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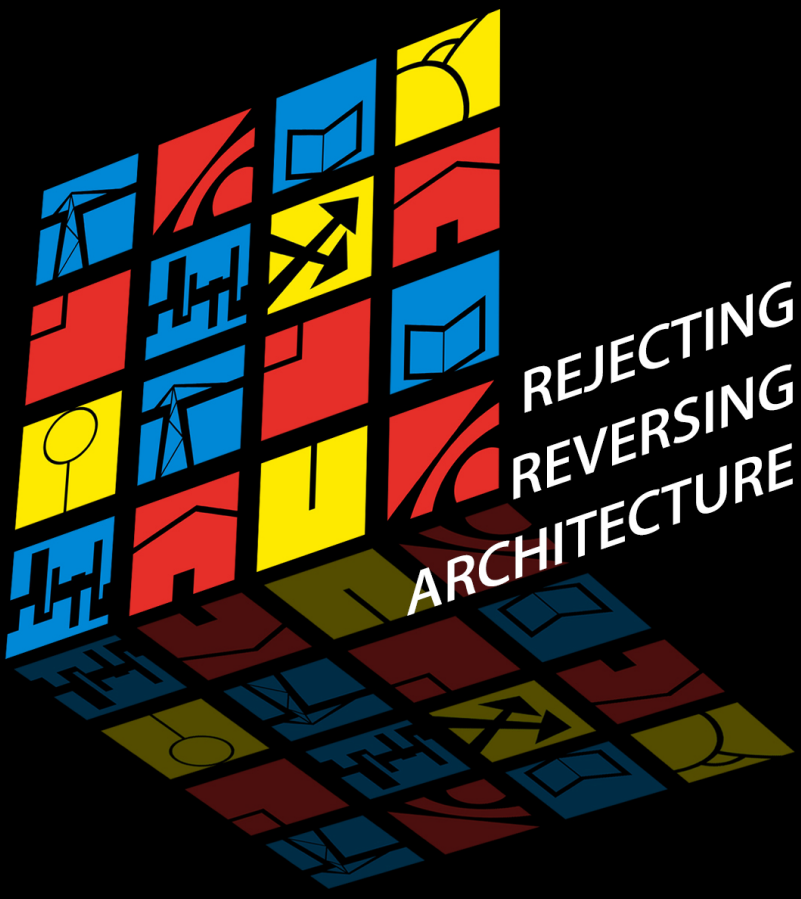
livable environments & architecture



5th International Congress

September 28-30 2017 Trabzon TURKEY

KARADENİZ TECHNICAL UNIVERSITY

Faculty of Architecture Department of Architecture

Edited by **Asu Beşgen** **Nilgün Kuloğlu**

LIVENARCH V

LIVable ENvironments & ARCHitecture

5th international congress

september 28-30 / 2017
trabzon – Turkey

karadeniz technical university
faculty of architecture
department of architecture

REJECTING / REVERSING ARCHITECTURE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REJECTING
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Karadeniz Technical University, Turkey

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Şengül Öymen GÜR

“Urgent Need for a Utopia of Self”

TC Beykent University, Turkey

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Murat KADER

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iki design group, Turkey

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İstanbul Technical University, Turkey

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ACKNOWLEDGEMENTS

Welcome…

On behalf of the Architecture Department of our university, we are greatly honored and pleased to welcome you all to the Congress on “LIVable ENvironments and ARChitecture” here in Trabzon.

As we know, LIVENARCH aims to raise awareness of livable environments and we hope this congress offers you a unique opportunity to gather here to share experiences and discuss architectural strategies for livable environments, which definitely will result in the improved outcomes for our environments.

LIVENARCH congress was first initiated in 2001 and held until the year 2009. So, after a break for 8 years since then, the congress now continues to be held by our department and we are so happy for this.

The theme for LIVENARCH V-2017 is: “REJECTING/REVERSING ARCHITECTURE”. We aim to create an atmosphere of thinking the architectural knowledge in reverse; reconstructing knowledge as such or refusing it altogether through a reverse perspective. In other words, by intending to generate a whole new knowledge of architecture, comprised of what architecture can and cannot do, we kindly would like to invite participants to face the “rejection/reversal” side of architecture.

As you know following sub-themes have been determined in the congress by the organization committee “REJECTING/REVERSING ARCHITECTURE” in/at/on/over:

- Theory/History/Discourse
- Identity/Culture/Tradition
- Design
- Urban/City/Landscape/Rural
- Interior Design
- Criticism/Method
- Technology/Material/Sustainability
- Nature/Environment
- Conservation/Transformation/Reuse
- Human/Behavior
- Politics/Policies/Laws/Regulations

- Economy
- Visual Arts/Aesthetics
- Education

We also have several most valuable plenary speakers and it is our great pleasure and privilege to have these plenary speakers to join us for this congress.

The keynote speakers are:

1. Sonay ÇEVİK, Karadeniz Technical University-Turkey (LIVENARCH 2003, Congress Chair);

2. Şengül ÖYMEN GÜR, Beykent University-Turkey (LIVENARCH 2007- 2009 Congress Chair);

3. Murat KADER, Architect, iki Design Group-Turkey;

4. Spiro POLLALIS, Design, Technology and Management at Harvard Design School-USA;

5. Gülsün SAĞLAMER, Former Rector of İstanbul Technical University (1996-2004)-Turkey

We are very grateful to the plenary speakers and our organization team of LIVENARCH V-2017 for their tremendous support they have provided as host and to the Congress Scientific Committee, particularly to;

Zeynep AHUNBAY (ITU, Turkey), Nilüfer AKINCITÜRK (Uludağ. U., Turkey), Emre AYSU (Maltepe U., Turkey), Minos BAKALÇEV (Cyril and Methodius University, Macedonia), F. Cana BİRSEL (ODTU, Turkey), Demet BİNAN (MSGSU, Turkey), Lily CHI (Cornell University, Turkey), Nilay ÇOŞKUN (Gebze Tecnical U., Turkey), Alper ÇABUK (Anadolu U., Turkey), T. Nur ÇAĞLAR (TOBB University of Economics and Technology, Turkey), Neslihan DOSTOĞLU (İstanbul Kültür U., Turkey), Dietmar EBERLE (Eidgenössiche Technische Hochschule, Sweden), Arzu ERDEM (Kadir Has U., Turkey), Nur ESİN (Okan U., Turkey), Neriman ŞAHİN GÜÇMAN (ODTU, Turkey), Şengül ÖYMEN GÜR (Beykent U., Turkey), R. Eser GÜLTEKİN (Artvin Çoruh U., Turkey), C. Abdi GÜZEL (ODTU, Turkey), Başak İPEKOĞLU (İzmir Institute of Technology, Turkey), Theoklis KANARELIS (University of Thessaly, Greece), Lucia N.A. LOMBARDERO (Architectural Association School of Architecture, England), Sevgi LÖKÇE (Atılım U., Turkey), Manfredo MANFREDINI (University of Auckland, New Zealand), Gül KOÇLAR ORAL (ITU, Turkey), Deniz Erinsel ÖNDER (YTU, Turkey), Sofia Tahira ELIAS-ÖZKAN (ODTU, Turkey), Çiğdem POLATOĞLU (YTU, Turkey), Güven Arif SARGIN (ODTU, Turkey), Felicity D. SCOTT (Columbia University, USA), Arzu Gönenç SORGUÇ (ODTU, Turkey), Sema Esen SOYGENİŞ (Bahçeşehir U., Turkey), Hülya TURGUT (Özyeğin U., Turkey), Zeynep ULUDAĞ (Gazi U., Turkey), Gülay KELEŞ USTA (İstanbul Kültür U., Turkey), Zerrin YILMAZ (ITU, Turkey), Kestutes Zaleckis (Kaunas Technology U. Lithuania).

I also would like to thank to the Scientific Research Projects Unit of Karadeniz Technical University, Trabzon Chamber of Architecture, VİZYON Digital Center and graphic designer Cansu BEŞGEN for their valuable contribution to the Congress.

My thanks also go to the rectorship of Karadeniz Technical University, Dean of Faculty of Architecture, and the head of Department of Architecture for their support.

And finally many special thanks should go to the organizing team of the Congress whose support were great for the organization: Asu BEŞGEN, Fulya ÜSTÜN DEMİRKAYA, Sibel MAÇKA KALFA, Hare KILIÇASLAN, Nilgün KULOĞLU, Serap DURMUŞ ÖZTÜRK, Ayşegül ÖZYAVUZ, Kıymet SANCAR, Murat TUTKUN and Nilhan VURAL.

Many warm thanks to the other teaching staff and personnel for their kind support.

Final thanks go to the all former congress chairs whose effort were great for the past organization of this Congress and who left us a legacy to continue ever and finally to pass it to the future generations.

Hope to see you again in LIVENARCH VI- 2019.

Best Regards,

Prof. Dr. İlkay ÖZDEMİR

The Chair of LIVENarch-V

Karadeniz Technical University, Department of Architecture, Trabzon

September 28, 2017

PREFACE

Editor's Note

From a Roundtable to a World…

The LIVENarch journey began 17 years ago on a roundtable in the Seminar Hall at the Department of Architecture in Karadeniz Technical University. This was the beginning of the first step to reach an international discussion platform about the problems and needs of architecture. Like the parents of a deep-rooted family, Prof Dr Şinasi Aydemir and Prof Dr Şengül Öymen Gür were the leaders of the friendly sharing, which they always used to construct new visions and academic culture for our department. Beginning with little notes and key words on a board, the first LIVENarch Congress was held in 2001 with the theme of "Nature-Cities-Architecture" chaired by Prof Dr Şinasi Aydemir.

Since then, we held 3 international congresses in 8 years. The 2nd Congress was held with the same theme and chaired by Prof Dr Sonay Çevik.

The following congresses; 3rd and 4th were chaired by Prof Dr Şengül Öymen Gür with different themes such as; "Contextualizm in Architecture" in 2007, "Re/De Constructions in Architecture" in 2009, aiming to touch the pulse of architecture.

After a long break, again on the same roundtable at the same Seminar Hall, in the lights of what we have learned from our former leaders, with a group of volunteers, the LIVENarch has begun to be re-formed. This time, it has to be fed with *whats and whys we and we do not have*: ARCHITECTURE.

At the end of long discussions, with a number of serious meetings, the theme of LIVENarch-V was chosen from over 10 themes as follows:

"REJECTING/REVERSING ARCHITECTURE" and framed its discourse as:

"At times, architecture happens to be a form of deductive reasoning arriving at the particulars from the universal, utilizing a priori knowledge beyond experimental proof. At others, it is a case of inductive reasoning reaching universal from particulars on the basis of a posteriori knowledge produced through experiments. In the 21st Century where epistemological development outpaces action, on the other hand, architecture is in the limelight with its new articulation and comprehension dynamics. New approaches such dynamics bring about make it possible to develop new knowledge in a number of fields such as theory, design, method and application in the discipline of architecture.

In the analysis of architectural knowledge, each new thought creates a new comprehension. Each construct, possibility, acknowledgement and expression other than acquired and internalized knowledge expresses a new definition of reality. With an open mind for diverse sources of knowledge, architecture works on the basis of certain assumptions and pre-defined terms. However, the acceptance of knowledge is again subject to specific limits.

Endeavors in architecture reflect rejections rather than acceptance, inversions rather than straightforward approaches, standing against rather than standing by, and displacement rather than placement. Such endeavors cover, in addition to the envisaged future of architecture, the identification of deficiencies which make predicted now harder to achieve. Contradictions are what makes architecture possible, while contrasts feed thought about it; inversions arouse it, while refusals instigate it to action...

In an environment where the reality is defined by wrong rather than correct, ugly rather than beautiful, lawlessness rather than order, improper rather than proper, undefined rather than well-defined, ill-fitting rather than befitting, skipped knowledge rather than taught knowledge, unknown rather than learned, impossible rather than possible, fait accomplie rather than unlikely, impossible rather than due, the "reject" and "reverse" state of architecture reveals theoretical/practical existences with a multitude of probabilities.

In this context, LIVENarch V-2017's theme "REJECTING/REVERSING ARCHITECTURE" intends to think of architectural knowledge in reverse; reconstructing knowledge as such or refusing it altogether through a reverse perspective. Intending to generate a whole new knowledge of architecture, comprised of what architecture can and cannot do, invites the participants to face the "rejection/reversal" side of architecture."

Despite the social and economic crisis, our country and we have been living in, we received 86 proposals from different sub-fields of architecture, such as:

"theory/history/discourse, criticism/method, urban/city/landscape/rural, identity/culture/tradition, design, interior design, technology/material/ sustainability, conservation/transformation/re-use and education", but unfortunately from less countries because of the same crisis.

The book, now you are reading, has 2 volumes inside, with the papers from different universities, placed accordingly to the sub-fields by our Scientific Committee.

Towards this aim, in the 1st Volume, you will see 4 Parts:

In the 1st Part, under the heading of "THEORY/HISTORY/DISCOURSE*", Aktan ACAR,* from TOBB University of Economics and Technology, discusses the *"six concepts of Vitruvius: order, arrangement, symmetry, eurhythmy, propriety and economy"* by a reverse chronology. He analyses them with the genuine foundations of the universal language of architecture, believing in the rediscovery of universal language of architecture will overcome the crisis of meaning and legitimacy. *Serap DURMUŞ ÖZTÜRK* and *Melis YAZICI*, from Karadeniz Technical University, make a *"linguistic text analysis",* putting forward the relationship between architecture and collocation, moreover

underlining once again the importance of the text and words in architecture literature/discourse. *Iakovos POTAMIANOS*, from Aristotle University of Thessaloniki, studies on *"disorientation",* bases on the metaphoric concepts of *"Daedalus"* and *"labyrinth".* The objective of his research is to discern some of the basic principles on which a design might have been based, such as; *"comprehensive viewing versus viewing from within", "the establishment of signposts", "formal and spatial differentiation range"* and *"the apprehension of directional light and shadow cues". Çiğdem KOÇ* and *Murat SÖNMEZ*, from TOBB Economics and Technology University, discusses the *"chaos theory"* in order to criticize the architecture of today on the line of complexity in daily life. Lastly, in the 1st Part, *Yelda CANBEYLI* and *Aktan ACAR*, from TOBB University of Economics and Technology, search the *"contemporary architecture through the lens of architectural utopia competitions",* for deriving the characteristics of contemporary architectural thinking, theory, and production.

In the 2nd Part, under the heading of "CRITICISM/METHOD", *Beyza Nur BATI* and *Murat SÖNMEZ*, from TOBB University of Economics and Technology, propose an *"immaterial architecture",* basing on the theory that all creations depend on *"two domains of reality: the superior and inferior",* sampling by different contradicting sensations. *Yasemin İLKAY*, from Van Yüzüncü Yıl University, reverses the current definition of *"urban green space by rejection the planning practice"* at urban greenery in Ankara. She searches the answers to some questions such as; *"the 'urban' as open public space or the 'nature' as green space?"* and *"the 'urban' in green areas or the 'nature' in urban areas?"* in order to find out the priorities for human and green. *Alper BODUR* from Water and Sewage Administration of Istanbul and *Yurdanur DULGEROGLU YUKSEL* from Istanbul Technical University, discuss the *"life quality improvement over social houses"* in Istanbul, examining the the effects on quality of householders' lives based on squatter housing demolitions on the urban squatters.

In the 3rd Part, under the heading of "URBAN/CITY/LANDSCAPE/RURAL", *Rengin Ege ÇORAKÇI and Pınar ÖKTEM ERKARTAL* from Beykent University, look through *"the high line and the lowline projects as biophilic spaces"* by reversing architectural examples from New York and around the world, examining the design of alternative biophilic public spaces that emerged when the areas of urban expansion spreading towards their periphery to become insufficient for the increasing urban population. The second paper is held by *Miray GÜR* from Uludağ University. It aims *"to reverse the structuring of the transformations, which have been carried out to a family friendly transformation approach parallel with the family structure and social interaction based neighborhood culture"* in Turkey within TOKI projects. As the third paper *Elif BÜLÜÇ, Fatmanur BARAN* and *Dicle AYDIN* from Necmettin Erbakan University, search *"the effects of infill designs on morphological change"* in cramped urban fabric, based on formal differentiation in the street texture that accommodates traditional and current textures in Konya. *Fulya ÜSTÜN DEMİRKAYA* and *Hatice GENÇCAN* from Karadeniz Technical University, ask for the *"dilemma about the change of the city silhouette of Trabzon",* bringing to a conclusion that the city does not still

have a silhouette that it can reflect its identity, despite its deep-rooted architectural history. *Banu Çiçek KURDOĞLU, Sevdenur AKDOĞAN* and *Sultan SEVINÇ KURT KONAKOĞLU* from Karadeniz Technical University, focus on the *"recreation and tourism greenway in Samsun old rail trail with opportunistic and recycler planning strategies and scenarios".* In the same way with the previous two papers, *Duygu AKYOL* and *Arzu KALIN* from Karadeniz Technical University, investigate *"the coastal city silhouette of Izmir*", by taking photographs and making on graphic abstractions from seven points, considering the main criteria such as "*occupancy gap balance, green tissue structure change, and continuity*".

The 4th Part consists of three papers within the "IDENTITY/CULTURE/ TRADITION" sub-themes. In the 1st paper, *Şafak ŞAHIN* and *İlkay ÖZDEMIR* from Karadeniz Technical University, re-reads *"the traditional architecture over Ordu Houses"* by emphasizing the causes and results of rejecting traditional architecture values. *Esra YALDIZ, Süheyla BÜYÜKŞAHIN SIRAMKAYA* and *Dicle AYDIN* from Necmettin Erbakan and Selcuk Universities, focus on the city of Konya within the frame work of *"Station Streets formation, believing that the Station Streets form the continuity in the creation of spatial structure and the development direction of the Anatolian cities".* The last paper of the part is proposed by *Yüksel TURCAN, Esra NARTKAYA* and *Rüveyda YETIŞ* from Karabuk University. The authors search *"the historical water mills as the industrial heritage of Safranbolu",* contributing to the cultural sustainability by documenting the traditional mills which are the important buildings of an era.

Volume 2 includes 5 Parts:

The 1st Part has the heading of "DESIGN". The 1st paper of Volume 2 is held by *Suzie ATTIWILL, Özge CORDAN* and *Kağan GÜNÇE* from RMIT, Istanbul Technical and Eastern Mediterranean Universities, putting forward a proposition for *"Nicosia / Cyprus in the view of urban and interiority"* concepts, by the help of "Inhabiting Nicosia Workshop"'s scenarios and students' works. In the same way, this time focusing on the concepts of *"privacy necessity"* and *"plant material", Özge ÖZARMAN* from Karadeniz Tecnical University, suggests *"a model for single family dwellings at gated communities"* to draw attention to the privacy needs of the users. *Fatmanur BARAN, Elif BÜLÜÇ* and *Dicle AYDIN* from Necmettin Erbakan University, note *"the change of hospital designs based on architectural program",* with three stages that reflect the spatial organization, which affect the inner space construction and the outer space formation. *Bahar KAYA's paper* from Mimar Sinan Fine Arts University has the title of *"biomimicry and biodesign",* defining the two concepts in a large scale, with examples from Asia and Europe. *Selin OKTAN, Çağlar AYDIN* and *Serbülent VURAL* from Karadeniz Technical University, search *"the question "why?" in design process through computational methods"* with a group of students works of conventional design processes, written algorithms and computer workspace by using Grasshopper plugin on Rhinoceros*. Serdar AYDIN* and *Marc Aurel SCHNABEL* from Victoria University of Wellington, relate the theme of the LIVENarch Congress by "*rejecting authorized heritage institutions"*, in default of emphasizing the need and the importance of *"a digital heritage project with a model of a virtual museum".*

The 2nd Part includes papers from "INTERIOR DESIGN" sub-field. With the aim of rejecting/reversing architecture in the discipline of interior design, *Korcan GÜLFİDAN* and *Saadet AYTIS* from Mimar Sinan Fine Arts University, suggest the *"conception and misconception of design customs"* by evaluating *"the stereotypical portrayals of interiors in media".* In the paper, media elements which were generated and published with various mass communication tools in the 21st century are selected in the sampling process of interior portrayals. With a different point of view, *Talia ÖZCAN AKTAN* and *Özge CORDAN* from Istanbul Technical University, put forward the needs of *"housing interior design for Syrian refugees"* via examining design strategies and decisions at Sultanbeyli case. *Muhammed Fatih ÇETİNTAŞ* and *Nesip Ömer EREM* from Istanbul Technical University, search the "*spatial evaluation of hospital policlinic waiting areas"* with six case studies on six different public hospitals in Istanbul.

The 3rd Part is about the discussions on "TECHNOLOGY/MATERIAL/ SUSTAINABILITY". Nuriye Nida ÇELEBİ ŞEKER and Sevtap YILMAZ from Mimar Sinan Fine Arts University and Istanbul Technical University, propose a research of *"geometric parameters affecting acoustical performance and examination of different plan shaped halls".* In the paper, different planned halls that are in the same specifications in terms of volumes, average heights, number of seats, per volume and area, surface materials are designed and investigated. *Onur COBAN, Mustafa OZGUNLER* and *Mustafa Onur SAVASKAN's paper* from Mimar Sinan Fine Arts University, searches the solutions for *"reducing the probability of fire start in hospitals".* This time *Mustafa Onur SAVASKAN* and *Umit ARPACIOGLU* from the same university, put forward the rural sustainability and architecture in rural development policies in turkey with the pilot village: Tongurlar, emphasizing the main concept of *"sustainability"* and its components.

"CONSERVATION/TRANSFORMATION/RE-USE" is the content of Part 4. In this aim, the 1st paper comes from Istanbul Aydın and Yıldız Technical Universities by *Didem TELLI* and *Kunter MANISA.* The authors put forward a new way of urban transformation as *"polycentric industrial urban regions".* At this point, for being the leading projects of this field, serving as a model of polycentric formations, the *"Ruhr from Germany"* and *"Lille from France"* are analyzed in details. *Figen KIVILCIM ÇORAKBAŞ, Talha AKSOY* and *Serhat SARI* from Anadolu University, search the *"Istanbul land walls and vegetable gardens as a case for an integrated conservation of cultural heritage and landscape"*, especially arguing that the "*bostans"* constitutes a cultural value within. *Dilek YASAR* from Beykent University, puts forward the parameters which are believed to be ignored in the transformation activities carried out in districts of "*historical and cultural importance over Karaköy Kemankeş Avenue".*

The last part is about "EDUCATION". In this context, we have 3 papers. The 1st paper is about *"biomimicry in architectural design studio education"* research by *Elvan Elif ÖZDEMİR* and *Hayriye Oya SAF* from Mersin University. The authors examine an educational architectural design project carried out by the fourth year architectural design students at Mersin University, developing and integrating the implications of the biomimetic

approach into design education. *Aktan ACAR* and *Günsu Merin ABBAS* from TOBB University of Economics and Technology, focus on *"the robotics and digital fabrication in architectural design education"* using a transdisciplinary pedagogy, explaining the exploration of a curriculum for architectural robotics within the scope of experimental workshop programs by students' works. *Ümit Ceren BAYAZİTOĞLU, Güliz ÖZORHON* and *İlker Fatih ÖZORHON* from Özyeğin University, similarly bases on a student workshop in their paper, with a different concept; *"transformation".* According to this theme, the research aims to provide an informal medium to experience different methods, to produce alternative solutions and to question the current state of the city taking the past and the future into account.

I, as one of the members of the LIVENarch-V Organising Committee and the editor of "REJECTING/REVERSING ARCHITECTURE" Proceedings, am very proud of being a member of the roundtable in our Seminar Hall for participating in all the phases and meeting all the faces of LIVENarch, since 2000 with my architecture family.

Hoping to see the affects of roundtable memories in the following LIVENarches…

Assoc. Prof. Dr. Asu BEŞGEN

The Editor & Member of Organizing Committee of LIVENarch-V

Karadeniz Technical University, Department of Architecture, Trabzon

September 28, 2017

LIVENARCH
livable environments & architecture

VOLUME

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THEORY ■ HISTORY ■ DISCOURSE

CRITICISM ■ METHOD

URBAN ■ CITY ■ LANDSCAPE ■ RURAL

IDENTITY ■ CULTURE ■ TRADITION

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KEYNOTE

I

URGENT NEED FOR A UTOPIA OF SELF

Şengül Öymen Gür

TC Beykent University, Turkey

LIVENARCH 2007-2009 Congress Chair


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URGENT NEED FOR A UTOPIA OF SELF

Şengül Öymen Gür
TC Beykent University, Turkey

INTRODUCTION

A utopia is an imagined community or society that possesses highly desirable or nearly perfect qualities for its citizens.[1] One could also say that utopia is a perfect 'place' that has been made so there are no problems. The opposite of a utopia is a dystopia, meaning a rotten society and bad place. Also, heterotopia is a term suggested by Foucault indicating multiplicity of places and communities existing together in peace[2], without an unpredictable future though. Unfortunately in the early 21st century we have all come to accept that peace and sustainability on earth are impossible to achieve without planned utopias. We are in a state of ou-topia today.[3]

In this opening speech I propose to define a utopia for a better future, which would start by changing our worldview.

Impact of Neoliberal Policies on Architectural Practice

Architecture is not an autonomous discipline. Freedom on drawing board is a limited and misleading freedom. Definition, practice and education of architecture is totally and entirely a cultural domain. Like all phenomena imbedded in cultural domain it cannot be conceived independently of society, economy and politics. The globalization era in which we are today, is procuring a new construct in terms of societal, economic and political strategies; spreading worldwide in alliance with the progress of communications and transportation and influencing all cultural particulars via its multi-dimensional behavior; reconstituting the globe.

Through guidelines in favor of capital and capitalism, globalization realizes major transformations in mechanisms of social order and human's living realm. As already known, culture is the order of symbols, changes over time,

[1] Giroux, H., 2003. Utopian thinking under the sign of neoliberalism: Towards a critical pedagogy of educated hope. Democracy & Nature, 9(1), pp.91-105: Simandan, D., 2011. Kinds of environments—a framework for reflecting on the possible contours of a better world. The Canadian Geographer/Le Géographe canadien, 55(3), pp.383-386. http://onlinelibrary.wiley.com/doi/10.1111/j.1541-0064.2010.00334.x/full

[2] Foucault, M. Of Other Spaces: Utopias and Heterotopias, 1967; Heterotopia is a concept in human geography elaborated by philosopher Michel Foucault to describe places and spaces that function in non-hegemonic conditions.

[3] "Topos" (gr.) means topological place, and "ou"(gr.) means non-existent.

and expression of objects, beliefs, meanings, words, preferences, tastes, worldviews, values and principles. Changing of economic, political, socio-cultural, scientific, and environmental concerns on the axis of globalization makes it inevitable to produce and procure new and vital phenomena and concepts in architecture, as well.

Unfortunately globalization had undesirable consequences in this country. As soon as the effects of globalization was felt in Turkey around the 1980s import substitute politics (ithal ikameci politikalar) was skillfully dropped overnight by the Özal Government and were replaced by export priority strategies. On urban level, populist policymaking was abruptly replaced by urban investments which would alleviate the introduction of the new bourgeoisie with the new global consumption culture, procurement of depressed and deteriorated historical settings to put forward the heritage for tourism, to produce gated communities and residences; luxurious entertainment and shopping centers, 5^+ star hotels, mixed use projects, luxurious congress centers, museums and exhibition halls. In the sphere of education, the architect educators could not resist the changes and started to propose these subjects as studio matters enhancing the state of alienation through new digital techniques, in most cases. The concepts of modular coordination, standardization, simplicity, ergonomics, ease of construction and many others associated with Modern Architecture fell into oblivion. Countries started to compete to excel one another in the production of new architecture indifferent to major environmental concerns (Figures 1-2)

Figure 1. King Abdullah Petroleum Research Center (2009-˜),
Riyadh; Saudi Arabia; Zaha Hadid
[Site Area: 530.00m^2, Footprint Area: 28.500m^2, Total: 66.00m^2]

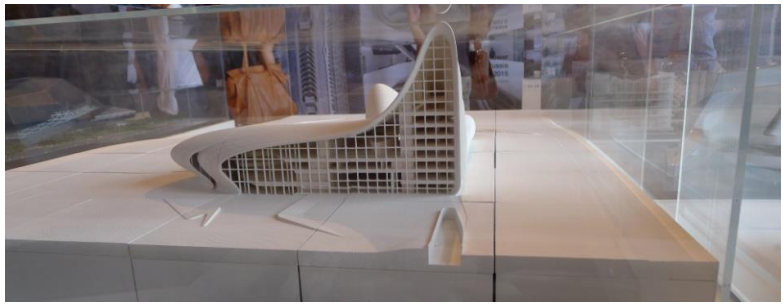


Figure 2. Haydar Aliyev Cultural Center (2013), Baku, Azerbaijan;
Zaha Hadid, Patrik Schumacher+Saffet Kaya Bekiroglu
[Site Area 101801.0 M2]

Environmental Situation: The Fierce Urgency of Now

Our world is facing some ultimate states of which especially we architects should be worried about. Ultimate state can be conceived somewhat like limit **state** design (LSD), also known as load and resistance factor design (LRFD), which refers to a design method used in structural engineering. A limit **state** is a condition of a structure beyond which it no longer fulfills the relevant design criteria. As a simple example; body temperature normal is 35,8 and 37,2 °C (96,5 bis 99 °F). Ultimate state is 40 to 42 ° C, which is a very high fever (fever hyperpyretic). If no precaution is taken we simply die.

Some ultimate states are exemplified below (Figures 3-5):

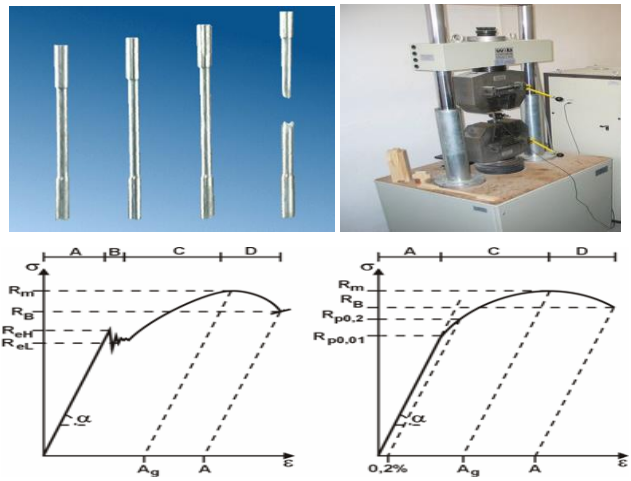


Figure 3. Axial Tensile Strength (S 235: F = 240 N/Mm²)

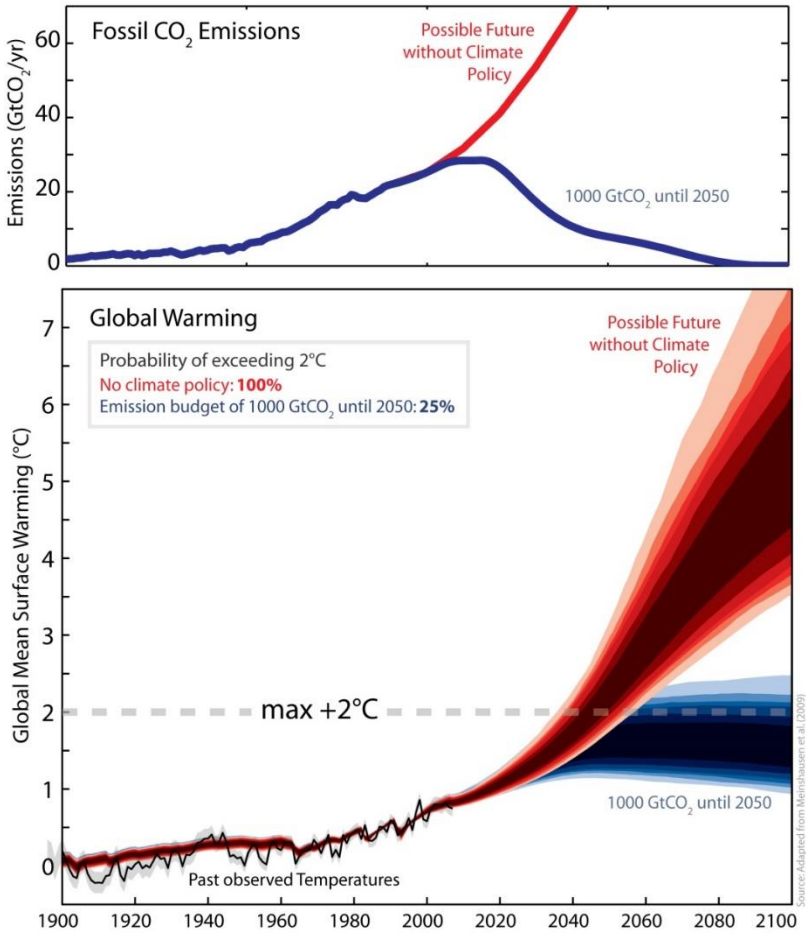


Figure 4 & 5. Ultimate State for Sustainability Sciences

Figure 6.

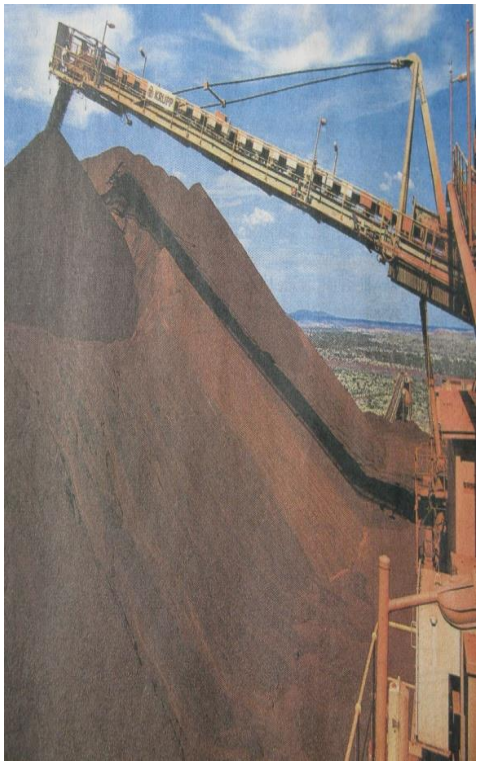


Figure 7.

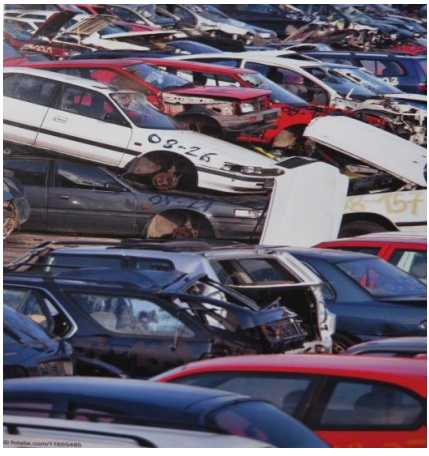


Figure 8.

Figure 9.

In Search of a Brave New Utopia-A Utopia of Self

There is a tendency to emphasize the visual sense in favor of the others in architecture despite the fact that we experience the world around us with our bodies and minds. And, this we need to clarify further.

While there is widespread agreement across disciplines that the identities of individuals, groups and places are significantly interrelated, there are equally divergent views as to the nature and origins of these relationships. For instance Christian Norberg-Schulz (1966, 1971 and 1979) and Kevin Lynch (1960) make value judgments about different forms of habitats but fail to raise general assumptions. Norberg-Schulz's *Intentions in Architecture* (1966) is founded on modern science and the doctrine of symbolic form; it builds a place for architecture in a modern philosophical landscape. However, he does not deal with the entanglements of individual, society and place involved in the processing of symbols. Both *Existence Space and Architecture* and the *Genius Loci* are powerful books, which organize and taxonomize the symbols and symbolization of places, which generate the total form but he does not formulate any universal principles. Lynch's observation is meticulous but does not answer the "where" and "why" at a universal level.

Researchers in other disciplines such as Amos Rapoport (1969, 1977) and Edward Hall (1960) stresses importance of cultural factors, values, customs and memory. Mental and body images, schemes and maps come into play at this instance. In Hall's term-proxemics, for instance, man has elaborated on extensions of organisms among other species. Researchers like Edward Casey (1998) and J. E. Malpas (1999) have both reinvigorated the subject of place, especially the interdependence between the subjective and objective elements of place experience. I keep on offering my famous lecture, "Palimpsest: Reading the Place" over and over again (Gür 2002a, 2002b, 2002c, 2015).

The prime importance of human body in spatial cognition and human perception is long emphasized by Maurice Merleau-Ponty (1962) through theories of "embodied mind" which relates our spatial experiences to the findings of neuroscientists; and by Michael Polanyi (1958), who on the other hand, argued "tacit knowledge" as a state of knowing, which employs the senses. This was strongly corroborated by Gibson who proposed the "ecological optics" assumption, underlineing the sensory experiences (1966).

In emphasizing fundamental role played by the body as the medium of all experiences the concept of "self" emerges. However some, for instance, Metzinger (2003) argue that there is no concept such as self; it is a phenomenal process, a collection of representations. At this point conflicts arise between them and Merleau-Ponty who conceives body as the fulcrum of human existence, of memories, perceptions and cognitions. Nevertheless 'a collection of representations' itself is purposeful and neurological in essence. Researchers corroborate the fact that empathy which is the hardcore of sharing social values, and activities, building affinity with places is a neurological process (Figure 10). What is more, an alternative theory of

'extended mind' argued by Abel (2015) embraces the extension of personal capacity by external devices.[1]

"*Searching for a new and appropriate metaphor consistent with such an approach, the extended self is likened to a magnetic 'field of being' comprised of objects and places as well as, others, with the body at its center, the origins and properties of which we are only now beginning to comprehend*" (Abel, 2015; p. 57).

Figure 10. Human Brain is Complicated

Departing from the rigorous efforts made by Chris Abel to uphold his thesis and combining it with Bernard Stiegler's (1998) theory of technics, it is plausible that 'coevolution of the who and the what' sets man apart from any other species. The human kind evolves together with the innovations he makes; and the more he develops his skills more complicated becomes his experiences with the environment. Humanity's unique powers of technology to change and dominate the natural environment might have evolved.

Here the complimentary concepts of type (biological) and meme (cultural) surface. Types both in living organisms and architecture are generalized models defined by our ability for classifications and combinativity.[2] Meme on the other hand, is an element of a culture or system of behavior passed from one individual to another by imitation or other non-genetic means but it is also

[1] Andy Clark and David Chalmers, The Extended Mind"
http://www.nyu.edu/gsas/dept/philo/courses/concepts/clark.html, July 29, 2017.

[2] For an exhaustive investigation see Gür, Ş. Ö. "Adalet Binalarının Anlamsal Değeri", Adalet Binaları Tasarımı, Ankara, Önka, 2017; pp. 19-64

sometimes used co-terminus with genes. It is employed in design process (Salingaros and Mikiten, 2002).

Memes (of language, taboos and other social constraints) and techniques do not follow separate routes of evolution but rather co-evolve in a most complicated and entangled manner to form a fusion of types and techniques and thus create our 'extended self' Abel, 2015). There is a clear evidence of this in our daily lives and spoken language. Cultural transmission and diffusion can be investigated via memes. We have cognitive roots of classification and combinativity underlying all taxonomies, indicating a universal basis for identifying and grouping types as a primary mode of transmission and diffusion. Human brain is adept in reading and establishing taxonomies of memes. Otherwise it would have been impossible to tell a prey from a predator.

We all know the influence of biological taxonomies on architectural history and theory, even more detailed studies of building types and urban morphologies by various writers. Hence strong and stable relations between form, function meaning are established, despite some cultures attach different meanings to different forms. Accordingly, eschewing any fixed relation between form and content, a new concept "technical meme" was proposed based on the material embodiment or inscription of memes in artifacts and other culture-forms. It completes a vital link in the cognitive loop integrating the extended self with the wider world (Ibid).

Technical memes evolve in practice. Automobile and freeway are examined in the evolution of dispersed cities, suburban life, radically changing the bodily experience of urban space. In the context of vernacular housing, the reproduction of similar building types and forms in quite different cultures provides further evidence of flexible relations between form and meaning. Evolution of vernacular architecture is primarily determined by cultural customs inscribed in material form, that is, technical memes, rather than by purely functional and climatic factors alone. Abel argues that,

"Innovations emerge out of fresh combinations of existing but previously unrelated concepts or techniques. In this sense even the most innovative designs can be argued to have a 'natural history' involving evolutionary processes analogous to those governing organic species, albeit with significant differences between their respective agents of production." (p. 215).

I this sense many architectural and urban types can be investigated on an evolutionary basis by emphasizing the combinatorial principles to display creative fusions. Just as the extended self is the hybrid outcome of many combinatorial elements, so the built world is constructed in the same way as a mirror image of this process. I personally did many studies on types, one of which is about utopias and their progress (e.g. Gür, 2017; Figures 11-13).

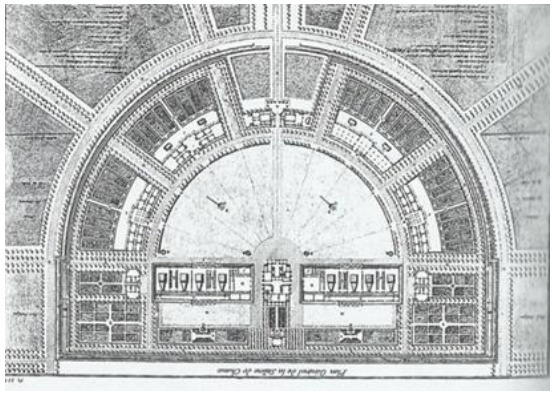
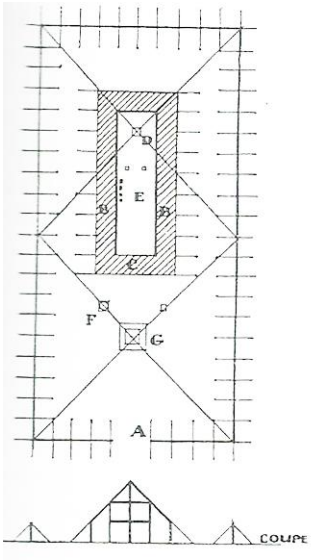


Figure 11. Claude-Nicholas Ledoux; Saltworks Of Chaux Master Plan, 1774



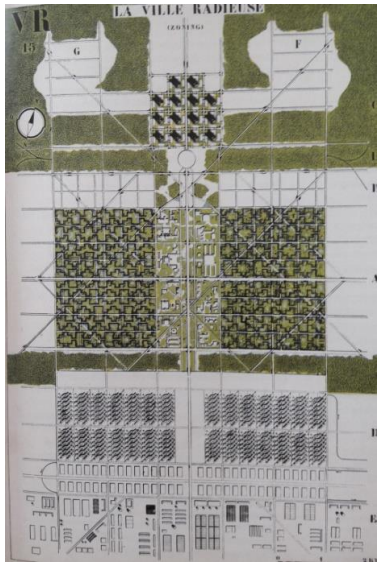


Figure 12a. Plan of a Temple as a Model for Le Corbusier's La Ville Radieuse

Figure 12b. The Master Plan of La Ville Radieuse

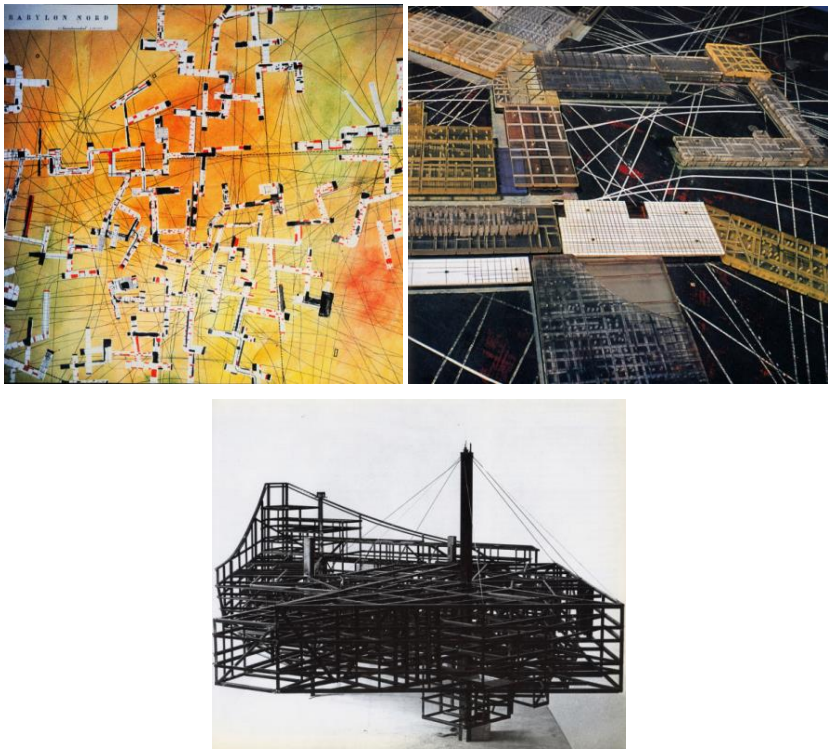


Figure. 13. Constant Nieuwenhuys's New Babylon Encompassing the Modern Transportation Sysytems and the New Construction Techniques https://lebbeuswoods.wordpress.com/2009/10/19/constant-vision

Based on our extended selves we architects can develop utopias to cure the negative aspects of climate change that matches the scale and urgency of the human, ecological and economic crises facing the world today; we can transform our carbon-intensive economies into sustainable and equitable systems. Should conservatism not constitute a mental state, obstacle?

Cultural Conservatism

Cultural Conservatism and resistance to change is a known phenomenon. While accepting that vital analogies might provide plausible explanations for how technical memes spread and shape people's minds, one must admit that there are 'good' and 'bad' memes. 'Tribal thinking' and its variations which explain addictive and conservative behavior of social and psychological origin is proffered by Mike McRae (2012) and others. They suggest that misguided belief in free will prevent us from recognizing just how fallible individuals and groups are when it comes to questioning their own habits or resisting any change to them. We have 'confirmation bias' rather than accepting contrary observations. The popular concept of free will as an unquestioned zone of

personal action is an illusion born of confusion between perception of separate physical body (true) and belief in a separate self (false).

“The reality is that while people make many everyday choices, both choices and decisions are generally directed by the impacts of place, language and culture on the extended self.” (Abel, p. 259).

Hence; there is no such thing as free will. It is the ‘cognitive dissonance’[1] which may lead to the actual or potential collapse of civilizations. Festinger (1954) advises self-evaluation and self-enhancement as a cure.

Thus; regarding the coevolution of Homo sapiens and technology up to date and examining ways in which individuals and groups are appropriating cyberspace, creating whole new virtual worlds to inhabit, we have to device a broader perspective as professionals to include environmental ultimate states. Despite the movies showing the aftermath of major disasters our planet is going to face in the near future, it is still very difficult to envision the dark future because we cannot experience the consequences with our bodies. Thus the link between mind, body and technics is not properly formed as of yet. My utopia suggested at this point is to extend our selves beyond personal egotistic borders for the sake of a livable future.

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[1] The term is employed by Leon Festinger; see Festinger , L. ‘A Theory of Social Comparison Processes’.

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THE SIX CONCEPTS OF VITRUVIUS: A REVERSE CHRONOLOGY AND ANALYSIS BACK TO THE GENUINE FOUNDATIONS OF THE UNIVERSAL LANGUAGE OF ARCHITECTURE

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ABSTRACT

Today, architectural theories are replaced by instant discursive positions, which are mainly overwhelmed by a crisis of meaning and legitimacy. The reverse-chronological investigation of the history of architectural theories showed that those positions are based on the architectural theories of the 17. and 18. Centuries. The crisis of meaning and legitimacy of architecture was also due to its emancipation from metaphysical roots and language especially in 17. Century. Despite the break with the origins, neither the intellectuals of the following centuries, nor the contemporary theorists have given up to use and benefit the very basic and genuine language of architecture. The dissociation of the concepts from their origin has forced the following generations to invent or discover the meaning of architectural terms, consequently the language of architectural knowledge. This study claims that this language was compiled and structured around six essential concepts of order, arrangement, symmetry, eurhythmy, propriety and economy by Roman architect Vitruvius in the 1. Century BC. This paper suggests a reverse analysis of the history of architectural theories back to Vitruvius. This analysis has demonstrated both the dependence of contemporary discourses on those concepts and their genealogy, and the rediscovery of universal language of architecture would overcome the crisis of meaning and legitimacy.

Key Words: Vitruvius, Architectural Theory, Language of Architecture.

Architecture in Crisis

Contemporary architectural theories are not subordinated to the hierarchical articulation of human learning and knowledge that were used to be classified as seven liberal and mechanical arts until the scientific and intellectual revolutions of the 17th and 18th centuries. Before that, the origin and knowledge of architecture were being derived from metaphysics, in the form of cosmology, which was covering mythology, philosophy, theology, proto-scientific observations, and experiments. At the eve of the 18th century, the former metaphysical paradigm of architectural theory has been replaced by the scientific doctrines.

According to Dalibor Vesely, the paradigm of architectural theories shifted once more from science to technology, a more powerful influence, in the 20th century [1]. Vesely underscores that new confrontation of architecture with "the possibility of design based on no more than an understanding of form, formal purpose, material, and technique". He claims that the simplicity and intrinsic poverty of that design is considered to be complemented by "an unprecedented complexity of personal intentions and formalizations". It is possible to state that in order to justify and valorize those personal intentions philosophical and psychological models have been implemented, as in the case of phenomenology.

In fact, this shift initiated an important change in the contemporary understanding of theory. As Alberto Perez-Gomez indicates, today theory is considered as a rational method of production having a character of applied science or technology [2]. In her seminal work "Theorizing a New Agenda for Architecture", Nesbitt points out a crisis of meaning in the discipline based on the basic premises of Modernism, which are referred as limitations [3]. Those limitations, writes Nesbitt, includes for example functionalism, radical break with the history, and honest expression of material and structure. According to her, postmodern architectural theory has addressed that crisis. Indeed, it was a crisis of meaning and legitimacy. It is, moreover, the consequence of the emancipation of architecture from cosmology and metaphysics of the antiquity in the 17th century. As it has been mentioned above, that cosmology and metaphysical knowledge, the theory back then, had been defining the origin, role, duty, and meaning of architecture.

Today, this crisis is much deeper and its consequences are much more devastating. Because, the prevailing diversity of the currents, debates and intentions of this era is quite of a challenge. The qualitative and quantitative transformation of the means of communication has a unique impact on the production and dissemination of the knowledge. Every single idea is published, circulated, and accessed via the internet, as a manifest, theory, or debate. It is possible to access them from all around the world simultaneously. All knowledge, relevant or irrelevant, melts into the infinite information cloud of the hypertext reality as well as the hardcopies.

This is the age of Wikipedia, as a digital summa, which structures the inner relations of knowledge body contextually. It offers a horizontal expansion of every bits and bytes in which all the accumulated knowledge of human being is documented. The question is if it possible to distinguish and reach, and

interrelate the relevant sources and knowledge within that information sea. In this context, the theory seems to be replaced by instant positions. It is hard to deny that those singular positions increase the possibility of offering innovative and creative contributions to the domain of architecture, where the theory is considered as the knowledge of a valid and relevant model or method for the production. The use of computers, fabrication technologies, cognitive allegories as a medium of expression for the formal manifestation of scientific-technologic or psychological models are the characteristics of the 20th century architectural thinking and writing tradition. It is possible to expand this perspective to the humanistic attitude of phenomenological discourses, linguistic-semiotic models, biology, and mathematic based theories, and the cultural-critical approaches of the 60s and 70s.

A critical comparison of the contemporary perspectives and the 18th century theories, however, demonstrates that the prevailing discourses and currents are overspecialized investigation of isolated aspects of the latter. Within the scope of this study, it is claimed that the prevailing arguments and theoretical assumptions in architectural theory have been recompiling, revisiting, or reinventing the concerns and ideas of the theories of the 18th century. Furthermore, they have been installing a particular content repeatedly in order to cope with the same primary theoretical problem of the discipline, the crisis of meaning and legitimacy. This content had been proposed by Vitruvius, the Roman architect-engineer of the first century BC. By the end of the seventeenth century, architectural theorists cut and isolated the Vitruvian content as individual issues and aspects of architecture, such as context, social and cultural role, economy, technology, structure, construction, function, form, aesthetics, ethics, meaning, and sensorial-emotional-cognitive experience.

Vitruvius presents this set in the very beginning of de Architectura. Furthermore, in various chapters, he paraphrases or quotes regarding to different issues and aspects of architecture in order to remind what architecture contains and how it should be performed [4]:

Now architecture consists of order, which in greek is called taxis and of arrangement, which the greeks name diathesis, and of proportion and symmetry and decor and distribution which in greek is called oeconomia.

The subsequent architectural theories have developed either a dialogue with the Vitruvian perspective or an objection to the very core of his statements on architecture. Throughout its history, some key components of his idea were obscured, whereas some others were promoted individually. In any case, it is almost impossible to cite any endeavor to understand, communicate, learn, design, and build architecture and space without citing Vitruvius' conceptualization.

Claude Perrault: The Rosetta Stone of Semantic Shift in Architecture

The first and primary responsibility in shattering Vitruvian foundations of architectural theory belonged to Claude Perrault (1613-1688) in 17th Century. To put it briefly, Perrault proposed that taste was culture and time based, and it would appreciate different proportional relations in different times and

cultures [5]. The architectural orders of the ancients were based on that relative and even subjective taste. François Blondel (1618-1686) had declared that the taste was individual and indeterminate, too [6]. But he could not have been critical enough to the authority of the Greek and Roman tradition, whereas Perrault was announcing the superiority of the Moderns in particularly science against the ancients [7].

Claude Perrault states that the nature does not provide rules for the beauty, contrary to many ancient authorities had claimed to find in nature in the form of proportion [8]. If there had been, says Perrault, all the efforts of previous writers to find a common, unchanging and universal proportion pleasing the eye and mind would have been achieve success. But there had been nothing but inconsistencies and disagreements about the measurements and proportions of the ruins of ancients.

His approach to the method as a part of applied theory of architecture demonstrates the characteristics of his era. His theory does not contain metaphysical foundations or causes for neither origin, nor beauty nor the appearance of architecture. The positive beauty of architecture is based on certain qualities common and agreeable by all [9]. The taste, as related to arbitrary beauty therefore proportions, is custom based.

Until Claude Perrault the legitimate and meaningful source and factors of the taste were the cosmology and the principles derived from that cosmic order by the masters of antiquity. Even under those circumstances, the personal – individual reflection of the architect on the problem had been encouraged. Even though their knowledge about human psychology, creativity, design methods or building technologies cannot be compared to the contemporary ones, first Vitruvius, and then Alberti were very well aware of the importance of the architects attitude and taste. In this respect, the famous and long part of De Architectura libri decem, Book I.I, explaining the education of architect, should also be re-considered accordingly. The knowledge of the architect is the source of its taste that shall be the measure of good and bad architecture.

The endeavours to prove the significance, meaning, duty, and the legitimacy of architecture by means of the prevailing and fashionable models, methods and analogies continued until the second half of the 20th century. The linguistic, semiotic, biological, informatic, and computational models have been considered in order to explain and re-construct the architectural – physical and conceptual – language. Moreover, the over-plural, multi- and inter-disciplinar, but over-specialised domain of architectural research and practice, have obscured the borders and crossings between only models and architecture, but also the models themselves.

As it was stated above, the replacement of metaphysical paradigm had triggered crisis of meaning and legitimacy. The scattered but bold theoretical or discursive production of the 19th and 18th centuries would help to relocate reflections of the crisis. The dawn of the 19th century cannot be characterized with a progressively evolved particular discourse on architecture. It can be described as an atmosphere that was composed of accumulated knowledge and experience, which were being validated in their appropriate positions and relationships with respect to the paradigm shift emerged in the 17th century.

The 17th century was a distinguished period within the western culture. The magnificent scientific revolution initiated a paradigm shift of which foundations were settled during the Renaissance. It is accepted that the “Modern Science and Philosophy” have begun within this century [10].

A Reverse Chronology

A chronological investigation of the architectural thinking and writing would present the multiplication and atomization of the theories alongside the highspeed paradigm shift(s). It would demonstrate, furthermore, detachment of the architectural concepts priorities from their roots. A reverse chronology, or a cross-sectional excavation through the history of the western architecture however, could help to disclose gradually the genuine origin of the contemporary arguments in architecture thinking and production.

After having lost the mythological and metaphysical model behind the art of building, the rational explanation of the birth of architecture had become an important issue. The imitation of nature as the source of art of building was represented with a poetic image, the primitive hut. The dissolution of the origin myth in the form of primitive hut in architecture can be marked with Jean-Nicolas-Louis Durand (1760-1834) who claims the wholeness of architectural space, which concerns the physical comfort conditions, economy, and purpose of the building [11].

Marc-Antoine Laugier (1713-1769) focused on emergence of structure and construction. The description of the first primitive hut by Laugier is a poetic representation of this natural, inventive, technical and constructive character [12]. He endeavours to meet the God created and exiled lonely man on earth, the forces of nature, and the rational necessities of man ignited by nature on the basis of a simple and rational architecture. There could be nothing irrational and unprecedented either in nature, or man, or architecture. From Leon Battista Alberti to Durand, the architectural practice had been concerned with respect to the physical conditions and basic needs of human.

In his lectures on the fine arts, August Schlegel (1767-1845) disputes over the primary controversy of architecture [13]. How could it be founded on purpose whereas it is an art? According to Mallgrave, Schlegel saves architecture as an art with the idea of “appearance of purposiveness” [14]. This midway had been paved by, again, the French architects at the close of the 18th century. The chief aims of those French pioneers “the expression of character, the creation of atmosphere, the division of the composition into independent units” based on expressiveness through form, rather than picturesqueness [15]. In that way, it would have been possible to defend architecture, as an art, in relation to the individual taste and influence upon the senses, despite the rationality behind the use material, structure, physical conditions, and the moral aspects. Until Schlegel, those position run on parallel but distinct courses, even though both had advocated the expressive function and qualities of architectural form, which has been called as character.

At the end of the 18th century, the idea of character seems to have two different direction. Mallgrave points out Quatremère de Quincy’s (1755-1849), who stripped the idea of any emotional and sentimental content away, rational

attitude as the first direction [16]. According to Quatremère de Quincy "architectural character resides in a necessary conformation between physical needs and moral habits, and in that developed by the climate, ideas, customs, taste, pleasures", just like the character of people" [17]

The appropriation of form with respect to the moral, cultural, and physical requirements of the context seems to be in harmony with the structural and functional rationalism of the 18th century. Carlo Lodoli (1690-1761) had stressed the application of mathematics and physics guided by rational norms in order to achieve the indivisible form and complete expression [18]. Marc-Antoine Laugier had claimed that essential beauty of architecture is independent of the habitude of senses [19].

The other tradition of the concept of character in architecture concerns the sensational and emotional aspects of the relations among the architect, architectural space, and user. Those aspects, mostly, were asserting the psychological interaction or influence of the forms, which recalls the anthropomorphistic tradition again. The very basic claim of this tradition is the expression or incorporation of an abstract content through the form. At the turn of the 19th century, there were two heirs to this tradition. First one claims an architectural character embodied in a symbolic language of forms, which was promoted by Claude-Nicolas Ledoux (1736-1806). The creation of an intended psychological and poetic effect upon a subject in motion was the second, which was represented by Etienne-Louis Boullée (1728-1799).

Claude-Nicolas Ledoux has a considerable influence over the Modern Architecture. His adherence to Rousseau's "Social Contract", and insistence on the expression of the social laws by means of architecture are of importance. The use of pure, Platonic geometric forms with symbolic value was characterizing architecture of Ledoux. It is possible to state that, after Ledoux, the expressive power of architectural character embodied in a symbolic language, known as 'speaking architecture - architecture parlante', which had been foreseen and warned by Jacques-François Blondel (1705-1774) [20].

The play of pure geometries had already been propounded by Boullée. He did not, however, attempt to deliver a content coded in symbols. He concerned a required impact of architecture on the senses by means of geometrical composition [21]. For Boullée, character is the effect of the object, which makes an impression on the perceiver, which cannot be reached by reason and argument that belong to the realm of science [22].

Boullée had followed his teacher, Jacques-François Blondel. But between Boullée and Blondel, there were two important figures to be mentioned: Marie-Joseph Peyre (1730-1785), and Nicolas Le Camus de Mézières (1721-1789). In fact, the theory of Nicolas Le Camus de Mézières cannot be considered as a mere prelude for Boullée. Le Camus introduced particular issues and aspects of architectural space that would turn to be the major topics 20th century theories. He proposed an examination of behavioural and sensational effects of architecture through the sensory experience alongside a moving subject [23]. He mentions not only the functional and proportional relations, but also the formal compositions and transition of spaces, which are

considered in accordance with the effects of light and shadow on masses, which had been paraphrased by Le Corbusier in the 20th century. Marie-Joseph Peyre, however, conceived the character as having associative and emotional effect, on the basis of pictorial composition, on realm of psychology, which can "create an impression of terror, fear, respect, gentleness, tranquillity, voluptuousness" [24].

Historians and theorists agree on that the idea of character of a building had been introduced to the domain of architecture by Germain Boffrand (1667-1754) [25]. Kauffman claims that Boffrand had achieved a dual meaning architecture by joining the concept of visual unification of parts with the concept of spiritual union of those parts, which is described as character [26]. Boffrand states that the components of building, which are more than the use of materials only, are brought into life by means of the character they convey [27].

The investigation of the question of character extracts a certain anxiety for a legitimate identity in architecture. As it has been mentioned above in discussing the question of origin, the problems and related terminology were the same, whereas the metaphysic causes of the problem had been replaced by the physical, visual, and moral issues. Because, theory had always been in continuity. It is possible to assert that theory was embracing the knowledge, but denying the source. This denial has been obscuring the lineage of the ideas, indeed. Leon Battista Alberti of Renaissance, for instance, had mentioned the appropriate expression of the purpose of an edifice by means of the composition and relations of the lines among each other, too [28]. Moreover, he had referred to a process of design in the mind of an "ingenious artist", which corresponds to the genius of the Enlightenment. And most importantly, Alberti had considered the form as separate from the matter.

The communicative or expressive function of architecture has always been a major concern for the architectural theories. The question is, however, the nature and qualities of that concrete body of expression. At this point, it is of importance to remind Dalibor Vesely's distinction between the character, as the experience of surface appearances, and the deeper reality of architectural space that is related with bienséance and convenance, of which history go back to Vitruvian concept of decorum [29]. Although they offer such an appearance, the value and power of symbolic representation by means of architectural orders cannot be underestimated. The main concern becomes the difference between the symbolic representation and realization of a content as a form, indeed. It would be a prejudice to assume that the former has been the main case in architectural history.

Even the pure forms of Claude-Nicolas Ledoux or Etienne-Louis Boullée had been concerned as a medium to create a particular effect and express their character. As Boullée says, architecture was about creating an image by means of the arrangement of volumes in order to express human sensibility [30]. Kruft asserts that despite that those forms had been considered as a basis for architecture since Renaissance, they never gained a legitimate status through their symbolic value, or considered as independent from other fundamental principles of architecture [31].

It is possible to put that despite the changing paradigms, cultural differences, and opposite theories, there is an almost universal language and definition of architectural form relevant through the generation of architectural theory. According to this definition, form stems from the nature of the materials employed, the disposition of the elements made of those materials, the principles and rules of arrangement of those elements in order to express an abstract content. Without exception, the firmness, the convenience, and the proportions, under different names and categories, are the essential properties of form.

The appropriation of form to the function was also an important issue for the architectural theory. To be true to the purpose, nature and function of the material and structure is of importance for the complete expression of form. That morality is generally attributed to the 19th century theorist and architect Eugéne-Emmanuel Viollet-le-Duc (1814-1879), as a Modernist attitude. Francesco Milizia (1725-1798) was claiming that the form of the architectural elements was determined by their functions, whereas Jean-Babtiste Le Roy (1720-1800) was asserting that “a hospital ward is truly a machine for the treatment of the sick” [32]. Carlo Lodoli had conceptualized that idea as any part that does not working should be excluded. With help of advanced calculation of load bearing elements, the contribution and promotion of the structure took a considerable step, as an organic system of forces and resistances. The term of “organic” is not a mere coincidence indeed. Rykwert, Kruft and Neveu explicitly put that Carlo Lodoli was the first one who used “organic” with an implication of “gesamkunstwerk” to describe his rational architecture covering even the last item of furniture [33]. The organic articulation of the working parts as a whole had been paving way to the late 19th and early 20th century discourses.

Particularly after Claude Perrault, the legitimacy of the forms does not derive from the authority of the previous masters, but rather the principle and rules that were invented or discovered by the ancients but improved and adjusted during the historical course of mankind. The unity of form with respect to the relations not only among the parts, but also between the parts and whole has always been one of those principles. Those relations were considered mostly as having a qualitative character. August Schlegel was claiming that the architect must consider the living relationships among the parts, rather than assembling the parts according to mechanical rules and proportions [34]. The architectural character was being considered as the result of not only the measurable relations among the parts, but also immediate and apprehensible relations, which is called good proportion and can be appreciated by the taste.

The transformation in the understanding of taste during the 18th century can be marked with three theoretical positions: First one was the principles and rules of the ancients. The architectural object itself was the source of the taste. It was subjected to the change based on experience and intellectual reasoning of the architect. The second position was the subjective personal judgment of educated man. It was the counter argument of the predetermined taste of the previous authorities. The last one was a total shift from the both beholder and the object, to the process. Because none of them, alone, could have handled the issue of sensory experience, the impossibility of developing

universally satisfying rational system of proportions, and probability of infinite number of legitimate individual judgments.

During the 18th century, the disputes over the taste, as the power of judgment, were swinging between the qualities of the object of experience and the faculties of mind. Since the sensory experience was associated with the lower pleasures of body, an idea that can be traced back to the Socratic tradition, and the senses are identical for everyone, the intellectual verification and comprehension of the impressions produced by the senses were being considered as the primary ground of the taste.

This oscillation between the positions reveals itself even in the institutional definitions of the Academie d'Architecture. In 1734, Academie relies on harmony or agreement between the whole and its parts depending on ordonnance (arrangement), proportion (appropriate dimensioning according to use and location), and convenance (placement according to the use) [35]. This definition was clearly promoting the compositional qualities. The previous agreement of Academie d'Architecture, achieved in 1712, was, however, addressing the intellectual faculties by promoting the simple relationships in all parts for the easy and deep satisfaction of the mind [36].

Perez-Gomez reports, nevertheless, that the notion of taste in Charles-Etienne Briseux (1660-1754) was distinct from the late 18th century concepts since he had suggested a genius who could override the rules [37]. Perez-Gomez indicates that Briseux was claiming that his contemporaries were praising taste as the legitimizing force behind their work. Briseux, however, had argued the impossibility of individual taste, because everyone identifies the same cause and principle of beauty, which produce pleasure, through their identical senses and intellectual processes [38].

The idea of a genius can be followed back to Germain Boffrand, as he had called "the most enlightened man" [39]. At hands of the most enlightened man, art elevates the nature to the perfection through those principles established on likes and dislikes of the enlightened men. To Boffrand, "taste may be defined as a faculty that distinguishes the excellent from the good". He argued that arts are reduced to the principles by a considerable operation of human mind. It is a process reflection on the pleasing and displeasing things, which takes centuries and due to correction by experience many times.

Sebastian Leclerc (1637-1714) had already addressed that qualitative nature of proportion by pointing out the fitness of the parts founded in the good taste of architect. He denounced science of proportion as the source of good taste. Kruft writes that for Leclerc, sensory perception is the judge of beauty; good taste was corresponding the pleasure of the beholder on the basis of personal judgment; the finest taste creates the greatest individual pleasure; personal taste is the arbiter of what is permissible, pleasure is the criterion of beauty; and finally, good taste does not belong to a privileged society, it can be improved [40].

As stated a number of times, in 1683 Claude Perrault diclosed the crisis by stating that the taste and beauty of orders were custom and culture based. He set the new rules for the game of architecture. Every architect who knows how

to build can master the rational and measurable quality. The taste, nevertheless, was a distinguishing quality that requires knowledge and reflection upon the work. This was a statement putting architectural practice under the magnifying glass of the architectural theory. Therefore, the building itself displaced the Vitruvian set of concepts as the content of architecture.

This break with the cultural and intellectual background issued very basic questions concerning the origin and meaning of this art, what to be expressed as a content, the forms of representation, and taste of/for architecture. In order to comply with this new task, the theorists substituted technological, scientific, psychological, or cognitive models for the previous metaphysic theory. Those new models, however, applied onto the old concepts and terminology. That is to say, the tools of the new model were implemented in order to describe and explain the conceptual content and the terminology of the previous model that remained same. The exploration of that content demonstrated that it contains the same not only terminology but also the concepts with Vitruvian tradition.

What architecture consists of …

In VI.2.1. Vitruvius explains his design method with respect to his concepts. First of all, the standard of symmetry is determined. Following this standard, the proportionate dimensions of the whole building are calculated. And then the wisdom or skill of the architect takes command to have regard the other issues. Architect makes adjustments and modify the plan through subtractions or additions in the symmetry of design without losing the principles in plan, and missing the intended effect on the elevation. During these adjustments and modifications, the false impressions of eye should be considered to suit the nature of the site. For a desirable result, the mere science or rule is not enough. The skill of the architect does matter.

In his description of design process, Vitruvius does not mention “order”, “arrangement”, and “economy”. He cites symmetry, eurythmy, as the adjustment of the proportions, regarding to conventions, customs, or nature, which are called as propriety. Symmetry and eurythmy correspond to measurable relations among the parts, and between the parts and the whole. The propriety determines the adjustments in symmetry without disturbing the eurythmy. Symmetrical relations are generative, but the proportional relations of eurythmy requires the good taste and skill of the architect. The explanations of Vitruvius disprove the categorizations considering those six concepts separately. On the contrary, they constitute a whole.

Within this whole, order and arrangement refer to two different aspect of the elements of composition. Order is about the articulation of the elements with respect to their quantitative aspects. Arrangement, however, considers the qualitative aspects of the parts. Arrangement, or disposition (diathesis in Greek) is explained in detail, in contrast to “order”. It refers to the qualitative aspects of the elements.

In I.2., Vitruvius points out an elegant effect achieved by the adjustments [of the dimensions] appropriate to the character of the building. The character of the building is culture and custom based. It is related both with the social

status of the client, available sources, and physical context, Therefore, arrangement is also related with dimensions with regard to the requirements of the propriety.

Order and arrangement refer to the composition of the elements regarding their measurable and unmeasurable aspects, which are determined by standard of symmetry, eurythmy, propriety, and economy. On the basis of this overall perspective and relations, it is possible to revisit each concept separately. To develop a better understanding it would be helpful to start with symmetry, which includes proper, commensurable and well-proportioned relationships between the parts in association with the whole. Therefore, proportion-as-beauty and proportion–as-ratio distinction dissolves and they merge into the concept of symmetry of ancient Greek culture. In Vitruvius Symmetry is a modulation system, which is based on the dimension of a particular element. Starting from this single dimension, the dimensions of the other elements, their spacings, their compositions, and the dimensions of the whole are proportionally generated. It can be derived from geometric relations, or arithmetical calculations. In the end, a mutual correspondence is achieved between not only the parts, but also the parts and the whole.

The contemporary researches and applications of parametric design and generative algorithms are enhanced and computationalized version of the very basic idea of symmetry. It should bear in mind that symmetry is not about geometrical compositions or mathematicised design process. It is only about the proportional relations, which cannot be fully comprehended without Eurythmy.

The good-rhythm of the proportional relations has always been a controversial term in architectural theory. The difference between proportionality of the absolute, commensurable and rational symmetry addresses the reason, and relative and sensual eurhythmy to the eye. For Vitruvius, however, they are the constituent of architecture together, rather than being antagonistic. Moreover, eurythmy does not address good taste, or imply a “pleasing appearance based on irrational, aesthetic-intuitive reasons, without a geometric, and divisible component. It signifies well-proportioned symmetry that is appropriate and convenient contextually. It is important determine the dimensions with respect to the use and effect. It is obvious that, dimensioning and modulation, that is symmetry, should have respect for propriety. Eurythmy, thus, can be defined as the calculated adjustments, in accordance with the previously determined symmetry, in order to correspond the propriety. Actually, the achieved proportions in relation to the certain characters and building must have established a visual memory, that is to say a visual custom or tradition, in the form of architectural orders.

When it comes to the concept of propriety, décor(um), correctness, aptness, or appropriateness, the context of the discussion expands suddenly form the symmetry of the elements, to the social, cultural, physical, functional and representational qualities of architecture. The concept of propriety or decorum originally has a moral content that was applied to art later on. It derived from the laws of universe where all the parts in proper place and use in a

correspondence with the other parts and the whole. This was the moral law, too. If it is proper, it is moral, and vice versa.

This moral content, however, is not limited with customs of social life, or the religious issues, or the requirements of the social hierarchy. It is also about the approved technical principles previous architects. It arises from functional requirements, and the usage, too. The physical conditions of the site, including topography, climate, light and shadow, surrounding natural factors such as water resources or hazardous areas. In the final analysis, decorum implies the context, program, and the content in contemporary sense. This moral content, however, implies an orthodoxy to a certain extent. On the other hand, again, it is decorum that keeps the critical attitude towards the internal consistency of not only representation, but also tékhnē. The story of Caryatids, narrated by in Vitruvius I.1., is about the importance of the true relationship between the content and the representation. Vitruvius warns the architect about not using particular forms or symbols if their true content and significance are not understood. Furthermore, what cannot be happen in reality cannot (they thought) be correctly treated in the imitation. For, by an exact fitness deduced from the real laws of nature, they adapted everything to the perfection of their work, approved what they could show by argument to follow the method of reality.

This critical perspective is not limited with the appearance of things. While explaining the principle of planning of theatres in V.6, he underlines that in some cases proclaimed dimensions following the principles of the authorities cannot answer to all the proposed effects. In that case, through his versatile mind and technical skill, architect makes necessary adjustments regarding to the site, scale of the building. It is always possible to change the proportions for the sake of convenience.

Economy or distribution can be described as an umbrella concept. The function of economy is to manage and regulate the qualitative and quantitative values and resources of human activities. The measure of the economy is temperance. As stated above, in 3.1.6, temperance differs man from the rest of the animal world. It should be considered in relation to the concept of propriety.

CONCLUSION

It is possible to claim that Vitruvian description of what architecture consists of were the product of collective human knowledge embodied in metaphysics, philosophy, science, and art. Vitruvius developed a body of knowledge of his contemporary concepts concerning their contextual distinctions and connotations. He made an all-encompassing conceptualization and skilful synthesis of them in a communicable form for design, construction and education. Despite the fact that, his historical, mythological, metaphysical, and even some archaeological references are irrelevant for today, there is still a lot to learn from Vitruvius' reasoning and method on architectural design. He described the tangible and intangible, qualitative, and quantitative

components of architecture and proposed an understanding on how to incorporate them.

Vitruvian statement of what architecture consists melted into the vast knowledge and specialization in human productions. But, without any rupture, those concepts have been at very core of the theories since Alberti. It was disintegrated and reduced into function based, formal, aesthetic, construction related, structure dependent, archaeological, and historical, and so on so forth, categories. Although each category refers to different aspect of one and the same architectural production, in time they were formed as distinct and contradictory architectural discourses, and theories, all of which deepen the crisis of architecture.

To have a genuine and universal language would help to restore the conceptual structure of the domain. It should be a language capable of corresponding the theoretical and practical aspects, of communicating the other fields of knowledge, and of adapting itself to the changing context. Regarding this, it possible to consider the Vitruvian concepts, along with the terminology they contain, as a promising offer. Then it would be possible to reflect upon itself. It can be defined as an endeavour to distill, refine, and expand the knowledge of the domain. It is of significance not to employ allegories, analogies, symbols, temporary representations, or invented or imported terminologies. By this way, theory can monitor, criticize, and change itself. Such a critical reflection could be started with the exploration of Vitruvian concepts that would provide not only the object, but also the language of the criticism itself.

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AN ESSAY ON THE RELATIONSHIP BETWEEN ARCHITECTURE AND COLLOCATION: LINGUISTIC TEXT ANALYSIS

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ABSTRACT

The developments in information technologies lead linguistic studies to the direction they lead all other disciplines: towards a number of diverse directions. Collocation, one of the major areas of linguistic studies, supports the argument that textual analyses can lead to objective conclusions, through its aim of unearthing the relationships between words.

As an essay discussing the relationship between architecture and collocation, this paper focuses on Jacques Derrida's book "Writing and Difference", as an example of a deconstructivist linguistic analysis. When establishing the interdisciplinary links between architecture, philosophy, and linguistics, the book opts for a rejection of the existing knowledge, and a reversal thereof. In this context, the methodological model proposed entailed the importing of the book into AntConc software, with a view to providing an analysis of the textual relationships over selected terms. The efforts made it possible to discuss the semantic references a philosopher who revealed substantial ground in the field of philosophy, as well as his work, did/may lead to in the field of architecture, through linguistics analysis, with reference to a number of quotations. In conclusion, the paper underlined once again the importance of the text and words in architecture literature / discourse.

Key Words: Architecture, Linguistics, Deconstruction, Collocation, Text.

INTRODUCTION

The existing and potential relationships architecture has with a number of disciplines are studied widely, while the duos of architecture and writing, architecture and text, architecture and thought, and architecture and representation are securely in the area of linguistics and philosophy. The studies investigating discourse and text analyses are guided not only by the contributions of the field of linguistics, but also through the impact of philosophy on the field. Against this background, this paper intends to borrow its materials from philosophy, and its methodology from linguistics, with a view to expressing a number of interpretations regarding architecture.

French philosopher Jacques Derrida, who enabled a deepening and popularization of the relationship between linguistics and architecture, asserted the existence of unconventional relationships between words, meaning, and language. Such relationships also constitute major building blocks in the development of the philosophy of deconstruction. Derrida's book studied here, "Writing and Difference" (*L'écriture et la différence*) warns the readers against latent, philosophically unconscious influences: He presents an extended concept of difference through an analysis of writing [1]. The book also argues that the relationship between writing and difference is based on the concept of *différance*, which lies at the heart of Derrida's philosophy of deconstruction. That is why Derrida's deconstructivist philosophy is rich in its potential of continuous influence on the literature and discourse on architecture.

This extra-disciplinary position, which remains outside the scope of the textual materials unique to architecture, and which is based on the analysis method belonging to another discipline, will lead to a form of ‘otherness’ in the knowledge area of architecture, and will enable us to have an outsider’s view of architecture [2]. Against the background of the relationships between the issues/concepts such as words, meaning, language, or patterns, the relationship between text and architecture arises as a problem of linguistics as well.

The linguistic nature of architecture is promoted in a vein comparable to words; buildings and their parts undergo a change of meaning through time. For language, is a string of vocal indicators. In architecture, vocal indicators express themselves in the form of various typologies of construction and forms of buildings, while such typologies and forms can arise as symbols and indicators in their own right. Messages, signs and symbols show that the architectural structure is a language in and of itself, with its own grammar to support. For instance Schulz refers to place, space and character as the elements of that grammar [3].

In linguistics, language may not always refer to a spoken language and the use thereof. In a similar vein, language in architecture refers to more than the physical expression in the form of the building. Architecture can generate a discourse, evolve into a part of a discourse, and borrow various concepts from a number of disciplines to place such concepts at the heart or to render them means of the discourse generation process. Indeed, this positioning refers to

not only a formal grammar for architecture, but also to the development of a language by it.

In a nutshell, the methodological approach to the relationship between philosophy, linguistics and architecture as an attempt to analyze/interpret is actually about an important theoretical contribution to the area of architecture, as a means of increasing the visibility of the semantic references in the texts.

Language-Linguistics-Semiotics in Architecture

Looking at the literature, one can argue that architecture, as a discipline, ventured into certain pursuits in linguistics, semiotics, and semantics in 70s and 80s [4, 5]. Architects who generated text as products well, have contributed to the development of a substantial infrastructure attesting architecture is also about a textual expression, on the basis of the pioneering works of structural linguistics and semiotics. One can claim that a view of architecture as a string of descriptions and a composition of texts, was dominant.

Ferdinand de Saussure's theory of linguistics, on the other hand, is among the major developments of the 19th Century. In his work titled "Course in General Linguistics" (1916, 1998) Saussure developed a perspective revolutionizing the understanding of language [6]. The method and theory of linguistics he developed led to a debate about language as a string of signs. The basic propositions of Saussure's structural linguistics can be summarized as follows [7, 8, 9]:

- Language is a system of signs and indicators.
- And it certainly is not synonymous with word. Language is social and general, while word assumes an evolving standing; it is variable and specific to individuals.
- Language is based on two distinct axes and two distinct developments: synchronic and diachronic.
- The construct gets varied and distinctive through duos of concepts, leading to the development of new meanings.

Saussure considers text and language as two distinct systems of indicators. However, text exists merely to represent language, while language is a verbal tradition existing in complete independence from the text. The "sign", as the core concept of semiotics, can, in general, serve as replacement for something else; hence it refers to any object, thing, or concept indicating something other than itself [10].

In a nutshell, semiotics emphasize the view that the codes which shape the meanings of objects and the conditions for their reproduction are generated through history, and are of a cultural essence, just like language itself [7]. Considered a challenge against semiotics, architecture, on the other hand, is about a specific form of defiance on part of the functional architectural object which refrains from communication, and which is not designed to communicate in any case [11]. Any building which comprises a part of an architectural culture projects a mental image through its form. As the

components of the building can be translated into meaningful signs, all objects and activities can be considered a text entailing a system of signs [12].

According to Eco, architecture cannot exist without a signifier-signified object, for it is a language in essence [13]. That is why reading architecture as a text is easy and difficult at the same time. It is easy, for textual conditions are clearly observable with any building deemed a work by a well-known individual, as an arrangement of the space and materials. It is difficult, on the other hand, for reading ignites a complex flow comprised of crucial domains which can be emphasized potentially through a semiotic analysis [14]. That is why linguistics and structuralism have arguably led to a new theoretical dimension in architecture, through their contribution to the generation of codes.

The interpretation of architecture exhibits itself in both the construction and the design activities [15]. However, such a construction does not necessarily entail an actual building activity; to the contrary, it can be about constructing thoughts through textual and literal production. Architecture as a text consists of a coding system, and entails meaning as such. The users / viewers of architecture reproduce the spaces they have seen, in the light of their mental images, memories, and perceptions of codes, developing a meaning on the way, regarding the design object [12].

Derridarian Deconstruction and Architecture

The approach to thought presented by Jacques Derrida, the founder of the critical thought approach commonly known as deconstructivism, brought along new approaches to new fields including but not limited to literary theory, linguistics, philosophy, law, sociology, cultural theory, and architecture, as its inverts established views in these disciplines. That Derridarian method functions, in essence, as an approach to sort out the deep constructs of the text.

Derrida's defining works include "Of Grammatology-1967", "Dissemination-1972", "Margins of Philosophy-1972" and "Writing and Difference-1980". In almost all his works, Derrida re-problematized constructivism with reference to language in general, and Saussure in particular. For Derrida, language is less fixed and more ambiguous than what constructivists think of it and present so. Meaning cannot arise without reference to another meaning in an arrangement of contrast, and the borders of meaning are prone to change at all times, for signs always go through other contexts of meaning, and cannot be closed off for good [9]. That is why Derrida embraced the view that an independent area of indicated objects or concepts cannot exist, and that one cannot avoid a string of signs at all.

Deconstruction is used to undermine metaphysical assumptions in disciplines of literature, philosophy and linguistics in general and academic disciplines such as constructivism and semiotics in particular, serving to expose these disciplines to abovementioned assumptions [9]. The deconstructivist method requires, above all, dismembering the logic behind the language, for linguistic texts entail traces of complete contrasts.

Saussure's book "Course in General Linguistics" published in 1916 presented a robust conceptual framework for the problem of 'distinction' or 'difference'. Saussure noted that the real problem with ascribing a meaning lies with the distinction and difference, and that the differences between the signs are what really specify the meaning; hence the idea of a fixed meaning would be inaccurate [8]. Derrida, in turn, called this the 'postponement of meaning'. Drawing attention to the arbitrariness of the concepts of the indicator and the sign, or the word and the meaning, Derrida noted that plays on word do not lead to a dominant meaning. In this context, he employed deconstruction as a method to prove that the words could signify unseen contexts as well.

The Derridarian deconstruction is based on the premise that each text is an incomplete word in essence, and that the text does not have an essential meaning. Therefore, deconstruction has a skeptical attitude towards the ability of language for the generation of a consistent meaning. Through différance, Derrida's theory for generating meaning, a game of existence and non-existence draws attention to the use of language [16, 17].

The Derridarian deconstruction perspective, which provides the intellectual foundations for architecture as well, can be presented as an investigation, challenge, and linguistic problem. According to Derrida, any architectural deconstruction requires the existence of a special archetype, and strong conventional expectations [18]. As Gür put it, the only thing to do with architecture based on conventions, just like language, is playing with the language, or should one say, expanding the meaning through questioning it [19].

As the questioning language or 'modus operandi' of architecture, to which the discipline is also a witness, deconstruction questions everything without the intention of attaching the labels of correct or wrong, and points out to that everything and anything can change [20]. Architectural spaces, in turn, are texts in and of themselves, and can be interpreted within a textual framework.

In sum, the relationship between the Derridarian deconstruction and architecture emphasizes architecture as a linguistic problem, represents it as a textual representation, and underlines the need to attach importance to questioning meaning. In this context, the problem of the sequence of the words / concepts / terms in a given text, and the actual contexts the words are used in and the words that accompany them can serve various semantic outlooks. The semantic codes existing in the text, interpreted through the lens of a given sequence, can undoubtedly make objective assumptions possible.

Collocation as a Deconstructivist Form of Linguistic Analysis

The 20th century saw the sequential relationships drawing attention of constructivist linguists trying to analyze the relationships between the elements of sentences [21]. The collocation perspective presented by Firth and his followers, by then found its way into the literature as an approach to signify the level of creating meaning in conjunction [22]. In this perspective, linguistics became synonymous with the grammar of meanings.

The literature describes collocation as “associated with the view that the presence of two or more units of language existing in a given sequence; application of distributional criteria; and the direction of the meaning is closely related to their use within the sequence” [10]. Another definition refers to the meaningful combination of two or more words, denoting a whole new object or concept in conjunction [23, 24]. Collocation can arise through free combination of two words, or through a strictly formal mode of collocation which does not leave any room for variation [25].

Collocational information is stored in one's mind, helping the reader to create her own collocations. Exactly as Derrida leaves the association of meaning to the reader, collocation enables the reader to set up an indefinite number of assocations. In this sense, collocation is defined as a textual concept, and can be considered as a product of the verbal associations in text. In lexical approaches, the words to act as templates, and the collocational variety of the words are crucial [26, 27]. Acting alone or in combination with template words and through collocation, the words can develop their own grammar [28]. It emphasizes the continuity in the use of words, rather than just a transient combination. Hence, collocation questions the borders of the words, and their unlimited use.

Texts investigated through collocation can be analyzed through various pieces of software [29]. Software such as WordSmith, AntConc, TextSTAT (Simple Text Analysis Tool), or AdTAT (Adelaide Text Analysis Tool) can provide objective pictures of the language patterns entailing a number of words and sets of words within a textual material, enabling safe-to-use findings to shed some light on the text [30]. In addition to the quantitative and objective data thus derived, the frequency of use and the positioning of the words, and the associations they have with other words are presented, allowing the interpreting eyes to derive some meaning.

The textual patterns reviewed in the light of linguistics input directly reveal the author's perspective. They also enable other authors and readers to develop a network of textual relationships. What renders a linguistic analysis an actual case of deconstruction, on the other hand, is the ability to utilize / interpret words in different contexts and groups.

Objective and Method

Not only it is impossible to think of the words constituting the text independent of their meanings, but also it is clear that they assume different meanings as well, in combination with other words they are used alongside. The frequency of use of a specific word through a text is as important as its textual circulation along specific words.

In this context, the objective of this paper is to develop a methodological experiment between the disciplines of philosophy, linguistics, and architecture, with a view to revealing architectural quests / meanings / interpretations through a linguistic analysis of a text by Derrida. Derrida’s book “Writing and Difference” covered in the paper refers to an interdisciplinary association, and chooses to reject established knowledge as well as to reverse it. The structure of that relationship, on the other hand, can be presented in a more objective

manner through collocation on a linguistic analysis plane. The deconstructivist linguistic analysis applied, in turn, entails significant clues regarding the literature and discourse of architecture.

Methodologically speaking, the paper is composed of three sections, each of which is dedicated to a specific discipline (Table 1). Jacques Derrida's book "Writing and Difference" covered in the first of these was selected as a text bearing important codes in the discipline of philosophy. This section lists the search terms from the book, with special reference to literature on architecture, such as reverse, reject, architecture, deconstruction, text, structure, discourse, city, followed by the analysis thereof against their context in the text, through the application of linguistic method.

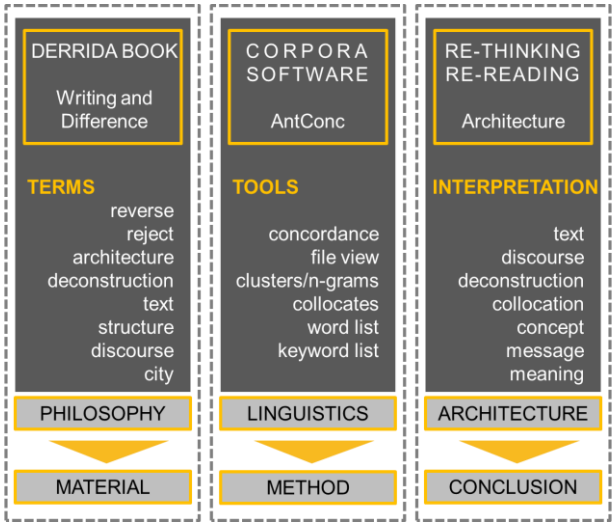

Table 1. Method Steps of the Text Analysis

The second part of the method applied opted for the linguistics discipline, given for its close association with the words. AntConc, one of the frequently used corpus software packages used for computer-aided linguistics analyses, was used. AntConc is developed by Laurence Anthony [31], and offers the abilities to establish the usage characteristics of the language in a very accessible linguistic environment, to develop a corpus, to establish the frequency of the words, and to identify specific words used in conjunction with others. In this context, the tools offered by AntConc also serve as the means of collocation as a method of linguistic analysis (Table 2).

AntConc Corpus Software Tools	
Concordande	Searches for the search term and word group entered, within the context specified.
File View	**Displays the search term used for the search, in the original file.**
Clusters/N- Gram	**Used to analyze units with multiple words. Shows the sets of words neighboring the term searched for.**
Collocates	**Lists the words appearing alongside the search term entered.**
Word List/ Keyword List	**Lists the most frequently used words of the corpus.**

Table 2. Tools of AntConc Corpus Software

The final part of the method, on the other hand, aims to re-think / re-read architecture as a discipline, through the concepts and analyses derived from the terms identified in the first part and the tools described in the second, with a view to coming up with conclusive interpretations.

Text Analysis: Words and Narratives

In order to identify any collocation between the words, the text analysis section saw the loading of the book "Writing and Difference" in AntConc software. The "concordance" tool of the software was used to review the contexts of the selected search terms in the actual text, leading to the development of a frequency table for the words (Table 3). The frequency table presents structure, discourse and text as the terms occupying the top three spots.

Rank	Reference	Terms
1.	258	**structure**
2.	257	**discourse**
3.	145	**text**
4.	38	**reject**
5.	18	**city**
6.	4	**reverse**
7.	4	**deconstruction**
8.	3	**architecture**

Table 3. The Frequency of the Search Terms in the Corpus

Architecture and deconstruction on the other hand, ranked much lower, while reject, reverse and city were observed as the terms they were mostly associated with. This arguably indicates the use of texts, discourses, and

words as the means to establish the relationship between architecture and deconstruction. The relationship is described in dedicated tables (Tables 4-6), through cluster analysis with reference to the use of the terms within the corpus, using the "clusters/n-grams" tool of AntConc. The clusters exhibit semantic references for textual analysis, by expressing the associations of the word with two to three words neighboring it to the left or right.

A glance at the clusters comprising the word *reject* with its neighbors to the right or left reveals that it is often used in conjunction with the words *finalism*, *madness* and *language* etc., denoting different forms of rejection under different labels (Table 4). The narrative about the relationship between the master and the apprentice, developed with reference to the set of challenge, rejection, and accusation, is dominated by the message that a challenge against a specific piece of thought could entail both rejection and internalization: *"… he is challenged by the master who speaks within him and before him, to reproach him for making this challenge and to reject it in advance, having elaborated it before him; and having interiorized the master…"* [1] (pp. 37).

In addition, for Derrida talking about the rejection of philosophical and psychiatric materials, Foucault's concept of *madness*, serves as a sign to revisit problematic issues once again. In this context, madness deemed the ultimate form of the ability to think, can suddenly lead to a perception with negative / impossible connotations, enduring a reversal of meaning: *"Foucault, in rejecting the psychiatric or philosophical material that has always emprisoned the mad, winds up employing—inevitably—a popular and equivocal notion of madness, taken from an unverifiable source…"* [1] (pp. 49). The will for a whole and consistent perspective for production in the theory of architecture, and the quote entailing references to question that very will, in turn, emphasizes the ability of the rejection to produce its own conceptualization: *"… seeking its own conceptuality between rejections. Totality and infinity, the great work, not only enriches these concrete analyses but organizes them within a powerful architecture."* [1] (pp. 114).

A frequent pronouncement in architecture, the non-place, discussed with reference to the relationship between the city and the desert, leads to an interpretation of rejection as a form of sterilization in effect. To put in a different way, it is impossible to develop anything without words: *"… in the non-place, between city and desert, for in either the root is equally rejected or sterilized. Nothing flourishes in sand or between cobblestones, if not words. City and desert, which are neither countries, nor countrysides, nor gardens…"* [1] (pp. 84). Dialectics is always that which has finished us, because it is always that which takes into account our rejection of it. Making frequent references to the contrast between the life and death, Derrida employs the concept of *death* (the negative) as a recurrence, signifying actually its rejection: *"To reject death as repetition is to affirm death as a present expenditure without return. And inversely…"* [1] (pp. 311).

A glance at the clusters of the word *reverse* in contexts extending to its right and left, no message denoting a specific meaning was observed (Table 4). Yet, while on the track of knowable, it is crucial that the definition of a reality is

provided in the form of the word order. Perhaps, the actual truth is about the reversal itself: *"Here it is a question of knowing whether the trace permits us to think presence in its system, or whether the reverse order is the true one. It is doubtless the true order. But it is indeed the order of truth which is in question…"* [1] (pp. 135).

The quotation discussing the word *other*, on the other hand, signifies the existence of a mutually reinforcing wholeness between the semantic differences rendering what is obvious irrelevant, such as the one in the dichotomy of light-night: *"Unique case? No, we must reverse the terms: "other" is the name, "other" is the meaning of this unthinkable unity of light and night. What "other" means is phenomenality as disappearance."* [1] (pp. 161). As a diverging opinion on this issue, the progress from the unknown to the known, or in the reverse direction served as an example on how knowledge evolved into non-meaning in the relationship between the text and the meaning: *"… the relation oriented from the unknown to the known or knowable, to the always already known or to anticipated knowledge. Although general writing also has a meaning, since it is only a relation to nonmeaning this order is reversed within it…"* [1] (pp. 342-343).

Reject		**Reverse**	
Left Context		Left Context	
Cluster	Frequency	Cluster	Frequency
rejecting the excellence	2	reverse order is	1
rejection of finalism	2	reverse the terms	1
reject death as	1	reversed within it	1
reject madness during	1	reversed without difficulty	1
reject the scriptures	1		
reject the work	1		
rejected a psychoanalytic	1		
rejecting distinction	1		
rejecting the psychiatric	1		
rejection of system	1		
rejects the language	1		
rejects the logicizing	1		
rejects the majority	1		
rejects the psychoanalyst	1		

Right Context		Right Context	
Cluster	Frequency	Cluster	Frequency
thought rejecting	2	can be reversed	1
absolutely rejected	1	order is reversed	1
equally rejected	1	we must reverse	1
expelled, rejected	1	whether the reverse	1
finished rejecting	1		
globally rejecting	1		
less rejects	1		
likely reject	1		
possibly reject	1		
soon reject	1		

Table 4. The Results of the Cluster Analysis Regarding the Use of the Terms Reject and Reverse within the Corpus

A glance at the clusters of the word *architecture* against the context to its right and left reveals that it was used mostly with the words *uninhabited*, *built*, *powerful* and *principle* (Table 5). The criticism was concluded through a comparison with the architecture of an abandoned and empty city through the quotation which began with a discussion about the existence and non-existence of pure language: "*Somewhat like the architecture of an uninhabited or deserted city, reduced to its skeleton by some catastrophe of nature or art"* [1] (pp. 4). Various structural references were emphasized in association with the unifying nature of architecture: *"... a work is governed by a unifying principle, the architecture that is built and made visible in a location... Splendid monuments of human pride, pyramids, tombs, whose noble structure Bears witness that art, through the skill of hands and hard work, can vanquish nature"* [1] (pp. 17).

Derrida refers to the relationship between architecture and rejection in his objection to concrete analyses performed by structural linguists: *"… classical conceptuality, seeking its own conceptuality between rejections. Totality and infinity, the great work, not only enriches these concrete analyses but organizes them within a powerful architecture."* [1] (pp. 114).

A glance at the clusters of the word *deconstruction* against the context to its right and left reveals that it was used mostly with the words *logocentrism*, *efforts*, and *form* (Table 5). Underlining the concept of binarism in terms of investigating the radical impact of thought, Derrida made some references to the need for binarism for different domains and levels of literature: *"Such a radicalization of the thought of the trace (a thought because it escapes binarism and makes binarism possible on the basis of nothing), would be fruitful not only in the deconstruction of logocentrism…"* [1] (pp. 289).

His narrative on the relationship between deconstruction and discourse, on the other hand, the concept of *heritage* as a problem of economics and strategy was emphasized: *"… the problem of the status of a discourse which borrows from a heritage the resources necessary for the deconstruction of that heritage itself. A problem of economy and strategy."* [1] (pp. 357).

Architecture		**Deconstruction**	
Left Context		Left Context	
Cluster	Frequency	Cluster	Frequency
architecture of an uninhabitad	1	deconstruction of logocentrism	1
architecture that is built			
architecture. Levinas calls the	1		
	1		
Right Context		Right Context	
Cluster	Frequency	Cluster	Frequency
a powerful architecture	1	appearances, the deconstruction	1
like the architecture	1		1
principle, the architecture	1	labor of deconstruction	

Table 5. The Results of the Cluster Analysis Regarding the Use of the Terms Architecture and Deconstruction within the Corpus

The book has 257 utterances of the word *discourse*, and 145 of the word *text*. The distribution of the important / priority clusters to the right and left of these utterances are presented in Table 6. In this context, the words used in collocation with the word discourse exhibited use in different codes and semantic contexts. The frequency of the words evoking a thought of non-discourse in line with the deconstructivist attitude, is obvious. Furthermore, the fact that the German word *aufhebung* can be translated into English as 'reversal', presents yet another message to correspond to the reversal idea in deconstruction.

Discourse		Text	
Left Context		Left Context	
Cluster	Frequency	Cluster	Frequency
discourse arrested	1	texts and written	2
discourse collapse	1	text / director-actors	1
discourse dislocate	1	text is everything	1
discourse foreign	1	text nowhere present	1
discourse irreducibly	1	text of phonetic	1
discourse vanishes	1	text of speech	1
discourse collabration	1	text surrounded by	1
discourse, logic	1	text whose essence	1
discourse, meaning	1	text whose nature	1
discourse, structural	1	text whose principles	1
discourse. analogy	1	text without psychical	1
discourse phenomenology	1	text, pure speech	1
discourse intend	1	text, to place	1
		text, the analogy	1
		text/interpretation, etc	1

Right Context		Right Context	
Cluster	Frequency	Cluster	Frequency
philosophical discourse	22	original text	3
no discourse	5	written text	3
hegelian discourse	4	analogous texts	2
significative discourse	4	phonetic text	2
destructive discourses	3	theological context	1
scientific discourse	3	audience, text	1
clinical discourse	2	author-text	1
critical discourse	2	cartesian text	1
finite discourse	2	established text	1
mythological discourse	2	foreign text	1
oral discourse	2	hegelian text	1
poetic discourse	2	important texts	1
god. discourse	2	metaphors—text	1
anonymous discourse	1	nor text	1
aufhebung (discourse	1	numerous texts	1
destroying discourse	1	particular text	1
epistemic discourse	1	preestablished text	1
imitated discourse	1	prerequisite text	1
metaphysical discourse	1	psyche, text	1
non-discourse	1	psychic text	1
not discourse	1	psychical text	1
prophetic discourse	1	representative text	1
structural discourse	1	rigorous textuality	1
theological discourse	1	sacred text	1
theoretical discourse	1	strange text	1
transmitted discourse	1	unconscious text	1

Table 6. The Results of the Cluster Analysis Regarding the Use of the Terms Discourse and Text within the Corpus

A glance at the word used in collocational proximity to the word *text*, on the other hand, reveals a preference for the words *audience*, *author* and *representative*, signifying the importance of the relationship between the reader, the author, and representation against the background of the relationship between writing and deconstruction.

CONCLUSION

If architecture is indeed a textual representation, any textual representation material can be rendered the subject of architecture. In this context, the interdisciplinary method tried reveals the relationship between philosophy, linguistics, and architecture, with reference to both abstract semantic associations, and to objective data. The analysis of a text outside the discipline of architecture, through collocation based on the ordering of the words, can produce important data for the discipline. For instance the according to cluster analyses developed with special reference to the book “Writing and Difference”, Derrida’s text entails clear architecture references expressed in the form of words such as *structure*, *city*, *discourse*, *deconstruction*, *architecture* etc.

A glance at the cluster tables developed with reference to the frequency tables for the selected terms reveals that the ordering of the words and the codes they are associated with are crucial, while the relationships between the words can be expressed briefly and practically. Finally the selected terms were defined with a wide range of semantic expressions and depth (for example prophetic discourse, sacred text, possibly reject etc.).

The assumption that collocation is a form of deconstructivist analysis was proven through the occurrence of 38 instances of the word *reject* and 4 instances of the word *reverse* throughout the text. On the other hand, the text analysis executed using the corpus software offers a number of advantages such as the ease of scanning large-volume and monolithic texts such as books, the ability to establish an unlimited number of associations between and clusters of words on the basis of the range of the terms selected, and enabling re-reading of each text with different terms and perspectives. In conclusion, the deciphering of the texts can lead to new areas of knowledge for architecture, and can play a role in the development of new methods in the theory of architecture.

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REJECTING REVERSING ARCHITECTURE

DAEDALUS TRAPPED IN HIS OWN LABYRINTH: A STUDY ON DISORIENTATION

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ABSTRACT

Daedalus, the greatest artist and architect of Greek mythology, built the Labyrinth for Minos, king of Crete, in order to incarcerate in it the Minotaur, a creature half human, half bull [1]. His achievement was to create a prison without bars, a maze so incomprehensible to perception that no creature could possibly escape it.

Later, when Daedalus fell out of favour with the king, he was imprisoned in his own contraption [2]. His design worked without fail even for himself. This quite curious effect, that not even its own creator could escape the labyrinth, must have been based on a systematic observation of perception. It is evident that the understanding of the manner in which perception operates is indispensable to any architect aiming at the facilitation of orientation. Daedalus' project, however, is the only one designed with the express purpose of achieving the exact opposite.

The objective of this research is to discern some of the basic principles on which such a design might have been based. This paper, however, may not be but an introduction to the issues involved. Thus, its method consists in a discussion and analysis of some perceptual principles, the obstruction of which may definitely cause disorientation. These include in order of priority: first, comprehensive viewing versus viewing from within; second, the establishment of signposts; third, formal and spatial differentiation range; and fourth, the apprehension of directional light and shadow cues.

It is evident that a perceptual understanding, rather than a historical one, of this unique project - designed to programmatically cause disorientation - would be of the essence in discerning the corresponding design faults of mega-structures, in contemporary cities, striving for the exact opposite. Most modern airports, hospitals, or shopping malls are true labyrinths with no intention of being so.

Key Words: Daedalus, Labyrinth, Perception, Orientation, Disorientation.

INTRODUCTION

Daedalus, was highly sought after by various cities, including Athens [3], Knossos [4], and Camicos in Sicily [5], because of his unsurpassed skill as an artist and architect, although Socrates doubts it, making fun of his work [6]. While in Crete, he allegedly built the Labyrinth for Minos, king of Crete, in order to incarcerate in it the Minotaur, a creature half human, half bull [1]. It is considered to be located either at the Knossos palace itself, or at the Scotino cave, a sacred shrine possibly dedicated to a Minoan fertility deity, or at a cave in Gortyn, a city of southern Crete [7]. Whether or not the archaeologists ever reach a unanimous conclusion, Daedalus' achievement was to create a prison without bars, a maze so incomprehensible to perception that noone could possibly escape it.

Later, when Daedalus fell out of favour with king Minos, he was imprisoned in his own contraption [2]. His design worked without fail even for himself. This effect was rather curious because usually a designer retains in his memory an entire composition of his own making both in its general and its detailed aspects. The fact that the labyrinth operated as an entrapment even for its own creator is precisely what is of interest to this paper because it must have been based on a systematic observation of perception.

This paper is not interested in archaeological findings but in perceptual ones; not in what has been but in what kind of thinking would seem to come from. What is certain is that the outcome of the perceptual investigation of its formal and spatial arrangement could not lead to a single solution but to a group of solutions that would share common tendencies or characteristics. For this reason is set out to investigate the various cues and principles involved in causing disorientation, using Daedalus' deed as a springboard.

Toward this goal certain fundamental principles of Gestalt psychology are employed as cornerstones, such as the concept of the whole as a controlling superordinate structure, or the laws of subdivision, similarity, and contrast in order for the potential structure of cues that would cause a maximized effect of disorientation to begin to unfold. This attempt aims at revealing of course, through a *reductio ad absurdum* method, the range of unsuitable practices followed by architects regarding the issue of orientation; a tantalizing subject in the design of contemporary cities and mega-structures. The outcome of this paper may not be used as a guide to overcome mistakes of routine design practice but, by transposing the goal, it may offer insight in how a designer might begin to think in attempting to resolve such problems.

The View from Above versus the View from Within

Daedalus' myth serves in this paper as a springboard to investigating, at a basic level, the perceptual principles involved in causing disorientation. Some of these principles have been studied by scientists in experimental perceptual psychology, particularly of the Gestalt school, and will be of assistance to this investigation. To the degree that such principles become understood they may be used to evaluate contemporary designs of complex spaces as of their tendency to cause disorientation. Contemporary cities and architectural structures are often susceptible to disorientation to the mitigation of which

technological solutions have been devised, such as the GPS (Global Positioning System). Therefore, one might think that this pervasive problem has been solved on technological grounds. The truth is, however, that the widespread use of the GPS, even though it helps in way finding, it does not actually solve the problem of disorientation; in fact, it reenforces it. One may reach one's destination but has no sense of how he got there! In such a condition, a person feels increasingly helpless in dealing with the perceptual structure of his immediate environment. If the GPS breaks down, the person is at a loss. Regardless, the sense of disorientation is persistently present and may cause, in turn, certain psychological states, such as the loss of connection to the environment, the inability to conceive the structure of the surrounding world; states which eventually lead to the alienation from one's own identity. The feeling that grows from such psychological states is that there can be no sense of recognition and hence of belonging, a fact which sets off a perception of the environment as unlivable. Occasionally, architects and designers, that recognize the seriousness of the issue, attempt to resolve such problems intuitively without seeking a thorough understanding. For the above reasons, a systematic study of the perceptual factors causing disorientation becomes of the utmost importance.

Before the advent of the GPS one used maps. A map provides the visitor with a view from above, containing a considerably greater area than that in which one is located at any one time. This view, however abstracted, is nonetheless a comprehensive one, through which a visitor may conceive the size of the city or place by comparing distances. Such a view approximates that of a bird, becoming associated with a sense of command over space.

Considerable effort is needed, however, in order to reconcile the view from above with the view from within, as if immersed in space. A main cause of the difficulty of reconciling the reading of a map with the reading of space, while being in it, is due to the fact that the perception of space is based on some essential information which differ fundamentally from the corresponding information on the map. This information is related first, to the relative scale and location of the observer in respect to the surrounding buildings, and second, to the visual configuration of the formal structure facing him, and its concomitant hierarchical structure of significance.

Firstly, the discrepancy of the relative scale brings about a torrential perceptual transition and instigates correlated feelings. The sense of command over much smaller than oneself representations of space is substituted by the antithetical sense of subordination in a reality which is substantially, or even overwhelmingly, larger. This contrast, although perfectly acceptable in rational terms, generates a chaotic conflict in the realm of associations. This conflict is so taxing to perception because it raises, instantly, a sensation of the primordial strife between large and small expressed in myths, such as, the "Genie and the Lamp", or in fairy tales, such as, "Alice in Wonderland". One sees in the map something so small and insignificant transforming, in reality, into something so large and overpowering.

Secondly, the visual configuration of the forms facing the observer in reality

have nothing in common with the surfaces on the map. Their shapes and sizes establish an order of an entirely different nature. The order perceived on the map is continually disrupted by the visual order faced in actual space. The hierarchy of these two distinct visual orders are entirely conflicting, a situation that might prove chaotic to perception, if it were not restrained by reason. While in the map the hierarchy is determined by an order of significance of use – as, for instance, of private versus public areas - in actual space another visual order is established, which depends on relative sizes of surfaces or volumes, textures, and colors. The latter order is continually projected onto the first in order to make a judgement regarding their fit. Only through this process a decision may be reached.

When one looks at a map his cone of vision (60 degrees) contains within it a represented area considerably greater than the actual area in which he is physically located. Lifting his eyes from the map, he finds himself immersed in a space far exceeding the limits of the cone of vision and consequently peripheral vision as well as head and bodily motion must be employed in order to apprehend it. The observer is fully surrounded by the environment. This stark contrast brings about associated feelings. It seems that the more a certain view fits within the cone of vision the more one has the feeling that he is in command of it. The lesser an area fits within it the greater the sensation one gets that he has no control over his immediate environment.

Thus, disorientation is more probable to occur when forms of buildings are consistently much greater, from any viewing point, than what can fit in the cone of vision. It corresponds to the sensation one gets when trying to swallow a mouthful that is too large. Gestalt perceptual psychologists have reached the conclusion that perception conceives wholes [8]. However, if a whole is too large to be grasped from any single viewpoint by the cone of vision, it becomes too hard for perception to capture it and consequently discern its structure. This leaves perception with a sense of inability to cope with the environment and an ensuing sense o feebleness.

Within the labyrinth the reverse process would have to be followed by the trapped individual, which is what one attempts to do in wayfinding. This process consists of generating a mental map, that is, a comprehensive two-dimensional distillation of the conglomeration of forms one is faced with. The generation of such an extract is not easy because it requires the commitment of great mental power; much greater than that required to reconcile a map with actual spatial conditions. It is equivalent to playing chess by memory. Although difficult to achieve, a way to carry it out would be by generating memorable spatial anchorages.

On the basis of the above arguments, Daedalus would have chosen perhaps to generate an overwhelming structure in terms of size and complexity in order to overpower the viewer's perception and eliminate the probability of any view from above.

Anchoring versus Scanning and the Stability of Space

The eyes do not perceive the environment via a process of scanning of all visible surfaces, as cameras do [9]. What testifies to this is the dizziness felt

when viewing a cinematographic recording, which scans space from one point to the next, revealing everytning that exists in between. The sense of stability of space vanishes during this process. This happens because perception requires anchoring points. The first thing it does, when found in a given space, is to establish such points. These points may not be incidental but must be crucial to perceiving the particular spatial form. For instance, when a space is square or quadrilateral, perception establishes the four corners as its fundamental points of reference generating, essentially, four signposts and certain ordering axes which remain invisible (Figure 1) [10].

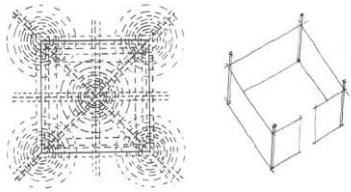

Figure 1. A Square With Four Signposts At İts Vertices

Note also the invisible axes in the left image that provide a visual structure

Based on these signposts, the various objects within space acquire a relative locus and a relative measure; things fall in place and the spatial ensemble becomes a perceptual reality. One moves around with ease and, although the eyes may constantly change their fixation, no sense of instability or dizziness occurs because everything is apprehended in constant reference to the signpots. Contrariwise, there may be conditions in which this sense of spatial stability may not take place.

The Proliferation of Anchoring Points and Curved versus Angular Shapes

It seems that a sense of instability occurs when it becomes increasingly difficult to establish signposts or when the signposts increase in number. When the shape of space becomes polygonal in plan, the number of corners increases (Figure 2). In such a case the acquisition of a sense of direction becomes more complicated and eventually lost. The initially simple relationship of two cardinal or opposed directions is substituted by a number of directions and a much greater number of signposts.

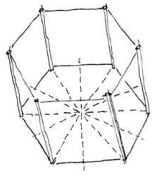

Figure 2. A Polygonal Space With Signposts At İts Corners

The multiplication of signposts reduces their value for perceptual use. On the other hand, spatial awareness deteriorates rapidly when the signposts disappear, as in the case of a circular or cylindrical space (Figure 3). The only virtual point of reference remaining in effect, in this case, is the invisible vertical axis located at the center. The cylindrical shell delivers a sense of fluidity, since there is nothing that may generate a differing or conflicting percept at any point. Consequently, the invisible yet sensed central axis becomes the only anchorage for perception.

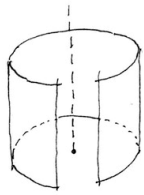

Figure 3. A Cylindrical Space with No Anchoring Points at the Perimeter

An interesting example of a similar space, in which a sense of spatial stability still persists, particularly by reason of the intersections among the curvilinear shapes, is the church of Sacra Famiglia in Salerno, designed by Paolo Portoghesi (Figure 4).

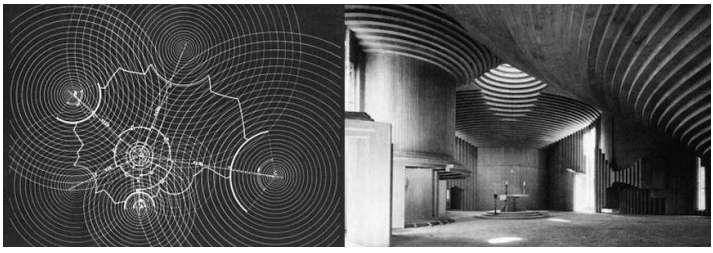

Figure 4. Paolo Portoghesi, Church of Sacra Famiglia, Salerno, Italy

The situation becomes bewildering and nearly vertiginous when more complex curvatures are employed in plan, as for instance, in the case of an ellipse or a parabola. The complex geometrical dependencies onto foci and lines, renders these relationships incomprehensible to perception. An interesting experience occurred during a visit to the new wing of the Van Gogh Museum in Amsterdam, designed by Kisho Kurokawa (Figure 5).

Figure 5. Kisho Kurokawa, New Wing of Van Gogh Museum, Amsterdam, Netherlands

An exhibit hosted there in 2013-2014 used elliptical cubicles open from above, on the walls of which paintings were hanged (Figure 6). The experience within these cubicles was confounding. Perception was unable to cope with the complex relationship to the two foci of the ellipse. As one turned his head the walls seemed to continually draw closer or move away in an uncontrollable manner since perception could not hold onto any signposts or to any kind of conceivable structure. The points of reference of the two foci were not helpful.

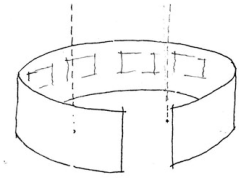

Figure 6. Elliptical Exhibition Cubicle in New Wing of Van Gogh Museum

One may also recall examples of medieval cities that have developed in curvilinear plan and the difficulty encountered in orientating oneself within them. A good example is the city of Hilversum in the Netherlands (Figure 7).

Figure 7. The City Of Hilversum, Netherlands, Established Between 900-1305

Containment versus Gathering of Space

Perceptual signposts should not be confused with the vertices of the constructed building. Sometimes they may coincide with the vertices of the boundaries of space but they do not need to be limited to them.

They may be located on points within space and at a distance from the perimeter. When placed within space a certain reversal occurs regarding the perception of space. Depending on the compositional strength of the signposts, space may be perceived in a starkly different manner. Rather than as “contained” between boundaries, it may look as “falling away” from powerful “vertices” or “gathering” around them. In such cases the boundary related signposts acquire secondary importance, since the new “vertices” tend to exert a magnetic attraction and assume the role of the focus. The dynamics generated by the boundaries diminish in influence and in certain occasions may disappear altogether. The degree of influence of the boundaries’ dynamics depends on their distance and it increases with the decrease of distance between opposing boundaries and vice versa. The degree of the perceptual influence of internal vertices depends on certain compositional attributes, such as their mass, their relative scale to space, as well as to various other plastic qualities such as the tension generated between light and shadow within their form, their directionality and so on.

Daedalus, would have systematically avoided any kind of signposts as his pursuit of disorientation would lead him to eliminate all elements providing anchorage to perception.

The Influence of Direction - Introversion versus Extroversion

A side effect of the multiplication of signposts is that the sense of direction is disturbed, as already mentioned. A polygonal space becomes more introverted than an orthogonal one. All lines perpendicular to the sides of the polygon tend to point towards the center rendering any mnemonic relationship to the exterior impossible. This happens to a lesser extent when one enters a square space and even less when one enters an othogonal space with one distinctly elongated side. Subsequently, the ıntensity of introversion or extroversion of a space is directly related to the facility to discern a relationship between the inside and the outside. An example of directionlessness is a typical American shopping center. From the moment one parks one’s car and enters the building is virtually impossible to find his way back to it, because once one enters the space, a completely new world opens up to him which bears no directional relationship to the world outside. An example is the Briarwood Mall in the city of Ann Arbor of the State of Michigan (Figure 8). Although orthogonal, it has a wing that crosses the main rectangle at right angles, which transforms the plan into an introvert shape and disrupts any relationship to the outside. Therefore, Daedalus must have systematically disrupted the relationship of the inside to the outside by using highly introverted shapes.

Figure 8. Briarwood Mall, Ann Arbor, Michigan, USA

Entering versus Exiting

It is said that it is easy to get into a labyrinth but impossible to get out. It may be conceived as a whirlpool or a vortex that swallows the visitor into it. Only then could the labyrinth be acknowledged as a prison, in fact, a prison without bars. For this peculiar phenomenon to take place on solid land, the process of entering must differ fundamentally from that of exiting. While the walls encountered may be identical, from a material viewpoint, they must appear different depending on the direction of approach.

A way of realizing this would be if the visual condition along the entering direction revealed salient differentiations while along the exiting direction this would be reversed generating a sense of blending, a chameleon like condition. One way this could be attained would be by accentuating the thickness of the walls in the entering direction while this same thickness would be virtually eliminated along the exiting direction and the lines of apertures would blend into the wall texture. Such a strategy would necessitate the slanting of the cross section in plan (Figure 9).

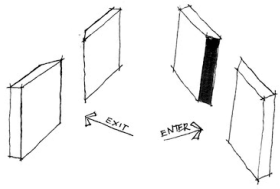

Figure 9. The View of a Passage along the Entering Direction
Would Differ from Its View along the Exiting Direction

Light and Shadow and the Disjointedness of Space

Light is instrumental in way finding. In an open air space, by taking into account the position of the sun in the sky, one may obtain significant information about his relative location. Similarly, the shadow of an object or of one's own body may reenforce such information. This knowledge, however, may also be used in order to obscure and mislead perception. There are numerous examples of shapes and forms that have been devised precisely for this purpose [12].

In an open air space the top of the walls form edges which cut off the sunrays and in so doing they generate directional shadows. When one changes

direction he becomes aware that he did by the shifting of the shadows. Thereby, both the position of the sun and the direction of the shadows may be used as a tool to find one's way. If one wished to mislead would attempt to prevent this from happening by removing this possibility from a designed space. He could design the walls in such a way as to prevent them to casting shadows not only to the ground but to the walls opposite to them as well. This could be achieved if the walls were built so as to fluctuate in the vertical direction. Another way would be to generate slanting subdivisions of wall surfaces in order to light them more or less intensely than what their position would afford them. In this manner he could deceive the eye in regards to their distance as compared to neighboring surfaces.

The issue of light and shadow is quite complicated. Some interesting observations regarding light and shadow are that light tends to attract attention, on the one hand, while at the same time a lit surface tends to move toward, or appear closer to, the observer. Another interesting issue is that the fragmentation of a form into lit and shaded parts tends to break down the form, and consequently hide it, making it invisible or unrecognizable as a whole.

This can become clear by observing a human body moving through a forest with tall trees. The foliage of the trees generates patterns of bright and dark spots on the ground as well as on any body moving through it. As a result the form of the body breaks down, its solid appearance is lost and it becomes hard to reconstruct it in perception. This may serve as a method for hiding an object from sight by making the structure of its parts indistinguishable. In order for a part of a body to be distinguished it must be possible to be constructed in perception as such, that is, as a part that belongs to a whole. If it is subdivided into smaller portions, uncharacteristic of the whole, then its essential structure is lost to the perceiver. In this way, crucial aspects of the labyrinth, such as exits, may become concealed. Also, such a strategy may generate confusion regarding the direction of light. In order to understand the direction of light one often needs to rely on shadows, but not just any shadows (Figure 10).

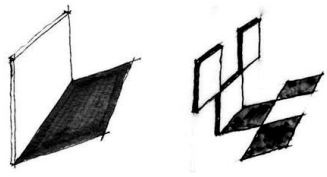

Figure 10. Elongated Shadows and Compartmentalized Shadows

The more elongated the shadows the clearer they indicate the direction light comes from. Compartmentalization of the shadows augments the confusion regarding the direction of light. The compartments seem to belong to the texture of the surroundings rather than to be caused by an external directional source of light. This universal subdivision is utterly destructive to any sense of structured form (Figure 11).

Figure 11. Subdivision of a Body by Light and Shadow Patches in a Forest

Daedalus was allegedly an important astronomer as well. If this were true and the Labyrinth was open to the sky, a probability pointed at indirectly since Daedalus is said to have escaped the Labyrinth by flying with wings he had constructed [2], what would have prevented him from being orientated by simply observing the positions of the stars in the sky?

This question is a legitimate one and quite difficult to answer unless we take into account the Gestalt distinction between a part and a segment of a whole [11]. A part is considered to be an entity, which bears a significant relationship to the whole; a relationship revealed by its form. On the contrary, a segment bears no such relationship because it is cut in such a manner that any relationship to the fundamental structure of the whole is concealed. On the one hand, Daedalus would have probably created persistent incosistencies and random segmentations of the formal structure such that essential information of use would have been concealed. In this way he would have disrupted any attempt at discerning the presence of an ordered whole.

On the other hand, in an open-air Labyrinth, an analogous spatial segmentation would have to be attained. An astronomer needs greater portions of the sky to be revealed in order to place the heavenly bodies in relationship to one another. The narrower the segments of the sky become, the smaller the probability of his making the necessary connections between the stars both in terms of position and relative brightness. As a result, if the Labyrinth were built with high walls on both sides of narrow passages then any astronomical knowledge on the part of the prisoner would have been disabled.

The Bleakness of Repetition

The previous analysis of perceptual cues that may lead to disorientation would appear as insignificant in comparison to the issue of repetition. The grouping of visual elements is a fundamental function of perception. Forms are grouped in terms of similarity of shape, color, proximity and other features. In the same way they may be differentiated from one another on the basis of opposing characteristics [13]. A moderate iteration of a shape, i.e. 3 to 6 times, in the absence of an overarching unifying form may generate a sense of a group possible to be perceived as a whole, that is, acquire itself the quality of a meaningful form. Once iteration exceeds this number the sense of wholeness becomes dim. No larger form is perceptually in effect. The ensemble breaks down into its parts and the oneness transforms into a multitude, dissolving into a pattern. Perception cannot cope with the multitude; it seeks diversification

on which to anchor. The greater the repetition the more perception attempts to pass over it as insignificant so as to reach a meaningful break (Figure 12).

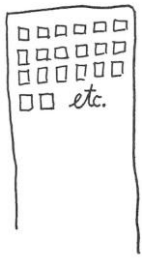

Figure 12. A Child's Drawing of a Skyscraper [14]

It makes no difference whether the repeated part embodies regularity or irregularity in its own form. The repetition is so overpowering to perception that it muffles all segmentations and irregularities of individual forms. It is of no concern whether the individual forms are orthogonal or not. It appears that repetition exerts a veiling influence, which dissolves individual character. It appears that, of all other cues examined, repetition is the one that is the hardest for perception to cope with. It profoundly affects the peculiar method of perceptual operation, which is to detect differences and similarities and set them against each other. When repetition becomes too tenacious, it tends to lend a unifying bleakness to space. No doubt, repetition would have constituted Daedalus' most formidable design weapon.

Even if there are changes effected on forms, while the latter are repeated, the veiling influence of iteration keeps being so powerful that tends to hide the process of transformation to a degree that the altered form is confronted by perception as a surprise. Good examples of this are Escher's drawings (Figure 13).

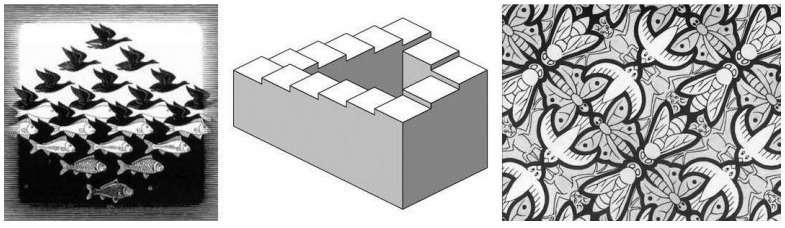

Figure 13. Escher's Drawings

CONCLUSION

From the above discussion and limited analysis, it has become evident that the more curvilinear or polygonal a form becomes the harder it is to establish perceptual anchoring points and the sense of disorientation is intensified. Part of this is due to the multiplication of directions and the transformation of the space into an introverted one. Highly responsible for this is also the prevention of any views from above as well as any geometrical relationships to the outside. The sense of disorientation in an interior space increases the more the geometrical dependencies grow more complex. In such cases is possible to even experience a virtual loss of spatial stability, which serves as a foundation for any sense of orientation. From the point of view of anchoring points, it has been established that neither the increase nor the decrease of such points result to a greater sense of orientation, but rather a certain measure, that is, a small number of them in any one space. Also, it has been established that orientation is dependent not only on signposts placed at the vertices of spatial shapes but also on signposts placed within space. It should also be mentioned that the greater a space becomes, as viewed from within, the more the boundary signposts are reduced in importance and those placed within space emerge as more crucial. Therefore, Daedalus must have eliminated the presence of signposts of either kind or multiplied them to infinity in order to maximize disorientation. On the other hand, he must have used curvilinear shapes preferably of a type with complex dependencies in order to induce dizziness and a sense of spatial instability. Finally, he must have not allowed natural light to generate elongated shadows so as to impart any sense of direction, while would have resorted to a obsessive iteration of any forms he must have chosen in order to intensify a sense of loss and helplessness.

Based on the above observations, which are but an introduction to the issue of disorientation, it must have been understood that it is possible to achieve it methodically. The method consists, firstly, in making a fundamental distinction between reality and appearance. A building may be what it is in structural terms, but the way in which is made to appear to the eyes is an entirely different matter. Disorientation may occur either because the designer intends to achieve it, just as Daedalus did, or because he did not pay adequate attention to the appearance that a perhaps functionally or stylistically driven reality generated. While in the first case the outcome may be nothing short of an art, in the second, it is but a blatant failure.

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THE ARCHITECT OF TODAY ON THE EDGE OF CHAOS: AN APPROACH THROUGH CHAOS THEORY

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ABSTRACT

Today, in the frame of the transformation of the city and the social dynamics that lead to this transformation, it can be said that there is a congestion and repetition in the context of the city/citizen/architecture. The identity problems created by social and spatial constraints have been and will continue to be influential in the forming of metropolitan life and space. It is possible to examine the spatial consequences of the social transformations that modern individuals experience, but only by comprehending the importance of the strong relationship between the space and the identity of individual. It is difficult to produce 'the new' in architecture as long as the new ways of seeing not produced in this complex situation, which we are hardly able to describe on the plane of city/architecture.

Due to the desire of humankind by means of conceiving the complex universe we live in, many theories have appeared in the history. Even though the Chaos theory has been used in human sciences at first, it actually gives us hope concerning the future use in social sciences that include architecture and sociology in terms of breakthroughs. In this context, the theory, which analyses the nonlinear complex systems, can now be seen as a tool to investigate the current situation of architecture.

Metropolitan cities can now be assumed as the most complex scene of architectural experience in the context of nonlinear natural atmosphere and linear orders created by society. There is a direct relationship between design process and the views of today's architect in the face of chaos and order. Through the chaos theory, this paper will discuss the views of the today's individual on the line of complexity in daily life and the attitude of today's architect on the edge of chaos.

Keywords: Chaos Theory, Architect, Complexity, Order, Metropolitan City.

INTRODUCTION

Due to the desire of humankind to understand unknown, many theories have appeared throughout history. The last quarter of the 20th century is an era ın which significant scientific developments occurred. The hypothesis of chaos which has existed since the ancient times became particularly popular in this era. Although the theory fırst appeared in human sciences, it currently seeks to give clarity concerning the future of social sciences. The mathematical model of chaos theory provides insight for physics; in addition, more recently academics argue that this theory may also support many sciences that include architecture and sociology in terms of breakthroughs.

According to James Gleick, the social sciences which embrace theoretical principles of the theory may have the chance of abandoning the mechanical perception and seeing the world from a wider perspective. Chaos has become not just a theory but also a method, not just a belief but also way of doing science. (Gleick, 1987). In this respect, the philosophy of the theory may be regarded as an instrument which is used in order to comprehend the dynamics and complexity of systems and the metropolitan city shows itself as the most obvious architectural platform where chaotic relations can be observed in daily life. The city atmosphere is the place where chaoticity and complexity can be observed most intensely in terms of sociality and formality in our daily lives.

It is known that major changes in the economical, technological, sociological and cultural fields in the transition from the feudal system to the capitalist system produced serious urban consequences within the newborn social structures and social classifications. The most significant of these results can be observed in metropolitan cities, the most concentrated environment of social dynamics.

“In an artificially conceived environment, calculated to secure anonymity and functional specialization of space, city dwellers faced an almost insoluble identity problem. The faceless monotony and clinical purity of the artificially construed space deprived them of the opportunity for meaning-negotiating and thus of the know-how needed to come to grips with that problem and to resolve it.” (Bauman, 1998, p. 46)

As Bauman emphasizes, in the frame of the transformation of the city and the socio-cultural and socio-psychological dynamics that lead to this transformation, it can be said that there is a congestion and repetition in the axis of the city/citizen/architecture. The problem of "identity" created on individuals and groups in everyday life with globalization has been and will be influential in the forming of the metropolitan scene. In this context, it is possible to identify the troubles of today's urban space only by comprehending the importance of the strong relationship between space and identity of today’s architect. Hence, it is thought that it is possible to go beyond this urban / spatial / architectural / social bottleneck, but only by generating new ways of looking.

The metropolitan city can be seen as a stratified structure that contains all the stages of complexity from the chaotic atmosphere of nature to the order in that society creates. On this line of complexity, the individual of today positions himself / herself according to many social, economic, political, cultural, religious, and other parameters. The relationship established with the city represents a moment of encounter; this moment appears as a living reality and is a layered and a reflective representation that replaces each other in the relation of the city and citizen, not as the attitude of an observer who is distant from the city (Aydınlı, 2012). As Aydınlı states, individual faces with the all stages of complexity in his/her daily life. Today's architect, like every individual, has to define his/her existence between the chaos and the order. At this point, the architect has a role in the mental and physical tools of the city's formal structure. This role is evolving within the framework of the attitude and potential of the architect in today's metropolitan cities, in the face of complex problems. Therefore, this research focuses on which attitude of today's architect can be the intervention tools to initiate the transformation of city/society.

From Chaos to Order

''Before everything, there was chaos.''- Hesiod (Hesiod, 2006)

Chaos (Khaos) is a Greek word and is thought to have first appeared in "Theogony" meaning "The Birth of the Gods" by Hesiod in sources dealing with Ancient Greek philosophy (Hesiod, 2006). However, findings in respect of the Chaos Theory had not been systematised until the last quarter of the 20th century and also it had not been qualified as a "theory" by the world of science during that time period. It was in the 1970s that the doctrine was systematised and resumed its name.

In the past, scientists generally avoided investigating complex systems. Contrary to the Newton science which sees the world as a machine with regular, predictable and certain justice, the theory takes irregularity, unpredictability and uncertainty into consideration and acts as a bridge between the simplification of Newton science and randomness of quantum physics. In addition, the theory brings harmony and togetherness, not contradiction between order and disorder. It is important to note this as a spectacular distinction which will further be discussed below and is likely to be confronted while comprehending the city entirely.

The city needs order to restrain the density that it involves (or a part of it). Under the non-linear structure of the city, there are considered to be some solid and linear structures which ensure that the city is in order by the society. It is only possible that the control and continuity of a non-linear system relies on that there exists a linear system in it.

The metropolitan cities can be seen as an order in irregularity. The actor generating the order of the city is 'society'. Nature is chaotic. The society needs simplicity and avoids irregularity. Hence, the city is a scene where all diversity gathers and the continuum is always provided. This complex system is the cooperation of nature and society; however, it can be added that this complex system is prevented by society.

The city is one of the orders of human beings that they simplified for the purposes of controlling its complexity, and that they set up through association by establishing similarities and differences. The city harbours systems and sub-systems supported by a certain world view. Just like what is seen after looking at the fractals from different distances, there are intertwined systems of different scales in the cities as well.

It can be said that the cities have the characteristics of complex systems in order through the Chaos Theory. The number of variables in complexities in disorder is very high. It is hard to foresee the behaviour of a system. However, complexity in order bears variables to a quantifiable degree within itself and it is possible to be controlled. The same holds for cities. As their level of chaotic aspects increase, the cities are transformed into metropolitan cities. However, even the metropolitan cities have a balance within themselves.

Order means establishing social reconciliation spaces. In other words, this means that an individual living with other individuals becomes possible when an agreement on certain conditions has been made or when certain will is adopted. In this context, the continuation of the order does not become possible by the power influencing the city alone. The individual appears to be the stakeholder who is most affected by this use and who provides the order. Because order does not consist of urban or social order alone, order is the structured state of conscious.

The Attitudes of Today on the Line of Complexity

Under the Domination of Order: The Blasé

A metropolitan resident hesitates to think during actions within the contexts of an institutionalized living environment. Because, the life style of a metropolis directly affects the daily life of residents and sets its own routine. According to the paper; `Metropolis and Mental Life' of Simmel, humans resist the mechanism of socio-technologic decomposition and fatigue (Simmel, 1976).The density of stimulant on nerves constitutes the spiritual basics of a metropolitan type personality. This is because of the fast and continuous change on stimulants. Mentality is stimulated by the differences between the consecutive impressions. Permanent impressions need less awareness, which have minor differences and stays in a common order.

In the feudal world, “free man” is thought to be a man who is dependent upon and protected by the law of the country. The person who is not free was seen as the one who received his rights from a narrow feudal unity and who had been alienated from the larger social frame-work. Simmel defined today's city residents as “free” in the meaning of having a more developed sense of spirituality and taste as opposed to the residents of townships who had been limited by narrow patterns and prejudices (Simmel, 1976). However, the aspect that has to be carefully considered at this point is that while the boundaries of such freedom are extending during the modern age, the spaces of the orders are also widening. The individual makes choices in order to cope with the complexity of the metropolis and gives up some of his freedom in order to gain his personal freedom. The establishment of political groups, societies, networks of relatives and congregations arise out of the necessity

felt by human beings that they have to protect themselves within rigid boundaries and a central unity and achieve a sense of belonging. It is very difficult for an individual who has been raised with order to cope with the dominant system neither mentally nor practically and to get out of that frame-work.

The individual is put into a certain frame by the system and the system automatically undertakes the production of the individual in conformity with the required model. This set up is not normally consciously realized. The individual can come across this set up right at the heart of daily life, in newspapers, in books, in magazines, in films, in lectures, at wedding ceremonies, during shopping, at celebrations and at various vital practicalities. Order is an indivisible part of these practices and continues to exist alongside such practices. The individual structures his communications with the other individuals and his existence within the society and the city in accordance with these provisions. Such provisions create the basis for the urban behaviors - learned behaviors- of the person. This whole set of judges convicted in society is defined as Doxa in the sociology of Bourdieu. Bourdieu claims that the origin of the social actions of the person in every field from daily life to politics, from cultural tastes to the manner of speech is governed by the society inside the body of the individual (Bourdieu, 1982). It is an observable truth that the individuals go on living the life styles that have been imposed upon them by the society, go on living without questioning the behavioral patterns and give in to the domination without utilizing their mechanisms for questioning and criticism.

Neither Inside nor Outside: The Stranger

''There are friends and enemies. And there are strangers." (Bauman, 2010, p. 53)

The need of mankind shows itself when the society put things on the ground that the individual perceives and systematizes them. However, the society is constructing an artificial order by labeling objects and distinguishing between things with and without a real sense of what they are. The ''stranger'' is a concept that emerges in order to be able to define the different things in this moment. The stranger is the phenomenon created and excluded by us. The stranger is both near and far at the same time. The existence of the stranger does not change. The effort to bring a limit to the uncertainty of strangeness manifests itself in urban planning. The city has a function that narrows its boundaries and the society generally try to avoid focusing on the ambiguities, uncertainties and insecurities of the liquid world. This situation reflects our daily lives directly on the urban level.

It can be said that fearing and escaping from the stranger leads the city to the formats that a city does not really have. It adds different equipment/roles to the city and as Baudrillard says, 'the truth itself becomes the simulacra' (Baudrillard, 1994). The space of 'the stranger/other' is being produced in a foreseen way and the city is assumed as an environment in which the stranger is controlled under the desired manner. As long as an individual who is far away from the intellectuality does not question the situation imposed on him, he makes it his own reality. According to Bauman, in fact the real

freedom and liberation is only possible through the acceptance of differences and the rejection of complacency (Bauman, 1991). The individual cannot catch the feeling of freedom when she/he is in a worrying mood created by the stranger. As a matter of fact, despite the argument of Bauman which states that modernity aims to and should destruct ambiguity and create a static order, this effort actually increased the ambiguity in the city. The source of increasing ambiguity is seen as the stranger. Along with the growing crowd in the city, the lifestyles generated by different layers and cultures have increased the tension in the city such that the metropolitan city has now become a place where strangers "stand and move around each other". (Bauman, 2010)

According to Sennett, the stranger is synonymous with the outsider, and appears in a landscape where people have enough sense of their own identities to form rules of who belongs and who does not. (Sennett, 1977) Thus, the stranger who does not belong to the city and the citizen who defines himself, his boundaries and his surroundings against the stranger pushes the architect of today to a totally different plane on the line of complexity.

In the Shadow of the Disorder: The Idle

This attitude that emerges as an opposing attitude on the other side of the line can be thought of as the mental state of the individual who has no sense of continuity or sense of obligation and who rejects all social ties. In this respect, is seen as a deviation from ‘normal’. This is a period of deterioration in which internal life in the form of isolation, loneliness, lack of communication, lack of purpose, worthlessness, void, hopelessness, and futurism are experienced intensely and violently. This attitute, who is in a passive revolt, is standing against all the values of society, institutions and lifestyle.

Even though it has the possibility to observe the blase attitude under domination from the outside, this attitude is at least as violent as the uncomfortable. This violence is too far from the ability to produce the new, since the uncontrollability, unpredictability, remains under coincidence and creative thinking can not be achieved in authoritarian, restrictive, over-structured environments. As the leaders of the cultural elite group, architects are founders of order. Therefore it can be said that the role of the architect profile in the axis of the city and society is directly related to creativity. In the context of these types of identity, which dominate the modern man, today's architect needs a different plane to reinforce his creativity.

On the Edge of Chaos

“Chaos is rejecting all you have learned, chaos is being yourself.” (Cioran, 1975, p. 29-30)

According to mathematical theory, the edge of chaos is the most critical region on the line of complexity. In this region, a small change can either drag the system into a chaotic behavior or lock it into a constant behavior. Additionally, systems are not clearly defined and are subject to change in this region. The general feature of these systems is the unpredictability of certain behavior within a predictable behavioral structure. On this edge, the system makes the

most complex calculations using the greatest potential. In other words, this border represents the easiest situation of change.

''Creativity is balanced at the knife-edge between predictability and randomness. A completely ordered or completely chaotic system is not very valuable because it cannot evolve very far; it cannot improve or progress. By contrast, a system pushed far-from equilibrium to the boundary between order and chaos.'' (Jencks, 1995, p. 85)

According to the theory, with this quote, Jencks underlines that chaotic systems have more possibility of creativity than linear systems. Because, it is hard to create the 'new' under domination, sometimes even it's impossible. Whenever a structure needs to be formed, some percentage of irregularity is necessary for change. This relation brings a dialectic connection between order and change. In chaotic systems, while order wants to maintain itself, irregularity provokes it by holding an anarchistic attitude.

Although order seems solid in the context of time-space at first sight, actually it is not. In contrast, it requires motion including a certain energy. Conversion of energy is needed even for the maintaining order. With this reason, daily life contains a hidden dynamism. As stated before, order cannot be generated randomly without an authority or power and also cannot be maintained without any support. Since it is not natural, it is only continued by the interventaion of humankind. In other words, unless it is imposed by external influences, its energy decreases and it evolves to irregularity. Because of the fact that the chaos theory defends that every order tends to be destroyed; if an order keeps its existence, it can be said that there are some authorities resisting and interrupting the tendency of destruction.

CONCLUSION

It can be said that the inferences obtained in the research are directed at the debate on the relation between the city/architect and order-disorder. Even if it cannot be pinpoint certain results, it is assumed that the architecture is moving towards a darker urban table. In this context, this debate is based on the search of utterly different approaches of city/architecture. It gives us hope that even the determination of how the architect is directed to the present situation will come, without revealing the social and spatial constraints of the metropolitan city and thus the architect of today, or without offering convincing solutions.

The final piece of Deleuze and Guattari's, 'What is Philosophy?' begins with the following sentence: 'We require just a little order to protect us from chaos.' (Gilles Deleuze, 1991, p. 200) With this point of view, it is seen that the nonlinearity of nature is tried to be restrained by an artificial order produced by mankind. This order refers to a secure spatial unity established by certain forms, means and laws. To put it differently, as Deleuze and Guattari states, the chaos dominating to nature occurs as utterly different from nature in an approach of order with the society at city scale. Chaos cooperates with man-made order so that society survives and keeps its daily life the same.

Christopher Alexander explains that the living structure is generated from the centers as a whole. Primarily it is necessary to explain the center and a whole in order to be able to understand how life originates from them (Petruševski, 2012). As Alexander argues, if it is assumed that city is a living organism, it can be imagined that the horizontal and vertical strata move in unison with each other.

“Artists struggle less against chaos (that, in a certain manner, all their wishes summon forth) than against the "cliches" of opinion.” (Gilles Deleuze, 199, p. 204)

In the scope of the study, although the individual views have been handled very carefully, it is difficult to argue at this point in the study that is easier to answer question, 'Where will the evolution of the views of today's architect go?' But within the derived conclusions, striking results can be achieved today. The task of dominating the earth, where human beings are part of it to the most micro places today is very clearly confronted on the urban level. According to Deleuze, who criticizes the thought that excludes randomness and chaos on behalf of order, this system of thinking is trustworthy for individual. In this sense, as Deleuze and Guattari point out, being in certain, definite, rigid and static mental frameworks are almost like an umbrella protecting us (Gilles Deleuze, 1991). Along with the assumption that the domination/order is an attitude toward chaos, the free space perception of the city/citizen is becoming questionable. Today, the reality of the spatial organizations presents a tragic debate.

“Thus, lacking the real, it is there that we must aim at order.” (Baudrillard, 1994, p. 16)

Within the scope of the study, it seems that the search for order of the society has come from the intolerance to the other. It is though that the society is preventing ambiguity by organizing itself in oppositions. According to Bauman, this attitude can only come to an end when tolerance for differences begins. In this context, the state of being on the edge of chaos represents the ability to produce a new order between irregularity and strict order. New products, new behaviours, policies, strategic positions can be developed with this way of seeing. It is observed that the Chaos Theory brings us to a key concept with the interaction of the concepts that has been encountered. This new concept is “to construct to destruct”. In order for the metropolitan life to discover novelties and to produce positive values, the architect should be able to take a look at the metropolises from outside. It could also be argued that this is only going to be possible through metropolitan cities with this approach. This is a kind of key that could put the experiences together; it gains through the residents of the metropolis and turns them into a production activity. Awareness of this approach against the consuming and monotonic system of the metropolis could be a tool to bring in colour and energy to the daily life of the exasperated metropolis resident description of Simmel. Such awareness bears the potential of realising transformation not on individual scale, but also on social scale.

After the analysis and the proposed ideas, it can be imagined that the probability of today's architecture to turn into more disturbing geographies in

the near future is quite high. But within the scope of the processes and situations that have been achieved, thanks to the butterfly effect approach, which is the basic metaphor of the Chaos theory, the transformation of the chaotic structure of the city in its historical process allows us to make promising conclusions about the architect and architecture today.

It is seen in the context of Jencks' discourse that creativity exists at the boundary between chaos and order, the edge of chaos is the moment/region that existing order can be destructed and new notions can be constructed by taking advantage of the unpredictable and random structure of chaos. Hence, today's architect can reach this limit at which he can remove the system of order from its dominance and bring a new expression or definition of use against the problem. Today's architect can help you to fall into chaos by taking the risk of confrontation with chaos and can make new productions towards the future independent of dogmatic, static and linear phenomena. Consequently, all the inquiries and analyzes made in this context can be expressed by Deleuze and Guattari.; “Art indeed struggles with chaos, but it does so in order to bring forth a vision that illuminates it for an instant, a sensation.” (Gilles Deleuze, 1991, p. 204).

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A RESEARCH ON CONTEMPORARY ARCHITECTURE THROUGH THE LENS OF ARCHITECTURAL UTOPIA COMPETITIONS

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ABSTRACT

Architectural theory and history writing tradition of modernism claims a critical distance between the object of writing and the researcher. The vantage point of the observer is considered to be objective enough to have a clear and whole sight. Accordingly, today's history is hardly to be the concern of the theory. It is considered that there is a necessity of time and a certain distance for the accumulation of valid and relevant knowledge necessary to present the history out of today's singular cases. This perspective, however, limits the criticism within the intellectual and chronological boundaries of past examples. Therefore, contemporary architectural thinking and theory can only be reached through the filters of the history. Within the scope of this study, it is claimed that there is a strong necessity for different and particularly hodiernal theoretical filters for prevailing architectural production and culture. The aim of this study is to present a research on the possibility a tool or toolset that can help to focus on the characteristics of the very contemporary singular cases in order to generalize certain parameters and qualities of an immediate architectural history. In that sense, future oriented architectural utopia projects are of importance since they explore the unknown territories of future by using the conceptions and methods of today's circumstances. The study investigates an architectural utopia developed in the 20th century in order to demonstrate that the tools and discourse of the case had been derived from its own time and they reveal the characteristics of their time. After that, the same method is applied on a contemporary international architectural competition for the future utopias. The prized projects shall be investigated and utilized for deriving the characteristics of contemporary architectural thinking, theory, and production.

Key Words: Architectural Utopias, Architectural Theory, Future Time, Present Time, Utopian Thought.

INTRODUCTION

Today it is considered that there is a necessity of time and a certain distance for the accumulation of valid and relevant knowledge necessary to present the history out of today's singular cases. This perspective, however, limits the criticism within the intellectual and chronological boundaries of past examples. Therefore, contemporary architectural thinking and theory can only be reached through the filters of the history. Within the content of this study, it is claimed that there is a strong necessity for different and particularly hodiernal theoretical filters for prevailing architectural production and culture. The aim of this study is to present a research on the possibility a tool or toolset that can help to focus on the characteristics of the very contemporary singular cases in order to generalize certain parameters and qualities of an immediate architectural history. In that sense, future oriented architectural utopia projects are of importance since they explore the unknown territories of future by using the conceptions and methods of today's circumstances. The study investigates an architectural utopia developed in the 20th century in order to demonstrate that the tools and discourse of the case had been derived from its own time and they reveal the characteristics of their time. After that, the same method is applied on a contemporary international architectural competition for the future utopias. The prized projects shall be investigated and utilized for deriving the characteristics of contemporary architectural thinking, theory, and production. In the scope of the study, three competitions were examined and gathered under three main themes.These are; Ecology, Population and Construction Methods.

Competitions

Section 1 – Ecology: In this section the ecology-based projects will be examined in the specified competitions.

The first one is, Maltepe University and Iaps-Csbe Working Network Cooperation Iksv Second International Istanbul Design Biennial Academy Program "Imagining Istanbul" National Student Opinion Competition / 2014.

This competition concentrating on the future types of urban space and urban life. Members were relied upon to create manageable and inventive projects that encapsulate future situations of urban space. In this competition, encouragement award project (Project 1) is thought the Istanbul as a biological city.it designed by Erkin Yaşar Çerik. In this project, Individuals give a profound and physical purifying in the avenues of the city, while participating in agrarian exercises in the regular habitat and covered in vehicles. With vertical, sky gardens, individuals will be near farmland and gardens, and there will be an exit from the world's resentment. The other competition is, Evolo Magazine Skyscraper Competition / 2017.This competition, concentrate on visionary ideas for building high- projects that through the novel use of technology, materials, programs, aesthetics, and spatial organizations, challenge the way we understand vertical architecture and its relationship with the natural and built environments.1st prize project of this competition is Mashambas Skyscraper (Project 2) by Pawel Lipiński, Mateusz Frankowski. Today, Scientists caution about, worldwide sustenance deficiency. Therefore the fundamental target of the project is to convey green upset to the poorest

individuals. Giving preparing, manure, and seeds to the little ranchers can give them a chance to deliver as much present day cultivates according to section of land. Mashambas is a mobile instructive focus, it gives instruction, preparing on farming methods, shabby composts, and current apparatuses. Another ecology-based project in the same competition, 2nd prize winner is Vertical Factories in Megacities (Project 3) by Tianshu Liu, Lingshen Xie.Today, factories moved to areas outside cities because they were noisy and polluting. But many factories are cleaner and could have a new place in the urban environment. The aim of this project is moving factories back into the city would provide a higher quality of life, by allowing employees to walk to work rather than commute in cars. By bringing factories back to the city, can achieve zero CO2 emissions, be energy efficient, and provide higher quality of life to the inhabitants. The last one is, Tokyo Vertical Cemetery Competition / 2016. This competition challenged architects to develop proposals for a vertical cemetery that explores the relationship between life and death in the city while taking into account the cultural identity that is tied to death. The runner up project of this competition is Inner Landscape (Project 4) by Nıccolò Brovellı. This project is a boundary between the frantic rhythm of the city and the timeless interior space. Inner Landscape is a vertical path, hybrid interpretation of multi-storied pagoda and Japanese shrine. The last project in the ecology context is, Beyond the Horızon of Consciousness (Project 5) by Anna Eckes Olaf Mıtka. This project, Inspired by light and chestnut that leaked even to the dark areas of the city of Tokyo, it is free-planned and has a cave appearance. There is a structure integrated into the water (lake) and rocks. As a result of these competitions, which are not related to ecology, the teams have come out with ecological concerns. They are aiming to combine people with the natural environment and protect the environment. It proves that they are concerned about this issues today.

Section 2 – Population: In this section the population-based projects will be examined in the specified competitions.

The first one is, Maltepe University and Iaps-Csbe Working Network Cooperation Iksv Second International Istanbul Design Biennial Academy Program "Imagining Istanbul" National Student Opinion Competition / 2014.

The equivalent award project (project 8) by Ali Arslan and Neşet Özgür Öztürk is expressed that the number of houses in Istanbul is increasing day by day. The city has certain limits and reached maximum capacity. The city will be unable to withstand this crowd in time, it will explode and become three dimensional. Subsequently urban understanding and building structures will change. Finally, Istanbul will develop to end up plainly one of the metropolitan urban communities (Ecumenopolis) to join with different urban areas on the world. The next project from Evolo Magazine Skyscraper competition / 2017 3rd place is Espiral 3500 (project 9) designed by Javier López-Menchero Ortiz de Salazar. It located in eastern coast of Spain which has the most highly populated seafront areas, has suffered an indiscriminate urban expansion. Aim of the project is, create private and public spaces for individuals with streets formed with vertical blocks, and at the same time to allow specific connections with the street.The last one is from Tokyo Vertical Cemetery Competition / 2016 runner up project.it is name is IN-Between (project 13) by

Moıses Royo,Marquez Carlos, Orbea Martınez,Gonzalo Garcıa Robledo, Pıotr Panczyk. This structure is considered as a place between death and life. While continuing the burial tradition, there is also a different aim. Public spaces in this structure, have brought grave areas to the public. In this projects, it is thought that public spaces in open areas will not be enough because of considering that population growth will be excessive. Therefore, it is aimed to create new public spaces in buildings with the help of the technology.

Section 3 – Construction Methods: In this section the projects which looking for new construction methods will be examined in the competitions.

The first project from, Maltepe University and Iaps-Csbe Working Network Cooperation Iksv Second International Istanbul Design Biennial Academy Program "Imagining Istanbul" National Student Opinion Competition / 2014. Equivalent Award (Project 7) designed by Erkin Yaşar Çerik, Merve Koçak, Cansu Kaçar, Ayşe Merve Çilingir, Serdar Ayvaz. This project based on the fact that the Istanbul expect a big earthquake, it mentions a new urbanization will occur with after this earthquake. New urban, identified using advanced technology, streets, houses dynamic relationships obtained a transparent and collective status. The other Project in the same competition has same theme. It designed by Egemen Nardereli and Sadık Mert Kocaman. This project (6) suggest that backings to not recharge Istanbul until 2093 and to add new individuals to the city with a specific end goal to stop this consumption. In the next years, life will keep on approaching the metro. There will be an existence underneath Istanbul, not a stratification. So that the upstream part will become unusable. The next project from Evolo Magazine Skyscraper competition / 2017, Honorable Mention 1 project is The Forgotten Memorials: The Utopian Future of Urbanization (project 10) designed by Zhonghan Huang, Wen Zhu.

In this project it is supported that contrary to what happened in the past, it offers a proposal to prevent the demolition of old buildings. The new buildings are built under the old ones, and thus the old buildings turn into monumental structures that reach the sky in time. Another project from Evolo Magazine Competition is Flexible Materials Skyscraper (Project 11) by Fu Hao, Zhang Yunlong, Yang Ge.Like others it search new construction methods. The reason is that the construction of the building requires a lot of time, manpower, and working procedure. However, the changeless rigid material has not been able to meet the people's pursuit of the architectural form. Also construction process limits the development of the building. The aim of the project is to explore a new architectural model to meet people's pursuit of architectural form. In addition to this it will reducing the tedious construction process and recycling to reuse. The last project from Tokyo Vertical Cemetery Competition / 2016. 1st prize and its name Death is Not the End. Beıng Forgotten Is (Project 12) designed by Weı Lı He, Wu Jıng Tlng Zeng, Zhı Ruo Ma, and Kuı Yu Gong. This project explores a new way of dealing with the spatial constrain for urban cemeteries while expressing a unique approach to life and death. By having the balloons as a medium for coffin storage, utilize the vertical space by having balloons that gradually rise up and eventually fly off. The appearing and disappearing of balloons resonate with the temporality of life. Departing from the depressing silence in traditional cemetery design,

propose a new space of tranquility created by a tower of rising balloons. As a result of this section, these projects are aimed at saving time and making new designs with flexible materials. Especially with the help of technology, has begun to search for new construction techniques for the protection of old settlements and structures.

CONCLUSION

In these competitions for the future, answers for the issues of the living condition are created by designers, and have demonstrated the universes longed for. In this context, three competitions were examined and gathered under three main themes. Competitions and themes may increase over time. But under specified conditions, these themes are; Ecology, Population and Construction Methods. It's demonstrated that ecologic, sociologic, technological factors are important for todays architecture during the time spent making space and form. Scientists caution about worldwide green deficiency. Therefore the fundamental target of the some projects (project 1, 2, 3, 4, 5) are to convey green the whole world. Additionally, it aiming to combine people with the natural environment and protect the environment. In that way, the pollution of the environment, air and noise in cities will be reduced. This will provide higher quality of life to the inhabitants. Besides building up new green settlements to urban communities are considered, the developments in technology and its reflections have shown themselves in the engineering. As a result of this improvement, new projects are proposed on construction methods and materials. The proposed projects (project 6, 7, 10, 11, 12) in this regard, search new structure, material and city model. With the help of technology, these projects are aimed at saving time and making new designs with flexible, lighter and quicker materials. Especially these new construction techniques to be used for the protection of old settlements and structures. Since, the increase of population with immigration, it led to overvaluation of urban areas. In projects (Project 8, 9,13) were planned to lessen the population. Because, public spaces in open areas will not be enough. Therefore, these projects aimed to create new public spaces in buildings, with the help of technology. Consequently, it is underlined that the materials won't just be seen as far as visuality yet will likewise add to architecture. Future conjectures on a few issues in today's conditions and endeavors to enhance these conditions have been appeared. These projects offer recommended answers for how your new articulation without bounds will be. It also benefit from facts and suggests alternate life descriptions that seek solutions to these facts. (Contandriopoulos, 2013) In the end, these futuristic designs follow a straight path to the possibilities of future times, not in the direction of perpetual components, but in the realities of the today.

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PART 2

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CRITICISM

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METHOD

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IMMATERIAL ARCHITECTURE

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ABSTRACT

This study's philosophical and theological contexts indicate that all creations depend on two domains of reality: the superior and inferior. Although these terms contradict each other; actually, the inferior reality reflects the superior reality; such as the ontological inquiries and their manifestations, or physical manifestation of the spiritual. Similarly, architecture is material built into its immaterial philosophy. Therefore, the immaterial concepts perceived in material situations within the architectural creations can be discussed. The concept of immaterial does not refer to a true absence of matter here; it emerges as a perceptual situation. Whether architecture is immaterial or material depends on perceptions, based on an intellectual journey into the inner worlds of universal realities. Therefore, the immaterial creations have interpretations and fictions, separately from what we see in them directly. From this perspective, the act of creation in architecture relates to establishing spatial awareness with architectural tools. According to Pallasmaa, 'instead of mere vision… architecture involves realms of sensory experience which interact and fuse into each other.' [1]. Thus, immaterial architecture identifies new architectural experiences by challenging inbred or familiar senses. The immaterial architectural experiences are based on contradicting sensations; they propose an active and creative architecture as a conscious and evolving deviation from established behaviour. Contrary to the conventional sense of architecture, it seeks to essence of matter rather than material, actions rather than images and designs openings rather than figures, darkness rather than light.

Key Words: The Immaterial, Act of Creating, Metaphysical Space, Manifestation of Essence.

INTRODUCTION

Thinking the Immaterial/from Transcendental Reality to Ultimate Reality

The most basic inquiry of an act of creating is about what being, becoming, existence and reality is. Since the existence of Greek philosophy, the journey of humans for absolute truth had gained various dimensions, and religious philosophers became the followers of this journey with their new interpretations. Generally, human being's elevation to truth is a process of purification and simplification. It can be observed as a process of salvation from the ordinary senses and the effects of daily life. While this is more of a theoretical process in philosophy, theology speaks about completing this process through a method that is based on action. However, the matter for both is about a journey from what is concrete and visible, which is the objective reality of the senses, to the virtual and the invisible, which is the mental–spiritual and transcendental.

According to Plato, whose ideas are assumed to be one of the earliest ontological inquiries, transcendental is God. Because God is the most beautiful and flawless, he creates the universe in the image that is closest to his own. For example, God created the sky, which existed and will exist at all times. It was the infinity that was taken from God as an essence. The form he gave to the universe was the most appropriate and relevant to himself. The most suitable form for that who encompasses all living creatures is the form that collects all shapes within. Thus, God created the universe in the form of a sphere. In this manner, each part is equally far from the centre; this leads to the conception of the idea that the entity is equal to itself from all directions and that it neither has a beginning nor an end [2]. This form is the most spectacular and most akin to God. In other words, the emergence of earth is the existence of God. Moreover, according to Plato, something that begins to exist must be absolutely tangible or visible [3]. In other words, it is now sensible. Since there are instances of God in those that exist, there has to be unchanging, non-perishable essences that do not disappear. According to Plato, since these essences are the divine and transcendental, they can be grasped through ideas. Idea refers to that which is not material but mentally devisable. He claims that everything we perceive in the material world is modelled on forms that are eternal, immaterial and ideal.

Similar to Plato's discourse, the act of creation, whether it is in Islamic, Christian, Jewish, Buddhist or Hindu belief, is debated on the basis of the idea of a 'superior being' (that is above the limits of human consciousness). While the inquiry about what this superior being is has stayed the same, explanations or representations may vary. Coomaraswamy explains this with a metaphor related to mountains, where all paths lead to the same summit. He says that all great religions of the world have valid claims to truth which must be respected and understood in a comparative mode [4]. Doctrinal differences, conspicuous at the mountain's wide base, when we see the peak, all the differences vanish and reach one transcendence.

For instance, the divine truth in Islamic philosophy according to some mystics (Sufis) is God (Allah), who is 'the absolute being'. All other entities are images that are his reflections. In this discourse, the Sufis advocate the doctrine of

'The Unity of Being' (wahdat al-wujud). This means that there is only one modality of the absolute being, and everything we perceive is externalised through manifestations of his attributes only and all of these manifestations depend on this being [5]. For instance, Ibn al-Arabi explains this by drawing a circle that signifies the created world. While the centre point of this circle represents the essence, lines that are drawn from the centre to the periphery, which are inevitably equal in length, show the willpower of the supreme being. In this scheme, he summarises both the states of being and all the divine and cosmic realities in all their ideal forms and concrete shapes.

It is possible to assume from these examples that there is a particular philosophically formal distinction of being. Plato makes that distinction as 'sensible' and 'intelligible'. The Muslim philosophers, who adopted and developed the intellectual tools of Greek philosophy, had maintained this separation by a divide between *al-hissi* and *al-akli* [6]. The common theme here is that when the intelligible or the al-akli is somehow materialised and brought down to the five senses, it always remains inferior. Nevertheless, this act is an inquiry that is ontological and related to bringing into existence. In this respect, it engenders a pursuit of esoteric knowledge, which goes beyond the mere visual objectivisation of some values. Architectural forms that are integral parts of the sensible world should be considered with this duality—the theoretical knowledge that aspires to understand and explain the essence and the manifested entity (representation of creation). With this type of approach, the creator (the architect, artist) seeks to leave the mark of supreme reflections onto the imperfection of the matters.

Immaterial Practice/from Ultimate Reality to Transcendental Reality

Ensuring that what is universal is perceived in a sensible manner depends on its ontological significations that are the meanings found in the being and ideas are created through an agency of these significations. However, there is a limitation to the representation of infinity and timelessness of the universe. This representation signifies the nature of infinity by going beyond the limits of the act of making and finding standards that transcend human consciousness through particular expressions. It achieves the quality of a higher reality by the agency of ultimate things or acts. Architecture may be the representation of an ultimate reality. However, when architecture refers to the meanings that are found in the entity or to the connections it establishes with the entity, it emerges with a universal representation. It forces the representation capacity of infinity and timelessness in universality.

Peter Zumthor's architecture is a good example of a desire to develop an architecture that determines and transforms into what is real. He talks about 'the magic of the real', and to him this means 'the alchemy of transforming real substances into human sensations' [7]. When the matter, substance and form of an architectural space is applied and internalised appropriately, in the emotional sense, particular moments emerge. His viewpoint is the source of how he develops the basic ideas or principles to approach a particular space and context and to ensure the development of the design. This is why his buildings have a strong and endless existence. For example, the Bruder Klaus Field Chapel is the most contemporary form of the prayer site that raises one

question what spirituality is and ensures that visitors are reminded of existential inquiries. This space is purified of all material states, allowing the attainment of the spirit of space, which is termed 'the atmosphere' by Zumthor. All material realities remain as mediums here, while mystical sensations are brought into existence (Figure 1).

Figure 1. Peter Zumthor, Bruder Klaus Field Chapel, 2007

The fact that material realities are the mediums for the attainment of a much more transcendental reality can be associated with the meanings found in the entity or the revelation of its essence. For example, an overwhelming presence of concrete in a building can expose the very essence of the entity. It is certain that the structure is concrete; however, characterisation of the material becomes debatable. The idea at this instance is that there was an architecturally important moment (i.e. experiential interval) when that material was identified or the fact that it was completely composed of concrete becomes significant. Zumthor describes the concept behind such a structure as the elemental emotions rather than a specific material. Zumthor's architecture is preoccupied with materials and tectonics that is a rigorous and plain examination of place and purpose. His spaces are often materialised through the medium of one key material. The presence of one material is emphasised, possessing an authority towards an overall architectural presence. He believes that in every project, a material must discover its potential until it captures the major influence of the structure (figure 2). Perhaps the fact that the process pertains to the material to such an extent arouses a feeling of removal of concerns regarding physical representations and offers an experience of space through a transcendental image.

Figure 2. Peter Zumthor, Thermal Baths in Vals, 1996

Immaterial Space

When spatial organisations are obtained by inquiries about creation, a complex ensemble of metaphysics, cosmology and mysticism is constructed; moreover, this ensemble indicates the relationship between spatial organisations and tectonic expressions. At the centre of this interpretative approach is the spatial sensibility, which should be understood as a particular awareness of space. Based on this view, it can be concluded that spatial organisation is shaped by a complex and multilayered worldview. For example, when Tadao Ando's sacred buildings are examined, situating them within the local tradition is not merely due to his attitude favouring the comeback of the past, but it is an acknowledgement of principles with a hermeneutical depth. In these principles, tradition is perceived as the ontological backdrop of being. For example, the Church of the Light was built on the theological backdrop of the Buddhist idea of nothingness (figure 3). The space of nothingness that seeks to embody the spiritual realm is explained by the religious and philosophical notion of nothingness. The space of nothingness is where one finds his or her own self and the richness of life, and one struggles to attain a deeper layer of self. The space of nothingness created in the Church of Light is related to the fact that there actually is nothing there. A simple box into which multifarious manifestations of light are drawn is adopted as the space of encounter [8]. The architectural performance of the church is, in this sense, same as the Japanese tearoom. There is nothing except for the deep awakenings of the self in the minds of the participants.

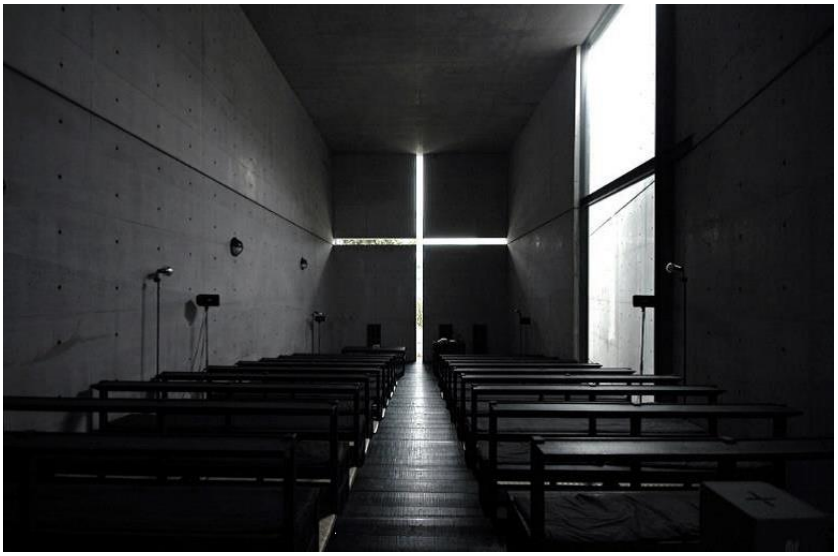

Figure 3. Tadao Ando, Church of Light, 1999

In the example of the Church of Light, space is not produced only through a mystical context. The concept of space, which is the principle theme of modern architecture, is directly related to Semper's idea, wherein space is something experimental. Even though space can be defined as an enclosure or a continuum, it is also an extension of the body; therefore, it emerges with a discourse that includes the individual who experiences the space, into the creation of space. Such a quest for space contains immateriality in its experiences. In other words, the creation of space in the Church of Light example is not only about situating a mystical point of view but it is also about including the actions of the user into its experiences. This is what makes it immaterial.

Most architects consider the space as mouldable according to their desire. The perceived space is created by imposing an abstract scheme. At this point, the ways in which an architect considers prospective users can be explained by the hierarchy of mind and body, which is rooted in Platonic discourse. Descartes explains this hierarchy as 'I am, I exist, that is certain. But how often? Just when I think' [9]. According to this hierarchy, architects commonly limit users to mental abstractions, generally ignoring bodily diversity. This demonstrates that the body is conceived as a machine and, consequently, as passive [10]. However, immaterial architecture suggests that space is a complex place grounded in everyday life, and it is created and transformed by experiencing (feeling, living) it. Lefebvre claims that the space of the experiencing person is lived—not represented (or conceived) and compared with the abstract space of the experts (architects, urbanists, planners), the space of the everyday activities of the experiencing people is a concrete one, which is to say subjective [11]. In other words, the breaking point in perception

is not the unusualness of the situation of the space creation, but it is the power of the situations to create awareness and to become visible and tangible.

CONCLUSION

Architecture pursues what is ideal both in form and in material characteristics and builds his space on the perfect beauty of the form. This implies the generation of a new stylistic entity each time in relation with the substance. However, the embodiment of form and its constant self-recreation indicates the reproduction of copies of Plato's world of forms. What is divine is a whole. It is not possible to talk about different and separate parts. Therefore, immaterial architecture by leaving aside all prime components of the architecture such as context, form, image, structural characteristic materialises it on perception. As in the example of Zumthor, form, material, image do not have significance separately; what really matters is the space itself, which emerges at the end of the process of thinking and creating and renders perception as being different and authentic. Ando, on the other hand, offers a mixture. Forms are platonic, and the perception is built on contradiction, making them integrated; such as in the example of The Church of Water, the fluid and transparent properties of the water and the static and impermeable features of the concrete are incompatible with each other. Water and exposed concrete make each other as opposite basic design tools. Indeed, the ultimate existence of space is found on the perception which is revealed by the destruction of the singular qualities of both water and concrete. This perception is beyond all formal features.

Architecture has in fact been founded on strength, functionality and beauty in many theories since Vitruvius. Immaterial architecture has the possibilities of explaining its existence in different ways. It offers a content in which time and space destroy themselves but that they possess a reality that is independent from a kind of unity they compose. It seeks to expand the scale of optical vision by widening the law of matter. This is actually related to the expression potential of entity rather than that of the constructional techniques. Therefore, the essence of the material is sought for. If the matter is the ultimate reality, then this journey is about reaching the immaterial, i.e. the space where the associations of the transcendental happen, through the essence of matter. In other words, contrary to the architecture that bases its references on materiality, immaterial architecture suggests an architecture that generates an interdependence between space, which is the subject of the architecture and the essence of materiality, using a method that seeks divinity and transcendence.

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Figure 1:

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Figure 2:

http://www.arcspace.com/features/atelier-peter-zumthor/vals-thermal-baths/

Figure 3:

http://www.archdaily.com/101260/ad-classics-church-of-the-light-tadao-ando/5037f3cd28ba0d599b00064c-ad-classics-church-of-the-light-tadao-ando-photo

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REVERSING THE CURRENT DEFINITION OF URBAN GREEN SPACE?: TOWARDS A REJECTION OF PLANNING PRACTICE AT URBAN GREENERY IN ANKARA, TURKEY

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ABSTRACT

Urban green space has rooted from nature and has penetrated urban spatial pattern as an extension of nature. However, by the time it entered into the urban theory and planning practice, it has gradually turned out to be perceived and conceived as a 'tool' for the sake of 'urban development' (following the path from regulatory and sanitary functions to organizational functions and lastly to political-economic functions). As a result, urban green space has withdrawn the natural origin to some extent, which indicates the conflict between the two dimensions of urban green: being (an extension of) nature vs. being an urban open space. The main question of the paper is how far urban green has transformed from its natural origins. Examinations are based on site observations in Ankara between 2009 and 2015, reports of municipal councils, web sites of municipalities, legal texts, in-depth interviews. Urban green has functioned as a tool via three modes of reproduction: (1) as 'a policy instrument' attached to urban transformation projects; (2) as 'a context of policy' implying a fragmentation and decrease in quality; and (3) as 'a site of policy' highlighted the representational dimension of urban green, all of which demonstrated the shift in definition of urban green from a natural to a political entity. The current definition of urban green in planning urgently necessitates to be reversed. This study aims to make a philosophical (ontological and epistemological) discussion and tries to reject the hegemonic definition and role of urban green areas in cities within the recent neoliberal spatial policies and reproduction mechanisms. As planners and designers, what potentials do we have? What should be our priority: The 'urban' as open public space or the 'nature' as green space? What should be reversed, how: The 'urban' in green areas or the 'nature' in urban areas?

Key Words: Conceived Space, Urban Green Policy, Urban Open Space, Urban Green Areas, Ankara.

INTRODUCTION: Rethinking on Definition of Urban Green

Urban green space –even nested in its name– has a two-folded character. On the one hand, it has rooted from nature and has penetrated urban spatial pattern as an extension of nature –defined as 'green', which is on the basis of its origin. However, by the time it entered into the urban theory and planning practice (especially by the first quarter of 20th century), urban green space has gradually turned out to be perceived and conceived as a 'tool' for the sake of 'urban development' (following the path from regulatory and sanitary functions to organizational functions and lastly to political-economic functions). As a result, urban green spaces have withdrawn the natural origin to some extent, which indicates the conflict between the two dimensions of urban green: being (an extension of) nature vs. being an urban open space.

On the basis of such a conflict, three phenomena influence the three-stepped reproduction process [definition, design and creation] of urban greenery, which also has an impact on the mechanisms deforming natural-built balance via spatial reproduction, even while creating urban green areas. Firstly, urban green spaces have a specific and significant role within urban spatial reproduction processes, especially at the point where neoliberal capitalist mode of production highlighted exchange value rather than use value by 1970s. Secondly, by 1980s, rising identity politics increased the representational potentials and political content of urban green spaces, which has recently functioned as 'public space'. Furthermore, the recent research on urban green (especially in western cases) also indicates the rising phenomenon, which can be traced via the recent studies on the concepts such as justice, identity, spatial culture and sustainability of such cultures, accessibility. Thirdly, and most critically, the built environment shone out within the design and physical patterning of urban green spaces, which should be questioned in depth; the shift from natural to the built environment should be rejected and reversed.

The main question of the paper is how far urban green has transformed from its natural origins and what urban green has recently been in Ankara. Examinations [site observations between 2009 and 2015, reports of municipal councils, web sites of municipalities, legal texts, in-depth interviews] indicated that urban green has functioned as a tool via three modes of reproduction: (1) as 'a policy instrument' attached to urban transformation projects; (2) as 'a context of policy' implying a fragmentation and decrease in quality; and (3) as 'a site of policy' highlighted the representational dimension of urban green, all of which demonstrated the shift in definition of urban green areas from a natural to a political entity. The question how we should balance natural and built entities of urban spatial patterning occurs as a critical problem area within recent urban spatial reproduction process under neo-liberal policies, mechanisms, and tools. The current definition and epistemology (and therefore methodology) of urban green planning urgently necessitates to be re-defined and reversed. This study aims to make a philosophical (ontological and epistemological) discussion and tries to reject the hegemonic definition and role of urban green areas in cities within the recent neoliberal spatial policies and reproduction mechanisms. As planners and designers, what potentials do we have? What should be our priority: The 'urban' as open

public space or the 'nature' as green space? What should be reversed, how: The 'urban' in green areas or the 'nature' in urban areas? The initial discussions within the urban utopias and urban green theories (since the beginning of 20th century) are revisited to trace the problems and potentials for the reversal of urban green reproduction process in Turkish case, in the example of capital city.

Origins of Urban Green Space

Green space ensures the equilibrium between built and natural environment of urban spatial pattern. It has several functions and forms within physical, psychological, social and political dimensions meeting not only the public and recreational needs of citizens, but also design standards for the continuity of urban spatial and temporal organization. Urban greenery penetrates the spatial pattern and provides a breathing space for both citizens and the city. Urban green space serves as recreational public spaces where citizens can interact with each other on the one hand, that is why urban green is defined as 'public'. On the other hand, it is designed by the hand of (local or central) state that is what makes it 'public' as well. Planners and architects conceive such spaces via policies, design codes, and plans with projects and especially responsible local or central authorities ensure these spaces constructed within a specific political stance. The process of planning/design, creation and maintenance –in other words '(re)production'– of urban green areas and parks in a city is a crucial component of urbanization, planning and urban policy experience. Urban green space has been reproduced via three stepped process: 'definition', 'design' and 'creation'.

'Definition' underlies the creation, appropriation and reproduction of urban green spaces [1]. Defining a specific urban function or landuse is critical; since it both guides the planning procedures and influences urban daily life in the boundaries of urban spatial pattern. Then what is urban green? Why have cities necessitated it? The relationship between natural and built environment constitutes a critical dimension of urban history and planning discipline, since the first settlements emerged. Indeed, urban green space (like urban planning) is regarded as a child of industrial revolution; and it is placed at the core of this relationship.

Then what is the origin of urban green space? The attributed meanings, forms and functions have been transformed via continuities and ruptures since antique times. These attributions have covered a distance from 'garden of Eden' to urban lungs, palace gardens and green belts [2]. The etymology of both 'garden' (which is the ancestor of urban park) and 'park' indicates a fenced, enclosed area for the use of a specific group. On the basis of this fact, Mayer-Tasch [3] argues that the origins of urban green arose from the myth of Heaven, where some are included and some others are excluded as a result of a system of prize and punishment. Examining the ancient myths and religious texts, a symbolic-religious origin constitutes one of the basis of defining urban green.

The relationship between natural and built environments constitute the second dimension of the origin of urban green space. Agricultural revolution (within Neolithic age) changed the contact of humankind with the nature; as they

settled, human beings began to interfere nature, and therefore 'built environment' appeared just beside the 'natural environment', and the conflict between 'built' and 'natural' also appeared as well. The garden design rooted from a tradition reaching to ancient times. Palace gardens were observed in ancient cities like Nimrud, Khorsabad, and Nineveh of Bronze Age. For example, Marrakech was a city designed around gardens of fruits, and temples, and public spaces open to the use of people. In the subsequent cases, gardens and small scale neighbourhood parks were seen to be located around the civic structures of the city [4]. After agricultural revolution, urban green occurred gradually to be an issue of privilege in relation with the social class of people; i.e. In Roman urbanization (30-95 BC), in Ephesus the terrace-houses –known as rich housing– had gorgeous gardens with full of various fruits, marble and bronze statues, fountains, sitting places, pergola and columns [5]. In Ancient Rome villa type housing was idealized and 'gardens' shone out as a part of this patterning; indeed, roman cities were so crowded that gardens could be added solely to the new neighbourhoods where richer citizens were living [4]. İnvestigating a different example from Byzantine period, after Seljuk leader Alparslan entered Anatolia, Turks contacted with natural environment differently as a result of the transition to settled lifestyle; they created their parks for the sake of determining boundaries, and attributing to space symbolic meanings with an enthusiasm of settlement psychology [5].

Looking at the European tradition of urban green, before 18th century, the nature itself, meets the need of urban green space and recreational functions; the people were recreating themselves in huge areas of meadows. Beyond such natural spaces, baroque gardens were on the stage; they were produced for the use of aristocrats –therefore closed to the ordinary people– and for the sake of aesthetic concerns and indicating power [6]. In this period, the relationship among public and natural environment were defined in three channels: (a) passive usage modes in large, natural spaces –belvedere, (b) palace gardens under the ownership of aristocrats, which were overdesigned and from where specific classes were excluded; (c) informally occurred, and actively used small residual spaces, central areas rooted from squares or large areas such as graveyards, where the people feast and have fun [1]. Therefore, in 18th century, urban green spaces, which are open to public use for recreational purposes, were rare to see. Before the appearance of urban parks (which were produced via conscious park movements), citizens had reproduced themselves at the 'pocket spaces' near to either their home or working places; or they were preferring either great areas out of the city or smaller central places at the city centre. Graveyards, squares, market places, gardens of housing areas, school yards, streets, beer gardens, entertainment parks and coastal regions were examples of such places, some of which were commercial urban sections [7].

Industrial revolution has changed this scene, and resulted in human made urban green spaces beyond natural meadows, palace gardens and square rooted pocket spaces; new green spaces emerged as a part of built environment [8]. Although the conflict (between natural and built environment) goes back till the agricultural revolution, in fact by the industrial revolution,

urban green space has appeared as a necessity in planning discipline and urban spatial pattern by 19th century. Two main motives shaped the reproduction of greenery in urban areas: (i) creating 'healthy' spaces within urban fabric which is destroyed via industrial production and its artefacts; (ii) creating recreational spaces for working class to enable them reproducing themselves within the city daily life [6]; [1].

Such a transformation in urban fabric, with reference to mode of production, constitutes the third origin of the urban green space. Till industrial revolution, natural environment existed separate from urban space to some extent, however the industrialization penetrated the relationship between natural and built environments so that the built space gradually invaded natural environment. And urban green space occurred as a necessity to save the existence of dense and unhealthy urban areas, therefore two channels of actions appeared: invading nature on the one hand, creating pseudo-green areas in large scales in a widespread manner on the other hand. Such a tendency affected urban green spaces in depth, and from that point these spaces turned out to be generally 'tools' in planning practice as 'urban open space' [1]. Indeed, by the mid-19th century, parking movements –seen in European and American cities– focussed on providing large green spaces (imitating nature) by the hand of the states [9]; [8]. Under the effect of 'romanticism' [8], English urban parks (presenting a passive experience on scenery) were developed as a reaction to French Baroque gardens representing the monarchy and its values [2].

Bingöl (2006) defines three main periods after industrial revolution; (1) industrialization, (2) modernism, (3) postmodernism (or preferably after modernism). Urban green spaces were observed to occur in the industrialization period; the housing conditions of working classes were so awful that urban greenery appeared with their regulatory and sanitary functions. Large urban green spaces were designed to cure the unhealthy urban development among the dense fabric; moreover, they were conceived to educate the working classes who migrated to the cities and had to be introduced the urban culture [7]. One of the most known urban green spaces (in this channel) was Central Park, which was constructed in 1851, in USA.

By 1920s, a new motif was added to the sanitary functions of urban green spaces; beyond being a cure to physical illnesses, urban green spaces were recognized to have a potential on organizing and orienting social lives of people. Planning, design and urban green spaces as a part of this issue, could have been used to transform not only physical environments but also social compositions and patterning. Therefore, urban green areas were designed as a 'tool' for the sake of organizing both physical and social environments) [6]. Such an instrumentalism consists of two sides; one has a technical content, and concentrates on providing a balance between occupied and void spaces; so, it aims to organize the physical urban pattern to cure the density and other artefacts of population and built environment. The second side is related with the motive to shape the society through designing physical forms and boundaries; however, this also means organizing the daily life, temporality and social-spatial organization via limiting the physical environment with specific functions and forms [1]. Rational Comprehensive

Planning, utopian approaches, spatial standards, zoning and holistic frames to solve the urban space as a whole (by the help of green belt, green wedge, green ways) are all products of this period [10]; [11]; [12]; [13].

In USA, as an extension of this motive, reform parks appeared as spatial tools in order to transform society. These parks consisted tennis courts, sports units, dance floors and libraries; and they organized the leisure times of American society in 1930s, therefore functioned as educating public spaces. Through the activities and entertainments at such spaces, teaching the decent citizenship was aimed to be taught to the public. During the same period, small scale neighbourhood parks were also conceived in addition to reform parks [7]. After II. World War, the concept of 'justice' shone out within the process of providing urban green spaces as an extension of welfare state. Social and environmental justice appeared in distribution mechanisms and rising sensitivity to environmental issues. At this point urban green space has become a part of distributional policies and come to the forefront as an urban service which was provided by local governments. This transformation converted the urban green space a subject of urban policies; and the 'public' dimension of these spaces become prominent as the issues of participation and urban justice rose. Urban green space is essential as a public space; however, this transformation resulted in an alienation from its origins: being 'natural' and 'open' [1].

Urban Green as Extension of Nature vs. Urban Open Space

Green spaces balance built and natural sections of the city. In early definitions, they are recognized as 'extension of nature', on the basis of the studies on ecology and biology. Since then, primarily they are seen as 'natural elements' of urban pattern on the one hand, however on the other hand, they are regarded as components of natural setting and life. Therefore, early approaches to green spaces focussed on 'protection' (Cranz, 1989, cited in Bingöl, 2006) [6]. This approach dominated the early phases of industrial revolution, by the time urban parks first emerged, in mid-19th century. Such a sensitivity later disappeared until the recent times with the discussions on environmental issues and sustainability; therefore 'ecological emphasis' returned to the agenda related to urban green space [1].

The form, function and meaning of green space have been shaped through changing emphasises and have influenced the definition, design and creation processes. We will concentrate on the environmental emphasis in this paper. The issues –which we will discuss– draw a sketch on the conflict of being an extension of nature and being urban space, which is critical to our discussion in this study. Considering the definition process, three main issues occur on urban green space [1]: (1) the size in relation with the influence area; (2) the degree of independence for the green space with reference to urban spatial pattern; (3) the function and meaning of the green space in relation with the rest of the city [a buffer zone or a transition zone].

Parks	Housing unit addressed	Allocation unit to be built	Size
Neighbourhood park	700–1000	Primary School	1-4 ha
Community park	1000–5000	District / province	4-20 ha
Metropolitan park	5000–10000	Urban	20-50 ha
Regional park	20000–30000	Region	Over 200 ha

Table 1. Locations and Criteria for Green Areas

(Tümer, 1976 cited in Özkır, 2007: 12)

While defining urban green space, defining its size with the hinterland is the first critical choice. Mainly, parks are defined at four scales in the literature as [14]: (i) neighbourhood park –*mahalle parkı*, (ii) urban community park –*semt parkı*, (iii) urban metropolitan park –*kent parkı*, regional park –*bölge parkı* (see Table.1). Neighbourhood parks are defined as small spaces around the housing units which are reached on foot; inhabitants of the neighbourhood come together and socialize, recreate themselves via small scale active and/or passive activities [14]. They are usually located near to primary schools providing a platform for daily micro scale recreational activities, especially for children. 1 ha of neighbourhood park is recommended for a population of 1000 people. They usually consist of playgrounds, sitting areas (benches), tables, spaces for table tennis and picnics (Gold, 1980, cited in Özkır, 2007). The accessibility of the park should be between 500 m and 1 km (Whitfield, 2001, cited in Özkır, 2007) [14].

Community parks, similarly enable micro activities, especially sports facilities with arenas, water surfaces, swimming pools, walking paths and large open spaces. They are usually designed adjacent to secondary schools and high schools, and comprise of several recreational facilities not exist in neighbourhood parks. It should be preferably at least 8 ha, and 1 ha is recommended for 1000 people; they are usually experienced by youth having multifunctional spaces; and should be located at 2-3 km distance from housing areas. Metropolitan or urban parks present a refugee from the chaotic atmosphere of urban daily life. They should be located at or adjacent to the centre however should present a relatively natural environment; 12 ha is recommended for 1000 people and 40 ha is targeted at least. They usually service the whole or a great part of the city, 50 000 – 100 000 people, in a 30-minute car ride from different sections of the city. They usually comprise of forestry, groves, various spaces characterized by the changing topographic elements with water resources, all of which enable swimming, camping, boating, fishing, picnicking, walking and horse riding. By definition such spaces should occur as the nodes of urban spatial patterning, where a wide range of population contact with the nature and with each other within the spatial patterning of urban space and daily life [14]. In Turkey, republican

parks and youth parks appeared in this category in the establishment process of Turkish Republic [15]. Botanic gardens, zoos, amusement parks and historical-cultural parks forms the different categories of urban parks. Regional parks serve a greater region and population who visit the space usually at weekends and/or holidays, within a one hour ride; 50 ha is recommended for 1000 people. Designing a regional park should be a subject of not only urban planning or design but also regional planning. Such spaces are usually expected to have an authentic nature near to rivers, lakes and therefore having areas for camping, natural centres, pedestrian path systems, water surfaces, botanic gardens with probably macro scale sports facilities. These parks should enable parking, organizations for massive users and planning of their stays and activities, resources for camping, trekking, picnicking [14].

The second issue on the definition of green space is 'the degree of independence' within urban spatial pattern. This indicates the duality between being a target itself and being perceived as a tool. The ecological perspectives consider the green spaces as targets not tools since the nature is prior to urban areas. Such an assumption leads to a design which considers the continuity of green spaces and natural environment within urban spatial patterning. If the designer conceives the green space as a tool, then green spaces are instrumentalised in order to facilitate urban development, so the urban space and built environment is prioritized. This issue can be related with anti-urban utopias, which appeared as products of the modernist era. During this era, utopias appeared in mainly two channels; one is anti-urban, the other channel is urban friendly utopias. Howard's *Garden City* and Wright's *Broadacre City* were in the category of anti-urban utopias. Howard's green belt approach regarded green space as separating element to protect urban development, which indicates another type of instrumentalism of urban green. On the other hand, Le Corbusier, in his *Radiant City – Le City Radiant*, proposed urban green space as an integrating element in spatial pattern [1].

Third issue, in relation with the second one, is the function attributed to the green space: either as an integrative socio-spatial component (i.e. transition zone) or a separator spatial component (i.e. buffer zone). If urban green is considered as a buffer zone, as in the cases of anti-urban utopias, they protect one region from the defeats of another region such as noise, pollution, crowds, vehicles, etc. These three issues on definition influenced the main approaches for design process appeared in early 20th century, as a part of modernist utopian ideals and comprehensive planning as well. Design process also has three main issues: (1) designing green spaces either holistically or incrementally; (2) seeing urban green as a part of anti-urban utopia protecting natural environment or urban friendly utopia supporting urban development; (3) would the designer benefit from natural inputs of the area and protect the authentic natural character of the space by leaving the aura untouched or should he/she interfere the natural space by artificial physical elements such as ponds, waterfalls, and other inputs of built environment (İlkay, 2016). The first modernist utopias –either anti-urban or urban friendly– defended the holistic approaches, such as green belts, green wedge, green networks, and greenways. For example, the ideal of green belt in Howard's *Garden City* was planned to surround the city and separate the

urban settlement with the nature, and if necessary new satellite towns would be constructed out of this belt [16]; [17]; [12]; [13].

On the basis of definition and design, creation process also has three decision issues. First, the types of activities (passive or active) should be decided in relation with spatial organization of the green space. This issue also brings about the boundaries of freedom of action for the users, either they will be oriented by the spatial pattern or they will be free and be let to make their own choices about the spatial experience. Second issue is the system of paths enabling and framing who will access the space at which degrees, which has both physical and symbolic dimensions. The locations of entrances within their specific forms, symbolic-spatial components such as statues, tents, other psychical determiners addressing specific users' preferences and political stands, and elements enabling various activities such as basketball-volleyball fields, playgrounds, amphitheatres, arenas for political activities, and other entertainment facilities. Such physical elements indicate who is invited to the park, and who is not. The use of budget is the third issue during the creation process. This is related with how much money would be used for which site of the green space and to what extent would the creator interfere the natural environment to create built environment. Such decisions indicate the green policy of both the central and local politicians, designers, architects, planners; at that point, such actors decide on: how much of the resources will be reserved for natural environment (i.e. planting trees and other vegetation, protection of soil and existing natural landscape, and protecting or creating water sources) and how much will be spared for the built environment (i.e. constructing concrete ground, components such as benches, pergola, tables, picnic platforms and amphitheatres); what kind of material will be used during the construction: relatively natural based material or harmful but cheaper material during the construction of pavements, benches, lighting, and any constructions on soil [1].

As the last issue within creation process, the provision of the green space comes to the forefront. Opening ceremonies, the naming processes and advertisements indicate the hegemonic and political struggles on and at urban green space. This issue indicates the approach of the party in power to the space: whether they evaluate the green space as 'a gift to the inhabitants' or 'a social project' or 'a political or economic bribe' –*rüşvet*, which is usually a part of the general spatial policy of the government. 'How they see the green space in the urban pattern' is a critical point within this policy: which role they provide to the green space –whether a public space where citizens come together and interact with nature or a stage and subject of political struggles having symbolic content beginning from the name attributed to the area. Urban green space is provided either a (relatively) natural component of spatial layout or a physical–symbolic tool to ease the provision of specific projects of housing or public spaces for the sake of economic or political rent, which has increased recently indicating the shift from use value to exchange value.

All these issues imply the role and function attributed to the urban green space within both spatial pattern and social organization. In the next sub-heading, the recent modes of reproducing such spaces will be discussed in

the case of Ankara, with reference to the PhD research study of the writer, held between 2010 and 2016. Generally, the urban green space has been regarded as an economic tool to increase the economic value of housing sites, which can be traced by analysing the advertisements of urban transformation and renewal projects, or/and a political tool to justify spatial policies of party in power or/and shaping the social composition of urban parks through deciding on who will access to the space to what extent and what will be experienced at the space.

Recent Modes of (Re)Production of Urban Green in Ankara

By 1970s, welfare state was observed to be collapsed. Turkey has experienced the effects of this process by 1980; the distributive politics shifted to identity politics and neoliberal urbanization got on the stage. Ankara, which has been a critical stage and subject of Turkish modernization project (since the establishment of nation state in 1920s) lost its significance vis-à-vis İstanbul; the pattern of public spaces and green areas has been deformed probably since they were products of the first planning experiences of Ankara and Turkish Republic, which denied the spatial-institutional heritage Ottoman Empire. Especially after mid 1990s, the historical content and representational potentials of open public spaces and green areas of Ankara have been attacked. What are the boundaries and mechanisms of such a transformation? How does urban green function in Ankara today? What motivates the government, and designers to produce urban green space recently? Balaban (2002) mentions two significant sub-eras which shaped the urbanization in Turkey by 1980s [18]: (a) 'decentralization of authority' and (b) 'recentralization of authority' since 2002. In this second sub-era 'deregulation' and 'liberalization' processed dominated the urban transformation and development mechanisms.

Moreover, Turkish planning system was fragmented via several responsible institutions whose authority conflicts and various legal regulations which are too complex to follow and implement [19]. In addition to these phenomena, identity politics replaced distributional politics and class policies. Within this frame, urban space has gained a new meaning and significance in urban development and transformation mechanisms and processes: (1) urban space as 'a policy instrument' [i.e. being a part of the macro-politics such as world city]; (2) urban space as 'a context of policy' [i.e. problems which are particular to urban space such as poverty, exclusion, gentrification, transportation]; (3) urban space as 'a site of policy' [i.e. administrative dimension such as 'governance'] [20].

Eventually, this sub-section aims to answer how far urban green space has retired its origin and natural form in the case of Ankara, and this examination is based on the meso-analysis conducted during the PhD research of the writer, which is finished in 2016 [1]. During this research, site observations between the years of 2009 and 2015 were conducted in several urban and neighbourhood parks; several reports of municipal councils were analysed with reference to legal de-regulations; and in depth interviews held in park areas were evaluated. Examinations within the meso-analysis indicated that urban green space in Ankara has displayed a similar tendency to the frame

which Bayırbağ (2010) presented for general urban space. Urban green space has shone out as a 'tool' with reference to the Bayırbağ's frame within three representational modes of production: (i) urban green space was 'attached' to urban transformation projects and housing sites so that it appeared as 'a policy instrument' in such cases in order to increase the 'exchange value' of the developed urban space and built environment; (ii) urban green space as 'context of policy' resulted in a fragmentation and decrease in spatial quality; (iii) urban green space as 'site of policy' which emphasized the political and representational dimensions of the space.

Recently constructed urban parks in Ankara are examples of the first mode, such as Ankapark, Göksu Park, Harikalar Diyarı. These parks are large parks which seem to service all the city, however usually were placed at peripheries and generally address the adjacent neighbourhoods, which conflicts with the definition of 'urban park'. Moreover, the metropolitan municipality has interfered the historically valuable urban parks of Ankara (which have become significant components of urban spatial pattern) also indicated the first mode. Some attampts to capture Eymir Gölü, the increase in built environment in the case of Mogan Lake, and other spatial re-organizations at Dikmen Valley, Hatip Brook, Atatürk Forest Farm, Gençlik Park and Güvenpark, all implies the shift of urban green space from being either a natural space or a large recreational area to a tool to develop built environment and enhance housing sites. In some cases, the green space occurred to be an attachment to the housing projects so that to increase the exchange value and the legitimacy of the urban renewal and transformation policies –such as in the case of the opening ceremony at Mamak Urban Renewal on 23.05.2015. In that case, Hatip Çayı Park, as a pseudo-urban green space, was seen to be attached to the project and presented within a political target to provide a platform for the prime minister of that time, Davudoğlu, to make a political propaganda before the general elections in June, 2015. Furthermore, the places of the inhabitants were determined during a lot on that day. In another example, Ankapark, which was designed at the site of Atatürk Forest Farm, was presented to the public although the construction was not over and it appeared as a new form of recreational, large, green space in the context of Turkey, which can be regarded as a re-definition attempt organized by the hegemonic spatial policy and the party in power [1].

The second mode refers the technical content of the discussion; urban green space has gradually turned out to be a built and fragmented spatial unit within decades and the natural dimension was left aside; the built environment was put forward. As explained in the conflict between the dimensions of being an extension of nature and being an urban open space, green space transformed to be a pseudo-green and was reduced to being a technical issue within planning discipline via green standards in Turkish case. As an urban problem, it is assumed that a specific number of people would reach a specific m^2 of green within their neighbourhoods and urban areas. An attempt to determine such a numerical value is worthwhile, however it is not enough; since, the in-depth interviews and observations displayed that various groups experience green areas within several needs and desires, and having differentiated values, mind-sets, symbols, political and social stances. Therefore, in-depth

analyses should be done to map what kind of green spaces are necessitated where, which is lacking in recent reproduction approaches. Moreover, urban green areas are not solely for the people, they are critical spatial units for the city as well. Therefore, they should be planned and designed within a holistic manner, not as incremental projects attached to other spatial projects which come to the fore with respect to exchange value. The natural dimension of the urban green space should urgently be revisited with reference to the urban utopias probably and some modernist concepts; or new concepts should be developed [21]. Therefore, the quantity and the quality of urban green space has been reduced as a result of three sets of transformations: (1) The urban green space was designed and formulated within a concern to ensure the standards defined in the development law, however they are never supplied fully. And the needs of the different inhabitants are not considered, since the design and construction process of urban green space are regarded as solely technical; although urban green has social and political dimensions. (2) The holistic approach was quitted, which led to fragmentation in urban areas and social compositions; and this attempt also supports the symbolic struggles at or on urban green space. Rather, such spaces should be designed to unite the society not fragment them by highlighting differences of identity. (3) The legal and institutional frame is so fragmented that it cultivates the conflicts of power among the local and central institutions, which damages the integrity and collectivity of urban open spaces and green areas. All of these changes of the technical issues indicate a kind of fragmentation of both the spatial pattern of the city and the social organization of the public.

As the last mode, urban green space appeared to be ‘a policy site’ as in the case of opening ceremony of Mamak Hatip Çayı Park in 2015. The micro analyses held in the PhD thesis also indicated a similar tendency in neighbourhood parks, where opposite groups mark the site with their specific symbols and experiences (such as iftar tents in Gençlik Park, Altınpark, police power in Güvenpark, or particular NGO’s buildings, etc.) [1].

CONCLUSION: Rejecting Current Planning Practice at ‘Urban Green Space’

(Ward) Thompsan (2002) asks the question “what should be demanded from urban open space in the 21st century?” [22]. She gives priority to the concepts of nature and sustainability; and then discusses the criterion of cultural diversity and the role of urban green areas as public spaces. She regards such spaces as platforms for expression of both personal and cultural diversity and gives priority to the issues of democratic provision within accessibility [22]. This emphasis indicates the public space dimension of urban green space, which is valuable indeed. However, this is not enough. As defined at the very beginning of this paper, urban green space is (an extension of) nature, an open urban space and a public space. Therefore, public character is only one dimension of this trivet.

As examined in the paper, the natural origin of urban green space has been ruptured gradually within decades so that the balance of natural and built has been under attack. Therefore, under recent neo-liberal spatial policies and

reproduction processes, the question occurs as how we relate natural and built spatial entities both as a design approach and a political problem. Urban green is defined, designed and created via three modes of reproduction: (1) as ‘a policy instrument’ attached to urban transformation projects; (2) as ‘a context of policy’ implying a fragmentation and decrease in quality; and (3) as ‘a site of policy’ highlighted the representational dimension of urban green, all of which indicates the shift in definition of urban green from a natural to a political entity.

What should be done? Firstly, the use value and the profile of users should determine the types and forms of urban parks, even a neighbourhood park or a regional park, not the urban rent at all. Moreover, the standards defined in the Development Law and codes are significant but not sufficient; each and every location and neighbourhood has its own characteristics and user profile. Therefore, the standards should be determined locally beyond the quantity criteria such as 10 m^2 / person rather the urban green space should be designed and conceived in relation with both ‘nature’ and ‘urban’ with respect to the social-spatial needs specific to the area. Secondly, although the urban green space supports urban spatial pattern, it should be evaluated as an independent spatial entity to some extent, since it is located at the intersection of urban and nature. We should re-invite nature to the city through providing the continuity of urban green. Revisiting urban utopias, urban green space should be re-designed as an integrative spatial-component; holistic solutions should be adopted within an ecological perspective. Thirdly, although the symbolic-political content of urban green cannot (and should not) be ignored and destroyed, however the natural dimension should be re-invited as well. Therefore, the fragmentation of planning should be removed, use value should be re-integrated to spatial reproduction mechanisms, and the local needs and justice of accessibility of several classes and identities should be supplied. Unless, the ‘green’ is highlighted within ‘urban’, then there will be no urban space left one day.

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EVALUATION OF SOCIAL HOUSING PRODUCTION IN ISTANBUL ON THE IMPROVEMENT OF LIFE QUALITY

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ABSTRACT

In the city life, quality of life is determined by the interaction of social, economic and physical environment, and is directly related to the decision and implementation of the central and local decision-makers. A municipality that serves the urban population has important duties and responsibilities related to quality of life. Municipalities in fulfilling these responsibilities, obviously it is clear that they stay insufficient. The emergence of slums and the formation of an infra- structure and unhealthy environment is an example. Slum areas which are thought to give a modern image are the target of various urban renewal projects. As a result, today, through the state and municipalities to find solutions to the housing problems of low income and to prevent squatters and to improve the city's quality of life is produced social housing. This article is the result of a study which sought to evaluate how the resettled residents had adapted to their new houses in Istanbul. The goal of this study is to examine the impact that social housing productions based on squatter housing demolition in Istanbul have had on their residents' quality of life. In the study, based on the demolition of slum housing production, the production of social housing in other words, intended to put forward their impact on quality of life of slum owners. The scope of the study is to examine the effects on quality of life of householders based on squatter housing demolition on the urban squatters. As a result of this study, considering further steps to be taken to ensure the disposal and indicate the need for an approach to improve the effectiveness and efficiency of social housing production is important.

Key Words: Life Quality, Social Housing, Relocation; Slum, Slum Demolition.

INTRODUCTION

In the world, especially in the developed countries, it is observed that the housing environments towards the end of the 1970's have created an atmosphere of discomfort and dissatisfaction on people [1].

Because of the versatility of the housing, such problems can be solved only through the determination of the needs of the user group or participation in decisions, consultation at the programming stage, and post-use evaluation studies [2].

Today, changing living conditions have changed people's expectations and priorities in life. The residence and its immediate surroundings are of sufficient quality that the individual and his / her family can meet the physical and psychosocial needs and satisfy the user. The user's requirements need to be well-known for this [3]. One of the goals selected by world leaders in 2000 was to improve the lives of at least 100 million people living in shanty towns [4].

From the twentieth century onwards, the rapid and crooked development and growth of cities have led to a decline in the quality of life of the city's inhabitants. Individuals living in the city decreased in their sense of belonging and loyalty to the city.

Increasing living standards in the world and the desire to live in common social spaces shared by people have increased the quality trends and expectations [5].

Although this issue is not expressed very clearly in Turkey, it can be diagnosed by the "Gecekondu Law" numbered 775, which entered into force in 1966 about 200-250 years after Europe [6-9].

As a result, today, through the state and municipalities, social housing has begun to be produced to find solutions to the housing problem of the low incomes and to prevent the slums and to increase the life quality of the city.

In this context, the social housing produced by the Istanbul Metropolitan Municipal Housing Directorate is examined in detail from the implementation phase and a general evaluation is made about the residences.The changes in the quality of life of slum dwellers that have to move to these dwellings are discussed.

The Concept of Life Quality

Since 1930, quality of life has been the subject of study by researchers from various disciplines. These researchers tried to describe the quality of life components. They compared the geographical areas such as cities, regions and countries with the quality of life indexes they developed [10].

Today, the issue of quality of life is on the agenda of institutions and organizations in the global and regional level, central and local governments. Local, national and global policies are directed towards better living conditions through quality of life research [11].

In recent years, quality of life research has been developed to analyze the components of quality of life and to understand the issues that affect quality of life. Surveys of living quality far exceeded the sorting of a city by its economic status [4].

The quality of life is the focus of many studies. However, there is no consensus on how to define it. There are more than a hundred definitions in the literature [12]. While quality of life is defined on bad terms, the focus is on basic needs such as business food, accommodation and security. On the other hand, in good terms the definition of quality of life, access to entertainment and recreation facilities is expanding to include a happy society, a clean environment, and a successful personal and professional life [13].

The measurement of quality of life has been widely discussed for a long time and there is still no standardized measurement. The quality of life is measured by different methods in different researches and the research scales are different in this direction [14-19]. There is no consensus on the type and criteria of the indicators to be used in measuring the quality of life [11]. Factors related to the quality of life can change according to the conditions of cities, cultures and over time [20].

In recent years, research on urban quality of life has increased rapidly in developed countries, while it has progressed more slowly in developing countries. The quality of life studies in Turkey have not started simultaneously with the West and have not progressed at the same pace [21].

The concept of quality of life in Turkey is also included in the five-year development plans. It is mentioned that in the Tenth Five-Year Development Plan (2014-2018), priority will be given to transformation projects that increase the quality of life extensively [22]. But with regard to the problem of housing development plans brought to the principles, policies and measures were not applied enough, along with the speed of urbanization problems also increased [23].

As a result, approaches to the concept of quality of life in different researches vary according to purpose, method and scale. It is not possible to make a generalization about the scale at which the quality of life indicators will be assessed.

Social Housing Projects

For the first time, the housing constraint that emerged after World War I forced states to think about the solution of the housing problem [24]. Public intervention in this area has led to the emergence of social housing throughout the world [25]. Social housing type practices in developing countries have begun with the policy of placing people in healthy houses that have been damaged by the devastating activities of governments [26].

In the literature, it is seen that the social dwelling is named with many names such as state dwelling, public dwelling, core dwelling. Social housing is affordable to the poorest or low-income families in the least size and standardized to meet the needs of housing [27].

Developed countries have solved the problem of housing with the social housing policies that they put into practice since World War II [28]. On the other hand, the number of residences produced for the low incomes remains one of the most important problems in developed and developing countries worldwide [24-29].

There are common aspects of social housing practices in developed countries, and there is no standard social housing practice and policy that applies equally in each country [30]In some countries, only the poorest segment of the population can benefit from these residences, while in some countries low-wage segments and in some countries, middle-income segments can benefit from them [25-31].

Starting in 1980s, social housing activities as a part of the social policies of developing countries have gradually begun. Different developmental trends have been observed for each country. However, the number of developing countries active in this area and the prominence in the housing policies of social housing is continuously increasing [25].

It can not be said that the reflection of the evolution of Turkey and its planning approaches and methods in Europe and America is positive. Most projects are not successful because they have been copied and applied from the West without regard to local features [32].

From 2003 until today, there have been significant changes in responsible actors in housing policies in Turkey. TOKI has become the most authoritative institution in the housing policies in the country [33-34].

The metropolitan municipalities have become a very important actor in the recent years about housing production and the works of the Housing Directorate, which continues its activities under the Istanbul Metropolitan Municipality, draw attention.

The main goals of the directorate are summarized as the owners of the social housing schemes are not victimized so that the provision of social equilibrium is transformed into living spaces [35].

Between 1988 and 2013, 4606 squatters were dismantled in 465 projects within 25 years. Approximately 10.638 houses were produced. Approximately 3,381 shanties were allocated to the owners of the houses. The Housing Directorate allocates the social housing that is available and ready to be acquired when building social housing for the shanty house owners. In this process, it can be allocated to a social housing in a different district [35].

Figure 1. Demolition of a Gecekondu and Move in the Slums

In addition to the social housing, the directorate also has children playgrounds, parks, gardens, green areas, indoor and outdoor sports halls, indoor sports halls, environmental regulations, afforestation work.

Figure 2. Social Reinforcement Projects Density Map (1995-2013)

Methodology

The universe of the research is the slum dwellers who are transported to the social dwellings produced within the scope of housing studies produced by Istanbul Metropolitan Municipality for the shanty owners. Istanbul Metropolitan Municipality Housing Directorate has realized social housing production in many districts. From the point of view of number of houses, the most social housing is produced in Pendik, Eyüp, Güngören, Kâğıthane, Kartal, Esenler, Şişli districts. The sample of the study was formed as the result of the data obtained from the stage. Social housing in Eyüp Kartal and Şişli districts has been determined as a sampling area.

Figure 3. Social Housing Areas Produced By the Municipality in Istanbul

In this study, random sampling technique was used on the basis of cluster sampling. After the data collection process, questionnaires were prepared and a pilot questionnaire was made, the questionnaires were updated in line with the obtained results and the preparations for the implementation of the questionnaires were completed. During the interview, questions were raised about revealing the point of view of the quality of life and comparing before and after social housing promotion. In this context, the study focuses on 7 basic categories consisting of (1) life situation, (2) physical factors, (3) environmental factors, (4) social comparisons, (5) access to services, (6) economic factors.

Questionnaires were formed with the research model and the pilot questionnaire was completed and the questions were finalized. A total of 506 households were interviewed. From the beginning, many corrections have been made in the studies related to the questionnaire and the final form of the survey was taken on February 26, 2016. In order to provide evidence of the reliability and homogeneity of the scale, the general reliability coefficient was calculated using the SPSS program. Crα = 0.958. This value is a high value in terms of the Reliability Scale and indicates that the scale used in the survey is "highly reliable".

Findings and Evaluation

In the survey, participants were asked about basic characteristics such as age, gender, marital status, educational status, birthplace occupation, monthly average income. Factor, cross and mean analyzes were used to define participants' general knowledge and level of satisfaction.

Nearly half of the respondents are between the ages of 36 and 55. The hometown of the respondents respectively; maximum Black Sea (about half of surveyed households from almost every province), Eastern Anatolia (from almost every province) and Central Anatolia region. According to gender status, 40.3% (204 people) of the respondents were male and 59.7% (302 persons) were women. More than half of the participants are elementary and

junior high school graduates. This result shows that more than half of the shanty households do not continue to educate high school and over. The majority of participants are married. Since more than half of the respondents are women, it is normal for the housewife rate to be close to half of those surveyed. Workers and pensioners have also a certain place in social housing. More than half of the households living in social housing are supported by the work of one person. Approximately one in four people is provided with the work of two people.

Family size ratio living in shantytown and family size ratio living in social housing are almost the same as family size of 5 persons. It has been found out that the family size in the slums is higher in households with 6 and larger size. It is found out that the number of families living in social housing is higher in family sizes of 4 and less. According to the results of the survey, it is understood that after moving to the social housing, the decrease in the family size has relatively begun to occur. Almost all the respondents have a washing machine. All rooms are equipped with a dishwasher. Half of the participants have computer and internet access at home. Credit card, monthly pay TV broadcasting and car ownership rate is low.

Participants stated that quality living is mostly in a safe (22.3%) living in a city with no livelihood (20.9%) health (14.7%) and with a good social network (11.2%). According to the majority of participants, the ideal residence should be in a place with gardens and a view close to the monolithic center and to gain value in the future. More than half of the participants do not want to move from social housing. Four of the participants want to move. Participants express the need for a bigger and more comfortable home because of the desire to move. Participants are mainly satisfied with the social housing life. Almost half of the participants stated that they were generally satisfied with the services of the municipality. Those who think that the participants are economically profitable and those who think that they are not profitable are mostly in the same place.

The participants stated that they had the greatest number of neighborhoods, green areas and transportation problems in their social house lives.

In the direction of research results, it is seen that there is overall progress in relation to physical, environmental, access to services and overall satisfaction. It is seen that there is a decline in social relations and economic situation.

CONCLUSION

Increasing world population, inefficient consumption of resources, increasing human life and quality of life for each individual due to destruction in natural areas is getting more and more important day by day. Despite adverse conditions, serious work is being done to ease life and improve the quality of life on a global, national and local scale. With the problem of the welfare caused by the destructive effect of World War II on European countries, social state understanding and social housing practices came to the forefront and spread to the whole world afterwards.

The purpose of this study is to determine the characteristics of the allocation of social housing to contribute to the quality of life of slum dwellers and to apply these characteristics in the social housing areas to be produced by solving the relation between the increase of living quality and the social housing budget. Towards this end, it has been the primary goal of studying how quality of life is perceived in terms of demographic characteristics and how life quality changes are positively related.

Central and local governments have initiated many activities to prevent problems such as unemployment, economic problems, housing, infrastructure deficiencies, and uneven urbanization that have arisen due to rapid urbanization in Turkey. These studies, where housing demand is one of the first targets, show that quantitative qualification is on the foreground, while discourses are carried out in improving activities related to environment and quality of life. Until recently, it has been observed that the solution of the problem is expressed in numbers and the solution ways are searched, and today, it is frequently encountered with the numbers that present living conditions can be improved with such projects.

Improvement of living conditions, one of the main areas of interest of local and central decision makers, causes changes in perceptions. Decision makers are trying to determine which conditions of life quality will be preferred. Policies and plans that focus on healing in life are being made quickly, so, some negative effects are preventing the improvement in living conditions.

One of the consequences of rapid urbanization, the struggle with the shanty house is now on the agenda as the transformation of the slum areas. Along with this transformation, it has become a priority to improve the living conditions of the slum areas and the healthy structure of the slum areas. Considering that the number of gecekondu in Turkey is considerably within the total number of housing, the issue of housing is still an important issue.

Local governments have a very important place in quality of life studies. In order to increase the quality of life in social housing to be produced by local governments, indicators should be determined on each scale. The municipalities should demonstrate a holistic approach to these indicators by cooperating with other institutions such as universities, trade unions. Thus, living conditions in every sense can be improved. There are no quality-of-life indicators set by the Istanbul Metropolitan Municipality on social housing production. Particularly in the areas to be demolished, it is necessary to carry out repetitive studies to be formed considering the demographic structure.

The solutions and applications related to the housing problem that emerged along with the daily unfolding urbanization will continue in the future. The solution of these problems and the success of the institutions go hand in hand with participants and actors coming together and taking into consideration the current conditions.

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PART 3

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REJECTING
REVERSING
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REVERSING ARCHITECTURE - THE HIGH LINE AND THE LOWLINE PROJECTS AS BIOPHILIC SPACES

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ABSTRACT

This study, prepared under Livenarch 2017 with the theme of Rejecting / Reversing Architecture being debated, evaluates the biographical design framework of the two crushing projects that can be described as new empirical studies for the individual's urban experience. The High Line and the Lowline projects in New York, point to alternatives to producing more livable spaces in high-density urban areas, as well as overturning epistemological perceptions such as architecture-green tissue, urban space-natural space, and under-over-ground.

In the context of the study, biophilic design criteria will be used when evaluating the Lowline and The High Line projects. As a field of sustainable design, biophilic design seeks to maintain the human-nature interaction in the built environment. Biophilic design is a concept derived from the biophilia hypothesis which Wilson expressed as "inherent human inclination to affiliate with nature" describes the types of relationships that people establish with nature.

The aim of this study is to examine the design of alternative biophilic public spaces that emerged when the areas of urban expansion spreading towards their periphery began to become insufficient for the increasingly urban population. With this goal, two successful experimental projects that offer an unusual urban experience will be addressed through biophilic design. While studying human nature interaction in the High Line project; the current status of the Lowline project will be assessed and biophilic design recommendations related to the development of the design will be presented.

Key Words: Biophilic Design, High Line, Lowline, Public Space, Reversing Architecture.

INTRODUCTION

One of the biggest problems today in crowded megacities is to create more humane and livable environments. As a part of nature for thousands of years, people who have lived with nature have come to the point of breaking away from the nature in modern times. On the other hand, the need for nature is still seen in their activities in everyday life. Because of the lack of interaction with nature, individuals' psychological and physical health is affected in the worst way. With the genetic blundering of the biophilia from generation to generation, modern humans have become confused about the necessity of nature and the need to meet it, and have faced diseases that it has not been able to find out the reason. However, it is observed in certain studies that the symptoms of health problems are decreasing when the human needs for nature are met.

Construction processes which seemed to be endless and the architectural consumption, which constantly fills the meaningful gaps of the city, have begun to transform the dystopias of the age into reality. At this point, it is necessary to reverse the architecture by taking advantage of the layered urban structure and to look for what is unusual by leaving the known assumptions aside. In intensive architectural pattern, creating spaces that open the individual up to the nature and to vague spatial relations that are not strictly boundaries begins to move out of the moulds.

Research was conducted to gain an understanding of specific infrastructures that have been repurposed in New York City and transformed into a biophilic public space. Through this review, two experimental projects, the High Line and the Lowline project were selected. The reason for selecting these two examples is that they both overturn the usual spatial relationships such as architecture-nature, above-below and natural-artificial.

The High Line project, which is the transformation of an old railway in New York into a public park, offers an unusual urban experience in the city, where the pace and intensity of everyday life are enormous, in the presence of the Hudson River view. The linear park, consisting of viewing terraces, hiking bands, water objects and seating items on the line, symbolizes the transition of an important heritage of industrial history of the city to an important recreation layer of urban life.

The Lowline project, which is also the world's first underground park in New York, aims to transform an abandoned old tram terminal into a public green space. To achieve this goal, the laboratory, established in an abandoned market, has already reached 100,000 visitors, demonstrating the possibility of an underground public space thanks to the new solar technologies.

In these special cases, published documents pertaining to the project were examined and a case study analysis of each project was derived. The analysis describes them under the biophilic headings such as: environmental features, natural shapes and forms, natural patterns and processes, light and space, place-based relationships, evolved human-nature relationships.

An Unending Utopia

The concept of "livable city" has many different parameters. Nevertheless, as a result of a rapid brain storming, it is possible to assume that a city where all kinds of access to basic rights such as health, education, law are possible, where there is sufficient accommodation, where collective and private transportation works well, cultural and social communication is possible, where historical values can be preserved and where people can access to nature is livable. According to the international documents, meetings and academic studies carried out within the subject, the concept of sustainability corresponds to some principles and values compiled under the general headings of ecology, land use, transportation, public spaces, health, safety, design, education, culture and economic development [1].

In the literature, the cities that aim to accommodate these principles and values are expressed in different terms such as "sustainable city", "fair city", "creative city", "healthy city", "eco city", "smart city" [2]. But it is clear that all these terms are rooted in the goal of keeping the quality of life at the highest level of the inhabitants of the city. Actually; a long, fair, healthy, happy, comfortable life imagination and the reflection of this imaginary city in its physical texture has been thought for a long time. All these thoughts and dreams are just utopias until the day they are to be realized.

The utopia concept first used in the work "Utopia", written by Thomas More in 1516, means "good place" by adding the Greek words "topos" (place) and "eu" (good) to the prefix "ou" (non) [3]. According to Mannheim, the utopia, defined in the dictionary as "impossible draft or thought" [4], is "a system of thinking that is contrary to the present situation and is presently in place" [5]. In general, utopias emphasize discontent about the present time and imagine a more ideal situation that has once existed in the past, or for the most part is predicted to exist in the future. However, some utopias can be seen as negative future scenarios as opposed to "ideal" and "better" dreams and are described as "dystopia" [6].

Utopia and dystopias have been influential in the shaping of the space throughout history. Efforts to reach the dreamed place or via versa to prevent an undesirable future have enabled the questioning of existing spatial relationships and the establishment of new spatial relations that are thought to be impossible at all and the realization of imaginary designs. The academic studies show that the search for a world that is not possible in the present, but for which man is eager to exist, extends to Egyptian and Sumerian epics [7] [8]. However, it is generally accepted that utopia writing emerged in the 16th century together with modernity. From the 16th century to the present day, it is seen that the concepts of city and housing are depicted in various forms in utopias shaped by different living conditions in each period. The reason for this is undoubtedly the continuous change of the social, economic and political conditions that affect the formation of the utopias.

In the utopias produced in the early 19th century (most known utopias by Thomas More, Tommaso Campanella, Francis Bacon), ideal cities are described as isolated, peaceful, naturally inhabited places where social equality can be ensured.

In the 19th century, as a negative reaction to the new production and consumption order created by the industrial revolution, to the crowded population in cities, irregular settlements, inadequate infrastructure, environmental pollution and social inequality; Robert Owen, Charles Fournier, Samuel Butler, William Morris, Ebenezer Howard, Étienne Cabet and Richardson have developed alternative life models. Edward Bellamy and Gillette, on the other hand, have embraced new technologies in their utopias, believing that the effects of the industrial revolution on the city can be resolved by technological developments.

In the 20st century, witnessed two wold wars, the first large-scale application of computers and the emergence of mass consumption, utopias have focused on the concepts of "technological developments", "temporality", "reproducibility" and “modularity”. Garnier, Le Corbusier, Milintin, Archigram, B. F. Skinner, Aldous Huxley, Ernest Callenbach and Ursula K. Le Guin produced the leading 20th century utopias.

In the 21st century, there are two major developments that shape the environment, lifestyles and therefore utopias. Among these, first is that computer technology, internet and rapid communication techniques are beginning to play a very active role in everyday life; the other is that the environmental problems have taken a situation that is irreversible. For this reason, the 21st century utopias have been shaped by the idea of virtual cities that can be added to the global communication system through information networks, and by the dream of "sustainable" physical environments that can sustain life even in natural catastrophes.

When the ideal living spaces described in all these utopias are examined, in search of almost all habitable environments from the 16th century to the present day, there can be seen a desire to establish a more intimate relationship between man and nature than is present. For example, in the More’s Utopia there are cities located on an island and garden works are the most popular and most important activities of the residents of the city. The Utopians, who looked carefully at their vineyards, flowers and fruit trees, made these hobbies almost a race [9]. Ebenezer Howard clearly emphasizes the importance of nature within the city by placing a large public park at the centre of Garden City, which he dreams of [10]. And also in Callenbach's Ecotopia [11], waterfalls, rocks, trees and ferns, even on the busiest boulevards, emphasize that this city is intertwined with nature (Figure 1). Despite the crowd, the city, where silence and bird sounds can be heard, seems to have solved the intense urban-nature dilemma.

However, the fact that every new utopia has repeatedly expressed the same longing to formulate a different solution proposal is an indication of the inability to reach the currently desired environment.

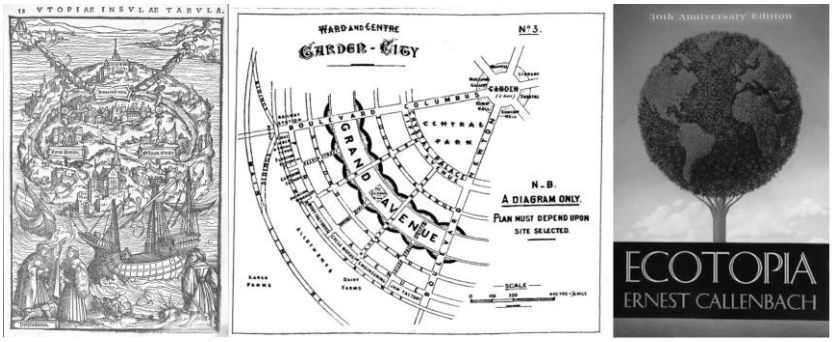

Figure 1. Left to Right: Thomas More-Utopia [9],
Ebenezer Howard- Garden city [10],
Ernest Callenbach- Ecotopia [11]

Biophilic Design and Human-Nature Interaction

Biophilic design is one of the design terms that have recently emerged to restore the diminishing relationship between man and nature. Although it seems like a utopia to return to nature, sustaining the human-nature relationship in the built environment will allow for the creation of more livable cities and spaces.

“Biophilic Design” term which is coined by Stephen Kellert is inspired by Biologist Edward O. Wilson’s the biophilia hypothesis that is defined as the inherent human inclination to affiliate with nature [12]. With this hypothesis, Wilson explains that human beings have biologically developed in nature with other living things for more than 99% of their existence but in the last few centuries with the modern urban life they became a part from nature. Disconnection from nature leads to several psychological and physiological problems [13]. On the contrary, the researches across a wide range of sectors support the contention that contact with nature has a profound impact on human fitness and quality of life [15].

As a colleague of Wilson, Stephen Kellert had an attempt to translate the notion of biophilia in to the design of the built environment. With this aim he listed the biophilic design attributes under 6 headings, to guide the designers. (Table 1) [14].These features are mainly categorized as “direct” and “indirect” experience of nature, “experience of space and place” [15].

Environmental Features	Direct relationship with natural air, daylight, plants, natural materials and colors, water, fire.
Natural Shapes and Forms	Symbolic and indirect relationships using organic forms (curved lines, biomimicry)
Natural Patterns and Processes	Incorporation of properties found in nature (sensory variability, growth, change, transition, organization principles)
Light and Space	Warm, reflected, filtered light, spaciousness, spatial variability and harmony
Place-Based Relationships	Geographic, ecological, historic and cultural connection to place
Evolved Human-Nature Relationships	Biologically based human affinities for the natural environment (prospect , refuge, security, curiosity, fear, awe)

Table 1. Biophilic Design Attributes and Explanations According to Kellert [14]

Unusual Biophilic Spaces: The High Line and the Lowline

Unfortunately, today, aside from applying the above-mentioned biophilic design principles, the architectural consumption, which seems to be endlessly and filling the city's significant gaps with more concrete, has begun to transform the dystopia of a never-ending age into reality. Especially in cities such as Istanbul, New York, Paris which are getting crowded every day and in which every square meter is becoming more valued, the human-nature relation is gradually decreasing. This can be seen in the simplest terms from the huge difference between the size of the space that should be used as the green space and the size of the green space actually used by citizens [16].

In sum, access to nature and the use of green space, which is the primary step in the human-nature relationship that forms the essence of biophilic design, is increasingly challenging in large cities. For this reason, new alternative solutions are needed for people who are looking for natural spaces that will provide rest and renewal in chaotic urban life.

Within intensive architectural pattern, creating places with more flexible spatial relationships that are natural and not rigid on the borders, begins with out of the molds. In this context, it is aimed to evaluate two unusual projects that reverse the architecture by taking advantage of the stratified structure of the city according to biophilic design attributes. For this purpose, the contributions made by the High Line and the Lowline projects, selected as alternative biophilic sites, in urban life in terms of strengthening the human-nature relationship will be revealed. As the Lowline project is still in its development phase, some design proposals will be determined according to the biophilic design elements.

The High Line Project and Its Biophilic Design Attributes

"A lot of people think it's this big architectural statement. It wasn't – it was really pulling-back from architecture", Ricardo Scofidio, about the High Line Park [17]

The High Line Project (Figure 2), which transforms an old railway in New York into a public park, into an urban landscape, offers an unusual urban experience in the city, where the everyday speed and intensity are enormous, accompanied by an unbroken Hudson River view. The train rail built above the street level to provide safer train transport in the early 1930s served to freight wagons carrying goods at an altitude equal to the third floors of the buildings until the 1980s. However, as a result of the functional transformations that have taken place in the region, factories have left their place to luxury residences, restaurants and galleries, and in the 1990s, rails that are no longer used have been damaged. As a result of this process, the owners of the land proposed a complete destruction of the railway, but it was decided that the local government, the local people and the private sector came together and decided to turn it into a new public place [18].

Figure 2. The High Line Project, New York [19]

Approximately 720 teams from 36 countries participated in the international architectural competition organized in 2003 for the transformation project was won by James Corner Field Operations and Diller Scofidio + Renfro. It is possible to access from various points of the city to the linear park, which is about 2.5 km long and includes many view terraces, hiking bands, water items and plants. Using tidal interaction between agriculture and architecture in the park; the floor applications, varying from hard to soft materials, were inspired by spontaneous landscaping formed over the railway spontaneously in the years when the rails lost their function [20].

The High-Line Project symbolizes the transition of a significant architectural heritage in terms of industrial history of the city to a biophilic public place, which is of great importance in terms of quality of urban life. The project, which transforms the traditional single-layer urban texture into a multi-layered urban experiment, is a design that reverses architecture as Ricardo Scofidio has mentioned [17]. Contrary to usual; an existing infrastructure has been transformed into a green space. The axle, which has been passed over for some time, has become an activity area to spend time for relaxing. The green area is not in the city but on the city; so to say in the sky. In the project, the boundary between architecture and nature is blurred. It is unclear where

architecture ends and nature begins. The architectural structure is the skeleton of natural space.

Although the idea of an upgraded linear park was rooted in the Paris-based Promenade Plantée, which dates back to 1993; it would not be wrong to say that this typology is consolidated with the High Line project and is beginning to spread all over the world. Today, Chicago, Philadelphia, San Francisco, Rotterdam, Seoul, Toronto and Mexico City have launched park projects located above the urban layer (Figure 3) [21]. The common goal underlying all of these projects is to create active green spaces that offer a different experience in the mentioned cities.

Figure 3. New Planned Elevated Parks around the World [21]

Environmental Features - Due to its outdoor location, the park has natural air and sunlight. Some parts of the park can be affected by the shades of the surrounding tall buildings at certain hours of the day. The park itself presents a view and vista for city, while the nearby Hudson River and the green area creates view for the park. For the flooring material, textured precast concrete planks and resin bound gravel are used with their natural stone appearance. Reclaimed wood and oversized timber sleepers are used for the seating units such as benches. An entertaining water feature is achieved by watering the slopped concrete pavement (Figure 4). Animal-human interaction is provided by endemic bird and insect species and the squirrels.

Natural Patterns and Processes - The gaps between the pre-cast concrete planks allow the plants to grow spontaneously. The paving units have tapered ends that comb into planting beds merge the transition of two materials. At some parts the paving units rise and curve to form the benches (Figure 4). The source of design inspiration comes from the growth of the organisms in nature. The navigation path of the park is angled with various dimensions rather than a straight line.

Figure 4. The High Line Project – Water Feature, Natural Shapes, Materials, Natural Patterns and Processes [22] [23]

Place-Based Relationships - Spontaneously grown plants are conserved with the ruined rails at some parts of the park. The historical heritage of the industrial iron structure is conserved (Figure 5).

Figure 5. The High Line Project – Place-Based Relationships [24] [25]

Evolved Human-Nature Relationships - Along the walking path, the small spaces with benches create personal refuge areas. These spaces help people to feel safe by creating bounded private areas within the public sphere. In some areas of the park, elevated platforms make it easier to observe the environment and watch the landscape.

The Lowline Project and Its Biophilic Design Attributes

Another unusual biophilic space developed to make the city more livable is the Lowline Project, which is the world's first underground park in New York (Figure 6).

The purpose of the project is to offer an unconventional solution for the transformation of the unused areas in the city by public consideration. The first target set in this context is the conversion of an abandoned old tram terminal, which has been in New York's least green area since 1948, to a public green space. To achieve this goal, the laboratory, which was established in an abandoned market, has already reached 100000 visitors, proving that it is not impossible for a public space that disrupts underground with a new solar technology. Thanks to the new solar energy technology developed by James Ramsey, the necessary wavelengths to support photosynthesis are delivered

to the ground to grow plants and trees. In September 2012, the Lowline team created a full-scale prototype of this technology in an abandoned depot for the "Imagining the Lowline" exhibition on the Lower East Side. The exhibition attracted thousands of visitors, was met by the press intensively, and eventually served as a proof of the concept [26].

Figure 6. The Lowline Project [26]

Now at an experimental level but promising with the study of the technology being tested, the Lowline is very close to being the first green public space under the city to be the predecessor of a new park typology. The project, which overturns the closed space-open space sensation, offers an alternative transformation for the lost areas by taking all the natural elements and artifacts under the ground that the body is accustomed to seeing and feeling on the ground. In addition, the project creates a good experimental process to create habitable areas that will shelter people in the future due to climate variations and pollution that cannot be avoided.

Environmental Features - Natural daylight is successfully transmitted to the underground by the help of technology. Natural ventilation is provided mechanically. Plants grow with transmitted sunlight. Natural materials are used in the design of the organic shaped plant bed. Natural materials and colors can also be evaluated in other structural elements in the design process. Another important biophilic design element - water, can be incorporated into the design process.

Natural Shapes - The plant beds resemble geological structures. The plants are hung to the tree-like columns. The light panels have an organic and dome-like shape. Due to the fact that the space is underground, technological or artificial nature elements such as lighted panels with nature images or projected images, can be evaluated in the design process.

Natural Patterns and Processes - The plants will grow and develop over time and create visual change and variability. The main solar panel is located at the center that creates a focal point. The transmitted daylight creates a dynamic contrast with the darkness of the background. Change and transformation attribute can be reflected to the design. Transitions between the spaces can be achieved by creating bounded and small spaces.

Light and Space - Despite the fact that the natural daylight is transferred to the interior, the visual perception can't go beyond artificial lighting. This feature can be augmented visually to look like the sky or the sun. The added artificial lighting, probably due to the lower level of illumination, can be arranged by means of illuminated stretched ceiling techniques to enhance this

mood. Because the space is underground, high ceiling and spaciousness are necessary. In this way, the space can create a positive feeling of natural underground cave called “cenote”. (Figure.7). As can be seen from the two figures on the left, the boundary walls with natural materials should be lighted in order to achieve a positive and spacious effect. In the Lowlinelab there is a more bleak and dramatic effect similar to the two figures on the right.

Figure 7. The Lowline Project – Natural Analogies with Cenote Caves [27] [28] [29] [30]

Place-Based Relationships - Conservation of structures and columns of the historic trolley terminal is planned. In this way the historical connection will be maintained. Sustaining the ecological structure is limited to the plant species that can grow with the transferred natural light to the underground.

Evolved Human-Nature Relationships - Due to the Lowline’s underground location, the space is a kind of refuge that is isolated from the conditions above the ground. For the prospect attribute, observation of outside life can be achieved with cameras located above the ground. The underground park can trigger claustrophobia. The effect of this situation can be reduced by more illumination, high ceiling and mirrors. Probably for the same reason amorphous shaped mirrors are presented at the 3d renders. Again it can be seen from the 3d renders that the prospected space will be more illuminated than the prototype space - the Lowlinelab. These kind of closed spaces also reveal the feelings of excitement, curiosity and discovery as well as fear. A central area with a higher ceiling and smaller bounded spaces will intensify this attribute by creating curiosity.

CONCLUSION

For a more livable environment, the desire of urban residents to be naturally inclined requires well-planned biophilic spaces. For this purpose, the study examining two unusual projects on the basis of biophilic design criteria reveals that, even in limited environmental conditions, relationships with nature can be maintained by developing correct design strategies.

The High Line and the Lowline projects, which are seen as completely opposite to each other in physical frame, have many common points.

- Both projects demonstrate architectural experimentation on how to create more humanistic public spaces by creating meaningful gaps in intense urban pattern.

- Both the High Line and the Lowline projects re-use an unused architectural heritage of the city's history as an active public space.

- Again, both projects carry the concept of intertwining from the horizontal plane to vertical plane by blurring the conventional boundaries between urban-green areas.

- In both projects, the architecture is the structure system of the nature and these are originally projects to return to nature.

- The development and support of both projects with social initiative is one of the indications of how much the people living in dense cities have longed for nature.

The biophilic properties of the two parks are shown in Table 2. While the High Line has all the environmental features in close proximity to natural conditions, almost all the environmental features on the Lowline have been brought to the space with the help of technology. In the High Line, natural forms, natural patterns, and evolved human-nature relations have been successfully evaluated. Although these features are not fully available at the Lowlinelab, it seems that these features are considered in the 3d renderings of the Lowline. In the night lighting of the High Line, the right atmosphere is created with the concealed and yellow-hot coloured lighting elements. On the Lowline, since the park is underground, lighting should be taken seriously in accordance with the psychological and physiological effect on people. Both parks have been shown to be sensitive to the conservation of the historical features of the existing sites, which is believed to contribute to the user's connection with the space and the sense of belonging.

	High Line	Lowline
Environmental Features	air, sunlight, plants, water, natural materials, animals	mechanical natural air, reflected sunlight, plants, natural materials
Natural Shapes and Forms	organic form, geomorphology	organic form, biomimicry, artificial nature
Natural Patterns and Processes	sensory variability, growth and change, organization principles,	sensory variability, growth and change, organization principles,
Light and Space	natural daylight, spatial variability and harmony	diffused and reflected sunlight
Place-Based Relationships	ecological, historical connection	historical connection
Evolved Human-Nature Relationships	prospect, refuge, security, curiosity, exploration	refuge, curiosity, exploration, fear, awe

Table 2. Comparison of the High Line and the Lowline Projects according to Biophilic Design Elements

Biophilic design is not just about bringing environmental elements such as plants, water, and natural materials into a living space. It also includes implicit features that we are not aware of much about nature. At this point, it is important to evaluate the titles of natural patterns and processes and evolved human-nature relationships in design.

The High Line is an example for the future of elevated parks with its physical and social aspects. The Lowline will contribute to the development of technology in order to bring nature into a closed space, even if it is found to be utopian or absurd by some masses. It is clear that an underground park will not really be very attractive, but will provide an important solution for future negative scenarios. For today, it is thought to contribute to the socialization that will be preferred in extreme hot and cold weather conditions.

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REJECTING / REVERSING THE PRESENT URBAN TRANSFORMATION APPROACH into FAMILY FRIENDLY TRANSFORMATIONS

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ABSTRACT

TOKI leads most of the implementations today under the central policies in Turkey and resettle the social classes in cities in the urban transformations that restructure the cities. It can be analysed that economic value increases, mechanical physical requirements, organizational and legal dimension-related parameters stand out in the transformations, and displaced/relocated residents show that the city and transformation areas are not approached in the resident and family point of view. Although the social rehabilitation of the domain resident is targeted at the end of the process, after the implementations which are independent from the social life and developed without considering the characteristics of the living environment, the culture of neighborhood which the residents are a part of is being lost, their belonging to the social and physical environment are being disappeared and residents are not able to adapt to their new life environments. The environments that are produced against the life culture that the residents are accustomed to and the "displacement" reduce their quality of life and their conformity to lifestyle. In this framework, the purpose of this paper is to reverse the structuring of the transformations, which have been carried out to a family friendly transformation approach parallel with the family structure and social interaction based neighborhood culture in Turkey. In line with this purpose, firstly the family friendly settlements are theoretically analysed within the perspective of their necessities and importance with the perspective of socio-spatial effects in the residential and transformation areas. Then, the results of the case study are discussed that has been carried out on the socio-spatial effects that are reversed in the transformations and family friendly transformations are suggested. The results of the study show that the social relations provided by the previous horizontal physical space organization cannot be transferred to the vertical structure after the transformations produced by TOKİ, the units keeping the neighborhood alive are lost, the spaces tried to be renovated are converted into unidentified and meaningless areas only for mechanical needs, the perception of insecurity along with the social relations which are lost have been spread, and the physical environment belonging and social adherence have significantly diminished. After evaluating the results, the suggestions are being developed for family friendly transformation strategies that can be integrated with the city in a social and physical sense, that are suitable for the lifestyle of the resident and are resident and family-oriented.

Key Words: Family Friendly, Urban Transformation, Social Aspect, Neighbourhood, TOKİ.

INTRODUCTION

When we look at the development process of urban transformation in Turkey, it can be observed that the actors who played a role in the transformation process after the legalization of urban transformation in the 2000s have been reduced to TOKİ in time and the urban transformation targets of the administration have been improved with the increasing resources. Social classes are being relocated to urban areas in the urban transformations that reorganize cities as one of the main planning policies with the Law No. 6306. Value increases in the urban space, property transfers, and displacement indicate that the city and the urban space are not approached from the family (who is the user) point of view. It can be observed that in the transformations organized by the TOKİ, the residents neither physically nor socially adapt to their living areas and their quality of life has decreased. The residents of the area who are targeted to have a social rehabilitation at the beginning of the transformation, are exposed to “displacement” at the end of the process which is related to one of the prominent concepts of the congress theme. In implementations where the residents are exposed to an adaptation process that they cannot get over, the goals for social improvement cannot be achieved and social and economic difficulties arise except for the residents getting new housing.

In this context, this paper aims to “reject” the decisions and approach of urban transformations led by TOKİ that residents cannot adapt to the physical environment which are developed independently of the living culture, the city’s public space is transformed and segregated from the city, and “reverse” them in accordance with a design approach that is resident and family-oriented, suitable with lifestyle of the right owners, can be physically and socially integrated into the city. The rejection of the existing transformation approach is based on the family life that makes the resident happy before the transformation, the common living in the neighborhood culture, the understanding of the public space of this culture, the physical space organization that allows social interaction, and aims to reverse the present approach by integrating the family friendly settlement criteria in parallel to "neighborhood" approach which feeds the family structure and social relations in Turkey with the logic of transformation. In this context, socio-spatial effects of transformations are presented in the implementation examples determined. The results of the research indicate that the social relations come to a full stop, physical environment belonging and social adherence have significantly been diminished with the neighborhood layout that has been disappeared upon transformation led by the TOKİ. It can be observed that the vertical life in the apartment blocks does not allow social relations such as the horizontal space organization before the transformation and the common life on the ground level, and it does not support the living culture of the resident. However, since the destruction and reconstruction of deprived areas through urban transformation is an invaluable opportunity, the life quality of resident and urban space should be aimed to be improved. Family friendly design principles must be developed for different residents and family types through resident and family friendly urban transformation while reversing the decisions for transformations in processes that both affect the resident and family.

Family friendly transformations that are beneficial from housing to city scale and from resident to the society in a physical, social and economic sense have the potential to support the quality of life by supporting the Turkish family structure with including the participation dimension.

Definition, Necessities and Significance of Family Friendly Communities and Settlements

In order to discuss the concept of family-friendly settlements, it would be useful to talk about the definition of family that everyone knows about in the literature. The family concept refers to "the smallest group within the community, formed by relations between the husband, wife, children, and siblings basing on the marriage and consanguinity" in Contemporary Turkish Dictionary of Turkish Language Association, and Cambridge and Oxford Dictionaries refer family as the group, formed with parents and children, living together. It is inevitable that family settlements, defined as the basic unit that constitutes the building block of the society in different definitions, meet the different needs of the residents of different ages constituting the family, provide social interaction, provide a qualified environment for children to grow up and be safe.

The family is crucial for social growth, continuity, and diversity, and the families considered as the most important population (in terms of time, money, participation) re-investing in their settlements represent a valuable consumer population. Also, almost all of the planners assert it [1]. It can be observed that literature regarding the family friendly settlements, which play an important role in planning that supports the social structure consider such settlements in the perspective of children, young, old, disabled, women-oriented planning and housing, transportation, recreation areas and economy for restructuring of the local governments [2, 3, 4]. It is clear that these components are important for the social, physical and economic sustainable life spans.

It is important that the planning for environments that meet the family needs is comprehensive and plan and zoning regulations include housing, transportation, schools, child care, and funding for community services. In family, friendly spaces where the concept is defined as “communities where families enjoy housing at affordable prices, child care, parks to play in, pedestrian pathways, quality public schools, and safe neighborhoods, among many other potential features that promote family well-being” while the funding is emphasized as the key, the family, and resident participation in the planning process is “significant driver” [1]. The families with child constitute the source of economic growth and it is important to have an economic infrastructure that meets their needs at local and regional level, integration between the different age groups between the schools and cities and multi-phased planning that supports a common vision between the generations for the future [4]. According to several studies, it is emphasized that affordable housing should be provided for families with child not to refrain from education expenses and the limited resources are required to be used in a creative and reasonable manner. Affordability is a problem that relates to all age groups, family types and occupations [5]. Accordingly, they are the basic components that manage

the participation process of families in the planning process along with the funding and physical planning decisions [1]. It is clear that in implementations where the resident is not considered in the design and implementation process, in other words, in processes where the resident does not participate in, their quality of life reduces. The family should be included in all phases of the implementation process as of the political decision for a hope of family-friendly city. Those who will best diagnose the problem and contribute to the solution will be the ones that experience the problem and sometimes that create it. The design, which is considered as a means of changing the world, should never turn into an act of pushing aside and objectifying the user [6].

Supporting family structure in an urban setting, in other words, the family friendly neighborhoods have different benefits in physical, social and economic perspective. Cities where different age groups live together and the public infrastructure is improved by taking care of children have higher standards in terms of security and liveability. While the housing spaces where the land is used more productively and ecologic design principles have been adopted contribute to the reduction of environmental footprint, it improves the economic competitiveness of the city and decreases the monthly spending of household in economic sense. While supporting the physical activities such as walking and cycling support public health, practices that keep the family in the foreground increase the time spent with the family. Furthermore, the political arrangements to ensure that extended families with low income can have large houses have the potential to create social justice. Family friendly housing policies can allow families from diverse socioeconomic backgrounds to have access to the opportunities that the city provides. There are other important issues in family-friendly settlements, such as the quality of public schools, the security of the settlements and streets, the suitability of streets for disabled and stroller use, the open and closed recreational areas for children and young people, affordability of child care, support for social interaction in areas [3, 7, 8]. In the action plans developed by the Seattle Planning Commission in order to increase the suitability and affordability of housing for families with children, the dimensions such as suitable and flexible housing size and number of rooms for families, incentive zoning programs, creating residential cores with ground-related housing, low-rise and midrise multifamily housing, creating family-friend houses through innovative design and construction, a strong priority for families with children in affordable housing programs, strengthening partnerships for school district planning and capital investments with the city planning for growth in family-friend neighborhoods stand out for renew planning efforts in family-oriented perspective and allocate resources for that to happen [7]. Characteristics of child-friendly housing contain unit based decisions that meet the changing needs of the family and economical characteristics and site-level such as transportation, child care, school access and supervised outdoor play space [8]. Diversified housing is a key feature in dynamic and diverse communities. The diversity of housing stock provides some possibilities for the residents with different demographic qualities, provides for the transition between the housing options responding to the changing needs of the households and enables meeting the adherence and labour force needs in the settlement thanks to the consistent stay in the

residential space. Affordable housing options with the required size encourage residents to invest in their cities [9].

Considering the different dimensions of family friendly settlements, it is of important that housing should be able to meet the size and functions that families need, should be low-rise or mid-rise, contain diversity of housing supply and adopt to social interaction between neighbours. The settlements also should have the proximity to the facilities provided by the city having necessary precautions in traffic, contain qualified schools, affordable houses and childcare as an affordable service, qualified and secure public spaces, and participation of families into the decision making process supporting the social justice.

Family Friendly Approach within the Socio-Spatial Dimension of Housing and Urban Transformation

In the family-friendly cities, housing and settlement scale are important, and it is possible to say that the settlements developed in this direction are parallel with the "neighborhood" concept that feeds family structure and social relations in Turkey. Since the cultural infrastructure in Turkey adopts family experience with a more than one child, it is inevitable that living environments are suitable for this. As the family forms the building block of the community, the neighbourhood is a social relationship that is based on social relations that develop in connection with the place of the house in its physical environment as regard to the "location". As a matter of fact, "trust", one of the basic components in family friendly settlements, is also a priority in neighbourhood relations. In this context, the social relationships that are possible through the physical qualities of the housing areas can be evaluated in parallel with the physical and social qualities of the family friendly settlements.

Housing at affordable prices, safe neighborhoods and parks, child care, pedestrian pathways, quality public schools, flexible spaces for diverse household needs and grouping households according to their characteristics stand out in family-friendly settlements. Furthermore, the housing qualities, activities in common areas, typology of houses / buildings on the environment, scale, design decisions, density and semi-private places in the area are influential in the housing areas that feed healthy social relations and neighbourhoods [10, 11, 12]. Safe neighborhood living, aimed in the family-friendly settlements is considered to be matched up with the physical qualities of the residential area that feeds the social relations. The family-friendly settlement develops as an approach that fosters the cities where children are raised and overlaps with the neighborhood scale that provides an environment of security and solidarity in which the children are raised in Turkish culture. According to some studies the places where people settle after the urban transformation are not suitable for raising children due to the social relations that have been lost [13,14].

The most important factor that strengthens social relationships, both in terms of physical environment and social networking, is the co-existence and sharing of specific activities/areas/feelings. People's identifying themselves with a place and their feeling of adherence to a community support the social relations and quality of life. As a matter of fact, there are different research

that social relations are influential on the quality of life and we can observe that that besides the effect on general perception, it is related to the satisfaction of housing and housing area, sense of security and belonging [15, 16, 17]. Adherence to community and city is also a target for family friendly settlements [7, 8] because, those who feel adherent are encouraged to stay in the city at different periods of their life contribute to the city both in a labour and economic sense.

A number of criteria which are important for transformations such as the physical relationship of houses, the availability of public spaces, the continuing sense of belonging, continuity of neighborhood cultures, meeting the needs and expectations of different resident groups, and enabling residents to express these needs and expectations at the beginning of the process that enable social interaction on the scale of street are also compatible with family-friendly settlement criteria such as affordable housing, safe and child-friendly neighborhoods, which are suitable for different needs that are important for the residents. Such transformations have a potential to create positive socio-spatial effects.

Present Urban Transformation Process from the Perspective of "Reversed" Social Relations

The breakdown of social relations with urbanization and modern life has been formed by the beginning of social inequalities and divergences in the reflection of the capitalist relations on the space and society that took place in the post-1980 period. Those living in the slums to move to the remote places of the city with the reorganization of the "diseased" slum areas as the attraction point of the global capital and the city to have a new appearance have started to be emphasised more [18]. Urban space has become a residential area for high-income groups on the periphery of slums and city with the increasing socio-economic diversification and escalating migration since 1990s and the urban transformation has been legalized as of 2000's. From this period on, TOKI's duties and authorities have expanded considerably, the actors who played a role in urban transformation processes have been reduced to TOKİ in time and the administration has increased the targets of urban transformation with increasing resources. Law no. 6306 issued in 2012 and expanding the TOKI authorities directs the practices of urban transformation in our country today and forms urban transformation cities as one of the main planning policies. Social classes are relocated in the public space with the reorganization of the cities according to the perspective of this period, and the government controls this process through TOKİ [19].

In today's implementations, although some compulsory solutions are developed on the differentiation of the dynamics of transformation, physical environments produced by TOKİ are created without consideration of the qualities of the living environment that are familiar to residents before the transformation, and it has a negative effect on the quality of life by interfering with social relations. The opportunities offered by these environments limit social relations in the area, reduce solidarity and isolate people [13]. Different studies reveal that the urban transformations led by TOKI cause economic and social fluctuations and the neighbourhood living to disappear [18, 20, 21].

In the process of urban transformation, besides the radical change in the physical environment, different dimensions of problems in the process are triggering social segregation. The paper analyses the social relations that evolved after the transformation in the same organization (TOKİ-district municipality-metropolitan municipality led by TOKİ) but in areas with different dynamics in the perspective of family friendly settlements and in this context conclusions and suggestions have been created. The settlements that support the family structure and urban transformation will positively affect both the life of the household and the social relations.

Discussion on "Reversed" Social Experiences on Transformations

In analysing the reversed social relations as a result of urban transformation, Bursa TOKİ Doğanbey, İstanbul TOKİ Bezirganbahçe (Ayazma-Tepeüstü transformation), İzmir TOKİ Uzundere (Kadifekale transformation), Denizli Bağırsak Deresi and Kars Cumhuriyet Mahallesi have been examined, which have been carried out as a result of similar processes. In the analysis of the transformations, the case study in Doğanbey made by the researcher is utilised and the relations that are obtained through social relations of the physical environment have been interpreted in line with the data of specific studies which analyse the Bezirganbahçe, Kadifekale, Denizli and Kars transformations with the perspective of social dimension. The case study conducted by the author in Doganbey was conducted through observation, questionnaires, and in-depth interviews. In order to increase the reliability in the statistical sense in the study using layered sampling and proportional distribution approach, a questionnaire was applied to 325 participants which were above the required sample size and in-depth interviews were conducted with 35 participants selected from these participants. Case studies carried out by Turgut and Ceylan (2010), Baysal (2010) and Türkün and Aslan (2014) through questionnaires and interviews for the investigation of resident opinions in Istanbul Küçükçekmece, finding of the observations and in-depth interviews by Eranıl Demirli et al (2015) in İzmir Uzundere, the result of face-to-face interviews by İçli (2011) in Denizli Bağırsak Deresi, and findings of the surveys of Demir (2013) in Kars Cumhuriyet Mah. case have been analysed and all data have been examined in family-friendly settlements perspective with socio-spatial effects, reversed by physical environment after the transformation.

Brief Information on the Transformation Areas Examined

Doğanbey Urban Transformation Practice has been implemented in one of the oldest settlement areas of Bursa using in-situ transformation method. 2729 houses have been built with three different sizes and typology by TOKI for the transformation which started with the Prime Ministerial Consent received in 2008 and protocol signed in 2016 between the TOKİ, Bursa Metropolitan Municipality, and Osmangazi Municipality. 40% of the area consists of 3-4 storeys and the rest contains 21-23 storey blocks. The density, which is 75-100 people/hectare in the region, has risen to 500 people/hectare after the renovation and this brought the physical problems especially in the city centre silhouette as well as social dimension.

Tepeüstü-Ayazma Urban Transformation began with a protocol signed between TOKİ, local governments, İstanbul Metropolitan Municipality and Küçükçekmece Municipality and Prime Ministerial Consent in 2004, like Doğanbey. Having similar qualifications with Doğanbey in terms of administrative, legal and financing, it is different since it has transferred the residents into another area. There are two bedroom flats in the area consisting of 12 blocks, 48 apartments, and 55 blocks.

Within the scope of the "Konak Urban Transformation Project" initiated in 2005 with the protocol signed by and between TOKI, İzmir Metropolitan Municipality, and Konak Municipality, 1968 houses were demolished in Kadifekale and the residents were transferred to TOKİ Uzundere which consists of high-rise blocks.

In the framework of the urban transformation project initiated in the Bağırsak Deresi area of Denizli in 2006, the creeks were cleaned and the residents in that area moved to the TOKİ Houses that were built in the nearest suitable area to the region similar to other implementations. In this context, the name of the area has been changed to Akvadi and TOKİ has implemented 1534 houses in 8 storeys and 32 apartments with sizes ranging from 90-120 m2.

The urban transformation around Üçler, Sukapı, Atatürk neighborhoods and Kaleici Region around the Kars Castle in Kars was initiated by a contract signed by and between TOKI and Kars Municipalities and the residents are placed in TOKİ Houses, which were built in a similar way to other areas. Since the paper takes the evaluation into consideration conducted by Demir (2013) regarding the neighbourhood, the opinions of the residents are at the forefront, which are relocated in the apartment blocks in Cumhuriyet Mahallesi pursuant to the transformation.

Socio-Spatial Effects of Transformations on Social Interaction

In Doganbey, the percentage of those who stated that neighbourhood relations are very important or important among the reasons why residents prefer their house prior to the transformation is about 93%. Based on observations made in the field with questionnaires and interview data, it can be said that neighbourhood relations are very important for the participants and for the whole people in the region. It is observed in the Doğanbey research that there is a strong relationship between neighbours' relations, adherence, belonging, conformity to area and lifestyle. In Doğanbey prior to the transformation, the percentage of the participants who meet with their neighbours every day or every other day was 82% and those who meet with them 1-3 times a week is 14%. According to the research, prior to the transformation the neighbourhood relations for Doğanbey residents have constituted the lifestyle of them as a yield of the neighborhood culture to which they belong. Decline in the ratio for those who meet with their neighbours every day or every other day after the transformation from 82% to 5%, and rise in the ratio for those who barely or never meet once a month from 1% to 61% indicate that neighbourhood relations after the urban transformation have been significantly decreased. Almost all of the respondents indicated that they spent time with their neighbours in the pre-transformation situation, and these rates dropped to about 20% in the next case. Likewise, after the

transformation, the ratio of participants who feel adherent and belonging to their neighborhood and neighbours has significantly declined.

The percentage of residents who stated that they meet almost every day in Ayazma-Tepeüstü is 90%, who say they see each week and is 6 % who rarely meet is 3 %. After the transformation, the ratio of residents meeting in Bezirganbahçe almost every day decreased by half and declined to 43%. Furthermore, while those who meet every week is 6% in Ayazma, it is 23% in Bezirganbahçe and those who rarely meet increased from 3% to 31% [22], the frequency of meetings has generally decreased. In Bezirganbahçe, where neighbourhoods and assistance networks lived in the gardens has been lost, the ratio of residents who meet at home and on the street in Ayazma and Tepeüstü was reduced by about 30% [13]. Seventy-three percent of the residents who missed the lifestyle in Ayazma-Tepeüstü explained the reason for this as neighbourhood relations [22]. Also in the study conducted by Türkün and Aslan (2014) four years later in the region, the reason that negatively affects satisfaction in Bezirganbahçe is that "neighbourhood relations are bad". The right holders in Doğanbey state that *"We are delighted to find each other on the road", Neighbourhood relations are at zero level", "Now we need to walk at least fifteen minutes to get to each other. No one can see each other now; our apartments are far away"* and according to the interviews conducted by Baysal (2010) in Bezirganbahçe such expressions as *"There is a difference with the Ayazma in all respects. Neighbourhood contact disappeared ... "," In Ayazma, you come out in front of the garden, your neighbour would do so to, there was a conversation ... here we are within the four walls... ", "Above all, our neighbourhood relationship is over. We came here and it is over ... We were like a family there, we were like a home"* show the changing physical space organization's influence on social relations.

As it is in Doğanbey and Bezirganbahçe, residents in TOKİ Denizli and TOKİ Uzundere areas have not been able to continue their social relations after the transformation due to the loss of public spaces together with the transformation. 90% of the participants in Denizli stated that they spend the most of their time at home, they are not able to meet as they did before since there are no public spaces to allow them to spend time together and their social relations have decreased. All 100 interviewees reported that the site settled after the transformation largely prevented public relations [18]. The results made by Demir (2013) in Kars Cumhuriyet Mahallesi also show no difference. While 76% of the residents were frequently meeting each other before the transformation, this has declined to 46,5% after the transformation, the ratio for those who establish warm and sincere relations with their neighbours was declined from 87% to 49,5% and the ratio for those who state that they frequently engage with each other fall to 55% from 74%. It can be observed that the social relations provided by the horizontal physical space organization before transformation could not be moved to vertical apartment blocks after the transformation in all areas. This is due to the fact that the interaction of the houses has been overturned, as well as the loss of gardens and open public spaces on the scale of individual houses.

It has been observed that high apartment buildings in TOKİ Uzundere "subjugate" private and public open spaces, negatively affecting social

interaction both in terms of neighbourhood and usage. In Kadifekale, it is seen that the residents in the public spaces have organized traditional celebrations such as wedding ceremony in outdoor public spaces in spring and summer, but TOKİ Uzundere does not have the flexibility to suit the socio-spatial habits of the residents. Uzundere, like Kadifekale, does not offer the possibility of sitting outside the front door and chatting with other neighbours, making the experience of socializing on the streets of residents as they did in the past, not enabling outdoor habits. At present, some relocated women set a date in each week to gather in one of the apartments to socialize and to sustain existing networks. A new minibus route established between Kadifekale and TOKİ Uzundere reflects residents' intense need to maintain their old networks in the culture before transformation [20].

Similar to Bursa and Istanbul examples, the social relations such as a doorstep or street talks and solidarity which are allowed by the vertical space organization in the neighborhood the implementations in Aegean Region have become a thing of the past. In Denizli, where streets are the common areas in the neighborhoods before the transformation, the pre-transformation space organization allows the neighbours to chat in the streets, to be aware of the life of a person, and to organize a neighborhood where children can play and where there is a solidarity. The street, which is used as a social space before the demolition, has the identity of a neighborhood unit that is bounded by itself. As in Denizli, in all the areas set forth in the paper, the garden and communal areas before the transformation allow the users to continue important rural habits for the residents, such as growing vegetables or feeding chickens, now it can be observed that such habits cannot be maintained with the apartment building.

A similar situation in Uzundere and Denizli is that the disappearance of small scale commercial units that nurture the daily social relations with the transformation is another dynamic that reduces the conformity to lifestyle. Small slum shops, which are seen as a social appeal, also allow women to socialize and earn money without leaving their neighborhood at Kadifekale. In this respect, pre-transformation areas support family-friendly organization. The large modern shopping mall in TOKİ Uzundere is far from sincerity, expensive for the space resident and a place that does not allow socializing. The shopping mall has a considerable number of stores which are still unoccupied. Furthermore, portable 'car-shops' that are established by some inhabitants selling basic essential products at inexpensive prices have become sites of social attraction and benchmark in TOKİ Uzundere. The fact that sincere car shops become the attraction points shows the physical space preference of the individuals toward their shopping needs and attempt to strengthen the social relations of the individuals. The creator of "spirit of the place", supporting the neighborhood culture as another belonging actor, the coffee houses has turned into a popular cultural café with transformation and became disidentified. While the basic unit that makes up the neighborhood is the house, coffee houses are among the basic elements of this settlement [24]. When small shops are thought to be important to this organization, we can reach the causality for corruption of the family-oriented settlement organization and social interaction. While the residents associate the

commercial units in the common settlement area before the transformation, they now feel that they are condemned to a limited urban geography and they are excluded in a narrow publicity [18]. Resident perception in Uzundere and Denizli indicate that social relations, needs and affordability are priorities, consumption is in the background in the small scale commercial units prior to the transformation, which nurture from the horizontal organization and street use in neighborhood life belonging to the lifestyle. Although this construct match up with the family-friendly organization, this has been lost with the transformations.

Socio-Spatial Effects of Transformations on Other Parameters related to Social Interaction

The data regarding the frequency of solidarity/assistance with neighbours after urban transformation is parallel to the frequency of meeting. When the rates of assistance between the neighbours (supervision of the children, borrowing of goods, shopping aid) are examined, while the ratio of those residents who cooperate every day / every other day is 78% before the transformation, it is 2,5% after the transformation. Similarly, the relations of assistance and solidarity with neighbours were 75%, prior to transformation in Kars, this has fallen to 58% after the transformation. The conclusions regarding that the network of sharing, solidarity, assistance has been damaged are supported by the expressions of Doğanbey residents such as *"We even made our food together in our old neighbourhood, shared whatever they did" "We would always take care each other's children ...Now I do not know who is who ... "," I can take care of my work by taking sugar, coffee from my neighbour, now I have to go to a market, only for an onion",* Bezirganbahçe residents such as *"We cooked a bread in Ayazma and gave it to somebody else. Nobody shares here, you could not bring together two people even if all hell broke loose".*

In the study, it was seen that social relations are related to neighbourhood belonging and physical and social environment adherence as well as the feeling of security. As a result of the end of the neighbourhood in Doganbey, most of the participants suggested that the region was not suitable for raising children, and almost all the participants complained that there was no neighbourhood that could comfortably entrust their children as they did in the past. In Kars, the results are similar, while 63 percent of the participants indicate that they usually left their children to each other in the slums, and when they were transferred to apartment life, this rate dropped to 47 percent [25]. Moreover, in the neighborhoods of Ayazma, Doğanbey and Kadifekale, the children could play in public space as monitored and safe by the adults prior to transformation. However, children's playgrounds produced by TOKI cannot be used by children in all areas and do not provide the opportunity for monitoring from the apartments as they do in horizontal space organization. This is another situation that is in conflict with the requirement for family friendly settlement.

The feeling of insecurity in the place, especially by women, especially in the evening, and the inability to safely entrust their children to the neighbours are important indicators of the reduced sense of security. The data such as the

breakdown in social relations, the sense of insecurity, reduction of conformity for raising a child indicate that transformations are not family-oriented. The placement of unrecognized and unreliable residents to Doğanbey was an important problem after the transformation, where everyone was familiar with each other, and 78% of participants, who stated that the zone was safe before transformation, fell to 18% after the transformation. Doğanbey residents feel uncomfortable with the glue-sniffers and prostitutes at nights, while Bezirganbahçe residents live with a fear of crime. Security was the aim for Doğanbey transformation and purifying the "social exclusion" and "social development" were the aims for Ayazma transformation, however, transformations have triggered the sense of insecurity, social exclusion, and segregation. Political polarizations have increased with resident assimilation triggered by the physical environment that does not support social relationships after transformation. In the case of Kars, it was also found that the feeling of confidence among the neighbours decreased, while 79% of the residents felt safe with their neighbours in the slum before transformation, and this rate decreased to 58.6% [25]. The situation in TOKİ Uzundere is not different. Relocated residents feel detached from their social roots and feelings of trust and security. Although some of them moved to Uzundere with their relatives or neighbours, planning of the new housing area has not let the communal interaction patterns continue as before [20].

For all of the areas analysed, it is possible to state that the environment that is relocated after the transformation does not support the way of life which the neighborhood setting had supported. Transformations have an adverse effect on the social interaction and solidarity, the feeling of belonging and adherence, the perception of security, and conformity to raise a child and reversed the resident and family oriented way of life.

The Evaluation of Socio-Spatial Effects of Transformations with the Perspective of Family Friendly Settlements

Regardless of whether the site is being transformed anywhere else or in situ-transformation for all transformation areas analysed, all residents are forced to cope with the social and physical environment adaptation process in which the neighborhood has disappeared. The data obtained as a result of the socio-spatial influences of the five post-implementation physical environment changes in different cities show that neighborhood settings such as streets, gardens, courtyards, small scale commercial units and coffee houses are important for social interaction. The social relations provided by the horizontal physical space organization prior to the transformation have not been moved to the vertical organization after the transformation, both the settlement of the houses and the loss of quality and quantity in the public spaces have undermined social relations. Furthermore, the importance of low-rise or mid-rise housing is mentioned in family friendly residential settlements that are developed with resident focus, and the vertical formation produced such transformations contradicts this understanding. While housing sizes and plans need to allow for the needs, it appears that housing diversity is not a priority in most of the implementations or emerged solely from economic reasons. Similar to houses, for public spaces failing to have socio-spatial habits of residents, the lack of appropriate flexibility and functionality does not meet the

criteria for responding to the different needs that family friendly settlements should have on both the residential and area scale. Housing schemes produced mechanically do not have the flexibility to respond to the needs that arise at different times in the timelines of their families' lives.

The spaces that constitute the spirit of the place fostering neighborhood setting, which conform to the understanding of the neighborhood scale within the scope of economic or social necessities and enable the regions to embody the living space identity have been lost together with the transformations. Even if spaces such as commercial units, cafes, or social facilities have been implemented with the renovations to meet the physical requirements, such implementations have been contrary to the spirit of the place and identity that provides physical-social integrity.

In the case of family friendly implementations, while it is necessary to develop predictions regarding the zones where the residential zones will focus on the transformation network and systems, residential zoning approach has not been adopted in the spaces where the new houses have been implemented in the transformations that are developed with the model to move to another place and it gets difficult to access the city facilities. However, it is important for the family friendly planning for the concentration of implementations in the convenient areas to be determined in the city for the residential zones in relation to the transportation network and for accessing to the city facilities in a fair manner. Indeed, this is necessary for this issue to be considered in terms of security, for families with children to live together as far as possible, for supporting each other, for raising their children in a secure environment, for cooperating in terms of care. It is observed that playgrounds which are among the high blocks and limited by standard park equipment, can not be monitored from the residences are not preferred by children. Playgrounds and recreations areas should be in a way to encourage the use in the areas which are suitable for three-dimensional perception scale of the children, which are safe and can be monitored by the parents. The data such as the breakdown in social relations, the sense of insecurity, reduction of conformity for raising a child indicate that transformations do not match up with family-friendly criteria.

Another issue related to children is the need to consider qualified and affordable schools with the transformed settlements in relation to the residential area and urban planning. This can be overcome by adding this criterion to the zoning decisions or by the qualified schools which are included / are very close to the areas. As a matter of fact, the idea of a qualified school is not a priority in the regions examined, for example, this situation causes serious problems for the residents in Doğanbey. Despite the importance of affordable childcare in family-friendly settlements, the involvement of nurseries outside the primary school may be positive, as the issue is being overlooked.

It is another important issue for residents to have a say in the design process of transformations as they experience the area to be transformed in a personal manner, and it can be observed that they are not included in the participation mechanisms during the transformation process in five regions. Despite the call for questionnaire and workshops in the beginning of the

Küçükçekmece transformation, the residents were not invited to the preparatory work. Similarly, the residents did not have the right to speak or reject the lots and this caused a decrease in their quality of life in Doğanbey. Residents could not be able to describe their experiences, to specify important dimensions for them, to express their thoughts/expectations about social interaction or lifestyle indispensable in their lives in any of the transformations.

CONCLUSION

Proposals on Rejection with the Perspective of Family Friendly Transformation

The physical environments through urban transformation produced by TOKI in Turkey are being developed in order to meet the mechanical human needs under economic constraints and worries by destroying the neighborhood setting that supports the family structure in Turkish culture. In the areas examined, the residential and communal space texture, which feeds on neighborhood scale organization and human scale, has destroyed the sincere relationships that have been missed by the residents of the neighborhood culture. Significant breaks in the social network have taken the meaning of the place along with destroying the causes of life for the residents. However, it is noteworthy that the neighborhood setting, which exists in such areas prior to the transformations and started to be lost in Turkey, have tried to be implemented in the residential spaces that are developed today in an artificial and unfriendly manner. In this case, instead of trying to create artificial environments, transforming implementations that are inevitable to be implemented need to be produced in such a way to support the family life, which is the building stone of society, without disturbing the neighborhood setting.

In the areas examined, the main problem for the users is the loss of lifestyle before the transformation, which is due to the disappearance of the social interaction and the common living areas where the families share their experiences. Apart from this, access to urban facilities, economic difficulties such as families' school, health, housing expenses also constitute problems after the transformation. Unfortunately, urban transformation, seen as the best and only solution in planning policies, has not met the socio-spatial needs of its residents in the first years and decreased their quality of life instead of increasing it. In this framework, by rejecting the existing transformational approach, it is of suggestion that we should integrate family-friendly settlement criteria into the urban transformation in reversing in a way to adopt main resident participation, neighborhood culture and family life that exist before the transformation, integration to the city in a physical and social sense and public space approach belonging to the city and residents. A strong social network is very much related to the transformation and the family friendliness of residential areas. The physical transformation that causes the decrease in social relations also reduces the conformity of the family-friendly settlement. Urban transformations to be produced in line with the criteria for family friendly settlements, which have different benefits from physical, social

and economic perspectives from residential to urban scale, have the potential to increase the quality of life of residents.

Considering the family friendly settlement criteria in combination with urban transformation setting that improves the quality of life and conforms with the lifestyle of the residents, it would be positive to target low-rise and mid-rise multifamily housing, to meet the size and function that families need in diversified housing and to give right to speak to the residents with participation mechanisms. The definition of family-sized housing and family-friendly buildings in this framework is also a preliminary step. It is also important to provide housing relations and public spaces where children can be safely raised, are controlled by families, physically and socially secure, based on inter-neighbour solidarity and cooperation, and inter-individual social interaction. Public spaces should not be the remaining spaces among the residences, they should include recreational and parking spaces that are ground-related, designed according to the resident's scale and can be used safely and qualitatively by children, young people and the elderly. The implementation of affordable, small-scale, sincere commercial units and cafés that are in the spirit of and in conformity with the lifestyle of the location in the common public spaces will support the use as well as economically contribute to the resident. Moreover, by identifying the city's heavily used points, systematizing transport networks, positioning health and education facilities within a residential zoning system will increase the quality of life of the participation of the needs of different resident groups. Identification of transportation methods that support public health and social interaction, such as walking and cycling will enrich the living environment to support the safety and quality of life of the families and thus the quality of life. The arrangements which will enable fair access to urban facilities, social interaction, the social lifestyle before the transformation, easy and fast access to qualified schools, affordable house purchases and childcare, public access to the urban facilities and participation in the decision-making process will increase the life quality of the families and will be beneficial for the urban transformation. Urban transformations are for the transmission of cities into the future. Inevitably, the limited resources should be used with creative and rational methods in the transformation of the city and implementations should be made in accordance with the aim of raising the quality of social and urban life in the continuity of the cities.

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THE EFFECTS OF INFILL DESIGNS ON MORPHOLOGICAL CHANGE IN CRAMPED URBAN FABRIC [1]

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ABSTRACT

Having played a part in historical continuity and appearing as the reflection of different periods and cultures, cities that we live in today are a phenomenon that indicates the development and evolution of societies. To continue their existence, these cities need to maintain continuity on the one hand and respond to the development and change on the other hand. New settlements, among factors affecting the change in cities, are also an indispensable part of the development and transformation in cities. One of the concepts that come to the mind first when the built environment is going through a redevelopment process is the urban infill. The practice of infill can be implemented on the historical fabric or in existing neighborhoods of a city. The practice of urban infill that appears in the form of demolition and rebuilding especially in the urban fabric of attached buildings must be appropriate for the existing built environment and evoke its distinct texture, which is regarded as positive implementation. However, when the implementation of urban infill is inappropriate for the character of existing built environment, urban identity undergoes a change. In the further stages, this texture sets a precedent and paves the way for new changes [1]. This study aims to reveal the negative impacts of inappropriate infill in the dense urban environment on the morphological transformation of urban qualities in the city center of Konya. Konya had been one of the metropolis cities that has hosted many civilizations throughout the history and therefore has gone through different changes and transformations. In the city that is built around the Alâeddin Hill, which is an old tumulus, redevelopment did not happen in the form of demolition and rebuilding. While the old texture is maintained as distinct and separate area, the implementation of development has been done in different areas or there are streets where the old and new meets. In this context, the scope of this study is defined by morphological changes observed based on formal differentiation in the street texture that accommodates traditional and current textures simultaneously in Konya.

Key Words: Infill, Urban Morphology, Urban Transformation, Urban Identity.

[1] This study is based on the master's seminar "Contextual, Morphological and Visual Change of Space and Place Identity through Infill Applications" presented by Research Associate Elif Bülüç under the supervision of Prof. Dr. Dicle Aydın.

INTRODUCTION

As a product of historical continuity, city is a dynamic concept transpiring as a concrete reflection of lifestyles, aesthetic sense and technological opportunities in different periods and cultures. Cities need to respond to developments and changes in order to maintain their continuity. Due to structural and functional wearing in old textures, cities are affected by many factors and begin to change, and with the emergence of new urban textures, subcenters trigger the change of character in old textures. In Turkey, urban identity consisting of natural-artificial-cultural values was preserved until 1950s. However, in line with urbanization policies pursued afterwards and globalization process, there have been changes in urban identity that has been preserved until today [2]. Among several factors affecting this change is new settlement process that is an essential part of urban development and transformation.

Konya is a metropolis that has hosted various civilizations and accordingly undergone significant changes and transformations throughout history. In the city of Konya located at the outskirts of Alâeddin Hill, an old mound, new settlement was not in the form of new buildings constructed by destroying old urban texture. While the old texture remains in one part of the city, the new texture is built in other areas or there are streets accommodating both the old and new. Therefore, the subject of the study is urban morphological changes in the street texture accommodating both traditional and current textures simultaneously in Konya.

The Purpose and Method

The study aims at exploring morphological changes created by infill applications in congested urban texture in Konya. Within the scope of the study, Abdülezel Paşa street located in Konya Zindankale that simultaneously accommodates old-new combination in the urban texture and has periodical functional diversity from past to the present was chosen as the study area. As part of the study, development plans, municipal council decisions, council decisions made in parcel-scale etc. were examined and morphological change in the study area in different periods was identified in the framework of meetings held in the city hall.

Impact of Infill Applications on Morphological Change

The cities have reflected their experiences and ideas into the space in every period [3]. Today, urban and architectural buildings in our cities have been affected and shaped by different periods and cultures in historical continuity. In order to continue their existence, these cities need to respond to development and change while maintaining continuity at the same time.

The change in urban spaces is directly proportionate to changes in roads, squares, buildings, green spaces etc. that constitute it. In addition, migration, urbanization, supervision mechanisms (construction decisions), local administrations and policy, globalization, transportation, land speculation, disowning, wearing, social, cultural and economical structure and natural disasters [4] also affect the change in urban spaces. In this context, factors causing change in urban spaces are given in Figure 1.

Natural Disasters	Wars	Migration and Urbanization	Globalization	Technological Developments
Socio-Cultural Features	Economical and Political Features	Supervision Mechanisms	Wearing in Built Environment	New Settlement

Figure 1. Causes of Change in Urban Spaces

Another factor contributing to the change in urban spaces is new settlements. Infill applications, among concepts that come to mind when we speak of new settlements in the built environment, are also seen in built-up areas as in historical textures. Particularly infill applications, which are in the form of collapsing and rebuilding in adjoining city textures, have a positive or negative impact on the existing tissue and cause a change in the tissue.

Infill as a Concept

“Infill” is among concepts that come to mind when we speak of new settlement in built-up environments. In English, the verb “infill” means to fill (a space or hole), to fill with dye while the noun form means material that fills or is used to fill (a space or hole), and gap. In architecture, infill is defined as the act of filling, filling the gaps and use of vacant land and property within a built-up area for further construction or development. On the other hand, infill building is a new structure constructed in a built-up area or historical environment.

The concept of infill is an industrial term used in the development of vacant parcels in built-up environments [5]. Doğrusöz (1994) defines infill building as “new building in existing urban settings” [6]. In this context, the term infill building in the discipline of architecture is used to define “new structure constructed in built-up environments”. Infill structures can be new buildings constructed in historical areas as well as new structures constructed in existing built-up areas (Figure 2).

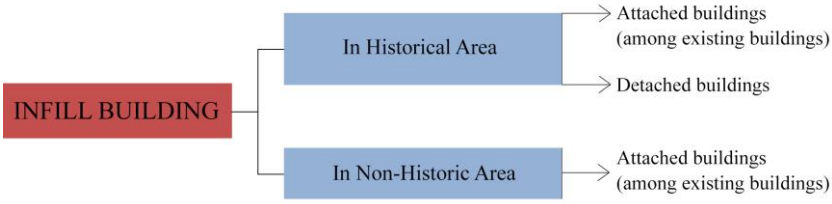


Figure 2. Infill Building [7]

The change/increase of construction methods due to technological developments, increase of material diversity, change of needs and means with economic development etc. have caused the differentiation of infill buildings from existing structures in urban textures. Therefore, there have been changes in the characteristics of urban textures due to infill applications.

Impact of Infill Applications on Urban Morphological Change

All economical, social and cultural changes happen in physical spaces over time. The changes in the cities also represent their identity as indicators of social lifestyles and their interaction with the environment reflected in physical space, and continuous development and change lead to the redefinition and reproduction of the urban identity [4]. The change in urban spaces is directly proportional to changes in roads, squares, buildings, green spaces etc. constituting the urban space.

Another factor affecting the change in urban spaces is new settlement that is an indispensable part of urban development and transformation. New settlements integrated into the existing settlement later (infill designs) may create positive or negative impact in the character of a place. In this context, it can be said that the morphological, functional, spatial, visual and contextual characteristics of the urban space change with new settlement [1]. Ünlü (2006) defines these characteristics as elements creating the urban space [1].

Morphological characteristics are such characteristics as building height, parcel dimensions, density, building layout, street pattern and city block format that are related with the structure based on parcel. The changes of these characteristics affect the change in the urban scale.

Field Study

The urban changes in Konya did not happen in the form of new buildings constructed by destroying old urban texture. While the old texture was preserved in an area, new textures were built in other areas or the old and new coexist. In this study aimed at examining changes created by infill applications in congested urban textures, Abdülezel Paşa Street in Konya Zindankale was chosen as the study area. In the street texture here, there are 8 parcels in the north and 11 parcels in the south. The street acquired its current block format in the second development plan in 1954. The study area is important because it accommodates traditional and current textures simultaneously and has functional diversity from past to the present.

Picture 1. Working Area, Abdülezel Paşa Street

Historical Evolution of Abdülezel Paşa Street

In the city of Konya established around Alâeddin Hill that is an old mound, there was no considerable change in terms of construction activities till the end of the 18th century. The most significant incident that affected the physical structure of the city in the 19th century was a fire in 1867 that lasted for three days. After the fire, slow but consistent construction activities continued in Konya. These activities were accelerated between 1898 and 1902. In the city centre, streets and alleys cutting each other vertically were opened. With the arrival of Anatolian-Baghdad railway in Konya at the end of the 19th century, business life revived in the city, which consequently influenced urban land use, the mode of local transportation and urban form. It required the construction of a station and some nearby facilities such as hotel and warehouse [8].

The oldest development plan obtained from the archives of Konya Metropolitan Municipality is General Map of the City of Konya dated 1922. When this development plan is examined (Figure 3), it is found that settlement areas mostly spread in the southeast and northeast direction and Abdülezel Paşa Street located in the western part of Alâeddin Hill was the Muslims' Cemetery at the time. In the plan, new urban development tendencies around the railway and station area in western part of the city draw attention [9].

When the development plan dated 1933 (Figure 4) is examined, it is noted that parcelling work around Alâeddin Hill had began at that time. The silhouette of the city was usually created by traditional dwellings with gardens built of adobe material [10]. It is observed that areas in the western part of the city that were fields and meadows ten years ago were transformed into residential areas. The main reason for that is the revival of business life with

the increased activity of the railway station at the area and consequent population growth in the city. It is found that Abdülezel Paşa Street, the study area, was still a cemetery in 1933 just like ten years ago, but its surroundings were increasingly transformed into residential areas.

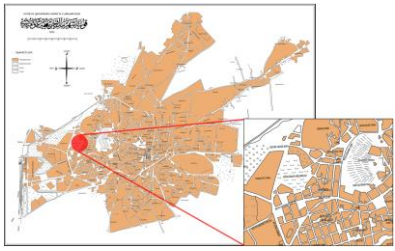


Figure 3. General Map of the City of Konya dated 1922 (Obtained from the Archives of Konya Metropolitan Municipality and revised)

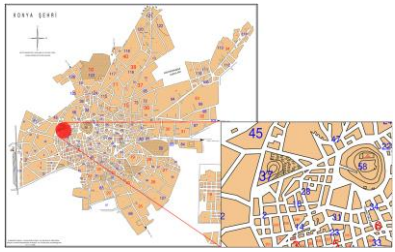


Figure 4. Development Plan of the City of Konya dated 1933 (Obtained from the Archives of Konya Metropolitan Municipality and revised)

In 1/5000 regional development plan (Figure 5) drawn by Asım Kömürcüoğlu in 1946, the station area in the western city was chosen as the direction of urban development and maximum storey height was planned as three. Organic urban texture in traditional settlement areas was replaced by new lattice shaped settlements cutting each other vertically [11]. Population growth has also brought housing increases for the city. With 1946 development plan, house construction increased around the station street that was developing at the time and urban residential area started to move into the west. It is found that the study area did not take its current parcel shape yet and was part of Zindankale Archaeological Site in 1946. The existence of university, maternity, fair area, several schools and official buildings in the surrounding area also draws attention.

1954, Konya's second development plan (Figure 6) was drawn by Ferzan and Leyla Baydar. The direction of the urban development was chosen as west, northwest and southwest in the plan [9]. It is stated that the storey height was increased to 4-5-6 at that time. When the state of the study area in 1956 is examined, it is seen that the area took its current parcel form in this period. While there is a housing texture in the parcel in the right side of Abdülezel Paşa street, the left parcel is noted as suggested housing zone. As in 1945, buildings with various functions such as mosque, primary school and hospital are seen in the area.

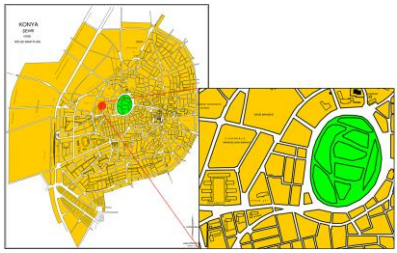


Figure 5. Regional Development Plan of the City of Konya dated 1946 (Obtained from the Archives of Konya Metropolitan Municipality and revised)

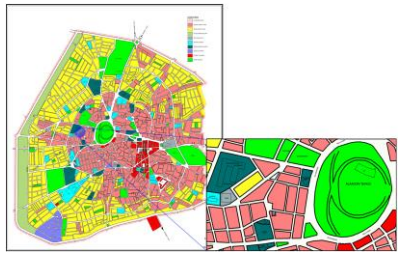


Figure 6. Development Plan of the City of Konya dated 1954 (Obtained from the Archives of Konya Metropolitan Municipality and revised)

When 1954 development plan no longer responded to urban development, 1966 development plan (Figure 7) was put into force after a national competition. This development plan drawn by Yavuz Taşçı and Haluk Berksan was analyzed based on natural data, and it was found that there were areas suitable for settlement in the northern, northeast and eastern parts and southwest part relatively of the existing settlement area. When the study area is analyzed in this period, it is seen that both sides of the street shaped as housing zones although there is no certain information about storey height.

In the 1970s, "Illegal Housing Prevention Work" was started in the northern and northeast axis of the city as a measure against increased squatting with the growth of population in the city. Besides, the development of existing industrial areas was completed and the need for new industrial areas emerged [9]. In parallel with this, a step was taken for a mass housing construction in order to ensure the development of Nalçacı Street [8]. To meet such needs, no 4 squatter settlement and organized industrial zone in the northern city were added to the 1966 development plan and 1974 Additional Plan was created (Figure 8). In the 1974 Additional Plan, the study area was named as "Business Areas" and according to the documents obtained from Selçuklu Municipality, it is found that the construction of a number of buildings remaining today started in 1974 and buildings were employed as store and dwelling.

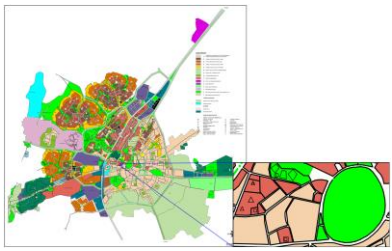


Figure 7. Development Plan of the City of Konya dated 1966 (Obtained from the Archives of Konya Metropolitan Municipality and revised)

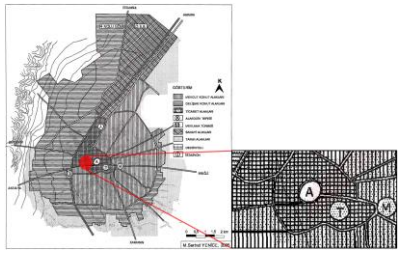


Figure 8. Konya Urban Form in 1974 Additional Plan (revised based on the work of Yenice (2005))

In 1980, with the insufficiency of the existing development plan and moving of Selçuk University campus outside the city, the increase of house construction in the area required a new development plan. The fourth development plan (Figure 9) put into force in 1983 was mainly focused on improvement in industry and services, environment and aesthetic awareness. At the time, housing development in agricultural areas jeopardized these areas and to prevent it, some areas in the northeast was opened to construction. In 1983, the study area was defined as business area in the development plan. It is found that the construction of some buildings remaining today started at that time and the buildings were constructed as 4-5-6 storey and used as store and dwelling.

With the development and growth of the city, a new development plan (Figure 10) was drawn in 1999 to eliminate deficiencies in transportation and tourism. In the scope of the plan, the northern-northwest, northeast and southern areas of the city were provided as development directions. These activities led to the emergence of identical houses, bus terminal remained at the city centre and its moving was brought to the agenda. A new bus station was built in the northern city in 2000 and consequently housing activities increased in the area. With these developments, Konya was divided into several centres. While the old Konya remained in the eastern and southern side of Alâeddin Hill, new residential areas developed in the western and northern parts. The study area was again depicted as a business area in 1999 development plan. It is found that settlement in the area continued at the time and preparatory school buildings and business premises in the study area that are considered relatively newer were built in 2005 and afterwards. It is significant that with the developments after 2000, housing function in the study area was gradually replaced by business function.

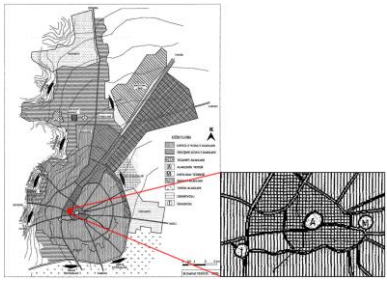


Figure 9. Konya Urban Form in 1984 Additional Plan Period (revised based on the work of Yenice (2005))

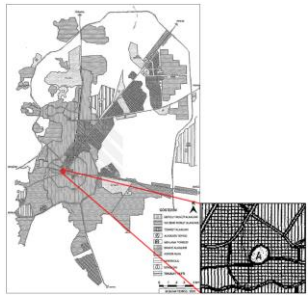


Figure 10. Konya Urban Form in 1999 Additional Plan Period (revised based on the work of Yenice (2005))

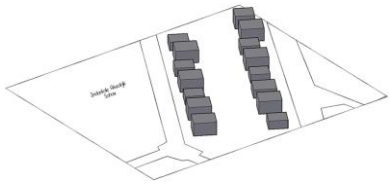
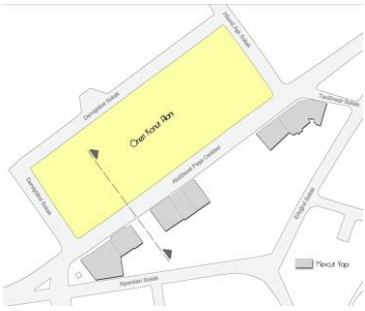
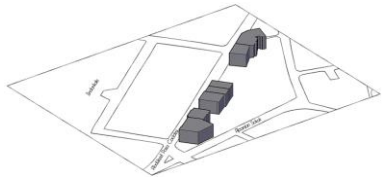
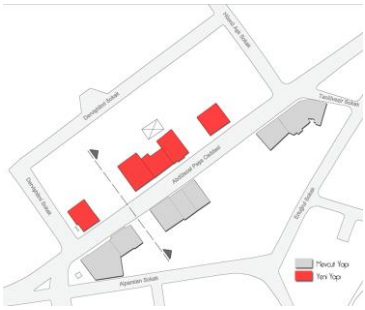
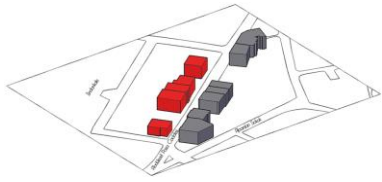
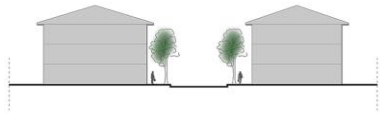
Today, it is seen that there has been no change in the study area in the past ten years. Notwithstanding, in the light of meetings held in Konya Metropolitan Municipality, it is known that the study area remains within the third degree archaeological site within the scope of the Historical City Centres and Surroundings Preservation Master Plan. It indicates that the study area is open to changes and transformations in the upcoming years.

Urban Morphological Changes in Abdülezel Paşa Street

Urban changes in Abdülezel Paşa Street happened as result of the development plans and city council decisions since 1920s. These works covering the city also affected the study area regionally. The most significant reason for the change in the study area is the revival of business life and subsequent population growth in the city. The study area that was a cemetery until 1940s was transformed into residential areas and therefore, a contextual change based on functional change began in the area. In the first development plan drawn in 1945, maximum storey height was planned as three. Therefore, it can be said that buildings in the study area were two to three storey at the time. In the second development plan drawn in 1954, the storey height was increased to 4-5-6. With the increase of storey heights, morphological changes happened in third dimension and building density in the street texture increased. With the shifting of the residential areas to the northern city in the third development plan in 1966, business function was added to the housing function in the study area, which resulted in a second contextual change due to the functional change. In the fourth development plan put into force in 1983 and subsequent development plans, the study area was named as a business area, and new buildings in the area thereafter was constructed to be used as store and dwelling. In 2000s, new buildings in the area were constructed solely for the purpose of business.

Urban morphological changes in Abdülezel Paşa Street began in 1940s. These changes were chronologically depicted in Table 1.

Table 1. Morphological Changes in Abdülezel Paşa Street

Layout Plan		Perspective	
		Section	
In 1940's Abdülezel Paşa Street			
Layout Plan		Perspective	
		Section	
In 1950's Abdülezel Paşa Street			
Layout Plan		Perspective	
		Section	

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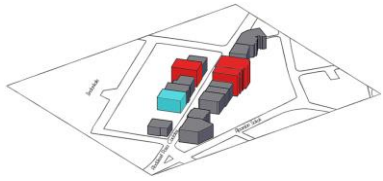
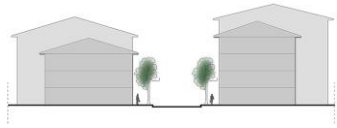
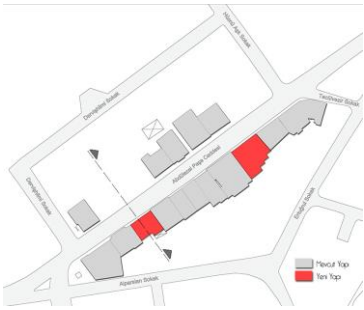
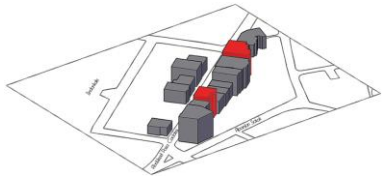
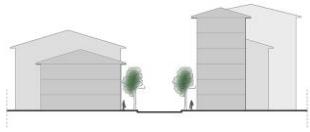
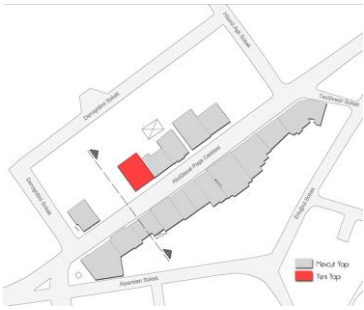
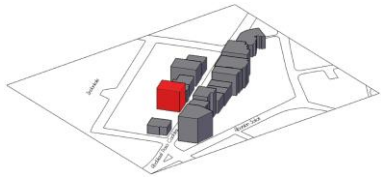
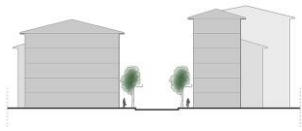
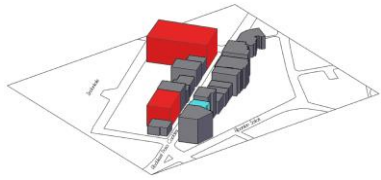
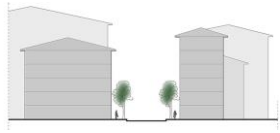
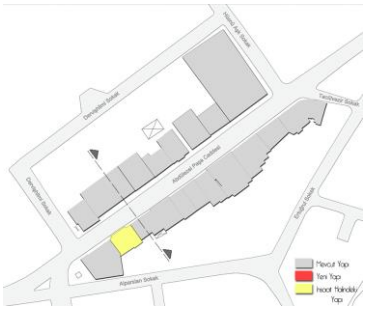
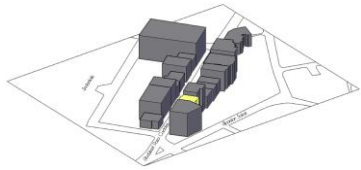
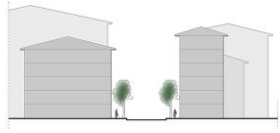
Layout Plan		Perspective	
		Section	
In 1970's Abdülezel Paşa Street			
Layout Plan		Perspective	
		Section	
In 1980's Abdülezel Paşa Street			
Layout Plan		Perspective	
		Section	

In 1990's Abdülezel Paşa Street			
Layout Plan		Perspective	
		Section	
In 2000's Abdülezel Paşa Street			
Layout Plan		Perspective	
		Section	
Nowadays Abdülezel Paşa Street			

As result of the morphological changes in the street texture with the increase of storey heights, the relationship of the buildings with each other and with the street was negatively affected, and the positive qualities of the urban texture disappeared due to the increase in building density. The morphological changes in the area led to the contextual change based on functional change, which made the change in the characteristics of the street texture unavoidable.

EVALUATION AND CONCLUSION

In the study, it was found that urban morphological changes happened in Abdülezel Street since 1940s. These changes stemmed from development plan decisions and resulted in the increase of storey heights in third dimension and increase of building density in the street texture. While maximum three storey dwellings formed the character of the street, the increase of storey height to 4-5-6 with the new development plan and later addition of dwelling and business function to the area marked the beginning of morphological changes in the texture.

Differences in new applications from old applications are the increase of storey height and materials used in facades due to technology. While the relationship of the buildings with each other and the street changed in a negative way with the increase of storey height, the construction of new buildings for business and dwelling purpose also changed the street character.

In conclusion, it can be inferred that infill applications in congested textures in city centres morphologically do not have the positive aspects of the old texture and the increase of allowed building height has negatively affected urban space quality of the street texture. Although demolition and rebuilding work seems unavoidable, making planning decisions in the application process in a healthy manner will help to construct new buildings by preserving the characteristics of the old ones.

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REJECTING REVERSING ARCHITECTURE

THE CHANGE OF THE CITY SILHOUETTE OF TRABZON IN THE DILEMMA THAT THEY BROUGHT AND TOOK AWAY

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ABSTRACT

It takes time for a physical space to gain an actual character. While cities are reshaped under a different management every time in the vicious cycle of establishment, expansion, destruction and re-establishment, the change in the physical appearance accompanies this process. Images that distinguish a city from another and make it impossible to define an ideal city have developed in this continuity containing the partial or complete denial of the previously present. The city, which cannot be covered by a single description, can only be defined based on these images -the topography, accumulation of architectural structure and the entirety that structuring and topography forms together. In this sense, the city silhouette belonging to every moment you may enact is the simples image reflecting the identity of the city.

Just as every ancient city in Anatolia, it is clear that Trabzon has reached our times experiencing significant physical transformations. The city was built in time with architecture, which is one of the tangible expressions of this transformation. This process was not only limited to changing the old, sometimes destroying it and sometimes building the new with the characteristics of the period, but it was also reflected on the topography of Trabzon, which is the indicator of its architectural identity.

In this context, the study claims that Trabzon, with its deep-rooted architectural history, does not still have a silhouette that it can reflect its identity onto, and aims to present the changes in the silhouette of Trabzon with an approach protesting the inability to read the historical structural accumulation over the city's silhouette. It will be possible to follow the traces of the physical effect of periodical changes/transformations on the silhouette of Trabzon, by placing the structures on the topography modelled with the help of 3-D modelling software.

Key Words: Trabzon, Silhouette of Trabzon, Urban History, Historical Development, Change of Silhouette.

INTRODUCTION

The real characterization of a physical space can only be obtained over time. City spaces, which undergo changes and transformations, have been restructured throughout history by wars and migrations. As cities recycle between the processes of founding, expanding, destruction, and re-founding in the hands of new occupants, this process included physical changes each time. The act of founding a city, which is also defined by Plato as “the greatest virtue of the human” is also a complete process. To the extent that it is the entirety of the parts added together; it also constitues the varying needs and aims of the time periods that it is developed and formed, attitude to be taken towards the historical heritage, therefore, it is an accumulation of cultures and an integrity of the behaviors shaped settling accounts with one another in time [1]. This may differ in different societies for different reasons (religious-ethnic structure, administrative-political conditions, geographical-climatic conditions, demographic development).

When we look at the focal points of the cities each of which is an application field, we see religious buildings such as mosques and churches and many structures surrounding these fulfilling various social and cultural tasks. These structures and transportation that connects them, infrastructure, social equipment systems as well as the daily life going on around all of them influence and shape in the long term the natural environment around them from architecture to fashion style, housing culture to communication styles [2].

Structures within the silhouette reflecting urban identity reflect the residing society’s economic, social and cultural condition. The silhouette enables the perception of topographical structure, flora, urban images, structure typology, open-closed public spaces within the settlement, in short natural, spatial 3333elements forming a city and the interrelation of these elements. Factors forming the city silhouette also express the city. In short, the urban identity becomes visible within compositional integrity. While the word silhouette refers to shadow profile; profile shadow, silhouette and silhouette line, in general, mean the line where the earth and sky meet, today this word has turned into an expression defining the line where sky and buildings meet [3]. In other words, “city silhouette” or “city panorama” is the horizontal view of the architectural and other buildings in a city and a whole consisting of various natural, cultural, social, spatial elements and elements guiding the space. The city silhouette or city portrait emerges because of the accumulation of different processes. These processes include, as mentioned above, wars, economy, demography, administration, zoning activities and social structure - main factors which can be catalysts in almost every society. In this context, drawing a silhouette of a city means enabling the perception of topographical structure, flora, urban images, structure typology, open-closed public spaces within the settlement, in short natural, spatial elements forming a city and the interrelation of these elements. In short, it means expressing a city and making the urban identity visible within a compositional integrity [4]. To this end, city of Trabzon which attracted different civilizations during almost any period of the history with its important location as well as its sheltered and natural port and the formation of the city under the control of different rulers in

each period is the subject of this study. It is obvious that Trabzon, like many other ancient Anatolian cities, has reached today after critical physical transformations. Its unique topography and city walls shaped according to the topography and rising in the same direction with the sides of the valley have been always the most distinct, defining characteristics of Trabzon.

Having witnessed different administrative and ideological organizations from ancient period to present, Trabzon has assumed its new view formed with the blend of new and old and bearing the trace of every period and every society. The city has been built over time with architecture that is one of the tangible expression of this transformation. This process has not just remained limited to replacement and occasional destruction of the old and the construction of the new featuring the characteristics of the period, it has been reflected even in Trabzon's topography which is the indicative of its architectural identity. Especially with the developments involving the continuous change occurred in all cities after the industrial revolution - it may be said that there was a movement in terms of influence even in the Ottoman period -, the city has gained a brandnew look. The fact that different cultures lived in the same territory has given the city an accumulation and identity.

It is beyond any doubt that starting from the Russian invasion and followed with Tanzimat and Republican modernization movement, construction of new roads, many public buildings, mass housing practices which are the indicatives of a modern city met many needs of the period. However, this process also put the city into a spatial transformation process. Because of its geographical location, historical importance and cultural accumulation, the values embodied by Trabzon and its silhouette reflecting these values should be protected. In this regard, the purpose of this study is to describe the formation process of Trabzon's city silhouette and to draw attention to the actions that need to be taken through technical applications and planning, in order to protect and revitalize the extant remains.of this process.

Change of Trabzon's City Silhouette: The Method Followed in the Study

City silhouettes symbolizes and reveals the histrocial, social and cultural accumulations of the society. Silhouettes give insight into the city's symbolic images, natural beauties, historical environments and city's identity. To identify the disorders in the city's silhouette, it is necessary to evaluate the environment physically and culturally and what kind of visual characteristic the city has assumed [5]. The factors affecting the formation of the city silhouette are discussed under the following topics; "natural factors" that can be defined as topography, geological condition, climate, flora, water elements and interaction between individual and the environment; "socio-cultural factors" involving different cultures and their lifestyles both shaping the city and giving it an identity; and "spatial factors" created by humans with natural, social, economic and technological factors and also expressing the lifesyles of the society and including the monumental structures. In short, images that piled up on each other continuously, distinguish one city from another and making it impossible to define the ideal city have been developed. City which cannot be fully described by a single definition can only be defined according to these images - its topography, architectural building heritage and integrity between

the structures and topography. In this context, any major city silhouette that can be picture is the simplest image reflecting the identity of a city.

The study aiming to trace back the transformation of Trabzon's city silhouette formed starting from the first settlement to the end of Ottoman era and compare it with today's city silhouette discusses the topography which can be defined as constant element as well as artificial environment and structures shaped by socio-cultural infrastructure differences and defining the changing aspect of the silhouette on this topography. While describing the change of the city's silhouette, the reasons triggering this change-unique dynamics of every period - are taken into consideration. At the stage of formation of the silhouettes and determination of structure/spaces, physical change/development/ transformation of Trabzon is examined in terms of three periods which can be defined as cultural breaking points; from the first settlement to the Komnenos Period, from Komnenos Period to Ottoman Conquest, from Conquest to Republic. When the traces of the reflection of social change on the physical structure are considered, Ottoman era consists of different periods within itself.

Starting from the city walls which can be defined as the first architectural product, the structures determined depending on the factors such as size, location, socio-cultural, historical value of the structure according to the periods are the main sources to be used to create silhouettes of the periods.

Here, the important methodological issue is the determination of the structures reflecting the identity of each period and constituting a part of the silhouette. In urban design, there are two aesthetical variables: formal and symbolic [6]. Therefore,while determining the structure/places forming the city's silhouette in the study, the size of the structure within urban fabric (its height and the area it occupies) and the integrity that it creates with supplementary elements are considered as formal value and if it contributed to the formation of city's political, religious, cultural and architectural identity throughout the historical process and witnessed the life of the period, this is considered as symbolic value as it bear meaning from the perspective of urban-dwellers. Since the effect of topography on the formation of silhouette cannot be disregarded, both topography itself and the structures standing out within the topography with its location are considered as the subjects of the study, even if they do not bear formal or symbolic value. In addition, some structures may be examined under several topics with regard to the value they embody. Besides these, the structures that are found to have no effect on the silhouette, even if they carry value in the urban sense, are not covered within the scope of the study. Silhouette of the city due to its location and size and Aşağıhisar walls.

The problems encountered during the formation of the silhouette and the detection of the structures can be summarized as follows: The sources available from the pre-Ottoman Period and the present data are mainly oriented to enlighten political history instead of the city's physical structure at that time. Moreover, the fact that the structures built during this period were destroyed or damaged by various reasons over time have created a serious obstacle to the attempt to detect their physical structure. For this reason, in the future studies it should be taken into consideration that new structures and

fabrics can be identified and improved, contributing the silhouette. In this context, the study does not claim that the recreated silhouettes are complete. The second difficulty is that as a result of the new institutions that emerged in the structure of the traditional Ottoman society with implementation of Tanzimat reforms in the cities, the Ottoman Trabzon represents two different processes; which are from Conquest to Tanzimat and from Tanzimat to Republic. However, these two periods, which seem to be independent within themselves, constitute a part of the whole connected to each other as result of continuity of both historical process and the documents and their intricate structure [7].

Visualization of city silhouette includes the stages of determination of structure/places, formation of topography - determination of change, determination of the location of structures/ places on the topography and modelling. The maps used to identify the correct location of structures on topography, especially of those known, but destroyed structures, have been important sources. For the recreation of the silhouette, for terrain curves, the current plans of Trabzon dated 2014, for the coast line changed by embankments, the ones dated 1938 and for the determination of the locations of the structures, the ones dated 1914 and 1938 have been used [8]. In order to revive these steps as much as possible in the study which aims to determine the identity of the city from ancient period to present through its silhouette and assumes that the city has lost its silhouette reflecting its identity; The Hagia Sophia Mosque, which defines the settlement limit until the end of the Ottoman era in the western suburbs and in the east, the Çömürçi neighborhood, including the Çukurçayır region which is the scene of intensive construction today are considered as the limits to determine the boundaries of the study area. In the south, Boztepe against which the city lies is what determines the spatial limits of the study.

With the help of the computer program (AutoCAD), the 2014 contour lines used to form the base of topography. The structures digitized on this topography via maps have been elevated to the third dimension and positioned on the contour lines. Today’s city silhouette has been obtained by photographing within the limits defined by the view from the sea.

Structures Forming the Trabzon Silhouette Before the Komnenos		
TOPOGRAPHY	**Topography**	• Zağnos Valley • Tabakhane Valley • Blacksea • Boztepe
	Location	• Yukarıhisar Walls (Citadel) • Ortahisar Walls (Middle City) • Tabakhane Bridge • Zağnos Bridge • Panagia Crysokephalos Church (Ortahisar Fatih Mosque) • St. Eugenios Monastery (Yeni Cuma Mosque)
ADJECTIVE REASONS	**Singular Size**	• Tabakhane Bridge • Zağnos Bridge • Panagia Crysokephalos Church • St. Eugenios Monastery
	Total Size	• Yukarıhisar Walls • Ortahisar Walls
SYMBOLIC REASONS		• Yukarıhisar Walls • Ortahisar Walls • Tabakhane Bridge • Zağnos Bridge • Panagia Crysokephalos Church • St. Eugenios Monastery

Structures Forming the Trabzon Silhouette the Komnenos Period		
TOPOGRAPHY	**Location**	• Aşağıhisar Surları (Lower City) • Leonkastron (Güzelhisar) • Kommen Palace • St.Gregory of Nyssa Monastery • Theotokos Theoskepastos Monastery (Kızlar Monastery) • Hagia Sofia Church (Ayasofya Mosque) • St. Auxentius Church (Çaprahan Church)
ADJECTIVE REASONS	**Singular Size**	• St.Gregory of Nyssa Monastery • Hagia Sofia Church (Ayasofya Mosque) • Kommen Palace • St. Auxentius Church
	Total Size	• Aşağıhisar Walls • Kızlar Monastery • Leonkastron (Güzelhisar)
SYMBOLIC REASONS		• St.Gregory of Nyssa Monastery • Hagia Sofia Church • St. Auxentius Church

Structures Forming the Trabzon Silhouette the Ottoman Period			
TOPOGRAPHY	**Location**	• İçkale Mosque • Gülbahar Hatun Mosq. • İskender Paşa Mosq. • Musa Paşa Mosq. • Hamza Paşa Mosq. • Hatuncuk Mosq. • Tabakhane Mosq. • Hasan Ağa Mosq. • Hacı Yahya Mosq. • Hacı Salih Mosq. • Müftü Mosque • Ahi Evren Dede Mosq. • Çarşı Mosque • Pazarkapı Mosque • Tavanlı Mosque • Bedesten • Taşhan	• Vakıfhan • Alacahan • Sabırhan • Yalıhan • Government Office • Nemlioğlu Mansion • Rum School (Kanuni Anadolu Lisesi) • Trabzon Mekteb-i İdadi-i Mülki (Trabzon Anadolu Lisesi) • Military Hospital • Sarı Kışla
ADJECTIVE REASONS	**Singular Size**	• Gülbahar Hatun Mosque • Çarşı Mosque • Pazarkapı Mosque • Yalıhan • Government Office • Nemlioğlu Mansion • Rum School • Trabzon Mekteb-i İdadi-i Mülki • Military Hospital • Sarı Kışla	

	Total Size	• Gülbahar Hatun Complex • Hamza Paşa Mosque and Cemetery • Vakıfhan+ Hacı Yahya Mosque • Alacahan+ Hacı Salih Mosque Tavanlı Mosque and Cemetery • Ahi Evren Dede Mosque and Cemetery • Taksim Cemetery • Maşatlık Non-moslem Cemetery	
SYMBOLIC REASONS		• Ortahisar Fatih Mosq. • Gülbahar Hatun Mosq. • İskender Paşa Mosque • Musa Paşa Mosque • Hasan Ağa Mosque • Hacı Yayha Mosque • Hacı Salih Mosque • Çarşı Mosque • Government Office • Nemlioğlu Mansion • Bedesten • Taşhan	• Vakıfhan • Alacahan • Sabırhan • Yalıhan • Rum School • Trabzon Mekteb-i İdadi-i Mülki • Military Hospital • Sarı Kışla

Table 1. Structures/ Places Forming Trabzon's City Silhouette

Advantages of the Change: The Formation of Today's City Silhouette

The city bearing the traces of civilizations in its known names such as Trapezus, Trebizond or Trabzon has been an important settlement center in every period because of its position in the Anatolian geography and its topography. In addition to its easily defensible, safe and secure location which was a decisive factor in the selection of settlement area of the city in all periods of the history, the valleys provide abundant water for the city, and its seaside and Boztepe against which the city leans make the city a sheltered port against the wind. The "topographic advantages" offered by the geography attracted the civilizations that set up the cities here. The fragmented geographical structure of Trabzon boundaries of which are marked by two valleys in the east-west direction, and by the sea and Boztepe in the north-

south direction was greatly impeded the city's growth and the emergence of new settlements. In this context, the settlement that started to form within the city walls determined by the topography began to spread especially to the eastern and western suburbs with the influence of the ports. The city space defined by Hagia Sophia Mosque in the west during the Komnenos Dynasty, and by Değirmendere in the east, persisted in the Ottoman period as well; due to the increasing population over time and the reconstruction activities that occurred, the existing settlements have become more crowded rather than the emergence of new settlement areas.

Parallel to the Westernization concept that emerged especially with the Tanzimat, new elements emerged in the spatial structures of the cities in order to show the modernization of the Ottoman State and the society and especially to restore the central state authority at the empire level [9]. However, after the Ottoman conquest of Trabzon, the Russian invasion, which we can call perhaps one of the most important dynamics that determine the direction of physical change/development, led to the reshaping of urban identity. During the invasion period, new routes were opened in the city, especially for military purposes, and expansion works were carried out in the existing roads. In addition to today's Maraş Street which extends from Meydan Park to Hagia Sophia District, the roads extending from Boztepe and Yeni Cuma Mosque to Bahçecik District were also opened during this period. In addition to these works, the Russians made a wide range of arrangements in Ortahisar and Zagnos. Today, in as much as the contribution of the presence of these streets to the physical development of the city is an unquestionable reality, it is also an undeniable fact that it destroyed many possible historical and cultural spaces that were recorded or failed to be recorded [10]. For the city of Trabzon, expropriations made with the purpose of building new structure, road construction and expansions for the implementation of the Lambert plan, which was made by the French architect-city planner Jaques H. Lambert in 1937 and commenced in 1938, caused the destruction of many monuments in the city and disappearance of the traditional settlement zones substantially. This is also a breaking point for city memory [11]. Besides this plan, the zoning plan prepared with another contest opened in 1970, additions in 1975-1984, and three planning periods in 1987 and 2003 were effective respectively in the attainment of the present outlook of the city [12]. Thus, the coastline of the city changed first with the revisions of the ease of access to the urban dwellers and then with filling plans applied for the reasons of recreation, sports and park areas [13]. With these planning works, not only new roads were built on the coast, but also new Tanjant Road / Yavuz Selim Boulevard parallel to the Zağnos and Tabakhane bridge route tangent to the south side of the ancient city were built. Today, new additions are made with viaducts and overpasses to the roads completed in early 2000s. While the city underwent very few transformations in terms of functioning and structure until the industrialization, the rapid urbanization caused by the growing population and industrialization lead to construction activities including not only the transportation sector but also high-rise public, commercial or residential structures covering wide areas. Attempts are being made to find solutions to the various urban problems caused by the rapid population growth and migrations, by addressing them with the applied urban

transformation projects. This change is especially seen in the settlement area of Zağnos and Tabakhane valley that have been the settlement area for the migrants coming from neighbour cities for a long time.

Disadvantages of the Change: Change of the Historical City Silhouette

The topography that shaped the original settlement in today's Trabzon, which has lost all its physical traces of the first settlement, gives important clues in determining the settlement area of the city. Divided by Degirmendere, Tabakhane and Zağnos streams, the city was built on the ridge between the deep valleys formed by the Zağnos in the west and Tabakhane steams in the east from south to north. This ridge on which Trabzon was founded, rises from the coast and leans to Boztepe in the south and ends in the Black Sea in the north. The city owes its life lasted for thousands of years to the fortified walls rising along two deep valleys in the east and west. These walls, which are the symbolic structures of the city silhouette, are the physical and historical walls of the city as it is in every period of history. When we look at the city from the sea today; at the south end of the city, it is possible to see the walls of the Yukarıhisar, thanks to its advantage being in a higher position than the other two fortresses,and the Komnenos palace right in the middle. However, the mountain chains used to rise behind it left their place to high-rise buildings. From the first settlement to the Ottomans - as we mentioned earlier, until the elimination of the security concerns - it is understood from the engravings that the effect of the wall on silhouette continued although one or two-storey residential buildings in the area surrounded by the walls have been piled up. As a matter of fact, Kuban [14], states that the Anatolian city reflects a building culture that was entirely created in the Ottoman era with its physical appearance and that the city has given all the details of city silhouette with mosque, castle and houses. The third part of the city walls, which is located in the north of the city, is below the road level due to road works and the changing coastline. In addition to being under the road level, recently added viaducts prevent the walls from being perceived from the sea. However, Zağnos Bastion of the Aşağıhisar walls is still distinguishable in the silhouette bacause of its topographical locations - for example, although there is Moloz bastion in the north end, it cannot be seen due to reasons mentioned before - as well as its high body walls. Another point that should be mentioned here is that because of the change of the coastal line and the rising of the roads, the structures in the northernmost are not visible at all in the photographs taken, while the structures - such as Zağnos Bastion - in the south give a misleading look as if they are located at the north coast.

Transportation of the valleys that form the city’s settlement fabric is provided by Zağnos Bridge in the west, which acts as a fortification wall between Ortahisar and Aşağıhisar, and by Tabakhane Bridge in the east. While the present structure of the two bridges have different period features, it is stated that the original structures bear 1st and 2nd century characteristics [15]. The present structures have reached their final appearance during the Ottoman period. The Zağnos Bridge today is about 20-25 m high and 50-60 m long. The Tabakhane Bridge in the east of Ortahisar has reached today with many repairs and expansion works. Both the walls of Ortahisar, which determine the limits of the old settlement area of the city, and the religious structures

between the buildings, towers, bridges and civil structures, and the effect of the walls on the silhouette are under threat due to the problems arising from the urbanization process. It is not possible to distinguish the two bridges enabling the external connection from the inside of the walls with the distinctness of the topography in the silhouette. However, with the recent planning works in the valleys, the valleys have become relatively readable. When we look at the place/ structures that we can follow the traces in silhouette in the recent photographs taken from the sea, it is noteworthy that these spaces or structures are very few in number. The first building in the west, which can be read in the silhouette, is the present Hagia Sophia Mosque, which also determined western limit of the city for a long time. The structure, which has become gradually far away from the coast due to road works, has a dominant structure in silhouette together with the green texture that it is in, thanks to the recent landscaping works. (In order to enable the follow-up of the study, structural or spatial disappearances/losses have been traced back first starting from the city walls, that is the first definer of the city's physical boundaries and other analyses within a system extending from west to east of the city. Analysis made from west to east first addresses to the structures that we can trace within the silhouette.) Sarıkışla built upon the plains where the slope rising from north to south ends and Military Hospital below it as well as today's Trabzon Science High School which one of the firs Tanzimat structures thanks to its topographic advantage, can be read within the silhouette. (It is one of the first Tanzimat structures whose former name was Trabzon Mekteb-i İdadi-i Mülki. Today it is replaced with the buidling designed by German architect Bruno Taut in 1938-1940. Although it is not the original building, it is discussed within the scope of the study because of its importance in the history and city memory.) The fact that the area is still in the control of military and no construction works are allowed is an important factor in the readability of the Sarıkışla and Military Hospital besides its typographical advantage. When we move eastward, we encounter the second historical and cultural spatial or structural trace in the Gulbahar Hatun District second mark on the neighborhood, which is Hamza Pasha Mosque located at the Wes of Küçük İmaret Cemetry. However, the structure itself can not be directly perceived, but it can be distinguished by the trees in its private cemetery, that is, the green area that the cemetery created within the city. In the eastern suburbs, in today's Kemerkaya district, Greek School (Dar-ul-Mualimin) which was built right next to sea before the urban road planning and which is currently Kanuni Anatolian High School, is still one of the buildings most dominant in the city silhouette with it U shaped plan extending towards south and with its 3-storeys.

Other than these structures, for example Panagia Chrysocephalos converted into "Atik Mosque" as symbol of Ottoman conquest or İçkale Mosque, the first mosque of the city that is built in the era of Prince Abdullah and Gülbahar Hatun Mosque which is also a prince era structure and which has survived only with its shrine can not be read from the silhouette. When we attempt to read the structures that we assume that can be read from the silhouette from the first settlement to the end of the Ottoman Empire, the first building after the Hagia Sophia Mosque that we need to look for in the west is the "Cami-i

İmarret-i Amire-i Hatuniye" (Gülbahar Hatun Mosque) built by Yavuz Sultan Selim, who was appointed as the governor of Trabzon, in the western suburbs outside the city walls. Today, as well as shrines and mosques that survive, the complex of buildings with madrasa (Hatuniye Madrasa), imaret (Hatuniye İmaret), school (Hatuniye School) and darü'l kurra (Hatuniye Darü'l Kurra) occupy a large space. Considering the geographical conditions as mentioned earlier, it may assumed that the activity of such structure outside the walls may be caused by the fact that the walled city was pressing upon the settlement boundaries and there was not enough space that would accommodate several functions such as imaret, madrasa in the center of the city founded in a narrow space between two valleys. At the end of the process of conversion of the complex and the private cemetery are to the Atapark, only the Gülbahar Hatun Mosque and its shrine have survived and the effect of the complex in both space and time was reduced [16]. There is the historical and symbolic importance of present-day Ortahisar Fatih Mosque thanks to its features of being the greatest church and cathedral church in Komnenos period and being a symbol of conquest in Ottoman period. Fatih Mosque lost its appearance in the silhouette when viewed from the sea, due to the construction concentrated from the south to the north. However, the existence of the Zağnos valley gives a clue about the place of the building in the result of the detailed examination. In addition, especially the northward high-rise structuring makes it impossible to read the mosques from the silhouette like Gülbahar Hatun and Fatih mosques, except for its rising minaret. The physical existence of the buildings in that geography and the meanings which they represent in the society; the owners constructed the buildings, the construction method and the sub-components (shape, material, etc.) affecting it are other important points [17]. The historical and geographical characteristics of the place where current İç Kale Mosque referred to as "Valide-i Merhum Sultan Abdullah Mosque" in documents was built are very important, but it is not possible to read the modest building in the current city silhouette. Musa Pasha Mosque, which is a rare domed and minareted mosque located within the Ortahisar walls, may not be perceived even within the city due to the tangent road passing through in the south. It is impossible to see the Musa Pasha Mosque in the city silhouette at least from now on, due to presence of City Hall built in the old town center in the north outside the general Tanzimat applications and the prison (Hüseyin Kazaz Cultural Center) built in association. As a matter of fact, the northnermost of these three structures, City Hall may not be read from the silhouette today.

Pazarkapı Mosque as well as Pazarkapı District, and Hasan Ağa Mosque in Sakız Square, which are located on the same level as it, do not appear in the city silhouette due to the changing coastal line and elevated road level. On the western edge of the Tabakhane Bridge, the Müftü Mosque, which is located at almost north of the Tabakhane Mosque, was destroyed and rebuilt. These two buildings, which were built in the middle of the 20th century, are being read on the city silhouette with their minarets. Trabzon, which has always been a settlement since ancient times, has stood out with its trade and port city identity even in the first phase of urban development. The city port, which we can call as one of the first construction activities; is the Moloz Port built by Roman Emperor Hadrianus and located at current Moloz district in front of

Aşağıhisar walls. It is understood that the Moloz and its surroundings outside of the Aşağıhisar walls are the busiest port of the city of Trabzon. Its proximity to the Çarşı District accomodating bazaar and inns as well as foundation buildings such as mosque, baths fountains, where merchants may meet all their needs is especially the most important evidence of the fact that Moloz and its surroundings were used as port [18]. When considering the relations with the port and the extant structures, it is seen that the commercial structures and the other structures providing service to these such as religious ones, etc. are located in the coastal zone associated with the port. The change of the coastal line and the various road works which are one of the biggest problems that we have encountered when we evaluate the unread or ineffective structures in the silhouette have affected the appearance in these structures. Apart from today's Taşhan, Alacahan, Hacı Yahya Han (Gön Han, Vakıf Han) and Sabiıhan, it is understood from the documents that there are many known inns in the center [19]. The most important structure of the Trabzon market is covered bazaar. In the most important commercial center of the city equipped with these structures, there is the Çarşı Mosque built by Hazinedarzade Osman Pasha in 1839 in the place of Mescid-i Hacı Kasım, which was built between 1486 and 1523 according to the foundation records. It is not possible to read these structures in today's silhouette obtained within the scope of the study. This situation arises from the fact that the silhouette is obtained from the sea. For example, Hacı Yahya is still on the side of the road and there is no building in front of it. However, these constructions are visible in the photo taken from east to west in 1898. Here, again, the reason is not different than it is in all other buildings lost its effect on the silhouette of the city.

St. Eugenious Church (Yenicuma Mosque) dedicated to St. Eugenios believed to be the patron saint of the city was established in the eastern suburbs, just east of the walls of Yukarıhisar is completely lost due to the settlement around. However, based on a photograph we can date after 1940, it is possible to say that the effect of the structure in question on the silhouette has been realized after this date. When we look at its location and the intensity of the structuring, it is obvious that this building having a good readability in pre-Ottoman period seems to have continued its readability in the Ottoman period as well. When we ascend to the south, we see Tavanlı Mosque located within a large cemetery on Boztepe Street in the Gazipaşa District and Nemlioğlu Mansion which is expected to stand out in the silhouette with its massive size, right next to the mosque. The location of the Tavanlı Mosque placed on the lower slopes of Boztepe, today can be only determined thanks to the Kızlar Monastery behind it. However, although it is located in Boztepe, the Ahi Evren Mosque is still being read in silhouette, because it is positioned on the upper part of Boztepe in particular. The structure is easily perceivable thanks to both the topographic advantages and the use of the are as military space and thus prohibition of zoning activities around the structure. The last building in the west, which can be clearly seen in the city silhouette, is the Kızlar Monastery. The fact that Monastery was built upon the slope ofBoztepeon two terraces in a way dominating has made structure to maintain its existence in the city silhouette. There were churches in the eastern suburbs standing until recently, but these were destroyed due to various urban works. One of the most

important of these buildinding is St. Gergory of Nyssa Monastery built in the current Kemerkaya District and is located in the "benchmark" of the city. The church, which was the cathedral church of the city in 1665, was demolished in 1963 due to road construction [20].

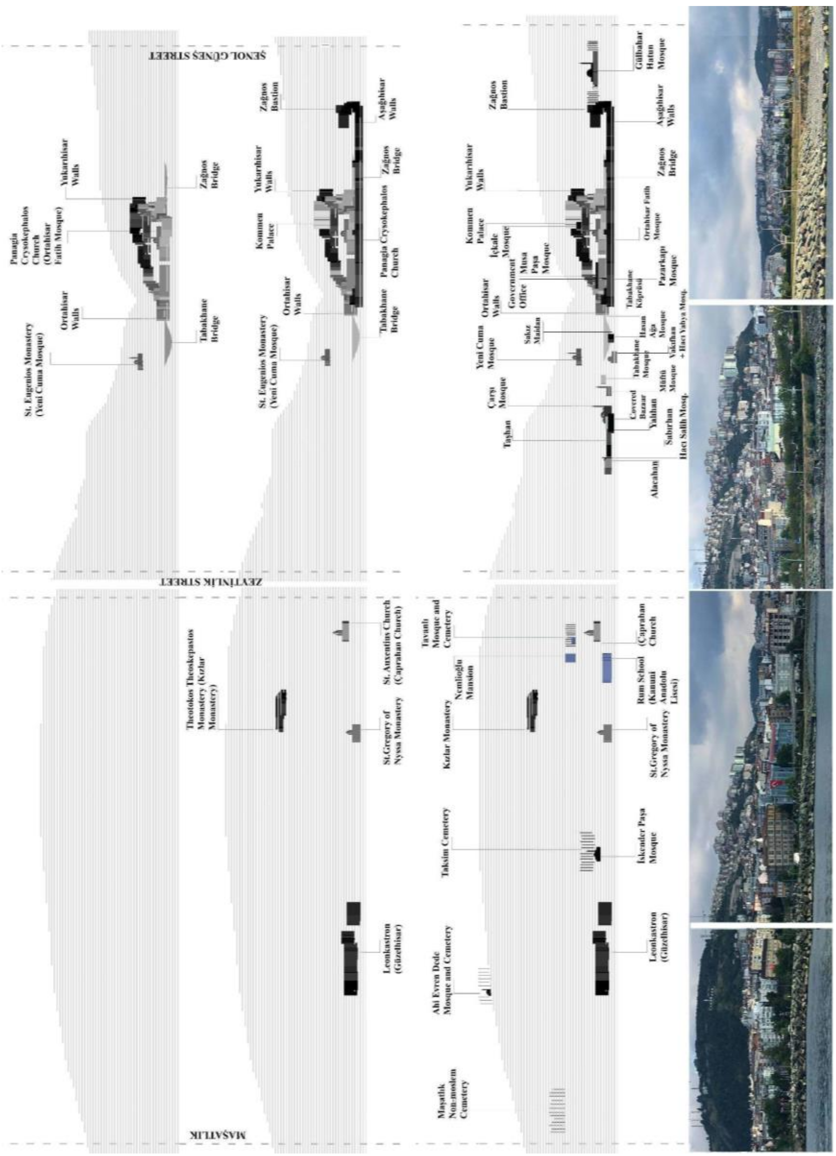
Apart from the bazaar mentioned above, the second trade zone is Gavur Square, currently Atatürk Field which is located in the eastern suburbs, which has become a vital point as the starting and ending point of the Erzurum-Iran trade road. Considering the structures in this area, we see Leonkastron / Güzelhisar surrounded by city walls, which was not directly a trade center but belonged to the Genoese colony settled in the city for trade in the north of the Gavur Square. This area has bay characteristics shaped by topographical conditions. Within the area surrounded by the walls during Komnenos period, a palace was built by Üçüncüoğlu Ahmet Pasha in 1740. A flat, settlement-appropriate topography on the rocky area, extending towards the sea and forming a bay in front of it, ensured that this area was visible in the city silhouette in almost every period of history. Again in Gavur Square, İskender Pasha who seems to be an important figure in the Ottoman bureaucracy was built İskender Pasha Mosque having a complex structure with its accompanying fountain and madrasa and darülkurra which are not present today. As the mosque was built around the Gavur Square being a junction and nodal point for the commercial roads, it became the dominant element in the physical structure on the commercial axis in the eastern suburbs. The area size of the structure has and the dome that covers this area allow it to be distinguished from other mosques. The cemetery area surrounding the mosque was also removed except for İskender Pasha's grave due to the road passing through the south. After its evacuation in Republican era, two-storey madrasa positioned immediately adjacent to the mosque was also demolished despite the fact that it was in good condition and only its main gate was left during the landscaping works took place after 1950 [21]. One of the important public areas of the city of Trabzon, the square has recently been subjected to intensive construction. Due to the influence of the high-rise buildings built from the south to the north, it has become impossible to read them in the silhouette. However, it is noteworthy that other present-day constructions rising just behind the mosque can be perceived within the silhouette.

Aside from all the structures mentioned above, especially during and after the Ottoman period, the religious belief involving the tradition of planting a tree on the side of every grave has turned into cemeteries into forests of cypress trees. Other than zoning activities, the cemeteries, whether small or large, should be examined further in a separate study considering their symbolic contribution to urban identity inside or outside the city boundary. Apart from the private cemeteries of Gülbahar Hatun, Hamza Pasha, Ahi Evran and Tavanlı mosques that are mentioned hereinafter where relevant, there are also cemeteries inside the city, which have left a mark in the city memory. Among the best-known of these are Taksim cemetery that is visible almost every available photo of Atatürk Field, Maşatlık on the ridges of Esentepe and Kavak Square Cemetery starting from the area where today Fatih State Hospital is located and extending up to Trabzon High School. Taksim Cemetery has been transformed into Taksim or Fatih Park with its present

name and although it partially preserves its green fabric, it has lost its perceptibility within the city especially with the Yavuz Selim Boulevard passing through the south. Kavak Square Cemetery and Maşatlık are non-existent today [22].

CONCLUSION

Urban common spaces are place where urban people come together for social, cultural and economic, etc. reasons. These places witness important events, moments and experiences of urban dwellers and urban life. Historical and cultural continuity is interrupted when the physical environment for contemporary needs is not formed with characteristics of the past [23]. While the city underwent barely any transformation functionally and structurally especially until the industrialization, because of the new buildings "added into the silhouette of Trabzon" as a result of the growing population and rapid urbanization caused by industrialization and the development of zoning activities aiming to house the growing population and including pufblic, commercial and residential structures by disregarding the existing characteristic in the protected areas and the areas where historical values are dense, the historical identities of the cities have become near-extinction. Transformation of urban spaces started with Tanzimat and accelerated especially in the mid-twentieth century with an ever-growing momentum by the means of active social dynamics became an initiative serving for the development of the city from time to time, while in other times, - when looking back- it caused irreversible and irreparable cultural damages. As a result, in a city with high historical value, such as Trabzon, taking measures to ensure the sustainability of this characteristic of the city and protection and further unveiling of the city silhouette are of great importance. It is necessary to examine the relations between old and new places and to re-evaluate street, transportation and human relations in urban life and create a sustainable living environment in this framework.


ŞENOL GÜNEŞ STREET
ZEYTİNLİK STREET
MAŞATLIK
St. Eugenios Monastery (Yeni Cuma Mosque)
Ortahisar Walls
Panagia Crysokephalos Church (Ortahisar Fatih Mosque)
Yukarıhisar Walls
Tabakhane Bridge
Zağnos Bridge
Zağnos Bastion
Aşağıhisar Walls
Kommen Palace
Panagia Crysokephalos Church
Theotokos Theoskepastos Monastery (Kızlar Monastery)
St. Auxentius Church (Çaprahan Church)
St.Gregory of Nyssa Monastery
Leonkastron (Güzelhisar)
Gülbahar Hatun Mosque
İçkale Mosque
Musa Paşa Mosque
Government Office
Pazarkapı Mosque
Ortahisar Fatih Mosque
Tabakhane Köprüsü
Sakız Maidan
Hasan Ağa Mosque
Vakıfhan + Hacı Yahya Mosq.
Tabakhane Mosque
Yeni Cuma Mosque
Müftü Mosque
Çarşı Mosque
Covered Bazaar
Yalıhan
Taşhan
Saburhan
Hacı Salih Mosq.
Alacahan
Tavanlı Mosque and Cemetery
Nemlioğlu Mansion
Kızlar Monastery
Rum School (Kanuni Anadolu Lisesi)
Çaprahan Church
Taksim Cemetery
İskender Paşa Mosque
Ahi Evren Dede Mosque and Cemetery
Maşatlık Non-moslem Cemetery

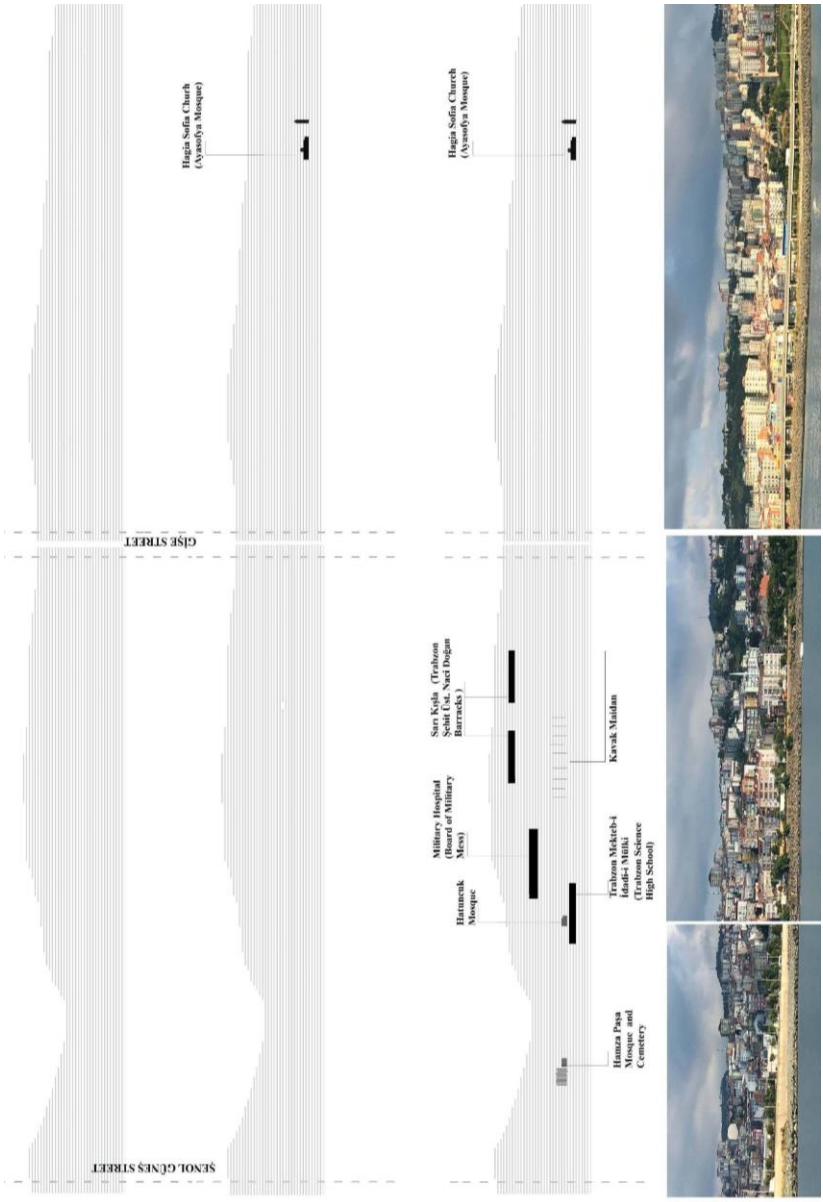


Figure 1. The change of the city silhouette of Trabzon

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EVALUATION OF POSSIBILITIES OF THE RECREATION AND TOURISM GREENWAY IN SAMSUN OLD RAIL TRAIL

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ABSTRACT

The railway axes that have lost their function are now being transformed in many countries of the world and used for recreation area, walking path, bicycle path and sometimes horse riding. These axes are revitalized as linear parks and greenways. Among the countries that have implemented this practice are; Australia, Canada, USA, UK, Ireland, Germany, New Zealand and Singapore. The applications in these countries have been examined within the scope of the researches carried out. The new functions gained in the fields of these exemplary applications and the new uses of the areas were evaluated and the benefits of the transformation of the area to the city and its users were investigated. Within the scope of the study, Samsun Black Railway line was taken out of all the samples related to Rail Trail and the functions in these examples. After this line has lost its function, the transformations that can be done on the railway road have been evaluated. In this context, the railway will provide the integration of city centre, industrial and rural areas. In this study, opportunitistics and recycler planning strategies are used. Scenarios have been developed to plan as recreation and tourism greenway for this route.

Key Words: Rail Trail, Greenways, Lineer Parks, Samsun, Turkey.

INTRODUCTION

Urban green spaces can be defined as public areas that are arranged by the administrators of the city so that people can have a rest, walk and perform various forms of recreational activities within urban areas, and approach to the nature [1].

The term of green roads, which are included in urban green spaces, was introduced in the 19th century. Urban designers started to connect the urban green spaces with one another and generated continuous “corridors”. The word “green road” is the combination of the English term “green belt” and Frederick Law Olmsted’s term of “park roads”. The green roads have their origins from Frederick Law Olmsted, who proposed green roads and park roads, especially in his plans of “Boston Emerald Necklace” in the USA, and from the Ebenezer Howard’s conceptualization of the green belt in Europe [2].

Thanks to the benefits they provide to Americans in respect to transportation and recreational activities, green roads have become a generally accepted notion of planning and design in the modern era. Frederick Law Olmsted was the father of both landscape architecture and the movement of modern green roads. Being inspired by the European boulevards, Olmsted designed his park roads based especially on Baron Haussmann’s example in Paris dating back to the middle of the 19th century [3] [4] defined green roads as field networks containing linear elements, which are planned, designed and managed for multiple purposes.

Open and green spaces that are located within the city are such areas that enable human beings, who lost most of their ties with the nature due to urbanization, industrialization and population growth, breathe in the urban area and have closer contacts with the nature, as well as maintaining continuity in historical-cultural-natural texture. In this way, open green spaces link urban utilization areas with different characteristics and certain parts of the city together, thus generating a holistic structure. In this respect, the most essential policy to be adopted is to preserve the existing natural or green corridors in the urban areas and to reinforce their connections with the town center and its surroundings. Referred to as urban corridors, such public areas as green roads, river axes, roads, railways, squares, parks, pedestrian zones, roof gardens do actually constitute the elements of the one “open and green space system” of the city [5]- [6].

According to [7], green roads can be defined in four different ways: 1. linear open spaces like channels and scenery roads that are established along natural corridors such as rivers, ridges or valleys, and manmade structures like railroads transformed for recreational use, 2. natural or designed roads that are allocated for pedestrian or bicycle tracks, 3. open space connectors that link parks, natural reservoirs, cultural elements and historical settlements to one another and to living spaces, and 4. special local lines that are designed as park roads, green belts and linear parks.

Endeavors to regain the idle areas that lost their functions as they were discarded due to technological changes, and transform them into recreational green areas through reclaim-derelict approach have become widespread in

recent years. Redesigning railroad axes that lost their functions and became idle into green roads in the same approach has been adopted in many countries. These areas are transformed into recreational areas, pedestrian roads and bicycle tracks and sometimes into riding routes. They are revitalized as linear parks and green roads.

Countries that started implementing similar schemes include Australia, Canada, the USA, the UK, Ireland, Germany, New Zealand and Singapore. Pronomode Project conducted in Paris, High Line Project undertaken in the USA, Bristol Project and The Goods Line project completed in the UK and Switzerland, respectively, are some examples of such projects.

Paris Promenade Plantée Project: One of the first examples of the typology explained above is the Paris Promenade Plantée Project. Promenade Plantée (or Coulée verte René-Dumont), which was designed by the landscape architect Jacques Vergely and the architect Philippe Mathieux and fully established in 1993 in the 12th arrondissement of Paris. It is located on a 4.5-km-long land piece that covers almost the entire 12th arrondissement. The park is founded on the old cargo train line, which was closed in 1969 and remained deserted for many years. The line was regained as a green corridor for the city [8].

New York High Line Project: High Line (also known as the High Line Park) was established on an elevated portion of the city, on the disused spur of New York Central Railroad called the West Side Line, in Manhattan, and it is 1.45 miles (2.33 km) long. Inspired by the Promenade Plantée project created in 1993 in Paris, High Line was redesigned and planting schemes were performed. The most significant part of these arrangements was to transform railway line into a pedestrian track (Rail-to-Trail). In order to re-use the railway, formation of an urban park started in 2006, and the first section was opened in 2009, followed by the second one in 2011. The third, and the last, section was officially opened for public use on September 21, 2014. The small zone between the 10th Av. And the 30th St., which remained closed even after the official opening, was subsequently opened in 2015. The project revitalized the area, leading to immense property development projects in the region surrounding the park. Since September 2014, the park has annually been visited by 5 million people [9].

Bristol & Bath Railway Path Project: Bristol & Bath Railway Path was created on the rail chair of the old Midland Railway, where the passenger transportation stopped at the end of the 1960s. Trains started operating on the line between the years 1979 and 1986. This line, like many other routes, lost its functionality over years, and was later transformed into a linear park. The first section was the spot between Bath and Bitton, for which Cyclebag got the permission to form a 2-m-wide cycle track. The path was later expanded to the last section in Bristol in the west. Presently, the path has a 3-m-wide surface end to end, and is an attractive recreational area and route. The path also constitutes an important wild life corridor. There are spots where one can explore the amazing history, visit interesting places nearby and visit other attractions through links to other tracks and routes. The railway path starts from the town center of Bristol and leads towards Fishponds in the north. The

path later crosses Mangotsfield, Warmley and Bitton. The last part is in the rural Bath and North East Somerset, crossing Saltford before reaching Newbridge in Bath. It connects to the path in Mangotsfield, which accompanies the old railway from Shortwood up to Coxgrove Hill. The path is visited by at least 1 million people every year [10].

The Goods Line Project: The Goods Line freight train line located in Sydney was built in the 19th century so as to transport commercial goods. Operation of the railroad came to a halt in the 1980s, and it remained disused for a long time afterwards. The old railway, which was regained as a linear park for the city, started to bear a considerable public responsibility, aiming at forming a line that connects people in social and cultural terms. The elevated linear park in this project reaches up till Railway Square and Darling Harbour via Ultimo. The uninterrupted 500-m-long corridor harmonizes Sydney's art, entertainment facilities and educational activities. It has become a new meeting spot for more than 80,000 students, residents and visitors. The Goods Line Project has transformed a disused elevated section of a railway route crossing one of the densest parts of Sydney into a green public corridor. The park, which lies similar to the backbone, leads along important educational, cultural and media facilities of the city. Apart from its function of connecting, the line, which was supplemented with numerous social infrastructure elements, generates different interaction spots thanks to its leisure areas, amphitheater, playgrounds, stands, terraces and green areas. The Good Line Project intends to form an example in evolving disused urban spaces into spots that enrich the public life. The project defines open spaces with loosely drawn borders in order to host various activities that will trigger bringing people together. The line, which was intentionally designed in a non-linear form, creates marginal spaces thanks to its indentations, providing people opportunities to stop by and fully seize the potential of these spaces [11].

Apart from the examples from abroad, the Cermodern museum, located in Ankara, Turkey, is an example where an old railway repair shop on an old railway line was transformed into a museum and open air theatre. Films are shown and exhibitions are held in the area, the garden of the repair shop, during summer months.

Strategies of greenway planning are formed basically through four main approaches, namely "preservation oriented", "defense oriented", "challenging" and "seizing the opportunities". Protective strategies are implemented when the existing structure and processes of the landscape are supported. These strategies are generally implemented in areas that are protected from change while intense changes are taking place around them. When the existing landscape is fragmented and the core area starts diminishing, defense oriented strategies are employed. Challenging strategies, on the other hand, is based on the motivation to attain the sought spatial structuring of the projected landscape. Different from other approaches, through these strategies, nature is repaired with the help of new elements in landscapes that have been damaged or fragmented. In the case of special landscape elements, the approach that seizes the opportunities is adopted and these elements are connected to one another with green roads [4].

In the current study, which was conducted on regaining railways as green roads, challenging (regaining) strategies and planning strategies that aim at seizing the opportunities were adopted.

Goal of the Study

With the studies conducted, applications in the example countries were scrutinized. New functions that areas gained through such applications in these example countries and new ways of utilization of these areas were evaluated, and benefits of the transformation of these areas for their users and the entire city were investigated.

Setting off from all the examples concerning green roads and the functions of these examples, the old Samsun Railway was investigated in the current study, possible transformations that can be made in the old railway line, which had lost its functions, were discussed. In this scope, the scenario in which the railway integrates the town center, industrial and rural zones in the form of a recreational area was investigated, and rather than repairing the area, suggestions were made to regain the area by transforming it into a new place with different functions that makes economic contributions to places located along the tracks.

Scope of the Study

After a general conceptual explanation about green roads, examples from around the world were presented. Following the example areas, the old Samsun Railway was introduced, and as it has lost its earlier functions, the scenario in which it is regained by transforming into a linear park for the city was investigated. In this scope, the findings relating the goal of the study were scrutinized, and the current status of the area was analyzed. Suggestions were made about the future of the area. In the discussion and results, a general evaluation of the study for the city of Samsun was made.

Study Area

The examples analyzed concerning the railway axes that lost their functions and importance over time can be regarded as a good opportunity as they can be regained for the city in the form of new recreational areas. In this respect, especially the old and disused railway routes in Turkey can be regained as recreational areas. The old railway line built within the borders of Samsun was examined as an example [Figure 1].

Figure 1. Samsun City Location [12]

General Information about the Old Samsun Railway Line

Samsun is the only province of the Middle and the Eastern Black Sea Region which has connection with the railway network of the country. Construction of the 404-km-long Samsun-Sivas line was completed in 1932. This line ends at the Samsun Port. Samsun-Çarşamba railway line, on the other hand, is a short line with a length of only 37 km. This line, the construction of which was initiated by private entrepreneurs, was completed in 1926, and later was transferred to the management of Turkish State Railways (TCDD). As the traffic flow was taken over by land roads, this line was closed in 1955 on the grounds that it lost its function. When it was active, the line had been used by many local residents for one-day trips with the purpose of shopping, entertainment and education. Because the number of freight trains operating between Samsun and Çarşamba and one-day trips increased in the following years, suburban trains started to ride on the same line in 1980. Moreover, fully-closed carts were also used in the same period. The line, which was closed one more time, was opened once again in 1992. This railway remained in service until 2005, but following the privatization of copper and nitrogen factories in 2005, the line was ultimately closed, as it is no more needed. Significant buildings located along the old railway line include The Grand Station, the TCDD building in Kılıçdere, Sycamore trees planted along the axe signifying the spots of old stations, Tekkeköy Train Station and Hamzalı Train Station. The old railway line crosses the town center, the Industrial Area, center and the rural parts of Tekkeköy and Çarşamba district [Figure 2].

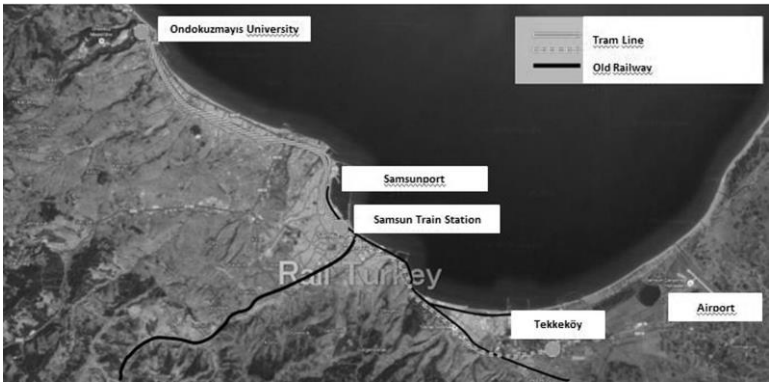

Figure 2. Old Samsun Railway Route

Examination and Analysis of the Sections of the Old Samsun Railway Line

The old railway line crosses the districts of İlkadım, Canik, Tekkeköy and Çarşamba in the metropolitan area of Samsun [Figure 3]. As the line is currently under maintenance, it has been closed for a period of 3 years. When the line is opened, transportation of goods to the logistics center in Tekkeköy will be realized through the existing line. The section after the logistics center, up to Çarşamba district, will remain idle. Areas along the existing line host numerous buildings that bear historical traces. Handling these buildings holistically with the railway line, after the old railway line between Samsun and Çarşamba has lost its functions, a linear park that crosses the town center and links the districts to one another can be designed like the examples from around the world. The railway line was examined in three different sections: town center, industrial area and the rural areas located within the borders of Tekkeköy and Çarşamba.

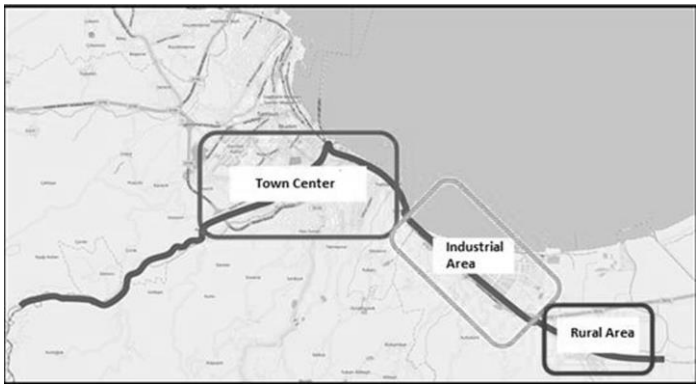

Figure 3. Department of the Railway Lines

Town Center Section

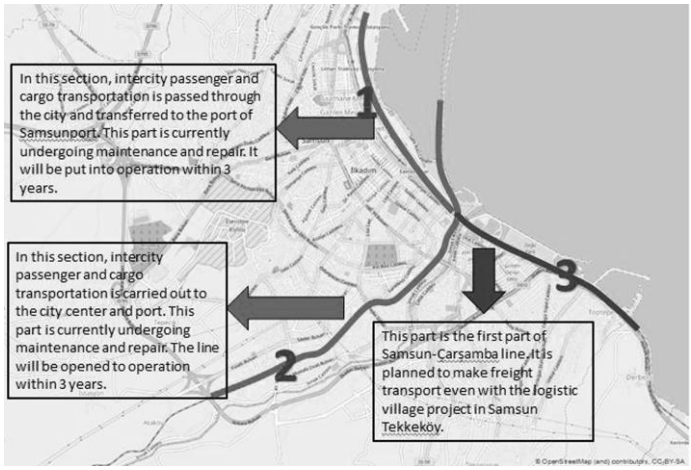

Figure 4. Departments of the Town Center Section

In the zone marked 1, the goods supplied from the south of the city are planned to transport to Samsun Port. According to acquired information, goods from the port will be taken to southern districts on the same line in the opposite direction. Zone no 2, on the other hand, is the point that ensures intercity connection for Samsun. Plans indicate that this zone will have been opened within three years. Zone number 3 is entirely meant to transport goods from the port to the logistics center founded in Tekkeköy. After the railway line has lost its functions, a linear park can be planned in the area that is limited by the ring road in the south, Samsun Port in the west and the fishing port area in the east, making use of the areas that are currently used for recreational purposes. More dynamic components (bicycle tracks, sports fields, amphitheaters etc.) that are meant to meet recreational needs can be constructed in this new project [Figure 4].

Zone No 1: It can be understood from Figure 5 that the line located within the town center and the stations are already located in the recreational area. The Old TCDD building, on the other hand, will be converted into Surgical Instruments Museum. This museum will have a very important mission in this linear park. Designing this zone as a linear recreational area will help having a holistic ‘green area’.

Figure 5. Location of Station and Axle in the Center in Recreational Areas

Zone No 2: This line, which is located within the town center, lies parallel to Mert River, which connects to the seashore from the southern part of the city. This part of the railway sets off from the rural, sparsely populated areas in the south, and reaches to the areas by the seashore, where the housing is very dense [Figure 6]-[Figure 7].

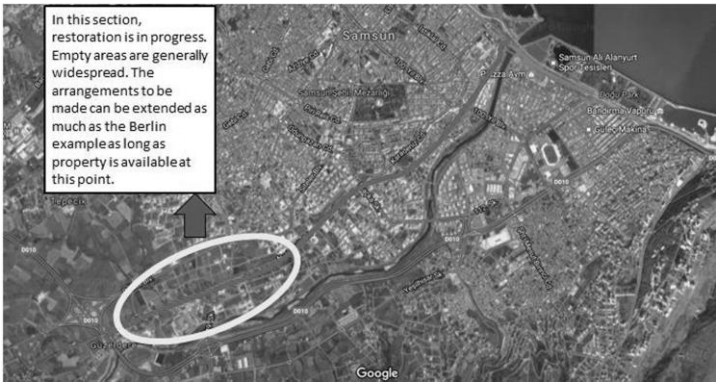

Figure 6. South Connected Railway Area of the City

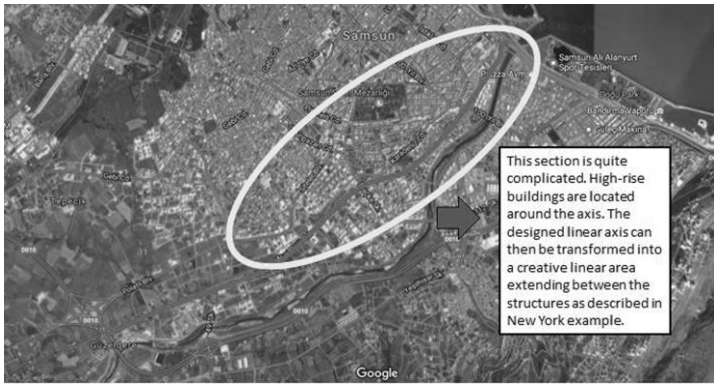

Figure 7. South Connected Railway Axle Containerized Areas of the City

Zone No 3: Being in the recreational area, the railway line located within the East Park in the town center will be integrated with the surrounding area when it is also arranged as a linear park. Bandırma Museum, Suada Aqua Park and Mavi Işıklar Rehabilitation Center for the Disables are positioned along the route [Figure 8]. Integrated utilization with these existing facilities can be maintained thanks to new functions to be gained by the line.

Figure 8. Bandırma Museum and Position of Railway Line

Current Status in the Industrial Area

Crossing the town center, the railway arrives at the Samsun Industrial Area. The line forks into two inside the Industrial Area. Cargos are carried to Yeşilyurt Port on the line built along the shore. However, the other line, which lies along the inner part of the area, is currently idle and the railway tracks are partly damaged [Figure 9]. As this section is inside the Industrial Area, a linear park, which will integrate with the industrial area and where industrial products are exhibited, can be established if it is transformed into a “Rail-to-Trail” form. In this section, people can familiarize with industrial park areas, getting rid of customary areas in the town center, which are generally arranged for recreational use.

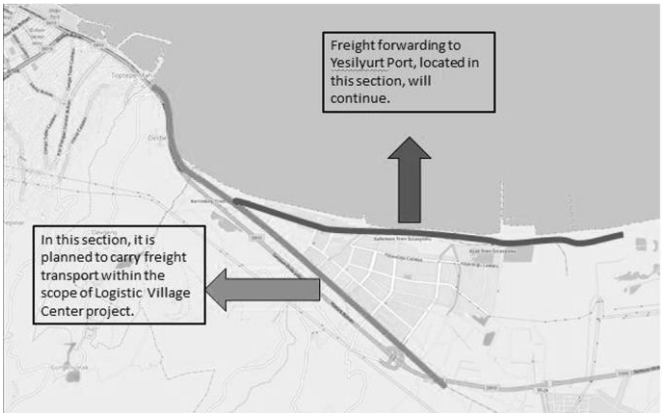

Figure 9. Industrial Area

Current Status in the Rural Area

This part of the railway line is currently disused [Figure 10]. Nevertheless, according to information taken from the State Railways, this part is planned for the service of the Logistics Center founded nearby.

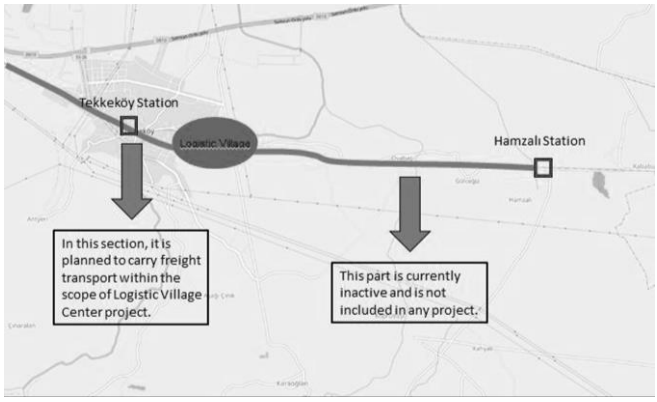

Figure 10. Axle in Tekkeköy District and Logistic Village

There are no plans for the rest of the line, which reaches until Çarşamba after the Logistics Center. The line constructed in the rural area is idle [Figure 11].

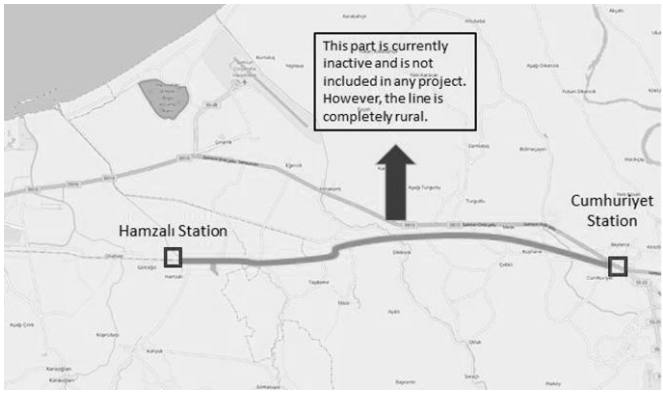

Figure 11. Axle that will Pass through Rural Areas

There are important structures in this section of the line. Especially the Tekkeköy Station, built in the center of Tekkeköy District, is the most notable one of them. Hamzalı Station building is also standing in this part of the line that crosses the villages of Tekkeköy District and arrives in Çarşamba [Figure 12]. These structures can be made into museums that reflect the old importance of the railway line and memories of long years.

Figure 12. Constructions on Axle [13]

Material and Method

In the study, examples from abroad relating green roads were examined and theoretical background was formed. In this respect, planning strategies were discussed, and challenging (regaining) strategies and planning strategies that aim at seizing the opportunities were adopted. Detailed analyses were made during the planning phase, and current status of the area was subsequently scrutinized. Photographs showing the past of the area were examined and traces of the old times in the area were revealed. Face to face interview method was employed in the planning phase of the study. People who are knowledgeable about the area were surveyed and information was gathered concerning the earlier utilizations.

Findings

In the current study, as it lost its importance and functions over time, it is proposed that the old Samsun Railway shall be turned into a linear park, similar to those examples from around the world. The railway line is re-

evaluated in an approach that adopts challenging (regaining) strategies and planning strategies that aim at seizing the opportunities. In its current status, the line leads through different utilization areas including the town center, Tekkeköy district and rural parts of the city. Detailed analyses about these sections are presented above. Restoration of the structures built along the 37-km-long railway line is planned, thus gaining them new functions. Active recreational areas and bicycle tracks were proposed for the town center. Memory corridors, especially for the old station building in Tekkeköy district, and agro tourism areas were proposed. Detailed utilizations for different parts of the line are summarized below [Figure 13].

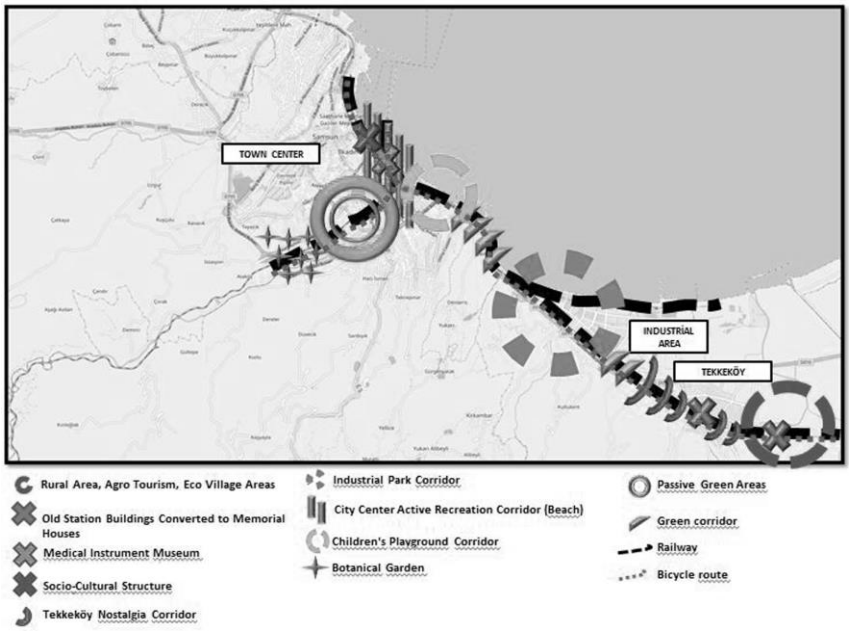

Figure 13. Recommended Samsun Railway Line Linear Park Functions

Group of Botanical Gardens Spreading Around a Large Area

A botanical park can be designed around the railway line on the southern part of the city, where the housing density is low, and in this way, a large green area that is composed of various plant species can be created. This park will eventually limit the fast spreading of the city towards the southern outskirts of the city, and ensure large green area utilization. Besides, there shall be a bicycle track that will extend to the seashore towards the north. Large lawns can be formed in this section, like in the examples of Germany. Apart from these, different plant species can be exhibited in this park just to create a space worth seeing for people.

Passive Green Spaces in the Town Center (Southern Band)

As housing becomes denser just after the proposed group of botanical parks that spreads around a large area, this section was designed as a passive green space. The line will be turned more 'green' and the bicycle track will continue here as well. This passive green space will act as a corridor between the large botanical area and the active utilization areas to be created along the shoreline.

Proposed Active Recreational Corridor in the Town Center and Structures within (Coastal Band)

In this proposed area, bicycle tracks, different street furniture, walking tracks and sports fields can be created as discussed earlier in the foreign examples, especially as in the images relating High Line project. As the surroundings of the railway line in the town center are currently used as active recreational areas, integrating the new utilization areas with the existing ones was proposed. The Train station and the Surgical Instruments Museum will be connected to each other via the proposed active recreational corridor.

Playground Corridor in the Town Center

In this part, we proposed the formation of areas that will basically be utilized by children. A corridor with playgrounds where children can spend their energy and improve their social relationships was planned here. Children, who grow up only by playing virtual games in our time, will be able to spend their energy in special playground areas that will be allocated for long-played children's games. The existing large green space in this section is quite suitable for the formation of this corridor.

Green Corridors

As the area that was proposed as the Green Corridor is limited by motor roads, utilizations cannot be spread in a large area. These areas, which comprise railway tracks and a bicycle track, were proposed as corridors that will maintain access from the crowded town center to rural parts of the city.

Industrial Park Corridor in the Industrial Area

The railway line crosses Samsun Industrial Area. This section was proposed in the form of an Industrial Park. Exhibition halls, where products manufactured in the zone are displayed at various intervals and visitors are informed, can be designed in this part.

The bicycle track will also cross the Industrial Park Corridor. This section will act as a connection point between the town center and the Memory Corridor and Rural Corridor proposed for Tekkeköy district.

Memory Corridor

Memory Corridor is projected as a long corridor that links the old train station located in Tekkeköy district and the train station in Hamzalı, one of the boroughs of Tekkeköy district. Current status of these two buildings can be seen in Fig. 45, 46 and 47. Stations are surrounded by sycamore trees. These trees were planted to designate the places of stations in the first place, and

each of them has historical value. Harmonious with the structures and trees surrounding them, former utilizations as a station and events experienced here can be portrayed through visualizations or statues, and local features can be underlined through details in the scenes. Bicycle track will also cross this area and maintain access from the district to rural areas and eco-tourism areas.

Rural Areas, Agro-Tourism and Eco-Villages

The railway line lies on the rural grounds in this section. The planned linear park can be envisaged as an adventure extending from the town center up until untouched rural areas.

This adventure comes to an end with the agro-tourism areas to be created in the rural areas. This area will be covered with hobby gardens. Urban people will be able to access such areas where they can get involved with agriculture in this part of the linear park. Through mutual understanding with villagers, greenhouses where organic production is made and means of direct retail are used can be planned for this section.

Discussion

A linear park is planned for the old Samsun Railway line in an approach that adopts challenging (regaining) strategies and planning strategies that aim at seizing the opportunities. The proposed set of utilizations will generate a nostalgic corridor in the area, and as is the case in the examples from abroad, it will make economic contributions both to the railway line and the nearby areas getting in contact with the line thanks to increasing touristic utilizations through social and economic means. Rather than destroying the dysfunctional railway tracks, it will be wiser to handle them in an approach that adopts challenging (regaining) strategies and planning strategies that aim at seizing the opportunities, and to revitalize the area by means of different utilization forms. Some of the structures located along the line have been used as museums. Therefore, perceiving the entire line as a corridor hosting many social areas and designing it as a continuous route that integrates existing utilizations with the proposed ones will be the right decision.

Re-evaluating such disused routes in this manner is quite common in foreign countries. Regaining the routes that has lost their functions and turning it a widespread phenomenon will positively contribute to tourism.

CONCLUSION

The main theme of the study is to regain the old Samsun Railway line, which lost its former functions, in the form of a linear urban park. For this purpose, forms of utilizations explained in Findings should be integrated with the railway line and, in this way; it should be turned into a focus of attraction. To the extend property ownership issues are solved, museums, parks, playgrounds, passive green spaces, bicycle tracks and picnic venues can be constructed along the route. Especially the buildings in the rural areas can be used in respect to portraying the cultural diversity of Samsun. In such areas,

important elements of the rural culture that identified with Samsun can be exhibited in the museums. This type of arrangements will add to touristic value of the city of Samsun, and constitute a unique example of linear parks -which are quite common abroad- in our country.

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FAIRYTALE OR NIGHTMARE? INVESTIGATIONS ON REVERSING COASTAL CITY SILHOUETTE OF IZMIR

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ABSTRACT

In addition to its many features, a good city should offer a strong imaginability to its users. A sense of spatial legibility that can expand and deepen even if it is not simplified because of its complexity. At this point, the skyline of the city forms the route through which a coastal city can be read most openly, and the smallest change / transformation on it means adaptation or rejection for the city dweller.

The urban citizen to whom the spatial change is alienated is uneasy and refuses to use the places he can read, understand, and therefore adopt before the transformation. Because the disappearance of the visibility of the icon elements on the shoreline reflecting the identity of the city made it difficult to read the city.

For this reason, the change / transformation wind, which causes the city to change step by step, shows the most striking effects on the shoreline and shoreline silhouettes of the cities. For İzmir which is one of the most important cities where this change / transformation is effective in our country, the coastal silhouette is one of the most effective identification items and the transformation in urban planning should be studied and designed. For this reason, for the research aiming to reveal the change / transformation of the coastal cities, the 16 km coastal band between Izmir Konak district and Karşıyaka district center was chosen as the study area.

In the first stage of the research carried out in two different stages, 4 different photographs were taken and the general silhouette of the shore was defined in order to determine the general shoreline. In the second stage, as a result of the literature survey, seven points with symbolic prefixes in İzmir city shoreline were determined. These points were first investigated in terms of the general silhouette and secondly in the context of the near-wall silhouette of the user on the shore-filling area in order to determine how the urban user perceives the shoreline of İzmir city according to their location. The physical transformation of these seven points on the general silhouette was examined by taking graphic abstractions on the photographs taking into consideration the main criteria such as occupancy gap balance, green tissue structure

change, continuity. In the photographs of the fronts drawn through the same points, the same points were also compared with the photographs taken prior to the conversion, again with the physical criteria through the same criterion and the user perception through the usage variations. Thus, it has been tried to find out from which point the day-to-day transformation of the past has started and what the city user has been adapting and at what point he rejects it.

Keywords: Coastal Silhouette, Imageability, Silhouette Transformation, Landmark, Visibility.

INTRODUCTION

Each city is the sign of existence that the civilization that made it embodied it on the earth. This sign of existence makes life permanent. Because, like every living organism, the city inherits world history as to where it originated from when it was born, how it developed as it grew, and what it turned into and why it died [1]. Thus, when a civilization ends, another civilization starts, a brand new city emerges from the ashes of a dying city.

Cities can have different characteristics depending on the factors of establishment and development. Some may have intense construction while others may have rich historical texture or have significant geographical and geological structures. They can also be called industrial cities, tourism towns, financial and commercial cities due to their predominantly functional features [2]. Whatever features it has, a city has to pass on the vital codes of civilization, the memory of itself, to the future.The original examples of the buildings in different functions and the patterns of life in these places should be conveyed to the successors of the space patterns and social life practices that these buildings have formed together. Because the values of culture and spirituality that a city carries from its past to its present day constitute its memory, its spirit in a sense. Cities without beliefs do not express any value other than the living / non-living masses, masses of the masses who have to live inadvertently and do not feel belonging. For this reason, it should start from the silhouette of the city to move this information because it is the key city silhouette of the city memory. The buildings that make up the silhouette of the city give the codes of cultural identity there. The patterns of life, beliefs and values of society are like the "skeleton" of silhouette [3].

The fact that nowadays the uncontrollable increase of the urban population and the fact that the physical places, physical substructures, and the fact that the cities can not increase this population increase, the fact that they can not enlarge and grow at the same time brings with it the distorted structure and the cities without identity[4]. In this case, the city's industrial society, which looks like a giant building site, is big. The effort to build permanent, beautiful, robust and comfortable urban environments is only possible if the urban memory is moved to the future and the legacy of the city is taken into consideration by future generations [5]. Because the ideal city is both a memorial and a theater of prophecies. For this reason, it is a big mistake to think that a city's past vital accumulations do not conflict with the future

predictions [6]. At the same time, because the image of the individual in the mind of the city will provide integration with its subsequent perceptions, It must also have meanings that are easy to read, provide a certain visual satisfaction, and are loaded with associative perception [7].

To summarize, it is an ideal city;

- Past and future, contemporary and traditional,
- Innovation and complexity, and the balance between familiarity-clarity-perceptibility created by openness and connectivity,
- The emphasis that facilitates perception and the presence of sovereign points,
- Have continuity,
- Is a living environment with the flexibility to transform from "something" to "something else" [8].

Throughout history, coasts have functioned as a social and economic field of interaction for people; has become one of the main geographical elements that shaped settlements and influenced their lifestyles. For this reason, if a city is a coastal city, one of the most important elements determining the identity of that city will be the spatial fiction of the shoreline and the silhouette it defines. Because the shoreline of the coastline forms the route through which a coastal city can be read most openly, and the smallest change / transformation on it means adaptation or rejection for the city dweller. The urban citizen to whom the spatial change is alienated is uneasy and refuses to use the places he can read, understand, and therefore adopt before the transformation. The disappearance of the visibility of the iconic elements on the coastline makes the city difficult to read and causes the deterioration of the structure of the collective touch that the citylin can perceive by making meaningful relations with the accumulations of life. For this reason, it is extremely important to examine what kind of visual quality a city will undergo by evaluating the change / transformation in the silhouette of the coast, physically and culturally, in order to create perceptible and acceptable cities by its users.

The wind of change / transformation, which causes cities to change step by step, shows the most striking effects on the shoreline and shoreline silhouettes of cities. Thus, in the coastal skylines where there is a rapid transformation, sudden and extreme changes in the physical structure of the city cause negative effects on the perceptibility of the city. öFor İzmir which is one of the most important cities where this change / transformation is effective in our country, the coastal silhouette is one of the most effective identification items and the transformation in urban planning should be studied and designed. The purpose of the research is to examine the change of shoreline in İzmir city on macro and micro scales and to present sections on macro and micro scales of spatial transformations.

A Fairytale City is İzmir

İzmir, Smyrna in the Antique Period, Amazons, legendary female warriors according to a story, was founded by Lelegler according to another story. Located in the west of Turkey, near the Aegean Sea, the city is the most

important and largest settlement center of the Aegean region. İzmir, which has been modernized by preserving its archaeological and historical accumulation, is an important commercial center with its port city. On the one hand, healing thermal waters, on the other side blue sea and blue-flagged beaches, the diversity of health and marine tourism areas is filled. İzmir is the sound of water and wind [9]. Known as "Beautiful Izmir" in Turkey, the city is located at the beginning of a long and narrow bay decorated by yachts, passenger ships and gulf ferryboats. It has a temperate climate and the impetus from the sea in the summer takes the heat of the sun burning. İzmir, which is a unique identity with its historical and cultural texture, is the 3rd biggest city of Turkey. İzmir is love in Kordon.Alsancak and Karsiyaka districts, coastal strip restaurants, cafes and hiking trails bring together the people of Izmir, where social touch is intense [9].

“My age is 8500 ... "says Izmir.This metropolis, which is the bouquet of civilizations of the ancient Ionia region, has been home to thousands of uninterrupted years throughout the history and mythology of Amazons, Lydians, Persians, Greater Alexander and Generals, Romans, Araplar, Emevilere, Byzantines, Seljuks and Ottomans[9]. Smiling face of multiculturalism A large part of İzmir burned in the fire of 1922, 2 million 600 thousand square meters settlement parts and 20-25 thousand buildings completely disappeared. One of the important items that constitute the image of İzmir's city is I and II. The cord has also suffered major devastation, and unfortunately the old Izmir has only a large hole burnt in the edges and the center of the city. From this date on, restructuring of İzmir started with the works of creating a contemporary city by being equipped with constructions reflecting Turkish characteristics between 1923 and 1933. Until the 1940s, the basic practices in order to give a modern look to İzmir were regular roads and open boulevards, creating squares and large green areas, making the city illuminated and developing a regular transportation system. The city of Karsiyaka has developed into a lively neighborhood. Kente was very interested in bringing green spaces, parks, and this goal was achieved by drying marsh or removing old cemeteries. The first half of the 1950s, the peasant who migrated to the city, could not integrate with the city and created a phenomenon called "slum" in the city walls. Unfavorable developments in city walls and devoid of all kinds of infrastructure were spreading rapidly, while land values rising in urban centers were pushing for increases. For these reasons, insufficient plans have led to the need for a new plan in Izmir, the third largest city in Turkey, and an international competition. The two-storeyed gardens were sacrificed to rapid construction in 1960's and 1970's along with industrialization and enrichment of İzmir in parallel to the industrialization and enrichment of the city. The city, which could not expand outwards, turned upwards and turned into an 8-10 storey building. The city met again with the history it lost in the ruins of the 1960s. In this context, the historical buildings which contributed to the urban silhouette during the historical process were restored and integrated with the surrounding areas as a whole, if necessary, on a single building scale. The Counter Workshop in Konak is integrated with urban life as a Center for Performing Arts. Forbes Pavilion, Murat Pavilion, Peterson Pavilion and Yahya Pasha Pavilion have been studied for the purpose of preserving and preserving the structures that have an important

place in the urban identity. Which was one of the earliest examples of public buildings belonging to the Early Republican Period, was given to the city as an Old Fire Department, City Archive and Museum. The structure which has a very important place in the city skyline of İzmir, which was built with iron material at the end of the 19th century and used as customs warehouses in Pasaport, used in various functions after the declaration of the Republic and lastly served as a fishy state, was transformed into a modern shopping center [10].

Although Izmir appears to be a slowly changing, cautious, transforming city that can maintain its cultural and spatial identity, it will inevitably undergo a radical change at a time when all the vital experiences have changed and transformed at universal scale, not only in Turkey. In this process, it is seen as the periods where the changes accelerated after the 1990s and 2010, the scale, the texture of the settlement changed, and the beginning of Izmir. Beginning in the second half of the 80's, the process of transforming the city was accelerated to support the construction of mass settlements. Thus, the city fragments began to spread on the slopes of İzmir, which was settled linearly along the coast. In the design approach of these new urban spaces and in the form of articulation to the city, it became increasingly disconnected from the existing settlement texture. In particular, the efforts of new residential areas and living areas to create their own private surroundings prevented the integration of the sites, enclosed with surrounding walls, for security purposes into the city. At the same time, this large-scale, vertically developing texture also leads to the disintegration of existing urban tactics and spatial decomposition. Then spatial divisions become the cause of social separations [11].

However, in terms of cultural identity, it can be seen that İzmir city carries the traces of very religious and multicultural tolerance with its Levantine, Jewish and Christian identities from the past in its socio-demographic structure (Culture and Tourism Ministry). The shoreline has a significant potential in the production of public spaces where spatial and social separations will take place, especially in cities with sea-related relations such as İzmir.

Figure 1. Izmir Shoreline

The studies initiated under the name of İzmir Deniz Projesi are the most important steps taken in order to evaluate this potential. In this context, it is aimed to provide places that continue along the coastal strip of approximately 40 kilometers, providing pedestrian and bicycle transportation, and enhancing the city's meeting with the sea, motivating and enriching with different programs. This work, which brings together a large number of designers from different disciplines and provides a co-production environment, can be seen as a participatory model that can be an example in the design of public spaces for Turkey. As a result of the spatial gains from the project, uninterrupted transport can be achieved with bicycles, which can now be accessed from rentable bicycle stations located at various points along the coast. There are also a variety of activities such as public areas, such as public areas, such as public areas, such as public places for cyclists, pedestrians and pedestrians, bicycle parks, internet access points, watering points for pets, shaded seating areas, in there [11].

Materials and Methods

Study Area

As a research area, İzmir city coastal region, where urban transformation movements spreading rapidly in metropolitan cities have been felt recently, has been chosen. The starting point in the coastal zone was determined as Konakaka ferry pier and Konakaka ferry pier. Also, 5 more dots are marked between the start and end points. These are; Cumhuriyet square, Culturepark, Port area, Bayraklı region, Alaybey region.

Method

In the study, two methods have been applied in order to be able to identify and change the city silhouette. First, photographs of general silhouettes were taken from two opposite shores. In this method, Silhouette photographs of Karsiyaka and Alaybey region were taken from Konak ferry pier, Passport and second cord regions. Then; From Karsiyaka and Alaybey regions, Konak ferry pier, passport ferry pier, photographs of the area coastal silhouette for Kordon and Liman region were obtained.

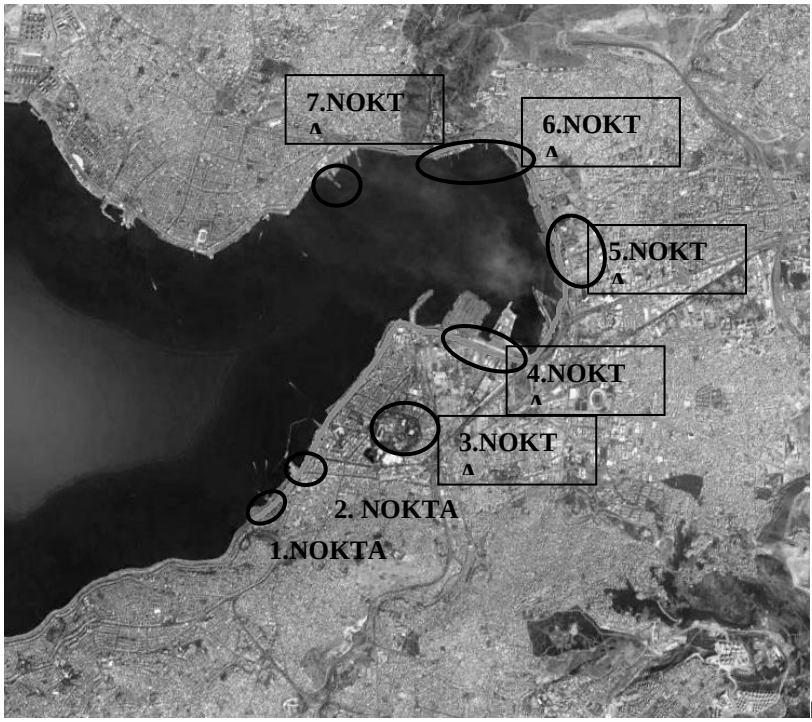

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Figure 2. Güre 2. Workspace Route

As a second method; Photographs were taken from seven locations to understand what the user could perceive in the city's view when the user was located at certain intervals on the shore band. These point locations are made up of nodes / focal points of the city's components. These points are; Konak Ferry Pier, Passport Ferry Pier, Republic Square, Fair Area, Port region, Flagged skyscrapers area, Alaybey military reverse shrine. The physical transformation of these seven points on the general silhouette was examined by taking graphic abstractions on the photographs taking into account the main criteria such as occupancy gap balance, green tissue structure change, continuity. Again, the same points were examined with respect to the physical conversion size over the same criterion and the user perception variance over the usage changes in comparison with the photographs taken before the conversion in the facade photographs taken over the filling area. In this way,

the current situation of the İzmir coastline will be determined and it will be determined whether it carries the criteria mentioned above.

Results

General Siluet Report on the Coast

In this section, photographs taken from different points where the shoreline of İzmir city is perceived as general silhouette are evaluated. Silhouette lines are defined as graphics through photographs and perceptibility is interpreted through the change of this line. According to this, when the Bayraklı-Alsancak city silhouette determined as the first silhouette point is evaluated; Folkart skyscrapers, which started to be built in Bayraklı in 2012, and Bayraklı area as a skyscrapers region are filled with residences by day. This building texture, which caused a great change especially for the city skyline, is perceived as from Karsiyaka scaffolding.

Figure 3. Bayraklı- Alsancak Coastal Silhouette

Bayraklı-Alsancak coastline silhouette first multiplied situation; It has diversity in terms of structure form. The fact that the intensive building plots are located in an unplanned way within the existing structure texture causes the urban silhouette to be perceived as complex. In general, high block structures added to the coastal silhouette can form a positive silhouette sensation which will increase perceptibility by forming dominant points on the silhouette. However, in the Bayraklı-Alsancak coastline, the excess of these vertical structures and mispositioning negatively affects the silhouette line, the occupancy and the space balance. At this point, the coastal skyline is transforming into a mixed appearance and the level of perceptibility is decreasing. İzmir city is one of the important points where the general coastline is perceived as Karsiyaka coastal slope. The determinant feature of Karşıyaka coastal slope given below is the foreground of building block effect of building texture.

Figure 4. Karşıyaka Coastal Silhouette

Intensive urbanization is also affecting this Karsiyaka coastline. When the silhouette is examined, it is observed in the formation of the silhouette line that the effect of space is lost in all and the building texture has created a full mass effect. Particularly, the same height of the building increases the block effect

and the decrease of the changing points in the silhouette decreases the perceptibility of the reproduction of the same points. Mass effect After the Karsiyaka ferry skeleton, it leaves its place to a single line size and the feeling of closure starts to disappear. One of the important points of İzmir coastline is the coastal skylines of Bayraklı and Konak districts. The silhouette clearly shows how the silhouette of the Bayraklı skyscrapers and the Konak area changed. The evacuation of the area in the context of the Kadifekale presence and the urban transformation in Konak province helped Konak to reveal its natural building texture. In addition, the occupancy-space balance, which positively affects the mass and space effect in the sky, leads to an increase in perceptibility for both silhouettes.

Figure 5. Bayraklı-Konak Coastal Silhouette

Figure 6. Konak Coastal Silhoutte

The Bayraklı-Liman-Alsancak skyline is defined as another point forming the general silhouette of İzmir.The most prominent feature in the silt that occurs immediately after dense construction is the occupancy gap balance, which is defined by the vertical effect of the building texture.

Figure 7. Bayraklı-Liman-Alsancak Coastal Silhoutte

In the coastal silhouette of Bayraklı-Liman-Alsancak, vertical elements contribute to the observation of the formal movement of the urban silhouette. This vertical effect describes the dominant points on the weighted horizontal effect in the silhouette line. Therefore, this situation allows the coastal silhouette to be perceived better.

Observation of Silhouette Change at the Focal Points of the City

In this section, the silhouette change is interpreted according to the change of 7 different points which have become focal points of the city according to the years.

Konak Ferry Port

The reflection of the modernization process of the Ottoman State, which started in the 18th century, coincided with the beginning of the 19th century, and this transformation provided the basis for the emergence of a new urban touch in the physical structure of İzmir. As the city square, the beginning of this new public space around the mansion extends to Katipoğulları, İzmir's famous family. The family we knew from the beginning of the 18th century grew stronger within the given century and became one of the most influential foci in İzmir's administration.

Thus, the small empty space in front of the walls surrounding the outer courtyard of the Katipoğlu family's estate formed the first Konak place in Izmir. Later on, Konak Square was restructured by architect Ersen Gürsel in 2003 and got a look of today [10].

As seen in the silhouettes obtained, the time-dependent changes of the Konak ferry port can be seen to vary greatly.

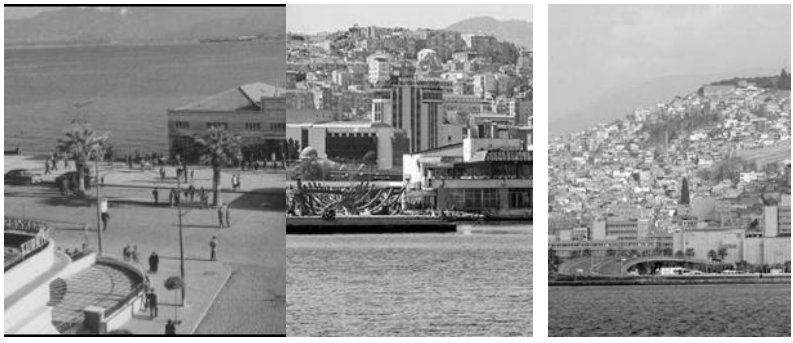

Figure 8. The Change of Konak Ferry Port over the Years

It is seen that there is no additional structure having any function around the structure of the scaffold in 1940's and it is seen that there is a road route providing connection between Hatay and Basmane in the back region. In the middle of the year 2012, the siluette is connected to the main building of İskelenin, depending on the time required, and it is seen that the tower is directly connected to the square by Konak Square project. Especially the city silhouette which Kadifekalenin created in the background creates a hump for İzmir city. After this period in which the natural structure without fullness and void effect is not seen much and the effect of mass which is not protected is observed much, the region has been regulated as a green area with the decision of urban transformation for Kadifekale and started to participate in the urban silhouette in a historical layer belonging to İzmir. In the first stage,

urban transformation seems to have added an advantage to the city, but in the future the question arouses the question in the minds that the area will always be a green space.

Pasaport Ferry Port

The greatest change in the time of the passport ferry skyline in the city skyline was the mass and closure effect of the sets taken by the high-rise building decisions on the shoreline.

Figure 9. The Change of Pasaport Ferry Port over the Years

Culture Park

While looking for a place for İzmir Fair, İzmir 's imperial order was taken into consideration and the place of fire was constructed as "Culture Park" in 1936 and İzmir Fair was started to be organized in this city park. Culturepark, completed in 1936, was one of the most important green field works carried out in our country until this turn. Kültürpark has become one of the most important recreation areas of the city with its Zoo, Parachute Tower, Amusement Park, Open-air Theater, Painting and Sculpture Museum and culture and art centers [10]. CulturePark, which is planned to serve as a central park for İzmir, has been used for a long time as a fairground, the entrance and exit to the area and the fact that the arrangements and arrangements in the area have not been arranged in accordance with the city users have become a green space which is actively used apart from Fair days. In the year 2016, as part of the repair work for the area, it is aimed to reintegrate into the city, actively use it and to take place in the city as a green focal point.

Figure 10. General View of Culture Park

The space effect created by the green texture against the mass effect defined by the dense building blocks enables the CulturePark to be defined as a high level of perceivability in the plan plane.

Kordon Region

Figure 11. Kordon

Especially in the cord region, it is more appropriate to take part in the silhouette study, especially due to the excess filling of the 2nd Cord and the faster disappearance of old buildings. Especially in the city of Izmir, the coastal area has undergone a great change. In the second strand, large differences were found in the general silk with the fact that the old buildings could not be protected and the filling area was enlarged and new silk and high-rise buildings were positioned. Although it is thought that both perceptibility decline and natural structure is maintained unprotected here, the formation of this by means of high-rise block buildings increases both the closure effect and the complexity.

Port Area

In the middle of the 1860s in İzmir, due to the opening of the railway lines and the accelerating and increasing flow of goods coming from the region, there was a need for a cloaking where large tonnage vessels could comfortably dock and load and unload. After the construction of the Alsancak station, then the docking of the customs from Alsancak to the Alsancak and the climbing of the tram line were carried out while the passengers were moving in the daytime, the train arriving at the Alsancak Train passed through the First Kordon to the Izmir Port [10].

Figure 12. The Change of Port Area over the Years

The harbor area is seen as one of the open areas in the general silhouette taken from Karşıyaka ferry pier. However, when the port area is located and the back side is seen in the city, it is seen that the occupancy gap relations of the building forms in which complexity and perceptibility decrease are worsened. Especially the formation of undefined places constitutes the biggest problem seen in and around the Port region.

Bayraklı Region

Figure 13. The Change of Bayraklı over the Years

The actual mobility in the Bayraklı region accelerated with the competition projects made in the name of the region after 2000s. The project studies started with the determination of the zone as the skyscraper area in the reconstruction plans and a different dimension was given to the urban silhouette with many construction works. Among the criterias examined in this study, the possibility of perceptions in the open spaces of the region where the complexity emerges as the opposition of the innovation is decreased in connection with the human-space scale, and the presence of the skyscrapers and the continuity is observed to be deteriorated.

Cumhuriyet Region

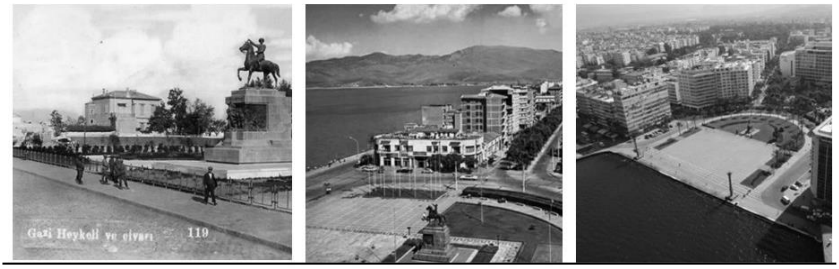

Figure 14. The Change of Cumhuriyet over the Years

The overall appearance of the Republic Square na has not undergone a major change over the years as in other regions. While the western frontier always protected the same silhouette, the appearance of a block silhouette was formed with multi-layered formation on the North South and Eastern fronts. Priority has been the focal point, but has recently lost focus with the position and rise of the buildings.

RESULTS AND SUGGESTIONS

The geographical location and natural environment conditions, which are the most important factors affecting the development of the coastal cities, have made it possible to be one of the most important cities of İzmir's geography. Despite losing an important part of the urban texture in the fire of 1922, the reconstructed city is now under the pressure of intense construction. Especially the tendency of uncontrolled residence has inevitably caused the İzmir city, which has been sheltered for many years, to face a different change. This change, already visible in coastal and urban skylines, is evident if the structural identity of the city can be perceived, if not planned. For this reason, it is of utmost importance to take all kinds of spatial decisions related to the city, to act with awareness and sensitivity, and to take the development strategies based on public benefit, sharing, a different kind of social classes and urban belonging as a priority.

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PART 4

■

IDENTITY

■

CULTURE

■

TRADITION

■

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LIVENARCH
livable environments & architecture
REJECTING
REVERSING
ARCHITECTURE

RE-READING TRADITIONAL ARCHITECTURE: TRADITIONAL ORDU HOUSES

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ABSTRACT

Traditional architecture is the part of the cultural heritage of the public that serves the daily objectives of the societies. However, the corruption experienced in cultural and social areas reflects itself heavily on the urban space and housing zones. The policies implemented today, political power, and the institutions and organizations in the field of architecture cause this situation to become insoluble.

Cities and parts of cities with no identity values and full of structures with empty cultural backgrounds are being formed, while the accumulation and the cultural traces of the past is fading away. Rejection of the traditional architecture has been encouraging the empty emotional reactions with no content and almost trying to erase the past, which eventually creates a contradiction in the research and discussion of its own character without identity.

In this study to be conducted in Ordu province, the settlement and planning features, as well as the construction technique of the Traditional Ordu Houses, which remained under the pressure of the structures without identity, are to be socio-culturally evaluated. It is to be asserted that the traditional architecture forms should not be rejected in the communication with the future generations, as well as in the communication between the past and future generations.

Key Words: Traditional Architecture, Rejection of Architecture without Identity, Ordu Houses.

INTRODUCTION

Deterioration in cultural and social areas reveals itself in cities, urban areas and housing areas in physical sense. Today's politics, powers and architectural institutions and organisations leave this issue more unsettled. Originating from this problem, deteriorated cities and suburbs started to be constructed without any classified description, identity, cultural background and authenticity.

Despite being a general problem of construction, this process, especially encountered in house constructions proceeds its own way with the supply, demand and inspection triangle in a fast manner. In contrast to the negative aspects of rapid urbanisation, industrialisation, immigration and deterioration; traditional construction architecture tries to maintain its continuity with the conveyed background and cultural accumulation of people, local materials, climatic data, economic conditions and nature compatibility.

Traditional architecture that provides cultural interaction among generations should not be rejected. Therefore, it seems a better solution to have a modern architecture by combining the cultural accumulations with the inputs such as formation, material structure and standards in order to supply the modern and reasonable requirements of current user groups.

Research Method and the Study Area

Traditional *Ordu* Houses are abundant in *Taşbaşı*, *Zaferi Milli* and *Aziziye Quarters* of *Ordu*. In this report, the houses in *Sıtkı Can Street*, which is the intersection point of these quarters, will be evaluated. Firstly, the traditional houses in this area were determined; then, their relations to the other buildings were observed through typological analyses.

The features of the houses were determined below:

- Settlement features of the houses
- Planning features, types and elements
- The factors affecting facade of the buildings
- Construction practice and material use features

The houses in Ordu protected urban area were searched and then it was determined that 12 houses were ruined or burnt, and 20 houses were empty out of 98 registered houses. Therefore, only 66 houses were suitable to work on. 34 houses were examined by considering the limits of *Sıtkı Can Street* which is the intersection point of *Taşbaşı, Zafer Milli* and Aziziye Quarters. 32 houses were examined out of 34 on this area since the remaining two houses were ruined and it was impossible to enter [1].

The thirty-two examined houses were analysed in terms of their locations, entrances, plan types and elements, the number of floors, construction system and facade elements.

Figure 1. Border Map of Working Area [2]

Figure 2. Working Area, A-A Draft [1]

Figure 3. Working Area, B-B Draft [1]

Traditional Ordu Houses

The gardens, which are significantly important for privacy in traditional house planning, are seen in both small-scale and large-scale houses in Ordu. These houses are generally located in wide gardens in Ordu. Rugged terrain and the rough roads separate these houses from each other. Even though the gardens are surrounded by walls, these walls are not higher than one and a half meter. The aim of the walls is either to avoid any landslide or to determine the frontiers of the garden as the walls are on the facade of the road. Because of the topographical structure of the city, the buildings can be seen from the road and from the garden of another building. Today, traditional wide gardens are not so common as they were previously as a result of sharing large parcels and increased building density.

The most important factor determining the design of traditional Ordu houses is the lifestyle. The role of climate, topography, landscape, sun and materials are in the second rank. In traditional Ordu houses, basements are designed for substructure and servers; ground floors are designed for general services (closet, bathroom, stove, etc...); first floors are designed for living spaces. Oriels and suite room designs exist in these houses.

Figure 4. 5. 6. The Use of Traditional Sofa – Oriel and “Maşallah” Letter – Suite Room [1]

Generally, there are secondary places for laundry, woodbin and storage in the basements and ground floors in the traditional Ordu houses. Therefore, there are small windows on the walls of basements. Facade surfaces of the ground floors are compatible with upstairs. On the other hand, window sizes are bigger in upstairs. The windows are in the guillotine and double casement style; some houses have got iron guardrails. The most frequent window is ½ size rectangle guillotine one (Figure 4 – 5 – 6). The window sizes are approximately 80x120/150 cm. The windows of stone-ground-floor buildings are framed with stone window jambs while the windows of wooden-ground-floor buildings are framed with wooden jambs. There are also some examples of carved frames. In some buildings, there are arches and tympans on the ceilings, and patterns on the lower parts.

Traditional Ordu houses have spacious structures with their 3 – 3.80 meters ceiling height and large sun-drenched windows. There are numbers of windows because of wooden framework structure. Buildings are generally located in sloping lands; their basements, which are built for making use of the slope, are constructed with stone walls. Wooden materials are used for constructing upstairs; these floors are raised from the ground because of high humidity. Wall thickness varies between 55–70 cm. The walls are generally plastered and painted [3].

Upstairs are constructed by wooden frames (wooden framework structure with adobe or brick infilling system). The walls have all the characteristics of wooden framework structure with their 120 – 150 cm open boarding main columns in the corners and 30 – 40 cm sub-columns covered by lath. All of the walls are plastered [3].

Evaluation

- The houses were considered based on whether they have gardens or not; if they have, their locations in the gardens were then evaluated. The houses with numbers 5-6-7-8-9-14-15-25 are without gardens; the houses with numbers 17-18-21-24-26-30-31-32 are in the middle of their gardens; the houses with numbers 1-2-3-4-10-11-16-19-20-22-23-27-28 are on the side of their gardens; the houses with number 12-13-29 are in the corners of their gardens.
- Among 32 houses that were examined in terms of their plans, there are 4 houses with external halls (No: 7-9-28-32), there are 24 houses with internal

halls (No: 1-2-3-5-8-10-11-12-13-14-15-16-19-21-22-23-24-25-26-27-29-30-31) and there are 4 houses with middle halls (4-6-17-18).

- Among the houses with external halls, number 9-32 are ideal types, number 7-28 are the corner or middle hall types. Among the houses with internal halls, number 5-10-22-12-16-23-24-26 are ideal types, number 13-20 are the corner or middle hall types, number 14 is the type of hall with a single or double room, number 1-2-3-8-15-21-22-25-27-29-31 are the types of the sofa with room or balcony, number 19-30 are the types with three or more iwans. Among the houses with middle halls, number 4-6-17-18 are ideal types.

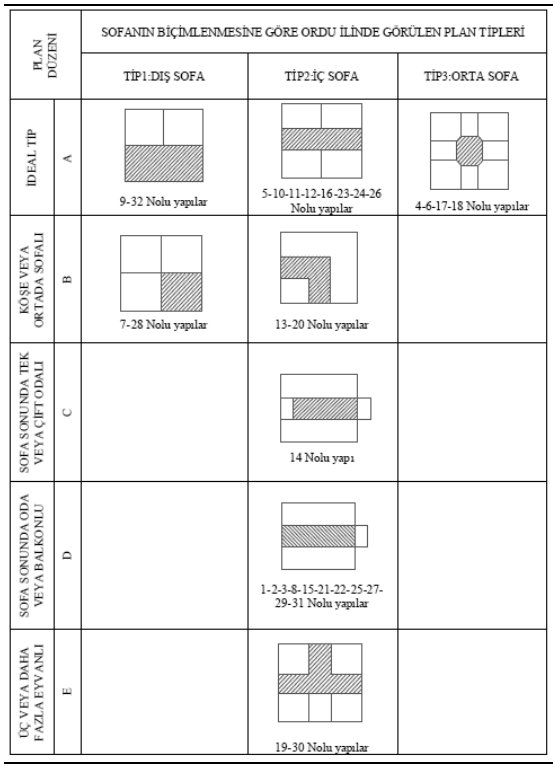

Figure 7. Plan Types of Traditional Ordu Houses [1]

- 19 of the examined houses have two floors (Card No: 3-5-8-10-11-12-13-19-20-22-23-24-25-27-28-29-30-32), 13 of them have three floors (Card No: 1-2-4-6-7-14-15-16-17-18-21-26-31).
- Only 24 of the examined houses have rectangle shape window frames. The other 8 houses have the rectangle with arch shape window frames.
- 21 houses have guillotine type window frames with 2 horizontal and 4 vertical portions as 8 in total while other 8 houses have guillotine type window frames with 2 portions. Moreover, 8 windows have split half swing scuttles.

- 10 houses have wide, high oriel windows with arches. Number 4 and 7 has quite big windows in their suite rooms.
- Most of the facades have rhythms.
- There are laundry, woodbin, storage, etc in basements and ground floors; therefore, these floors have small windows [1].
- The most frequently used windows size rate is ½ .
- Relieving surfaces vary in the basements and the ground floors of the houses because of the building material quality and the ground conditions. Using the upstairs as the living spaces and suitability of conveyor system bring about the increase of the numbers of the windows. The increasing rate of the number of windows creates a positive effect because of humidity.
- Duty cycles of the houses were calculated. Firstly, window sizes and compact surfaces were calculated; then, the duty cycle is shown in a graphic. Numerical value proximity of duty cycle to 1 shows the increasing rate of windows on the surfaces. The house with number 4 has the highest rate with 0,86 in its middle hall plan. At the same time, this house also has the suite room.
- 18 of the examined houses have cantilevers that 14 of them are overhangs (Card No: 2-3-6-9-11-14-15-16-17-19-20-25-27), 4 of them are on the columns (Card No: 12-23-30-31).
- 29 houses have symmetry. The symmetry is seen in the whole buildings. However, the stone walls of the basements because of the rugged terrain, and the use of these floors as service areas cause dissymmetry.
- The intense use of horizontal and vertical belts are seen. Horizontal belts are used as cornices in the stopes. Vertical belts are used for determining the outer contours of the buildings. Moreover, they were determined on the facades of 19 houses.
- In the houses examined , there are two types of walls as the pitch-faced stone wall, which is formed by using rough and different-sized stones, and well-shaped cube stone wall. Pitch-faced stone walls are seen in the construction foundations, basements and ground floors. On the other hand, well-shaped stone walls are used in the corners of the buildings, frames of windows and doors, and entrance stairs. Among the examined houses, number 17-18 were reinforced concrete, number 21 was totally constructed by face stone.
- Carcass systems of the examined houses are constructed of wooden materials while the walls are constructed as plasterboard. Door jambs of first and second plasterboard floors are constructed of wooden materials.

CONCLUSION

It is possible to see the valuable examples of traditional house architecture in protected urban area of Ordu which is one of the important residential areas of Black Sea Region that has a rich cultural heritage. However, today, ignorance of local administration and people, the inadequacy of legal sanctions, unavailability of necessary financing for maintenance and repair cause the landlords abandon these houses and leave them to ruin in time; thus, this rich historical heritage disappears in a fast manner. On the other hand, reconstruction permits and illegal buildings destroy the current texture.

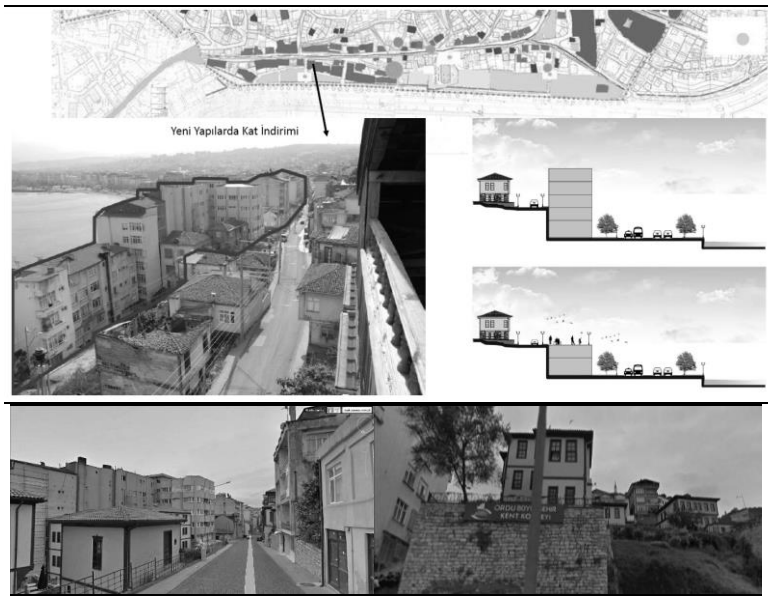

Figure 8.9.10.11.12.13. Planned Structure - Traditional Structure Incompatibility

As a consequence, such historical cities that have cultural heritage should sustain their identities. Therefore, traditional architecture should not be ignored but taken as reference on the contrary. Architects have tremendous responsibilities for applying this sustainability, however, they are not the only responsible groups for the disappearance of the environmental aesthetics by the buildings. Employers, planners, designers, controllers and politicians should be the solution shareholders without serving for their own interests. On the other hand, it is not possible to satisfy all the needs of the human within the traditional building architecture. This situation seems impossible with the problems such as physical ageing, functional ageing, changing necessities. Awareness about traditional building stock is needed, and this stock should be vitalised. Not only the awareness levels of the schematic occupational groups but also of people from all strata should be raised about aesthetic values and environmental conscience.

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STATION STREETS IN FORMATION OF ANATOLIAN CITY IDENTITY: KONYA

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ABSTRACT

City is a spatial concept handled in the continuity of physical, social and cultural formations belonged to different historical periods. City identity formations include the change/transformation processes happened in a spiral structure containing physical, social, political, economical, cultural and many other components from macro environment, they are placed in, to micro environment alongside the physical structure [1].

City identity can be determined by the means of socio-cultural structure, socio-economical structure, and physical environment and image elements [2]. Among these characteristics the physical structure and spatial properties belonged to artificial environment can be explained by architectural identity. Architectural identity is determined with the distinctive characteristics formed by the architect or the user for the building and close environment [3]. City identities exist with the continuity of the elements which form the identity. Within the city whole, first roads/streets, then squares and junctions as meeting points and at last the boundaries between the roads and meeting points (railways, green areas, etc.) are perceived [4]. Therefore, by the means of roads, streets and buildings the city can stay in the memory and the identity can be perceived.

In Anatolian cities, Station Street concept forms a part of the continuity in the creation of spatial structure as it determines the development direction of the city and symbolizes the modern part of the city [5]. In this study, the Station Street which is important for the development of Konya is handled. The current maps, development plan studies, Google map images, archive photographs and actual photographs and written documents related to the area formed the basic materials of the study. The vanished buildings in change process, transition from low-rise buildings to high-rise buildings, existence of government buildings and integration of the Atatürk Monument

with the station axis are evaluated in the context of urban development/change and identity.

Key Words: City Identity, Architectural Identity, Change and Transformation, Railway, Station Street.

INTRODUCTION

Identity means to distinguish an object from other objects and accept that one as an apart the object [4]. Identity concept usually is defined as features, distinctive, making difference for living beings or objects and inclusively contains many architectural, social, cultural, political, psychological, emotional, economic concepts [6].

In other words the identity is the completeness of the characteristics separating or combining the individual or the society from others, the identification of identicalness or dissimilarity, and a problem of belonging [7]. Therefore, the identity concept reveals the owned distinctive features making comparison between similar, and emerges in the line with the requirements of societies and with the data of environment they involved in [8]. In terms of cities and architectural products, the identity and urban image fact includes a very wide definition which comes into prominence with its visual dimension, and also involves natural, geographical, cultural products and social life norms [9]. Urban identity can also be expressed as the whole of features that distinguish one city from the other [10].

Urban identity and related urban images emerge in a very long period within urban space, and sometimes composed of very different components [9]. Çöl defined urban identity in 1998 [11] as “a meaning loaded unity appeared by the means of a huge process affecting urban image, carrying unique qualities in every city with different scales and interpretations, keeping the improving and sustainable city concept, shaped by physical, cultural, socio – economical, historical and formal factors, formed by the citizens and their life styles”. This definition shows that the urban identity is not only a spatial fact but it has social, cultural, economic etc. dimensions [12].

Urban identities exist with the continuity of the elements which create identity. Urban memory expresses a mental process, socially established. Urban information is recalled through collective memory in this period, and transferred to the future through spaces / places [13]. Primarily roads / streets, and then squares and intersections that are meeting points, and the boundaries between roads and meeting points (railways, green areas, etc.) are come into mind within urban integrity [4].That’s why, keeping a city in mind and perceiving its identity can be possible by roads, streets, squares and structures. Streets and main roads emerge as the components of city morphology by the effect of many factors. It is possible to list these factors as old neighborhood system (organic structure), topography, climate [14], the roads reaching to the old core of the city, the relative position of the railway station to the city, and planning role [15].

Railways and their patterns (station streets and structures), which contain the basic criteria of republican modernization in Turkey, are also effective factors in the perception of urban identity in urban scale [16]. These structures which accelerate the change of many cities of Anatolia have also become an effective factor in the physical change of cities. Konya Station Street, discussed in the study, has changed over time in associated with the economic change of the country, and it has been known and lived in by the citizens in spite of becoming distinct as a result of the requirements and interactions. Also, the existence of the structures that may be urban image and triangulation point along the station street has necessitated being dynamic in the urban sense. The basic materials of the study consisted of the field surveys and archive reviews carried out on the station street. The findings obtained in this scope was interpreted in terms of the formation of the buildings over time that create the street and have been the urban image, the effects of extinctions, changing identity of the street thus the street, and documented with visual materials.

Urban Identity and Station Streets

Urban Identity Concept and Architectural Components

The components such as geographical location, physical structure, socio-cultural structure, religious elements, climate, topography, commercial structuring, economic environment, history, culture, roads, streets and architectural products contribute to the formation of specific identities of cities. Architectural products and constructions from these components play a role in the formation of the architectural identity of the city. Bülüç (2017) detailed urban identity components by the main classification of concrete and abstract components (Table 1). The abstract elements (social features: social, cultural and economic), an input in the formation of urban identity, also change as a dynamic fact, and cause to the change of artificial environment from the concrete elements. Cities, which are a reflector of these changes, also reflect own thoughts and experiences of each period. Cities have identities, achieved in the scope of the factors which have been effective in the formation of them. This identity achieved changes over the years, develops and renews itself creating a dynamic continuity [8].

CITY IDENTITY COMPONENTS				
ENVIRONMENTAL CHARACTERISTICS (Concrete Elements)		**SOCIAL CHARACERISTICS (Abstract Elements)**		
NATURAL ENVIRONMENT CHARACTERISTICS	ARTIFICIAL ENVIRONMENT CHARACTERISTICS	SOCIAL CHARACTERISTICS	CULTURAL CHARACTERISTICS	ECONOMICAL CHARACTERISTICS
• Geography • Topography • Climate • Vegetation • Fauna • Water • Geological Situation • Geophormic Situation • Geopolitical Situation	• Roads, Streets, Alleys • Urban solids o Buildings ▪ Existing Buildings ▪ New Buildings • Urban Voids o Square o Park o Garden • Imaginative Elements o Monuments o Fountains o Architectural Heritage Works o Urban Panorama o Urban Silhouette	• Population structure • Institutional structure o Political structure o Diplomatic structure o Legal structure o Administration Mechanism	• Tradition • Custom • Historical Char. • Life Style • Expectation • Needs • Religious and Ethnic Str. • Values, Views • Knowledge, Art, Ethic • Experience • Cultural level	• Income level • Employment str. • Employee ratio • Sector o Technology o Tourism o Industry o Agriculture

Table 1. City Identity Components [8]

The urban and architectural structures in our day have been formed by the influence of different periods and cultures in the historical process. The physical and semantic ties, formed as a result of the human's interaction with the places where they lived and used, have brought identity to these spaces. Hence, the transformation that the space faced, leads to the transformation of its relations with the environment and the change of its identity [17]. Which materializes the subject changes is the physical environment, that is, the urban texture and architecture products.

Railways and Station Streets in Anatolia

The second half of the 19th century, called the "Westernization / Modernization period", in which the Ottoman Empire experienced radical changes and important developments in all areas of life was a period when railway transportation became important in the Ottoman Empire as well as all over the world. The history of railway transportation in the Ottoman Empire began with the privilege of the Cairo-Alexandria railway line in 1851. But, given the current national boundaries in our day, privileging of İzmir-Aydın railway line in 1856 can be regarded as the first starting date of railway transportation in these territories. On the European side, the first Ottoman railway was brought into service by British companies on the Cernavoda-Constanza line in 1856. As a result of these developments, following the administration of the Ottoman railways by the Nafia Supervision and the Turuk and Meabir Chamber established in 1865, the railways administration was established in 1872 in order to realize railway construction and operation ([18]; [19]).

The railway works which started in the 1860's accelerated with the initiative of establishing the Istanbul-Baghdad line in 1871. During this period, Konya-Afyon railway line started to be built in 1896.

Unlike the Ottoman modernization movements, the modernization of the Republic Period was shaped by the idea of creating spaces where citizens' public and private life can be sustainable. For this reason, the thought of the integration of the cities with the transportation network, and transforming cities to the places where modern life is produced have come into prominence [20].

The railways have triggered the change and development of the city and citizens in every sense providing cities, countries to be influenced from each other in social and cultural sense; revive of the economy with the development of trade through transportation offering; facilitate accessibility through modernization; population increase by increasing migration to cities.

A road / street formation that connects station located on the route of railroad to city center ,crossing near a settlement and incompatible with the integrity of city, is seen in the Anatolian cities where the railway cross in the late 19th century. This road which connects the railway to the city in a straight line, and which allows passengers and goods to reach the station is called station street in many cities in the period when it was built [20].

From Çetin's (2012) aspect; the station street axis, connecting government squares to the station in Anatolian cities, and public structures located on it are the indispensable elements of modernity in cities [5]. The emergence of the concept of Station Street identified the development direction of cities, both in the Ottoman and the Republic period, depending on the railroad cross from cities, and represented the modernizing segment. Arıtan (2008) characterized railways and their patterns (station streets and structures) as effective spaces in the perception of urban identity in urban scale [16].

Case Study: The Process of Konya Station Street to Form City Identity

Konya is one of the oldest settlement centers of Anatolia. The excavations in Alaeddin Hill and places near the city center showed that the city history goes to 6000' B.C. The city - hosted many civilizations from past to present – exhibits a multi – layered structure. In Rome and Byzantine period, settlement areas were densely around Alaeddin Hill and its surroundings [21]. In Anatolian Seljuks period settlement areas developed through the east of the city [22]. The city developed through the west of Alaeddin Hill in Karamanoğulları period and then through south and south east in Ottoman period ([23]; [24]). In this period, as Mevlana dervish convent was located in the east of the city, city center shifted through there [25]. In 1897 new development actions began as a result of the fire happened in covered bazaar in new city center. The main street in Alaeddin Hll and Mevlana axe which has important contributions to city identity was opened, Government Hall and many 2-3 floored buildings were built in this period [26]. The land usage and transportation network changed at the end of 19thcentury as a result of that the Bagdad Railway reached to Konya, a third center is formed around the train station after Alaeddin Hill and Mevlana environs [12].

In 1946, the first planned development actions began for the city of Konya. These actions developed and continued in the years of 1954, 1966, 1982 [12].

The station and station street played a major role in the spatial development of the Konya province as of the year 1946 (Figure 1). The development of Station Street can be reviewed in two groups. The first of these is the final period of the Ottoman Empire, which started with railway cross from Konya and with the appearance of the street; and the second is the period from the construction of the Atatürk Monument with the declaration of the Republic to our day. The buildings / places which physically stuck in urban mind in these periods, which were important in the architectural field, and which have/had the characteristics of image quality will be defined as the elements of city identity.

I. Period: Station Street in the final period of the Ottoman Empire

When the first period was discussed, the regions where population density, accordingly housing and trade texture are higher in Konya are seen as the areas in the vicinity of Alaeddin Hill and Türbe Önü in the late 19th century (Photo 1). At that time, transportation was made on foot; no other means of transport was needed. But, due to the fact that Anatolian-Baghdad Railway reached Konya in 1895, and actually began to run in 1896, and that the distance between the station and the city centre is quite long, the means of

transportation were needed at this distance. When electric tramways were brought into service instead of horsecars in Istanbul, Izmir and Thessaloniki, the horsecars were transported to Konya to be operated by a private company in 1906, through the Grand Vizier Ferid Pasha from Vlora, old governor of Konya (Photo 2). The horsecars run between Türbe Önü and the station, and additionally, a load tram, making departure from the station and arriving at Old Wheat Market, also served ([27]; [28]). The route where horsecars run, gained a prominent vitality, and modern houses and new shops begun to be built along the roads of Mimar Muzaffer Street and Station Street. Moreover, station's coming into operation let the car driver profession to appear at that time, and refugees or immigrants often provided that service [29]. Due to the fact that railway cross from Konya province, and the station was far away from the city centre at that time, the number of hotels around the station increased, restaurants began to give service, and casino were operated in the city. The hotels were operated by non-Muslims and furnished and organized according to their delight ([27]; [29]).

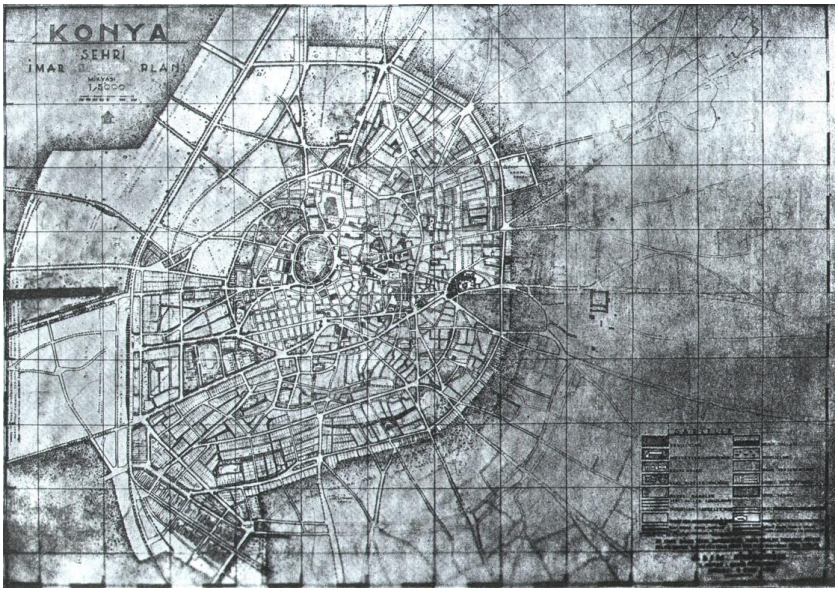

Figure 1. Development Plan in 1946 (Konya Municipality Archive)

Photo1. Konya Historical City Centre in First Quarter Of 20th Century (Koyunoğlu Museum Archive)

Photo 2. Horsecar Used in Konya in 1910s (Yaşar Barışık Archive)

At that time, the station street was described by plane trees on two sides, and a different landscape was displayed throughout the city (Photo 3). In 1956, the trees were cut in order to enlarge the street, by Osman Bibioğlu, Director of the State Hydraulic Works of current year, and the street was enlarged. In those years, the area where the station was located on, was mentioned as *"teferrüş"*, that is, promenade in the works, and it is mentioned that especially during holidays when the mail train arrives, station, and inner part of that were full of young girls and men and with those meeting and sending passenger [30]. Amber Reis Mosque, in the north of today's Atatürk Monument, was built by Arifi Pasha, Konya Governor of the current year, in 1911 at the beginning of the 20th century (Photo 4). The mosque is colloquially known as Green Mosque because of the tiles on its walls.

Photo 3. The Plane Trees on Both Sides of the Station Street in 1950s. (Ahmet Bilgin Archive)

Photo 4. Amber Reis Mosque and Atatürk Monument [31]

II. Period: Declaration of Republic and afterwards

The second period starting from the declaration of the Republic, as we defined in the scope of the study, begins with the Atatürk monument. Although the construction process of the Ziraat monument, which is the base of Atatürk monument, started before the declaration of the Republic, its existence in Konya as the monument of Atatürk, as it is in other Anatolian cities, is after the declaration of the Republic. For the site selection of the monument, the station street which connects the station, located in the west of the city and has the quality of the entrance of the city, with city center was approved; and Konya Ziraat monument, located on this area, was decided to use as the base [32].

Through Konya Governor Muammer Bey's initiatives, Konya Ziraat monument, which was decided to be used as a base for Atatürk statue, was planned as a monument for the women from Konya who had showed great usefulness in the agricultural field between 1915 and 1917 [33]. The construction of Ziraat monument, which was designed by Architect Muzaffer who came to Konya in 1920, was left half finished due to the financial and emotional troubles caused by the initiation of the First World War, and the project incompletely ended with the death of Governor Muammer Bey in 1920 [34]. The Konya Municipal Council took the decision to complete the uncompleted monument in 1924, and it was initiated as Atatürk Monument on October 29, 1926 [32] (Photo 5-6).

Photo 5. Ziraat Monument and its Photo as the Base of Atatürk Monument in the Opening ceremony (Koyunoğlu Museum Archive)

Photo 6. Station Street in 1940s. (Koyunoğlu Museum Archive)

It is seen in the photos of the current period that, there were two-storey traditional houses with a bay window, at the north of Atatürk Monument, on the street leading to the station in the 1940's (Photo 7-8).

Photo 7. The building in the south of the Atatürk Monument is defined as Kurtuluş Primary School by Odabaşı (1998) [27], and as a dwelling with a garden by Civelekoğlu (2017) [35]. Today the building of State Hydraulic Works is located in that area.

Photo 8. Civelekoğlu (2017) shares that one of the two old Konya house on the right of Atatürk Monument belonged to Şükrü Doruk and the other one belonged to Ahmet Haşhaş [35]

Because the station street and its immediate surroundings were used as military district during the national struggle period, structuring wasn't observed so much during the 1930s - 40s [20]. After the 1946 Konya Governor Construction plan, it is seen that especially houses, commercial and public buildings of similar nature were started to be built (Figure 2).

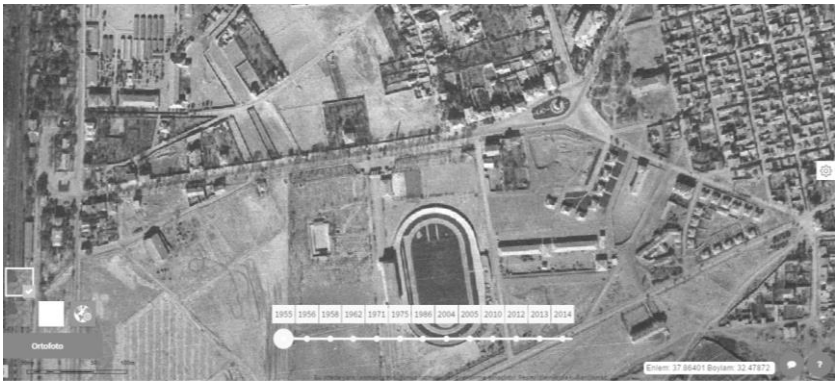

Figure 2. Aerial Photo of Station Street in 1955 [36]

The decision regarding the existence of Atatürk stadium on the station street was taken in 1941.The inclusion of football and running track in this field that will be newly built was also thought. It was decided by the Physical Training Region to make a running track and a football field in a part of the area around

the station, which was nationalized as Youth Park [28]. The State Hydraulic Works (SHW) existed in the field in 1954, which is in the south of the Atatürk monument and formerly the residence or school. There are administrative buildings, lodgment and social facilities of State Hydraulic Works in the field. (Photo 9-10).

Photo 9. Atatürk Stadium and its environment in 1970s (Koyunoğlu Museum Archive)

Photo 10. The building of State Hydraulic Works and Station Street in 1960 [37]

The 1950s have been a period, during which development and changes experienced in Konya. Tractor was used in rural areas, productivity increased, and and the economy revived. The opening of factories triggered the increase in the population, and the population increase reached to 87.5% between 1950 and 1960. A new construction plan, covering 912 hectares of land for Konya, was put into practice, and housing areas were increased with this plan [38]. One of the ways that was approved to increase the number of residential areas was of the construction of 4-5-6-storey apartments on the same street after demolishing 1-2 storey old houses that occupy a small space in a narrow area. The houses which are in the neighbourhood of Atatürk Monument, and which will be an example for the traditional Konya residence begun to be demolished (Photo 11), and apartments started to be built in the place of them. Horozluhan site (Photo 12-13), which consists of 3 separate blocks, centrally heated, having adjacent order and the ground floor of which was assigned as commercial space, was built on the station street in 1966 as one of the comfortable apartments of the current period. Following the site construction, of which architectural project was made by Hulusi Güngör, apartment buildings in the neighbourhood is seen to increase in the photographs.

Photo 11. SHW, Horozluhan Site and Atatürk monument in 1990s. (Koyunoğlu Museum Archive)

Photo 12. The Horozluhan Site designed and constructed by Architect Vedat Dalokay on Station Street in 1966. (Yaşar Barışık Archive)

Photo 13. SWH, Horozluhan Site [39]

With the construction of high-storey residential block in the parcel located in the neighbourhood of Amber Reis Mosque in the 1990s, the vast majority of the street covered with a silhouette consisting of ground floor +6 storeys (photo 14-15).

Photo 14. Amber Reis Mosque, Atatürk Monument and close surrounding in 1990s (Koyunoğlu Museum Archive)

Photo 15. Amber Reis Mosque, Atatürk Monument and close surrounding in 2013

The third period of the field that we can't define will be needed to deal after the construction process of the metropolitan municipality service building on the stadium area following the demolishment of Atatürk Stadium (Figure 3). The beginning of the new period, which is in the phase of thought, can also bring in other losses, previously experienced, for the city. Ataturk stadium is a place which is the product of a city memory, became at the back of citizens' mind, and where memories are accumulated in the national holidays and festivals, and which witnesses experiences.

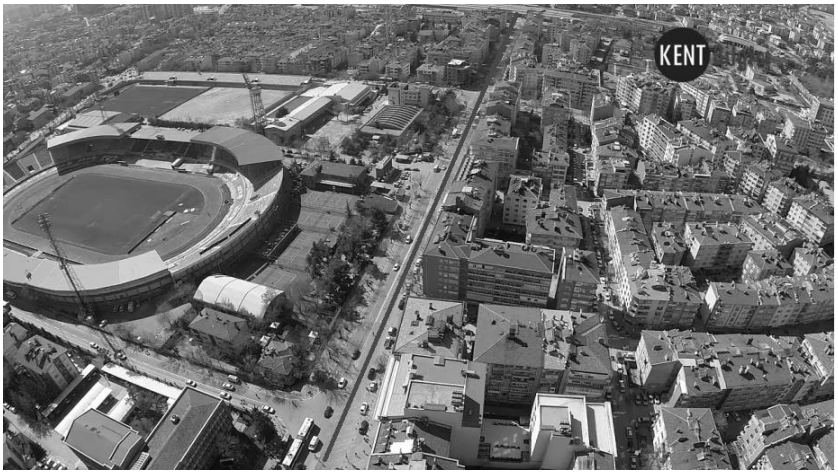

Figure 3. Current Aerial View of Station Street Today [40]

CONCLUSION

While cities, constantly changing and renewing, lose their readability over time; the perception of the city and the sense of belonging to the city are damaged. As a result of this, Value-adding historical cultural values, monumental structures, samples of civil architecture, roads, streets, squares, buildings, qualifications indigenous to a place make the maintenance of urban identity more difficult. Whereas, architectural values formed in every period, constitute an alternate reflection of national identities, and an important part of urban identity [41]. The roads, streets, squares, historical and cultural values, monuments and buildings, included in the whole of the city, provide the perception of urban identity. In this context, Konya Station Street, and the change experienced with regard to the street, we have investigated in the scope of the study; include the change process of Konya province and of the identity of the city.

The fact that the station street couldn't show structuring in the early period is due to the fact that the area was in the military zone status during the national struggle period. In the following periods, station and Station Street were determined as the focal point in the construction plan arrangement in 1946 for

the spatial development of Konya province, and the city was targeted to develop towards south and west. However, due to the fact that Konya couldn't sufficiently reveal its attraction point qualification, and the city center remained in the opposite direction to the station; the station street is seen not to be very effective in the development of the city. Besides, station and Station Street caused new structures such as schools, hotels, public buildings, stadiums to be constructed in this direction. Furthermore, unlike the roads in the center of the city, due to the fact that a street exists in the round trip direction, that hotel buildings such as Agustos Hotel, Bağdat Hotel, constructed in that period; exist, that it establishes connection between the monumental square where Atatürk statue is located and the city center, that the stadium was built on this street in the 1940s, that connection between Gazi High School, one of the works of the 1st National Architectural Period, and the monument square exists, and due to its green landscape; it acquired more different qualification than the other streets in the city. After 1946, new structuring activities accelerated and density increased.

In the public meaning, the construction of State Hydraulic Works which was constructed in the 1940s, of State Products Office Building, and of Atatürk stadium increased the intensity of use of the street. Ataturk Stadium creates appealing feature on the street. In recent periods, the location of Meram municipality building and KOP Building on this street has increased the appealing feature and intensity of this building.

The Horozluhan site on the street is also the first example of the change of housing concept in the street. The fact that the first apartment buildings with elevators and multi storey started to appear around the monument caused the increase of housing and trade usage on the station street. It triggered the formation of similar structures in the immediate surroundings. That the architects of the houses forementioned were from outside Konya (Vedat Dolakay-Hulusi Güngör) is important since it shows the influence of other cities to Konya Architecture at that time. The station street witnessed interactions.

The Atatürk monument, which is located at the beginning of the street, is both symbolic and memorial, and it constitutes the triangulation point of the monument square with its landmark feature. In this context, the Atatürk Monument is regarded as one of the important elements that create identity to the Konya province.

The station street has gained an important ground in the memory of the city and citizens within the process of change it experienced from he last periods of the Ottoman Empire to the present day. Konya city identity consists of artificial environmental components (roads, streets, squares, monuments, buildings). As well as these components show some change over time, they have the characteristics of the modernization of the Republic of Turkey.

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REJECTING REVERSING ARCHITECTURE

INDUSTRIAL HERITAGE OF SAFRANBOLU: HISTORICAL WATER MILLS

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ABSTRACT

Within the context of Industrial Heritage in the current climate, it is required to preserve mills, which are significant manufacturing buildings in agricultural society before industrial revolution. As a part of this study the water mills in Safranbolu will be discussed.

In this study; constructional and spatial analysis of 8 mills in Safranbolu city centre and various villages, will be carried out. The aim of the study is; classifying all these buildings through various media (photographs, facades, plan schemas etc.) and carrying out analyses to specify general typology by comparing the building in terms of construction type, building material, numbers of floor and roof type.

This study will draw attention to importance of water mills which take part within the context of Industrial Heritage from between Safranbolu's impressive examples of architecture. It is required to document the unregistered mills as a value of 'Rural Architectural Heritage'. By this way it is aimed to prevent the demolishing of these types of building. It is intended to compare registered and adaptive re-used mills in term of spatial usage and additional buildings. As a result of the study, it is desired to contribute to the cultural sustainability by documenting the mills which are important building of a period.

Key Words: Safranbolu, Industrial Heritage, Water Mills, Rural Architecture, Adaptive Re-Use.

INTRODUCTION

Safranbolu is put under protection city due to having a wide range texture of public and civil architecture buildings. Safranbolu, which was declared as 'World Heritage City' by UNESCO on December 17, 1994, has many monumental buildings such as hans, hammams, mosques and fountains, especially traditional houses. In addition to this Safranbolu's rich water resources allowed to construct various buildings such as fountains, bridges, cisterns. Also, it is established that water-powered mills which have the characteristics of Industrial Heritage are constructed on the tributaries of rivers in the city.

With invention of the mechanical power, this building type, has lost its importance and lagged the technological development. So, these buildings became unable to fulfil the needs of the urban life and lost its function. Some of these buildings are preserved and re-used with new function and the others are abandoned or completely devastated.

A variety of theses and articles have been published with the aim of drawing attention to the fact that the mills must conserve as 'cultural heritage'. It is identified in the previous studies that mills have been documented for preventing from destruction. The article published by Avşar (2015) expresses the process of re-using the Historical Merzeci Mill in Denizli within the framework of industry heritage. In the study, it is emphasized that the mill structure in the abandoned state has cultural value. The mill was restored and transformed into the 'Young Denizli Centre'. Thus, the structure has been improved and brought to the daily life of the city. To perform this function, it is drawing attention that the additional units are independent and flexible. Also, it is mentioned that contemporary materials are preferred in the construction of new additions [1].

In the master thesis prepared for the Unkapan Değirmeni Complex in Golden Horn, it is mentioned that industrial heritages should be refunction with Modern functionality. The size of the complex, which has blocks such as mill, kiln, and lodging, is remarkable. The complex has been abandoned like many industrial buildings and completely ruined. In this study, it was proposed to reuse the complex as a cultural and business centre. In the context of the new functioning, it is stated that the additional building should be in harmony with the original character, scale, mass and material [2].

It has been emphasized in the studies that mills are valuable as industrial heritage. It is firstly aimed that historical buildings should be documented, then develop with re-functioning and transfer to future. It is mainly aimed to develop historical buildings with documentation and then re-function and transfer them to future. Firstly, in the study determinated registration status of the mills in Safranbolu and the vicinity. New functions of the registered mills and characteristics of the new additions, has been examined. The current situation of the unregistered mills, has been determined and documented. In terms of subject matter, the concept of industrial heritage is first mentioned in the study titles. The mills in Safranbolu have been investigated by stating that the mills should be protected within the industrial heritage. It is thought that this study is

important for new researches and it allows to compare the spatial characteristics of new additions for adaptive re-use of the mills.

Concept of Industrial Heritage

Industrial archaeology is the whole study with the aim of examining and documenting building, area and machines related with industry. This term was first used in 1955 by British researcher Michael Rix [3]. Köksal (2012) also described industrial archaeology as follows; Archaeology researches ancient times. Industrial archaeology is an interdisciplinary field of study that examines documents, works, buildings, human settlements, natural and urban landscape areas resulting from the industrial activities [4].

Nizhny Tagil Charter was originated by The International Committee for the Conservation of the Industrial Heritage (TICCIH) in year 2003. It was declared that; industrial heritage consists of the remains of industrial culture which are of historical, technological, social, architectural, or scientific value. “These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education.’’ [5].

Conservation criteria of industrial heritage can be described as historical characteristic, functional suitability, adding value to its environment, technical and construction characteristic, authenticity value, equipment and interior design characteristics, industrial archaeological characteristics, cultural, symbolic, artistic and rarity values [6].

According to these definitions, it is possible to evaluate the water mills within the scope of industrial heritage and industrial archaeology. In this context, mills, which are important production structures in the agricultural society before the industrial revolution, need to be protected.

Mills as Industrial Heritage

The use of mills to produce flour, one of the basic needs of people, is based on ancient histories. There are hand mills in archaeological remains. In the following times, mills that worked with human and animal power emerged. Especially in the medieval period, certain technical innovations have been recorded and the innovation that can be counted in the first place of these innovations; Water mills.

The mills are the first examples of the use of other resources instead of human or animal power, so mills are also considered to be the pioneers of the industrial revolution. It is easier to grind wheat and other cereal crops through water mills. There are the other types of mills like Wind mills. Also, another type of mills called 'motor powered mills' appears in later history.

Towards the end of the 15th century the bourgeois class grew stronger along with developments throughout the world. So that the business sector such as trade, craft and mining has come to the forefront and the agriculture-related village economy has been left to the urban economy. With this situation, the

mills started to be transforming. After a while, the mills lagged technological developments and left their place in the factory and lost their functions.

The conservation of these water mills, which have witnessed a period, is important in terms of history and cultural sustainability. The main aim should be making these historical and cultural heritage functional, useful and beneficial for public and so they can be "living entity" [7]. This will prevent the disappearance of mills and milling cultures, which are a production place that cannot be met in daily life.

It is stated by Köksal (2012) that the criterions of re-using of the industrial heritage buildings follows as; it is necessary that industry building must preserve and exhibit the authentic characteristic. Also, it is required that the zone must enter the city life in a long term and qualified manner for the benefit of the public [4].

For example, Mill of Verla (figure-1) in Finland known to have been built in the 19th century was taken to the World Heritage List in 1996. The selection criteria of this mill which refunctioned as a museum, has been declared, that; “to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates significant stage(s) in human history” (http://whc.unesco.org/sites). According to TICCIH's 1985 report, 1071 windmills and 40 water mills were registered as industrial monuments in the Netherlands (figure-2) (Council of Europe, 1985; Köksal, 2005) [8].

Figure 1-Verla Mill Museum [9]

Figure 2- Mills in Netherlands [9]

Historical Water Mills of Safranbolu

Safranbolu has been a permanent settlement area throughout history due to its geographical characteristic. Having especially rich water resources has a significant impact on the socio-economic structure of the city in the historical process [10]. For this reason, Safranbolu has a variety architectural heritage (figure-3-4). Safranbolu’s architectural heritage; It constitutes religious, commercial buildings and mainly traditional houses. Nevertheless, Safranbolu, located on the historical Silk Road in the Ottoman period, has been an important commercial centre for a long time. There are many industrial production buildings such as ‘Yemenici, semerci, demirci bazaars’ and there are also other production buildings like leatherwork, woodwork and weaving in the city.

Safranbolu was protected in 1990 with the Conservation Development Plan [11]. There are various archaeological, natural and urban sites in the city.

Near Safranbolu there are many village settlements in the form of Rural Architectural Heritage and Cultural Landscape Area. The most well-known village among these villages, which is close to the settlements, is Yörük Village. There are variety architectural buildings reflecting the rural life in the village, which is protected because of the registration study. In Yaziköy and Konari villages, which are close to the Yörük Village, documenting and conservation study is ongoing. Another village around Safranbolu protected by the Conservation Plan is Bulak village. According to this, it is understood that Safranbolu not only have cultural assets that worth protecting in the city centre but also it has important with a lot of villages' settlement. It is concluded that the recent protection studies in the villages near Safranbolu are a strong indication of this.

Figure 3. 4. View from Safranbolu

The fact that the city is located on commercial roads and the abundance of water resources have affected architecture considerably. In the "Eski Çarşı" District, which is declared as an urban conservation area, industrial manufacturing area "Tabakhane", is located on the water side of the site. In this area, many manufacturing buildings for the leatherworking have been constructed. In addition, there are industry establishments bazaars where handicrafts such as demircilik (blacksmithing), semercilik (saddlebacking) and yemenicilik (yemenism) are made. In the light of this information, it has emerged that the historical mills that are the subject of the study are important due to being industrial heritage and their value should be emphasized.

The water mills that make up the subject of this study were built on Safranbolu and numerous river streams around of Safranbolu. It is known that these mills are numerous and very few can be reached currently. The mills were abandoned, because of technological developments and the decrease of the waters. The industrial revolution that caused the transformation of agricultural societies negatively affects Safranbolu with the opening of Kardemir (Iron-Steel Factory) in Karabük. Founded in 1933, the factory accelerated the migration from the village to the city and eventually the historical centre of Safranbolu was vacated. The transformation of the workforce to machine-based energy has caused the craft branches in Safranbolu to lose value. Due to the same reason, industrial mills have begun to be forgotten, losing their importance. Some of the abandoned mills in the study area have been re-used as café-restaurants with new additions. In addition to this it is concluded that some of the mills in the case study have been devastated.

The mills in the study area (figure-5) are marked on the map. Among these mills; Konarı, Dereköy, Yazıköy 1, Bağlar, Yazıköy 2, Yukarıdana, Karıt, İncekaya mills are examined in situ. According to the knowledge from Karabük Cultural and Natural Property Protection Council only Konarı, Yazıköy 1 and Bağlar are registered mills [12]. Mukhtar of Bulak village specified that there was a mill in valley of Bulak. It is indicated as D1 in the map. According to verbal information obtained during the study, it has been learned that there are many mills around Safranbolu, but they disappear over time. So, the D2, D3, D4 mills in the same valley as the Dereköy mill could not be reached in situ, and they just marked on the map (figure-5).

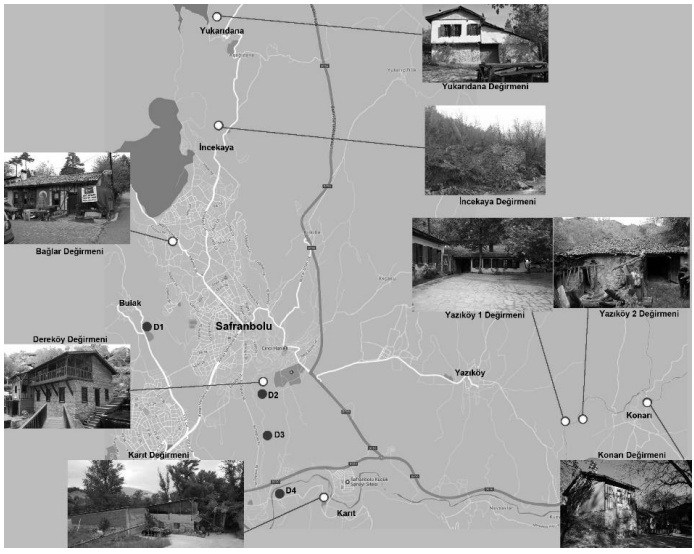


Figure 5. Map of Historical Water Mills in Safranbolu

In the studied samples, it was observed that the production area is the main place. In this main space, there are also examples of room for the miller to remain (Konarı, Bağlar). In the case of Dereköy and Yukarıdana, the upper layer of the mill belongs to Miller. İn Konarı example, there is a miller's room in the manufacturing place. At the same time, detected to the building, it was also observed that it is a place of residence (Table-1). There are also storage areas in example of Konarı, Bağlar and Yazıköy 2.

Figure 6. 7. Examples of Mill mechanism

Some of these mills (Dereköy, Karıt, Yukarıdana) maintain manufacturing. It has been seen that all the equipment belonging to the mill mechanism are available (figure-6-7).

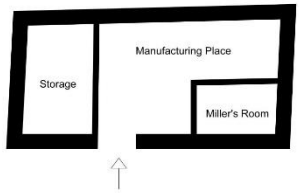
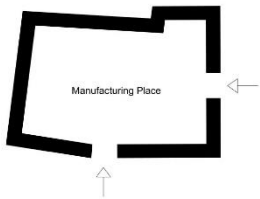
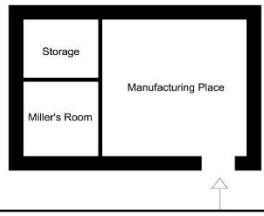
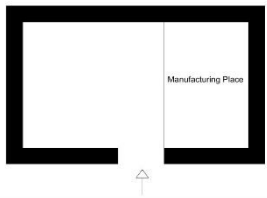
Name of Building	Plan
Konarı Değirmeni	
Dereköy Değirmeni	
Yazıköy 1 Değirmeni	
Bağlar Değirmeni	
Yukarıdana Değirmeni	

Table 2. Plan Schemas of Mills

Name of Building	Photograph	Constructional Characteristics					Environmental Characteristics		Spatial Characterestics				New Function	
		Construction Type	Building Material	Number of Floors	Roof Type	Building Status	Neighbourhood	Historical Remain	Manufacturing Place	Miller's Room	Storage	Original Addition	Mill Building	Addition
Konarı Değirmeni		masonory	stone	2	hipped roof	moderete (registered)	on the riverside	Historical Bridge	V	V	V	Miller's house	No function	Cafe-restaurant
Dereköy Değirmeni		masonory	wood-stone	2	gable roof	good (un-registered)	on the riverside	in the Natural Conserv. Zone	V	V	V	Miller's house	Mill and Cafe-restaurant	Cafe-restaurant
Yazıköy 1 Değirmeni		masonory	stone	1	gable roof	good (registered)	on the riverside	none	V	V	V	–	No function	Cafe-restaurant
Bağlar Değirmeni		masonory	wood-stone	1	gable roof	moderete (registered)	Traditional houses	Urban Conserv. Zone	V	V	V	–	Cafe	outdoor

Table 2. Characteristics of Mills

Name of Building	Photograph	Constructional Characteristics						Environmental Characteristics		Spatial Characterestics				New Function	
		Construction Type	Building Material	Number of Floors	Roof Type	Building Status	Neighbourhood	Historical Remain	Manufacturing Place	Miller's Room	Storage	Original Adddition	Mill Building	Addition
Yazıköy 2 Değirmeni		masonory	stone	1	hipped roof	ruined (un-registered)	on the riverside	Historical Bridges	√	√	√	Storage (ruined)	ruined	–
Yukarıdana Değirmeni		masonory	stone	2	gable roof	moderete (un-registered)	natural site	none	√	√	–	Miller's house	Mill	–
Kant Değirmeni		masonory	–	–	–	ruined and re-built (un-registered)	on the riverside	none	–	–	–	–	Mill	–
İncekaya Değirmeni		masonory	stone	–	–	ruined (un-registered)	on the riverside	none	–	–	–	–	ruined	–

Table 3. Characteristics of Mills

The mills are made of stone or wooden material by masonry technique. Mills are 1 or 2 storeyed buildings. They have hipped or gable roofs. The majority are not structurally well (Table-2-3).

In the process of re-functioning, these mills needed new spaces. Thus, new additions spaces were attached. According to the 13th article of Venice Charter; "Additions cannot be allowed except in so far as they do not detract from the interesting parts of the building, its traditional setting, the balance of its composition and its relationship with its surroundings." It has been determined that the additions functionally provide revitalized space for the mills. In this way, the mills have been adapted to the daily life of the city. However, structural and architectural characteristics are not qualified and not in harmony (figure-8-9-10-11-12-13).


Figure 8. 9. Dereköy Değirmeni and Additional Building


Figure 10. Konarı Değirmeni Figure 11. Addition of Konarı Değirmeni


Figure 12. 13. Yazıköy 1 Değirmeni and Additional Building


Figure 14. 15. Historical Bridges in Surroundings of Mills

It has seen that Safranbolu's historical mills have established organic relations with the environment they are in. The natural and humanmade factors around these mills are also remarkable. Generally, they locate in the nature and riverside. In addition to this, it is seen that there is bridge with two arcs in Konarı and there is a bridge with three arcs in Yaziköy (figure 14-15). The surroundings of mills have wealthy of architectural and natural beauty. These reasons provide advantages in the process of re-functioning and revitalization of the buildings.

CONCLUSION

Buildings, reflect the architectural style of the period they were built, so they are concrete examples of the cultural heritage. These buildings lose their functions for a variety of reasons and their adaptation to the daily life with contemporary function provides cultural sustainability and positive effects on cities with the protection of architectural values.

In addition to examples of civil and public architecture, Safranbolu has an important cultural heritage with its richly numbered mills. These mills; It is the symbol of Safranbolu's rich water resources and pre-mechanization lifestyle. It is important for cultural sustainability that these buildings, which have been manufactured for centuries, are preserved and used currently.

In this study, the present conditions of these buildings were examined and it was observed that there was not enough awareness on conservation. While these buildings of cultural heritage are being refunctioned, they should not be functioned with functions that limit the use of public. The buildings should be able to be qualified examples of industrial heritage with new additions and environmental arrangements. When these buildings, which are parts of our cultural heritage to be conserved, are re-used qualitatively, cultural wealth and respect for the city's history will be further enhanced.

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SUSTAINABILITY REDEFINES ARCHITECTURE

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SUSTAINABILITY REDEFINES ARCHITECTURE

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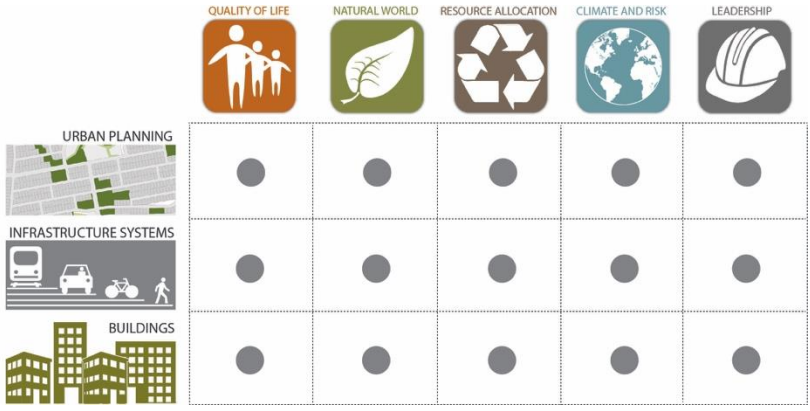
Sustainable design principles redefine our approach to planning and design practice, following societal requirements. Respect to the environment and enhanced social wellbeing establish new approaches to the design of buildings with a wider impact. However, *how sustainability principles redefine architecture?*

The research of the Zofnass Program at Harvard University (www.zofnass.org) on sustainable infrastructure and sustainable cities defines our point of departure on the sustainability of buildings and how sustainability redefines architecture.[1]

The Zofnass Program assesses the sustainability of a project along five dimensions. The first four of these are (a) the impact of the project on quality of life, (b) the impact of the project on the natural world, (c) the allocation of resources in the project, and (d) the impact of the project on climate change and how the project will cope with the risks of climate change. A fifth dimension (e) is the commitment of the project's leadership to sustainability, evaluated in terms of developing and implementing sustainable features.



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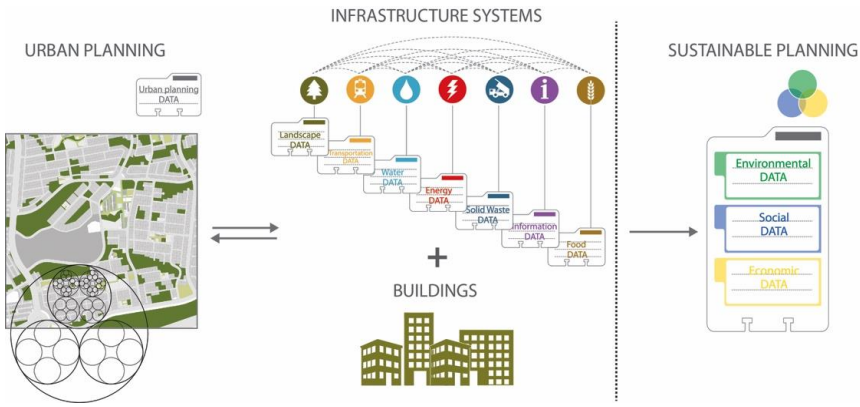
The entire city is a project, and as such its sustainability is also defined in these five dimensions. Decomposing the city as a project, we distinguish three distinct parts that define its sustainability: (a) the planning of the city, (b) the infrastructure systems of the city, and (c) the buildings of the city.

The planning of the city, its land use and the anticipated distribution of buildings, and the planning of infrastructure are fully integrated. The size of infrastructure systems depends on the demand and the location of the city's occupants, which translates to the demand from buildings and from the other infrastructure systems. For the cities of the past, it can be argued that this was an ordinary linear process. However, it becomes an iterative nonlinear process in planning the new sustainable cities of today.



The iconic modernist architecture phrase/leitmotif "*form follows function"* has led the practice of architecture for decades. A building's function, centered on the building's program and its performance for the user needs, considering the building as a self-contained entity, has been standard practice.

Nowadays, sustainability establishes new functions with a wider impact, as the building becomes a component of a larger system. These new functions, driven by sustainability considerations, are:

1. The building is a system component of the infrastructure.
2. The building becomes a resource saving entity, contributing to efficiency.
3. The building becomes a producer of resources, aiming and even exceeding self-sufficiency.
4. The building is contextually related to the climate and integrated to the natural world.
5. The building assists urban compactness through mixed use and reduction of space.

Considering each of the five functions driven by sustainability in more detail:

The building is a system component of the infrastructure. According to the sustainability principles, cities can be understood as a system of energy and resource flows and buildings play a key role within this system. Buildings are central to the urban energy system, with much of the system designed around them. Buildings are clients of the infrastructure systems: energy and water consumers, users of materials and determinants of land use. When the performance of buildings is improved, there is a reduction of the required resources provided by the infrastructure, with an impact citywide.

The interactions of buildings with the urban form, the transport system, and the energy and water systems are as part of the strategic urban planning efforts and affect performance citywide.

The building becomes a resource saving entity, contributing to efficiency. Efficient/high performance buildings use fewer natural resources. In sustainability, energy and water conservation is an integral part of building design and operation. In conserving energy, sustainability promotes an optimized, integrated performance of the main building systems, such as heating/cooling and lighting systems, sized based on actual demand, but also through their interrelation, choosing optimally among design alternatives. Performance specifications for building products and equipment also contribute to reducing energy use.

The building becomes a producer of resources, aiming and even exceeding self-sufficiency. Sustainable buildings are no longer considered as consumers of resources but rather sustainable buildings aim to be self-sufficient or even resource production units. Self-sufficiency features such as solar panels, geothermal systems, green roofs, rain harvesting and urban food production systems become integrated components of architectural design, introducing new design requirements. Building-integrated photovoltaic (BIPV) electric power systems, facade and roofing systems not only produce electricity, they are integral components of the building envelope. In today's architecture, these systems become multifunctional construction materials.[1]

The building is contextually related to the climate and integrated to the natural world. Sustainable building design is responsive and appropriate to the climate and context conditions. Site integration through proper sizing of the building's footprint, natural ventilation considering prevailing wind patterns, daylight-optimized building footprint in relation with orientation, integrated landscape design are key strategies of sustainable building design. In addition, the so-called *Integrated, Whole Building Design* approach gives proper consideration to the building envelope's configuration to achieve optimized levels of thermal insulation; considers the size, location and performance of windows and glazing systems, strategically integrates external shading elements and solar controls.

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The building assists urban compactness through mixed use and reduction of space. Architecture is re-shaped by the need for urban proximities and mixed land use. Sustainability's demand for higher density and urban compactness redefines the urban blocks typologies and consequently has an impact on the design of buildings. The private car dependent city, where residential, business, commercial and leisure districts are separated, is being replaced based on the principles of a pedestrian friendly, compact and mixed use city.

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URBAN + INTERIORITY: A PROPOSITION FOR NICOSIA / CYPRUS

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ABSTRACT

The conjunction 'urban + interiority' was a proposition posed to Masters interior architecture students as part of a workshop held in the context of Nicosia in Cyprus. The 10th IMIAD (International Masters of Interior Architectural Design) workshop was organized by Istanbul Technical University (ITU) between 1st to 11th September 2016, as a part of the annual curricular workshop series that is organized within the structure of the IMIAD. The theme of the workshop was "Inhabiting Nicosia: Interior Strategies for Public Realm". This theme aimed to re-address Nicosia and provide ideas for design interventions in the cityscape and streetscape. There were a range of sub-themes as part of the workshop, of which one was 'urban + interiority'. Interior strategies and practices of interiorization invite different ways of thinking and practicing of the discipline in the public realm. This sub-theme addressed issues of interiority, temporality, community and collective inhabitation, rituals and routines in the public realm, as well as sensorial aspects related to interior realms and scales. This group, composed of thirteen students and three academics, developed design scenarios and proposals for a car parking lot in a unique cultural, historical and traditional environment next to the UN Buffer zone (green line) in the Arabahmet Quarter in the northern part of Nicosia in Cyprus. To develop design strategies and design principles, each student was asked to conduct a situation analysis and, following a presentation of these, 3 subgroups were formed based on similar observations and concerns. Each group proposed a design scenario involving techniques of interiorization and projections regarding collective urban interiorities that could facilitate and move towards the reunification of Nicosia. This paper presents an overview of the workshop 'Inhabiting Nicosia' and then focuses in detail on the 'urban + interiority' group which attended to the production of urban interiorities through interior design techniques and strategies engaged in the public realm.

Key Words: Inhabiting, Urban Interiority, IMIAD, Workshop, Nicosia.

INTRODUCTION

In 2016, the annual workshop of the International Masters of Interior Architectural Design (IMIAD) was held in Nicosia, Cyprus – and the design proposition was 'Inhabiting Nicosia: Interior Strategies for the Public Realm'. Convened and organised by the interior architecture program at the Istanbul Technical University, this workshop brought interior architecture masters students and academics from six partner universities (located in India, Switzerland, Germany, Turkey, Belgium, USA) together in Nicosia, Cyprus. The workshop took place in an historic and functioning market - Bandabulya Municipal Market - on the north (Turkish) side of Nicosia's green line. Over a period of 10 days, students and academics were invited to develop design scenarios that proposed a future inhabitation of Nicosia.

The concept of 'Inhabiting Nicosia' was presented as a provocation where the students were invited to produce interior architectural design proposals situated within the urban fabric of Nicosia – present, past and future. Within the workshop, a keynote talk by Suzie Attiwill, titled 'urban + interior' posed the question of interior and the practice of interior design in the urban environment. The conjunction between urban and interior brings together aspects that are usually considered as opposites and in a dialectical relation – exterior and interior, public and private. In refusing these traditional and conventional binaries, new ways of thinking and designing the urban environment are invited. 'Urban + interior' is a reverse perspective of architecture as assumptions about the role of 'the interior' as defined in relation to the inside of a building, as pre-defined by the architectural context and shell, are dismissed. Refusing architecture, the workshop began in the urban fabric of Nicosia with the question of inhabitation situated in an exterior that is spatial and temporal where the present is composed of pasts and futures.

This paper introduces the conjunctions urban + interior and then gives an overview introduction to the complex situation that is Nicosia – historically, socially, culturally, physically – and this is followed by an account of the IMAID workshop and then a detailed discussion of the 'urban + interiority' group led by the authors of this paper which was one of the several sub-themes of the workshop.

Urban + Interior / Interiority

The idea of urban interior challenges an assumption that interior design necessarily has to take place inside a building and shifts the focus to a relational condition – here the 'and' between urban and interior as a question of designing and making the relation. This invites other possibilities for thinking and designing interiors – and the practice of interior design – and brings the sensibility and techniques of interior design to the urban environment [1].

The conjunction of urban + interior is a provocation towards the design and planning of urban environments. Urban planners and designers, landscape architects, architects and industrial designers are recognised contributors to the design of our urban environments. Interior designers and interior

architects are rarely cited or involved – and yet the question of inhabitation of cities is becoming one of the key issues of the twenty-first century as the number of people living in cities exceeds those in rural areas for the first time in history.

It therefore seems appropriate to bring the expertise, techniques and concerns of the interior designer into the urban realm to attend to how people might and can inhabit the urban environment. The conjunction urban + interior is thus a provocation – and this is extended to urban + interiority where we may also consider how an urban subjectivity might be produced through the practice of interior designing. The question of urban interiority as a collective subjectivity is an increasingly urgent one for cities given the immense shifts in population due to migration, political upheaval, terrorism, and the development of megacities with population of over ten million people.

An urban + interior approach brings a focus to the relation between people and the environment (physical, social, cultural, historical) over and above a concern with structure, tectonics, buildings and objects. The International Federation of Interior Architects/Designers defines the identity of the interior architect/designer as a professional who 'determines the relationship of people to spaces based on psychological and physical parameters, to improve the quality of life' [2]. Hence the potential of the practice and contribution of interior design and interior architecture in relation to how we think about cities from point of view of inhabitation.

In one sense, there is nothing new regarding the idea of the city approached from an interior perspective. For example, the famous plan of Rome by Giambattisti Nolli (1784) where streets and public interiors are diagrammed in white – hence making them appear almost as a continuous interior in the urban fabric of Rome – and there is also Camillo Sitte's *City Planning according to Artistic Principles* (1889) where squares are referred to as urban living rooms.

There are different conjunctions - urban + interior / urban interior and interior + urban / interior urbanism. Interior urbanism and urban interior are different concepts. The difference between them resides in their relation or non-relation with architecture: interior urbanism is an architectural idea of urbanism as interior; urban interior has urban as an adjective of interior.

The conjunctions of urban + interior and urban + interiority propose a relational dynamic as something that is critical to the city. Urban interiority opens up the relation to psychological and affective concerns and how interior design has the potential to address and produce a collective, civic interiority and subjectivity. The production of urban interiority has a transformative potential for not only how people inhabit cities but in producing the civic nature of cities - hence the potential of posing the design provocation 'urban + interiority in Nicosia, the last divided city in the world.

IMIAD 2016 Nicosia Workshop

The International Masters of Interior Architectural Design Program (IMIAD) was developed as a Curriculum Development project by Stuttgart University of Applied Sciences (HFT). IMIAD has been running since the 2005–2006 academic year and based on the IMIAD Memorandum of Agreement signed between Istanbul Technical University (ITU) (Istanbul, Turkey), Edinburgh College of Art (ECA) (Edinburgh, Scotland), Lahti Polytechnic (LAMK) (Lahti, Finland), Scuola Universitaria Professionale della Svizzera Italiana (SUPSI) (Lugano, Switzerland), and Stuttgart University of Applied Sciences (HFT) (Stuttgart, Germany). The Center for Environmental Planning and Technology University (CEPT) (Ahmedabad, India) joined the collaboration from the 2011–2012 academic years onwards. ECA and LAMK withdrew from the IMIAD Partnership in 2014. In addition, University of Cincinnati will join the IMIAD partnership in 2017.

The aim of the programme is to enhance the education at the graduate level, to introduce different cultural and professional environments to the students, of different disciplines such as Interior Architecture / Interior Design, Product Design and Architecture and to strengthen the communication level between the partners involving both students and teaching / academic staff.

As a design-based graduate program, one of the main education strategies of IMIAD is to teach in different milieu such as workshops, which can be defined as an informal education setting as distinct from the formal teaching environment of the studio. In other words, workshops are a key component of informal education that is conducted within a subject or a theme for a certain period of time. Diversification of learning and professional experience through informal learning environments gives flexibility to vocational training education. In addition, it provides many benefits such as rapidity of thinking and action, taking responsibilities, the activities of creativity, intuition, opening dialogue channels at different levels, increasing cultural and international communication and interaction, creating a dynamic atmosphere and work opportunities, thinking and learning through interdisciplinary, transdisciplinary and cross disciplinary and the discovery of personal skills and abilities [3].

The IMIAD Program involves an annual international workshop during ‘project month’ which is held by one of the partner schools, each taking turn every year. All educators and the third semester students who are involved in the international Masters of Interior Architectural Design come together for a ten day (or longer) international workshop before the beginning of the third semester.

In this context, the 10th IMIAD workshop was organized by Istanbul Technical University (ITU) between 1st to 11th of September 2016, as a part of the annual curricular workshop series. The theme of the workshop was “Inhabiting Nicosia: Interior Strategies for Public Realm” and its aim was to re-address the divided city of Nicosia through providing design ideas for the cityscape and streetscape.

Here, ‘inhabiting’ emerges as an all-encompassing definition with different questions such as; how do we inhabit the city and its public realm? Where

does the interior architect stand in this respect? How can we rethink the roles of interiors in a manner where it relates to the neighbourhood and city scale? What are the potentials of the various tools and intervention palettes of the discipline in regards to the revitalization of the existing values, community – such as, empowerment, and place-making? [4].

About Cyprus and Nicosia

Cyprus is located in south-west Asia and in the Mediterranean, to the east of Sicily and Sardinia. It is the third largest island in the Mediterranean. As the capital of Cyprus, Nicosia is a politically and physically divided city. It is built on a rich cultural heritage and diversity, socially and spatially bordered character of this island. The city enables a wide opportunity for discussing various aspects of conflicts and potentials by focusing on different layers within a multidisciplinary approach.

Nicosia is the agreed capital city of the island and life has continued for approximately 4500 years in the city. During its history, various civilizations (Roman, Byzantine, Lusignan, Venetian, Ottoman and British) have ruled over the island and left traces from their culture in the city. It is possible to observe traces of each civilization in the architecture, urban pattern and lifestyle in the city. Nicosia is a medieval town surrounded by walls which, in plan view, form the shape of a star. There are eleven 'bastion' on the wall. With the narrow streets defined by adjacent one or two storey houses around the streets, commercial, monumental and administrative building are a significant component of the city. In addition to this, defined open spaces are one of the other important components in the city [5] & [6].

After British colonial period, Greek and Turkish communities established the Republic of Cyprus in 1960. Nevertheless, conflicts between communities led to the island being divided into two in 1974 with Turkish Cypriots living in the northern part, Greek Cypriots in the southern part of the island. The division was marked-up on the Cyprus map with a green pen by the United Nations (UN) and hence the reference to ‘Green Line’ in relation to the actual division. The Walled City of Nicosia was divided into two part by the Green Line at the same time (Figure 1). In order to population size in the island, while.

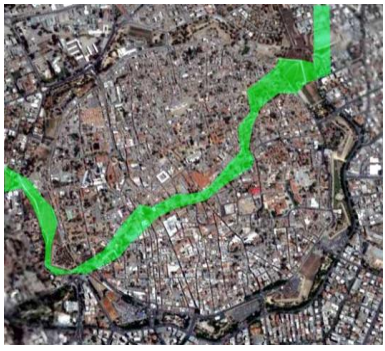

Figure 1. Last Divided Capital in the World Is Nicosia (Walled City) and Division of Symbol 'Green Line'

After the physical division of the island in 1974, it was decided to prepare a master plan for divided Nicosia. This begun in 1978 within the scope of United Nations. The team working on the preparation of development plans identified physical obsolescence in Nicosia's historic city centre, where there are many empty buildings in an idle condition, transportation issues and unsafe pedestrian access. The team proposed many short and long term rehabilitation projects for both the northern and southern part of the city. Some of these projects are: Arabahmet and Chrysaliniotissa neighbourhood of residential zones rehabilitation project Samanbahce rehabilitation project, Selimiye Square rehabilitation project, a number of monumental buildings (Bedesten, Ömeriye bath, the Armenian Church) and commercial buildings (from Bandabulya to Closed Bazaar) as well as infrastructure restoration and revitalization of open spaces [6].

The main goal of this project was not only physical revitalization in the master plan, it also emphasised the importance of social revitalization in housing areas. Due to the aspiration and aim to conserve the city as a whole – as an integrated rather than divided city including the revitalization of economic, social and physical aspects of Nicosia – the masterplan received the Ağa Khan Architecture Award in 2007.

The 'Walled City Revitalization Project' (implemented by the team of the 'Nicosia Master Plan' within the scope of the 'Nicosia Master') and conservation and revitalization projects by the United Nations Project Service Office (UNOPS) have begun to reuse the historic era of the Walled City of Nicosia through individual and group inhabitation [7]. In this regard, it is important to embrace the Historic Walled City of Nicosia dealing with the approach of 'urban interior' while considering the revitalization and conservation studies.

Italian academic, Elena Giunta's definition of the concept of urban interior as a 'temporary residence' which is produced through the impact of users, and composed of 'bodies (social component: individuals and communities), objects (inanimate actors) and spaces (structural systems) which are created by the environmental system' [8] is relevant here. The historic Walled City of Nicosia has hosted 'temporary residences' in the past and still hosts many of this kind of urban space. The Walled City of Nicosia can be reassessed from this perspective of body - object – space to transform and ensure the historic Walled City of Nicosia gains new life.

Many activities had been organised for the Walled City of Nicosia. The main aim of the activities can be classified into two groups: the first, occur in private contexts which are architectural and where the cultural heritage of the divided Walled City of Nicosia is the 'Apple of the Cyprus Island's eye' and the second group of activities addresses aspects of social, physical, economic political continuity in physical context. The IMIAD Workshop with the scope of the theme: Inhabiting Nicosia: Interior Strategies for the Public Realm was an important activity that forms part of this second group.

The main purpose of the individuals and groups who came from different universities to the Walled City of Nicosia was to address and consider the historic Walled City of Nicosia and its occupants. An important aim of the

workshop was to keep the old city alive. In this respect, the architectural and cultural heritage of the Walled City of Nicosia could be conserved while meeting the needs of its inhabitants; the quality of life would increase; the place could become charming for inhabitation and the growth of economic activities. As well as these, the future role of an integrated Nicosia could be imagined and constructed.

The 'Urban + Interiority' group focused on the area of Arabahmet. Located in the northern part of the Nicosia, the architectural characteristics of the houses is traditional Ottoman; the houses are composed of two stories, they have a 'cumba' (closed balcony), and a high garden wall around the courtyard. There are also commercial buildings in the area. It is important to reuse and revitalize historic areas which have historical and architectural values for transferring the heritage to future generations. Apart from this, many physical and social problems have also been identified in the area. The majority of the habitats of the region are low income, old and migrant families with 16% of buildings in the area abandoned; 20% have the property owner living in the building with 64% occupied by tenants who are migrants. Due to this, the majority of houses are neglected and are exposed to physical obsolescence.

Situated in this context, 'Urban + Interiority' identified an area that is currently used as car park of the Nicosia Turkish Municipality. The selected area is located 200m north of the Green Line and is surrounded by Ottoman residential houses, vegetation and an Armenian Monastery. (Figure 2)

Figure 2. Arabahmet Neighborhood and Workshop Area

(Developed Based On 1815 Kitchener's Map)

Urban + Interiority Group: Aim, Method and Design Process

Under the sub-themes of the workshop which included 'Interiors as Tactical Urbanism', 'Interiorizing Urban Volumes', 'Borders, Barriers and Thresholds of Interiors', 'Urban Corridors as Interior', the 'Urban + Interiority' group addressed the issues of interiority, temporality, community and collective inhabitation, rituals and routines in the public realm, as well as sensorial aspects related to interior realms and scales.

This group, composed of thirteen students and three academics, divided into three sub-groups to develop design scenarios and proposals for a car parking lot in a unique cultural, historical and traditional environment next to the UN Buffer zone (green line) in the Arabahmet Quarter located in the northern part of the walled city. To develop design strategies and design principles, the three sub-groups began with a situation analysis (as distinct from the conventional site analysis) and from these situation specific orientations proposed a series of design scenarios through techniques of interiorization and projections regarding collective urban interiorities that could facilitate and move towards the reunification of Nicosia.

The situation analysis was an important tactic in addressing the aims of urban + interiority with a deliberate distinction made from a site analysis as this would focus on an analysis of the urban fabric/built form. In contrast, the situation analysis asked students to observe and document conditions – temporal as well as spatial – how people occupied the city, their routines, the details of particular inhabitations; the different flows and rhythms of how the city changed during days, at night and different weather conditions, light, temperature, colours. The students were asked to also consider conditions such as temporality, spatiality, inhabitations, affects, historical precedents, religious and cultural identities.

The idea of designing an interior as inhabitation as a practice of framing involving selection and arrangement to produce a temporal, provisional consistency was discussed. There was also a shift in focus from an emphasis on arrangement of materials and objects in relation to a given structure and space to a consideration of arrangements in movement/change: a slowing down, a consideration and selection of forces folded in close, interiorizations, arrangements, attention to conditions of stability and temporary consistency.

The aim of the 'Urban + Interiority' group was to address the potential contribution of design to the production of a collective subjectivity – how it feels to inhabit somewhere, to belong somewhere, to be part of a city as a civic realm – in this case, the city of Nicosia. This also involved considering design as a project of projecting – in this case, projecting the future of Nicosia as a reunified city culturally, socially and politically.

The car park located on the northern side of the green line has eighty-one parking lots, with a ticket counter and a private makeshift place. During the week, lawyers attending the Justice Court of Cyprus park their cars in the parking lot. So, during the day, it is a common parking lot; however, after 4.30pm, it becomes a playground for the local children. The carpark is situated in the mixed neighbourhood where the American University of Cyprus

and the abutting Museum attracts the tourists. Those living around the area, as mentioned above, are mainly Turkish refugees with low economic status.

The three design scenarios proposed by the urban + interiority group transformed the car park into different uses with the aim to bring together different people into a collective inhabitation of the carpark and through doing this, to contribute to the development of a community spirit through the nurturing of social and cultural relations. The scenarios were then presented to the local community comprised – many of them young children of Turkish refugees.

Design Projects as Design Scenarios

Figure 3. Example

Scenario 1: Memory and Discovery

With the aim of the reunification of Nicosia, this scenario/group invited the people living on each side of the green line to develop tolerance for each other. This group proposed an 'Emotional Museum' in the open space of the carpark to create historical awareness for the past and the future, not only for those living in the north and south of the city but also in developing a collective memory for all Cypriots. To do so, the students proposed two different design proposals as below (Figure 4).

- One design proposal is to insert panels in the site for hanging pictures of all users (former residents, current residents and other people even tourists), initiating social integration, awareness and interaction.

• The second design proposal is to use the car park as an urban living room after the parking lot function ends in the evening hours – especially for elderly people who live in this neighbourhood. In this proposal, beer crates are used as urban furniture to mark the landmarks of the city of Nicosia with pictograms, indicating the coordinates and direction of the landmark on the ground as well as their distance from the parking lot. An experiential, social and cultural setting is constructed through play and exploration.

Scenario 2: Occupation over Time

This proposal was developed through the idea of designing a 'Unit', which referenced an existing makeshift space erected in the car park that belongs to a family living nearby. The design proposal extended this idea to the whole car park with the intention of letting residents occupy the parking lot and create their own unit based on their needs.

Each unit has a single parking lot. The design scenario is to eventually occupy the entire parking lot over time as units are needed. In this context, a detailed situation analysis was carried out within the scope of the study and the scenario presented the design of different kinds of units to show how they can respond to alternative uses such as: urban garden, cafe/shop, a workshop for children.

Each resident is invited to design their own unit according to their needs and to develop and discover an understanding of spatial practices through exploration. The design aimed to empower and provide economic benefit to community, as well as social interaction, coexistence and communication with each other (Figure 5).

Scenario 3: Unifying with Active Interaction

The third scenario embraced the idea of reunification of the city of Nicosia as the key driver for its design scenario and proposed a 'Football Club and Youth Centre' as a way of establishing a common ground for the youths living on both sides of the city; to encourage friendship and interaction between them.

For this purpose, it was proposed that the existing parking lot would be designed as a 'Youth Centre / Cafe' with a soccer field according to FIFA rules located on the existing parking lot. It was envisaged that the centre be a NGO like the other NGOs in the city of Nicosia such as *H4C and Studio 21*, and this NGO would run the soccer field and undertake the task of the training the football team and the club. At times when there is no football match, it was suggested to use the field for different purposes – such as celebrations, wedding and engagement ceremonies – and hence enable a dynamic use of the space through social events (Figure 6).

Figure 4, 5, 6. Design Proposals Of 'Urban + Interiority' Sub-Groups

As well as developing the design scenarios, the 'urban + interiority' group organized a public event and exhibition titled 'Urban+ Interiority: Propositions towards a new collective urban inhabitation' at the actual carpark with the participation of the local children and their volunteer teachers. The 'urban + interiority' group exhibited and presented their scenarios on a wall surrounding the parking lot and the children were invited to draw their own proposals and also to exhibit them on the wall as part of the event (Figure 7).

Figure 7. Urban+ Interiority Public Event & Exhibition: Urban+ Interiority: Propositions Towards a New Collective Urban Inhabitation, Nicosia, 10 September 2016

CONCLUSION

The IMIAD workshop *Inhabiting Nicosia: Interior Strategies for the Public Realm* was an invitation to pose the conjunction urban + interior / urban + interiority with a group of interior design/interior architecture academics and students. The Walled City of the historic centre of Nicosia has hosted many civilisations over time and as a divided city with a wall - a buffer zone - running through its centre, its current situation is one in need of addressing and revitalisation. There have been, and are, many organisations that have involved architects and designers in projects that seek to project a new future for Nicosia that involves the reunification of the city through the removal of the buffer zone and a re-thinking of how the old, historic centre of the city surrounded by walls can be regenerated with an attention to the social, cultural, historical and political conditions that will continue to shape the city.

The IMIAD workshop: *Inhabiting Nicosia: Interior Strategies for the Public Realm* brought interior architecture Masters students and academics from different parts of the world to Nicosia to address this challenge. They in turn brought interior strategies and techniques – an approach usually addressing the interior of buildings and one which starts from an intimate scale of 1:1 – to address the relation between people and their environment; together with a focus on the typology of 'private spaces', 'semi-private spaces', public spaces' and 'semi-public spaces'.

As part of the workshop, the proposition of urban + interior / urban + interiority was offered as a provocation to address this complex situation now in 2016 and in the future. Rejecting and refusing the architectural as a necessary given and starting point for the consideration of inhabitation, the conjunction of urban + interior opens up the question of thinking about the practice, techniques and concerns of design in relation to the production of interior and interiority.

The outcome of the 'Urban + Interiority' sub-group as part of the IMIAD workshop resulted in several design scenarios addressing the situation of a specific site of a carpark in the Nicosia Turkish Municipality. These scenarios were then presented back to the local community as a public event and exhibition - 'Urban + Interiority: Propositions toward a new collective urban inhabitation'. The workshop offered much to all involved - the Masters students and academics, as well as the local children who had an opportunity to participate and imagine a future Nicosia as well as offering their own visions and hence projected futures for the Walled City.

The question of inhabitation of the urban environment is an urgent issue as cities become increasingly complex due to population growth and migration as well as political, social, cultural and historical forces which surface as part of the dynamic ecology of a city. Bringing urban + interior and urban + interiority together in relation to a design brief and the particular situation of the Walled City of Nicosia demonstrates the significant potential of interior architecture as a design practice to address some of the compelling and pressing issues of the twenty-first century.

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A MODEL SUGGESTION ON THE RELATIONSHIP BETWEEN PRIVACY NECESSITY AND PLANT MATERIAL IN SINGLE FAMILY DWELLINGS AT GATED COMMUNITIES

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ABSTRACT

This study is formed and developed on the relationship between visual privacy necessity and plant material. Privacy, a concept that dealt with different aspects of different disciplines, in this study built on which the dynamics is based on the individual's visual privacy necessary at a semi private space, how plant material contribute to a semi-private space's privacy is considered within the framework of a model. Dwelling garden which is important in single family dwelling's life was chosen as a place of study. The purpose of the study is to draw attention to the privacy needs of the users in gated communities which are the semi-private spaces of single family dwellings and to the functional properties of the plant materials, to examine the relationship between privacy and plant material and finally to make an evaluation on this relationship in between. This study suggests that the privacy necessity is a basic requirement in the dwelling garden; plant material, which has functional properties such as flexibility, transparency, dynamics and so on properties, contributes to the spatial requirements in terms of ensuring the privacy; and with the plant designs to be made for this purpose the garden usage will naturally increase. Therefore, there is a need for interpreting all the steps of the model shaping the privacy needs of the individual in gated communities and to examine the ways which are useful in the dwelling's research and design. The functional features of plant material in addition to the aesthetic properties are two of the important issues that need to be focused for the creation of more qualified and quality environments.

Key Words: Single Family Dwelling's Garden, Privacy Necessity, Visual Privacy, Plant Material, Model Suggestion.

INTRODUCTION

Previously the dwelling has only functions of protection and shelter, over time developed, and today is regarded as a part of the living environment with surroundings. In particular, the most prominent feature of single-family dwellings, compared to a large number of multi-storey buildings, has dwelling garden which live through human-environment interaction overly [1]. Single family dwelling's exterior spaces have a similar structure to the inner spaces in fiction. Floor, ceiling, walls, columns, beams, windows, roofs, stairs, doors and floors that showed evidence of fixed and static properties [2], defining and limiting space by taking on roles that make up the components of architectural interior continue to exist in architectural exterior with flexibility, permeability, dynamics characteristics. Therefore, in terms of the sustainability of urban development, the planning decisions and practices in relation to these areas is very important. [3].

According to Lynch (1960), similar characteristics spaces adjacent to each other where appropriate, both sides of the border element which is the transition from visual or moving regulated in detail, has a function as well as a strong sense of impenetrability and become a link between the two regions [4]. Altman speaks of people in modern societies who, on the one hand, intermingle neighbours, communities, and cultures with each other, and who, on the other hand, seeks opposing cases of individuality, rarity and privilege and he is referring to these as "separator" and "unifying" forces [5]. In this context, dwelling gardens, on the one hand, while maintaining the confidentiality of the dwelling with being outward extension of the dwelling, on the other hand should allow for social interaction and knowledge transfer. Therefore, privacy concept, which means "the user wants to establish control over relations with its surroundings have the right to hold or wish to hold" [6], is the most basic feature that increase the usability of semi-private spaces such as dwelling gardens.

Looking at the ancient period, it is seen that past traditional structure evaluated the privacy term as "isolation" and reflected the lives in this way. Over time, with chancing person's values, beliefs, thoughts, and so on solutions for the needs changed accordingly [7]. It has also increased physical and psychological resources providing privacy from primitive and traditional societies to modern societies progressively. Modern societies are eventually suggested to be more flexible for interpretations and to get rich for solutions and tools in line of privacy [5]. However, today's living environments, case of private-public space is not processed adequately; especially in the analysis of intercommunicating, spaces are neglected; and undefined/ unidentifiable spaces are created [8]. Failure in organizing the semi-private quality of this private space which forms the balance between a private space and a semi-public space prevents the formation of privacy completely [9]. Therefore, creating environments that can respond to the expectations of the people is possible through better understanding their necessities [10]. Abraham H. Maslow, dealing with all the psycho-social needs of human and accordingly defines the individual needs of human, suggested theory of "Hierarchy of Needs" provided privacy necessary is a primary requirement more than aesthetic and intellectual requirements [11]. On the other hand, studies on

plant material show that plants feel positive emotions; have been more admired and preferred compared with artificial objects [12]. However, plant materials, the most important materials of exterior design and assumed a complementary task for privacy creating space, are used with aesthetic purposes primarily in dwelling garden; garden's privacy is provided with artificial elements. In this sense, the selected plants in dwelling exterior spaces, surrounded highlighting boundary elements, are not only to beautify of space but also should have functional features which provides dwelling closure and is a continuation of architectural structure elements [13].

Privacy necessity of semi-private space and functional usage of plant material for privacy create the structure of the study in this article presenting the relationship between visual privacy necessity and plant material in single family dwellings at gated communities. This study has focused on that privacy is an important spatial necessary completing spatial organization; that plant material which mostly plans the aesthetic usage, need also to have features of functions such as flexibility, transparency, dynamics and so on properties for contributing privacy of space. Dwelling garden which is an important in single family dwelling's life was chosen as a place of study. The purpose of the study, at dwelling garden which is semi-private space of single family dwellings, can be summarized to take care of the user's privacy necessary and plant material's functional properties; to examine the relationship between privacy and plant material; to evaluate on the relationship between these two things. In this study, suggestion model which is built on the relationship between visual privacy necessity and plant material were based on the idea that privacy is a primary spatial necessity on human- need relationships that make up the basic components of the spatial organization and the functional usage of plant material for privacy is effective as well as aesthetic usages.

Concepts and Definitions

This study is grounded on dwelling garden, privacy need and plant material concepts.

Dwelling garden involves life and activity spaces opening to outside world. Positioned in the garden as single-family dwellings, the starting point for families is the desire to live independently, provide the ideal motion areas and their private gardens are built for indoor and outdoor connection by means of these properties [14].

"User requirements", within the scope of architectural spaces, should be the least of the qualities of a space, indicate a requirement and a necessity [15]. The most widely accepted of research done to date about the ranking of the requirements is Maslow's "Hierarchy of Needs" theory. According to this theory considered as a pyramid, requirements follow a specific order. The first step of sequencing necessity should have saturated the non- occurrence of subsequent requirements. Accordingly, it is required that basic necessities of at the bottom of the pyramid such as physiological needs, security should be satisfied for the satisfaction of privacy necessities of top-level necessities such as the aesthetic and intellectual pleasure. [11].

The privacy necessity including auditory, visual and olfactive collected into three groups is approached to a visual point of view in this study. Privacy concept is defined as “the user wants to establish control over relations with its surroundings have the right to hold or wish to hold” by Gür (1996); as “Approach to optimal condition to person or group” by Lee (1976) [6]; as “to control the interaction, to provide the desired interaction and the ability to choose against unwanted interference” by Rapoport (1972); as “individuals decide by themselves which their own information to others they will present when, how and how far” by Westin (1970) [1].

The plant materials, having the different of usage potential in different discipline, are elements that all of properties contain both in production and aesthetics, as well as reformatory of living conditions for landscape architecture [13]. Private outdoor spaces of single- family dwelling areas are the places which increase opportunities with diversity and to be spied on creating space. Plant elements, commonly used in these areas, are priority of landscape architecture. In this sense, plant materials, creating space for privacy, have many functions such as building space, association to spaces with each other, creating visual obstructions, separation or binding spaces and so on. All of them are properties needed to be in exterior space for ideal privacy equilibrium [16], [17].

The Interaction between Human and Environment

Environment is generally defined as all the conditions and factors affecting the human [7]. Altman (1976) defined the mutual and two-way interaction between human and environment as “environment affects human and the humans too affect environment” [18]. Imamoglu (1979) defined the supported the same view as “we shape the environment and then the environment does the same” [19] and thus he brought a different approach to the definition of the term by establishing a relation between the architecture and the space. Based on the definitions so far, human and environment continuously affect each other and are in a constant balance [20], (Figure-1).

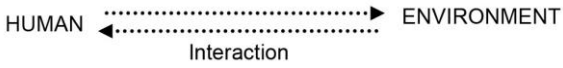

Figure 1. First Step of the Research Design

Concept of Space

Space is generally referred as a place where the humans live and various activities are done. Since this study is done from the perspective of Landscape Architecture, the definitions of the concept of “space” and the approaches are mostly dealt wilt “outdoor space”. Outdoors are like the indoor spaces in fiction. Floor, ceiling, walls, columns, beams, windows, roofs, stairs, doors and floors that showed evidence of fixed and static properties [2], defining and limiting space by taking on roles that make up the components of architectural interior continue to exist in architectural exterior with flexibility, permeability, dynamics characteristics. The outdoor spaces are the places where human communication and interaction take place most [13], [2], [21-22]. But, the space gains its meaning with the element limiting it. It is defined

this way and clarified.

Spaces are not separated from each other clearly. There are also semi-public and semi-private spaces that relate and complement these spaces [23]. Semi-private spaces are the spaces belonging to any structure, visible from outside and owned by private persons and which can provide visual space for others. With the gated communities, front and side gardens and the balconies can be given as examples [24]. It is also possible to say that the shared spaces of single family dwellings in collective settlements can also be considered as semi-public spaces. These spaces are public for homeowners and they are private for others. The outdoor spaces of these houses can be accepted as semi-private characteristics (Figure 2).

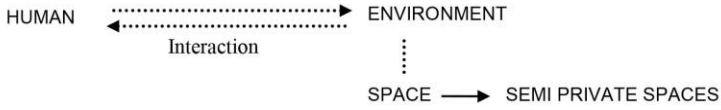

Figure 2. The Addition of Space and Semi-Private Space Concepts into the Model

The Concept of Housing

Housing, one of the basic needs of humans, provides shelter to people and it is an inevitable part of human life [9]. According to Cubuk (1989) housing "is a living unit that has close contacts with the environment far beyond its walls rather than being an isolated space for living and having no contact whatsoever with the outside world" [25]. The house in the world today is considered as a complete structure with its environment and such topics as creating civilized environmental conditions, bringing urban services and protecting the natural conditions are dealt with [9].

The most distinguishing feature of single family dwellings compared to multi-storey houses is that the users are very close to nature. Particularly, the private spaces outside the house are the places where the users are in direct contact with the nature as well as they are the spaces where the human and environment interaction is felt more strongly. In single family dwellings where the communication takes place continuously through in step-by-step hierarchical order, cultural, psychological and behavioural features become prominent as well as physical and spatial ones.

The results of the studies done in order to measure the satisfaction levels of the cities in different countries show that the success of the housing is related to the ways empty spaces among the houses are designed rather than the quality of the inner spaces [26], (Figure-3).

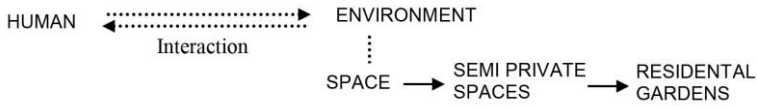

Figure 3. The Addition of the Concept of Resident Garden into the Model

The Concept of Human Needs

“Human needs” is an important term that covers and meets the various physiological, social and cultural needs [15]. There are several important scientists who put forward theories related to the human needs (Maslow,1954; Lang,1994; Proshansky,1974; Cooper,1975; others). In the “Hierarchy of Needs” theory put forward by Abraham H. Maslow, the basic needs of human is designed in a certain patterns from the most basic ones to the most complex ones. There must be a line of order according to the needs of humans and Maslow`s theory proposes that the needs will emerge according to a certain order. It also proposes that before meeting the complex and developed needs, there is need to meet or satisfy the primitive ones. The theory can be considered as a step-by-step rising structure like a pyramid. In the lowest step there are the most primitive needs such as physiological and biological needs and in the higher steps the needs are directed to the aesthetical and intellectual satisfaction and thus become more complex (sophisticated). Physiological and biological needs include such basic human needs as shelter, eating, continuation of the generation, continuity and permanence. They also include such psycho-social concepts as security (safety), life and property safety, protection, defence, privacy, and loneliness and defining sovereignty areas. These are followed by belonging and esteem needs as well as intellectual and aesthetics needs [11], [6], [27-28], (Figure-4).

“Human needs” is a very general concept and in this study it has been defined as the expectations of the users from the environment who will use designed architectural spaces [15]. User needs are the minimum qualities to be seen in a space belonging to the user. They point to a necessity and even an obligation. It is possible to say that every absence in the need for space just like the basic needs will disturb the user and the use of the designed space will affect negatively. For this reason, in the organization of space, meeting the needs of the users must be one of the primary goals and nature friendly spaces must be designed. [15], [29-30].

The increase in the variety in the changing conditions of todays` world brought about a variety of different likes from one person to another and increasing the needs to a higher level. However, such needs as privacy, safety, and sense of belonging display a global tendency since they are instinctive in nature and the provision of privacy needs becomes an important issue especially when one thinks of the comfort of the space (Figure 5).

Figure 4. Maslow's Hierarchy of Needs [12]

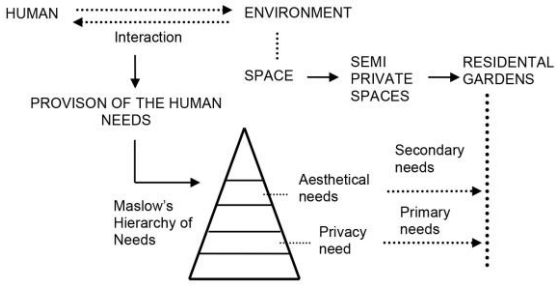

Figure 5. The Addition of the Concept of Human Needs into the Maslow's Hierarchy of Needs

Concept of Privacy

In recent years, the concept of privacy we use more and more in our daily lives could be considered as one of the most central terms of the environmental psychology in terms of revealing the interactions of human-space relations' social, psychological and spatial aspects [1]. Altman (1975, 1976) raised his own privacy approach to a higher level in the light of the first studies; thus, he created privacy theory. Altman, by simply defining the concept of privacy as "Access to the person's self or close proximity being within their control", indicated that privacy has important functions in the arrangements of the relations between person and person, person and group or person and public. In addition, he added that those functions also contribute to one's self-evaluation on the outside world. Because privacy has a traditional structure as well as it is a universal process [18], [31-32].

The Relation between the Concept of Privacy and Space

Özdemir (1994) gathered privacy in five groups as visual, auditory, olfactive, tactual and religious privacy [2]. In this study, the concept of privacy is evaluated within the scope of visual privacy.

Individuals' evaluations about the spaces visually and their deductions in their minds are directly related to the visual items of those spaces. Lynch (1960), in his study on the view of cities, tried to explain how humans perceive the living

frames, and figured out the definition of the space by portraying the characteristics of the environment, perceiver and space. This relation between environment and human perception mechanism paved the way for us to scrutinise what kind of effect the spatial perception for limited elements' qualities has on the users. Especially, to what extend our spatial perceptions and behaviours are related to the openness and closure of the space is a very important start point for our research subject [1], [6], [4].

When the people, who lose the control of relationships that they build or have to build, are exposed to interaction with people redundantly, they feel themselves under pressure in a "crowded" environment. On the other hand, if the relationship rate that is exposed to is below the expected rate, then they feel "isolated". In the mental imagination of a person, there is an "ideal privacy" definition about every environment and the behaviour that appeared within, and the definition can be interpreted as that is also connected to the social rules and cultural values [6]. Altman categorised many features of "the Theory of Privacy" by gathering them under main titles. One of them is the regulatory process that separated into two: desirable and reached privacy [1], [31]. According to Altman (1975), desirable privacy reflects the subjectivity that defines a person's or a group's ideal claim in social interaction. The privacy that is reached is the situation as a result of well-organized social inputs and outputs of actual privacy. As a result of well-organized social inputs and outputs, the optimum control about privacy is provided. If the privacy that is reached is less than expected from infringement of privacy, from density and crowd experience, in the opposite case loneliness and isolation can be mentioned [1]. In the formal definition (Figure-6) that Altman (1975) revealed the privacy that emphasises the central and hierarchical role of concepts such as personal space, sovereignty, crowd, isolation, personalization, is also known as other human-environmental relationship modalities. And this shows that the privacy is not a one-way process, but a process that influences social and individual values depending on whether people want to interact or not [6].

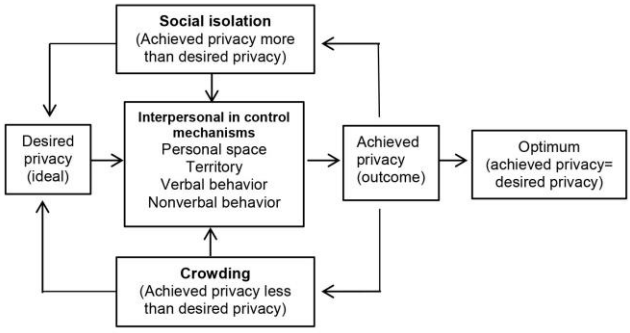

Figure 6. Overview of Relationships among
Privacy, Personal Space, Territory, and Crowding [31]

If it is evaluated according to the theory of Altman, it brings all these supervision mechanisms that keep privacy in balance, up or down below the ideal level of privacy, isolation or crowding (Figure-7).

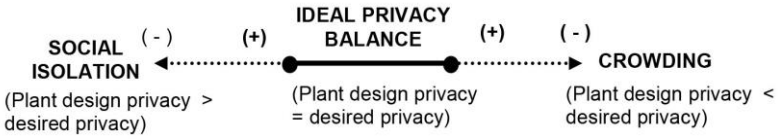

Figure 7. Ideal Privacy Balance and Social Isolation-Crowding Relation

Privacy, Visual Dominance and Visual Protection Concepts

Visual dominance and visual protection theory has been a starting point for many studies in recent years. According to Mumcu (2009) many studies investigating the properties of plants, planting design and other many different concepts (safety, fear, danger, encirclement , types of use in open urban areas, the psychology of people etc) deal with this theory [22]. For this reason, it is predicted that establishing a relationship between privacy based planting design and visual dominance and protection concepts will shed light to the research model.

In the study done by Appleton (1978) it has been proposed that the spaces providing visual protection but at the same time giving visual dominance are more preferred by people. Being able to see others without any obstacles is defined as “visual dominance” and being able to hide oneself is defined as “visual protection”. Both concepts are basically used to mean “being able to see without actually being seen”. Accordingly, a person with a visual dominance on its environment feels safe in his environment. For this to happen, there is a need to provide spatial features and the first being encirclement [22], [4], [33], [9]. According to Hudson (1992) this concept related to the visual protection should be taken as “protection” rather than “hiding” and with this view of him, he expressed the desire of people who don’t want to be seen by other people or not like to be exposed to the looks of them. For this reason, for a person in his private space rather than “what” he sees it should come “how much” he sees it and “how” he sees it and at the same time how much he is seen by others while doing so [22].

According to Rapoport et al. (1969) privacy means providing options such as being together or at times being alone when necessary [9]. There is a similar balance between Appleton`s visual dominance and protection theory and its function of “being able to see without being see” and the privacy`s “keeping contact with people outside from a surrounded space” feature. While the visual protection and dominance represent ideal privacy balance, social isolation and crowding represent two poles where privacy is violated. When privacy and social isolation–crowding and privacy and visual protection-visual dominance relations are considered together, it is seen that with visual protection having features of closure, privacy, being far from sight and visual dominance having features of openness, flexibility, permeability represent the two dimension of privacy and help establish the balance. Social isolation that reveals such feelings as closure, loneliness, unrest in a completely closed

space and on the opposite side, the feelings of crowding that is invoked by being completely visible and left alone in a completely open space represent the extreme poles where the feeling of privacy is disturbed. In both cases there are many negative aspects that would give the users the feelings of psychological unrest and stress and tense (Figure 8-9).

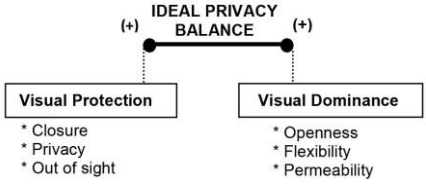

Figure 8. The Relation between Ideal Privacy Balance and Visual Protection-Visual Dominance

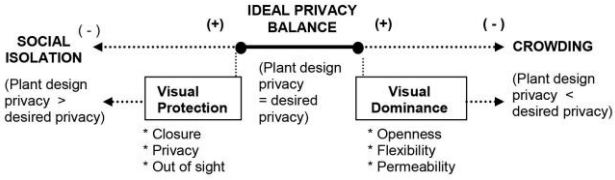

Figure 9.The Relation between Ideal Privacy Balance and Social Isolation-Crowding and Visual Protect

In study done by Nelson et al (2001) it was concluded that plants have an extremely important effect on the visual dominance and visual protection perceptions of the users. At this stage, in an attempt to determine the most popular tree form, different forms (branching and the density of the leaves) were investigated in order to understand how they affect people in spatial terms. The preference of tree forms with denser branching is determined to be due to the better visual dominance and the preference of summer forms since they cover larger areas due to denser branching and leaves was given to visual protection. Moreover, it was also added that the trees that falling their leaves (deciduous trees) prevent disconnection among people and increase communication [35]. Based on this, plants are extremely important in displaying visual dominance and visual protection and their contribution of the privacy is very big (Figure 10).

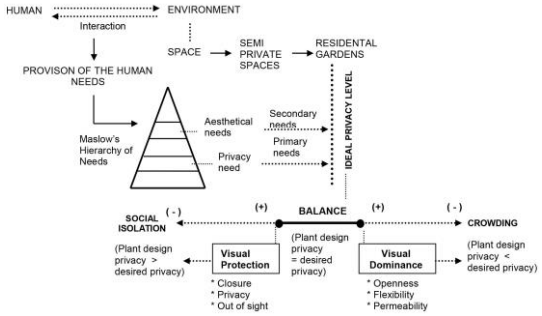

Figure 10. The Addition of Ideal Privacy Balance and Social Isolation-Crowding and Visual Protection –Visual Dominance into the Model

The Relation between House Gardens and Privacy

House constructions, which are in constant evolution, have been interpreted distinctly since ancient times. Societies with different cultures, traditions and lifestyles have also had different ways of designing the houses in which they live their lives [29]. According to Gür (1983), even though we consider the basic needs unchangeable for all the people, the actions of these needs and the relations between each action and their spaces may change according to the lifestyle of each society; moreover, this change affects the formation of structural environment elements [36]. In traditional Turkish house, the fact of outside closure of the house; in other words, the garden walls which surround the house is a factor which expresses the social structure and designs the house at the same time [37]. The users' demands of garden actually depend on their understandings of privacy. Garden is a transition space in the border between private and public sphere. Moreover, the garden separates the house from road and neighbours. Thus, the house may have somehow privacy. According to Gür (2000), landlords do not like being watched while doing his own staff in his private space. Therefore, being away even from the neighbour in a distance of a garden size contributes to keep the ideal privacy [5].

The plants of non-domestic spaces of the houses, which are surrounded by border elements in order to concretise it, should not only have functional features for glamourizing the house but also have features for providing a sustainable architecture for the closure of the house as the supplements of the construction elements. In addition to the artificial materials which are used for providing privacy in the house gardens, plants are more attractive with their natural and aesthetic features for the same purpose. On the other hand, considering the privacy as optionally togetherness or optionally isolation, one of the important features of the plants that the artificial materials do not have is the permeability. "Permeability value is an opportunity offered by the border for the senses and actions of human" [5], (Figure 11).

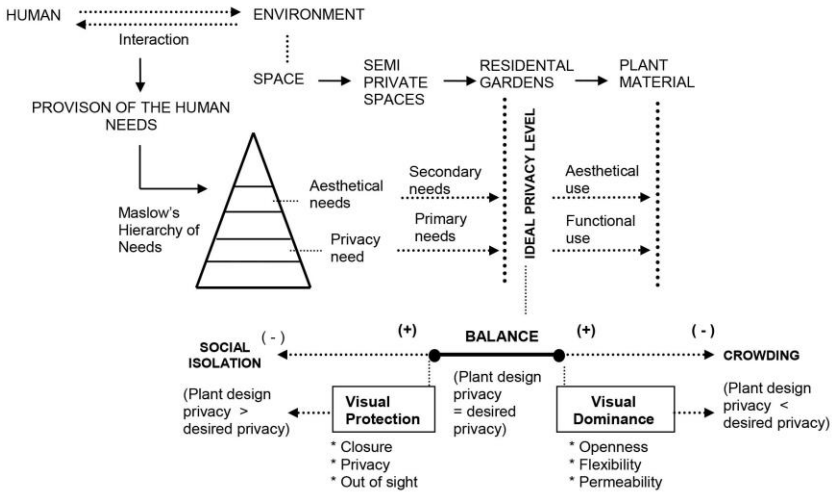

Figure 11.The Addition of Plant Materials into the Model

When the permeability and dynamic structures of plants are considered, they are distinguished from artificial elements in particular and can create different spaces at different times for serving different purposes; similarly, it is possible that solutions for privacy needs may arise with different plant compositions at the same time (Figure 12).

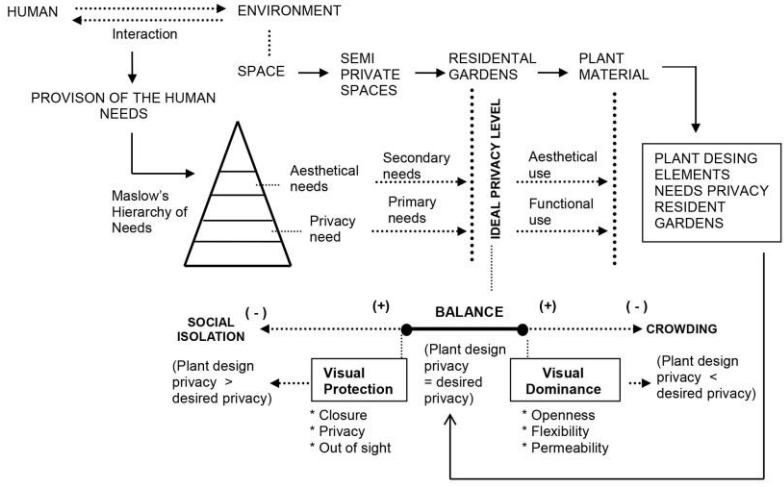

Figure 12. Research Design

CONCLUSION

In this study, the privacy needs in house gardens were questioned and while doing so how the solution can be achieved through plant material which is natural, living, changing, and various and the functional properties that would provide the desired privacy based on the physical properties of the plants were investigated and all the related concepts were related and defined. This model suggestion proposes that plant material, with its functional and aesthetical functions, may be used in the solutions of privacy needs in single family dwellings. This study is important for several reasons. First of all, how the openness and closure balance is formed in private outer spaces in single family dwellings is important. Secondly, how these spaces are perceived, and what the differences in the visual effects of the materials used for privacy reasons are, and what kind of design ideas should be followed in future studies are all important. The plant material having flexibility, variability and permeability which artificial privacy elements do not have must be revisited with its functional properties and the planning decisions should proceed accordingly.

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CHANGE OF HOSPITAL DESIGNS BASED ON ARCHITECTURAL PROGRAM[1]

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ABSTRACT

The correct synthesis of the information that designers acquire in the production process of architectural products provides the possibility of designing a physical environment in a healthier, more comfortable and better condition. Since it is defined as a systematic information search in the planning process, the important spatial programming process is an information processing process in which requirements and users are determined, decisions are taken and design directives are established. One of the building types that best describes the changes seen over time in spatial programs is the hospital buildings. In the present study, it is aimed to analyze the changes observed in the hospital architecture over the architectural programs and to reveal the change based on the knowledge. Within the scope of the study, by examining the design contests of hospitals opened in different years for different cities of the Anatolia, it was tried to reach their architectural programs. The analyses were made over the designs which received the first prize and the architectural programs of which were obtained, of 4 hospitals design contests held in 1960-1970-1980-1990s and it was tried to determine the change observed in the programs within the process. The study was done in three stages. In the first stage, the concepts related to the subject and the scope of the study was determined. In the fieldwork, the second stage, the analyses were made on what the changes observed in the architectural programs of the hospital contests opened in different periods are, over the reflections of those changes on the hospital designs and the space organization. In the evaluation and conclusion part, the third stage, by detecting the effect of the changes observed in the programming on the inner and outer space organization, it was tried to determine its effect on the process of hospital design. As a result of the study, it was detected that the change observed within the process in the architectural program in the specifications of the design contests reflects on the spatial organization, and that it affects directly both the inner space construct and the formation of outer space.

Key Words: Architectural Design Contests, Architectural Program, Hospital Design, Programming in Hospitals.

[1] This study is based on the master's seminar "Change of Hospital Designs Based on Architectural Program" presented by Research Associate Fatmanur Baran under the supervision of Prof. Dr. Dicle Aydın.

INTRODUCTION

The way to design the physical environment in a healthier, comfortable and well-conditioned environment is through the correct synthesis of the information the designer acquired by studying the environment, culture, history and spaces in the production process of architectural products. If the building/space to be designed has different features and technical characteristics as part of its function, it is more important to use properly the knowledge for the design to reach to a satisfactory result. During the process of architectural planning, the programming, which is an important step before the stage of design is defined as a systematic information research. The programming is a process of information processing in which the intended purposes, features, requirements and users of the building to be designed are determined, and the design directives are formed in order to make a decision. Revealing the reasons of the change of any building typology over time which has forms, styles, functions, etc. different features of the buildings is related to the changes observed in the programming. The building types which best describes the changes in the programming are the hospital structures in which the different functions co-exist and which are one of the structure group with a complicated function. The political, social, technical and economic developments in social structure, as well as the developments in medical science, cause the continuous development and change of the hospital structures. These developments, which bring about the problems related to the use over time if not considered, make unavoidable the continuous change of program contents in generating new information in the hospital structures.

The Purpose and Method

The aim of the study was determined as revealing the change of hospital designs acquired by architectural design projects that have an important position in the production of architectural products based on information. This change was first researched through spatial programs and sub-aim was determined as revealing how programs changed hospital designs. Within the scope of the study, by examining the design contests of hospitals opened in different years for different cities of the Anatolia, it was tried to reach their architectural programs. The analyses were made over the designs which received the first prize and the architectural programs of which were obtained, of 4 hospitals design contests held in 1960-1970-1980-1990s and it was tried to determine the change observed in the programs within the process. The study was done in three stages. In the first stage, the concepts related to the subject and the scope of the study was determined. The studies related to the subject were evaluated and the literature was searched for architectural planning process and programming phase, hospital architecture and design, spatial programs in hospitals and architectural design competitions. In the field study as the second stage, the changes observed in the spatial programs of hospital competitions held in different periods and the reflections of these changes on hospital designs and spatial organization were discussed through analysis and synthesis method based on visual sources. In the evaluation and conclusion part, the third stage, by detecting the effect of the changes observed in the programming on the inner and outer space organization, it was tried to determine its effect on the process of hospital design.

The Effect of Planning and Programming In Architecture

The planning process that is the process of building in architecture is all of the decisions to create architectural data based on functions, combine and integrate them in a systematic manner and orient architectural activities in order to achieve the desired aims [1]. Many theorists defined the architectural planning process as the stages of programming, designing, implementing, using and evaluating that are generally developed in accordance with the preliminary rulings of planning [2,3]. The programming involved in this process is the stage that exists since the beginning of architecture, provides input to the design process as the first step in the building planning process, orients the design and that is necessary for the design to be successful. Programming that systematically translates the integrated human-action-resource relationship in line with an aim and that is a process of achieving an effective, functional building in this regard [4], is the preliminary stage of the design starting process for spatial specification [5,6].

Programming, the decision-making process that determines the scope of a research and design work [7], is also a process of comparing and listing in intellectual and written manner when and how future works, operations, activities, events and effects will take place [8]. The aim in architectural programming is to program operation of the work to be managed and actions. In the design process following programming stage, the information that designers will create solution is explained to the designer with specific techniques by organizing the programming stage. The architectural programming [9], in which design information is combined together as a whole, consists of a series of dynamic and counter-interactive forward and backward steps [2,10]. Problems in other phases often make it necessary to return to the programming phase. Feed forward and backward as well as the changes in programming phase, reveals the reasons for the change of any building typology that has different characteristics such as types, styles, functions of buildings over time.

Spatial Program and Change in Hospital Buildings

One of the types of buildings best describing the changes in the spatial programming is hospital buildings that are a complex functional group of building with different functions. In order for hospital buildings to be able to serve for many years by keeping the community healthy, they are required to be designed as open to developments, durable and useful, well-organized and expert teams should study on long term planning approaches. Once the aim is determined in the planning phase and the feasibility studies are established, it is gone into the programming phase. The services that the hospital needs to provide are designed by designer/programmer as a spatial program according to the baseline data considering that the community to be served in the future will grow, develop and their needs will increase [8]. The fact that hospital buildings have complex functions, spaces provide special conditions and well-organized circulation network is arranged, results from the intensive spatial program of hospital designs

The spatial program in the hospitals is prepared by programmer/designer in line with the transportation possibilities of the area in which the building is to

be built, the capacity of the hospital and the user requirements by prioritizing laws, regulations and directives determined by the state. The first starting point for preparing program is the user's requirements that constitute the sub-aim of the program bringing out the deficiencies functionally in the using process. The transfer of permanent and long-term users (chief physicians and deputies, health personnel, administrative personnel, maintenance personnel) and temporary short-term users (inpatient, outpatients, attendants, outpatients and visitors) [11] that will use the hospital while the program is prepared as well as negotiations and proposals as data into the program, provides an important contribution to spatial programming. Although it is difficult to convert the subjective needs of different users into objective needs [10], the achievement of spatial demands as a rational solution is necessary to reveal the spatial program in which the needs of the hospital are clearly identified.

Hospital buildings are the application field of medical technique together with functional change and development. Factors such as medical technological changes, population growth (capacity increase), changes in social standards, changes in working conditions, changes in standards, organizational changes and so on are factors that cause change in hospitals [10]. The works in the programming process should be carried out as to include innovation and possible changes and to enable minimization, extension, division and addition in necessary departments [8].

Hospital Design Competitions

Architectural design competitions have an important position in the production of architectural products. Architectural project competitions with a long history until 18th century in the world [12] are a special living space in the field of architecture. The history of national architectural competitions dates back to the early years of the Republic. The tradition of architectural project competitions in Turkey may be addressed as breaking points that transformation was performed in political, cultural and social areas including the process starting from 1930s up to 1950s, the process from 1950s to1960s, the process between 1960 and 1980 and post-1980 [13].

Rapid population growth, technological development and unhealthy urbanization in the 20th century brought with the need for health buildings [14]. These problems led the state to take measures considering health policies. Hospital competitions were held in accordance with the criteria set out in order to solve the hospital deficiencies in health services. Depending on the criteria in the spatial program, the jury determined the most appropriate solution to the climate, topographic conditions and the projects were awarded, and they were applied if the necessary deficiencies were corrected and arrangements were made [14]. The hospital design competition was not held until 1960 in Turkey. A total of 478 competition were held between 1960 and 2000 [15]. The number of hospital design competitions held between 1960 and 2000 is totally 48. Hospital projects constitute 10% of the total competition projects held. Table 1 shows data on the national hospital design competitions held for the hospital competition projects in 10-year period between 1960 and 2000.

	Hospital Design Competition Held	Number of hospital competition/total number of hospital competition per year (%)	Average number of hospital design competitions per year	General H.	Branch H.	Education H.
1961-1970	14	%29	1,4	6	7	1
1971-1980	8	%16	0,8	4	2	2
1981-1990	5	%10	0,5	5	0	0
1991-2000	21	%45	2,1	11	10	0

Table 1. Data on National Hospital Competition Projects in 10-Year Period

In the project competitions, the second half of 90s and 2000s represent the transformation of modernization to a simple geometric language [16]. This trend, also called new modernism, is based on the transformation of modernist language by technology, new building materials and limited semantic factors. The hospital design competition was not held in Turkey after 2000s.

Field Study

The achievement of the project through the competition method ensures that the project is open to everyone's contribution and it gains validity in public information and public opinion. The choice of the project from various alternatives creates a healthy environment for the production, development and application of qualified projects. In the field study, four hospital competitions, which were obtained through competition for the various cities of Anatolia in the years of 60-70-80-90 and which could reach the project data, were selected. These competitions were determined by the criteria of being a general hospital, having 250 bed-capacity and above, and getting first prize. These reasons were thought to be effective in the change of the spatial program and the factors that could be input for the program were tried to be determined.

In the study, the changes observed were determined by reaching the spatial program of architectural design competitions held for 1960-2000, for;

-Zonguldak Workers' Hospital (1963)

-Kırsehir State Hospital (1974)

-MSB Maslak Military Hospital (1988)

-Gaziosmanpasa State Hospital (1995)

		Zonguldak Worker' Hospital (1963)	Kırşehir State Hospital (1974)	MSB Maslak Military Hospital (1988)	Gaziosmanpaşa State Hospital (1995)
BASIC FUNCTION AREAS	Polyclinic	*-Polyclinic Common Areas -Polyclinic examination departments (10 polyclinic)*	*- Polyclinic Common Areas - Polyclinic examination departments (10 polyclinic)*	*- Polyclinic Common Areas - Polyclinic examination departments (17 policlinic) -Polyclinic Pharmacy*	*- Polyclinic Common Areas - Polyclinic examination departments*
	Diagnostic Units	*-Laboratories -Radiology service*	-X-ray section *- Laboratories*	*- Laboratories services - Radiology service -Medical Photograph -Mikrofilm Service -Nuclear Medicine Service*	*- X-ray section - Laboratories*
	Physical Therapy and Rehabilitation	-Treatment unit *-General services -Women's department -Men's department -Elektrotherapy Department -Hydrotherapy Department*	*-Common areas - Physiotheraphy Department*	*-General services -Women's department -Men's department -Water Treatment Department -Gymnasium Theraphy -Occupation Treatment*	*- Common areas - Physiotheraphy Department - Mechanotherapy Department -Electrotherapy Department*
	Operating Room Service	*-Operating Room Common Areas -Operating Room Department -Birth Department*	*- Operating Room Common Areas -General Surgery Operating Room - Birth Department*	*- Operating Room Common Areas - Operating Room Department -Surgical Intensive Care*	*- Operating Room Common Areas - General Surgery Operating Room - Birth Department*
	Patient Care Unit	*-Type Common Service Area (common wc-bath, examination) -Type Sick Bedrooms -Surgical Department Services -Internal department srv.*	*- Type Sick Bedrooms (48 bed) (common wc-bath, examination, assistant room) -Services*	*- Thype Common Service Area - Type Sick Bedrooms - Surgical Department Services (275 bed) - Internal department services (350 bed)*	*-Type patient care unit (30 bed) -Services*
		-First Aid -Central Sterilization	-First Aid -Central Sterilization	-Emergency service -Central Sterilization	-Emergency service -Central Sterilization -Hemodialysis Center

ALLIED HEALTH SERVICES	- Pharmacy -Patient admission and discharge department	-Pharmacy -Patient admission and discharge department	-Clinical pharmacy *-Pharmacy Preparation and distribution department* - Patient admission and discharge department -Blood Bank -Morg-Autopsy Service	- Pharmacy - Patient admission and discharge department -Blood Bank -Morg-Autopsy Service
HOS. SUPPORT SERVICES	**General facilities** *-Refectory* *-Dorm* *-Kitchen*	**General facilities** -Pharmaceutical drug stores -Laundry -Kitchen	**General facilities** *- Refectory* -Kitchen - Laundry *-Mosque* *-General statistics archive* *-Medical records center* - Pharmaceutical drug stores	**General facilities** *-Dining Halls* *-Cafe* - Pharmaceutical drug stores - Laundry *- Kitchen*
ADMINISTRATIVE & TECHNICAL DEPARTMENT	**Technical Services** *-Main Heat Power Plant and Exchanger Office* *-Garbage incineration and collection* *-Maintenance workshops* *-Water reservoir* *-Repository* -Administration department	Administration department General Store Technical Services	**Technical Services** *-Main Heat Power Plant and Exchanger Office* *-air conditioning and ventilation center* *- Garbage incineration and collection* *- Maintenance workshops* *-Generator transformer center* *- Water reservoir* *- Repository* **Administration department** *-Main entrance* *-Command headquarters* *-Health Council*	**Technical Services** **-***Center of incarnation* *- air conditioning and ventilation center* *-Repair workshops* *-Elektrical Installation Neighborhoods* *-Central vacuum and oxygen circulation* Administration department Health council General Store
ADD. DEPARTME	Meeting Room	Auditorium Açık otopark alanları	Outdoor parking areas	Open car park for at least 100 cars Underfground garage

Table 2. Spatial Program of Selected Hospital Design Competition

It is seen that polyclinics, diagnosis and treatment units, surgery room, laboratory and patient care units in hospitals mostly have changes in their spatial programs. Changes determined in the spatial program;

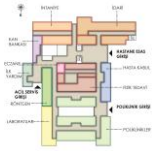
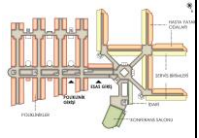
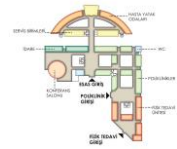
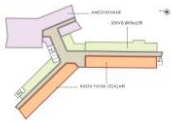
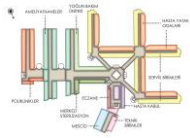
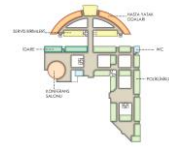
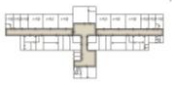
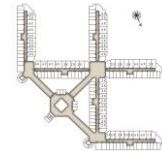
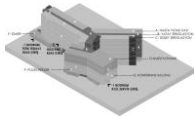
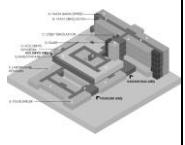
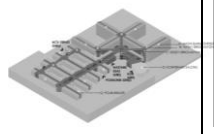
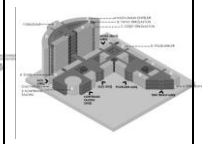
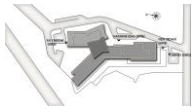
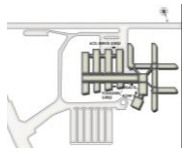
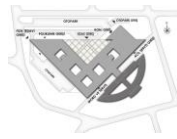
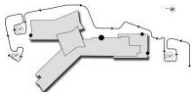
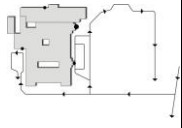
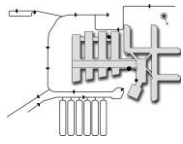
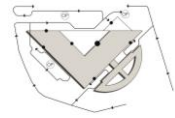
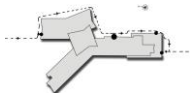
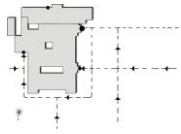
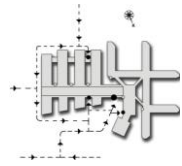
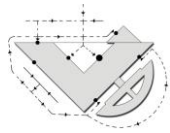
- 10 polyclinic solutions were required for polyclinics in 1963, while privatizations were seen in polyclinics in the 1980s and this number increased to 17.
- In surgery rooms, the intensive care unit as well as general surgery operation room and delivery room was included in the spatial program.
- For patient care units; single, 3, 6-bed capacity rooms, common wc-bath solution were required in the 1960s, while single, 2, 3-bed capacity rooms

and wc-bath solution were required to be solved within the rooms in the 1950s.

- Only the laboratory and radiology departments were included in the spatial program in the 1960s for diagnostic units, while the number of departments in the unit increased in the 1980s, and additional departments such as medical photographs, microfilms and nuclear medicine and so on were required.
- Physiotherapy, mechanotherapy and electrotherapy departments for physiotherapy units were included in the 1980s.
- The morgue and autopsy services were included in the spatial program and transportation to this area was requested from outside.
- While the number of vehicles required for open parking lot was not specified in the 1960s, the information on open and closed parking lots were detailed in the spatial program in the 1990s.
- Changes and privatizations were also observed in the spaces required for the technical services during the process and they were included in the spatial program

In order to determine how these changes in the spatial program were reflected to the spatial placement for selected hospitals, analyzes were made on the ground floor, patient care unit, other floor plans and 3D layout of designs. Table 3 also shows the outer space analysis through the overall layout of the designs, entrances, vehicle and pedestrian transport, 3D block effect and the planning system due to developments in the program and design conception in the research.
In selected hospital design competitions;

- The design of Saziment Arolat and Neset Arolat from the projects participated in Zonguldak Worker's Hospital with 450 bed-capacity competition held in 1963 [17],
- The design of Sinan Atasoy, Kutlu Alemdar and Erol Akpolat from the projects participated in Kırsehir State Hospital with 250 bed-capacity competition held in 1974 [18],
- The design of Hasan Ozbay, Tamer Basbug and Baran Idil from the projects participated in Ministry of National Defense Maslak Military Hospital with 600 bed-capacity competition held in 1988 [19].
- The design of Unal Kara from the projects participated in Istanbul Gaziosmanpasa State Hospital with 300 bed-capacity Architectural Project Competition held in 1995 were awarded first prize [20].

	Zonguldak Worker' Hospital (1963)	Kırşehir State Hospital (1974)	MSB Maslak Military Hospital (1988)	Gaziosmanpaşa State Hospital (1995)
Ground Kat				
Floor Plan				
Patient Care Unit				
Perspective				
Site Plan and Entries				
Vehicle Access				
Pedestrian Access				

Plan Sys. (Schematic)				

Table 3. Spatial Placement and Outer Space Analysis of Selected Hospital Design Competitions

Zonguldak Workers' Hospital

The entrances of the hospital located on the sloping land (main entrance, emergency entrance, service, physical therapy) were considered in different elevations and directions. Transportation and parking lot privatization were not considered. The formation of the building is similar to H-type plan. The male and female care units were privatized by breaking the middle section where the block including the patient care units is associated with the other units and the vertical circulation is involved. Physical therapy unit, treatment polyclinic, laboratory and administration on the lower floors of the elevated patient care unit and on the other hand, polyclinics on the lower floors and surgery rooms on the upper floors were packed. Bedrooms for 2, 3 and 6 people were rearranged on the floors of patient bedrooms. Vertical circulation, where there are only stairs in both sides of patient bedrooms and where there are stairs and two elevators at the connection points of patient care units and other units, was rearranged.

Kırşehir State Hospital

The hospital, of which entrances (main entrance, polyclinic entrance, emergency service entrance, and physical therapy) were considered in different elevations and directions, is located on sloping land. Transportation and parking lot privatization were not considered. A high block diagram, of which building design consisted of a vertical and horizontal planning system often seen in the hospital plan types and where the patient care unit is located on the common floor of all units, was applied. There are generally polyclinics, x-ray, laboratory, surgery rooms, physiotherapy unit in the common floor and patient care unit in the high block. There are rooms for single, 2, 3 and 6 people on the floors of patient bedrooms. Vertical circulation was rearranged in the one section of the patient bedrooms and at the connection point with common block including other units.

MSB Maslak Military Hospital

The main entrance of the hospital, polyclinic entrance, conference hall and emergency service entrance were rearranged at different elevations and directions due to its location on the sloping land. Ring-making areas, open-air parking lot and pedestrian-vehicle road separation were considered. Building design was created by joining two U-type blocks from the corners and by the grid system that includes units and builds inner courts in the middle. The block that includes units such as polyclinics, patient care unit, surgery rooms, laboratory-blood center, conference hall, etc. and the block that includes the floors of patient bedrooms were packed separately. There are rooms for

single, 2, 3 and 6 people on the floors of patient bedrooms. Vertical circulation is provided with escalators and stairs in the inner streets created in blocks including polyclinics, stairs on both ends of the blocks with the patient care units, main core at the connection point between the patient bedrooms and the other units. Furthermore, ramps were arranged to pass from this core to patient care units with elevation differences.

Gaziosmanpaşa State Hospital

Hospital entrances (main entrance, polyclinic, physical therapy, conference hall, hemodialysis, emergency service, morgue and service) were rearranged in different elevation and directions after privatized. The closed and open parking lots and pedestrian-vehicle roads are separated and assembly areas in semi-open areas were considered. The connection of two blocks is provided with corridor in the hospital where D-type block including patient care unit and L-type block including other units were rearranged after integrating. Vertical circulation was rearranged in D and L blocks and at the connection point of both blocks. Patient admittance, polyclinics, treatment units, emergency services, surgery rooms, laboratories, first aid and conference hall were packed in block L spreading on the floor. Bedrooms for single, 2 and 3 people were arranged in D-type block including patient care units.

EVALUATION AND CONCLUSION

The changes in the spatial programs of the hospitals affected by many factors and the effects of these changes on the hospital buildings were examined through the hospital design competitions held in Turkey. When analyzed the evaluations of the competitions by the jury members, how the changes in the program were rearranged in the spatial placement by examining through ground floor, patient care unit, other floors and 3D layout, and as well as outer space analysis such as the location of the buildings, vehicle and pedestrian transportation, parking lots and the location of hospital entrances, those below were determined;

- It was seen that a larger and more privatized space was required in the block including polyclinic, surgery rooms, diagnosis and treatment units, technical and administrative units and so on. Furthermore, the increase in the number of polyclinics due to the increase in the number of specialty departments, and the addition of extra departments to the laboratories brought new organizations in hospitals. The space requirement in these units from the 60's to the 90's caused block to spread horizontally or more multi-storey solutions to be produced vertically.
- The need for hospital building with excess capacity over time led to structural growth by increasing the need for space in patient bedrooms, polyclinics, and diagnostic units.
- It is seen that the spaces necessary for administration and personnel in the process were privatized, the number of space and capacity increased.

- In the building designed in the 1960s (Zonguldak State Hospital), surgery rooms and polyclinics were arranged directly in connection with patient care units on the upper floors. While patient care unit was separated as a block in the buildings designed after these years, the blocks including other units spread in the single-storey horizontal (Kırsehir State Hospital) and then multi-storey rearrangements were made in this block due to the increase in the number of necessary units over times (Maslak Military Hospital and Gaziosmanpasa State Hospital).
- Vertical circulation was arranged in several points from 1960s to 1990s, and the number of elevators and the area were increased and privatized.
- It is also seen changes in patient bedrooms from 1960s to 1990s. Bedrooms for 6-8-10 people in the 1960s gave place to bedrooms for single, 2 and 3 people rarely seen in those years during 90s. The increase in m² per person in the floors having bedrooms enabled the growth and privatization of patient care units. Patient care units were usually located in the south.
- There were not designed parking lots for cars in the 1960s, while there were open and closed parking lots that became a necessity for users, also included in the spatial programs and arranged in areas close to the entrance connected by vehicle roads in the 90s.
- Separation of pedestrian transport areas from the vehicle transport areas was unseen in the 1960s, while privatized pedestrian areas and semi-open spaces underneath the entrance arcades integrated with the building were arranged.

The necessity for hospital buildings to have the potential to meet the designed period and future requirements without compromising the service value is the basic aim of the spatial programming phase. Unless it is considered in the programming phase, any development bringing problems during usage makes constant changes of program contents in the hospital buildings inevitable to create new knowledge. The qualified spatial program will contribute to the health system of the country when it is considered that general hospitals constitute the backbone of inpatient treatment institutions within healthcare organizations.

As a result of the study, it was determined that the change in the process of the spatial program set out in the specifications of the design competitions was reflected to the spatial organization. It became a necessity to separate and privatize the spatial requirements that can be rearranged in a single space in time. The space requirement was diversified and increased by adding new functions over time. In this study investigating the changes in the spatial programs of the hospitals, it was determined that the change in the program directly affected building of the outer space as well as inner space placement (the reflection of the need for parking, the privatized entrances, the separation of pedestrian-vehicle roads, assembly area and so on to the outer space).

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BIOMIMICRY AND BIODESIGN

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ABSTRACT

Biomimicry is a discipline that produces solutions for human problems and needs with inspiration from or by imitating nature. The discipline includes not only the product and solution proper but also the system that is used and all of the stages. The word *bio* means "life" and the word *mimesis* means "to imitate." Biomimicry is an approach that is inspired by and imitates nature and it has applications in various fields. It can be used as a way of thinking and a design method in architecture where aesthetics, functions, forms-materials and structures that exist in nature take shape together. It is aimed in architecture with biomimicry to create novel, applicable and long-lasting solutions through inspiration from biological systems in order to live in harmony in the world and create a sustainable environment. [1]

Imitation of nature can be examined under three headings: formal imitation, behavioral imitation, and imitation of ecosystems. Formal imitation of nature in architectural design is called "biomorphic" architecture. It takes effect as a stylistic metaphor that imitates nature only in form and does not use biological functions or functional information. Biomimicry is defined as mimicking the functional basis of biological forms, processes and systems to produce sustainable solutions. [6] To design living objects from living materials and create designs integrated with nature is called biodesign. Biodesign is an idea of design that directly includes biological processes and entities in design. Biodesign is the next step beyond biology-inspired methods and incorporates living organisms as essential components in design, enhancing the function of the finished work. [10] The use of designs and ideas found in nature gains importance in the creation of sustainable architectural solutions. Biomimicry teaches designers to imitate nature in designing structures compatible with nature and helps them design materials, shells, spaces, environments and life systems.

Key Words: Biomimicry, Biomorphic Architecture, Biodesign.

INTRODUCTION

Biomimicry, or biomimetics, is a discipline that produces solutions for human problems and needs with inspiration from or by imitating nature. The discipline includes not only the product and solution proper but also the system that is used and all of the stages.

The word bio means "life" and the word mimesis means "to imitate." The term biomimicry was first defined by Janine Benyus as 'the conscious emulation of nature'. [1]

Biomimicry is an approach that is inspired by and imitates nature and it has applications in various fields. It can be used as a way of thinking and a design method in architecture where aesthetics, functions, forms-materials and structures that exist in nature take shape together. It is aimed in architecture with biomimicry to create novel, applicable and long-lasting solutions through inspiration from biological systems in order to live in harmony in the world and create a sustainable environment. [2]

Benyus stresses nine basic characteristics of designs in nature: Nature runs on sunlight; nature uses only the energy it needs; energy fits form to function; energy recycles everything; nature rewards cooperation; nature banks on diversity; nature demands local expertise; nature curbs excess from within; and nature taps the power of limits. [1]

Primlani lists the design principles of the biomimicry institute under six headings: Adaptation to changing conditions; improvement to survive; harmonization growth with developments; creating awareness and responsibility in local requirements; utilization of nature compatible chemistry; and efficiency in resources. [3]

Pedersen Zari classifies biomimicry in three dimensions: organism, behavior, and ecosystem. In this categorization, Zari creates subheadings like form, material, production, process and function, and examines to what level biomimicry reflects on a project. [4] Therefore, imitation of nature can be examined under three headings: formal imitation, behavioral imitation, and imitation of ecosystems.

Formal Level of Biomimicry (Biomorphic Design)

Morphological application of a natural form in architecture and exclusion of biological functions and information obtained from these functions leads to a non-innovative design. Patterning after a natural form and establishing a similarity with it does not go beyond imitation of the form.

Chief among designs that use nature as reference to create symbolical forms that imitate nature is the TWA Flight Center, designed by Eero Saarinen. The building's design was inspired by the formal structure of birds. (Figure 1).

Figure 1. TWA (JFK) Flight Center

The Ordos Museum, patterned after the formal structure of crustaceans in nature and their respiratory systems running through their carapace, was built on a steel structure using metal shutters. The Oceanographic Museum employs the form of a seashell, which was applied to the design by the shape of a thin reinforced concrete building envelope. There is imitation of a form in the design but nature does not functionally impact the design. (Figure 2)

Figure 2. Ordos Museum, China - Oceanographic Museum, Spain

Behavioral Level of Biomimicry

Biomimicry is imitated in architectural design in terms of behavior by observation of the behavior of living creatures in their habitat and their relationship with the environment.

For instance, the Eastgate Shopping and Office Centre in Zimbabwe imitates the mounds built by termites. (Figure 3) Wide surface of a termite nest sits in a northern-southern direction and receives the most sunlight in the morning. Termites must keep their storages in their nests, where they keep the fungi they produce, at 30 C°. As the difference in temperature in the region they live in is high between night and day, they create ventilation channels to maintain the heat equilibrium in their storages. Termites can close the ventilation channel when temperature drops in the nest, and reopen the channels and exhaust air, using the chimney effect, when the temperature is normalized. Temperature difference is great in Harare between night and day. Fans in the pressure cells of the building cool the air drawn to the first and second floors, and, thereby, the building. The Eastgate Shopping Centre works like a termite mound, keeps the interiors at a fixed temperature, and secure natural

ventilation. Shading elements on the front of the building ensure minimum heat insulation. [6] Thus, an energy-efficient, sustainable structure and a lifestyle that adapts to its environment is designed.

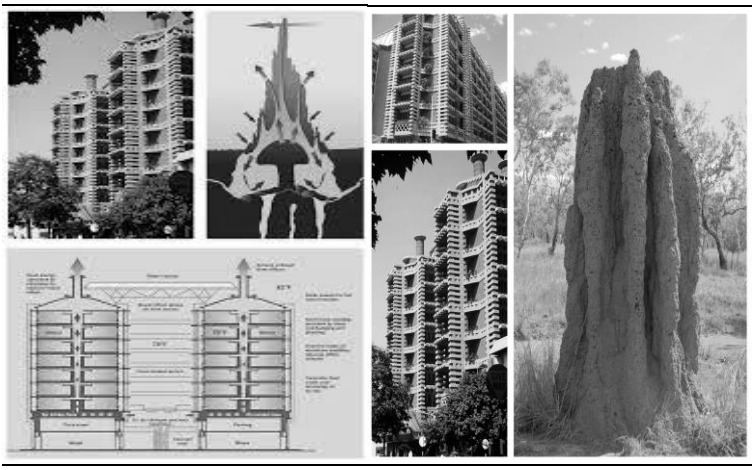

Figure 3. Eastgate Building, Harare, Zimbabwe

Characteristics of living creatures in nature in adapting to their environment can be divided into four categories: thermal harmony, water balance, protection, and communication. Mazzoleni examined the skins of mammals, fish, birds, amphibians and reptiles in nature, and established a relationship with multifunctional skin and a building envelope. [7]

For instance, lizards regulate their body temperature according to their environment. Characteristics of their skin and their behavior gain importance in balancing body temperature. Their skin is darker on their back to absorb solar heat, and light on their stomach to reflect the light. A lizard keeps his body vertical to sunlight to increase heat recovery, and parallel to sunlight to reduce heat recovery. [8] Lizard skin has a large number of separate surfaces, each of them in different shapes and of different thicknesses, connected to each other. An architectural solution was developed based on the *Uta Stansburiana* lizard to preserve human comfort in excessive heat on a desert. Opaque, insulated, photovoltaic and moveable window panels were used in the project. (Figure 4)

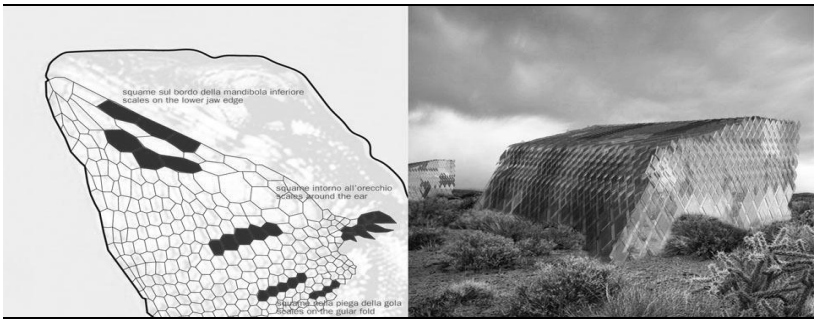

Figure 4. Architectural Project Inspired by the Behavior of the Uta Stansburiana Lizard

The Arab World Institute in Paris was designed based on the example of photosensitive pupils of the vertebrate, and sets an example of behavioral imitation of nature. The front of the building has metal mechanisms in a space between the outer double-glazed windows and the inner single-glazed windows that react to light like pupils and open and close like diaphragms of photo cameras. This helps control how much sunlight is allowed into the interiors and the building behaves as a living being that can adapt to changing environmental conditions. (Figure 5)

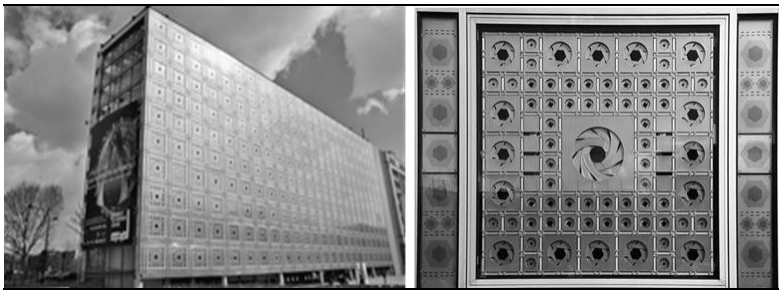

Figure 5. Arab World Institute Building

Shading elements designed based on the movements of plants according to the direction of the sun were used in the Al Bahr Towers in Dubai. The shading system consists of 1000 triangular pieces. The envelope was designed to react to the sun's motion. The building recovers less sunlight when the modules are opened during the day and closed during the night. They also ensure controlled sunlight in the interiors. They have reduced the amount of artificial ventilation and artificial lighting the building requires. (Figure 6)

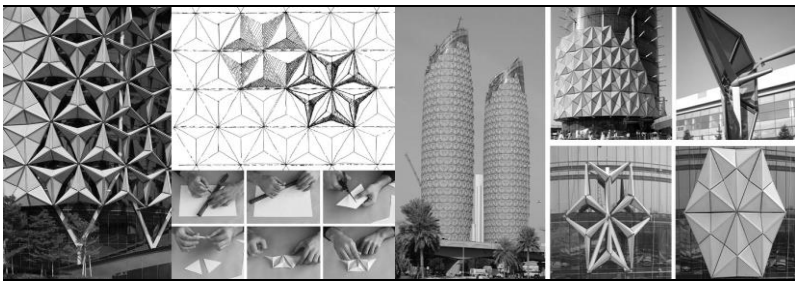

Figure 6. Al Bahr Towers

Ecosystem Level of Biomimicry

The concept of ecosystem, which is the compound of *ecology* and *system*, encompasses various organisms and their environment. The ecosystem concept emphasizes on the word *system*. Ecology defines a whole consisting of parts in multidirectional interaction with each other. Ecosystem comprises of individual and interconnected organisms.

Pawlyn defines biomimicry as "imitation of functional basics of biological forms, processes and systems to create sustainable solutions." [6]

The Eden Project, a large greenhouse built in the UK, is an example of the use of biomimicry at the level of ecosystem in architectural design. The building was situated on southern slopes to recover maximum heat from the sun. The design originates from bubbles of soapsuds. Based on a study of carbon molecules and single-cell organisms, a decision was made to analyze the spherical form of the structure in pentagons and hexagons in a geodesic arrangement. Buckminster Fuller, creator of the geodesic system, was inspired by the carbon molecule for his system. Pentagonal and hexagonal surfaces were covered with a material called Ethylene tetrafluoroethylene (ETFE), a fluorine-based plastic.

Considering that the building is a greenhouse and needs maximum sunlight, it becomes easier to recover the desired amount of sunlight with the system, which makes the building more transparent by using a smaller amount of steel. [6] (Figure 7)

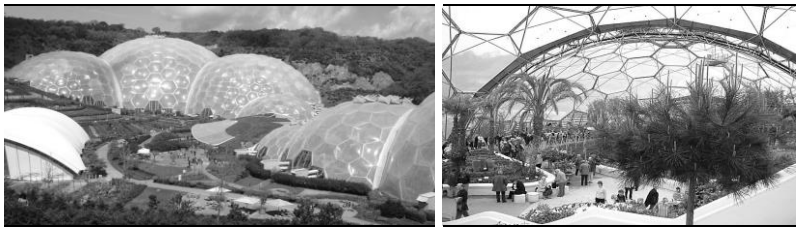

Figure 7. The Eden Project, Nicholas Grimshaw, UK, 2001

The Super Trees project in Singapore consists of tree-like structures made from 18 types of sustainable materials. Some of the trees generate energy via solar panels, while others feed the system with ventilation.

The trees sit on a steel trunk on a reinforced concrete core, plant panels and a wall system. The plant panels house 162,900 plants of 200 different types, and help the trees create a diverse visual impact. In touch with nature, the project imitates the structure of trees in form to ensure suitable conditions for plants to grow, and has an energy-efficient structure. [9]

Figure 8. Super Trees, Singapore

Biodesign

A novel approach to biomimicry aims to create living objects by instead of utilizing living materials and designs integrated with nature instead of hampering nature. [1]

Myers states that it is possible to design living materials to be used along with structures, objects and tools, and that these living organisms become indispensible components that will enhance the function of the finished object.

Biodesign is an idea of design that directly includes biological processes and entities in design. Biodesign goes one step beyond other levels and incorporates living organisms as essential components in design, enhancing the function of the finished work. [10]

The project Harmonia 57 is an example of structures designed according to the biodesign method. (Figure 9) The designer designed a building envelope nurtured by changes in moisture and temperature. The building breathes, sweats and renews itself like a living body. The building has plants on its walls, covering it like skin. The walls, made of organic concrete, have a porous structure, allowing various types of plants to grow. Installations of the structure are visible on the front, and feed the plants living on the walls like a system of veins and arteries circulating the body. The building breathes, sweats and changes itself in reaction to environmental factors like a living being along with the plants living on the organic concrete. [11]

Figure 9. Harmonia 57

Designed as a vertical forest project, Bosco Verticale is regarded as an example of biodesign. (Figure 10) The project was designed as a growth model for renovation of urban environment, and creates a biological living area. Two towers, one 80-meter-long and the other 112-meter-long, are surrounded by balconies, which house several types of trees, shrubs and plants. The plants produce oxygen and create a damp microclimate. A vertical forest, the structure enhances biodiversity and helps create an ecosystem where the flora, birds and insects continue to live.

The plants absorb dust, protect houses from sunlight, and offer acoustic comfort. [12]

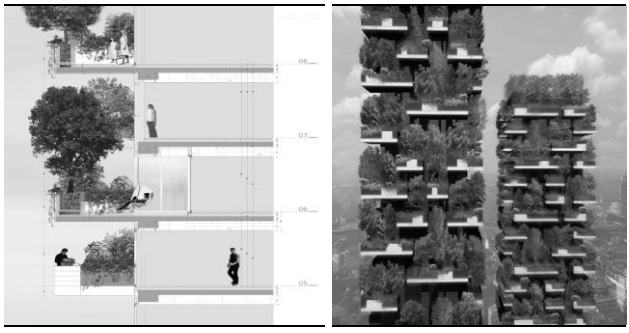

Figure 10. Bosco Verticale

CONCLUSION

The study and imitation of structures, behaviors, duties and systematic relationships of living entities in an ecosystem may be accepted as an important and prudential design method in terms of sustainable design. Architectural designs integrated with nature will allow us to create a sustainable environment and help people live as a part of nature without harming it. Utilization of biomimicry in architectural design requires an understanding of nature and adaptation to its order.

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REJECTING REVERSING ARCHITECTURE

SEARCHING THE QUESTION "WHY?" IN DESIGN PROCESS THROUGH COMPUTATIONAL METHODS

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ABSTRACT

"Why?"… The initial design thought, the relationship between design elements, the evolution of an initial shape to another shape, etc. lie behind the question "why?". This is the main question to disclose the design process. The implicit and undefined methods in the early phase of the design process evolve into explicit methods by utilizing computational tools, such as algorithms, parameters, rules, relations and variables. This transformation is interpreted as an important paradigm shift in architecture and the question "why?" have become prominent in the usage of computational tools in design. It is aimed to expose and discuss whether the computational design process rejects the conventional design process. Within the context of this study, both conventional and computational design methods will be utilized by a group of students to solve a design problem which consists of five phases.

Initially, a basic design study assignment was given to students. The students were channelized to ask themselves the question "why?" in the design process. In the second step, the students explained each step of their conventional design processes and wrote down the algorithm about their studies. In the third step, the students described their design compositions on a computer workspace by using Grasshopper plugin on Rhinoceros. The algorithms described in the second step would be the base of their Grasshopper definitions. In the fourth step, the Grasshopper definitions were further studied and design alternatives were explored. In the last step, the students were expected to compare the conventional and computational design processes.

As a result, the students carried on two design processes on the same design problem. They had the chance to compare and evaluate the differences and similarities between them.

Key Words: Computational Design, Conventional Design, Design Process, Algorithm, Parametric Design.

INTRODUCTION

Design is a “conscious purposeful activity” to create something that did not previously exist [1]. During this activity designer asks himself some basic questions: “What for..?”, “What is…?”, “How does..?” or “Why does…?” [1]. This study focuses on the question “why?”. Because it is about the purpose of design and it gives clues about the design process. “Why?” has always been an important question for making activity since the ancient times. When designing was an instinctive activity, the philosophers were thinking about the causes of a design. For example, Aristotle tried to understand “making” over four causes: the material, the formal, the final and the efficient causes [2]. Within the context of four causes the designer, the efficient cause, has the key role to form a design problem. This leads to emergence of some unexplained points in design process. At the beginning of 1980s some researches focused on designer and design process were began to be done [3,4]. Within these researches the key question was about what went on in the designer’s head. [3] This nebulous design process is described as black box process [5,6]. By the 2000s computational architecture began to rise and today it has a significant role in architectural design. Computational design is a more explicit process than conventional design. It could be defined as glass box, rather than black box. Because the steps, the analyses of the process could be understood by anyone. Design process itself is a critical issue for computational design. It could be said that not only the final product but also the design process has to be designed.

Within the scope of this study it is aimed to compare conventional and computational design processes on the same design problem. The design problem was chosen as a basic design problem and carried out by the fourth term students. A basic design assignment that make the students use Euclidean geometries (e.g. square, circle, triangle,…) was given. They were expected to create a simple composition; thus, they could make the Rhino® – Grasshopper® definition easily. Because testing the students’ software knowledge is not the primary target for this study. In the first part of the study, the students created their compositions within the context of conventional design methods. In the second part of the study, they re-described their compositions on Grasshopper® model. Finally, they were asked to make their Grasshopper® definitions better and get different compositions.

Writing the design process step by step by querying the question “why?” is one of the main points for this study. Because this study asserts that conventional design has an algorithmic logic in the background and this could lead computational design thought. This study aims to disclose the algorithm behind the conventional design and search similarities and differences between conventional and computational design processes.

Searching the Question “Why?” Through Conventional and Computational Design Processes

A design problem may have hundreds of different solutions. Only one of them is chosen as the final product. From beginning to end of a design, a multi-layered process is carried out. “Why?” is one of the main and important questions in this process. Because it is related to the form and the purpose of

design. It is a very complicated question, since aesthetic values, personal choices influence the answer. Sometimes that answer cannot be explained by the designer himself.

Conventional and computational methods have some differences within the context of design process. Conventional design method includes an intuitional approach to design problem. Mostly, the designer's knowledge, psychology and experience form the final design product. It can be described as a subjective design process. Every step of conventional design may not have an answer to question "why?". This can be described as "black box" theory [5,6].

Computational design process depends on the description and analyses of a design problem. Mostly, the designer's computer / software knowledge and analysis ability form the final design product. Every step of computational design process mostly has an answer to the question "why?". This can be called "glass box" [5,6].

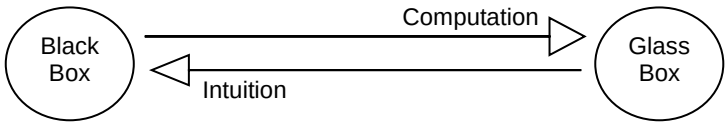


Figure 1. The Relation between Black Box and Glass Box

Glass box and black box processes represent contrary situations. As the intuition in design process increases it becomes closer to black box; but as the computation increases it becomes closer to glass box. Glass box is a more explainable and scientific process than black box.

The Same Design Problem for
Conventional and Computational Design Processes

This study was carried out by fifteen students and six of them were chosen as sample studies. The students were classified according to their Grasshopper® models as the most parametric ones to less parametric ones. For every three range (good, average, bad) two students' studies were chosen. Thus, an objective analysis could be done. The design steps of conventional and computational processes written by students were evaluated.

To carry out the basic design study by fourth term students, a cube that one edge's measure of 30 cm. was specified as workspace. The students were asked to determinate a concept within the context of computational design samples (Figure 1). In the first step of the study, students made a physical model that reflects their concepts. This part of the study was carried out to analyze the conventional design process. For this reason, every step of this process was asked to write down clearly by asking the question "why?".

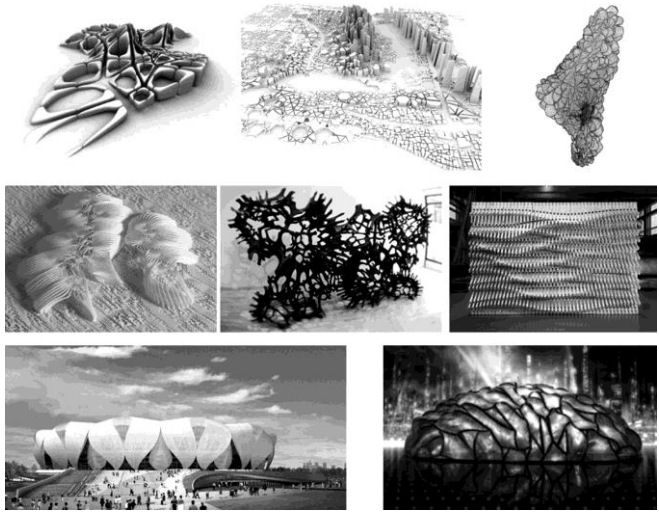


Figure 2. The Figures Given to Students to Determinate their Concepts

In the second part of the study, physical models were re-produced by the students on Rhino® - Grasshopper® which is a computational design software. The computational design process, which is performed by Grasshopper®, depends on an algorithmic logic and for this reason it naturally has to be defined step by step. Algorithm could be described as a simple instruction [7]. Algorithm is a solution strategy that is developed for a (design) problem. Algorithm comprises of a series of steps. The result of an algorithmic process can be variable depending on the parameters used.

This study focuses on the differences and similarities between conventional and computational design processes. The design steps are described by the students asking the question “why?” to analyze the design processes. The descriptions and outcomes are compared and presented in the tables below (Tables 1 to 6). Finally, the students are asked to evaluate these two different processes as differences and similarities.

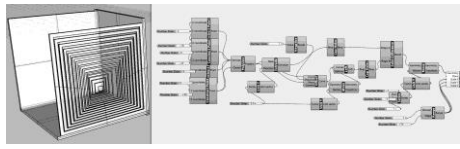
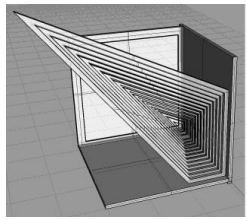
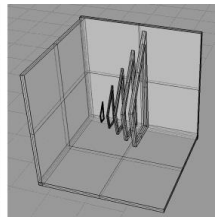
<table>
<tr><td colspan="2">Student 1</td><td colspan="2">Concept: Accumulation</td></tr>
<tr><td>Conventional Design Steps</td><td>▪ A square frame is chosen as a module.
▪ This module is reduced in size and copied.
▪ The modules are placed one after another and a box of 30 cm x 30 cm is filled.
1st box: 30 cm x 30 cm
2nd box: 28 cm x 28 cm
3rd box: 26 cm x 26 cm
.
.
.</td><td>Computational Design Steps</td><td>▪ To form a square 4 points are defined by construct point tool and the points are joined with lines.
▪ This square is used to define a frame by extrude and offset tools.
▪ The frame is enlarged proportionately and copied repetitively.</td></tr>
<tr><td>Physical Model</td><td> 
  </td><td>Grasshopper® Definition
Design Alternatives on Grasshopper®</td><td> 
 
  </td></tr>
</table>

Table 1. Student 1 | Conventional and Computational Design Processes and Outcomes

Student 1 explains the conventional design process by drawing the square frames relations with each other. In the first part of study, the relations between the frames are explained. In the second part of the study, the computational process is explained by Grasshopper® tools. The student focuses on to get exactly same outcome that she gets from the conventional design process.

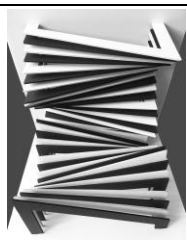
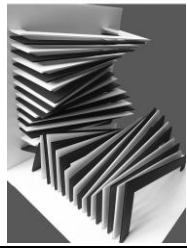
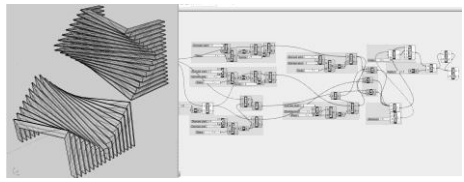
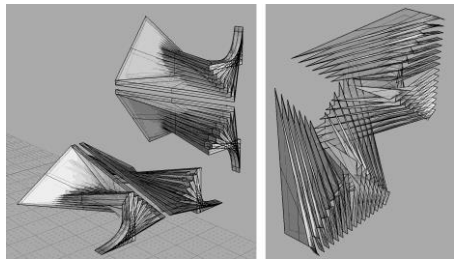
<table>
<tr><th colspan="2">Student 2</th><th colspan="2">Concept: Motion</th></tr>
<tr><td>Conventional Design Steps</td><td colspan="2">▪ A module is created.
▪ The module is scaled up or down and copied to make a series.
▪ The series is copied symmetrically.
▪ The same process is performed for the other lateral face of the box.</td><td>Computational Design Steps</td><td>▪ Two points at a distance of 20 cm are defined in Rhino®.
▪ The first point is copied 8 times at a distance 1 cm on the Z axis and 4 cm on the Y axis.
▪ The second point is copied 8 times at a distance 2 cm on the Z axis and 1 cm on the Y axis.
▪ The first point is copied 8 times at a distance 1 cm.
▪ The second point is copied 8 times at a distance 1 cm. And the repeated modules inner points are created.
▪ Lines are drawn between the points.
▪ These lines are combined with join tool and turned into surface with edge surface tool.
▪ The surfaces is extruded.
▪ The repeated module is copied symmetrically. And all the objects are copied again symmetrically on the Z axis.</td></tr>
<tr><td>Physical Model</td><td> 
  </td><td>Grasshopper® Definition</td><td>  </td></tr>
<tr><td></td><td></td><td>Design Alternatives on Grasshopper®</td><td>  </td></tr>
</table>

Table 2. Student 2 | Conventional and Computational Design Processes and Outcomes

Student 2 explains the conventional design process by relations and actions like scale, copy, etc. He doesn't use any numerical value for conventional definition. Despite this he uses numerical values to describe the

computational process. Because computational design makes him think about the quantitative relations between components.

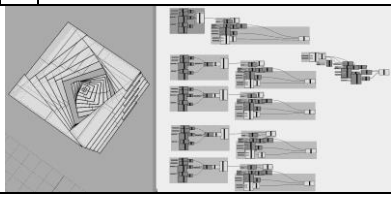
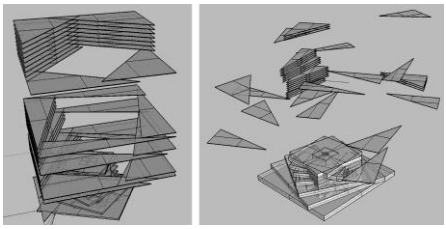
<table>
<tr><th colspan="2">Student 3</th><th colspan="2">Concept: Repetition</th></tr>
<tr><td>Conventional Design Steps</td><td colspan="2">▪ Triangle modules are chosen.
▪ Firstly, a right triangle of 8 cm x 30 cm is formed.
▪ The short edge is increased 2 cm and long edge is decreased 2 cm. By this way 5 different sized right triangles are formed.
▪ These triangles are made for four times and 20 triangles are made, totally.
▪ These triangles are glued on the box's edges and decreased squares are formed in the box.
▪ In the middle of the box decreasing squares are formed.
▪ With this design square forms are emphasized by triangles.</td><td>Computational Design Steps</td><td>▪ Firstly, a right triangle of 22 cm x 16 cm is drawn by line tool.
▪ This wired shape is transformed to a surface.
▪ The surface is decreased five times via scale tool in the range of 0.5 – 1.
▪ These new shapes are moved on z-axis at intervals of 4 units.
▪ All surfaces are extruded of 1 unit. These 5 shapes are made group.
▪ The group is rotated 90, 180 and 270 degrees around the center point of (15,15,0)
▪ Finally 4 groups of triangle shapes are got.
▪ The squares placed in the middle of the box are formed with the same steps above.</td></tr>
<tr><td rowspan="2">Physical Model</td><td rowspan="2">  </td><td>Grasshopper® Definition</td><td>  </td></tr>
<tr><td>Design Alternatives on Grasshopper®</td><td>  </td></tr>
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Table 3. Student 3 | Conventional and Computational Design Processes and Outcomes

Student 3 uses computational definitions with numerical values for both conventional and computational design processes. But she cannot build her Grasshopper® model in a parametric way. Because as is seen in the table her

design alternatives' parameters do not have the right range. The design space is the most important thing in computational design. Therefore, the parameters have to be defined properly.

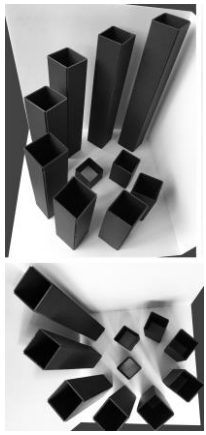
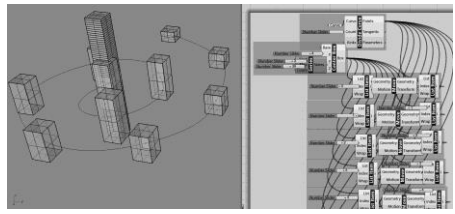
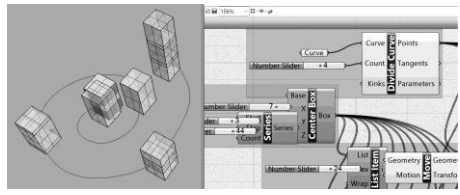
<table>
<tr><td colspan="2">Student 4</td><td colspan="3">Concept: Difference</td></tr>
<tr><td>Conventional Design Steps</td><td colspan="2">▪ Prisms of which measure of footprints are 4 cm x 4 cm and measure of heights are 30,27,24,…,3 are formed.
▪ These 10 prisms are rotated around a focal point placed in the middle.
▪ Difference concept is abstracted by different heights of prisms.</td><td>Computational Design Steps</td><td>▪ A curve is drawn in Rhino®.
▪ This curve is divided in 10 pieces by divide curve tool.
▪ A box of which measure of footprint is 4 cm x 4 cm is drawn by center box tool.
▪ First and last box's values are defined and between them series is defined.
▪ The zeroth box is filtered by list item tool and moved to first point on the divided curve.
▪ The same process is performed for 1,2,3,…,9 boxes.</td></tr>
<tr><td rowspan="2">Physical Model</td><td rowspan="2">  </td><td>Grasshopper® Definition</td><td colspan="2">  </td></tr>
<tr><td>Design Alternatives on Grasshopper®</td><td colspan="2">  </td></tr>
</table>

Table 4. Student 4 | Conventional and Computational Design Processes and Outcomes

Student 4 focuses on difference concept by hierarchy. In conventional design definition the information about the prism, height and footprint measures, are given. And the reason of different heights is explained. A similar design process is carried out in computational design process. Various size and number of prisms can be created on Grasshopper® model.

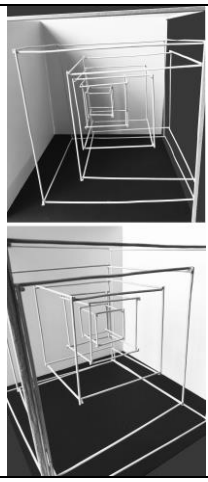
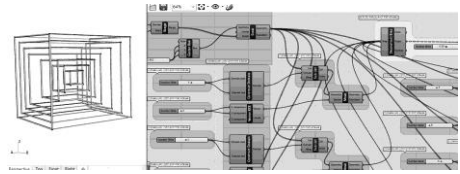
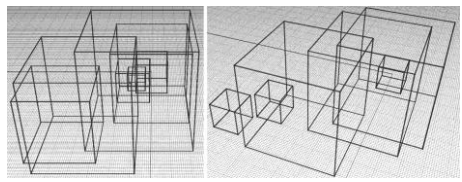
<table>
<tr><td colspan="2">Student 5</td><td colspan="3">Concept: Captivity</td></tr>
<tr><td>Conventional Design Steps</td><td>▪ 6 cubes are placed one within the other.
▪ The biggest cube's one edge is 30 cm.
▪ The smallest cube's one edge is 5 cm.
▪ The other cubes' edge measures are defined as 23 cm, 17 cm, 12 cm, 8 cm.
▪ The cubes' edges are:
30 – 23 – 17 – 12 – 8 – 5
7 6 5 4 3
▪ The second and third biggest cubes are glued on the edge of the biggest cube.
▪ The other cubes are glued on the opposite edge.
▪ With this design, a hierarchical order is formed.</td><td>Computational Design Steps</td><td colspan="2">▪ A box is formed by center box tool.
▪ The box's scale is changed by scale and range tools.
▪ 7 boxes are formed and interconnected to each other.
▪ To select the boxes sub list tool is used.
▪ All the boxes are moved to their places.
▪ These steps are carried out for all boxes.</td></tr>
<tr><td rowspan="2">Physical Model</td><td rowspan="2">  </td><td>Grasshopper® Definition</td><td colspan="2">  </td></tr>
<tr><td>Design Alternatives on Grasshopper®</td><td colspan="2">  </td></tr>
</table>

Table 5. Student 5 | Conventional and Computational Design Processes and Outcomes

Student 5 explains conventional design process in a computational way. All the components' sizes and the mathematical relations between them are defined. But the relations cannot be defined on Grasshopper® model, properly. The design alternatives cannot be described as proper and rational results.

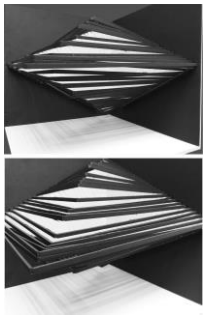
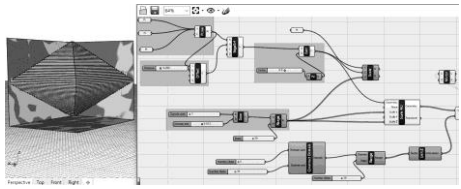
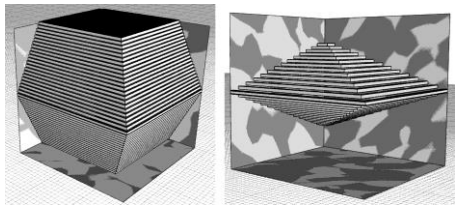
<table>
<tr><td colspan="2">Student 6</td><td colspan="2">Concept: Space - Gap</td></tr>
<tr><td>Conventional Design Steps</td><td>▪ A series of square frames are firstly scaled up in the range of 1 cm to 30 cm.
▪ Then the frames are scaled down in the range of 1 cm to 30 cm.
▪ Finally, a symmetric order is formed.</td><td>Computational Design Steps</td><td>▪ The biggest square frame’s three points are defined.
▪ The points are connected and an “L shaped” polyline is drawn.
▪ This line is extruded of 0.5 cm. and the biggest square frame is created.
▪ This frame is copied and scaled down by 1 cm for 30 times.
▪ The frames are moved to their places.
▪ Lastly the frames are mirrored and the symmetric composition is created.</td></tr>
<tr><td>Physical Model</td><td>  </td><td>Grasshopper® Definition</td><td>  </td></tr>
<tr><td></td><td></td><td>Design Alternatives on Grasshopper®</td><td>  </td></tr>
</table>

Table 6. Student 6 | Conventional and Computational Design Processes and Outcomes

Student 6 tries to explain the conventional process in a simple way. But it can be said that there is a lack of information about the design components. When he reproduced the physical model on Grasshopper® he began to give more specific information about the components, like “L shaped”.

As is seen in Table 1 to 6, the conventional design processes are explained as visual relations, generally. These visual relations are related to the concept. Because in conventional design the causation depends on abstract notions. This makes the design idea stronger. Besides that, the computational design process is explained more technically, in general. It could be said that the steps in conventional design leaded to computational design process.

Another point worth mentioning is that, it could be thought that the steps give an answer to the question “how?”. But in fact, the relations between the

components like the count of them or the distances between them are related to the concept of design. These concepts could be described as a limit of the design. In computational design process, every variable for a parameter lead to another design with another meaning / concept. The range of a parameter is specified as an answer of the question “why?”. This range is described as “fitness function” in computer science.

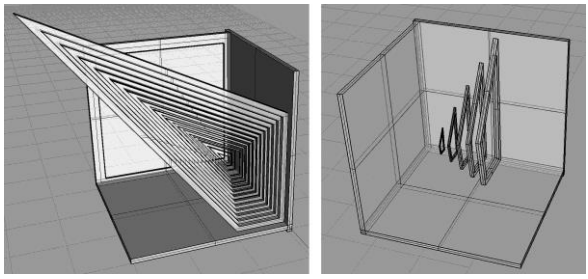


Figure 2. Design alternatives of Student 1

For example, in Figure 2 two design alternatives of Student 1 are seen. The second design alternative on the right side does not reflect her concept “accumulation”. Here, the question “why?” gains importance to limit the design space in computational design. Every design alternative in computational design process does not mean the proper design for the concept. The fitness function has to be specified properly for a meaningful design.

CONCLUSION

The question “why?” has different functions for conventional and computational design processes. In conventional design process, this question is asked to achieve the concept. Thus, the design could have a context. As aforementioned before according to Aristo’s four causes the efficient cause, the designer, has the key role to form a design problem. In ancient times, the primitive designer used his instincts for “making” activity. In a similar manner, today the “concept” helps the designer in designing process to make the final design product more meaningful.

The question “why?” has a role as fitness function in computational design process. Fitness function can be seen as a limit of an algorithmic process. The steps are repeated till the proper result is achieved. In computational design, once the algorithm of design process is built a lot of design alternatives can be tried on the same 3d model. Selecting the proper alternative in that design solution space might be possible by asking the question “why?” and giving the correct answers to that question.

At the end of this study, the students are asked to compare conventional and computational design processes. The common view is; using conventional design methods in the early design stages is more useful. But at a later stage using computational methods is more beneficial. Because the designer can try various design alternatives on the same model. It is thought that trying design

alternatives in conventional design is a waste of time. One of the students finds conventional design process grueling. In spite of that, another student sees it as a corner stone for design education.

As a result of this study; it can be said that both conventional and computational methods are significant for designing activity. Conventional method makes the design more humanistic. Beside this, computational method offers much more alternatives for a design problem. The computational design process does not reject the conventional design. Both conventional and computational design processes are complementary for each other.

ACKNOWLEDGEMENTS

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REJECTING REVERSING ARCHITECTURE

GLITCH IN THE MUSEUM: A DIGITAL HERITAGE PROJECT REJECTING AUTHORISED HERITAGE INSTITUTIONS

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ABSTRACT

This paper is part of a design-research project in the field of digital heritage. Contextualised around the authenticity issue of Kashgar, the westernmost city in China, the project investigates digital means for participation in processes of cultural heritage making. The focus of this paper is to characterise glitches that occur as part of the photogrammetry process which is a 3D modelling method. In the modelling process, there are several determinants of photogrammetric production including transparency, brightness and subtlety between repetitive elements that can be relevant to the object(s) or device-related e.g. camera lens and shutter speed. Frequently data transformation from 2D images to 3D objects changes the message. Photographs are converted into 3D sculptures with 'errors' or as we define 'glitches' that appear like holes or dislocation of pixel's colour values. Such internal errors are potentially representative of a gap in knowledge where users must project their own conceptual understanding to complete it. Decentralisation of the artefact from its materiality, by tolerating glitches of the digital transcoding processes, leads us to evolution of means for stimulating the subjective performance of users whereby emotions and intertextual narratives can be represented. The paper will show how glitches (digital errors) are exploited to rather catalyse communication between the machine and the human. Game design techniques that are employed such as positive and negative feedback mechanisms will be presented to demonstrate how glitches are integrated to a digital interactive experience.

Key Words: Digital Heritage, Participation, Photogrammetry, Glitch, The Museum of Gamers.

INTRODUCTION

Digital heritage is a new field that works on the digitisation of tangible and intangible heritage elements to preserve their values for future generations [1], [2]. Digital heritage studies are divided into three categories as documentation, visualisation and dissemination [3].

This paper firstly explicates the photogrammetric documentation process of a historical site; secondly demonstrates interactive immersive environment used for its visualisation; and finally explains the role of 'glitch' and user-generated content in the dissemination of its heritage value. The first two is about the background and methodology of this research. The third one provides subject-matter of this paper as a brief analysis of the changing role of authorised heritage institutions in the documentation, visualisation and dissemination of cultural heritage.

Galleries, libraries, archives and museums (GLAMs) sector comprises of a narrower section of authorised heritage institutions in which governmental stakeholders are also involved. To document, visualise and disseminate heritage, advanced digital technologies are deployed in the GLAMs sector such as photogrammetry, scanning, 3D modelling, virtual and augmented reality (VR/AR) and online media. As authorised heritage institutions, GLAMs are granted with public trust by majority to protect as well as define authenticity. In this paper, digital media in a participatory context is demonstrated for examining this de facto position of authorised heritage institutions, in particular GLAMs, which are the guardians of authenticity.

The digital heritage field was initially recognised as 'virtual heritage' until 2000s when analogue devices was losing their importance to digital ones. In 1990s, some leading museums such as Le Louvre started to sell CD-ROMs which are acknowledged as early examples of digital heritage applications following Apple Computer's "Virtual Museum" which was a 3D simulation of a classical museum space [4]. With the advent of virtual reality (VR) technologies, the scope of digital heritage applications extended from documentation to presentation and to further advances in producing knowledge from the engagement and understanding of participatory processes. In theory, heritage studies evolved from material-based views to politically-engaged social aspects of visualisation and authenticity [5]. This work goes beyond the social context of digital heritage with a design by inquiry approach to understand the impact of user-generated content in participatory heritage making.

Glitch is defined as an unexpected and intermittent malfunction in digital processes of sound or visuals. In this paper, they refer to visual imperfection of 3D models that emerged during photogrammetry. Low-cost photogrammetry is conducted through photographs uploaded into a software that stitches them together to build a 3D model of the photographed environment. In this research, users are examined through their engagement with glitches and their contribution to content generation is qualitatively analysed.

Problem Statement

Aestheticization of the past used to be integral to the appreciation of ruins since the Renaissance. The ideals of heritage and authenticity have been attributed to authorised institutions such as galleries, museums and tourism boards [5], [6]. But the demand for public participation especially in museums has created a rift in this situation, theorised by the advocates of the New Museology movement for more social inclusion and multiculturalism in the heritage sector [7], [8], [9].

In contrast to conventional way of aestheticism and authenticity in museums, contemporary medium is more open for content generation by public and individual storytelling. Despite questions about originality, authorship and value, online media is seen, if not taken for granted, as an important area to develop new museum and heritage standards for long-standing ethical protocols such as authenticity [10]. Theoretically, these developments are recognised as positive for democratisation of museums transforming to 'authenticators as authors of shared knowledge' from being 'authenticators as guardians of knowledge' [11].

Rethinking museums' role in society, the project titled Renewal, Innovation and Change: Heritage and European Society (RICHES) is delivered to seek new ways of engagement with heritage in digital formats [12]. Likewise, the *Pop-Up Museum* which is a partnership between Noterik, The Netherlands Institute for Sound and Vision and KU Leuven, hybridises digital and physical exhibitions with a modular installation that travels like a vehicle for people to participate and create their own museum [13]. Participation through digital artificial environments is the focus of this work. Exploration of hidden relations between discrete visual elements such as glitches is the main objective, whereas Kashgar, the westernmost city in China, offers the context of the problem.

Modelling a Virtual Museum

This research is part of a conceptual online museum titled, *The Museum of Gamers* [14]. *The Museum of Gamers* is a design research project in the field of digital heritage, bringing together architectural heritage, computational design, and new media fields [15], [16], [17]. Facilitating the revitalization of Kashgar's architecture, digital platforms are designed and developed to enable public participation to actively create, interpret and share heritage information.

With *The Museum of Gamers*, we prefer to interpret the need for an organisational change in museums as dispatching their authoritative power on the transformation of content towards peoples' collective intelligence. Based on the act of collecting, user-generated content reflects individuals' understanding of authenticity and aesthetics despite glitches decentring the object from its originality towards subjective and more authentic interpretations. With our assessments, we seek meaningful insight from a participatory heritage making via digital tools. In this paper, it is argued how glitches can play an important role in the collecting process for more authentic results. The next section elaborates on how glitches emerge in the first place.

Emergent Glitches from Low-cost Photogrammetry

Today, urban designers and planners apply to 3D modelling techniques to address the issues of cities during decision-making [18], [19]. When a city has important historical quarters, these techniques are given more priority for better planning decisions regarding the development of citizens' life and preserving their collective historical identity. One of the obstacles for some cities was the cost of 3D modelling. However, new and powerful photogrammetry software offer low-cost options for computationally expensive digital processes. ReCap 360 [20] and Remake (formerly Memento Project) [21] are the two photogrammetry software provided by Autodesk using the same algorithm to generate 3D models from photographs. In this research, these tools are deployed to model the narrow streets of Kashgar's old-town.

Three fieldtrips are conducted with photographs, street sound recordings, video recordings, aerial videos and notes of interviews with the local compromise the data collection from the site in Kashgar. Photographs are taken with a digital camera (SONY a6000). Fast-focus feature was definitive in the selection of the camera so that scenes of alleys can be recorded quickly while walking in a natural manner without requiring waiting too long. Only for use in photogrammetric modelling, fast-focus helped take around five thousand photographs in ten days. Aerial views are recorded with a DJI Phantom-3 device (see Figure 1).

Figure 1. Aerial View from Közciyerbaşı (گوزبچیار بېشی) in Kashgar

All those photographs are then stitched together in ReCap by Autodesk (see Figure 2). Resulting geometries of photogrammetry create 'holes', or rather glitches, where the software algorithm confronts a hard task, e.g. discrepancy in overlapping photos uploaded. This kind of errors can be alleviated by Remake's patching function that directly optimizes an average piece of mesh based on neighbouring polygons around the hole. Other post-production techniques provided by software such as 3DS Max and Mudbox by Autodesk are also used to moderate photogrammetric models of Kashgar.

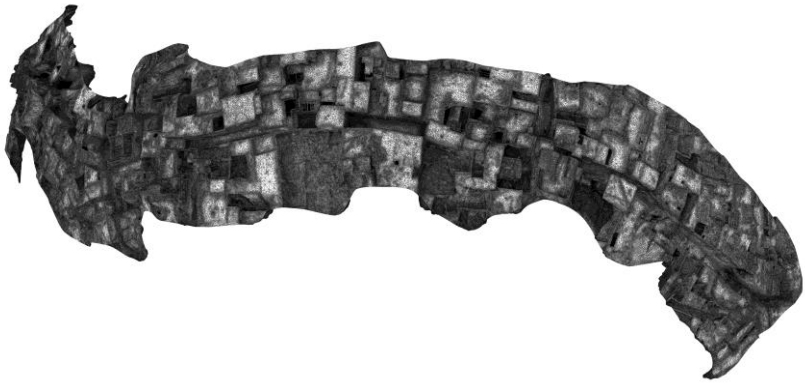

Figure 2. Modelling Kashgar's Narrow Alleys in Recap

These post-production techniques include basic manipulation of the geometry, e.g. stitching geometries modelled separately, decimating the number of polygons and smoothing, pushing and pulling parts of the mesh, which may result in further errors and glitches (see Figure 3).

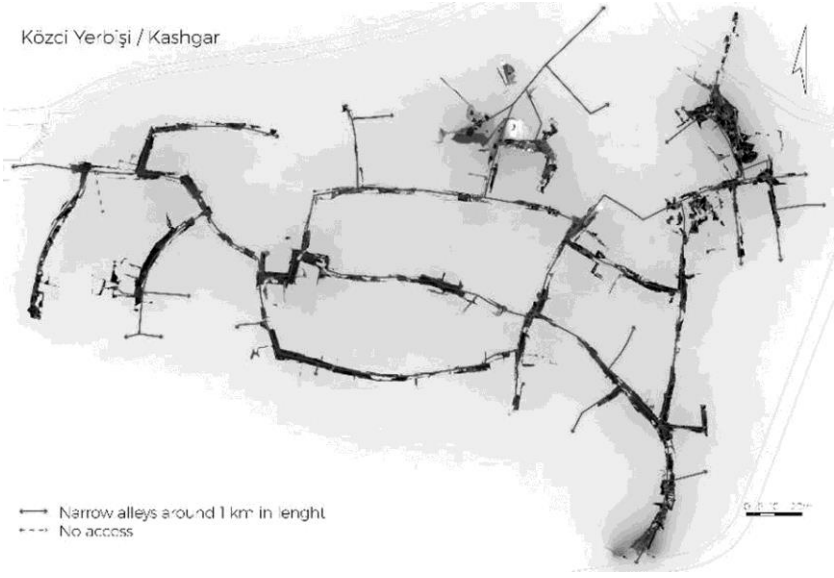

Figure 3. Mashup of the Photogrammetric Models with the Alleys on Plan

The photographs of Kashgar were taken at different times and in different environmental conditions such as cloudy days with evenly distributed light or sunny days that brighten white surfaces excessively, causing parts of geometry to be unrecognised by the algorithm and thus creating random black holes. These are errors that are revealed in textures and other misalignments

caused in the photogrammetric process, which results in its own aesthetics (see Figure 4).

Figure 4. Glitches during the Modelling of a Tomb (Mahmud al-Kashgari)

In the modelling process, there are several determinants of photogrammetric production including transparency, brightness and subtlety between repetitive elements that can be relevant to the object(s) or device-related e.g. camera lens and shutter speed. Frequently data transformation from 2D images to 3D objects may change the message [22], so that photographs are converted into 3D sculptures with 'errors' that appear like holes on excessively dark or white surfaces. Such internal errors are potentially representative of a gap in knowledge where users must project their own conceptual understanding to complete it (see Figure 5). Decentralisation of the artefact from its materiality, by tolerating glitches of the digital transcoding processes, leads us to evolution of means for stimulating the subjective performance of users whereby emotions and intertextual narratives can be represented.

Figure 5. Participants are Intuitively Informed about Glitch Areas with a Different Colour (Purple) to be Filled with the Collected Texture Items

Searching and Generating Glitches with User Participation

In *The Museum of Gamers*, visitors must project their understanding to communicate with what is incomplete and is informed. This gap between the presented and un-presented is named as 'glitch space' as a conceptual term that was introduced previously [23]. The design of dynamic and reproducible heritage content making via interactive online media is targeted so that in the virtual environments of *The Museum of Gamers*, participants can explore new behaviours. In this case, Kashgar, which is a historical town on the ancient Silk Road, provides the heritage content to be translated into digitally interactive environments (see Figure 6).

Figure 6. A Screenshot from the Walkthrough in the Interactive Kashgar Model

An interactive game-like environment is conceived based on photogrammetric models generated from the photographs taken from the historical Kashgar's narrow alleyways. It is designed to observe the memorisation processes of

individuals while transforming the content. In this virtual space, users act to repair a virtual Kashgar model by navigating through the photogrammetric model of narrow alleyways.

The user firstly explores a network of narrow alleys represented with photogrammetric models, then collects textures from hidden brick-blocks and generates screenshots on-play (see Figure 7). Following the traces in the narrow alleys which are the architectural elements such as doors and gates, the player journeys through a narrative. Finally, the player places the collected textures and screenshots (square size of 250x250 pixels) on the glitched parts of the digital Kashgar environment. By that, a library of collected items is generated by each user. It is made of texture-size screenshots that are instrumental to testing recognition abilities of one's own experience. Glitches are instrumental to testing recognition of each unique experience in a virtual environment while provoking participant interpretation of the scene.

Figure 7. A Screenshot Cast during a User Placing Textures onto the Incomplete Parts (On the Ground at Bottom of the Image)

Rejecting/Reversing Authorised Heritage Institutions with Glitches

This research explores the nature of engagement with decentred virtual objects decontextualized from their real bodies via glitches, i.e. not only because they are digitised. Despite that digitisation decontextualizes the real artefact, glitches extend decontextualization vertically. Therefore, an artefact is an 'error' (i.e. 'glitch') when the object is de-contextualised. The decentred object creates its own narrative to guide understanding of its value beyond its materiality. In the heritage discourse, this meaning-making process still sits between the representational and the performative-subjectivist approaches [24], [5].

The evolution of heritage theory shows us that it is a recent phenomenon accommodating terms of ambiguous meanings. Waterton and Watson [5] divides the theorisation of heritage studies into three areas with prepositions 'in', 'of' and 'for' between the words theories and heritage. Their classification

indicates less a revolutionary and chronological development in the last four decades of light debate than an evolution of a holistic understanding of the past, present and future of heritage.

Authenticity issue in digital heritage is a characteristic of theories 'in' heritage that generally responds to material culture. This is the most common theoretical background in the contemporary heritage practice [5]. Another reflection of this theoretical view is that the audience is given 'passive' role to consume what is interpreted.

The theories 'of' heritage move from materiality to social context. The development in this second phase necessarily brings about research questions about identity, nationhood and statehood in response to the social context within the political nexus of heritage and digital media studies. In the context of Kashgar, this has proved us problematic because of its politically sensitive circumstances.

Conventionally digital heritage applications are assessed through questionnaires to provide insight from a social context. Benefiting from game-design and game datamining fields, digital heritage applications can be evaluated through machine learning methods without applying to users' ambiguous survey replies [17]. The act of collecting becomes the strongest determinant of content transformation. And collected objects from each medium become data that is loaded with meaningful insight to be revealed via datamining techniques, e.g. association rule mining [16]. In this regard, this research corresponds to theories 'for' heritage that attempt to teach us new ways of understanding user experience based on decontextualized elements for example basic visual units broken down from discrete pieces [17] (see Figure 8).

The focus of digital heritage studies is mostly on either 'process' or 'product' but rarely 'users' [25]. As a human product, authenticity issue in heritage is most consistently associated with the integration of the work which is often cross-disciplinary, to user experience. The designer's empathy to create knowledge through practice can deal with the complexity of intersecting domains as well as the ambiguity of user-engagement.

CONCLUSION

This paper demonstrates a design-research project that utilises glitches, i.e. bugs, malfunctions and errors rising from basic visual units, for users to express their understanding onto the provided content. Authorised heritage institutions (AHIs) are traditionally organised as product-oriented authorities to define ethical subjects such as authenticity and heritage value. Digital tools offer new ways to understand these ethical concerns as well as to gain more practical insight from user experiences. The photogrammetric documentation a historical site is explained. An interactive virtual environment is demonstrated. And the role of 'glitch' and user-generated content in the dissemination of its heritage value are discussed. This paper provides a brief analysis of the changing role of Authorised Heritage Institutions (AHIs) in the documentation, visualisation and dissemination of cultural heritage.

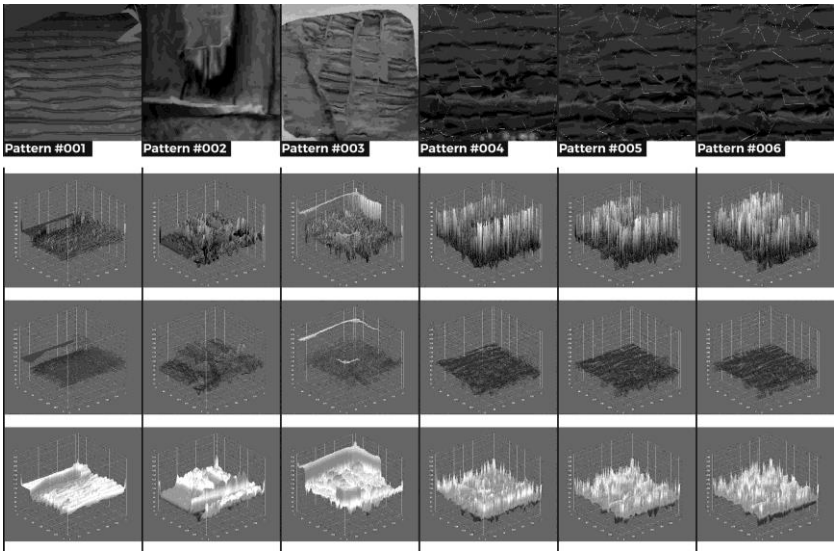

Figure 8. 3D Data Visualisation of Basic Visual Elements Generated from Patterns that are Collected by a Participant in the Interactive Virtual Kashgar Model during a Workshop at CAADRIA 2016 in the University of Melbourne

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CONCEPTION AND MISCONCEPTION OF DESIGN CUSTOMS: EVALUATION ON STEREOTYPICAL PORTRAYALS OF INTERIORS IN THE MEDIA

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ABSTRACT

Mass media, which provides new forms of learning to the societies, has increased the production, sharing and consumption of visual information throughout the world from the second half of the twentieth century onwards. Although this kind of visual information is often generated in the cognitive methods, it is more frequently designed to be easily decipherable for the moderate viewer who complies with stereotypical expressions and socially accepted generic references. The main aim of this study is to identify stereotypes within the interior architectural elements transmitted via mass communication devices, which are designed as connotative visual expressions about particular cultures or traditions. This aim also involves the questioning process of the cognition and the accuracy of the spatial stereotypes which provide the communication between designer and receiver with easy and uncomplicated methods.

In the information search process, interiors depicted through a variety of media organs, which are fueled by various cultural dynamics of different societies, have been compiled and examined. Aforementioned spatial portrayals in which stereotyped values are visible with their genuine, exaggerated, humorous and burlesqued ways, were evaluated in the light of the pioneer works concerning the subjects of 'social psychology' and 'cultural stereotypes'. Reviewed spatial portrayals were obtained from mass communication tools like advertising, comics, animations, animated sitcoms, music videos and social media-based contents. The evaluation process of the portrayals was managed by means of the titles of conception and misconception, which respectively causes effective and deficient learning. The necessity of mentioning 'cultural stereotypes' for this study came to light in due to the discussion of aforementioned methods of learning. For instance, a tangible value which is recognized by the members of relevant society may not to have a meaning to another one which has never priorly had a contact with this society; or this value may evoke irrelevant feelings in due to incorrect expressions and non-cognitive learning methods. In this study, spatial elements in media which carry cultural and traditional connotations are

evaluated as visual expressions which may be to show tendencies to switch into various and unique stereotypical beliefs. Media elements which were generated and published with various mass communication tools in the 21st century were selected in the sampling process of interior portrayals.

Key Words: Interior Architecture, Media, Stereotype, Culture, Spatial Identity.

INTRODUCTION

Roman philosopher M.T. Cicero mentioned *''cultura''* word twice in the fifth chapter of his second book of his ''Tusculan Disputations'' which is dated back to 45 BC:

''[…] ut ager quamvis fertilis sine cultura fructuosus esse non potest,
sic sine doctrina animus […]''

(''[…] even if a field is fertile, do not harvest without care;
so does the mind without learning… […]'')

''[…] cultura autem animi philosophia est […]''

(''[…] moreover the philosophy cares the soul […]'') [1]

The common point of translation of both quotes in English and Turkish is that Latin *''cultura''* can be translated as ''care'' or ''cultivation'' today, instead of words which literally stands for the modern ''culture'' word. The term is derivated from Latin *'colere'* root that means ''to cultivate'', ''to tent'', and ''to till''. The term gained its modern and common meaning which is related with this root by means of Gottfried von Herder's (1744-1803) work ''Philosophy of History of Humanity''. Herder defines the concept of culture as the self-educating, self-processing and self-cultivating processes of individuals, society and all humanity. ''Culture'' refers to the process in which the individuals cultivate themselves within a complex whole which comprise many values such as science, art, faith, morality, etc. [2]

However, definitions of the culture have dynamism and variabilities in similar way with the essence of the term itself. According to the quotation that Kroeber and Kluckhohn cited from Encyclopedia of Social Science, culture is a hermetic and fluid phenomenon [3]. Although it can easily be said that each society has its own unique cultural patterns, culture is not a tangible or a physical fact which can be measured or scaled. Lowell associates the fluidity and impenetrability of ''culture'' with the quantity of the codes within. Also, he mentions that depicturing the term is as unfeasible as ''grabbing the air with hands''. From this point forth, it comes to light that the values associated with a culture can only be defined in terms of communicative values within. In his ''Basic Tasks of Cultural Semiotics'' work, Roland Posner describes the notion of culture as a sign system and mention that all the scientific studies in the Western World were structured on the codes which are associated with philology; history, art history; architecture and musicology [4]. According to Posner, visual or audial cultural codes as well as many other behavioral sign systems can be natural, artificial or traditional. These codes were generated with the decision of one or more individuals and they can be

learned solely based on the relations between individuals and social spheres. In addition to this, some codes can be reflective of particular societies, geographies, particular social or economic conditions. These codes emerge as a result of communication and learning processes depending upon the modus vivendi of the individuals and humanity [5].

In this study, necessity of mentioning ‘‘cultural stereotypes’’ emerged in relation with the methodological problems of aforementioned learning process. A tangible value which was learned and accustomed by individuals of a group may not bear meaning for individuals from another group which has not come in contact with the former one; or this value may evoke different connotations than it possess by virtue of the erroneous expressions or learning methods which doesn’t have cognitive bases. These connotations may transform into stereotypical beliefs in due to non-cognitive and wildly generalized portrayals of cultural materials. Lexical meaning of ‘‘stereotype’’ is also about ‘‘lacking of accuracy’’. The term means ‘‘unfair and untrue belief that many people have about all people or things with a particular characteristic. [6]’’

Stereotypes are one of the most basic schemes used in facing to the social sphere. These schemes can be generated correspondingly with natural and intrinsic methods which occur as results of personal observations; also they can be adopted from family, friends, school or the media. American psychologist Elliot Aronson describes the stereotypes as the characteristics which are attributed to an entire group, regardless of the heterogeneity or the existing differences between the group-forming units. Therefore, stereotypes are commonly mentioned as the failure images of reality [7].

Humans shape their world-related experiences with reference to easy-to-solve classification patterns and generate cognitive categorization schemes which are based on the typical characteristics of a particular external reality. Cultural stereotypes emerge in due to the basic reactions of minds like ‘‘my, our’’ or ‘‘belonging to the others’’. In the process of mental categorization, individuals use basic binary oppositions like aforementioned one to perceive a reality [8]. Thereby, the primary mental definition of any cultural material is firstly shaped depending upon the recognized materials of the immediate environment of an individual [9], [10]. For instance, when a traditional harpoon used by an Alaskan fisherman is handed over to an East African fisherman who has not contacted with Alaska before; although he might foresee the primary function of the harpoon, he may will mark this harpoon as ‘‘belonging to the others’’ in his basic mental categorization.

A stereotypical content occurs when people briefly characterize the values associated with a group. Gordon Allport (1897-1967), an early modern theorist of stereotypical contents, associates the notion of stereotype with a uniform antipathy to an outgroup element [11]. Likewise, Katz and Braly states that ethnic stereotypes have permanently negative values [12]. However, a newer model of stereotypical content [13] states that stereotypical thoughts do not always have negative implications and argues that it can include variable emotions which can be separated under two titles: ‘‘warmth’’ and ‘‘competence’’. For instance, a stereotypical content may occur by result of

emotions such as ‘‘envy’’ or ‘‘admiration’’ for an elaborate or well-educated outgroups.

		Competence	
		Low	High
Warmth	High	**Paternalistic stereotype** low status, not competitive (e.g., housewives, elderly people, disabled people)	**Admiration** high status, not competitive (e.g., ingroup, close allies)
	Low	**Contemptuous stereotype** low status, competitive (e.g., welfare recipients, poor people)	**Envious stereotype** high status, competitive (e.g., Asians, Jews, rich people, feminists)

Table 1. Stereotypical Content Model (Fiske Et Al, 2002, p.881)

According to the Stereotypical Content Model, influence of ‘‘warmth’’ factor increases depending upon the lacking of the influence of ‘‘competitiveness’’ factor. These groups are exemplified as housewives, elderly, disabled people, welfare recipients and poor people. The influence of ‘‘competence’’ factor increases depending upon the increasing of the influence of ‘‘competitiveness’’ factor. These groups are exemplified as advanced groups in educational and economical context [13].

The Mass Media as a Stereotypical Form Generator

The mass media is a compilation of communicative organizations in which information can swiftly be distributed to the masses and decisions of individuals can be shaped. The main cause of mentioning the mass media as a ‘‘compilation of organizations’’ is that it has numerous sub-branches which increase in number day by day and also possess continuously expanding boundaries. This compilation contains printed media items such as books, newspapers, magazines, cartoons, flyers; broadcast media items such as movies, telecasts, video advertisements, radio broadcasts, music recordings and videos; digital media items such as websites accessed via internet or mobile networks, electronic mails, social media sites and internet based audiovisual images and broadcasts. Also AR-Advertising, billboards, signboards, communicative values and commercial ads on kiosks, stands and vehicles such as automobiles, busses, metro, trains, planes, even a speech in front of a community are within the boundaries of mass media [14].

Undoubtfully, audiovisual media can shape behavioral patterns of societies. According to the study, an adult U.S. citizen spends almost half of his free time watching television, listening to radio, reading newspapers and magazines and using the internet and the mobile network. Three-quarters of this usage is electronic media devices such as television, internet and mobile network [15]. In 21st century, learning with media highly affects children in preschool and primary school ages as well, due to the proliferation of various easy accessible media devices. For instance, according to the following

reports of ‘‘Surveying the Media Usage Habits of Children in Turkey’’ (2013) and ‘‘Turkey’s Media Literacy Research’’ (2016), 87.1% of children aged 13-16 are actively using mobile phones, 78.3% are actively using computers and tablets computers and 65.7% are actively using television. 75.5% of the telephone users stated that they have internet connection on their phones. The number of individuals who remarked that they use Internet for homework or learning purposes constitutes 60.0% of the total sample group [16]. This can be seen as evidence to what extent is learning process combined with the usage of mass media.

The spatial realities are also included in numerous manipulation and persuasion methods in mass media, in exactly the same way with the other visual, audial and literary norms of communication. The question whether the stereotypical attitudes and orientations which are frequently used in media have stylistic and spatial reflections is one of the main problems of this study.

‘‘Competitiveness’’ Factor and Spatial Stereotypes in Media

The fact that mass media which is seen highly related with learning activity can encourage the information sources to share information about the values of their in-group elements in idealistic ways; while it can encourage them to share information about encountered and antagonist societies in different themes such as barbaric, vulgar, ridiculous, burlesque, etc. For instance, the United States, which had firmed up its political power and dominance after World War II, is maintaining its ex doctrines at present day as well, via various media tools.

In contrast with modern and idealized portrayals of American societies, cultural elements about Russia has been portrayed by means of noncontemporary, offhanded and ridiculous stereotypes in media even in the Post-Cold War era. This condition can be seen as an evidence for usage of stereotypical content in competitive and political contexts. In ‘‘Figure 1.’’, ‘‘Figure 2.’’ and ‘‘Figure 3.’’, nine pieces of portrayals of Russia-related forms and spaces were categorized, which have been published by American media by 2000’s. It is clear that, stylistic manners seen in ‘‘Figure 1.’’ contains authoritarian and aggressive design elements which can be seen as reminiscent of the historical and imperial background of the opponent society, in contrast with the up-to-date portrayals of American interiors in the media.

In ‘‘Figure 1.’’ Double-headed eagle vexillums, which had been respectively used by Hittites, the Roman and the Eastern Roman Empire, Mamluks, Seljuks and the Holy Roman Empire before, are used as a key subject on spatial portrayals of Russian people. A palanquin with an acroterium shaped like a double-headed eagle and usage of the similar cultural and imperial symbols in a fictional interior in which characters plays instruments like balalaika, accordion and an instrument called gusli as the part of the act can be seen as spatial and stereotypical contents. On the third depiction, a red telephone box is in sight which is located in the fictional neighborhood called ‘‘Russian District’’ in the Simpson animation series. With a deliberate misconception, the red telephone box, which has been used as an urban furniture in the UK and various ex British colonies since 1920’s, is humorously designed with a bulbous dome on its top. The purpose of this expression can

be seen as taking the easy way out to ensure the recognition of the cultural elements. Both telephone box and dome are portrayed in such forms which can address to the generalizations in the knowledge of the viewers about both typical telephone boxes and typical Russian buildings.

Figure 1. (Left to Right), A Jeff Danziger Comic (2006); An Interior Scene from Animation Sitcom ‘‘American Dad’’ (2017); A Red Telephone Box with Russian Style Bulbous Dome from Animation Sitcom ‘‘The Simpsons’’ (2008)

The spatial portrayals which are in sight on ‘‘Figure 2.’’ contains less sketch expression in contrast with the former. The spatial reflections of praising the traditional values and authoritativeness are in sight in the images in gloomy, solemn and actual manners. The ‘‘Dangerous Eastern European’’ antagonist characters, who have been stereotypically portrayed with their dark and malevolent manners in movies, are frequently associated with the design styles which consciously reflect the style of some retrospective architectural periods.

For instance, in the movie of Eastern Promises (2007), antagonist Russian evildoers operate a restaurant which has no windows on any vertical surfaces at interior and takes natural light only from the skylight on the top points of its mock cross vaults. Upholstered seating which bears lion-head carvings on its hand rests, wallpapers with gilded floral patterns which covers the walls and the cross vaults, bronze vases and bracket lamps, three arm candelabras and inlaid samovars are in sight at the interior of the restaurant. Also in the movie of Equalizer (2014), the interior space in which Russian antagonists gather has a similar character with the former. The chamber takes the daylight from the stained glass skylight. A similar dubiousness with the former interior lifts its effectiveness by aid of dimness, dusky surfaces and the sudden religious icon behind the main table which is built up using the arrangements of neoclassical symmetry. At both interiors in ‘‘Figure 2.’’, clichéd spatial content about a particular group merges with the stereotype of characters that have illegal backgrounds who gather in secluded and gloomy chambers.

Figure 2. (Left to Right), The Interior of Trans-Siberian Restaurant from the Movie ‘‘Eastern Promises’’ (2007); An Interior from the Movie ‘‘Equalizer’’ (2014)

Stereotypical Portrayals of the Interiors in Video Advertising

French theorist Roland Barthes (1915-1980), in his work ‘‘The Advertising Message, Dream and Poetry’’, comments on a message of an advertisement in a semantical context and stated that the thing that affirmed the language of advertisement is not its veridicality. The messages and rhetorical elements of ads are fueled by reality, not definitely have to overlap with the truth. According to Barthes, an advertising message consists of three elements; a source: a company that praised or recommended a product, a receiver: viewer, audience or target group, a transmission channel: ad delivery tool. When the language of ad is successful, the advertising message will ‘‘say’’ the product, but ‘‘narrate’’ something else [17].

When the spatial reflections of the imaginary themes used in advertisements were examined, it can be seen that all of the spatial representations include in the ‘‘narrative’’. For example, at the interiors of two video ads in ‘‘Figure 3.’’, Italian goods brand Bulgari presents its new men’s fragrance with stylized masculine figurations, while French goods brand Dior uses stylized feminine figurations for its new women’s fragrance, independently of showing the fragrance itself in the videos. On the first image, stereotyped roles of men obtain spatialization with columns in Doric order which has been seen as a masculine architectural style of ancient times. In the video, product is presented in a masculine spatial context which contains sunlight, sharp shades, freely circulating wild animals around Doric columns which surround the circulation areas in order to reach the target audience.

Similar idealizations are used in the Dior video where the second visual image is obtained. In the scenario, South African actress Charlize Theron walks among a bunch of marble statues and female sculptures that bears golden candelabras at the Hall of Mirrors of Palace of Versailles. She grabs a garment hang in the air through a probably digitally generated dome and left the building ascending through the skylight. As the citation two paragraphs above, advertising message ‘‘says’’ the product, but ‘‘narrates’’ an idealization about strong and independent woman by use of interior space. In addition to these portrayals based on idealization of men and women’s roles in society,

age factor can also find spatial reflections in advertisements (‘‘Figure 3. and ‘‘Figure 4.’’).

Figure 3. (Left to Right), Spatial Portrayals which can be Associated with Men and Women’s Stereotypical Roles in Bulgari Extreme (2013) and Christian Dior J’adore (2016) Video Ads

Figure 4. (Left to Right), Spatial Portrayals which can be Associated with Different Age Groups in Gencturkcell (2016), Nike (2017) and Turkcell (2014) Video Advertisements

Ethnic Humor and Stereotyped Depiction of Spaces

Ethnic-based humor and burlesque comedy are as old as humor itself. It is known that ancient Athenians had been developed verbal humors about their neighbors Boeotians, Phrygians and Thracians [18]. The most prominent propagation area of ethnic humor is seen as internet and television at present day. The stereotypes which derived from this context are spreading to the world with both visual and audial elements [19].

The mass media benefits from visualizations which support humorous fictions, which can be easily understood by the audience (or can be learned via the context which they are included in), have based on mutual learning tendencies and stylistic knowledge of the society [20]. The animated sitcom created by Seth MacFarlane, Family Guy (1999-2017), is an epitomic production in respect of stereotypical contents. In the animation series, it is frequently taken advantage of the easily resolvable classifications and the basic templates of the common memory of the society in the transfer of cultural materials, which are regarded as “others”; the relevant stereotypes also reflect on the spatial elements and environmental design elements that feed the scenario.

In the first column on “Figure 5.” the house which is located in Quahog, a fictional city where the characters of animation series live, and in which the Griffin family (in the leading role of the animation series) lives is in sight. In the scenario, Stewie, the baby of the family, who develops new technologies, has invented a time machine that can make time travel to change plans in the past and experience alternative universes. In the episode of “Life of Brian” (2013), Stewie armed the Native Americans and changed the course of the time by turning back to the 17th century.

The second column depicts the same house in America in an alternative universe dominated by Native Americans. In the depiction, the Native American tent, is regarded as “others” and called the 'teepee', was conceived as an antithesis for the common house of the family; a humorous and atypical synthesis emerged in which the two structure types merged absurdly and the spatial background was formed through patterns far from the truth. In the episode entitled “Road to the Multiverse” (2009), the counterpart of the same house in a fictitious universe dominated by Japanese is depicted in a similar way as the previous example. In the resultant interpretation of the place, the spatial values have been reevaluated functionally with window and door arrangements called *"shoji"* consisting of carcasses and translucent paper made of wooden or bamboo in traditional Japanese architecture on vertical surfaces and floor cushions called *"tatami"* and *“zabuton”* which are used instead of existing furniture and composing floor surface.

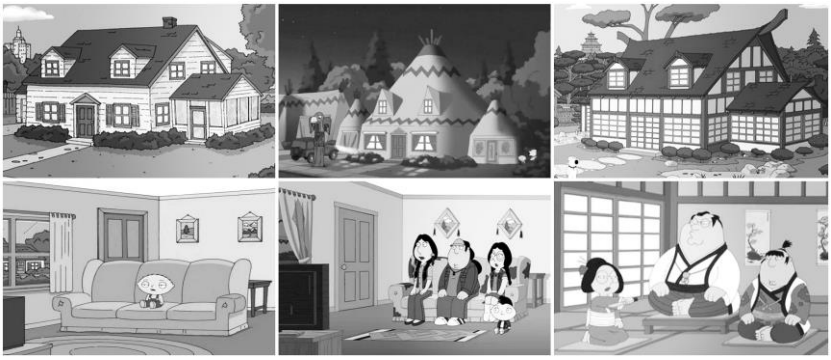

Figure 5. Spatial Stereotypes From ‘‘Family Guy’’ Sitcom Series (2009; 2013)

The usage of cultural stereotypes when portraying architectural or spatial elements in humorous media items can ensure the communication process in uncomplicated ways. On the samples above, several mnemonic items which furnishes both indoor and outdoor are projected to stimulate the simple categorization schemes of the viewers. Therefore, whole items can easily be distilled and separated under some terminological titles associated with a particular culture, such as *“dreamcatchers”*, *“totems”*, *“a tepee”*, *“ikebana”*, *“shoji”*, *“tatami”*, *“zabuton”*, etc.

Portrayals of Interior Elements in Printed Media: A Comparison between literal and stereotypical content

In contrast with the sample on the upper section, Roland Barthes (1915-1980), in the ‘‘the Cabinet of Signs’’ chapter of his ‘‘Empire of the Signs’’ book, approaches the Japanese design customs of house interiors based on detailed on-site observations and depicts them as ‘‘a caustic deprivation for the Westerner who is delighted with his/her armchair and bed.’’ Barthes states:

‘‘…yet I am never besieged by the horizon (and its whiff of dreams): no craving to swell the lungs, co puff up the chest to make sure of my ego, to constitute myself as the assimilating center of the infinite: brought to the evidence of an empty limit, I am limitless without the notion of grandeur, without a metaphysical reference…’’

In the literal portrayals of ideal Japanese house interior of Barthes’s book, the interior is a bit away from being labile and portable; space in corridor which is designed lacking of any furniture is laid out with sunlight, and the interiors indicate forlornness [21]. So much so that, if the subject of the space would be able to stand on the ceiling in spite of flooring, rarity of the apperceived items would not get changed [22]. The interior depiction above which is based on detailed observations and lyrical expressions cannot be seen as a stereotypical content. But yet, it doesn’t seem probable that designating standardizations for a particular society when it is taking into account that the changing cultural memory of the societies of today. In contrast with purified interior customs depicted above, technocultural interior spaces of today can turn into the users of its master; also give them numerous selection chances. This abundance is especially occurred by means of ‘‘individualization trend’’ [23] and digital-based art of today which has been shaped by the technological developments since 1970’s. For instance, the portrayed bedroom interior on ‘‘Figure 6.’’ is highly associated with today’s individualization trends. The photograph was cited from ‘‘My Room Project’’ [24], a book and international exhibition project created by photograph artist John Trackwray, in which stereotypical examples of bedrooms of young people from all over the world exist. According to the photograph, it is clearly seen that, effects of ‘‘technoculture’’ are explicit on interior items and personal appearance. Maybe in the near future, technocultural interior spaces, which provide much more individualizations for the user, will begin to be stereotypical contents of the future in spite of traditional stereotypes of today.

Figure 6. A Stereotypical Bedroom Photograph Influenced By ‘‘Kawaii’’ Trends, Tokyo / Japan (Thackwray, 2016)

CONCLUSIONS

Although a single spatial portrayal is very inadequate to collect all spatial values of a society which contains numerous individuals, the stereotypes associated with the design customs are frequently needed for expediting and strengthen the narrative in the mass media items. However, in some cases, it has been observed that the stereotypical content could be based on lack of knowledge.

In fictions which are directly or indirectly based on political competition or competence, it has been observed that revivalist architectural values and symbols which are evocative of power, menace or potency can be interpolated to the interiors.

It has been seen that plenty of formal values in the mass media items are characterized as easy-to-understand in short-cut ways in order to make a swift contact with the target group. This situation is more common in humorous items.

In humorous media items, information source can intentionally and exaggeratedly strengthen the stereotypical contents, by means of using the most recognizable cultural codes, both qualitatively and quantitatively.

In similar with the changeability of culture, the stereotypes and associated spatial contents can be in a state of flux. It is probable that the trends of today will be the stereotypes of the near future in spite of the stereotypical portrayals of design customs of today.

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REJECTING REVERSING ARCHITECTURE

DESIGN STRATEGIES & DECISIONS OF HOUSING INTERIOR DESIGN FOR SYRIAN REFUGEES

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ABSTRACT

In the beginning of the Syrian civil war in 2011, Syrian citizens, whose life is not under safe conditions, have started to migrate to neighbor countries. Turkey as a country sharing the 911 km borderline with Syria has let the Syrian families pass through in, and welcomed them as refugees by current migration policy. While 258.545 of them have been hosted in short-term sheltering areas, 2.834.441 refugees struggle to survive out of the camps. In time, they have settled in several cities in Turkey and Istanbul has become the popular one with the 438.861 refugees from Syria [1]. In terms of cultural, social and economic properties, Sultanbeyli district of Istanbul grabs the attentions of Syrian refugees, and they show a tendency to settle there for a long term living. In this context, the aim of this study is to define design strategies and decisions of interiors in terms of cultural specifications, spatial functions, privacy needs, and behavioral patterns of Syrian refugee families. Sultanbeyli district is the case of this study to provide a shelter as home in long term living period instead of short term sheltering solutions such as refugee camps, by suggesting the integration as a design strategy.

Key Words: Syrian Refugees, Life out of the Camps, Home, Integration, Sultanbeyli.

INTRODUCTION

Housing is one of the basic human needs and the right of housing is guaranteed by international conventions. International Covenant on Economic, Social and Cultural Rights, Article 11/1 [2] states: "Governments which are parties to this Convention ensure that they have an adequate standard of living for themselves and their families. This standard includes adequate nutrition, clothing, shelter, and continuous improvement of living conditions. Governments shall take appropriate measures to ensure the realization of this, recognizing that international co-operation based on their free will is essential".

In this context, the purpose of this study is to find a long-term solution to the problem of housing for Syrian refugees in Turkey. As a result of the literature review and field study conducted towards this aim, the Sultanbeyli district of Istanbul, which has been getting migration Syria since 2011, has been chosen as the pilot region of the study (Figure 1). In Sultanbeyli, Syrian refugees are consisting of lower-middle income group and family type of living style such as patriarchal family types. This type of family is suitable for the development of an integrated life model in the Sultanbeyli district, where the way of life is preferred due to their religious and sectarian affiliations. For this reason, this study is proposing to convert residential interiors of low-income Syrian refugees, who are mostly living as tenants, into the living habits of patriarchal family structures and culture to find out a long term solution instead of short or medium term solutions such as containers or camps for living in the case of Sultanbeyli, by suggesting social and cultural integration with the local community. Thus, the integration of the Syrian refugees with the local people living in Sultanbeyli aim to promote more humane conditions and to develop coexistence practices.

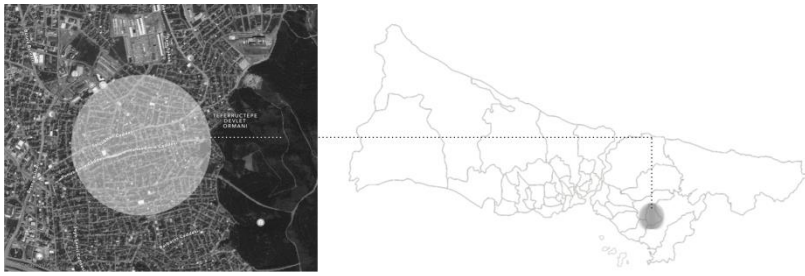


Figure 1. Sultanbeyli

In Sultanbeyli, a shanty town, the existing building stock consists mostly of apartments. In addition, Syrian refugees preferred apartments for their housing needs. So, the apartment type of housing is chosen as the sampling of this study. Thus, the interior design decisions, principles, and strategies are developed based on the Syrian refugees' spatial and cultural needs, privacy thresholds and behavioral patterns of their living styles with integrating of modern living conditions to solve housing problems of Syrian refugees with low and middle income groups, who would like to settle in Turkey for long-term periods.

Migration, Integration and Right of Housing

In Turkish Language Association, the term of migration is defined as; "The work of moving from one settlement to another one, moving and leaving the activity, individuals and communities from one country to another, for economic, social or political reasons" [3]. The concept of migration entitled "An Assessment of the Harmonization Process: Migration and Social

Acceptance", prepared by the Journal of Migration Researches (2015) claims: From the lands which people live on, from the social structures they are familiar with, the economic facilities they already have, in short, by moving away from many elements of social life, opening doors to other fields. In other words, migration is a dynamic that accompanies social, economic and cultural changes and reshapes the spatial distribution of the population [4]. A migrant is an individual who legally resides in a country where he or she is legally in possession of the law by entering into the other country, leaving the homeland mostly due to the economic reasons [5].

On the other hand, the refugee is defined as, “As a result of events occurring, it is the person who believes the homeland is not able to treat him neutrally in terms of race, identity, religion, political thought and social position. He/she decides to leave the homeland because of feeling under the pressure and deprived of confidence to his/her own country and seeks asylum in another country, then he/she is accepted as a refugee. Those who migrate for economic or tourist reasons are not considered refugees” [6].

Migration is an important process that takes place even in the last stage of urbanization, at a level where Turkey is reaching today and the rate exceeds 70%. Migration can be accompanied by serious socio-economic and cultural problems, increased regional disparities, and negative consequences that will undermine the separation between social groups, although it seems to be a consequence of adapting to socio-economic and cultural transformations in a society. The transformation of Turkey from a predominantly emigrant country to an immigrant country has let the involvement of many different disciplines in this context. As both returnees and new immigrants increase in number, immigration integration has become more prevalent for public opinion, planners and researchers [7].

In the context of the 2nd International Conference on Multidisciplinary Research & Practice held on December 24, 2015, the issue of refugees in Turkey was discussed in the article titled "Effect of Syrian Refugee Crisis on Turkey”. The main headings of the article published by Riddhi Chopra are the civil war in Syria, refugees, open door policy and its influences on Turkey. On the issue of housing, it is mentioned that at the beginning of the crisis refugees are mostly located in schools, sports halls, unused warehouses and factories, and isolated from local people. Besides, due to the insufficiency of the established refugee camping areas, it is claimed that millions of Syrian refugees reside in inhumane conditions in different cities and face with hostility by the host community. The first step to find a solution to this hostility is sociological and psychological integration [8].

The integration, which has been defined as a process of harmonization to the current environment or a situation [9], is determined as a design strategy to support refugees to let them more familiar to living environments, especially the apartment flats, and to make the adaptation process easier for them [9]. Integration is a crucial decision and an important step of this study to solve the housing problem for a long-term, -instead of short and medium-term solutions like containers or tent cities that detract refugees from real life and leave them live in ghetto areas- for the Syrian families to provide them with a safe living

conditions with the harmony of others, who are already living in the same neighborhood. Therefore the social discriminations as a result of ethnic, religious and sectarian differences that may arise in the future due to various reasons, will be prevented with the impacts of integration approach.

Lastly, housing is one of the most basic human needs. The most comprehensive regulation on the right of housing in international conventions is contained in article 11/1 of the ESCAR (Economic, Social and Cultural Rights), “States ensure that everyone should have adequate living standards for himself and his family, including adequate nutrition, clothing, and housing, and every each person have a right to sustain the development of his/her living conditions” [10].

In this context, it seems possible to receive the theoretical support that Abraham Maslow (1943) calls "the theory of needs”, concerning human psychology to correctly understand the need for the right for housing [11]. In this theory, an individual cannot pass to a higher level of necessity step without precisely meeting the requirements of a sequence. Maslow needs theory from bottom to top:

- Physiological requirements (such as breath, food, water etc.)
- Security requirements (property, family, etc.)
- Belonging, need for love (friendship, neighborhood, etc.)
- Health need (trust, respect for others)
- The need for self-fulfilment (lack of prejudice, virtue, problem solving etc.)

The basic requirements are from “Physiological needs” referring the highest level needs, to “Needs for Self-fulfillment”. The need for housing, covered by Maslow’s theory of needs, matches with this study in “security”, “belonging” “and “need for love” steps. While the need for security includes housing, the need for love is gaining significance in the concept of ‘home'. The house sets the boundaries of our living space and privacy must be provided at home. Privacy is one of the most basic human needs. In other terms, need for housing is possible with the creation of social, psychological and culturally supportive environments for human being.

Refugee Camps/Tent Cities vs. Home

The interview conducted by Ezgi Tuncer Gurkas, Pelin Tan and Fırat Genc state that the migration is one of the subjects to be considered on the issue of spatiality within the scope of the article entitled “Difficulty, Resistance, and Solidarity in Migration Spaces” published in Saha magazine in 2016 [12]. When the “space” is considered, the tent cities first come to discussion. The camps that have been established in an emergency seem to be a solution for a while, but it is stated that these closed areas, which are controlled by the permission of entrance and exit, have compelling conditions.

The everyday life, which is hanged up by the state of emergency, is still here, but it is built up around “temporality”. It is planned to meet all human needs in camping areas, but it is still not a "home". In these areas, immigrants who remain uncertain between “home” and “non-home”, hope that this situation will not be permanent and their suspended lives will return to “normal" conditions. However sometimes this situation becomes life’s itself, and the camp shows with its all reality.

It is not yet seen that families migrating from Syria and living in hard conditions in the cities are in association with the local people, establishing neighborhood or spatial partnership. On the other hand, the city is a public space that allows people to meet. Refugees from Syria who live outside the camps: Those have come to Istanbul Monitoring Platform has published an article titled “Ignored; “Refugees from Syria Living out of the Camps, Istanbul” [13] is an informative article about the general information about refugees coming to Turkey due to the insecure environment in Syria, and the living conditions in the camps and the life out of the refugee camps. As a result of investigations, refugees, who prefer not to go to the camps, have expressed the following concerns and thoughts as the main reasons for this situation:

- Physical conditions and safety: As it is stated, the camp areas are not in a capacity to meet the needs of numbers of refugees due to financial conditions, more than one family has to live in the same tent and the facts such as security except for basic human needs like food, water and clothing have not been solved in the camp area. When the impacts of the conditions are considered, one of the issues that should be emphasized is security in the context of the proposed project.

- Isolation and limitation of movement: The fact that the entrances and exits are kept under the control is a reactionary element for those living in the camp. These areas are the most obvious form of being under the control for the refugees.

- Discrimination based on ethnicity and religion: It has been determined that only Sunnis Muslims have been accepted into these areas and those groups such as Christian, Kurdish, Roman, Circassian, and Alevis have not been given the right to live in the camps due to negative discrimination, depicted in interviews with Syrian refugees living in camps.

- Gender discrimination and violence: The camp environment is vulnerable to sexual exploitation, harassment, rape and violence against women and girls, especially the single women refugees or female refugees with children are away from the idea of going to the camp [13].

For those who live out of the camps, refugees, who cannot get in the camping areas due to the negative impressions or the limited capacities of these areas, are trying to live with their limited facilities and non-regular humanitarian aid. The majority of refugees does not speak Turkish and do not know where to go in the face of adverse situations. The common problems of refugees facing varies according to the provinces and districts they live in. They do not have adequate accommodation, health, and nutrition possibilities, cultural incompatibility and children are not being able to continue their education and being exposed to social exclusion. There are not specific social support mechanisms for the refugees living out of the camps. The rapid increase in the number of refugees, who have recently arrived in the neighborhoods, has caused the rent explosion due to the increase in housing demand. Syrian refugees in Turkey are obliged to provide the residences by their own facilities. Most of them have to live in inadequate standards and under the week conditions because of their financial difficulties. Observations for the use of the right for housing during the study carried out by Refugees Platform from Syria to Istanbul, are:

- The general physical conditions of the houses are quite low. It is seen that refugees are staying in dwellings, rental rooms and damp homes similar to the garage entrance.
- Most of these houses do not have a heating system, and kitchens, bathrooms, and toilets are common in most buildings.
- With the increase in the number of refugees from Syria, the dissatisfaction of the residents of the neighborhood is also increasing.
- Many of women do not speak the language and cannot go out of the home for safety reasons because they do not familiar with the environment [13].

Although the home has been a topic of scientific interest for decades in several disciplines, the key question, "What makes a house a home? " has not yet been answered. It is widely acknowledged that the home is physically, psychologically, and socially constructed in both real and ideal forms. The home is characterized by the physical structure of a house, dwelling or residence where a person, family or household reside to achieve basic human needs, for instance, shelter, refuge, domesticity, comfort, self-identity, diversity and privacy. It is argued that a home is "a complex entity that is defined by cultural, socio-demographic, psychological and economic factors “. A prevailing approach has for long been to make a distinction between the house (or apartment) and home, where the house is considered a material construction, an object in a determined physical environment, and home as an emotional relation occurring in the interplay between the subject and the housing unit. By virtue of this perspective, the home is not as an entity but as something being made, something that has to be created continuously [14]. Further claims that the form of houses can vary tremendously and are shaped by a range of socio-cultural influences, including religion and customs. As well, the interior design strategies of housing the refugees will be giving importance to their culture and sociological structure.

Case Study on Sultanbeyli

This study focuses on the Syrian refugees living in Sultanbeyli in Istanbul because this district is quite suitable for the refugees, who have started to migrate to Sultanbeyli since 2011, related to the family types, living styles, religious and income profile with the local habitants of Sultanbeyli. In addition, it is also aimed to integrate these people with the locals in Sultanbeyli more appropriate and humanitarian way. It is to make a query about how to create long-term solutions for home interiors to make them more suitable for patriarchal family types of Syrian refugees with low income in Sultanbeyli district.

The project consists of a two-stage field study in general. The first study, entitled “The Meeting", consists of a preliminary interview, observation, and a field surveys. Various refugee families, from Syria, have had the chance to be observed in total.

The survey in the first phase covers two different families, El-Hussein and Al-Muhammad. Culture-dependent house utilization, privacy thresholds, behavioural patterns, spatial activity and space distinctions were observed. Then the draft questions and infrastructure for the second survey were established. In order to perceive the housing typology and related habits, it was asked to draw their old homes in Syria, where they had lived before coming to Sultanbeyli, with cognitive maps from refugees surveyed.

- **The first family: El-Hussein**

This family with a population of 11 people from Aleppo, Syria, has been living for two years in a 100 m^2 apartment, which has been converted into an apartment flat and previously used as a shop. None of the family members can read and write. For this reason, in order to learn their living conditions and to find out housing layouts in Syria, the drawing path was applied.

The results showed that the El Hussein family lived in a masonry house in Aleppo. The habits that they had, a low seating layout with a cushioned seating tradition, and their meals were taken in the living room, on the floor, not in the kitchen and on the table. Additionally, as a result of commune lifestyle of patriarchal families, it is preferred to have wide interior spaces and rooms, and these spaces should be separate into two parts, first is for female and the second for the male members of the family (Figure 2-3-4).

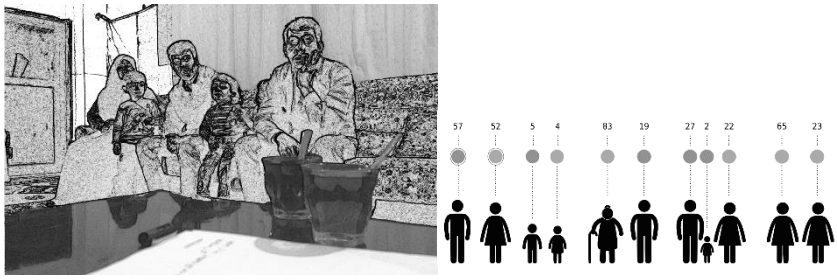


Figure 2. El Hussein Family

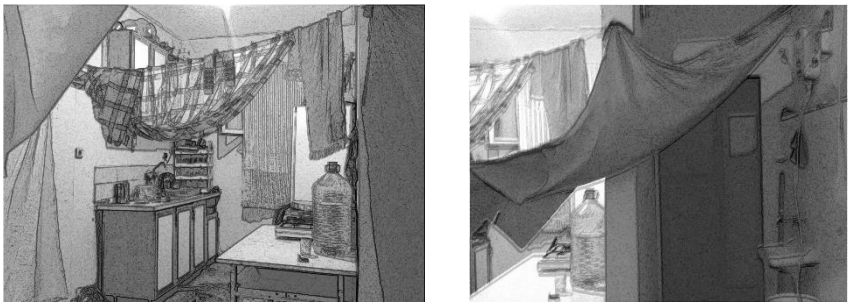


Figure 3. El Hussein Family Home in Sultanbeyli

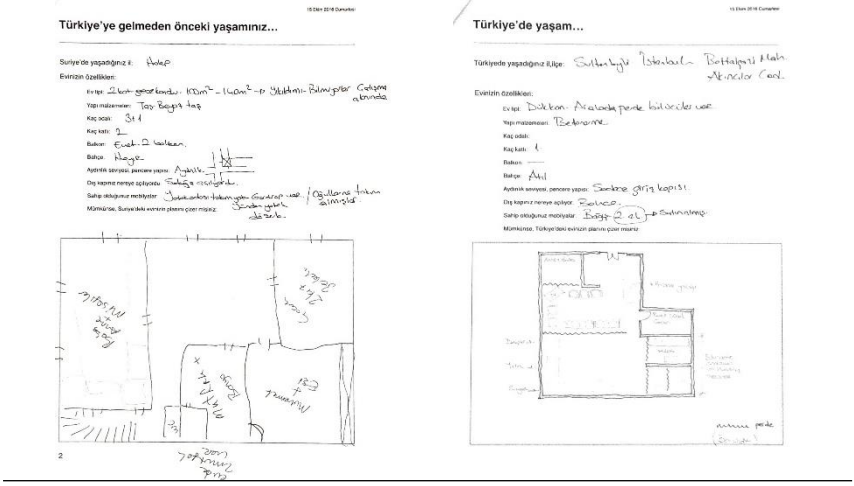


Figure 4. Survey Example Page Conducted on El Hussein Family

- **The second family: El-Muhammad**

The population of El Muhammed's family from Aleppo is 10 members. The family house, which they had previously been living in, was an apartment with two flats on each floor, and it was destroyed as a result of the bombing and the family immigrated to Turkey because of their children's safety (Figure 5).

The observations about the current house of Syrian family in Sultanbeyli are, the floor is full-covered with layers of carpet, the kitchen cabinets are turned into storage areas for large cookers -because of commune life, the cookers are as large as the family members-, all the furniture are bought with donation or second -hand methods. There is a private area for all the female members of the family for daily life and it is covered by curtains to make this area more

private. As well as the room for women, curtains are usually used to give the privacy to all interior spaces and these curtains are also working as flexible separations. Such that, it is again a piece of a curtain as a second layer of seclusion for doors. As it is mentioned on the first families' habits, the low-seating cultural behavior is the same. Although there are plenty of second-hand furniture, like sofas, in the house, the tradition of low- seating with cushions -*minder* is preferred again (Figure 6, 7).

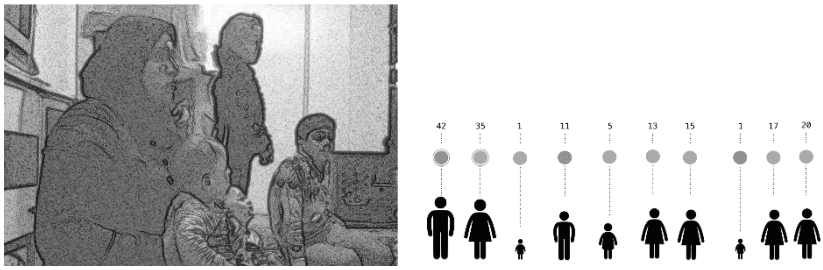


Figure 5. El Muhammed Family Hussein Family

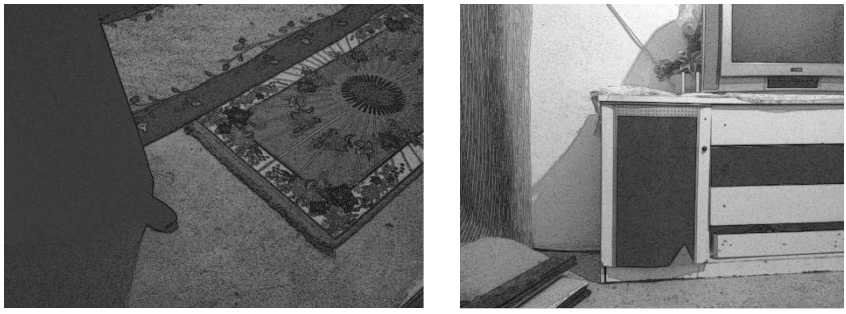


Figure 6. El Muhammed Family Home in Sultanbeyli

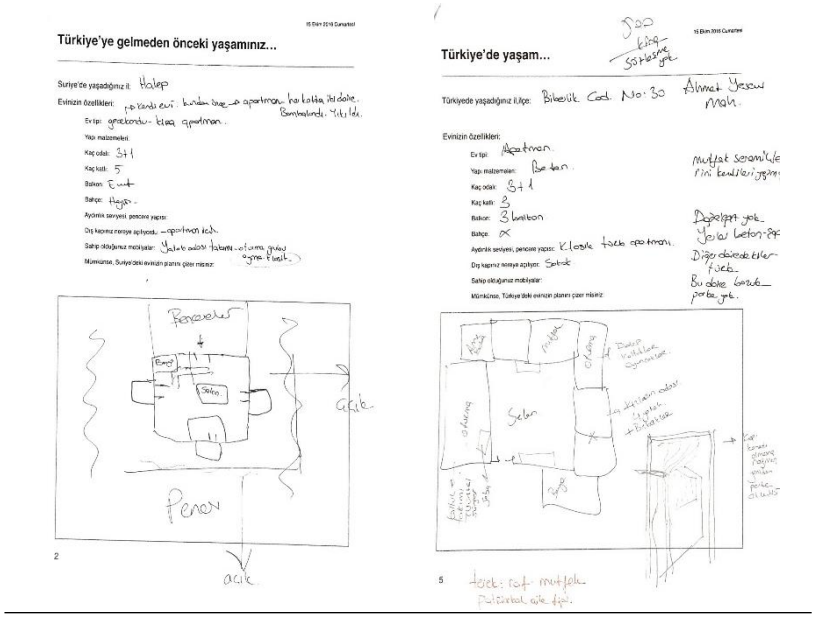


Figure 7. Survey Example Page Conducted on El Muhammed Family

As a result, the first design decisions that were made when the surveys was completed; The floor covered with carpets, the kitchens in which the terrine is to be available in the form of an open shelf in the kitchen, the storage space for the large pots, the curtains to be used for privacy and divisive functions, and the cushion-*minder* for the functioning of the cultural session (Figure 8).

Figure 8. Survey Results' Collage

The second survey, which was conducted as a result of the first survey and the simultaneous observations on the survey, included 5 families and 34 people in total (Figure 9). This study, which included 11 adult women, 7 adult men, 12 girls and 4 boys, included 67,64% female and 32,36 male. 100% of the families are tenants and average monthly rent is 440 TL. The average income of each family is calculated as 1480 liras, but when considering the number of individuals per a family, it is determined that an average of 6.8 people live in a family, and the per capita average income is seen as 152.9 TL.This study has resulted in the determination of the design criteria for the interior spaces of the Syrian refugees who have medium to low economic income. The results obtained from site studies are determined as “Design Strategies”.

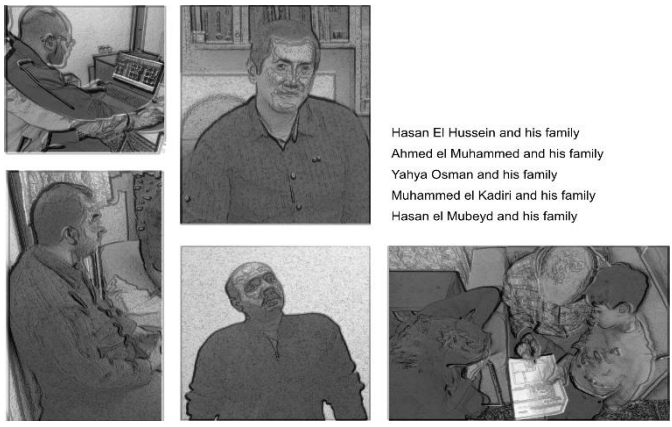


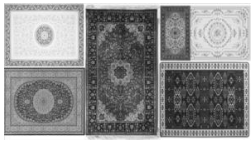
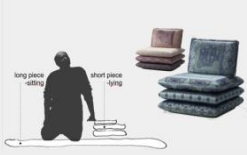
Figure 9. Fathers from Five Different Families

FINDINGS AND CONCLUSION

In this study, the surveys conducted on the five families focused on general personal questions, for instance, to understand the occupation or denomination of a person. Then, the questions asking about the family life goes with to learn the number of members and the income of the family. Then, the survey continuous with the questions about interior spaces of homes to catch more clues about culture, house typology, and related habits. For example, “Where do you prefer to have dinner?”, “Which room would you like to have larger?.etc. Then the multiple choice questions about carpet layout on the floor, cushion-*minder* depending on the culture and related behaviors,curtain providing the privacy and playing a role for dividing the spaces,and the kitchen and its qualities were asked.

Therefore, the final results show that the Design Strategies will be divided into nine basic parts. These are mainly, cultural codes, spatial activities, privacy thresholds, behavioral patterns, coming from the hot climate region and related culture, and patriarchal family needs. According to interior partitions and elements, the most important characteristics are given by the carpets, the cushion, and the curtains as separations (Table 1. Design Strategies).

• According to Cultural Codes 	-Patriarchy -Mass and crowded (commune) life
• According to the Spatial Activities 	-Separated male and female spaces -“Certain defined” spaces for women -Men have more flexible spaces -All the girls staying in a one,single room -At night the boys can sleep in the place they want freely -Kitchen is generally only used for cooking -Eating in living room -The guests' room is also the room where the guests sleep, and be hosted during daily life by householders -The entrance is a meeting place on its own -The bathroom is in the kitchen in traditional Syrian home
• According to Privacy and Thresholds 	-Women never show themselves to outsiders, especially men. -The door of the room where the women are located is absolutely closed and curtained -Changing the opening direction of the flats door for indoor coverage of the viewing angle -Girls must have curtains at the door of their room for privacy -Absolutely curtain at the door of the master bedroom -The preference for window glass to be frosted glass
• According to Behavioral Patterns 	-Women guests hosted by female, male guests by men householders -Boys have more flexibility in behavioral pattern in home -The guest is greeted by a man householder -No need to shake hands with women -Men are more talkative -Body position in low-seating -Touching feet constantly

• According to Hot Climate Culture 	-High ceiling preference -Wide central courtyard-entree preferred -Outside space transformed into an interior space -Water element usage in modern design approach in Syria
• According to Patriarchal Family Needs 	-The choice of spacious living areas -Choice of large eating areas -Choice of large number of rooms -Renovations in kitchen according to larger cookers then standarts
• According to Placement of Carpets 	-The carpets are definitely patterned -Covering the floors completely with carpet
• According to Cushion -*Minder* Usage / Low-Seating 	-Use of cushion on entry -Use of a cushion in the living room -Use of cushions for eating function as seating unit -Cushions are definitely patterned
• According to Preference of Curtain 	-Curtains play a divisive role -Using curtain to give the privacy for the determined rooms (masters' bedroom, girls' bedroom etc.) -Use of patterned curtains on windows -Color combinations in curtains and cushions

To sum up, as a result of these field studies and observations conducted in Sultanbeyli proved that a design should primarily serve the needs of the user. Therefore, the profile of users becomes a crucial point to understand their family typology, culture, and personal requirements about an interior environment except for the basic human needs. Since the basic sheltering needs are provided in refugee camps, most of the refugees prefer to live out of there. For the Syrians living in the cities, it is aimed to provide them with a "home", where the emotional relation occurs. Therefore, the constituents, which make o house a home, like cultural, socio-demographic, psychological and economic factors of refugees were tried to be investigated.

The results are, mainly centered by patriarchy and privacy, because these two have an impact on the place-making that is one of the basic steps of interior design. First of all, they live in very large numbers of members, and it is easy to say that it is important to have larger interior spaces like eating area and so on. That affects the kitchen storage elements because of large cookers. It is claimed by the Syrian female refugees that, the storage has a fixed measurement and their cookers should always be on the floor or on the top of the storage because it is very large to cram them in. Additionally, not having enough area for eating in the kitchen lets them eat in the living room by using cushions-minder. It may be argued that the low seating habit is related also with the patriarchy. Then, using cushions for the seating function brings the having full of carpets on the floor, because the floors itself becomes as a seating layer and it should be fully covered by carpets.

Another effect on the interior space layout is privacy, which has both impacts on behavioral patterns, spatial activities, usage preference of curtains and thresholds formed by genders. It is possible to face with a certain distinction between female and male members of a family. While men have more flexibility in spaces, women stay in one separate room as confidential members of the family, especially when there are guests in the home. For the privacy, the guest is greeted by a man householder, and women do not shake the hands of male guests. If the guests are male, female members of the family never show themselves to outsiders. Besides, they prefer to change the opening direction of main doors of the flat to make it not to cover the view of interior space directly. While women guests are hosted by the female, the male guests stay with men householders. Therefore, to achieve more privacy, the curtain is frequently used as a secondary element for doors. For instance, all the female must stay in one single room and have curtains on the door of the room, and the door of the master bedroom should be covered by a curtain as well. The curtain also plays a role to divide the interior spaces. It was the remarkable element of refugee homes, giving a strong character to the interiors of refugee homes.

Therefore, it is valid to mention that this study sets a socio- cultural goal to make the adaptation process of refugees easier to their living environments – especially apartment flats- through which the design strategy of *"integration"*.

As a result of the research and the analysis of the gathered data, the design decisions will be developed according to modern living conditions blending with the behavioral, social and spatial patterns such as separation of male versus female domains, patriarchal family types, privacy and status thresholds between / in the family members, multi-functionality, use of space and so on.

Shortly to say that this study will address to develop design strategies and decisions of housing interiors in terms of cultural specifications, spatial functions, privacy needs, and behavioral patterns for Syrian refugee families with low income.

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REJECTING REVERSING ARCHITECTURE

SPATIAL EVALUATION OF HOSPITAL POLICLINIC WAITING AREAS

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ABSTRACT

The most advanced and complex examples of health care buildings are hospitals. Hospitals treat patients and they are therapeutic and preventive organizations for the purpose of providing better life quality to people by preventing diseases. Hospital outpatient clinics, namely as policlinics, are the areas where daily patients visit the doctors for inspection. The daily flow of patients is most intense in these areas. In policlinics, patients and their relatives need spaces where they can rest while waiting for their treatment and where patient concentration can be met. Policlinic waiting areas define the circulation system of patient areas linked to other hospital spaces. This paper focuses on the outpatient clinics of the hospital where the daily patient density is high. This study aims to examine the effect of the circulation system on the spatial quality of the policlinic waiting area inside hospitals with various sizes. In the process of the study, the authors explored six kinds of policlinic waiting area planning (PWAP) depending on its location in circulation. These types are circulation end single sided niche sitting, circulation end double sided niche sitting, on circulation single sided sitting, on circulation double sided sitting, on-circulation single sided niche sitting, on-circulation double sided niche sitting. Six case studies were done on six different public hospitals, which have each kind of PWAP types mentioned above: Haydarpaşa Numune Education and Research Hospital, Şişli Hamidiye Etfâl Education and Research Hospital, Istinye State Hospital, Bezmi Alem Vakıf University Medical Faculty Hospital, İstanbul University Cerrahpaşa Medical Faculty Hospital and Istanbul University Istanbul Medical Faculty Hospital. All these PWAP's were evaluated due to their pre-defined spatial, operational, physical and psychological characteristics. These characteristics were scored according to four types of defined design criteria as standart, positive contribution, non-standard and negative effect. In order to be objective in scoring operational and physical characteristics of the PWAPs, they were evaluated within the framework of the standards developed by the International Standard Institute (ISO) and the National Institute of Standards (TSE) as well as literature in architecture. Findings indicate that single side niche and on-circulation type of waiting area are the best for PWAP in terms of patient comfort.

Key Words: Policlinic Waiting Areas, Spatial Planning, Design Criteria.

INTRODUCTION

Akıncıtürk (1985) explains that the term "hospital" has been applied to various institutions for centuries, and the different meanings and nomenclatures are given by many people are as follows:

- A shelter and charity for the poor or needy elderly,
- A charity for young people's care and education,
- A place of rest, bed and education,
- A university hall in the sense of 'Hostel',
- An organization for patients and health care providers.

Today's hospitals are shaped by the needs of the society and not only reflects its behavior, beliefs and values but also the economy at the same time and it is a fact that scientific advancement has made it possible to specialize and establish advanced technology in contemporary hospital spaces and that the institutional form of this service is the hospital (Akıncitürk, 1985). Mutlu (1973) defines hospitals as institutions that treat diseases, prevent the contagion of infectious diseases, take measures to protect community health, conduct scientific researches to combat diseases, and raise doctors and nurses by taking the health staff training of hospitals into consideration.

Aydın, D. (2009) defines hospitals as 'complex functional buildings' in terms of spatial organization. Factors that cause complexity in hospitals are; the number of users, the different qualities of technical equipment, the functions of the departments, the flow of the users and the materials. According to Aydın, D. (2009), the organization of hospitals and the quality of the equipment are important in terms of functionality, business efficiency and user satisfaction. Hospitals are grouped in three groups according to their service type: General Hospitals, Special Branch Hospitals (Eye, Oncology, Child, Women-Birth, Mental and Nervous Hospitals etc.) and Training & Research Hospitals. All these hospitals have policlinic departments for outpatients with waiting areas, which are important zones in hospital design. This paper aims to examine the effect of policlinic waiting area planning on spatial quality of these areas in public hospitals.

Policlinics and Waiting Areas

The most important units of hospitals are policlinics. Policlinics are the health care departments of diagnosis and treatment of diseases of external patients since 19th century. Clinical trials have begun in antiquity, but according to Türe, H., (1985), outpatient clinics occurred only in the 19th century, when the real hospitals emerged. Firstly, Prof. Junkers' systemic clinic and in this period the academicians were encouraged to take their students to special hospitals for the purpose of learning the inspections and treatments of foreign patients in practice (Türe, H., 1985). As a result of increased patient density, the first university hospitals were established in England. Prof. H.C. Vines has created a separate division within the hospital independent from internal patient departments. This department constituted the first policlinics as a diagnostic and treatment center. This new section was called 'Polyclinic' in 1871 at the University of Vienna (Türe, H., 1985). As a result of increasing patient density in the hospital polyclinics that developed in the 19th century, we encountered the first waiting area examples again in 1900 at the Bağdat Municipal Hospital

floor plans.. Patient waiting areas, which were designed as 'waiting rooms' until the last quarter of the 20th century, have been transformed from an independent place to the areas within the outpatient clinic. In policlinic areas, relaxation needs for patients and their relatives' relaxation are met. In case study hospitals, it has been observed that different types of PWAP are formed on the circulation area in order to meet the waiting area requirement, but they are generally designed by ignoring patient demands. This study is important to understand the effect of spatial configuration in terms of its performance and give some clues for further hospital designers by adding a planning criteria in hospital planning literature.

Methodology

In the study, the multi-case study method was used: pilot study and case study. According to Yin, R., (1984), Field work is the method of research used where there is more than one source of evidence and data. Itallows the research to be carried out within its natural environment, the situation and the environment are not confined to precise lines, and a better study can be obtained because multiple case studies offer more than one proof. With the selected multi-case study as method, it has been useful in directing the case study obtained in the pilot case study.

Patient interviews were conducted during the pilot study, and design evaluation criteria were determined as a result of personal observations and interviews. All these data served as a basis for final case study. Case study was made in six different public hospitals:

- Haydarpaşa Numune Education and Research Hospital,
- Şişli Hamidiye Etfâl Education and Research Hospital,
- Istinye State Hospital,
- Bezmi Alem Vakıf University Medical Faculty Hospital,
- İstanbul University Cerrahpaşa Medical Faculty Hospital,
- Istanbul University Istanbul Medical Faculty Hospital.

The evaluation method consists of spatial analyzes and observations. Analysis is based on the following main headings:

1. Spatial Factors

1.1. Dimension of Space

1.2. Flexibility

1.3. Accessibility

1.4. Wayfinding

1.5. Disabled Access

2. Density as Operational Factor

3. Physical Factors

3.1. Physical Environment Conditions

3.2. Security

4. Physcological Factors

Each of the above factors were scored according to the Turkish (TSE) and international (ISO) standards by observation and multiple measurements on site. All these factors have been scored relatively to the optimum conditions or values defined in these standards as follows:

- If the case is in acceptable limits, it is labeled as “Standard”: +1
- If the case is inside or outside the acceptable limits and gives an additional positive effect, it is labeled as “Positive contribution”: +2
- If the case is not inside the acceptable standards, it is labeled as “Non-standard”: -1
- If the case is inside or outside the acceptable limits and gives an additional impairment, it is labeled as “Negative effect”: -2

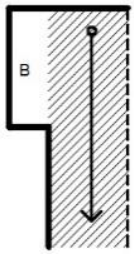
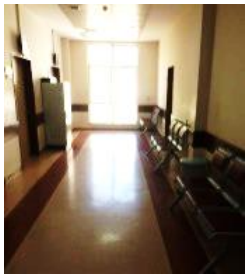
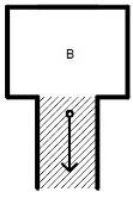
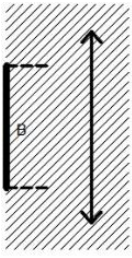
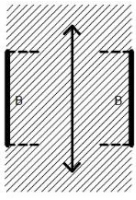
Scores			
Standard	Positive contribution	Negative effect	Non-standard.
+1	+2	-2	-1

Table 1: Scoring System

Case Study

In the field study of the six hospitals, the examined hospitals were classified into 3 types, according to the placement of waiting area relative to the circulation zone:
1- Located at the end of circulation,
2- On-circulation,
3- Inside niche on circulation.
According to the settlement type, each type is grouped into 2 different settlements within itself:
A) Single sided,
B) Double sided.

Policlinic waiting area planning is classified accoring to this theoritical background and six types of waiting area planning were generated accordingly; Type 1A, Type 1B, Type 2A, Type 2B, Type 3A and Type 3B (Figure 1).

Type Number	Type Name	Type Schema	The Picture of Hospital Policlinic Example	Hospital Policlinic Example
1 A	Circulation end single sided niche sitting			Haydarpaşa Numune Education and Research Hospital
1 B	Corridor end double sided niche sitting			Istanbul University Istanbul Medical Faculty Hospital
2 A	On-circulation single sided sitting			Bezm-i Alem Vakıf University Medical Faculty Hospital
2 B	On-circulation double sided sitting			Şişli Hamidiye Etfâl Education and Research Hospital

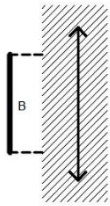
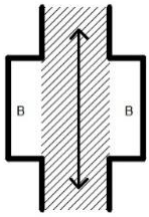
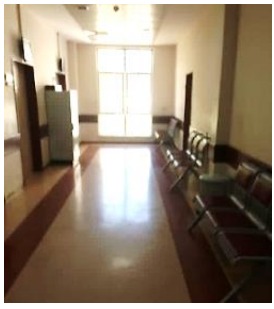
3 A	**On-circulation single sided niche sitting**			İstanbul University Cerrahpaşa Medical Faculty Hospital
3 B	**On-circulation double sided niche sitting**			İstinye State Hospital

Figure 1. Policlinic Waiting Area Types

Results

Haydarpaşa Numune Training and Research Hospital Polyclinic Main Waiting Area is located at the end of clinic ciculation zone on one side of the corridor as a niche (*Type 1A: Circulation end single sided niche sitting*) (Figure 2).



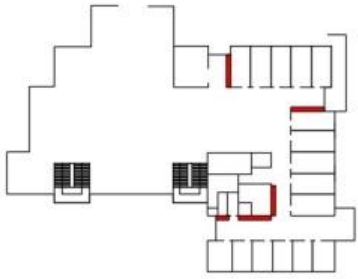


Figure 2. Haydarpaşa Numune Education and Research Hospital Waiting Area view and Plan. (Thick lines indicate the location of policlinic waiting area on the hospital plan). *Photo and drawing by, M. Fatih Çetintaş*

Istanbul University Medical Faculty Hospital Main Waiting Area is located at the end of clinic circulation zone. It defines a private space with various number of seats on three sides of waiting room (*Type 1B: Circulation end double sided niche sitting*) (Figure 3).

Figure 3. Istanbul University Istanbul Medical Faculty Hospital Waiting Area view and plan. (Thick lines indicate the location of policlinic waiting area on the hospital plan). *Photo and drawing by, M. Fatih Çetintaş*

Bezm-i Alem Vakıf University Medical Faculty Hospital Policilinc waiting area is located on one side of circulation and creates a single sided sitting zone (*Type 2A: On-circulation single sided sitting*) (Figure 4).

Figure 4. Bezm-i Alem Vakıf University Medical Faculty Waiting Area view and plan. (Thick lines indicate the location of policlinic waiting area on the hospital plan). *Photo and drawing by, M. Fatih Çetintaş*

Şişli Hamidiye Etfal Education and Research Hospital Policilinic waiting areas are located on the circulation zone on double side of corridors. Patients trespass this zone to walk from one side to another side of the corridor (*Type 2B: On-circulation double sided sitting*) (Figure 5).

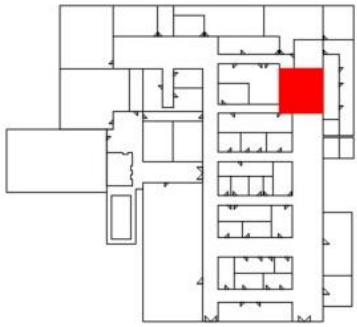


Figure 5. Şişli Hamidiye Etfal Education and Research Hospital Waiting Area view and plan. (Thick lines indicate the location of policlinic waiting area on the hospital plan). *Photo and drawing by, M. Fatih Çetintaş*

Istanbul University Cerrahpaşa Medical Faculty Hospital Policlinic Waiting Area is located on one side of main corridor in niches. These niches are next to both interior walls of doctor rooms and exterior wall windows (*Type 3A: On-circulation single sided niche sitting*) (Figure 6).

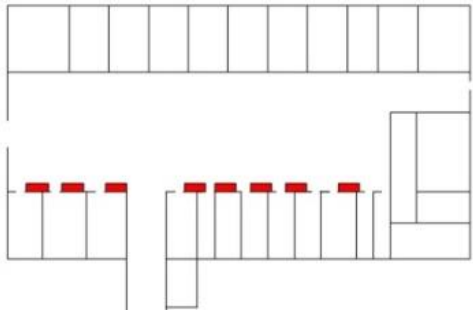


Figure 6. Istanbul University Cerrahpaşa Medical Faculty Hospital Waiting Area view and plan. (Thick lines indicate the location of policlinic waiting area on the hospital plan). *Photo and drawing by, M. Fatih Çetintaş*

İstinye State Hospital Policlinic Waiting Area is located on the corridors of hospital clinic in niches on both side. The niches were planned on the exterior walls of policlinic doctor and inspection rooms (*Type 3B: On-circulation double sided niche sitting*) (Figure 7).

Figure 7. Istinye State Hospital Hospital Waiting Area view and plan. (Thick lines indicate the location of policlinic waiting area on the hospital plan). *Photo and drawing by, M. Fatih Çetintaş*

Various measurements has been conducted in hospital policilinic waiting areas. Humidity values are within 30% to 60% of the ideal humidity range in hospitals, and if the room temperature is above 20°C, this situation has been evaluated as negative because it can increase bacteria formation in the hospital environment. Noise value is between 35 and 45 dB. It is above the standard value and gives a negative effect on policlinic acoustic comfort. The illumination value has been found to be below 200 lx which is inadequate for lighting. Since the spaces are painted with light colors, this is interpreted as positive. In hospitals, there were not any situations that would have a negative impact on the disabled (no elevator, elevation differences, no ramp, etc.). Half of the hospitals have a risk of slipping on ground. The door-to-door dimensions in hospitals were close to the ideal - except for two hospitals. Floor heights and equipment dimensions are ideal. When the number of patients per capita in hospitals are compared to the waiting area, it has been seen that the hospitals are intensive. Policlinic and waiting areas were found to have direct access by patients and access times of less than one minute. It has been experienced that patients do not have difficulty in wayfinding. It has been seen that hospitals are not suitable for spatial growth (Figure 8).

Haydarpaşa Numune Education and Research Hospital had the highest score with 21 points in the result of the evaluation and İstinye State Hospital had the lowest score with 0 point (Figure 9).

Benchmarks/Hospital Name	Conditions/Hospital Name			Şişli Hamidiye Etfâl Education and Research Hospital	Istinye State Hospital	Haydarpaşa Numune Education and Research Hospital	Bezmi Alem Vakıf University Medical Faculty Hospital	Istanbul University Istanbul Medical Faculty Hospital	İstanbul University Cerrahpaşa Medical Faculty Hospital
Physical Conditions	Humidity			45%	60%	45%	50%	40%	35%
	Temperature			28 C	32 C	28 C	32 C	24 C	23 C
	Ventilation		Natural Ventilation	X	X	Natural	Natural	Natural	Natural
			Artificial Ventilation	Artificial	Artificial	Artificial	X	X	X
	Noise			78 DB.	62 DB.	69 DB.	77 DB.	69 DB.	70 DB.
	Light		Natural light	Not-Available	Not-Available	Available	Available	Available	Available
			Artificial light	54 LX	(60 LX.)	(66 LX.)	(62 LX.)	(47 LX.)	(66 LX.)
Psychological Impa	Tecnology			Not-Available	Not-Available	Not-Available	Not-Available	Not-Available	Not-Available
	Color choice			KREM	BEJ	BEJ	LİLA	BEJ	KREM
	Equipment choice			Leather chair	İron chair	Leather iron	Leather chair	Wood chair	Cloth Chair
Wayfinding	General Access	Seeing	Visiting Doctor's Room from Policlinic Waiting Areas	Not-Seeing	Not-Seeing	Seeing	Not-Seeing	Not-Seeing	Not-Seeing
			Visiting the Registration Bank from the Policlinic Waiting Areas	Seeing	Seeing	Seeing	Seeing	Not-Seeing	Seeing
		Time for transportation to policlinics		32 SN.	38 SN.	58 SN.	12 SN.	14 SN.	28 SN.
		Rotation Numbers When Accessing Diagnostic Units		1	1	1	0	0	1
		Number of returns to policlinics		1	1	1	2	1	1
		Circulation Type	Elevator	10 person	16 person	4 X 12 person	Not-Available	Not-Available	Not-Available
			Stairs	1 (150 X 15 CM)	Not-Available	2 X 2.15 X 0.15 M.	1 X 1.50 X 0.15	1 X 1.20 X 14.50 M.	Not-Available
	Access to Waiting Areas			0	0	First floor	0	0	0
	Access to Polyclinics		Access to Patient Registration Banks	0	0	First floor	0	0	0
			Access to Doctor Rooms	1	1	First floor	1	1	1
Flexibility	Related Technological Development Growth			Not-Available	Not-Available	Available	Available	Available	Available
	Spatial Growth		Vertical	Available	X	X	Available	X	Available
			Horizontal	x	x	x	x	x	x
Density/Capacity	Doctor Number			5	2	2	Not-Available	2	6
	Number of Daily Patients			45	24	12	Not-Available	8	40
Space Dimesions	Window Sizes			YOK	1.75 X 2.65	1.75 X 2.65	2.85 X 2.30 M.	2 X 1.20 X 1.50 M.	1.50 X 180
	Floor Height			3.30 M.	3.20 M.	3 M.	3 M.	2.60 M.	3.20 M.
	Door Dimensions			NET 90 CM.	75 CM.	1.10 M.	1 M.	90 CM.	0.90 CM.
	Circulation Area Dimensions			5.50 M.	2.95 M. (65-165-65)	3.20 M.	10 M.	3 M.	5.80 M.
	Equipment Dimensions			55 X 45	45 X 45 CM.	45 X 45	45 X 50 CM.	40 X 35	45 X 45 CM.
	Waiting Area Dimensions			40 CM	65-165-65 CM.	0	2.10 M.	0.50-2-0.50	5.80 M.
Security	Slip / Fall			Available	Available	Not-Available	Available	Not-Available	Not-Available
Disabled People	Differences in slope			Not-Available	Not-Available	Not-Available	Not-Available	Not-Available	Not-Available
	Ramp			Flat foot	Flat foot	Available	Available	Not-Available	Not-Available
	Elevator			Available	Available	Available	Not-Available	Not-Available	Not-Available
	Sensible Surface			Not-Available	Available	Available	Not-Available	Not-Available	Not-Available

Figure 8. Measurement and Observation Results

Benchmarks/Hospital Name	Conditions/Hospital Name			Şişli Hamidiye Etfâl Education and Research Hospital	Istinye State Hospital	Haydarpaşa Numune Education and Research Hospital	Bezmi Alem Vakıf University Medical Faculty Hospital	Istanbul University Istanbul Medical Faculty Hospital	İstanbul University Cerrahpaşa Medical Faculty Hospital
Physical Conditions	Humidity			2	2	2	2	2	2
	Temperature			-2	-2	-2	-2	-2	1
	Ventilation		Natural Ventilation	-1	-1	-1	1	2	2
			Artificial Ventilation	1	-2	1	1	-2	-2
	Noise			-2	-2	-2	-2	-2	-2
	Light		Natural light	-1	-1	1	1	1	1
			Artificial light	-2	-2	-2	-2	-2	-2
Psychological In	Tecnology			-1	-1	-1	-1	-1	-1
	Color choice			1	1	1	1	1	1
	Equipment choice			1	-1	-1	1	-1	-1
Wayfinding	General Access	Seeing	Visiting Doctor's Room from Policlinic Waiting Areas	-2	-2	2	-2	-2	-2
			Visiting the Registration Bank from the Policlinic	2	2	2	2	-2	2
		Time for transportation to policlinics		1	1	1	1	1	1
		Rotation Numbers When Accessing Diagnostic Units		1	1	1	1	1	1
		Number of returns to policlinics		1	1	1	1	1	1
		Circulation Type	Elevator	1	1	1	1	1	1
			Stairs	1	2	2	2	2	1
	Access to Waiting Areas			1	1	1	1	1	1
	Access to Polyclinics		Access to Patient Registration	1	1	1	1	1	1
			Access to Doctor Rooms	1	1	1	1	1	1
Flexibility	Related Technological Development Growth			-1	-1	1	1	1	1
	Spatial Growth		Vertical	1	-1	-1	1	-1	-1
			Horizontal	-1	-1	-1	-1	-1	-1
Density/Capacity	Doctor Number			-1	-1	2	-1	-1	2
	Number of Daily Patients			-1	-1	2	-1	-1	2
Space Dimesions	Window Sizes			-1	-1	-1	-1	-1	-1
	Floor Height			1	1	1	-1	-1	1
	Door Dimensions			-1	-1	1	-1	-1	-1
	Circulation Area Dimensions			2	2	2	2	2	2
	Equipment Dimensions			-1	-1	-1	-1	-1	-1
	Waiting Area Dimensions			2	2	2	2	2	2
Security	Slip / Fall			2	-1	1	-1	1	1
Disabled People	Differences in slope			1	1	1	1	1	1
	Ramp			1	1	1	1	1	1
	Elevator			1	1	1	1	1	1
	Sensible Surface			-1	1	1	-1	-1	-1
Scoring	must be			36-72	36-72	36-72	36-72	36-72	36-72
	one			7	0	21	9	1	15

Figure 9. Scoring Results for Six Hospital Policlinic Waiting Area

Among the examined hospitals, İstinye State Hospital takes the least score according to ventilation. Because the facility has no natural or artificial ventilation utility. Istanbul University Istanbul Medical Faculty Hospital has optimum temperature value of 20°C. Hospitals have open plan and have not any problem for accessibility. Figure 10 indicates the approximate number of patients that one doctor examines in one hour. Relatively, as the number of patient per doctor increases, the polyclinic waiting area density increases and this situation decreases comfort of patients. Technological appliances and furniture for use inside waiting areas ensure the comfort of patients. Due to the lack of these equipment, none of the hospitals can score optimum values (for ex. Chairs) for patients.

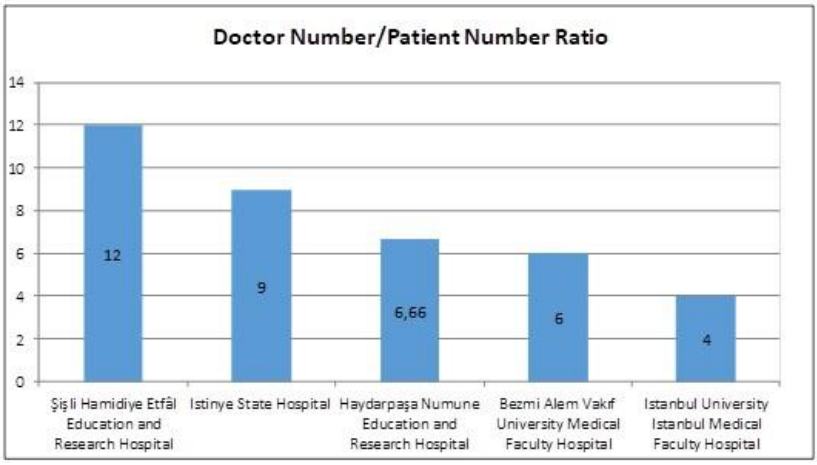


Figure 10. Doctor Number/Patient Number Ratio in Hospitals

According to the results, it has been observed that the PWAP type which is as the end of circulation or corridors give the best score in terms of planning (Types 1A and 1B). One reason of this situation may be that it does not interrupt the pedestrian flow and avoid possible congestion. To follow the inspection sequence patients should be able to see the appointment screen while sitting in the waiting area. This is an optimization problem between creating a free zone for circulation and have an eye contact with screen and reception desk. Pedestrian flow is not interrupted with niche settlements and waiting areas do not create an obstacle for patients (Type 3A and 3B). This group is the second best type in waiting area planning due to the scores that they have received (Figure 11).

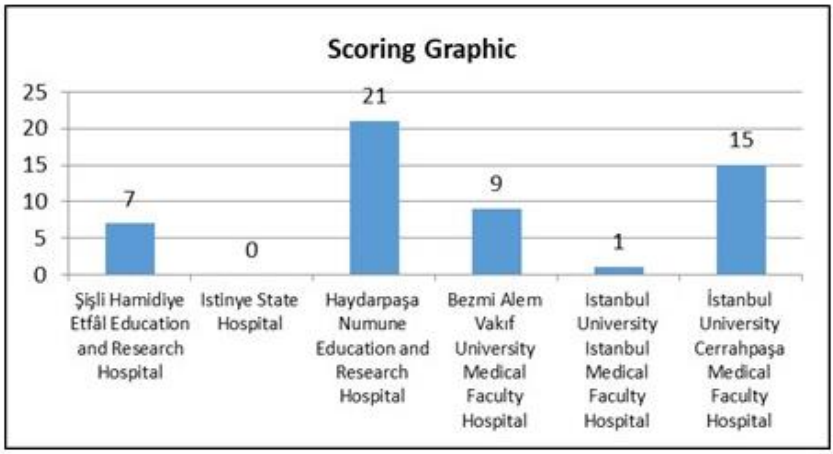


Figure 11. Scoring Graphic

Haydarpaşa Numune Hospital policlinic has been renovated in recent years. This renovation process can be interpreted as positive because of taking the highest score in our evaluation process. Although the policlinic of the Istinye State Hospital was designed as a dispensary in 1948 and have been constantly refurbished with additions, the data obtained in this hospital are insufficient and worst in terms of an ideal PWAP. This hospital is unable to respond to today's contemporary patient needs. Istanbul University Cerrahpaşa Medical Faculty Hospital surgery clinic is considered as the closest acceptable place to ideal. Although surgical outpatient clinics are very old and neglected, they have a wide range of adequate facilities as well as a large number of standard equipment that should be in a hospital polyclinic.

When we look at the waiting area per capita, we observe that the minimum values are 2.2 m^2/ person in Şişli Etfal and Bezm-i Alem Hospitals. These hospitals are at the third and fourth rank in total scoring. They both have on-circulation sitting area types. We may conclude that sitting area on the corridor decrease the area for patients, increases density and chaos in policlinic areas. It also lowers waiting area performance compared with waiting area planning at corridor ends. Istanbul University Medical Faculty Hospital and Istanbul University Cerrahpaşa Medical Faculty have the highest scores of 10.5 and 14.6 m^2/ person respectively. Both hospitals have waiting areas in niches on the corridor. So we may say that being on a corridor inside the niche decreases crowd and chaos in policlinic area. When compared to each other no standard is recognized in PWAP. These values also tell us that the hospitals do not include waiting areas in the project design phase and that the waiting area needs to be met in different types of arrangements, but this also results inadequate spaces (Figure 12).

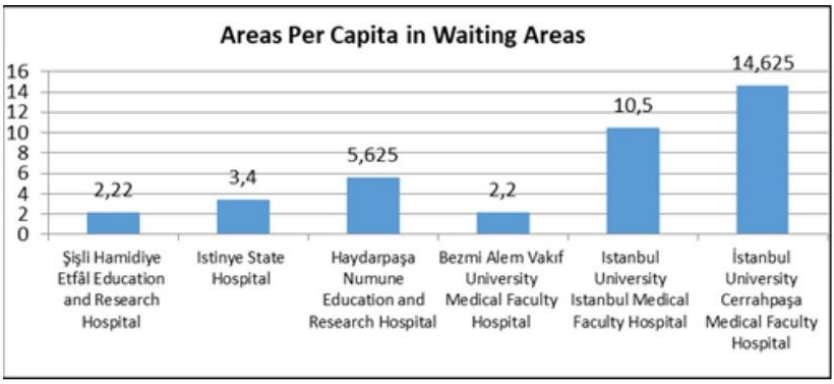


Figure 12. Areas Per Capita in Waiting Areas

CONCLUSION

Policlinic waiting areas are places for the patients and their relatives to rest while waiting for the clinic inspection on line. Generally architects and organization planners ignore the importance of clinic waiting areas. Because the personal observations show that, these areas are attached to planning to other spaces randomly or by infilling void areas on inside hospital plan. This situation disintegrates policlinic-waiting areas from the other parts of the hospital and creates spatial, organizational, physical and psychological discomfort in hospital use for patients, doctors, nurses and other available staff. This work gave us a chance to investigate this kind of inconvenient situations in waiting areas due to the change in plan layouts. Because this paper addresses to architects and organization planners who are in search for criteria on a better working hospital design. The result of this study may give clues for professional planners in terms of architectural context.

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PART 3

■

■

TECHNOLOGY

■

MATERIAL

■

SUSTAINABILITY

■

■

■

LIVENARCH
livable environments & architecture
REJECTING REVERSING ARCHITECTURE


LIVENARCH
livable environments & architecture
REJECTING
REVERSING
ARCHITECTURE

GEOMETRIC PARAMETERS AFFECTING ACOUSTICAL PERFORMANCE AND EXAMINATION OF DIFFERENT PLAN SHAPED HALLS

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ABSTRACT

One of structures of emerging with reasons that be like exhibiting a performance, coming together and sharing is hall that is speech purpose. Since it started to be used, have reached different extent with development of technology, revealing and increasing of different speciality area. The comfort conditions are important for exhibiting performance of performer/speaker and watching/listening/understanding performance of listener without extra effort in speech purposed halls, which can be arranged as theatres, conference halls, offices, meeting halls, restaurants, small and big classes, amphitheatres, multipurpose halls etc. In this regard of improving physical, visual, audial comfort conditions are necessary for providing speech intelligibility and concentration. In this paper, geometrical parameters such as sight lines, floor slope, the rule of 140, maximum length-volume-average height of hall, number of seats, volume and area per seat, seating layout, dimensions of seats, gangways, shapes of ceiling and side wall, the dimensions of stage, the materials of surfaces in accordance with target reverberation time are examined thoroughly for the purpose of provided with comfort conditions that are mentioned. Thus, in this study, by depending on these parameters, different planned halls that are in the same specifications in terms of volumes, average heights, number of seats, per volume and area, surface materials are designed and investigated.

Key Words: Room Acoustics, Acoustical and Geometric Parameters, Speech Rooms, Conference Halls.

INTRODUCTION

One of structures of emerging with reasons that be like exhibiting a performance, coming together and sharing is hall that is speech purpose. Since it started to be used, have reached different extent with development of technology, revealing and increasing of different speciality area. The comfort conditions are important for exhibiting performance of performer/speaker and watching/listening/understanding performance of listener without extra effort in speech purposed halls, which can be arranged as theatres, conference halls, offices, meeting halls, restaurants, small and big classes, amphitheatres, multipurpose halls etc. In this regard of improving physical, visual, audial comfort conditions are necessary for providing speech intelligibility and concentration [1, p:13, 30]. In this paper, geometrical parameters are described and rooms that designed according to these geometrical parameters are examined.

Geometrical Parameters

Floor slope, vertical and horizontal sight lines, seating area, reflectors, ceiling panels, stage design, balcony design and shape, size, average height, materials of rooms are basic geometrical factors that effect room acoustic.

Sight Lines and Floor Slope

Shapes and limits of a room can change due to kind of activity, but in all case back and sides of stage must be seen by all audience. Floor slope must provide adequate sight lines because adequate sight lines mean listening comfortly. The lowest and nearest point which the whole audience should be able to see clearly must be decided (APS). Vertical sight lines are drawn through the eye positions for each row of seats. For every row, sight lines are decided depending on head of audience that in front of this row.

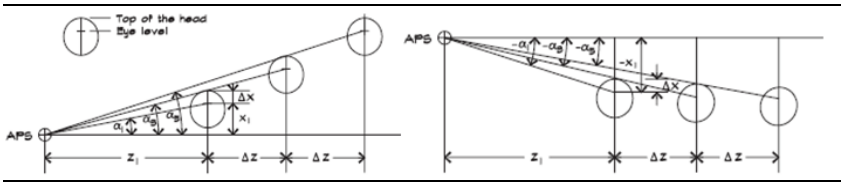

Figure 1. Geometry of Theatrical Sight Line Calculations [2, p:582], [6, p:77]

When sight lines are determined, eye-ear height measurement is consired. This measurement is nearly 1,12 m (height of eye-ear from floor for a person while sitting) for adults, stage height should be 0,80-1 m from floor.

Maximum distance between audience and stage, depth and height of stage, the measurement of lowest and nearest point which the whole audience should be able to see, highest point in stage which must be visible to the audience farthest from the stage, balcony fronts, proscenium pelmet or borders effect the vertical sight lines.

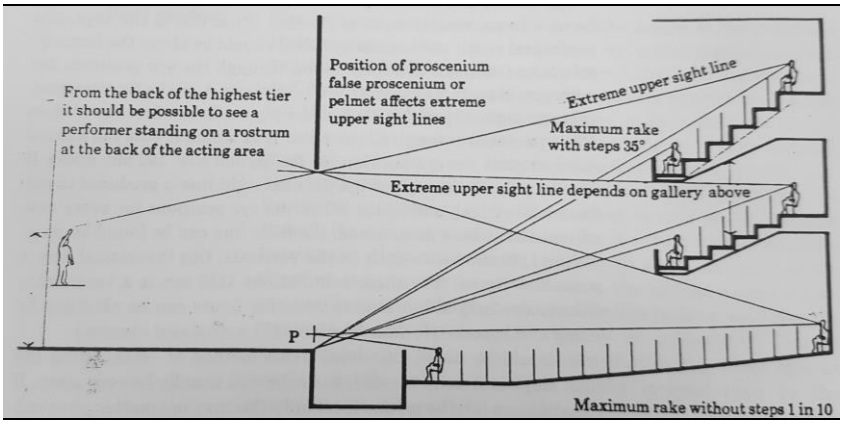

Figure 2. Vertical Sight Lines [1, p:32], [6, p:79]

Balconies provide more seats and especially they are used for less distance between stage and seating area.

Sight lines and floor slope criterias must be same in balconies but for safety reasons the slope must be limited to no more than about 35^0 [3, p:327].

The minimum height of the proscenium opening is determined by sight lines from the highest seat [1, p:66].

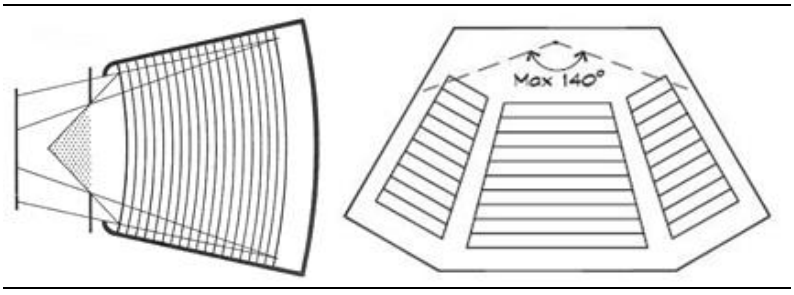

Figure 3. False Proscenium (left)-Seating layout angle (right) [1, p:34], [2, p:581]

Horizontal sight lines (in plan) limit the seating areas. As Figure 3 (left) sight lines comes from lateral audience is described stage area, so in Figure 3 (left) proscenium or stage area is designed incorrectly. In Figure 3 (right) stage angle is not exceed 140^0.

Seating Area and Design of Seatings

Source-receiver distance is minimized by designing the circular seating area as the seating circle expands, there is a region beyond which the human voice cannot extend without physical or electronic reinforcement [2, p:580].

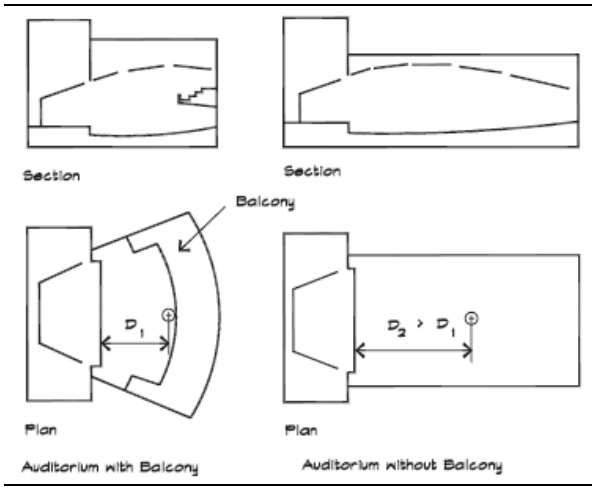

Figure 4. General Shapes of Auditoria [2, p:581]

The maximum distance between the farthest audience and source is not exceed 25 m, so depth of room should be less than 25 m [4, p:232].

When seatings and seating area are designed, chairs must be comfortable and ergonomic, also seating area circulation and safety regulations must be considered [1, p:30].

Audiences must not make extra effort for seeing stage easily and sitting comfortably [1, p:30].

Minimum seatway (measured between perpendiculars) E (mm)	Maximum distance of seat from gangway (510 mm seats) F (mm)	Maximum number of 510 mm wide seats per row	
		Gangway both sides	Gangway one side
305	3060	14	7
330	3570	16	8
355	4080	18	9
380	4590	20	10
405	5100	22	11

Figure 5. Distance of Seats from Gangways [1, p:54]

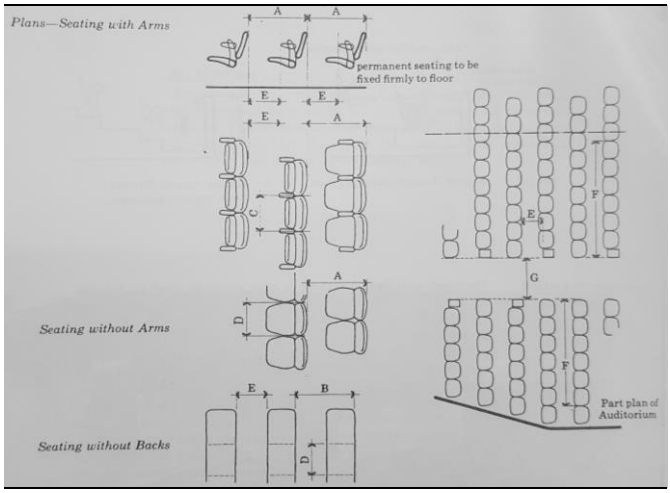

Figure 6. Auditorium Seating

A - Back-to-back distance between rows of seats with backs min:760 mm

B - Back-to-back distance between rows of seats with backs min:610 mm

C - Width of seats with arms min:510 mm

D - Width of seats without arms min:460 mm

E - Unobstructed vertical space between rows (seatway) 305 mm, (see Table 1)

F - For normal maximum distance of seat from gangway see Table 1. But rows with more than twenty-two seats could be possible, provided that the audience was not imperilled.

G - Minimum width of gangway 1070 mm

Ceiling-Wall Panels and Reflectors

Reflection from finite planar surfaces is of particular interest in concert hall design, where panels are frequently suspended as “clouds” above the orchestra. Usually these clouds are either flat or slightly convex toward the audience. A convex surface is more forgiving of imperfect alignment since the sound tends to spread out somewhat after reflecting. As in Figure 7, front and middle part of flat ceiling have useful ceiling reflections but energy of back part is absorbed by rear wall, audience area isn’t contributed by back part of flat ceiling [2, p:583-585].

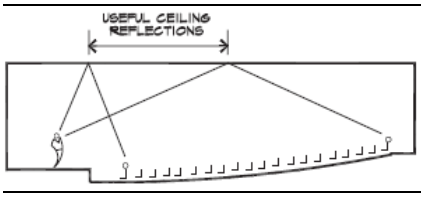

Figure 7. Reflections from a Flat Ceiling Section [2, p:584]

For more efficient reflections, ceiling can be seperated or seating area can be raised or ceiling can be designed as stepped that is shown Figure 8 [2, p:585].

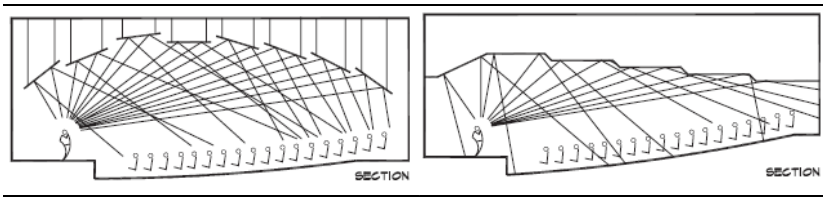

Figure 8. Reflected Sound from a Segmented Ceiling (left)-Stepped Flat Ceiling (right) [2, p:585]

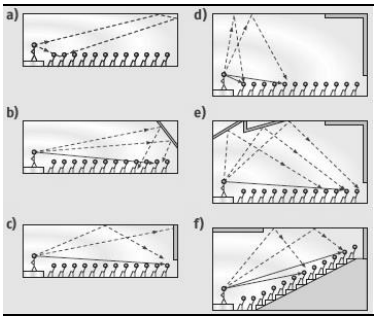

Figure 9. Means of Controlling Early Reflections in Auditoria [3, p:331]

In Figure 9, in low ceiling room (a) to the echo the rear wall/ceiling can be removed by using a slanted reflector in the corner (b). Alternatively, this energy may be attenuated by using absorbtive panels at one or both surfaces near the corner (c) [3, p:330-331]. In Figure 9, if the ceiling is so high that echoes can be generated in the front part of the room (d), slanted reflectors can be used in front of room for redirecting sound to the back rows or the part of ceiling that causes the echo, can be used absorbtive material (e). Alternatively, for reducing the volume, the floor can be sloped, so back rows are closer to reflecting ceiling (f) [3, p:330-331].

In Figure 10, the weak lateral reflections in a fan-shaped room are improved by giving the walls a zigzag shape along the side walls and the panels are separated from the wall surface and tilted downward [3, p:332].

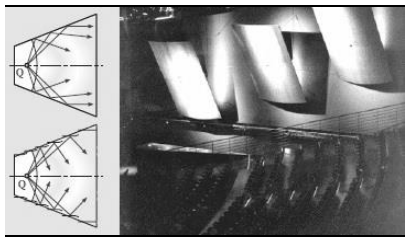

Figure 10. Improvement of Side-Wall Reflections in a Fan-Shaped Hall by Local Reshaping or Adding of Panels Parallel to the Long Axis of the Room [3, p:332]

As shown in Figure 11, individual reflectors should be suspended within the room boundaries for reducing the delay and increasing the level of a reclection without changing room volume, the reflector, which is placed over an orchestra pit, can improve hearing among the musicians and increase the early energy from stage to seating area. These suspended reflectors should be concave shaped to increase the influence of energy [3, p:331].

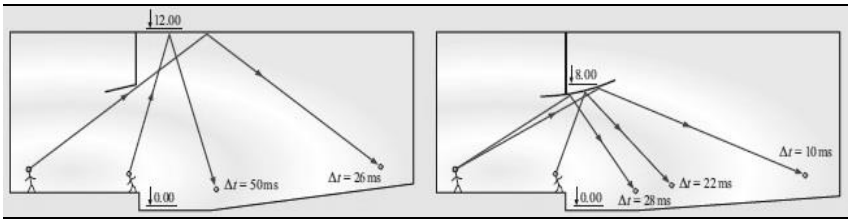

Figure 11. The Influence on Reflection Paths of a Reflecting Panel Suspended in front of a Stage [3, p:332]

In addition to this, if room depth is more than 18 m suspended reflectors help to transfer the energy to the back rows. When reflectors are designed, the maximum distance of audience is considered [1, p:40].

There can be so many reasons to use reflectors;

- To contribute an poor soudnd source; it can be placing back or over of the source [7].
- To improve hearing among the musicians in an orchestra pit [7].
- To prevent echo; so high ceiling can cause the echo in the frontal rows [7].
- To increase energy of sound and clarity; reflectors, which are placed rear wall, balconies, are redirected the useful reflections to the back rows [7].
- To create lateral reflections; early lateral reflection can be obtained by using reflectors in side walls [7].

Acoustical Defects

Acoustical defects can cause the decreasing intelligibility and destroying the comfort conditions. The basic acoustical defects are [2], [3];

- Long delayed reflections
- Echo
- Flutter echo
- Coloration
- Focusing
- Acoustical shadowing or Shadow zone
- Whispering gallery
- Masking

Echoes occur when a sound of sufficient loudness arrives later than the direct field by more than a given time. The cause might be a single reflection from a rear wall of an auditorium, particularly if it is concave [2, p:589]. Even if rear wall is used concave shaped, it is covered absorbtive material to prevent echoes or long delayed reflections.

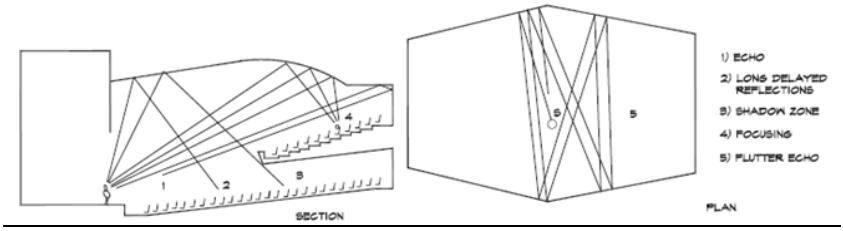

Figure 12. Examples of Acoustical Defects [2, p:589]

Flutter echoes are sounds that persist locally due to multiple reflections between parallel planes, concave, or chevroned surfaces. They can be caused by two, three, or more reflections [2, p:588].

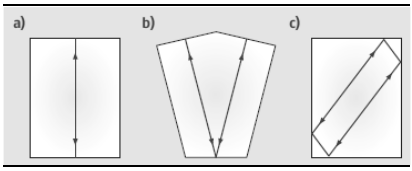

Figure 13. Room Shapes Causing Risk of Flutter Echoes [3, p:330]

To prevent these reflections-flutter echo, avoiding to use parallel surfaces or these parallel surfaces at least one must be diffractive or absorbtive material. In addition to this, angle of parallel surfaces should be changed 3 - 5^{o} [3, p:330].

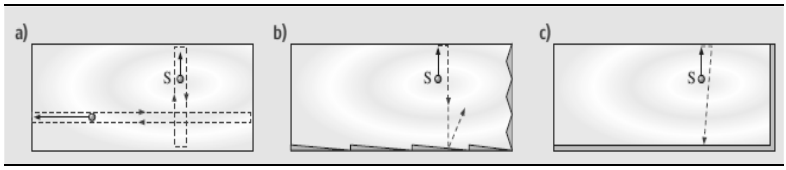

Figure 14. Room with Flutter Echoes (A), wnd Measures against this by Means of Diffusion (B) or Absorption (c) [3, p:330]

Coloration is the emphasis of certain frequencies or frequency bands over others. It can be caused by room-mode buildup or by absorptive materials that only absorb in certain frequency ranges [2, p:588].

Focusing is the buildup of sound energy in localized regions of a room, due to concave surfaces [2, p:588].

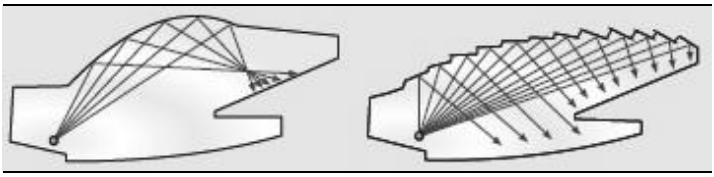

Figure 15. Reshaping of Ceiling Profile to Avoid Focusing and Provide More-Even Sound Distribution [3, p:332]

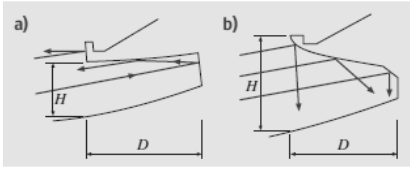

Figure 16. Poor (A) and Good (B) Design of Balcony Profile [3, p:328]

Shadowing is the blockage of sound traveling from the source, or from a significant reflecting surface, to the receiver [2, p:588].

Especially, in balcony design, seats of under the balcony is needed special treatment, not to occur the acoustical shadowing or shadow zone there [3, p:328].

If a source of sound is located in a circular space, very close to the outside wall, some of the sound rays strike the surface at a shallow angle and are reflected again and again, and so propagate within a narrow band completely around the room. A listener located on the opposite side of the space can

clearly hear conversations that occur close to the outside wall. This defects name is whispering gallery [2, p:249].

Concave surfaces are inefficient beacuse of risk of focusing and whispering gallery [3, p:330].

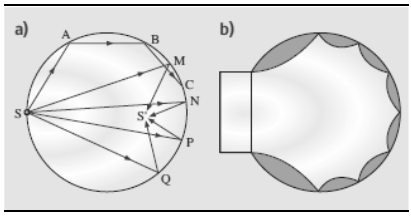

Figure 17. Circular Room with Focused and Creeping Waves (A), and with the Surface Shape Modified (B) so that these Phenomena are Avoided [3, p:330]

When two or more tones listen simultaneously, if their levels are sufficiently different, it becomes difficult to perceive the quieter tone. So the quieter sound is masked by the louder [2, p:91].

Each of these defects can detract from the overall acoustical environment in a room and each can be avoided with careful design.

Rooms

Speech rooms can be so many different plan shaped and geometry according to volume-size of room, activity which is played in, physical conditions of place where room is.

The most common plan shapes are; [2, p:659].

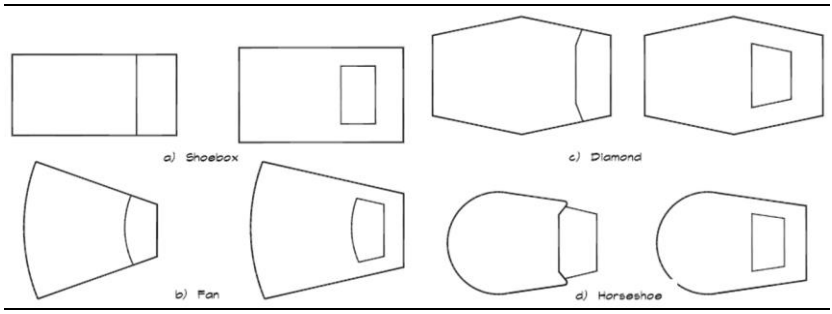

Figure 18. Simple Plan Forms for Rooms [2, p:659]

Properties of Rooms

As mentioned in paper; the rules of 140^{o}, aspect ratio, maximum depth of room, floor slope, sight lines, shapes of ceiling-wall panels-reflectors,

designing seating area, dimensions of seatings, gangways and stage, materials of rear wall, side walls, ceiling of room - stage and acoustical defects are considered and the most common plan shaped rooms are designed; rectangle (shoebox), fan, diamond. Also these designed rooms are drawn via Autodesk AutoCAD 2012, and three dimensional model is created by Google Sketch Up 8 programs [8].

When rooms are designed it is avoided the parallelism of floor-ceilingand also parallelism of side walls is changed by using diffractive materials. After all rooms are designed and properties of rooms are shown in Figure 20. Rectangle rooms are two; one oft hem 1x1 ratio and the other one 1x1.5 ratio. Rec 1x1 is named room 1, rec 1x1.5 is named room 2, fan is named room 3 and diamond room is named 4 [8].

	stage			room								
room1 rec 1x1	h (m)	area (m2)	stage volume (m3)	room volume (m3)	seat	room m3 per seat	room+stage m3 per seat	area (m2)	m2 per seat	avr. height (m)	avr. width (m)	avr. depth (m)
	3,8	165	627	2806	690	4,07	4,98	475	0,69	5,8	21,1	22,4
	stage			room								
room 2 rec 1x1.5	h (m)	area (m2)	stage volume (m3)	room volume (m3)	seat	room m3 per seat	room+stage m3 per seat	area (m2)	m2 per seat	avr. height (m)	avr. width (m)	avr. depth (m)
	3,8	165	627	2807	690	4,07	4,98	486	0,70	5,8	17,33	28
	stage			room								
room3 fan	h (m)	area (m2)	stage volume (m3)	room volume (m3)	seat	room m3 per seat	room+stage m3 per seat	area (m2)	m2 per seat	avr. height (m)	avr. width (m)	avr. depth (m)
	3,4	177	601,8	2779	696	3,99	4,86	467	0,67	5,8	24,3	19,2
	stage			room								
room4 diamond	h (m)	area (m2)	stage volume (m3)	room volume (m3)	seat	room m3 per seat	room+stage m3 per seat	area (m2)	m2 per seat	avr. height (m)	avr. width (m)	avr. depth (m)
	3,4	177	601,8	2616	684	3,83	4,70	448	0,65	5,8	22,4	20

Figure 20. Geometrical Properties of Designed Rooms [8]

Plans and sections of rooms are shown in Figure 21. For room 1, ‘aspect ratio‘ rule is invaded and for room 2, ‘maximum depth of room‘ rule is invaded to reveal effects of width and depth [8].

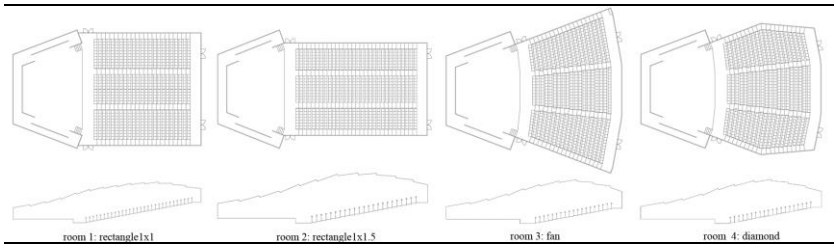

Figure 21. Plans and Section of Designed Rooms [8]

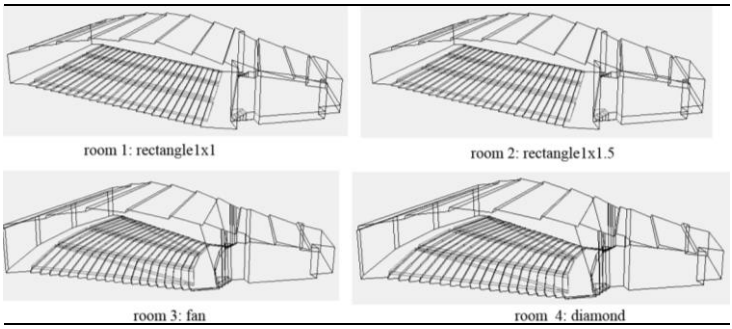

Figure 22. 3 Dimensional Models of Designed Rooms [8]

For useful floor slope, sight lines tests are calculated and checked, and then floor slope is designed due to this. Also some necessary ray analysis for ceiling panels are checked and ceiling panels are designed [8].

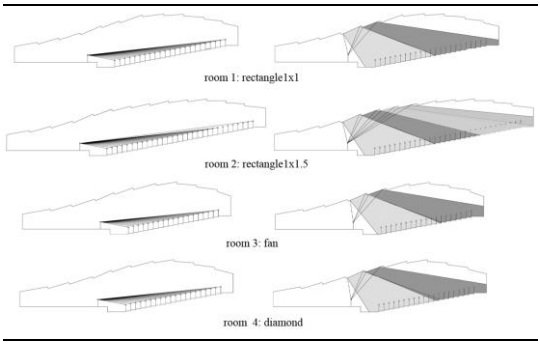

Figure 23. Floor Slopes and Ceiling Ray Analysis of Designed Rooms [8]

Odeon for Halls

3 dimensional models are simulated in ODEON 10.0 Combined that is used most common acoustical simulation program. For the models that calculation will be done using Odeon 10.0 values of some parameters are regarded as follows;

- impulse response length,
- maximum reflection order,
- number of early rays,
- transition order,
- background noise level NC, temperature is, humidity [5].

For these rooms, impulse response length is 3000 ms, maximum reflectin order is 2000, number of early rays is recommended by Odeon for every hall,

transition order is 2, background noise level is NC 25, temperature is 20º, humidity is % 50 [5].

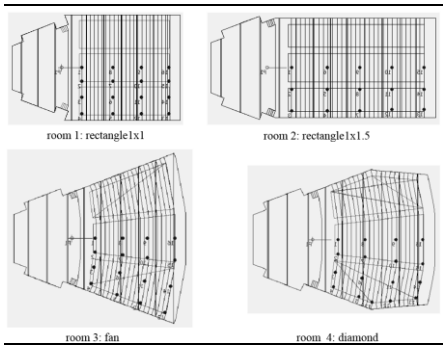

Figure 24. Placement of Source-Receiver for Designed Rooms [8]

Measurements are done for 2 sources and 15, 16 or 17 receivers according to room. Both sources are placed at the middle axis of the stage and 150 centimeters far from end of the stage and 150 centimeters high from the stage floor which is 80 centimeters high from the room floor. Receivers are homogeneously distributed to room [8].

	absorbtion coefficients								diffraction	material
room floor	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	0,05	carpet heavy foam backed
	0,08000	0,80000	0,24000	0,57000	0,69000	0,71000	0,73000	0,73000		
side wall	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	left side 0,05 right side 0,6	8mm Wood veneer on 50mm studs
	0,28000	0,28000	0,22000	0,17000	0,09000	0,10000	0,11000	0,11000		
rear wall	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	0,6	9O-15(28%) perforated 5mm board with 500mm airspace and 25mm
	0,83000	0,83000	0,72000	0,80000	0,90000	0,87000	0,70000	0,70000		
room ceiling	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	0,05	perforated 12 mm wood board with in the back
	0,25000	0,25000	0,15000	0,10000	0,08000	0,06000	0,05000	0,05000		
seating	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	0,7	unoccupied heavily upholstered seats
	0,72000	0,72000	0,79000	0,83000	0,84000	0,83000	0,79000	0,79000		
stage floor	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	0,05	wood veneer
	0,20000	0,20000	0,15000	0,10000	0,08000	0,07000	0,05000	0,05000		
stage wall	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	0,05	70 mm wood board
	0,01000	0,01000	0,05000	0,05000	0,04000	0,04000	0,04000	0,04000		

Figure 25. Surface Materials of Designed Rooms [8]

As shown in Figure 25, surface materials of rooms are described by considering the Reverberation Time. Until these materials are decided, some calculations are done and for efficient reverberation time, it is decided that these materials are the most suitable. Especially, it is used diffractive materials in concave rear wall and parallel side walls [8].

CONCLUSION

When designing a room, acoustic effect of architectural design must be considered and geometrical conditions should be optimized for ensuring speech intelligibility. Width, length, width/length ratio, contribution of lateral reflections, consistency of parallel surfaces, lateral wall design, ceiling panels shape of a room effect early reflections, delayed reflections, lateral reflections, total sound energy therefore the important speech parameters.

As the result of this study, differentiation of some parameters in four different rooms those have three different types is addressed. Especially for rectengular shaped rooms length of seating area must be shorter than 25 meters, usage of parallel surfaces should be avoided or parallelism must be disrupted by diffraction.

In addition to this, concave surfaces cause focusing so, concave surfaces should not be used or it can be treated with diffusive or absorptive materials. In fan shaped rooms, less contribution of lateral reflections especially for the receivers in the middle should always be considered and must be supported with ceiling reflections. In diamond shape rooms energy contribution of lateral reflections should be kept down with materials and other building elements. Because increased energy means continuous delayed reflections which causes echo, flutter echo, and long delayed reflections.

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REDUCING THE PROBABILITY OF FIRE TO START IN HOSPITALS

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ABSTRACT

The phenomenon of fire, which is unpredictable where and when to start, begins with the world's known history. Various measures had been taken and have been continuing by human being to in order to ensure security of life and property and create safer environments. There are also very likely to pose threats and to occur accidents in especially buildings theatre closed and have a large number of people inside. Hospitals fall into this category and are public structures where serious danger and threat have faced in terms of their function and population. There have existed difficulties in evacuation and rescue in case of fire in these places where the majority of the user groups by their functions are composed of people with limited mobility. Thus, all the shareholders involved in the construction, including architects who have designed the construction, should be taken various responsibilities to reduce the likelihood of fire to start and ensure fire safety in a building with such a great risk.

Key Words: Fire, Fire Safety, Hospital Buildings, Hospital Design, Passive Measures.

INTRODUCTION

Fire has been affecting people from the day of its first use. Measures against the fire phenomenon have always been an issue and a risk factor. From the smallest residential cell to urban fabric, it has always been a factor and its damage is increasing day by day in historical process wherever the life spreads. The damages of fire constitute the fire risk, derives the necessity of protection and as a result, human kind take different measures against fire.

Purposes and user profiles are important elements that affects the fire risk. Hospitals are buildings that embody several functions according to their different user profiles, have medium fire risk according to Regulations of Building Protection from Fire [1]. At the same time, they are a part of a dynamic and variable environment due to their functions which raises the fire risk and as a result, the uncloak the fire security concept.

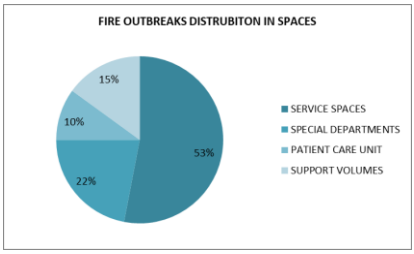
Hospitals are the first places when people experience health problems or suffer from disasters but the fact that hospitals can also face these problems is mostly forgotten or ruled out. For this reason, mostly due to shortage of grants, measures against fire are delayed or never taken. Unfortunately, authorization mechanisms concerning design, approval, supervision etc. have not been constituted in our country too. Whenever a fire occurs, a big public reaction happens and a big amount of money and time is spent to prevent that type of a situation to repeat itself. But these reactions are forgotten easily and do not continuously start a process for the exact solution. In the designing process, the protective measures against fire which should be discussed in the beginning are being discussed in the end. The safety measures against fire which are approached at the end of the design process as an obligation lack an affective functioning [2]. Mainly, in case of shortcomings of consideration the active and passive measures, slightest compromising from the details-materials-craftmanship in order to minimize the construction period or cost, this problem leads to disasters. Yet, hospitals are the hardest places to evacuate during fires. Actually, a supervision mechanism should be constituted not only in the hospitals but in all buildings, safety of patients, children and elderly people who may not act by themselves should be provided in every aspect. The people should be both cured and feel themselves safe from all external factors and disasters when they are visiting a hospital, and should not be roaming in the hospitals as they are bearing these worries. For this reason, fatalities and financial losses can be prevented by determining the possible negations and problems and taking the necessive measures in case of a fire. In the content of this study, measures in different scales should be examined towards the reasons which leads to these losses.

Reasons of Fire Outbreaks in Hospitals

The term “danger of being damaged from the fire” of a building or a user is described as the fire risk. According to Frantzc, presence of a user where the fire exists and danger of being damaged from it constitutes the personal risks, the dangers derived from the fire with several casualties constitutes the social risks [3]. Despite the fact that hospitals host a user profile with limited mobility, according to Regulations of Building Protection from Fire they are considered in the medium risk group. However, considering this profile, they should be

treated, designed and planned as a high-risk group building. Hospital fires have brought forth terrible results with small and big casualties and financial losses throughout the history. In 2009, the fire at Bursa Şevket Yılmaz State Hospital big and painful losses. This should be considered as a bitter lesson on social risks.

In hospitals, %53 of the fires starts in the service spaces (kitchens, warehouses, toilets, laundry rooms, heating systems, elevators and others), %22 in the special departments (laboratories, roentgen spaces, delivery rooms, sterilization), %10 in patient care units (patient rooms, recreational spaces) and the rest %15 in the support spaces (heat center, nurses or staff rooms and administrative departments) [4].



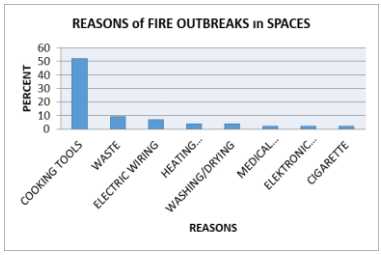


Figure 2. Locations and Reasons of Fire Outbreaks in Hospital

YEAR	HOSPITAL	CİTY	SPACE	REASON
2007	Samsun State Hospital	Samsun	Sick room	The Patient Burns the Sheets
2009	İstanbul Çapa Medical Faculty	İstanbul	ard	Cigarette
2009	Bursa Şevket Yılmaz State Hospital	Bursa	Tomography Space	Electrical Contact
2009	İstanbul Cerrahpaşa Medical Faculty	İstanbul	Roof	Laxness
2011	İstanbul Çapa Medical Faculty	İstanbul	Staff Room	Cigarette
2011	Karabük State	Karabük	Clinic	Electrical

	Hospital			Contact
2011	Antalya State Hospital	Antalya	Air well	Cigarette
2011	Van Military Hospital	Van	Kitchen	Electrical Contact
2012	Zonguldak Ereğli State	Zonguldak	Store	Electrical Contact
2012	Erciyes Üni. Medical Faculty	Kayseri/Erciyes	Sick room	Oxygen bottle
2013	Bursa İnegöl State Hospital	Bursa /İnegöl	Store	Waste
2014	Kilis State Hospital	Kilis	Roof	Flammable Insulatıon materıals
2015	İzmir Salih İşgören Hospital	İzmir	Store	Electrical Contact
2015	Malatya State Hospital	Malatya	Sick room	The patıent burns the sheets
2015	Malatya State Hospital	Malatya	Sick room	The patıents burns the room
2015	Ankara İbni Sina hospital	Ankara	Transformer building	Electrical Contact
2015	Şemdinli State Hospital	Hakkari/Şemdinli	Ofice	Air condition
2016	Çanakkale Lapseki State Hospital	Çanakkale / lapseki	Laundry	Electrical Contact
2016	İstanbul Bahçelievler Hospital	İstanbul	Operating room	Technıcal Reasons
2016	Yedikule Chest Diseases Hospital	İstanbul	Office	Electrical Contact

2017	Mehmet Akif Ersoy Hospital	İstanbul	Additional Building	Isolation materıals
2017	Şişli Etfal Hospital	İstanbul	İntensive Care Unit	Computer aided unıt
2017	Dicle Üniversity	Diyarbakır	Technical room	Unknown
2017	Elazığ Psychiatric Hospital	Elazığ	Sick room	Unknown
2017	Eskişehir Osmangazi Üniversity	Eskişehir	Basement floor	Electrical Contact

Table 1. Hospital Fires and their Causes in Turkey before and after 2015

The following data is reached form examining the hospital fires in our country;

-Boiler rooms where heating operations are processed creates great risks considering the burning processes and the fuels it encloses.

-Transformer fires and explosions happen frequently. Both main distribution board rooms and other distribution boards bears fire danger all the time.

- Generator rooms and the stored fuel bears fire danger.

-Electric unites in the operation rooms overheats and triggers the fire risk in the cables.

Figure 2. Fire from Carelessness in Clinic

-Patient originated fires in the patient rooms (setting their own room on fire, illuminating the O2 tank because of smoking) may be faced.

As you can see, all units in a hospital are under the risk of a fire outbreak. The measures that can be taken against the mistakes and on the projects in terms of fire security which leads to casualties are hereinbelow.

Measures Can Be Taken Against Fire

The most important stage of fire safety is preventing the possibility of a fire outbreak. The possibility of a fire may never be set to zero but can be minimized with maximum level of measures. The measures can be taken in this process, starting from the design stage, all the way through the using stage, are specified step by step.

Figure 3. Evacuation during Fire in Hospital

Layout Plan Stage

The quick intervention of the fire department in case of a fire is as important as an ambulance to rush a patient to the hospital. Possibility of a fire can never be set to zero. But in addition to this, with maximum measures the risk of a fire outbreak can be minimized. A well analyzed layout plan in the design process can decrease the amount of losses by shortening the intervention time. These issues should be paid attention to execute a working layout plan:

-Designing new hospitals in high density urban fabric should never be allowed.

-Motor vehicles are one of the reasons for the fire trucks to fail reaching the scene in time

-If possible, all facades of the building should be accessible from the road.

-Not only being accessible for the fire extinguishing and rescuing teams but providing them enough space to operate in should be in existence.

-Parcel inner roads and firm grounds should provide in enough width for the dimensions of the fire trucks, which should be learned from the fire department if necessary.

-Functions with exploding risks should never be allowed in the surrounding areas. Ensuring the necessary measures in resent locations should be observed.

-Emergency assembly points should be created and big enough for the people in the hospital in presence of a fire.

-Extinguishing systems surrounding the hospital such as hydrants, fire connection outlets should be considered and positioned without hindering the usage of its surroundings.

These items should be considered as important criteria for the locations of the hospitals that will be designed. Building, should be positioned in a way the extinguishing and rescuing systems can be operated in maximum effectiveness.

Figure 4. Fire Intervention of Fire Truck

Floor Plan Stage

After a well-positioned layout plan, the most important issues of a floor plan is first; positioning clinics, operation rooms and critical care units with the high risk case patients away from the fire breakout risks, and second; composing the containing units from smoke and fire resistant compartments and allowing inpatient evacuation from safe passages.

It is important to create smoke zones and fire compartments separated from the rest of the building with all doors, windows and shades, floors or walls contains enough structural resistance against fires within itself. Fire compartments are restricted with one floor height and 1400-1800 m2 floor space. According to Regulations of Building Protection from Fire it is 1500 m2 and may be doubled in case of existence of automatic sprinkle and smoke control systems in our country [5].

- According to *Regulations of Building Protection from Fire,* the hospitals and geriatric care homes and care homes for the mentally and physically challenged, which are under the title of health buildings, protected horizontal evacuation spaces should be formed occupant load should be calculated form 2,8 m²/person.

- Every horizontal evacuation space should lead at least one protected escape passage and aisle width should be at least 2 m.

- A patient or a suit room with more than 15 people occupant loads should maintain two separate doors away from each other.

- Fire escape stairs should be designed in easily accessible positions from all units and access routes should be schemed and hanged in every patient room and hallway.

-Fire escape stairs should be designed and pressured as a separate fire compartment.

-Fire star wells should be designed as separate fire compartments; floor entrances should maintain “fire safety halls” and should be pressured to prevent the entry of smoke.

-All elevators should be in suitable dimensions to carry inpatients, elevator shafts should have qualities of a fire compartment, emergency pressuring should be provided.

-Operation rooms and critical care units should be on the same floor and at least two fire compartments, in order to create alternative horizontal evacuation possibilities.

-Inpatient floors should be divided to two or three fire compartments which are no bigger than 300 m2. Every compartment should be accessible to one escape route. Hospital buildings with more than one floor should maintain enough number of emergency elevators. [6]

-Number of floors, land settlement and even the form of the building should be designed according to the safety policies.

-Limitations about the number of floors; (Evacuation of the patients with stretchers, mobile beds of inpatients, life supports, etc becomes very difficult, even impossible in some cases. For this reason, it should be limited with 4 floors above the ground level.)

-There should be no escalators.

-There should be no atriums, hallways should be divided from the compartment alignments with double-wing glass doors [7].

-A plan for preventing the staff and the patients to smoke in the patient care units and limit it in a separate space should be developed and practiced.

-At the beginning of the process it should be considered that spaces under fire risks and units contains patients with limited mobility should be separated and in order to be protected from the negative effects of smoke hospitals should be formed from two or more connected blocks.

Material Selection Stage

Poor material selection can amplify the fire after the breakout. Poisonous gas release becomes a big element of threat for the users. Correct material selection can reduce this threat. Main items to be careful about this subject are;

-Exterior facades are the most important structural elements to protect the buildings from outer dangers. Exterior insulation and painting materials should be inflammable to protect the buildings from fire.

Figure 5. Fire Caused by Insulation Material

-As long as the furnishing materials go; first of all, the curtains in the patient rooms alongside the beds, furniture and other furnishing items, should be selected from inflammable materials if possible, if not, hardly flammable and non-toxic. At least, materials that do not release a high amount of toxic gases should be chosen [8].

Figure 6. Post-Fire Condition of Patient Room without Fireproof Material

-Uncontrolled electrical overheating may occur because of different reasons. The cables should be uninflammable.

-Some transformers happen to be oil based and have a higher risk of fire outbreak. Depending on this, oil based transformers should not be used. Some transformers are located out of the building and under control of the

mains. Some transformers are located inside the building and under control of the building management. Transformer rooms should be compartmented to prevent the fire and smoke to effect other units and buildings in case of a fire.

-On the divider walls and doors A1 class inflammable materials should be used as constructional materials.

-If critical care units, operation rooms, high pressure room, patient care units, kitchen, warehouse, archives, boiler room, in-building transformer rooms, electrical distribution rooms and emergency services which accepts walking cases, polyclinics, laboratories and scanning centers, inpatient floors are going to be on the same floor, they should be divided as at least 120 mins fire resistant, and should be furnished with smoke-proof doors.

-All shafts (electrical, plumbing, air conditioning channel edges and other vertical and horizontal shafts) and miscellaneous spaces passing from the fire compartments should be “tamponed” in order to be smoke and fire proof. All cables should be non-toxic and halogen-free.

Figure 8. Damaged Electrical Cables after Fire

CONCLUSION

Fire creates high risks for the hospitals. Fire safety and evacuation requirements of the hospitals are further and more qualitative than other buildings. Design, construction, maintenance and operation of the hospitals should be done with a consideration of the passive measures to minimize the duration of patient evacuation. Requirements of present regulations and standards should be fulfilled. Another important issue is attaching importance to the horizontal evacuation, which is an important parameter in hospitals, separation of the building to compartments horizontally, separation of high fire risk units and high damage risk units, ideally placing in different blocks even, will raise the security level.

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RURAL SUSTAINABILITY AND ARCHITECTURE IN RURAL DEVELOPMENT POLICIES IN TURKEY AND THE PILOT VILLAGE: TONGURLAR

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ABSTRACT

Countries should use their resources efficiently to ensure the welfare and happiness of the population. This secures that rural development becomes an important headline in our country which still has wide rural fields and society. The incentive, support, activity and taking measures have a great importance on the elimination of economic and sociological problems in rural life.

Architecture is one of the reason for this support requirement in rural. So, architectural cognizance in the provincial side is necessary to be aware that in rural architecture, there is a wealth of knowledge that has been shaped and experienced in life throughout the centuries. However, reaching the right solutions for architectural problems is so important to people of rural could live their homes and understand the value of these homes.

Key Words: Rural Architecture, Traditional Architecture, Rural Sustainability, Rural Development.

INTRODUCTION

Rural areas have a rich diversity of architecture that combines different traditions, beliefs, lifestyles from the history, climate characteristics and the usage of the local building materials. This rural architectural understanding reflects the cultures, social relationships, habits, life priorities and the cognizance of the builder of the building and it has also become a part of the area and society that it is integrated with. These structures are the most basic elements of this texture which means bringing the rural past into the architectural present.

There is a great deal of knowledge that has been experienced and shaped throughout the centuries in rural architecture. The reason of the many of the solutions seen in the traditional structures do not exist in contemporary structures today is the rapid evolution in architecture. It is necessary to rediscover these centuries of knowledge in every scientific field as well as architecture and use them as a solution to recent problems.

One of the desires of architecture today is identifying the unique solutions of nature and life and creating a vocabulary of knowledge for new designs. Countless features from climate, material, construction technology of traditional rural architecture should be re-discovered to accumulate the architectural knowledge for more harmonious, healthier, comfortable and efficient buildings. In other words, these features that wait to be discovered have a potential for development in terms of human, physical environment and comfort.

One of the desires of architecture today is identifying the unique solutions of nature and life and creating a vocabulary of knowledge for new designs. Countless features from climate, material, construction technology of traditional rural architecture should be re-discovered to accumulate the architectural knowledge for more harmonious, healtier, comfortable and efficient buildings. In other words, these features that wait to be discovered have a potential for development in terms of human, physical environment and comfort.

Rural Perception and Sociological Aspects

It is not possible to say that the transformation of the western countries after the industrial revolution occurred at the same pace in Turkey. Especially declining manpower demand due to increased use of technology in rural areas and the adopted politics has caused migrations to the big cities.

When the last 30 years in Anatolia are examined, it is seen clearly that the natural and built environmental heritage has been deteriorated as a result of settlements that take place in rural areas without considering the local texture, architectural character and the needs of local people. Popularization of urban-oriented lifestyles negatively affects the quality of rural built environment. This means the texture of rural settlements and the historical construction methods are under the threat of overconsumption and mass production understanding brought by modern life [1].

Rural Areas Today

It is possible to say that the hierarchical relationship between the city center and the rural areas which including the villages and villagers, started with the modernization process of the Ottoman Empire in the 19th century. This situation continued to accelerate during the Republican period. The attention has shifted very quickly to the city and urban life style [2]. Another reason of this incuriosity about rural life has been the politics of the single-party period.

The situation across the world has no different. The percentage of rural population has been steadily declining in years, and even after 2008, the urban population has been proportionally ahead of the rural population. The general situation on the world is seen in the Figure 1.

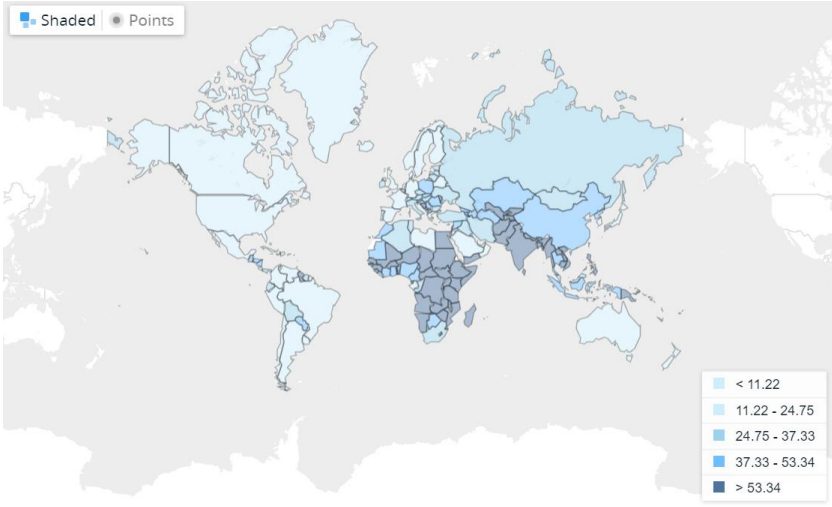

Figure 3. Rural Population Ratios Over the World (World Bank, 2017) [3]

In the first years of the Republic, 83.7% of the population of Turkey was living in the rural areas. Since the 1950s, immigration to cities has been seen according to development of the cities and the demand of the labor force. As reported by TSI (TÜİK), with the change of administrative definitions with Metropolitan Law, this rate which was 23.7% in 2010 has decreased to 7% [4]. Although the condition of reducing the rural population which has a place in the EU negotiation process is fulfilled, the change was only in the statistical dimension and not satisfied the rural needs.

This sudden change of population level has caused an irregularly and uncontrollably growth. Today, especially in the big cities, the impact of immigration on the population growth of the cities is huge.

Problems in Rural Areas and Architecture

The peasant has preferred urban life by abandoning the rural because of economical sociological and sometimes architectural reasons. This started a process in which rural areas left without identity and unprotected.

Developing technological infrastructure has created different expectations. Furthermore, peer pressure, the limited availability of educational facilities and the lack of economic activities have forced the especially young people sociologically to abandon their lands. The small structure of rural population, a homogenous distribution with a little variation, sense of belonging and ownership cannot prevent this situation.

For the peasant who makes his living in mostly with agriculture and animal husbandry poor yield, low income, uneven distribution of land ownership are causes economic troubles [5]. Moreover, the sale of the products with a number of brokers is also a problem.

Apart from these, rural constructions which cannot meet the current needs have an important place in rural problems that at the intersection of both economic and sociological troubles. As a consequence, with senseless approaches result an apartment culture far from using local techniques and materials in rural areas.

The field studies have shown that people who live in rural areas have to give up their ancestral homes due to architectural problems. The problems that observed with the surveys and interviews with the villagers from the Kayseri, Balıkesir and Bilecik rural are as follows [6];

- **Façade Materials:** The plaster materials used as façade material in the traditional architecture require periodic maintenance under external conditions and villagers do not want to deal with this maintenance.

- **Roofing:** The most important reason for damage and destruction of houses in traditional architecture depends on the detail problems in the roof. Village houses, which are not used and cannot be maintained periodically, become deformed and become unusable over time.

- **Typology:** Some of the spaces brought about by contemporary life (like hall) are not found in traditional rural architecture in some regions. Heat-related problems, life is mostly spent on the outside, and less use of nights in the past causes typological needs

- **Heating:** The technology used for heating in our traditional architecture does not make all spaces comfortable.

- **Installation:** Especially problems in sewage systems and related spaces can cause loss of houses.

- **Perception:** The perception of villagers about traditional village houses is negative because of all these reasons and people with a new home perception.

Another factor that threatens our traditional village houses is that our newly developed roads and transportation opportunities pose a risk for the original values of rural areas. Rapid access also causes rapid deterioration, thus leading to loss of our traditional rural architecture in many regions.

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values of rural areas. Rapid access also causes rapid deterioration, thus leading to loss of our traditional rural architecture in many regions.

Pilot Project: Sustain Your Village

One of the biggest reasons we lose our traditional village houses is the perception of the villagers about these houses. So, this project focuses on discovering the values of these houses and methods that the villagers can use to transform them into contemporary spaces. The idea that the existing heritage buildings could be transformed, also respond to current needs with a little joint and technological support is the scope of this project instead of being destroyed or being undefined.

It is noteworthy that the Bilecik province region is weak when the Human Development Index of TSI is evaluated. The data shown in Figure 2 confirms the need for innovative solutions of the region. It is approved in the Development Index made in 2010, Bilecik province gives a heavy migration [7]. Thus, there is a big need for development projects for the region assessing the natural sources and the location which has easy access major cities in Turkey.

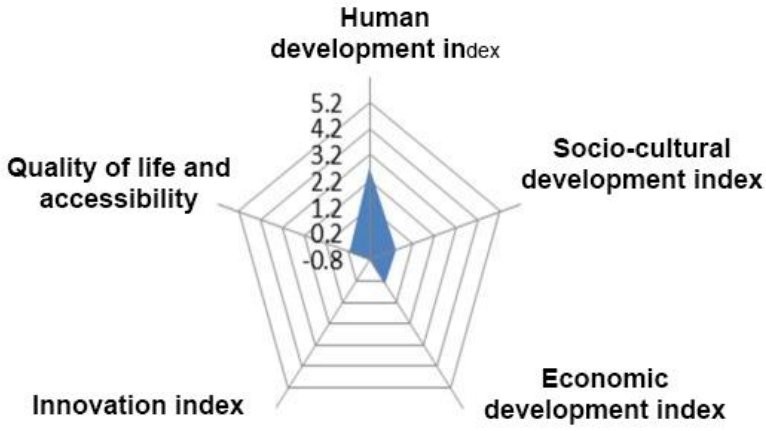

Figure 4. Bilecik Development Index Values (TSI)

As our transportation opportunities between our fast-growing and developing cities increase, access to the villages in the countryside becomes even easier. These transportation possibilities cause the development of these areas and the economic growth. It is inevitable that rural areas become small urban parts if this issue is not addressed within a planned framework. Industry development is supported by transportation network with new roads and high-speed trains is located between Bursa, Ankara and Eskişehir. This development brings risks as well as opportunities for the rural area remaining within this area. So, markedly increased pressure in these areas calls a planned construction and sustained economic improvement for development these areas [8].

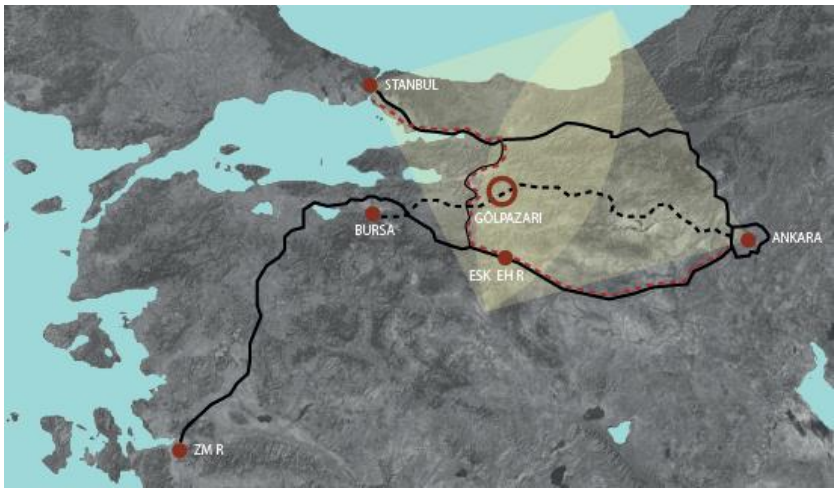

Figure 5. Relation of Bilecik Gölpazarı with the Near Main Roads

Another factor that has come to the fore when making the selection is natural values, ecological agriculture and alternative tourism potentials. It is also important for the local government of the region to support the work to be done. With all these reasons, Bilecik Gölpazarı district was approved as the pilot application area of the project. Gölpazarı where has been exposed to intense migration is also suffering from economic difficulties due to closure of military service and higher educational facilities.

Tongurlar and Kurşunlu villages were selected as priority areas of study. In these villages, important criteria for choosing were traditional half-timber system, center sofa plan typology and suitable working areas.

Figure 6. General View of Tongurlar Village

An internship program consisting of 8 different workshops was organized by Mimar Sinan Fine Arts University Architecture Department in Tongurlar Village in summer 2015 and 2016. Many students from varied universities have contributed to this study.

Searching for the Solution

Some solutions that the villagers can easily apply have been developed for determinated problems of the heritage homes in rural.

Typological Solution

Preliminary studies were carried out for the project area, and specific different house plans were observed to this village and region. 16 plan typologies were identified and it is possible to say that Tongurlar Village has a homogeneous plan typology. It was observed that the middle sofa plan system was used predominantly as the plan type. It is often possible to encounter simple, useful examples of this type of plan, which is typical of Anatolian architecture in this region.

It has been observed that the need for salons or living spaces that we need in today's contemporary life cannot be adequately met in the village houses. As a result, users feel the need to destroy their heritage homes and replace them with new materials. This problem has been tried to be solved by a simple approach in this project.

It was noticed that in existing buildings there is often a barn. Instead of destroying the homes by facing this problem in the families who do not maintain husbandry it is thought that the transformation of the barns spaces into the living spaces can provide both the protection of homes and the need with less cost. Also, it is thought that the answer to this problem can be found by adding a module to the traditional building in situations where there are no barns. In this direction, the barn was transformed into the living place which was chosen as a pilot building.

Heating Solution

Heating is another reason for the villagers to give up traditional village houses. In the old village life, areas used as living room where the cooker or stove are located. As a result of this, the fact that the bedrooms remain cold is far from satisfying the current needs. As a quick fix, it is planned to use cooker radiator system and solar energy systems to bring all the places of the home to comfort temperatures without spending too much energy.

Façade Material Solution

Energy consumption is calculated by making energy models of each house taken from the road. Their energy consumption is calculated by considering the conditions of usage of these houses. It has been observed with the analyzes, existing constructions provide acceptable values in terms of energy efficiency. The effect of sustainable soil material used in roof and wall layers has seen in these results [7].

A homogeneous character was observed in the use of materials in Tongurlar Village. The facade material used for the settlement texture is mud brick. However, because of climatic conditions, facades have become unable to respond adequately to needs of users. In order to actually see the values captured in the energy models, it is thought that the facade materials used on the facades need to be improved easily, which is accessible to the villagers.

Figure 7. A Facade from Tongurlar Village

• Samples were taken from different structures. Chemical, physical and mechanical analyzes were performed on the samples

• In order to determine the soil types used in the production of adobe, nearby soil samples were taken. The chemical properties of these samples have been determined.

• It is envisaged to improve the sustainability and the durability of the material to climate conditions. For this purpose, evaluation is made according to the existing analyzes and material specifications for adobe material and outer plaster that may be developed according to external conditions have been developed. These improvements have been in the form of the development of mud brick materials and soil based plaster.

The formula obtained as a result of the experiments and developed under laboratory conditions was applied on the pilot building which is 100 years old.

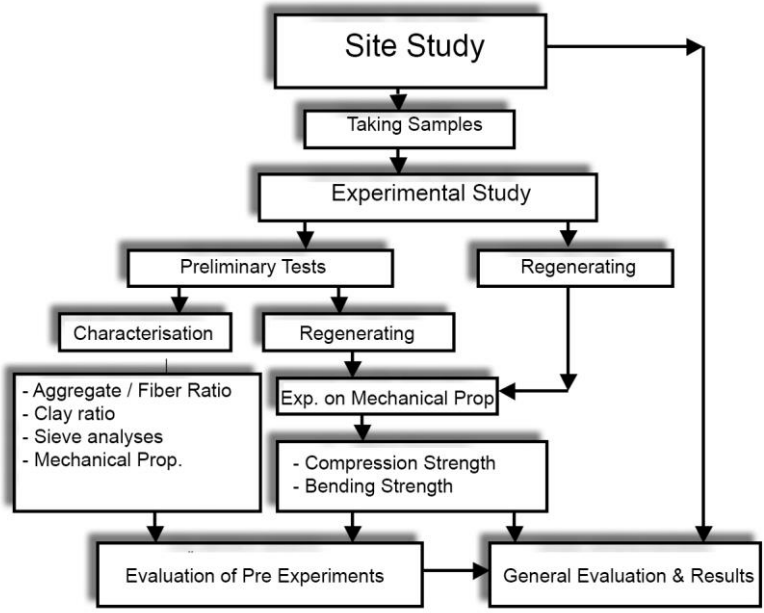

Figure 8. Flow Chart of Experiments for the Development of Adobe

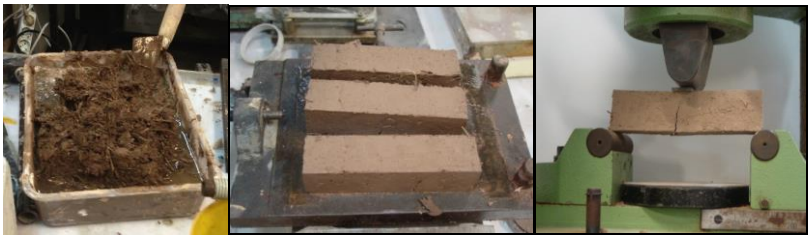

Figure 9. Studies on Mud-Brick on Laboratory Environment

Roofing Solution

One of the most important reasons for the loss of village houses, especially abandoned and unused village houses, has been observed as deformation due to roof details. In progress of time, water problems due to the details of the roof, especially the mudbrick filled buildings cannot resist the deterioration. Within the scope of the project, the roof of the building, which was restored as the student house of the Tongurlar Village houses, was renovated with new details developed. In addition, during the conversion of the barn to living area, roof windows are used. Roof windows have been both positive for visual comfort and natural ventilation. Figure 9-10 show the contribution of roof windows to daylighting.

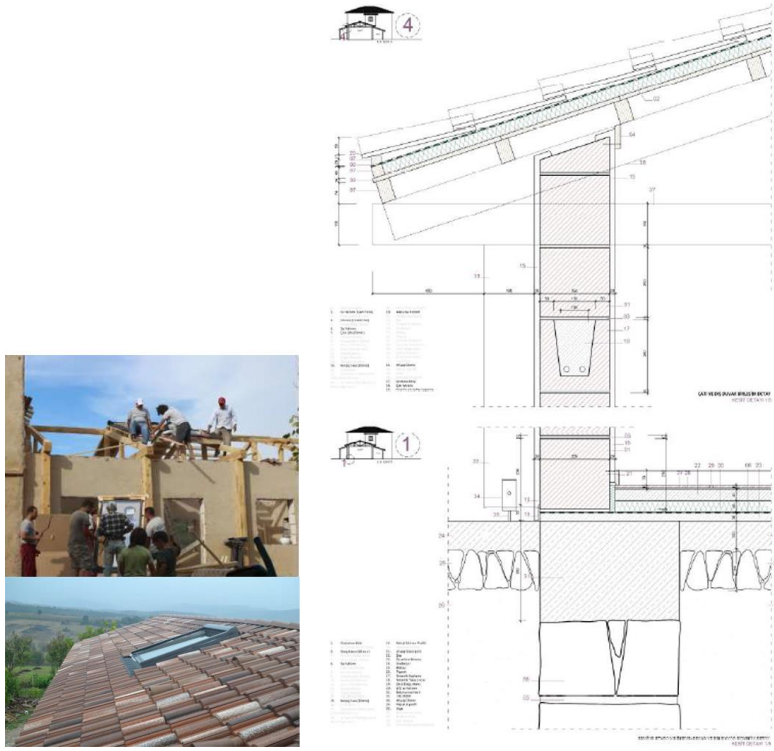

Figure 10. Roof Details at Renovating

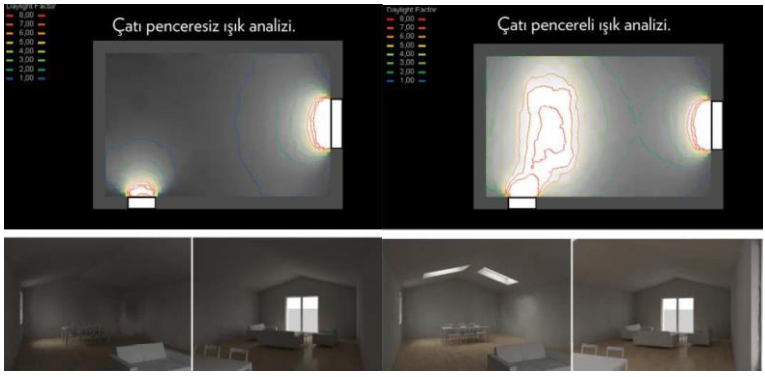

Figure 11. Light Analysis with Roof Windows

CONCLUSION

It is clear that the architectural problems which can be evaluated at the intersection of sociological and economic reasons, play a part in the abandonment. A number of factors have been put forward in the project which aims to create awareness and develop exemplary practice.

It has been determined that the traditional rural architecture has spatial comfort values that are not found in most of the contemporary residential structures or can be provided by only active systems with usage of energy in terms of many physical environmental factors.

When the structural details of the village houses are supported by contemporary structural details, many problems can be removed and the use of energy is thought to be even more positive. Particularly, it is envisaged that if the correct applications related to the building such as roof and façade problems, dilapidate, single-glazed wooden joinery widely used in rural areas are carried out causing heat and energy losses, it will be highly efficient and positive values will be reached in terms of comfort.

As a result of these process, the idea of keeping the traditional village houses alive in rural with improvement and maintenance would be a more sustainable approach. This approach also supports the qualitative preservation of architectural identity.

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PART 4

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CONSERVATION

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TRANSFORMATION

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RE-USE

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A NEW WAY OF URBAN TRANSFORMATION "POLYCENTRIC INDUSTRIAL URBAN REGIONS"

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ABSTRACT

The environmental concerns appeared in 1960s and 1970s, price increase in fuel and building materials have brought adaptive reuse forward and the adaptive reuse has become a suitable alternative for urban renewal attempts also in a short time especially because the problems related to the cost prevents building construction.

Since the appearance of urban planning and regeneration implementations in Europe in the 19th Century, the spatial understanding of planning strategies has expanded and the boundaries have become more permeable, resulting in new relationships, competitions and collaborations between countries.

The European regions have been re-planned, and the European cities have become closer to each other due to the new relations established. Within this period, the assessment of industrial areas on the European continent has become an important topic due to the size of industrial areas. Large scale regeneration projects have been carried out in which multi-centered conurbations re-functionalized especially as a result of the change in spatial understanding.

Within the scope of the article, firstly the concept of reuse, its relation between the urban regeneration and the new settlement types appeared as a result of expansion of spatial understanding of the planning strategies are examined. Within the scope of the aforesaid examinations, the urban extent of the adaptive reuse is approached through the Ruhr and Lille examples which are considered as successful in terms of re-functionalization of multi-centered industrial conurbations, and especially in terms of the factors requiring the regeneration and urban regeneration strategies.

In the conclusion, the inferences that can be used in large scale urban regeneration practices to be carried out in the future by determining the similar and different aspects of the examined examples.

Key Words: Reuse, Adaptive Reuse, Renewal, Urban Transformation, Polycentric Industrial Urban Regions.

INTRODUCTION

Today, the projects re-functioning the industrial cities that lost their old functions and which allow the re-evaluation of the derelict buildings remaining in the central areas of the cities during this transformation are increasing rapidly. Therefore, the urban extent of reuse, especially the re-functioning of industrial areas, should not be ignored in terms of urban transformation.

The Concept of Reuse and Its Relation between Urban Regeneration

The concept of "adaptive reuse", which means that the current use of a building, area, or zone is replaced by another use; is defined as an approach to change the function of the building by preserving the main structure and original construction of the building as a much more effective method instead of re-evaluating an abandoned or possibly considered to be demolished building or a building that lost its function as a result of social and economic development as post-demolition raw material, when it is approached in terms of architecture. [1] [2]

The main factor bringing the adaptive-reuse forward is the price increase in fuel and building materials between 1960 and 1970, when environmental concerns grew. The prevention of high costs and other cost-related problems unable to be carried through from the construction of new buildings have made reuse a suitable alternative also for urban regeneration and renewal attempts beyond the building scale. [3]

Although the definitions differ depending on the emphasized vision, purpose, strategies and methods, in the most general sense the urban regeneration is a vision and action that seeks to provide a lasting solution to the current economic, social, physical and environmental conditions in order to solve the problems of the urban space that is collapsed and deteriorated. [4] [5]

Urban regeneration is mostly associated with urban renewal-regeneration, rehabilitation, preservation-conservation, revitalization, redevelopment, improvement, clearance, infill development and refurbishment implementations. [5] [6]

In the social and economic structures of modern cities, particularly industry has a special place. The cities that have existed for five thousand years have greatly expanded in size as they have grown in number in the world after the Industrial Revolution. [7]

Urban regeneration implementations first appeared as the renovation (demolishing-reconstructing) of necessary territories as a result of urban growth movements that took place in Europe in the 19th century, and the political and economic structure of the regeneration process has gradually shifted from national development to the objective of global integration; this change in the objective also changed the urban planning process. [4] [5]

As a result of the transition to the common market system in the 1980s, European urban planning logic and strategies were adapted to the new context. The spatial understanding of the strategies has expanded and the traditional nation-state hierarchy (country-region-city) has changed. As

boundaries become more permeable and active, new relationships, new competitions and partnerships have emerged. [8] [9]

This network of relationships and new formations have led to differentiation in urban settlement types, and hence in related terminologies.

The Concepts Associated With Urban Regeneration

As a result of the research and literature review made, the types of urban settlements that should be known in order to better understand the examples to be examined within the scope of the article are divided into 7 sub-headings as town, city, metropolitan city, united city, megalopolis, global city and urban region.

Town: The towns that constitute the first step of urban settlements are factories in developed countries, as well as the places where the competitions become a part between similar functions. The towns are distinguished from smaller settlements by their transportation and entertainment facilities, such as railway and station, cinema and theater. [7]

City: While the city was once described as a town with a large church in Europe, today the places where the functions are extremely varied and all activities related to manufacturing and service are seen are called city. In addition, cities are the settlements with more extensive and diverse economic functions, as well as advanced functional specialization, compared to the towns. [7]

Metropolitan City: The unit that the various activities differ, the manufacturing activities are from the large city to the medium cities around, the distance between the workplaces and housing is increased, the suburbs are formed around the main city and a very active relationship is established between the cities of various sizes, however that the main city in the center of the region where the relationships spread, dominates and controls everything in intensive social, economic and administrative subjects.

At the center of the metropolitan city there are financial institutions such as banks, stock market and other intermediary firms. This region of the city also undertakes the role of creating and spreading culture.

The changes and transformations that took place in urban systems with the globalization process also affected the metropolitan cities of the developed countries and led some of them to be transformed into urban regions. [7]

United City (Conurbation): The conurbation term used for the first time in 1915 is defined as the sum of different towns and cities on a large area, in other words, multiple urban settlements of large and small size.

Each conurbation has extensive industrial or different business-related areas, large-scale shops and nightlife. They are mostly located around coil deposits or natural harbors.

Conurbations do not usually have a plan and form, but they have a compact transportation network. The common feature of their central parts is that

housing of working class and factories are located in this area. The uniform suburb areas define the areas outside the center.

Conurbation is divided into two types, one of which is multi-centered (multi-core) conurbations consisting of a large number of separate towns and cities, and the one-centered conurbations that are formed by the expansion of a big city.

Generally, multi-centered conurbations are the features of old countries like in Europe and single-centered conurbations are of new countries like in America and Africa. [7]

Megalopolis: Megalopolis is a large metropolitan area. The concept describes a gigantic urban zone that the towns, cities and even united cities come together and create. They come into being by combining miles of miles long places that had conurbation characteristics in past. [7]

Global City (World City): The world city is defined as the vital points of supra-national companies and their supervisory and management functions on a global scale. In other words, world cities are the vital points of the big financial centers, headquarters of supra-national companies, international organizations, high-level business services and primary transportation and communication.

The cities integrated with the global economy are ranked according to their economic potential and scale. In this ranking, the global cities with global influence area and supervisory capacities come first; the world cities (sub-global cities) with regional influence area and supervisory capacities come second and the cities with national influence area and supervisory capacities come third. [7]

Urban region: The difference between urban region, which is frequently encountered with the phenomenon of globalization and which makes globalization a socio-spatial process, and "global city" is its including a region.

Unlike metropolitan cities, the urban region that is a system in which there is not just a single city, but a large number of settlements, is a settlement area in which the existing settlements are sufficient for themselves instead of being dependent on a center.

The urban region has non-hierarchical, horizontal relations and flexible production structure. Since there is no relationship defined according to a particular center, a high-level network of relationships that can spread much wider areas spatially is mentioned in urban region. [7]

Regeneration of Multi-Centered Industrial Conurbations

In the post-1980 period, the re-evaluation of especially industrial areas on the European continent became an important topic for regeneration due to the size of industrial areas.

Industrial areas are irreplaceable for cities in terms of their development, technological progress and economic benefits. The economic, social and visual benefits that these areas provide to the city they are in during their

activities can be sustained even after the end of their activities thanks to current regeneration approaches. [9]

The multi-centered conurbations Ruhr in Germany and Lille in France are contemporary examples for the re-use of industrial areas whose activities ended. [10]

Regeneration of Ruhr Basin Industrial Consurbation

Location

In the most general definition, Ruhr Region (Ruhrgebiet) is the region located in North Rhine-Westphalia, Germany; bordered by the rivers Ruhr and Lippe, from west to east including the cities of Duisburg, Oberhausen, Bottrop, Mülheim an der Ruhr, Essen, Gelsenkirchen, Bochum, Herne, Hamm, Hagen and Dortmund. [11] Today, the boundaries of the Ruhr consist of a wide area extending from Dortmund-Bochum-Essen-Duisburg in north to Bonn in south. Within this area are Düsseldorf the capital city of North Rhine-Westphalia, Monchengladbach, Wuppertal and Cologne the largest city of the region and the fourth largest city of Germany. With its polycentric structure, the Ruhr covers an area of approximately 7,110 km^2 in North Rhine-Westphalia and is the largest metropolitan area in Germany with over 11 million residents. [12]

Figure 1. Germany, North Rhine-Westphalia, Ruhr Region

Historical Development and Factors that Require Regeneration

Despite having rich mineral deposits, the Ruhr was used for agricultural activities until the end of the 18th century, and mining was not given due importance. The conurbation has become the largest industrial region in Europe with the increase of iron and steel production after the industrial revolution. The population of the settlement where many factories established reached to 3.800.000 from 400.000 between 1850-1925. With the crisis of 1958, the factories began to close, in the '80s the Ruhr lost its industrial function and became a settlement with many abandoned industrial constructions such as factories, coal mines, gashouses and shipyards. [13]

When we look at the use of industrial areas in the Ruhr Region in the 20th and 21st centuries, it is seen that the Ruhr, Emshcer and Lippe rivers are influential in the settlement of these areas. When it comes to the mid-20th century, the decrease in coal-mineral deposits and the inefficiency of mines have posed a problem for the region. In this process that the industrial

production sometimes came to a stopping point, the need to reconsider and plan the economic activities and productive activities arose.

For the solution, convenience was provided to enable the settlement of new sectors in the cities where the current technologies are used and to enable the cities to attract investments in this direction. Industrial structures in the region remained idle due to functional changes and the transfer of production to different regions, empty and unused areas have caused many problems that security and health problems are in the forefront. [11] [13]

Solution Seekings and Urban Regeneration Strategies

Projects have been developed to solve the problems that occurred in the region and to restore the degraded areas to the city with the regeneration activities. With the support and works made in 1988 by IBA (Internationale Bauaufstellung), problematic areas were examined, it was decided that the projects to be prepared should be prepared to solve both existing problems of the region and the arrangements related to the new functions to be given to industrial areas should be prepared by moving from the past information-documents of these areas. Since 1990, architectural and urban scale design competitions related to various areas of the region have been organized and positive approaches obtained in the results have been started to be implemented rapidly. Emscher Park Transformation Project and Route.industriekultur are at the primary of these regenerations implemented in the Ruhr Basin. [11]

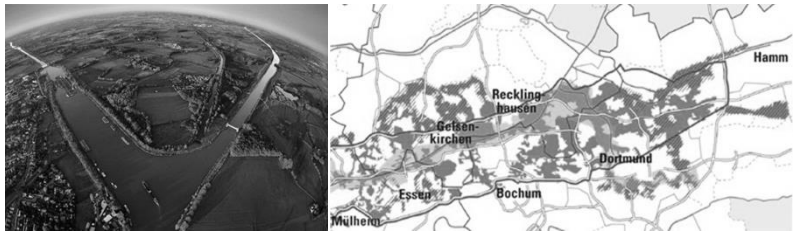

Figure 2. Emscher Park Transformation Project

Emscher Park Transformation Project: The Emscher Park project (1989-2010) is a project prepared by IBA that includes a large number of recreational area arrangements in the Ruhr area. Within the scope of the project, it was aimed to increase the number of tourists coming to the region by creating new routes by taking the beauties of Ruhr basin to forefront because it is a region attracting tourists with its natural beauty outside industrial areas. Within the scope of the regeneration designed to have an integrity with the projects produced in other fields, approximately 100 different projects, from the Emscher River to Duisburg and Hamm were planned and the operations (457 km^2 green space) are carried out in an area of 800 km^2.In the 1st stage operations between 1989-1994; it was aimed to regenerate the industrial area into a cultural area, to preserve existing industrial buildings, to revitalize the economy and to increase the quality of life. Since 1994 the second phase operations of Emscher Park project were started and in

addition to the previous design criteria, six basic approaches have been identified, including the development of industrial landscape, the cleaning of the Emscher River, the construction of new structures (trade & education) and making housing investments, the regulation of the abandoned industrial areas to be reused and making arrangements to revitalize tourism. [11][14]

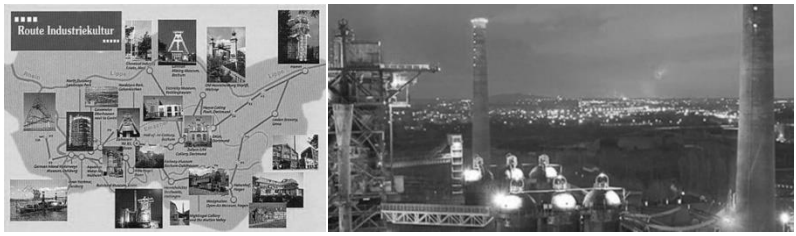

Figure 3. Route, Industriekultur

Route.Industriekultur: The Emscher Park project is a network of travel routes in which the regeneration operations made in the region by creating different routes can be seen entirely and predicted to revitalize the tourism. When the network is being created; 13 different port areas and 14 different navigation points located in the factory areas in internal parts of these regions where the regenerations carried out on building scale as well as the active areas of the industrial area can be sightsaw. [11][15]

Except from the Emscher Park and Route.Industriekultur projects, a great number of smaller scale regeneration operations, such as Oberhausen gasometer, Zollverein Coal Mine, Ruhr Industrial Museum, Essen Design Center (Red Dot Design Museum), Zollverein Design and Management School and Duisburg North Landscape Park are carried out.

Essen, which is located in the region, was elected European Capital of Culture in 2010. [11]

Regeneration of Industrial Conurbation Lille

Location

Lille city is located in the north of France, 15 km west of the Belgian border. The city with a surface area of 34.8 km^2 has a population of approximately 230,000. [16-17] Lille, one of the largest cities in Nord-Pas-de-Calais, which is one of the most important regions of France was one of France's leading cities in the textile, mechanics, chemistry and mining industries from the 19th century to the mid-20th century. [16]

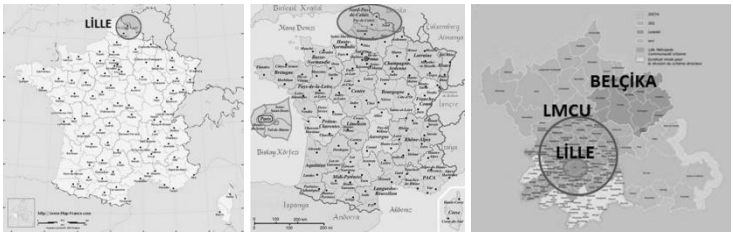

Figure 4. Lille, France

Today, Lille is located at the heart of France, at the heart of the triangle of Paris-London and Brussels and at the meeting point of the high-speed rail line (TGV) connecting these three capitals as well as on a network of advanced motorways. [18]

The busy urban area in which Lille is located is also part of a complex urban system consisting of cities and towns. In this urban system, there are 5 different formations in which Lille is included:

The City of Lille: A cultural heritage site known as the "old city", which has 230,000 residents and refers to Lille's trade history since the Middle Ages. However, many districts of the city were not developed in the middle ages, but developed in the 19th century, as a result of the industrial revolution. [17]

Lille Métropole Communauté Urbaine (LMCU): Lille Métropole Communauté Urbaine (LMCU): An intersocial and political institution created by the French government in 1968. [17] [19] The aim of the organization is to overcome the negativities arising from communal subversion which is widely seen in metropolitans by ensuring the cooperation between the 85 municipalities.[20] LMCU is responsible for transportation, water supply, sewerage, waste collection, arranging green and open spaces, planning, economic development, housing and construction and management of cultural and public facilities.[17]

Eurométropole Lille-Kortjik-Tournai: This region, which is the first and largest continuous cross-border settlement of Europe, is the first European Grouping for Territorial Cooperation (EGTC) created in 2008 as a result of common policies of Région flamande-Flandre and Région Wallonne adjacent zones with Lille metropolis

With an area of 3,544 km^2, about 2 million residents and a growing population density every day, the goal of establishing the European metropolis is to strengthen economic, cultural and political relationships between the cities under its scope. [16][17] Through this cooperation it is aimed to increase the economic attraction in the areas included in cross-border settlement, to rehabilitate the region with eco-friendly planning methods, to facilitate people's access to other regions and products, to provide cultural unity, to make region created interesting in terms of tourism and to improve the services in the field of health and education. [21]

The Lille Metropolitan Area: Lille's influence area is expanding to Arras, Cambria and even Maubeuge passing the former coal mine center Béthune, Lens, Douai and Valenciennes in the south by following an arch and to Belgian cities Tournai, Kortrijk, Ypres and beyond in the north. This region, 30-45 minutes from Lille, is an important business center within the urban systems including Lille, with a population of approximately 3.5 million people and almost uninterrupted urban continuity. [17]

The Lille City Region: The Lille City Region: The Lille City-Region covers the large area around Lille, the Opal Coast in the west, the Channel Tunnel, and the region beyond Cambrai and Maubeuge. This area with a population of approximately 5 million, which is 1 hour away from Lille, constitutes a functional value system in the Nord-Pas-de-Calais region. [17]

Historical Development and Factors that Require Regeneration

With the Flandra count Baldwin V's taking a castle on Deule River, the name of the city of Lille was first mentioned in 1066 as "isla", which means the island in Latin. [22] The city has developed around this castle and harbor, today known as Avenue du Peuple-Belge in old Lille. [22] [23]

In this period, as its general characteristic the city is a port city located on the main transportation routes between the Flemish cities and the champagne market. Lille, a rich commercial city in the Middle Ages, has become one of France's strongest industrial regions with the industrial revolution.

The development of the tradition and industry of textile production in Lille since the Flemish domination of the early 11th century continued until the World War I between 1914-1918. As a result of the German occupation during the war, 80% of the industrial capacity in the region was destroyed, the machines were damaged and a large part of the people living in the city died from starvation. After this date, the textile industry in the city has not reached its former glory. During the economic recession, mail business was an important means of livelihood for LMCU.

When the situation of the city was taken into consideration with the main lines, the population explosion between 1945 and 1960 was combined with the physical deterioration that occurred in the factories and housing due to the regression in the traditional industry. The current physical deterioration has worsened as the expansion of the city to the boundaries and even beyond the French border and towards Belgium has caused the abandonment of city centers.

When it came to 1964, the French government decided to create equivalent equalizer metropolitan areas (Métropoles d'équilibre) developed in tertiary industrial and technological field by taking the decision to rebalance the increasing weight of Paris, unbalanced and independent of the rest of the country, on French economy. Therefore, they focused on public needs and public investments in the regions they want to develop as an alternative to Paris. Lille, which was among the cities considered to be developed, is one of the most important economic centers of Northern Europe. [16]

Solution Seekings and Urban Regeneration Strategies

In the renewal process of Lille conurbation, the authority was LMCU. Between 1966 and 1989, LMCU undertook a technical role in the renewal process, focusing especially on road and infrastructure management. In 1989, LMCU, under the presidency of Pierre Mauroy, was involved in the development of the vision of economic development and the urban renewal of the metropolitan area. Since 1989, LMCU has moved Lille metropolis (Lille Métropole) to Europe, thanks to its proactive regeneration and renewal strategy to solve economic and urban problems. [10] The main headings and implementations of the generated strategy are as follows:

The development of an innovative and comprehensive network of urban transportation: While the network of urban transportation is under the responsibility of LMCU, the management of streets and avenues is under the responsibility of the municipalities. By the end of the 1970s LMCU was a pioneer in the design and construction of VAL's (Véhicule automatique léger) (Light Automatic Vehicle), the world's first automatic driverless subway system. The first line was opened in 1983. Beginning in the early 1990s and completed in 1999, the second line, including Lille, Roubaix and Tourcoing, has been the longest metro line in the world with a length of 32 km. The metro connecting 4 metropolitan including Lille, Roubaix, Tourcoing and Villeneuve d'Ascq, and plying 74 million times per year, has become a symbol of polycentric conurbation.

In addition to the Metro system, the 22 km old tram line connecting Lille, Roubaix and Tourcoing has been renewed and off-city bus lines including 89 inner-cities and 8 cross-borders were opened to use in Lille metropolis. [10]

Opportunities created by the Channel Tunnel: On January 20, 1986, President Mitterrand and Prime Minister Margaret Thatcher signed the French-British co-operation agreement for the Manche Tunnel to be built. Later, Lille Mayor Pierre Mauroy worked on Lille's being a central station for the North-West Europe high-speed railway, planned to be constructed in the future and foreseen that it will be work on Paris-London, Brussels-London and Paris-Brussels-Amsterdam route; in 1987, it was decided that Lille would be the future high-speed train station (HST). This strategic decision has had a positive effect on the economy of Lille metropolitan, and thanks to the rapid train system, Lille has turned into a point of intersection between North-Western Europe and European capitals from a dead end on the northern border of France. The Lille-Europe TGV station (Gare de Lille-Europe) opened in 1994 is at the entrance of Lille city center; and is 5 minutes from old Lille-Flandra (Gare de Lille-Flanders) station and 15 minutes from Grande Place, Lille's main square, by foot. The new station is also connected with the metro (VAL) and the tram (Eurostar). In 1989, in the area around the Lille-European railway station began the preparation of the Euralille master plan, a large-scale office and commercial space project that is expected to increase the importance of the city on the European scene. [10]

Developing flagship projects to attract investors, revive the local economy and strengthen the international profile of the urban region: In 1990, LMCU decided to create many more economic centers in addition to Eurallile project in the urban region and allocate the economic growth in the urban region in a balanced way. Within this scope, different centers have been created according to the areas of expertise in the Lille urban region. Communication technologies and textile gathered in Roubaix, administrative and international trade functions in Lille and logistics and transportation services in Tourcoing; all strategic points for economic development are shown in Schéma Directeur. The strategic points that point to different areas of specialization are as follows:

Euralille: (Lille-Center) Lille-Europe is a major business and commercial center around the new TGV station.

Eurasanté: (Lille-South) 3 km^2 business park and service center in the land of university hospital was designed to become a center of specialization recognized internationally, where both health and biomedical researches are made and relevant industries also takes part.

Haute Borne: A science park devoted to specialized initiatives in research, service and advanced technology. There are about 60 research laboratories, 5 engineering schools, and head offices of many companies, including the Innovation and Exchange center, which connects the university and the business world.

Eurotéléport: (Roubaix) A modern technological park project dedicated to the development of companies producing or using IT and communication tools.

L'Union: (Roubaix/Tourcoing) An innovative textile center projected to be used in the future.

Logistical Platform: (Tourcoing) International transportation center.

Euratechnologies: Technology park that is to contain office space of about 80.000 m2 and is under construction in the western part of the urban region for the development of online-shopping. [10]

Predictable cultural policy: Lille Metropole has conserved the cultural and historical heritage and has supported its development. After the city was elected to represent France at the 2004 Olympic Games in 1994, Lille was transformed from a regional formation in France into a metropolis on a European scale. The initiative beginned for the Olympic Games evolved over time into the European Capital of Culture initiative. The committee (LMCU), career managers (Christian Democrats) and local politicians (usually socialists) ignored the differences of political opinions and the competition of local municipalities for the development of the conurbation and strategic cooperation focusing on the main objectives was provided.

Cooperation succeeded and Lille was the European Capital of Culture in 2004. The image of the city has changed in national and European scale; Lille has transformed into a creative, young city with many potentials and qualities, and has become a prominent tourist destination in North-Western Europe. [10]

Cross-border cooperation and connections: The Nord-Pas-de-Calais region has been actively involved in cross-border cooperation since the early 1990s with the city and neighboring Belgian territories. In 1991, LMCU and Belgium's local directors (Tournai, Mouscron, Courtrai/Kortrijk and Bruges) organized a cross-border cooperation conference (Conférence Permanente Intercommunale Transfrontaliére-COPIT). After this conference, many projects related to transportation and waste management have been developed with the cooperation of towns and cities. Since 1992, a large number of cross-border bus lines and cross-border spatial development plans (Groostad project) and projects such as 20 km^2 business park on the Lille-Gent highway have been designed.

Urban regeneration and renewal in the “Ville Renouvelée: The new metropolitan planning concept is described with the" Ville Renouvelée" strategy. The strategy that combines urban regeneration and renewal to become a solution to economic, social and urban problems has quickly become the basis of French national urban policies.

It is aimed to make the depreciated areas attractive again for existing users and investors with the improvements made.

Today, the 40 km^2 inner-city area that was within the Lille region at that time was identified as priority neighborhoods in 2002 strategical planning document (Schéma Directeur) and in collective agreement (the contrat d’Agglomération) signed between public administration, region and LMCU. Areas of 19th century working-class housing, old factories, brown-field sites and some post-war housing, as well as most of Roubaix's territories, are included in the priority neighborhood category.

LMCU actualized Ville Renouvelée through SEM which is a company with mixed economy and is created in order to develop the primary areas specified in Schema Directeur. In addition to SEM, another effective organization in development of brown-field sites was the Etablissement Public Foncier Nord Pas de Calais created in the early 1990s.

According to Schema Directeur, urban renewal, suburbanization and urban growth towards green spaces can only succeed if done towards Brownfield.

Within the scope of Ville Renouvelée strategy, public administration, Contrats de Ville, the EU and LMC worked together, the project was supported with local taxes by regional managers, and LMCU invested in much larger scale than local municipalities. These investments were directed from the center to Roubaix and Tourcoing in the north-west of the metropolitan area, in accordance with the policy pursued. It was attempted to renew of workers' housing and neighborhoods in bad condition, to repair the post-war damaged housing, to develop public spaces, city design, green spaces, city parks and education and training programs for the poor. [10]

CONCLUSION

Urban transformation implementations have continued to evolve since the emergence of urban growth movements in 19th century Europe. In parallel with globalization, urban regeneration studies and related strategies have become extremely comprehensive with the growth of urban settlement types from classical understanding of city to international cooperations.

Today, the approach of reuse the industrial areas lost its function that emerged in Europe and encountered with examples throughout the world over time is an important issue because of the size and number of industrial areas.

At this point, Ruhr from Germany and Lille from France has an importance with regards to re-function the industrial areas whose function ended, scope and scale of urban regeneration operations performed during the re-functioning period, being leading projects in this field and serving as a model of polycentric formations that are increasing day by day in the world.

Both examples became an important industrial center after the Industrial Revolution, however they turned into idle settlements with high rate of unemployment and abandoned industrial structures in urban centers as a result of the regression in industry after World War I.

Regeneration activities were developed in order to solve the economic problems, solve the problems in these settlements and restore the problematic areas to the city. In the meantime, it was aimed to revitalize the economy by leaving the industrial activities, which are the main means of livelihood, to the tourism sector, and the activities to support the cultural and social development of the settlements are performed.

In the studies made, while polycentric Ruhr conurbation is differentiated from the Lille example by the beauty of its natural vegetation and recreative areas, Lille is differentiated from Ruhr as well with the international dimension of urban system consisting of many cities and towns, including Lille. The polycentric formation remains within the borders in Ruhr, acts as a much stronger catalyst in Lille for the regeneration of the city with its cross-border dimension.

Although public transformation between the existing centers is an important factor in both cases, the international dimension of this transportation has developed more in Lille.

In the process of transformation the old industrial buildings were turned into view points in Ruhr Basin by creating viewpoints, the centers showing different areas of specialization were created in Lille.

The traditional industry has been maintained in the re-functioning of industrial areas even if it is symbolic, this situation has been used to make the city remarkable especially in terms of tourism.

Through the adoption of cultural marketing, a city that is preeminent with its industry turned into a city known for its service sector. Both cities have come to the forefront in terms of culture and tourism. These sectors have been supported by a network of advanced transportation.

With the provision of the public and private union, necessary investments were made in the areas needed. A general benefit could be gained by ignoring local interests.

Thanks to the development of a comprehensive economic strategy, design, training, production and marketing activities have been balanced in both projects.

Urban regeneration operations in Ruhr Region and Lille, have been carried out step by step within the frame of a specific program from a sophisticated point of view.

As a result of the review made within the scope of the article; the urban regeneration process carried out in the Ruhr and Lille polycentric conurbations can be divided into subcategories under the titles of original function, current function, aim of new function, interventions and regeneration partnerships, which will provide a basis for future projects. (Table. 1)

Original function	Coal companies, mining, steelworks	Textile industry, textile production
Current function	Social-cultural spaces, recreation areas	Social-cultural spaces, recreation areas
Aim of new function	-To eliminate the unsafe and unhealthy situation. -To provide ecology and culture-oriented revitalization of the region. -To find solutions to the current problems of the region. -To add touristic attraction to the region. -To create recreation space.	-To find solutions to the current problems of the region. -To ensure the revitalization of the region economically and culturally. -Making the area interesting in terms of tourism. -To eliminate the unsafe and unhealthy situation. -To create a balancing city that will reduce the dominance of Paris over France.
Interventions	-Rivers were cleaned and recreation areas were created for the city. -Unused industrial structures were re-functioned and needed spaces were created. -Travel routes to ensure sightseeing the constructions which have a characteristics of museum and all the areas were created. -Quality of the region has been increased by creating technological structures and social spaces in the area. -The current industrial landscape of the area has been preserved. -Green areas in the area have been cleaned and increased.	-The network of urban transformation (metro system, inner-city and cross-border bus lines) was developed. -The city became a central station for the North-West Europe high-speed railway which was planned to be constructed and was foreseen to work on Paris-London, Brussels-London and Paris-Brussels-Amsterdam routes. -The centers pointing different areas of specialization were created. -Lille became the cultural capital with cultural policies by developing the tourism in the city. -The cross-border cooperation relationships were developed.
Regeneration partnerships	Public and private cooperation	Public and private cooperation, LMCU

Table 1. Regeneration of Ruhr Basin Industrial Conurbation and Lille Conurbation [11]

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THE INTEGRATED CONSERVATION OF CULTURAL HERITAGE AND LANDSCAPE: THE CASE OF THE ISTANBUL LAND WALLS AND VEGETABLE GARDENS

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ABSTRACT

The paper will focus on the importance of the vegetable gardens as a part of the cultural landscape generated by the existence of the Istanbul Land Walls. Old photographs, maps and texts will be presented in order to frame the integrity of the Land Walls and the *bostan*s.

The paper argues that the *bostan*s constitute a cultural value within the Land Walls WHS and should be addressed as one of the values of the site. The paper aims at developing an approach to the Land Walls and the *bostan*s as a unified system that has historically had complimentary qualities. The adoption of this approach into the micro site management plan of the Land Walls WHS would be interpreted as a positive step. The definition of the Buffer Zone should be reevaluated within the conceptual framework of cultural heritage and cultural landscape, and the preservation and utilization decisions on this zone should be addressed within the Site Management Plan as a micro-site management issue.

Key Words: Integrated Conservation, the Istanbul Land Walls World Heritage Site, Yedikule Vegetable Gardens, Bostan, Cultural Landscape.

The Definition of the Problem: The Walls and the Historic Vegetable Gardens

Dating back to the reign of Theodosius II, that is the first half of the 5th century, the Thedosian Walls are considered to be one of the greatest achievements of the late antique military architecture.

The Theodosian Walls are 5,7 km long, which is divided into sections by 7 main gates and 96 towers. Their defense system consists of a moat (*taphros*), outer terrace *(parateichion*), outer wall (*mikron teichos*), inner terrace (*peribolos*), and inner/main wall (*mega teichos*) (Figure 12). The first phase of the Theodosian Walls, that is, a single wall studded with defensive towers, was completed in 413. Due to the earthquake of 447, 57 towers were demolished and reconstructed, this time as a double wall and a moat.

Figure 12. The Plan and the Section of the Theodosian Land Walls (Turnbull, 2004, 11)

The Istanbul Land Walls was inscribed to UNESCO's World Heritage List in 1985, as one of the four Historic Areas of Istanbul. In the statement of the Outstanding Universal Value (OUV), the site was described as "the area along both sides of the Theodosian land walls including remains of the former Blachernae Palace" (İstanbul Site Management Directorate, 2016).

Although the Outstanding Universal Value focuses on the walls as a monument and does not define them in their physical and historical context, the vegetable gardens are an integral part of the walls' cultural landscape (Durusoy and Cihanger, 2016; Koca, 2014; Shopov ve Han, 2013, Kaldijan, 2004; Kıvılcım Çorakbaş, Aksoy ve Ricci, 2014; Başer ve Eşbah Tunçay, 2010; Bilgin, 2010; Ricci, 2008).

A regulation dated 413 and compiled in Codex Theodosianus (15.1.51/CodTheod XV 1, 51, as cited by Philippides and Hanak, 2011, 303-304) reads:

"We command that the towers of the New Wall, which has been constructed for the fortification of this most splendid City [Constantinople], shall, after the completion of the work, be assigned to the use of those persons through whose lands this wall was duly erected by the zeal and foresight of Your Magnitude, pursuant to the decision of Our Serenity. This regulation and

condition shall be observed in the perpetuity, so that said landholders and those persons to whom the title to these lands may pass shall know that each year they must provide for the repair of the towers at their own expense, that they shall acquire the use of these towers as a special favor from the public, and they shall not doubt that the care of repair and the responsibility therefor[e] belongs to them. Thus, the splendor of the work and the fortifications of the City shall be preserved, as well as the use such fortifications to the advantage of private citizens."

From this text, it is understood that some private owners had already owned the land, on which the Theodosian Walls were built. The law gives them the right to continue to use their lands. Here, most probably, the use of the referred lands was only agricultural in the 5th century. Therefore, it is seen that the history of the agricultural production around the walls dates back to an earlier date than the construction of the Theodosian Walls.

However, in national and international legal frameworks, the vegetable gardens are hardly defined as one of the main components of the Land Walls cultural landscape, and, accordingly, there are only a few references to historic vegetable gardens as assets to be conserved as cultural heritage.

For instance, in the Istanbul Historic Peninsula Site Management Plan (SMP), some objectives are specifically set for the conservation of the Land Walls World Heritage Site (WHS):

Objective KS-H1: Ensuring that the cultural properties in Istanbul Land Walls World Heritage Site are conserved and sustained in accordance with contemporary principles and standards.

Objective KS-H2: Highlighting the cultural properties within the Istanbul Land Walls World Heritage Site in terms of conservation-use balance, providing them for public use and reviving them with the functional usages and design practices in compliance with its identity.

Objective KS-H3: Ensuring the promotion of Istanbul Land Walls World Heritage Site." (Istanbul Historic Peninsula SMP, 2011, p. 205-207)

As a result, although the Historic Peninsula SMP's approach seems to examine issues regarding the Land Walls WHS thoroughly, it is hardly adequate in terms of defining methods to solve the conservation problems of the Land Walls and the historic vegetable gardens surrounding them.

Understanding the Historic Vegetable Gardens

The Land Walls contributed to the shaping of a rich and varied cultural landscape in both the Byzantine and Ottoman periods, with cemeteries, suburban monasteries and healing shrines constructed during the Byzantine period, together with the vegetable gardens (*bostan*s) that partially supplied the city's food demand.

In this section, the historic gravures, maps and drawings will be examined in order to understand the character of the historic vegetable gardens as cultural heritage.

In the map of Schedel, which dates back to 1493, inside the walls near Yedikule Castle, watermills are visible (Figure 13). This may be interpreted as the first visual representation of a building related to agriculture in the historic maps of Istanbul.

In the 16th century map by Lokman (1584-85), the only urban void inside the walls seems to be the one near Edirnekapı, presumably both sides of Bayrampaşa (Lykos) Stream, whose northern side is called “Yeni Bahçe” (new garden) in later historic maps (Figure 14). In addition, when the outer part of the walls is considered, the areas near Edirnekapı and Silivrikapı seem to be open areas without any buildings. However, there is no specific sign pointing out the areas’ use.

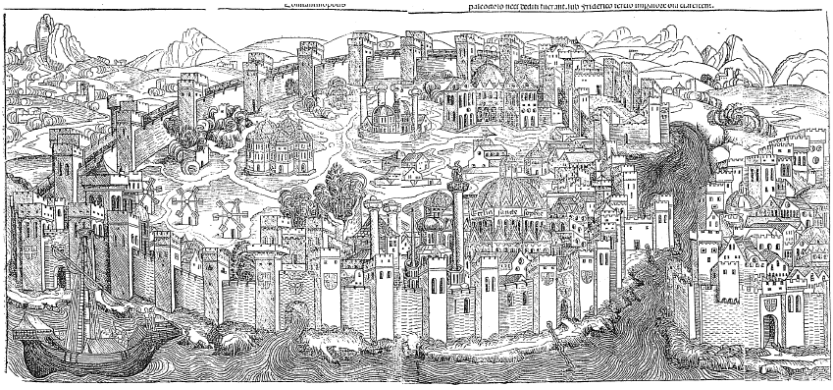

Figure 13. On the ‘Ancient Plan of Istanbul’ (1493) by Hartman Schedel, “Bostan Dolapları” (Watermills) near Yedikule are seen (Kayra, Maps of Istanbul, 65)

Figure 14. A 16th Century Map of Istanbul Historical Peninsula (Lokman, 1584-85)

Figure 15. Istanbul and the Bosphorus in the 17th Century (author unknown, Kayra, 1990)

Similar to the 16th century map by Lokman, a 17th century map of Istanbul visualizes the cemeteries on the northern part of the walls, near Edirnekapı and Eyüp, while showing the rest as green areas. However, in this map, no specific sign for agricultural use is employed.

The map dated 1764 by Reben is more detailed in terms of land use around the city, and the agricultural areas outside the walls and water streams are clearly seen (Figure 16).

In the analysis made for this study, -except the water mills in the 1493-Schedel map- this map is taken as the earliest map which shows the existence of the agricultural areas around the Land Walls. In this map, huge agricultural areas are marked outside of Yedikule Kapı on the south, around Lykos (Bayrampaşa) Stream and outside Edirnekapı Gate on the north (Figure 16).

Figure 16. An Historic Map of Istanbul dated 1764 by Reben (Kayra, 1990)

Another 18th century map, where the agricultural areas around walls are visible, is Kauffer's map dated 1776 (Figure 17). This map is considered to be the earliest map, which is based on modern cartography measurements and techniques. Therefore, it is very much different than 1764 map of Reben and it is far more accurate.

When the two maps are compared, it is seen that the agricultural areas around the Land Walls coincide roughly, whereas İsmail Paşa Bostanı which is inside the Yedikule Gate is not visible in the former (Figure 18).

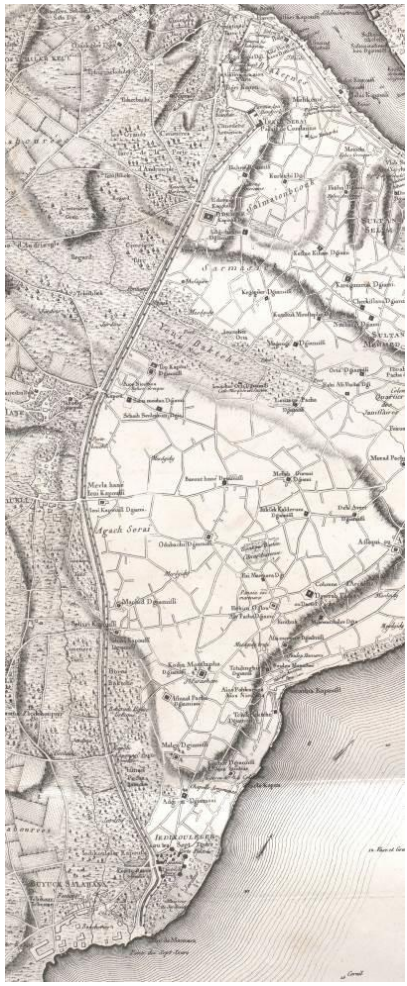

Figure 17. The Map by Kauffer Dated 1776 (Atatürk Kitaplığı Archive)

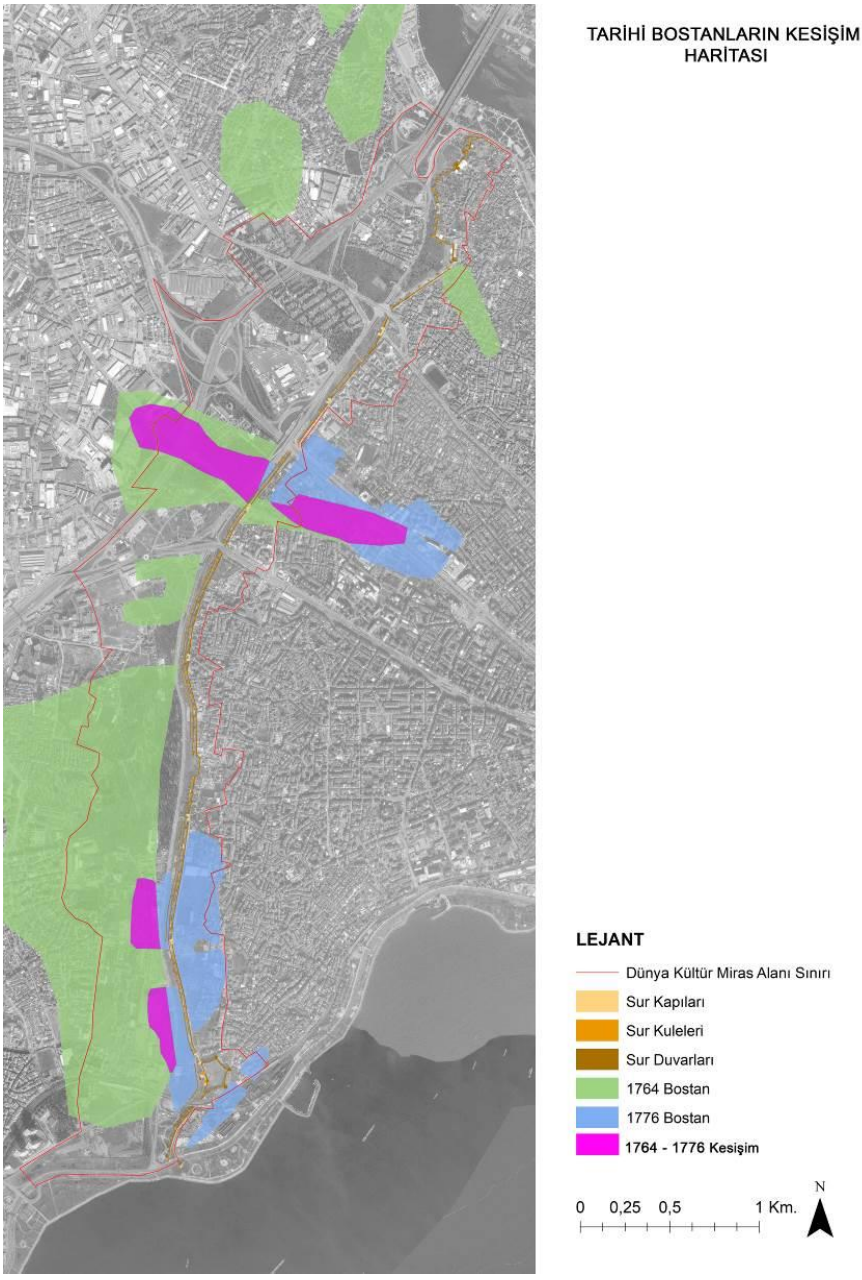

Figure 18. The Intersection of 1764 And 1776 Agricultural Areas is Visible in Fuchsia Color

Other maps, distinguishing between cemeteries and agricultural areas around the walls are 1840 map by Hallert, 1863 map by Stolpe, 1881 map by Demetriades, ottoman maps dated 1885 (Asitanei Aliyye), 1900 (Pera) and 1908 (Tefeyyüz Kütüphanesi); 1914-1918 Necip Bey Map and 1919 French Map. The agricultural areas around the walls in the referred maps mostly overlap, especially aroun the Lykos (Bayrampaşa) Stream inside and outside Yedikule Gate and as small portions outside the Edirnekapı Gate (Figure 19).

The Conservation of the Historic Vegetable Gardens

The unity of the Istanbul Land Walls and the agricultural areas (bostans) surrounding them form a unique cultural landscape (

Figure 20). Therefore, in conservation decisions, the *bostan*s should be considered as:

- a part of the water supply system of Istanbul's Historic Peninsula,
- a part of civic and monastic practices in the Byzantine Period,
- a part of the pious foundations system in the Ottoman Period,
- a part of urban farming activities in the Historic Peninsula in the Republican Period,
- a part the Land Walls as a system that constitutes the boundaries of the city in the Byzantine and the Ottoman Periods,
- a databank of historic and stratigraphic data on the seeds and agricultural practices in the past
- an embodiment of intangible values, that is, the historical continuity of agricultural practices in Istanbul's Historic Peninsula,
- an important opportunity to maintain sustainable urban landscape and viability of urban society" (Başer and Tunçay, 2010).

The historic vegetable gardens (*bostan*s) constitute a cultural value within the Land Walls WHS and should be addressed as one of the values of the site. An integrated conservation approach to the Land Walls and the *bostan*s should provide a sustainable conservation of the walls and *bostan*s. The adoption of this approach into the micro site management plan of the Land Walls WHS should be realized as a positive step.

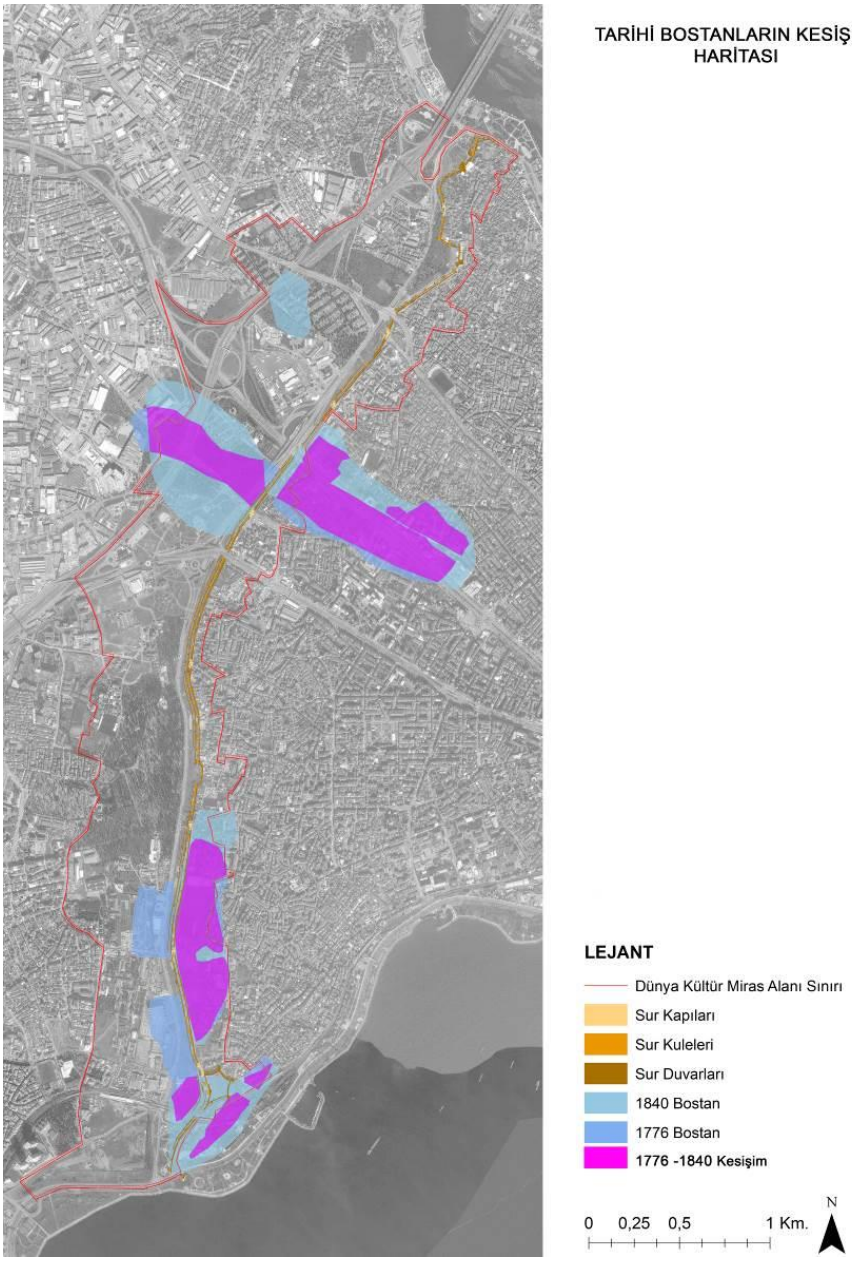

Figure 19. The Intersection of 1776 And 1840 Agricultural Areas is Visible in Fuchsia Color

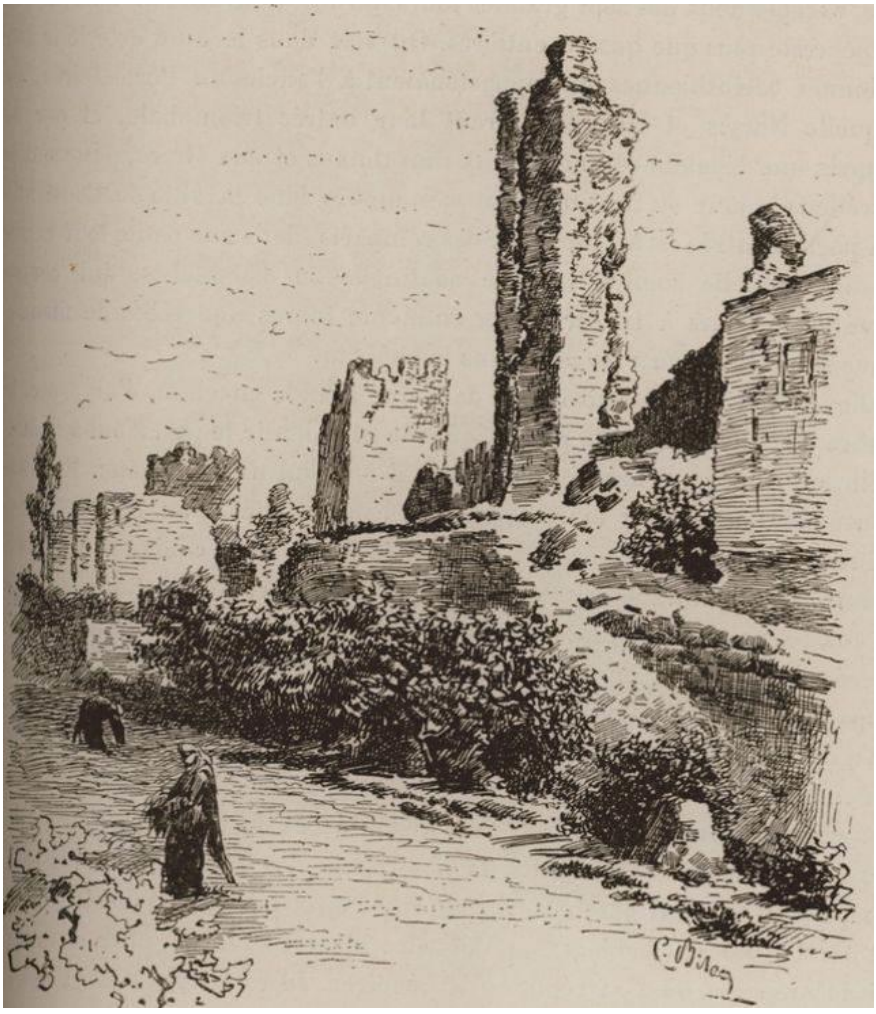

Figure 20. A Depiciton of the Land Walls and the *Bostan*s from the Publication of Edmondo De Amicis (Original Date Of Publication 1883, De Amicis, 1986)

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Finally, this paper utilizes information gathered for the report entitled "A Report of Concern on the Conservation Issues of the Istanbul Land Walls World Heritage Site with a Special Focus on the Historic Yedikule Vegetable Gardens (Kıvılcım Çorakbaş, Aksoy and Ricci, 2014).

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TRANSFORMATION OR ALTERATION OF KARAKÖY KEMANKEŞ AVENUE

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ABSTRACT

The purpose of this study is to put forward parameters believed to have been ignored in the transformation activities carried out in districts of historical and cultural importance, and to make suggestions by emphasizing important points that need to be considered in these activities. Ongoing transformation studies along the old city center of Kemankeş Caddesi in Karaköy have been taken up within the scope of this study. In this context, the historical buildings, most of which are being converted into hotels, and which constitute an important part of the region's history, have been exemplified, and the ramifications this situation has brought upon the region's character have been discussed. In the study's conclusion section, emphasis has been put on important criteria which needs to be considered during the refunctioning activities to be realized in the city's valuable urban parts like Karaköy which shed light on its historical, cultural, as well as its social processes. In this sense, the importance of concepts like cultural wealth and functional diversity is emphasized and should not be dealt with independently from users of such valuable urban parts**.**

The method of this study is comprised of stages of collecting, examining, and from an architectural environmental standpoint, interpreting by observing the necessary data.

Key Words: Transformation, Alteration, Karaköy.

Preface

It is inhabitants that make cities what they are. Cities touch people and vice-versa and thus communication forms between the city and people**.** The most important phenomenon that deems this communication meaningful is the architecture that features approaches of the past, ideas regarding today and predictions about the future. As it is, the most enduring elements that can be traced of this deep-rooted communication process between people and the city are its architectural products and the environment they generate. From this point of view, it can be said that cities having the chance to preserve precious traces of its true-life experiences and convey them to future generations have achieved valuable meaning and are strong cities from a communication standpoint. Of course, like all forms of communication, that which exists between the city and its people is invariable and not a static quality. Change and transformation come into play over time. Consequently, while existing communication sometimes takes on a deeper and more meaningful situation, it can also become degenerated as well. A striking example of this situation is the old city center of Karaköy's Kemankeş Caddesi. As it is known, perhaps the only element that made Karaköy what it is today was its centuries old, multi-cultural commercial life. It was this commercial life that not only determined the district's culture, but also generated its social fabric. Nevertheless, it is seen that each of the avenue's commercial office buildings, which represent an integral part of this historical fabric, are being refunctionalized and quickly transformed into consumer objects in the form of hotels. This situation has led to degeneration in the region's communication with its users by turning the mutual dialogue it once had with its inhabitants and passersby into meaningless gibberish.

Transformation or Alteration of Karaköy, Kemankeş Avenue

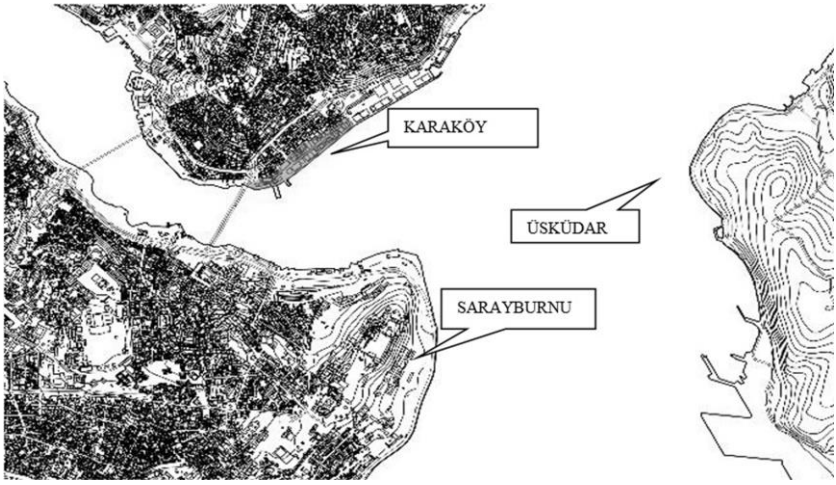

Figure 1. Karaköy, Kemankeş Avenue

As a district where diverse identities lived together throughout history, Karaköy took its name from the Jewish community that migrated from Russia's Karay/Karaim region [1]. Situated on the shores of the Golden Horn, it is known this historical region was a settlement at the end of antiquity**.** However, the region's active history began when the Genoese settled here in 1267 [2]. It gradually began to evoke the appearance of a European city when foreign embassies settled in the region from the 16th century onwards. By the 18th century, it had expanded further northward and began to fill up with various structures. Karaköy began to achieve a new identity with the construction of the Galata docks and commercial and financial buildings that opened in quick succession during the 19th century. Nevertheless, while modernization studies conducted during Adnan Menderes' 10-year tenure as Prime Minister (1950-1960) put Karaköy on the agenda, they practically wiped out its late-19th century fabric [3]. Once again, Karaköy is going through change and transformation in today's 21st century world. As one of the region's important hubs, Kemankeş Caddesi is an avenue where the impact of this change and transformation is felt most intensely. Scaffolding and signage positioned in front of the historical commercial buildings along the avenue herald news these historical structures are being turned into hotels, pointing to a Karaköy loaded with new meanings in this new context.

Figure 2. Ongoing Conversion Studies along Karaköy's Kemankeş Caddesi

The transformation studies continuing in an expedient, steady manner along both sides of the avenue also reflect the changing face of Karaköy. Regardless of how much the superficial indicators tend to show the old city center as renovated and revitalized, the rapid transformation of several historical structures into hotels also points to other underlying factors. This historical hub has become an important center of attraction in terms of Istanbul's tourism sector. Because it is not possible to construct new hotel buidings in the region as well as the fact there is very little available property to build on, historical structures are quickly being turned into hotels.

Historical Buildings Being Converted Into Hotels

The Central Pier Commercial Building, the Karaköy Passenger Hall, Çinili Pier Commercial Building, Galata Customs Building, Veli Alemdar Commercial Building, Hovagimyan Commercial Building and Liman Commercial Building are just a few of the structures undergoing conversion.

Figure 3. Historical Buildings Being Converted into Hotels

Central Pier Commercial Building: Garnering attention for its rich but moderate facade, the Central Pier Commercial Building was constructed between 1912-1914. Having served as the Maritime Operations of Turkey for many years, this structure is slated to begin serving as a hotel in the near future. This historical commercial building presents a unique image of the old city center with its protrusions bearing pulley-shaped cantilevers, and eaves that sit on grooved cantilevers, evoking a sense of nostalgia in passersby.

Figure 4. The Central Pier Commercial Building

Karaköy Passenger Hall: A decision was made to demolish the Karaköy Passenger Hall and replace it with a hotel. Designed by French architect Rebil Garbon, the structure was built during the first half of the 20th century and is one of the important works of the modern architectural process. Despite the fact it doesn't feature any traditional elements, it gives the avenue a character and creates a sense of familiarity in those viewing it.

Figure 5. Karaköy Passenger Hall

Çinili Pier Commercial Building: Built between 1910-1911, this commercial building attracts attention for its tile and stone cladding, which makes pedestrians stop to take a look at it. Today, the commercial building, which is being converted into a hotel by marketing its historical and cultural elements, seems to offer a frozen cutaway of time.

Figure 6. Çinili Comercial Building

Galata Customs Building: Built between 1907-1911, the Galata Customs Buillding (ex-Package Post Office) has the longest façade of any building along the avenue. This historic building, which is about to be converted into a department store and restaurant, features five round-arch fronts, with mostly Neo-Classic, and occasional Baroque elements, presenting an environment that practically makes us imagine the halcyon years.

Figure 7. Galata Customs Building

Veli Alemdar Commercial Building: Constructed in the late-19th century, this commercial building represents an important part of the avenue's historical and cultural makeup. Orginally built as a four-storey building, the traditional elements of these four floors are striking. Now nine-stories high, this historical commercial building is operated as a hotel.

Figure 8. Veli Alemdar Commercial Building

Hovagimyan Commercial Building: Constructed during the first half of the 20th century, this historical commercial building is striking for its blue, white, and dark blue porcelain tiles and decorative geometric shapes. The Hovagimyan Commercial Building reflects the historical and cultural values of the avenue with its fancy façade.

Figure 8. Hovagimyan Commercial Building

Liman Commercial Building: The date '1897' is inscribed over the entrance of the commercial building, which was once named 'Dadaviç.' This façade of this wide, bulky historical building overlooks both Kemankeş Caddesi, as well as Galata Şarap İskelesi Street. Offering a rich view with its cut stone appearance on the entry-level floor and its triangular pediment windows, this commercial building is currently utilized as a hotel.

Figure 9. Liman Commercial Building

Rich from an objective standpoint and profound in terms of meaning, each of the historical buildings along Kemankeş Caddesi in Karaköy, have practically been turned into commoditized, commercial objects. While the heavy, serious, objective surfaces of the avenue's historical structures represented money, power and constant balance in the past, today the same heavy, serious, objective surfaces have been renovated and transformed as they beckon cultural industry. While these historical buildings of Karaköy were marketed over time and converted into hotels, the hotels were also marketed over time.

In stating it more precisely, the venue is first being sold over its past and then the venue is being sold over its future.

When in fact, it is known that people of Turkish, Jewish, Armenian and Greek descent once had their places at this hub, which was quite different from Istanbul's other avenues and streets. As a matter of fact, in scanning through the 415-page phone registry of 1939-1940, one can find 166 telephone numbers belonging to historical buildings situated along the avenue listed in this phonebook. These listings show the immense diversity, ranging from produce trading to steamship agencies, from legal offices to freight forwarders. A portion of these telephone listings can be seen in the table below.

İsim ve İşlev	Telefon	Adres
Sıdıka Serbes / Bakkal	40259	Karamustafapaşa Cad. no:139 Pervititch haritasına göre 6. Vakıf Han'ın giriş katı
Adriatika Ş. Vapur Acentası	44870	KaraMustafapaşa Sk. Lloyd Han.2.Kat Şimdiki Veli alemdar Han
Anağnostopula D. Siskidi K. / Vapur Acentası	42612	Karamustafapaşa Cad. No: 141 Liman Ticaret Han
Barzilay ve Benjamen Fen Müd.	40989	Hovagimyan Han. 2.Kat
Compagnia Genovese di Navigazione a Vapore S.A.	44647	Hovagimyan Han. 5.Kat
Deutsche Levante Linie Taşımacılık	44760	Hovagimyan Han. 3.Kat
Mustafa Kasımoğlu	23076	Çinili Han. No: 18-20
Sinan Ozan / Avukat	41827	6. Vakıf Han. 4. Kat
Veli Alemdar / Müteahhidlik ve Ticaret	43528	Veli Alemdar Han. 1. Kat

Figure 10. A Portion of Telephone Listings

As one can see, this environment has become synonymous, not only with buildings, but with their users as well. This cultural and functional diversity practically gave the street a quaint European appearance, turning this axis into an exceptional locale in İstanbul. For instance, it is difficult to capture physical and cultural commonality between this historical axis and the Süleymaniye / Fatih districts [4]. As a result of this richness, a language unique to this region was formed. This language not only shed light on the commercial and social structure of the previous century / centuries, it allowed the opportunity for metropolitan people tired of concepts of speed and transience to get acquainted with the past.

CONCLUSION

According to the results that emerged from this study, the conversion of the historical buildings along Karaköy's Kemankeş Caddesi is the reason for the losses and contradictions in regards to the district's importance. With temporal dregs and memorial elements, it is possible to list the parameters that should be considered in transformation activities to be carried out in these types of urban parts which have positive effects on community awareness and neighborhood units, as well as shed light on historical, cultural, as a result, social processes in this manner:

Rather than being commercial-oriented, it is important to be human-oriented on transformation activities to be undertaken in these precious parts of the city. From this standpoint, not only is it important to benefit to from experts such as architects, urban designers, restoration specialist architects and architectural historians in decision what should stay and what needs to be changed, it is just as crucial to obtain the opinions of the people living in the region.

Whether it is in Karaköy or other historical districts like Karaköy, care should be exercised in finding the right balance between the old and new, cheap and expensive, local and foreign, and attention should be taken to ensure that the diverse legacy is preserved.

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BIOMIMICRY IN ARCHITECTURAL DESIGN STUDIO EDUCATION: DESIGN PRODUCTIVITY OF LEARNERS

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ABSTRACT

Biomimicry is a rapidly growing design discipline and emerging field in architecture. In Biomimicry solutions are obtained by emulating strategies, mechanisms and principles found in nature. However the use of biomimicry in architectural design education is limited. Considering the implications of biomimicry for architectural design education, this paper aims to incorporate this approach in to idea of the architectural design education. In order to achieve that, this paper examines an educational architectural design project carried out to the fourth year architectural design students at the Mersin University. In this study an educational tool-Biomimicry Design Tool (BDT)-was developed and integrated in to the idea generation phase of an educational design project to understand and explore the implications of the biomimicry approach for design education.

The findings of this study indicated that the educational tool within this approach was found as influential among the fourth year architectural design students for the idea generation phase of the design process. Number of design ideas were developed and presented in the BDT exercise proposes an original perspective at the early stages of design process as it constitutes both observation and analysis stages and the idea generation phases at the same time. It can be seen that the design productivity of the students were increased. Consequently, the research has shown that BDT exercise is a successful tool for the idea-generation stage of design process of architectural design education.

Key Words: Biomimicry, Design Education, Idea-generation tool, Biologically Inspired design, Design productivity.

INTRODUCTION

Nature has an endless source of inspiration for scientists, engineers, architects, designers and etc. Biomimicry is the study of nature that derives inspiration for solutions to human problems. These solutions are obtained by emulating strategies, mechanisms and principles found in nature. Several researches about biomimetic design who are integrating it to architecture has been done in the last decade. [1; 2; 3].The application strategies of biomimetics in architecture is still discussed. But on the other hand, the application of biomimcry/biomimetics/biologically inspired design approach for architectural design education have not been fully explored. This newly-developing interdisciplinary methodologies (e.g. biomimicry spirals, biologists at design table etc) have not been currently incorporated in to architectural design education.

Considering the implications of biomimicry for architectural design education, this paper aims to incorporate this approach in to idea of the architectural design education. In order to achieve that, this paper examines an educational architectural design project carried out to the fourth year architectural design students at the Mersin University. In this study an educational tool- Biomimicry Design Tool (BDT)- was developed and integrated in to the idea generation phase of an educational design project to understand and explore the implications of the biomimicry approach for design education.

Biomimicry in Architectural Design

The practice of learning from nature, organisms and systems has multiple tags in literature. These are bionics, biomimetics, biomimcry, biognosis and bio-inspired design [4; 5]. Biomimcry can be defined as an '*innovation process encouraging the transfer of ideas, concepts and strategies inspired from the living world, with the objective of designing human applications aiming at a sustainable development'* [6]. Biomimetics refers mostly to the field of mechanical engineering, while biomimicry is used in design professions, architecture and product design. The word Biomimicry possess the same Greek roots as Biomimetics because each derives from the Greek *bios* that denotes 'living' and 'mimesis' that means to 'imitate'; it is imitating life [7].

Biomimicry as a theory, it regards nature as a source of inspiration and/or a library waiting to be explored. Benyus explains [8].the approach in three main points:

• Nature as Model - studying nature and inspiring from its designs and processes to solve human problems.

• Nature as Measure - an ecological standard to judge the 'rightness' of our innovations.

• Nature as Mentor - a new way of viewing and valuing nature, not what we can extract from but what we can learn from.

Biomimicry as a design strategy Gamage &Hyde, [2]; classified it into two main categories; direct and indirect approaches. They defined the direct approach;' a design directly mimics strategies of an organism, a behavioural

pattern or a system in nature with aid of an analogical translation system' [2]. And in the indirect approach, the design uses abstract ideas and concepts as principles, from those apparent in the domain of nature [9; 10].

Biomimetics as a design approach can also be conceptualized as a problem-driven approach and solution-driven approach [4; 11]. In the problem-driven approach, the designer seeks to develop a solution to a problem via biology, the solution-driven approach involves taking biology as a solution to emulate and then transfer to human designs systems.

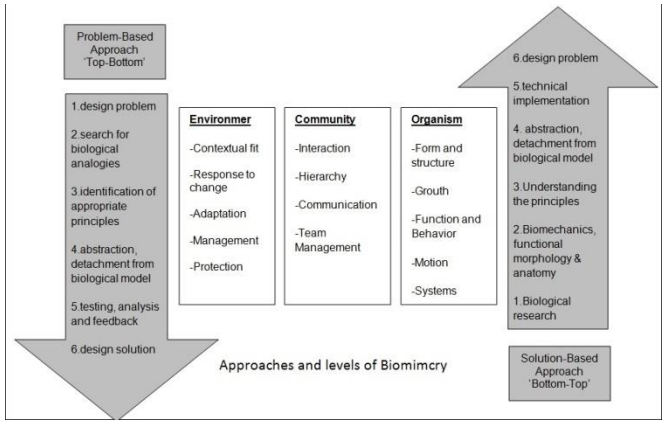


Figure 1. A Framework for Understanding the Various Forms of Biomimicry [12]

The framework redefines the different levels and approaches of a biomimcry as a tool to solve problems in architecture. It may allow designers and architects who want to use biomimicry as a methodology for finding solutions to design problems to choose best approach. Regarding at both problem and solution driven processes, Helms, et al. [11] identify the general steps involved in each approach and the main steps in each process are shown in Table 1.

Problem Driven	Solution Driven
Step1: Define the Problem	Step1:Identify Biological Solution
Step2: Redefine the Problem	Step2:Define Biological Solution
Step3: Search for Biological Solution	Step3: Extract Main Principles
Step4: Define Biological Solution	Step4: Redefine the Solution
Step5:Extract Main Principles	Step5: Identify Problems
Step6: Apply Principles	Step6: Define the Problem
	Step7: Apply Principles

Table 1. Comparison of Problem and Solution Driven Approaches [11]

In the problem based approach, as found by Helms, et. al. [11], in step 1, there are two main components. The first part of this step involves the identification of a problem while the latter part focuses on the subsequent translation of this problem into functional terms. There are two different methods to assist the participants about the functional translation. The first one is functional decomposition, which breaks a complex function down into its sub-functions. The second one is functional optimization, which identifies functions based upon optimization criteria-abstraction. In the second main step, takes the form of a question similar to: What methods do biological solutions use to successfully achieve the identified function? Step 3 is involved the search for biological solutions and in the study by Helms, et.al., the subjects are provided with four different search strategies [11]. These strategies are shown in the Table 2.

Search Strategy	Description
Adjust Constraints	Broaden problem definition to widen search area
Identify Champions	Locate organisms which survive in the most extreme examples of the problem being investigated
Find Variations	Look at different methods utilized by different ‘families’ or sub-species of organisms
Multi-functional	Identify single solutions that successfully resolve multiple challenges

Table 2. Biological Solution Search Strategies [11]

After the biological solution is identified then the next step is to develop a deeper understanding of how it works. According to Helms, et.al. [11], the

utilization of the functional decomposition strategies expressed in the Step 1 may assist with this process. The final step involves applying the main principles to the desired domain, such as architecture, industrial design, engineering or interior design.

In the solution driven approach, it involves some of same steps of problem driven approach but the order of the steps does change. Helms, et.al. [11], assert that nearly half of the designers utilized this approach. In the first step of this approach the designer is identify a particular biological solution that could be applied to challenges in different domains. Step 2 is to define the solution in functional terms with the step 3 being extract the main principles. In the step 4 the designer is to reframe these principles within the context of the perceived usefulness of the function or functions being achieved. Step 5 seeks to identify potential challenges where these principles could be applied with step 6 further refining and defining this problem. The last step is to brainstorm possible applications to which these principles could be applied.

Biomimicry Guild's Design Spirals

Another approach to applying biomimicry to design is the method developed by Carl Hastrich, in conjunction with Jainine Benyus and Dayna Baumeister [13]. Similar approach as the solution and problem driven methods mentioned above, these methods offer the designer two different approaches to the design process as well: Biology to Design and Challenge to Biology [13]. These approaches are much like the solution driven and problem driven methods reviewed above with the primary identification of a biological source of inspiration (solution driven) represented by the Biology to Design spiral and the primary identification of the challenge (problem driven) represented by the Challenge to Biology spiral. The spirals include the design steps below at Table 3.

Figure 2. The Biomimicry Design Spirals- Challenge to Biology and Biology to Design (reproduced from [14])

Design Steps	Description
Identifying	Developing a design brief of the need and identifying the core problems
Interpreting	Biologizing the question, asking the questions from nature's perspective
Discovering	Looking at natural processes and organisms that have the answer to those questions.
Abstracting	Finding the repeating patterns and processes within nature that achieves success
Emulating	Developing ideas and solutions based on natural models
Evaluating	Comparing the ideas developed to life's principles

Table 3. Design Steps of Biomimicry Design Spirals (reproduced from [14])

This study focuses on the solution-driven approach or 'Biology to Design' approach, as it follows a design process developed for educational purposes.

The main problem in integrating biology to knowledge into design process is the lack of in-depth biology knowledge of designers. Design practice has already an interdisciplinary nature. Not being a specialist on a specific material, technique or sector, designer creates the links between the objects, flows of information, symbols, etc. and the tools and methods of biomimicry are now being appropriated to the design process as well [15] These tools and methods (e.g. biomimicry design spirals, biologists at the design table, etc.) aims to bridge the gap between biologists who want to share his/her information on nature and designers, architects, engineers, etc., who want to make use of such information emerged from nature to develop solutions [7].

Biomimicry in Design Education

Considering to aim of the research, it is significant to understand how is being incorporated biomimicry around the world into design education. There is three approaches on design education and Biomimicry.

InnovationSpace is a trans-disciplinary education and research lab, between the Institute of Design and the Arts and the School of Engineering and the School of Business at the Arizona State University. It aims to provide education on the development of products that create market value, serve societal needs and minimize impacts on the environment.

Another approach on design education a Biomimicry is developed in the National University of Singapore (NUS). This is an approach for providing 13-weeks project courses based on integrating biomimicry into design for sustainability framework. In these courses, 'biology-to-design' and 'challenge-to-biology' approaches are included individually within the framework of design for sustainability [16]

University of Houston conducted an educational approach Biomimicry workshops at the Idea-Generation Phase. It implements the biomimicry approach at the idea-generation phase for sustainability purposes, through a week of workshop- consisting of introduction to biomimicry, guided observation of nature, searching databases and creating ideas on the natural inspirations-and later a one-day workshop on another guided observation of nature [17].

Mentioned above, it can be seen that there is various approaches towards the implication of biomimicry for design education- i.e. education and research lab, project courses, workshops. In this study, we incorporate the Biomimicry into idea-generation phase of the design process.

Aim of the Study

In this study, the implications of biomimicry for architectural design education will be explored through the integration of a design tool, developed by the authors –i.e. Biomimicry Design Tool (BDT)- at the idea generation phase of the architectural design education.

The BDT was incorporated in the idea generation phase as a three-day exercise. The aim of it was to let students explore and document different natural systems and organisms. The students were expected to inspire from nature and develop diverse solutions without limiting their own perspective. In this exercise, the students can use the online database or sources to find inspirations (i.e. Asknature.com).

Method

Students are guided through a design exercise utilizing a solution-based, bottom-up, 'biology influencing design' approach [11; 12]. The exercise involved (1) identifying a structure for a solution-based approach, (2) defining the biological solution, (3) extracting biological principles, (4) reframing the solution, (5) searching for a problem, (6) defining the problem, and (7) applying the biomimetic principles to the design problem.

When observed, the BDT was consisting of 6 parts: defining biological solution, abstraction of biological principals, reframing the solution, searching for a problem, defining the problem and the transfer of those features into design problem at hand. Fig.3. This idea-generation tool was considered as a way to integrate the biomimicry approach into architectural design education for the productivity of thinking. This exercise was developed for only considering the idea generation phase of the design process within the context of the small scale design education project.

For this research, the Biomimcry Design Tool was integrated into idea generation phase of the small scale project: 'Designing a canopy for 100 m^2 closed space'. 7 students have participated in this exercise and submitted their outcomes shown in the Fig. 4.

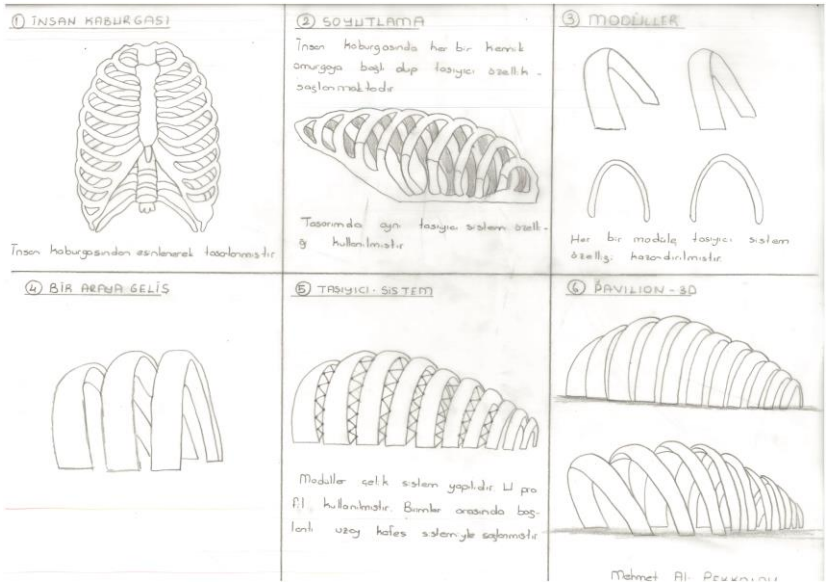
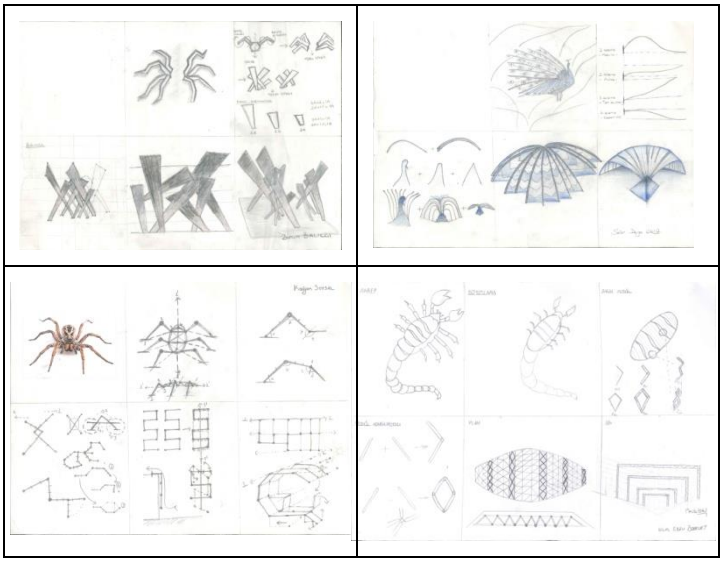


Figure 3. The BDT Format Example (Student 7)



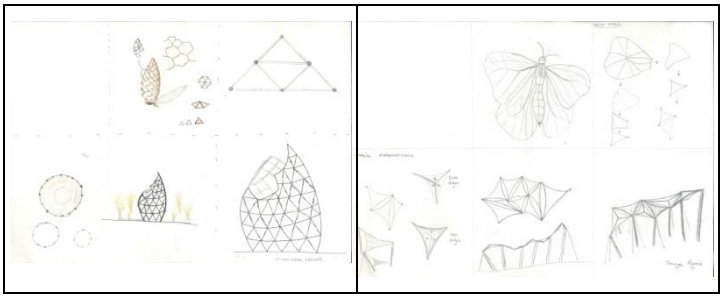


Figure 4. Students' Works (Student 1, 2, 3, 4, 5, 6)

Results and Discussion

As a result, we grouped the students according to their approach to the problem. We grouped them into three parts. The students with analytic outcomes, abstract outcomes and both analytic and abstract outcomes. Table 4.

Student No	Analytic Approach	Both Analytic and Abstract Approach	Abstract Approach
1			
2			
3			
4			
5			
6			
7			

Table 4. BDT Exercise Outcomes (Students Approaches to the Problem)

7 different participants will be evaluated in terms of their design processes and architectural products of their works which they have revealed with different analogical approaches. Initially, participants will be presented with their own narratives, and then each individual design process and outcome evaluation will be discussed, and the work will be grouped by their direction. In these evaluations, methods, analogical approach, aesthetic, functional sufficiency, structural definition and applicability criteria will be tried to be presented.

Student 1 mentioned her idea generation phase as' *In my analogy work, I have chosen from nature: 'a peacock', its performance in both physical and tail opening; I think that I can make similarities with architecture and get rich in structure. In the first stage, the creature selected by the hand exquisite was sketched and its structural values were visualized.*

In the second stage, it was observed that the wing opening performance could be abstracted to obtain an abstract structure that could be opened and closed.

In the third step, the living body's body (wing and fur) and the head part are abstracted and the unit module is obtained.
In the fourth stage, alternatives that can be used in 2 dimensions were produced. A pattern study was done which can be used in the coverage of structure cavities.In the final stage, a 3-dimensional structural design was obtained. As the head part is displayed as a triangular piece of volume, the wing parts are brought in the form of abstracted wings to form a closed volume. A semi-open area with a structural value at the same time as the roof covering was obtained. The ability to open and close in such a way as to be suitable for the purpose of use overlaps with the natural, instinctual movements of the living species taken as a similarity.'

As mentioned by the student 1 her approach to biomimicry was both analytic and abstract thinking. She imitates the movement of the peacock and used it in her design. The first participant has benefited very little from analytical data in their analysis and abstraction. It can be said that the analogy of this participant is a very abstract point. The spider, she chooses to purify the figurine from all the details and concentrate only on the scale and balance in the legs. In the process of creating a space by interpreting this approach; the desire to work against the classical and static aesthetics of the past, and the desire to work to achieve a vibrant aesthetic stemming from the change and rapidity of the "architectural dynamism" of the futuristic architectural approach. The participant avoided the vertical lines and horizontal lines in his design and tried to create a dynamic effect and abstract the movement by taking advantage of the inherent nature of the slant lines. The resultant analogy is a successful-aesthetic architectural product that is shaped far away from the selected spider figure. Since esthetic anxiety is at a high level, it can be said that material and structure knowledge is not considered much in the name of applicability of design. This is the negative side of work. Participants are expected to submit at least a proposal on behalf of the structure system. It is possible to consider applying a gross concrete system for the resulting product. It is also possible that the construction that is defined as a system of interconnected elements is steel.

Student 2 mentioned her idea generation phase as' '*The live "peacock" I have chosen from my nature in my analog work, the physical performance and the motion performance it displays at the tail opening; I think that I can make similarities with architecture and get rich in structure.In the first stage, the creature selected by the hand exquisite was sketched and its structural values were visualized. In the second stage, it was observed that the wing opening performance could be abstracted and an abstract structure could be obtained that could be opened and closed.In the third step, the living body's body (wing and fur) and the head part are abstracted to obtain the unit module. In the fourth stage, alternatives that can be used in 2 dimensions were produced. A pattern study was done which can be used in the coverage of structure cavities. In the final stage, a 3-dimensional structural design was obtained. While the head was displayed as a triangular piece of volume, the wing parts were brought together in the form of abstract wings to form a closed volume.*

A semi-open area with a structural value at the same time as the roof covering was obtained. The ability to open and close in such a way as to fit the purpose of use coincides with the natural, instinctual movements of the living path taken as the analogy.'

The second participant was inspired by the peacock motif in his work. It is seen that motion performance is taken into consideration in addition to the physical characteristics and aesthetic structure of the figurines selected in analysis and abstraction. It also shows the use of analytical thinking in the effort to obtain modules with wings and feathers and head-on abstraction. A purist approach has been established in abstracting the head with a pyramid. In the abstraction of the wing and the fur, it was observed that the functional structure of the physical characteristics belonging to the figure was also taken into consideration and transformed into the main carrier element by analyzing the form and the shape by analogy. The main bearing elements are fixed by connecting intermediate elements formed by abstraction of the fur, and also a closed volume is formed. There is no suggestion about the material. In the abstracting of the fur, it is possible to use the main figure purified from all the details and decorations. At this point it can be said that the participant's analogical approach is a very abstract point. The result obtained can be described as a successful architectural product in terms of aesthetics. However, there is no suggestion in this design as to how the head and wings should be joined and how to move. Especially how to connect the structural system which defines semi-open area with pyramid and how to add motion mechanism should be considered. However, given the length of time for the study and the absence of the participant's mechanical knowledge, the expectation of these details is unthinkable at this stage. It is expected to be solved in the later stages of design. As a result, we can say that the method of study of the second participant is a combination of analytical and formal approach.

Student 3 mentioned his idea generation phase as' *When we examine the structure of the spider system is based on balance. Both the joints in the feet and the legs on either side of the torso are shaped to stabilize around an ax that passes right in the middle of the torso. Since a jointed leg system provides flexibility in transferring the load to the ground, it prevents the legs from being damaged in transferring the load to the ground, and the integrity of the system is prevented from being distorted as the system continues to work as a whole Leg combinations that allow movement from a point that is the smallest part of the system are assembled in different combinations to form the system. It continues by joining from the middle parts or the end parts. The smallest unit of the system can be combined with the tip and parallel to each other. When the tip is articulated to the tip, the system can be combined from the center point and turned around a center. In this way, the system is fixed and a completeness is ensured. It is possible to position different parts in different directions by changing the angles of the parts that will form the system before they are fixed. In this position, the system sometimes becomes a two-dimensional staircase that will help climb over a surface. When parts of the system come together side by side in parallel to form a tube, it is possible to change the positions of certain parts of the parts enclosing the top of this*

transition area to close the top of a transition and to reshape the parts of the top cover according to the angle of arrival'

The third participant also inspired the work of the spider figurine. It is seen that there are quite detailed observations and observations about the physical properties of the figurine selected in the analysis and abstraction and a design is made through the module obtained in the result sheet. The joint locations and the moving joint points stand out in the design approach and in the final result. When the modules obtained by the physical structure of the spider are put together, the insertion of the moving knot points ensures that the result obtained from the design moves away from the formally affected figure. . It is noteworthy that the result is a flexible structure system, which means that the parts that will form the system before it is fixed can be positioned differently in different directions by changing the angles. It is also conceivable that when the joint points are made mobile and the control mechanism is formed, a kinetic structural structure of the architectural product is gained. The fact that design features such as climatic data are taken into account can also be emphasized as a positive aspect. The lack of comment on the material of the system to be used together with many details of the participatory structural system appears to be a deficiency. As a result, it can be said that the third participant used an analytical method which is very strong analytical. In addition, a product has been elaborated in consideration of feasibility.

Student 4, both analytic and abstract approach:' *The small and strong structure of the scorpion, when examined in terms of analogy, provides a steel-like power to the leg and body. The body represents the main vertebra, while the legs form the intermediate vertebra, resulting in a stronger structure. The pavilion is made up of two separate masses, each showing its commitment to each other. This commitment speaks of an abstract commitment without being provided with any material. Because of the characteristic structure of the scorpion, it does not show its emotions clearly. It is therefore not a matter of assembly as any material. Because the main spine was affected by the body, a reinforced concrete structure work was done. For the representation of the intermediate vertebrae legs, it is desired to refer to the giant hair scorpion piece made of steel and yellow color. The pavilion of the science museum was also influenced by nature.'*

The fourth participant used a combination of analytical and formal approach in his work inspired by the scorpion figure. Unlike all other participants, the character and feelings of the selected figure, Features have also been used as input in abstracts. The participant has made the two scorpion abstraction and the functional requirements are constructed in this way. There is a clear recommendation for use. The two structures are structured side by side with abstraction from emotion but with different materials and different working styles. It is possible to use different structural systems together, to define the systems to be used, to make predictions about color and material.

Student 5 with analytic approach mentioned his work as' *since the arrangement of the scales on the cones is shaped according to the golden proportion, they have an attractive and aesthetic appearance. One notable aspect of cones is that they can be turned on and off depending on different*

temperature and humidity conditions. The coniferous wood has woody hardness, a double-layered and fibrous structure. Cells forming the inner part of the shell are triangular and short-structured; While the cells forming the outer layer are thicker walled and longer. Located on the outer part of the cone and forming the first layer. The shell part attracts attention and repeats itself in a certain geometric order and in the circumference that surrounds this surface part. I wanted to design an outer structure with triangles from the surfaces formed on the outside of them. I wanted to show this on the outside, seeing the role of the outer shell carrier. The purpose of this project is to make a forest club. I made observation and terrace areas on different floors. I intended to cover the outer surface with glass material and continue the visual continuity. I designed steel bars as structural material. These steel elements constitute both the carrier system and the texture of the facade. Thus, it has wider uses of interior spaces.'

The fifth participant was inspired by the cone figurine. There is a clear recommendation for use. He has identified a module by taking the physical and aesthetic aspects of the arrangement of the stamps on the Kozalağ, as well as the ability to move and analytical examinations on their arrival. The selected module is reduced to a triangle. At this point there is a very abstract analogy approach. The designer, who aims to create the triangle module that he has selected the figurine form he chooses, draws attention with the effort to move away from the main form of figurine. A clear attitude towards the material is evident. But he hesitated to incorporate the ability to open and close and move in his analysis. This may be due to the inadequacy of mechanical information and the short period of design time. As a result, the fifth participant can be said to prefer predominantly an analytical analogy approach, especially during module selection and design creation.

Student 6 mentioned her idea generation phase as' *the living entity used in the analogy is a butterfly, and it is depicted as a perception by abstracting the butterfly first. Later on, the anatomy of the butterfly was examined and divided into certain sections within it. The butterfly, wing, trunk and head are divided into 3 parts, and there is a special ratio which provides balance. These sections focus on the wing, from which the veins dividing the wing into different geometric fragments are foregrounded. In addition, for the butterfly wing to have a certain balance, the proportions of its body and its feet are also examined. The wing has been a pioneer in the implementation of the suspension system to perceive a delicate and insatiable construction. The separation of the canadias into different geometric shapes has also been a reference in the planning of our system. First of all, it is designed as a seasonal exhibition space and is kept alive at various times by various functions such as seating area, activity area. In the course of the plan, the disintegration of the wing by the vessels in the course of the assembly was effective in the use of triangular forms. In the assembly of these forms, a hierarchy has been defined as a size, and sometimes larger parts are used, while smaller sized parts are sometimes used. This suspension is affected by the opening and closing of the wing of the butterfly while designing a suspension - stretching system which assumes duty. And in consideration of this, it is desired to revive the wing of the butterfly by reviving the parts in the*

form of a triangle, from the middle parts to the inside and the lower parts and sometimes to the upper parts. In this view, it gives a three-dimensional appearance and rhythm-like mobility while looking both indoors and outdoors. The veil, starting at a certain height, has risen further towards its ends, representing the rising of the flying butterfly by opening and closing its wings'

The sixth participant inspired the work of the butterfly figure. Despite the fact that quite detailed observations and studies have been made on the physical properties of the selected figurines in analysis and abstraction, the designer has continued to study by specifying a structure system in which these physical properties can be expressed. The designer using the suspension system tried to make the wing forms broken by the veins with membrane and steel ropes. It can be said that the analogy of this participant is also a very abstract point. He tried to clarify the butterfly figurine he had selected from all the details and to express the disintegration of the wing by the veins in the course of the gathering of the pieces with the use of triangular forms. The resulting product is formally far from the butterfly figure. Its design is about the abstraction and shaping of the movement and ascension of the wing's wings. These membranes have been tried to be formed with differences in the height of the parts. As a result, it can be said that an abstract product is achieved.

Student 7 mentioned her idea generation phase *as'Designed inspired by human ribs. Each bone in the human rib is attached to the vertebrae and provides a carrier characteristic. The same carrier system feature was used in the design. Each module is equipped with a carrier system feature. Modular steel system is built. U profile is used. Connection between units is provided by space frame system'*

The seventh participant performed an analytical approach based on the rib figure. The design was carried out on the side of the half of the ribs and with small movements in the dimensions of the units. In the name of abstraction, it seems that the chosen figure can not be removed formally too much. In fact, changes in the curves of the selected figure units using futuristic shapes can achieve formal richness with approaches such as exaggeration of dimensional differences. Participants preferred to focus on structural response and applicability instead of searching for these types. Modules are defined and considered as U profile and interconnections are provided by space cage system. The analytical aspect of the work involves a heavy analogical approach and feasibility.

Based on the exercise mentioned above, the researchers contend that the aim and objectives of the exercise were met. The students described their experience as interesting, informative and enjoyable.

CONCLUSION

The designers must move beyond the formalistic characteristics of the nature and encourage people to develop a deeper, more responsive understanding of the nature. The Biomimicry Design Tool integrated into idea generation phase of the architectural design education process (1) helped the students in understanding the process of creative thinking and creative problem solving (2) aided the process of learning from nature/biomimicry (3) allowed the students to gain an awareness of nature acting as a design mentor. This study may suggest that Biomimicry itself as a tool for fostering creativity may be viable instrument in idea generation phase of the architectural design process.

The BDT exercise was developed as a idea-generation tool to incorporate the biomimicry approach into design process but on the other hand we don't know its influence on the later stages of the design process. The further researches the implications of the whole design process could be explored. It should also be noted that the research was conducted with novice designers, and their skills and needs are different from that of professional designers.

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A TRANSDISCIPLINARY PEDAGOGY FOR THE ROBOTICS AND DIGITAL FABRICATION IN ARCHITECTURAL DESIGN EDUCATION

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ABSTRACT

In field of design computing and its integration to design curriculum, there are continuous shifts and diversifications. The field is fed by the developments in computation technologies. Therefore, the diversification of the scope continues as the integration of these developments in to design field. With these developments, the scope of the field is enlarged and the focus on the educational and cognitive aspects of such areas are proliferated. For each introduction, there appeared a new area of inquiry. The current research tendency is on robotic fabrication and additive manufacturing, so their pedagogical aspects and potentials should be investigated while they are forming a novel niche for the design field. At this stage, this paper explains the exploration of a curriculum for architectural robotics within the scope of experimental workshop program that have been developed and initiated at TOBB University of Economics and Technology, Department of Architecture. The very basic objective of the course is to create a transdisciplinary atmosphere for robotics and architecture through the contribution and works of students and researchers from different fields. To develop a critical and creative understanding of architectural robotics, the conditions, limits, and possibilities of robot arms have been explored on a wide range of activities from the assembling of the parts of the arms, to the mechanical behaviours and manipulations and the computational operations. Considering that the robotics are elaborating research on machine learning and self-learning robots, it is possible to suggest that it shall be of utmost concern to understand and interpret the behaviours of robots, rather than developing better skills of operational code writing. In that sense, this course focuses on the behaviours, capacity, and the learning of the robotic arms and the participants correspondingly.

This paper shall present the content, and structure of that course alongside the experimental works of the participants.

Key Words: Architectural Robotics, Architectural Design Education, Digital Fabrication, Digital Fabrication Curriculum, Robotic Fabrication.

INTRODUCTION

Design, as an overarching term for the field of creative industries has been formed by the intersections of various fields that have continuous knowledge accumulation, autonomous backgrounds and pedagogies, and they have their own grounds and their own epistemological conventions. Rather than autonomous disciplinarity or multidisciplinarity, the interdisciplinarity of the field of design has been providing a room for different disciplines to interact and to proliferate generous field of practice. As well as current conditions of the practice and tendencies of the research communities, the chronological relationships between design and various fields, particularly design computing and design pedagogy indicate and highlight the interdisciplinarity of the field and has been witnessing the articulation of different fields with generous research outputs.

Since 1960's, with the enormous influences of the ideas and the works on cybernetics of Gordon Pask, the field of design has an immense tendency to integrate digital technologies and to seek for the advantages of them [1]. Nevertheless, up until 1970's there is not any significant indication for the formation of the pedagogical understanding and research for the aggregation of the fields. In 1970's, with Akin's (1979) dissertation, the scope of the field is started to take its shape and determined by the integration of the computers and information technologies in design education and processes [2]. Following, in 1980's, the specialization in the field is seen by proposing computers as a tool that aids to design, drafting and drawing. In 1990's, the focus on CAAD (computer aided architectural design) is continued but also it is seen that computation and digital media are integrated to the design education curriculum from a cognitive perspective. Starting from 2000's, there is a large-scale expansion of the field scope. Due to the developments in computer and computation technologies, the borders of the 'digital' is enlarged; and its scope is diversified due to the articulation of new disciplinary branches like fabrication, robotics, information management, artificial intelligence, ubiquitous computing and material research. Accordingly, the field's focus on the educational and cognitive aspects of such areas are proliferated. For each introduction, there appeared new area of inquiry. Accordingly, within the field of design computing and its integration to design curriculum, throughout its chronological formation, it is observed that there are continuous shifts and a diversification in the scope of the field due to its expansion by the developments of computer and computation technologies. Therefore, the diversification of the scope continues and will continue as developments in the technologies are integrated to design and architecture.

When the contemporary research tendency is analysed, it is seen that digital fabrication, particularly robotic fabrication and additive manufacturing hold the potential to form a novel niche for design education. The current climate of the field is mainly based on primarily the speculation of the robotic fabrication theory and its real-time implementation. Within the scope of Turkey, there is a limited research field and fabrication facilities. Yıldız Technical University, Middle East Technical University, Istanbul Technical University, Bilgi University and Yaşar University propose fabrication laboratories and elective courses for architecture students based on theory and implementation.

However, there is a need for a common ground, a ground of every step in learning progress to be deciphered, a specialised curriculum for digital fabrication. However, rather than a quick jump into the theory and direct implementation, there is a need for the understanding and the exploration of the basics of the robotics, its nature, for the sustainability of the research area. There is a need for new methods for the adaptation of this new branch into the core of the architecture education by means of developing an appropriate curriculum for the field.

Based on the issues and concerns mentioned above, a new course and experimental workshop program have been developed and initiated at TOBB University of Economics and Technology - Department of Architecture. The very basic objective of the course is to create a transdisciplinary atmosphere for robotics and architecture through the contribution and works of students and researchers from different fields. In order to develop a critical and creative understanding of architectural robotics, the conditions, limits, and possibilities of robot arms have been explored on a wide range of fields from the assembling of the parts of the arms, to the mechanical behaviours and manipulations and the computational operations.

At this stage, the following sections explain the details of the process and the outputs of the base exploration of an architectural robotics curriculum within the scope of architecture education.

Current Research Tendencies in Architecture Pedagogy, Digital Fabrication and Robotics

As highlighted, the current research tendency is on the implementation of the robotic and fabrication technologies, and experimenting hands-on making and testing processes through the field, rather than the articulation of its pedagogical processes and strategies. There is a plenty of research on pedagogical aspects and processes of design computation as an intricate branch of design computation, however, due to the concentration of the learning-by-doing understanding of the making processes, the pedagogical side of the research is rather limited.

During the setting and structuring of the experimental workshop, for analyzing the current pedagogical approaches in the field, a literature review is conducted. It is structured in two parts that narrows down from a larger scope of digital fabrication pedagogy to the pedagogy for architectural robotics. The digital fabrication pedagogy is formed towards the end of the first decade of 2000's by the integration of fabrication labs in United States within the curriculum of K-12 schools without setting any disciplinary boundaries [3]. The pedagogical strategy is student-centered, progressive and promotes hands-on processes; and is structured upon three basic principles as experimental setting, constructivist understanding and critical pedagogy [3]. These core principles of digital fabrication pedagogy directly overlaps with the experimental, innovative, student-centered studio-based learning model which are rooted to the innovative understanding of schools of both Bauhaus and Beaux Arts. Hence, the field of design became one of the potential niche to integrate, test and develop digital fabrication. In recent years, the integration of digital fabrication technologies provides a generous research field as well.

The field has been discussing the cognition aspect regarding the pedagogical background of the new fabrication practices. For instance, Celani (2012) discussed the differences between the digital fabrication labs in architecture departments and engineering labs, therefore questioned the pedagogical approaches of these disciplines in her paper [4] and; Oxman (2008) questioned the challenges and media for educating the digital architect with her experimentally structured design studio sessions [5]. Despite the expansion of the field, digital fabrication is not yet questioned and investigated pedagogically; particularly robotic fabrication. For the pedagogy of the architectural robotics, very limited studies and sources that proposes an experimental study could be referenced.

Searching for the Pedagogy of Architectural Robotics

Based on current studies on architectural robotics and the identification of the limits of current pedagogical research in this area lead the authors to structure an experimental studio setting to investigate the concerned aspects of architectural robotics.

The studio had 12-weeks of hands-on learning and making process to explore and realize the potentials of the architectural robotics. The process was started by choosing the most suitable, practical and feasible robotic arms. The robots were primarily selected according to its movement-rotation flexibility as well as its potential for the further phases of the workshop such as its convertibility from manually-controlled to pc-controlled robot by using micro-controllers. Due to these criteria a robot arm with wrist motion of 120 degrees, elbow motion with range of 300 degrees, base rotation of 270 degrees, base motion of 180 degrees with vertical reach of 15 inches, horizontal reach of 12.6 inches, and lifting capacity of 100g is chosen for this workshop. Three robots were planned to be used throughout the term.

Following that, the robotic arms were assembled by the students via following the instructions mentioned in the product manual (Figure 1). The students were split into two groups of assembly. The groups were formed considering the plurality of the participants' disciplinary backgrounds. While architecture students were dominating the studio numerically, engineering students who were attending the workshop sessions were split equally in each group. Here, as an interdisciplinary-studio structure, students with different disciplinary backgrounds formed a knowledge and vocabulary ground with each other while sharing their knowledge, experience and opinions throughout the assembly process.

Following this formation of the groups, primarily, students made themselves familiar with the product manual, pieces and parts of the robot arm. They explored the certain power-motion mechanisms and electro-mechanical processes behind the motions. With these activities, this period provided an understanding for the further phases of the workshop that were planned to be the periods for converting the robotic arms that were controlled manually to be controlled by the computer.

This assembly period provided students an insight for interdisciplinary working atmospheres, a habit to follow the sequential instructions for the mechanical

assembly without following any intuitive tendencies, as well as hints and feedback to visualize the electro-mechanical operations that are happening during the robotic actions.

Figure 1. Robot Arm Assembly

After the assembly period, students trained on manually controlling the robotic arm in order to understand the interaction between the controller and the robot, the differences and the processes of human motion and robotic motion (Figure 2). They started by practicing on the controller-robot correlation. The controller has 5 movement controls as; (1) wrist motion, (2) elbow motion, (3) base motion and rotation, (4) reach, and (5) grip motion. Accordingly, the students trained on the combination of those five motions in order to control the robotic arm precisely. The students tested the robot with several actions like gripping and lifting the objects, moving the objects from a side to top on each other, as well as tried to work with multiple robot arms, which helped them to explore the sequential production process and the primary phases of robot programming. Defining each robot action for the production process, structuring the production actions in other terms, gave insights about the basics of the programming and coding culture, which is very determined and procedure-based.

For this phase, understanding, analyzing, correspondingly grasping the motion and behavioral limits of the robotic arm was very crucial. For the further steps of the workshops, practicing on these limits provided students their design constraints and structured their design process. This step became a phase of exploring the parameter and constraint-based design procedures

of the production and the production tools hands-on, which is not very familiar to students.

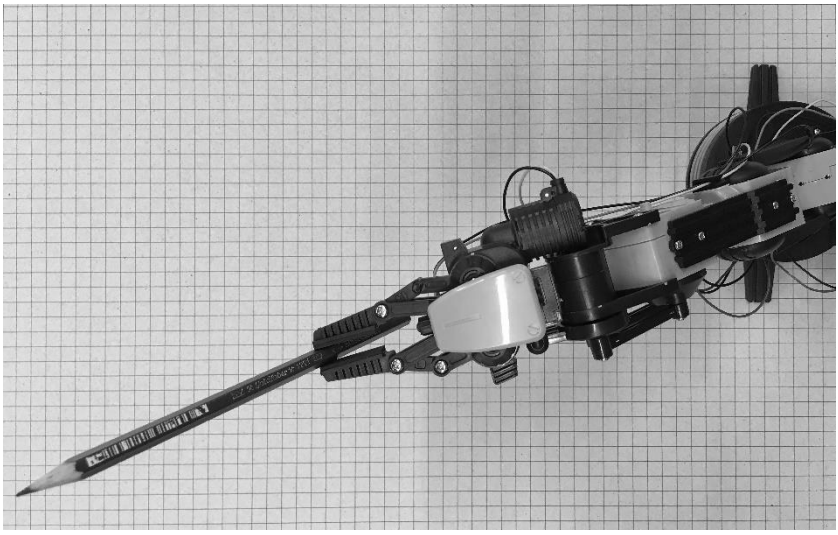

Figure 2. Testing Robot Arm Behavior

After gaining an overall insight about the robot-human interactions, students worked on the precision of the robotic actions. They aimed to test the defects of the tools that they were using. For that reason, they produced several grid boards and meshes with different scale and measurement precisions. Several action procedures that were determined for the robot arm were tested. Grid was as a chess-board that helped the students to find a common ground for defining and following the action procedures and mesh enabled two robots to be tested simultaneously in a volumetric-scale, rather than on a single surface. By doing that, they discovered the boundary conditions of the robotic actions of the robot arms. They used this experience throughout their design process.

For the next step, students built a test set-up. The set-up consists of two medium-density fiberboard surfaces with randomly distributed nails on the surfaces, which are facing to each other (Figure 3). One of the robot arm was located in between these surfaces with the clew of filament in its gripper. The aim of this exercise is to knit a surface with the robot arm. After training on knitting action, two robots were tested for this action. The major aim of this exercise is to explore synchronous actions of the robot arms as well as human control, which strengthen the peer interactions throughout the process. Peer interactions were crucial at this stage due to its nature. While controlling the robots, peers were required to follow the steps of the each other while performing the control of robotic actions. If one peer is getting of the knitting process, the production process becomes fully interrupted. So while the peers were controlling their robots, they were required to control and guess the actions and the further steps of their peer.

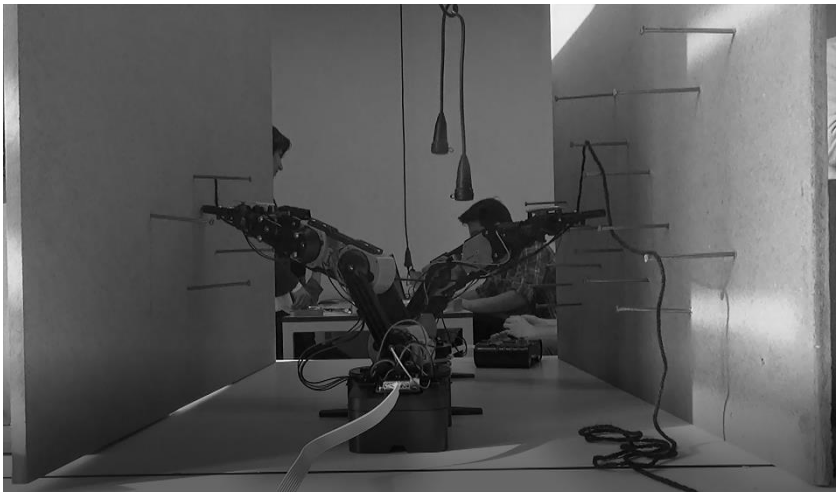

Figure 3. Set-Up and the Robot Arms

For the next step, the studio was re-structured and was split into three groups, one group for the manual robotic control, one group for the conversion of the manually controlled robot to robot with a micro-controller, and one group for the design to test the robotic fabrication. While the manual robotic control group were testing the complex robotic behavior, the design group aimed to design a structure, a bridge, within the action constraints of the robotic arm. These two groups worked hand-in-hand throughout this process. While the design group was elaborating on their bridge design, the manual robotic control group were testing the mock-ups of the bridge. The main objective of this phase was to find an appropriate way of building the bridge with a proper material according to the robotic constraints. During this phase, design and manual robotic group decided on building the bridge by knitting method with moldable electrical wires. Accordingly, the knitting method required a structure to be knitted on. Following, the design group were assigned to design the structure that allows two robots to work on the structure and knitting action primarily. According to the feedbacks of the manual robot group, the design group modelled, re-modelled and adapted their design to the robotic constraints.

In the meantime, the micro-controller group cut the controller connection and searched the strategies for micro-controller integration. Encountering with several coding obstacles and testing several controllers, the micro-controller group were able to write the code and control the robotic arm totally with a micro-controller.

CONCLUSION

Following these intense learning-by-doing sessions, as an exploration period, the studio sessions were concluded by the discussion of the process. As a studio strategy, the very last session was reserved for the general discussion of the process and the process outputs. Students were asked to evaluate their learning processes and expectations for the further steps.

As well as the main focus that studio imposes, the general focus of the students were rather than the design as an end-result, the process of learning by doing and control over the tools. They discovered the human-robot interaction, they explored designing with production constraints, working inter-disciplinary team-work and structuring design process based on computational understanding. Furthermore, due to its inter-disciplinary structure, students had an opportunity to explore different disciplines and fields, the conventions of different professional fields, as well as making trade-off between them. It is believed that, this studio experience formed and understanding and insight for students about current technologies and their non-conventional design process. Rather than theoretical background and direct implementation, learning the robot-human interaction, electro-mechanical principles behind every motion enlarged the horizon of the participants by strengthening the reasoning behind the production and design processes. For further steps, this course may hold the potential to give the basis of electro-mechanical procedures, accordingly the computational design understanding, base experience for architectural robotics and current fabrication technologies in field of design and architecture.

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REJECTING REVERSING ARCHITECTURE

TAKING PART IN ARCHITECTURAL EDUCATION IN THE ERA OF TRANSFORMATION: A SUMMER WORKSHOP

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ABSTRACT

Today, architectural design process is identified as a flexible process embodying both concrete components like; building, material, topography, structure; and complex, conflicting, immeasurable and unpredictable concepts as; time, emptiness, medium, character. While continuing a concrete architectural education to learn using the values, norms, and assumptions, on the other hand, the architecture student should overcome the restrictions created through the process, evaluate the multidimensionality of the situation, strengthen creativity by widening different viewpoints and overcome the innovations by personalizing the research field and keeping the boundaries open-ended and unclear. Even though formal methods that largely shape the logic of architectural design, architectural education also needs informal methods to be able to cope with indefinable concepts.

The diversity and participatory ideas that the 21st century has brought to the design philosophy get involved in the functioning of the architectural design studio. It is thought that the experience that gained in short-term workshops, and informal learning environments, has an important part in the materialization of the slippery ground in architectural education.

The workshop, to be sampled in the paper, held in the summer of 2016 with the theme of “City/Future”. The scope of the practice was to activate the students’ intuitions, to provide an informal medium to experience different methods, to produce alternative solutions and to question the current state of the city taking into account the past and the future.

Besides presenting the workshop process and its products; the analysis of the workshop performance is planned to carry out with the observations and interpretations of the workshop instructors, as well as students’ assesments. Finally, the importance and effects of creating different and experimental learning environments in architectural education will be discussed.

Key Words: Architectural Education, Informal Education, New Trends in Architectural Education, Participatory Learning, Experiencing City.

INTRODUCTION

At the present time, we are trying to live in a world that changes rapidly, with several problems as energy, sustainability, pollution, and extreme population growth. It is impossible to exclude architectural design process and design education from those alterations happening in our environment. The formal education, occuring within the schools and universities, is based on a certain curriculum and has a traditionally non-changeable structure. Since today's circumstances have become the concepts of change, renewal and transformation into important factors; alternative and lifelong educational research initiatives are getting increased. Therefore, it becomes difficult to apply former recipes in architectural education which needs to have a flexible context. We have complicated issues, and we need research in order to solve them properly. According to Hirschberg [1], the conventional approaches can't work anymore, and we need to set a new and strong research tradition. Also John Habraken mentioned that the studios can no longer be the only format for design education. As it isn't possible to exercise distribution of design responsibility, to deal with the sharing of values among designers, or to handle issues of change; the invention of different methods need to be discussed [2].

At this point, it is a need to query the methods and the starting point to improve the research tradition in architectural education. Can the workshops prepare a proper ground for new paths and methods with their innovative and creative approach? Is it possible to think them as tools for representing the distinctness of the architecture faculties as well?

Today, in the chaotic environment that we are living in, the universities / institutions are expected to create the necessary and creative conditions for qualified education in the faculties that are trying to maintain their existence with their own values [3]. It is possible to provide a solution by going beyond the formal practices and methods while ensuring these conditions. Workshops, one of the interfaces that have been establishing the relationship between architecture and life in a sense, are the unique platforms that carry the potential to create various subdivisions and models within their own themes [3]. As we are a part of the everyday environment, depend on it, besides that it shapes us; if the architectural education excludes the environmental impacts, as structure, behavioral patterns, historical/current issues, population changes, it may not be a sufficient formation under todays' circumstances. [2].

The aim of architectural education is to provide architect candidates with the ability to learn, research, express, criticize and reach positive results from discussions and organizing. The informal education mediums are thought to be subsequent, as they can provide expansion to the topics that haven't been touched or to the methods that haven't been experienced by the formal architectural education.

There is a need for open-ended problems and definitions, intuitivism, accurate readings, and therefore a refined look; in order to be able to stand out from the views imposed by daily life, and from the blurriness of discourse and visual images enforced by general public [4]. Currently, architecture and

architectural design practices are described as flexible processes. While its concept contains fixed and physical components; the effects of unpredictable, changeable and conflicting factors can't be ignored, as; time, emptiness, culture, medium, character. Alongside the formal methods, shaping the logic of architectural education significantly, design education needs informal approaches touching indefinable, uncertain and unknown concepts. The informal practices and viewpoints can support the architecture students while evaluating the multidimensionality of the situation, developing different point of views, also keeping the boundaries open-ended and unclear. Workshops can be about a particular problem, as well as for more general issues; the goal is to be able to produce alternative solutions, to evaluate multidimensionality of the situation, to see the different views and to create a discussion platform.

The 21st century has brought the diversity and participatory ideas to the architecture and design disciplines. This situation constitutes fertile ground for the emergence of results such as the diversification the training tools and methods, the formation of an interactive platform where students actively participate, even ambiguation of the role differences between the instructor and the student, and disappearance of the boundaries in the architectural design studio. The formed interactive platforms, where students actively participate in, can even provide obscurity of role differences between the instructor and the student, and disappearance of the boundaries. As a result, it can be said that the experiences gained in short-term workshops, and informal learning mediums have an important place in the materialization of the slippery ground in architectural education and understanding the everyday environment. For these reasons, workshops are being carried out in universities with increasing frequency to support the education.

Within the context of the paper, firstly the contribution of informal activities, as internships and workshops, to the education and to the development of various skills of the participants are evaluated with the support of literature review. Then, a summer workshop organized under the scope of Research Internships held in Ozyegin University is given as an example. The aim, purpose, process, and the position of the research topic in the current conjuncture of the internship program will be discussed.

In architectural education system in Turkey, the internships enable the students to maintain their formal education, in practical architectural medium during the summer semester, as office and worksite internships. However, in recent years it can be possible to observe alternative organizations added to the education progress at different institutions. In the process of the structuring of Department of Architecture in Ozyegin University, which was established in 2012, national and international architectural education formations have been observed in many aspects, and an educational program has been created by attaching the experiences gained in academic setting and taking into consideration the international accreditation standards. In this scheme, the internship studies have been planned as 3 varied periods/structures during consecutive summer periods [5]. The first one is defined as research internship supporting the continuity of architectural education of the students. The aim of research internship is indicated as gaining experience by participating in an ongoing scientific or professional

research project, summer schools, workshops, archeological excavations, and field studies in the faculty mandatory internships procedures document [6].

The learning activity case sampled in the paper, held in the summer of 2016 with the theme of “City/Future” the students who left behind the first year of their formal education. The goal of this research internship program was to encourage the students to experience new research methods, to increase the productivity in an informal setting, to improve new perspectives, and to face with current issues.

The 10-day working process, research topics, and research methods that the participants have improved for their fields are presented in “Process” section. Besides expressing the workshop process, an analysis of the workshop performance over various parameters is to be tried to carry out. The workshop process and its products are examined with a comprehensive and holistic analysis including the observations and interpretations of the workshop instructors, as well as the students’ assesments. The students have been expected to evaluate their experiences, by taking into account the last education year they had undergone after the internship. The importance and effects of creating different learning and experimentation environments in architectural education are discussed in the light of the examinations and evaluations. The feedbacks from the participants are thought to be a guide for possible future informal learning activities (Figure 1).

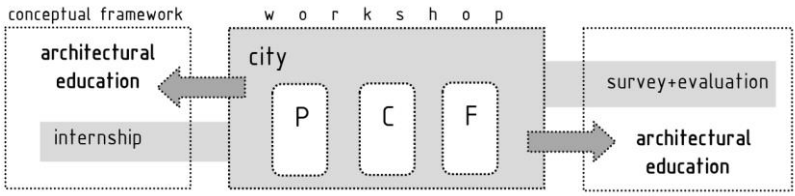

Figure 1. Strategy of the Study

Summer Study / Internship

The internship program, with the theme **"City/Future”** for the students who left behind the first year of their education, held in the summer of 2016. The workshop based on several concepts like **past-future** and **utopia-dystopia**, which can activate the students’ intuitions, and encourage them to use methods other than the methods they use in the architectural design studio. The aim of the workshop was to increase the productivity in an informal setting where they can debate their predictions and produce alternatives for solutions. Within the fieldwork, participants observed the potentials and problems of the city in the regions determined in Bosphorus and made foresights in the light of their observations (Figure 2).

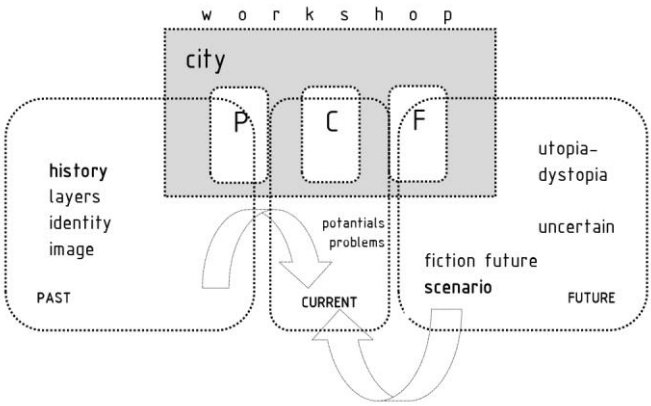

Figure 2. Process and Concept of the Workshop

Additionally, by observing the problems and potentials at the different points of the city, the students have gained the consciousness that, the city is included in architectural research not only with its physical being but also its social, cultural and economic attributes. Thanks to the experience of criticism in the workshop process, the students who had just completed the first year of their education, have comprehended the role of “architect” they are going to obtain, their responsibility for the city and the fact that architects are among the deciding actors who shape the future of the cities they live in.

The general purpose of the workshop process having the students be able to practice academic research, work in groups, gain sense of responsibility, develop suggestions through determinations and practice objectifying ideas. It is thought that, the study may enable the students to think about and question the current state of the city through different means (images, concepts), gain an overview of perceiving the circumstances of the city, develop their ability to think about the future of the city and produce scenarios. Along with similar studio practices, it’s foreseen that the students will think about the current state of the city through different means, imagine the future of the city and develop their ability to produce scenarios.

Process

The participant students endeavored to explore the **problems** and **potentials** of the city that they had been currently living in **_Istanbul_** by trying to understand its dynamics. Thus, the first goal was indicated as to comprehend İstanbul as a whole; for this purpose, readings / discussions and research were done at the studio. City/Future Workshop started with the joint text readings and debates on the city in order to give students an idea of how spatial problems can be described (Figure 3).

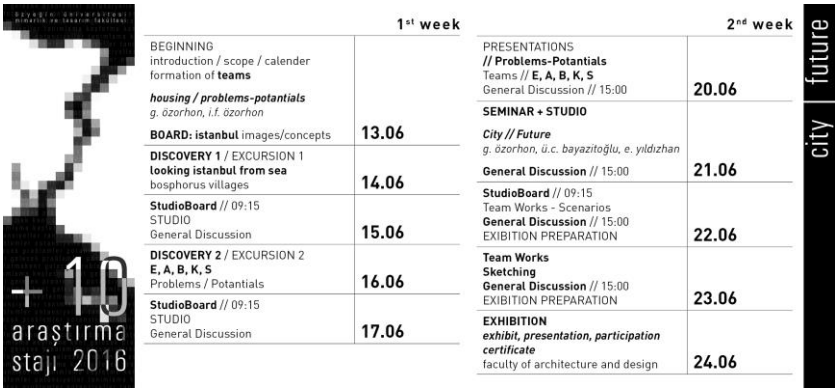

Figure 3. The Program

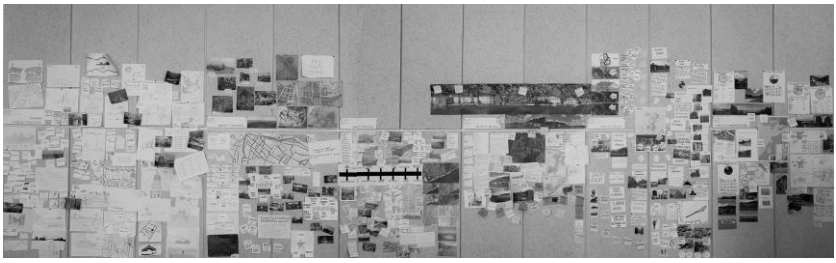

Figure 4. StudioBoard

Afterwards, the students formed images and concepts over their own urban experiences by brainstorming altogether, they made the Istanbul ideas in their minds visible on the board at the studio (Figure 4). During this process, they had utilized the keywords; culture, society, economy, traffic, urban transformation, transportation, ecology, sustainability, urban tissue, history, utopia, dystopia, ... In the light of the evaluations on the city as a whole, 5 teams were formed and a leader was selected for each; the teams deepened their studies on the chosen regions in the Bosphorus.

The selected areas were; **Eminönü, Beşiktaş, Kanlıca, Sarıyer** and **Anadolukavağı**. On the 2nd day of the workshop, by the arranged excursion (Figure 5) along the Bosphorus, the students observed and recorded the settlements having diverse characteristics from the seashore. The findings were combined in the studio, by getting over the literature, the investigations / research on the regions became deeper.

Figure 5. The Excursion

Figure 6. Interviews

On the 4th day, all of teams made observations on-site, and realized short interviews (Figure 6) with the dwellers; since therefore they had the chance to understand / follow their **sites** by the help of the **locals**. The first week was ended with the visualization of the works; the teams prepared presentations revealing the dynamics, and emphasizing the **problems** and **potentials** of their own fields (Figure 7).

Figure 7. Presentations

In the second week of the workshop; past-future-utopia-dystopia-scenario were the main concepts that were concentrated on. Several videos, research and projects were examined, and seminars were hold at the studio (Figure 8). Besides that, sketches were made in order to contribute to the transformation process of conceptual background into a project.

Figure 8. Seminars

Consequences

In consideration of the practices and observations done, the students were asked to make assumptions about the future related with the discourses that they had produced in the previous week. While forming the future scenarios, they were expected to face with the problems, and feed themselves from the potentials of the region analyzed; also to create fictions that could mark a unique review or criticism about the city, Istanbul (Table 1).

Finally, an exhibition was organized in the University and the booklets were produced to share the experiences and productions of the workshop participants during the 10-day practice (Figure 9).

Scenarios: Posters + Explanations

2066 Kanlıca

In 2066, the population growth will cause an increase in the number of floors in Kanlıca. Green plazas will be built and solar panels will be used in the sea, in order to prevent the influences of the industry, and to produce energy. When the natural greenery and agricultural fields placed in high rise gardens, Kanlıca would lose its natural and unique character.

2086 Kanlıca

With the rise of the water, the seaside residences will begin to flood, then the residents will start to move towards the center of the district. As a result, the 3-5 storey apartments and detached houses will leave their places to the skyscrapers, so metropolization period will be started.

DeadLock

It is emphasized that it is not possible to think the road construction as a solution to the road congestion in the cities. The rapid urbanization occurs as a result of the road networks, and it requires a more balanced system to reduce the adverse effects.

DistANBUL

The dystopic future of Istanbul that could form after 250 years of unsustainable architectural process and misuse of natural resources: drying of Bosphorus, continuing consumption habit, water wars, looting, settling to higher points, and a city full of functionless and futuristic buildings far from green.

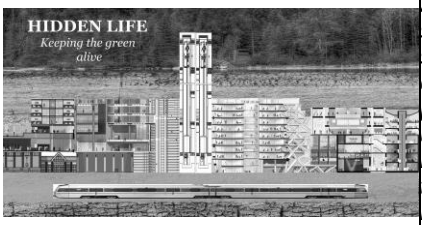	HIDDEN LIFE *Along with the population growth, the settlement areas will relocate under the soil, to prevent the green areas from disappearing. This collective life project presents an independent life underground, having facilities as houses, hospitals, food courts, schools. Areas on the ground, that were formerly cities, will be used as social areas, parks, forests. It is aimed to increase and preserve the green areas and fresh air.*
SKYSTANBUL *Skystanbul is a flying district which has everything that a city needs and generates its own energy from renewable resources. The reason why this flying district is built is the deficiency of open, public and green spaces. Skystanbul will provide open spaces, also it will lower the space occupation and relieve the tension and stress on the city.*	

Table 1. Scenarios

Figure 9. Exhibit Day

Evaluation

The architectural design studios are the mediums forming the center of architectural education, also where the students bring together the knowledge that they met throughout the training process. From this point of view, the transition of the acquired knowledge, regardless to its method or medium (formal / informal), to the studio / studio production is extremely important. For this reason, a questionnaire was sent to the students after the “City and Future” internship program to evaluate its targeted achievements on the axis of their studio practices. With the questionnaire, it was expected from the students to assess the general contributions of the workshop; as well as the acquisitions of the study, that they attended after first year, especially relating with the second year architectural studio course experiences. According to the results of the questionnaire, 69% percent of the students think that this internship program have been useful for the architectural project studios taken later.

The answers of the questions in the survey, which are measuring the extent of attending the "City / Future" workshop how well improved the skills of the students, showed that the 84% percent of the participants have the opinion that it contributed their research and teamwork skills, 88% percent of them think it effected their presentation and information collection abilities, and for 69% percent the workshop supported their literature review skill highly and efficiently.

Besides, according to the responses to the questions on the issues contributed by participation in the “City / Future” internship program to the subsequent studio courses; for the 80% percent of the students the workshop supported them in terms of understanding the dynamics of the city, and for the 77% percent of them it provided improvement in comprehension the place, communicating with the place, working in groups, and using various methods (observation, questionnaire, interview) during the production process in order to explore the daily life.

According to the results of the questionnaire, the students have especially raised awareness on understanding the “place” and discovering the potentials of the “place”; also they have observed the significance of field work with the workshop on city and future. Besides, participants think that they have improved particularly their research skills; and become experienced on involving into team works. They tried to understand the city, that they had been living in, with its diversified dynamics; produced ideas on the future of the city; also predicted the uncertain / blurry future based on the acquired data from past and present. The future scenarios, formed as a result of the forecasts, generally presented a dystopic future, while some of them built on a better tomorrow.

Some personal reviews from the internship reports that the students had submitted subsequent to the workshop:

“One of the most important thing that I gained in this internship was the ability of collecting data and understanding what is important for the site. The part

about the predictions on the future was really important for expanding the futuristic perspective and creativity of a student."

"I had the chance to see the city that I live in different perspective. I have noticed the features, urban tissue and real face of Istanbul. Working as a team, broadening our horizons about the city, realizing the problems, communicating with people and making scenarios about possible future concerns are the benefits that we gained from the research internship."

"I believe that I developed my speaking skills while talking with local people during the research process."

"I think I can now prepare a formal presentation and talk about it in front of people without getting too nervous."

"At this internship, I learned how to work in groups, make architectural analysis, finding solutions to existing problems and how to start investigating a problem and come up with an idea to solve it."

"We have learned about how to make a site research which is an important part of the design process. It was also nice to work with a group, which was the first time we worked as a group in an architectural practice. I had some difficulties but at the same time it was better to have different people who has varied aspects and ideas. Also, having a mentor, who has just graduated, was helpful for us because they gave us lots of recommendations and tips."

At the end of the internship program, it may be possible to make critical readings facing today and near future, through the scenarios / fictions produced for the future. Actually, it can be interpreted as an **inverse reading / discovery** which is looking present from the future extraordinarily, rather than from the past.

CONCLUSION

Within the scope of Research Internship, organized by Ozyegin University Faculty of Architecture and Design in the summer of 2016, the junior architecture students did fieldworks to understand the dynamics of the city and to observe its potentials and problems. Firstly, the students had explored the far-recent history of the site; secondly, they had conceptualized the current state by the research and observations, created images that combining the findings, and revealed the problems and potentials related to their fields. Thirdly, after the supportive seminars held in the studio, the participants produced scenarios on the future of the city or a fragment of the city, and lastly through the exhibition of all these products, they shared their studies with the university [7].

In the workshop process, it is aimed that the students will be able to practice academic research, work in groups, gain the sense of responsibility, develop suggestions through determinations, and objectify ideas. It was thought that the workshop could enable the students to develop the skills of thinking and questioning the current status through tools (images, concepts); producing scenarios on the future of the city; also to gain an external view on the

perception of events held in the urban area. Along with the similar workshop studies, it is predicted that the students would be able to think and question the present conditions of the city through different means; to speculate about the future; and to develop their abilities to produce scenarios. The scenarios, that generating fictional images, were thought as methods for chewing over and trying to describe/depict the future.

During the research workshop, the participants did not only make use of the theoretical knowledge gained from the literature; but also they learned and understood the city, which is a laboratory area, by living; shared the experiences of the community dwellers; and learned from each other. The students had the opportunity to learn and produce ideas about the city's past, present and future by participating in the city and experiencing different urban sections / layers. In addition, throughout the process, the workshop space was tried to be used efficiently; both working, sharing, and exchanging information were realized there. In this way, the one-way information transfer between the student and the studio instructor was restructured, and a multi-faceted learning environment was experienced.

The practices in the form of a lecture, an internship or a workshop organized as part of architectural education can make progress with the integration of different skill types of the students. Besides, it is indicated that the students can get the chance to improve, the most needed talent in the future professional life, their communication skills within the group.

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