LIVENARCH III

contextualism in architecture

3rd INTERNATIONAL
C O N G R E S S

livable environments
&
a r c h i t e c t u r e

Karadeniz Technical
U n i v e r s i t y
Faculty of Architecture
Department of Architecture

5-7 july 2007
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Şengül Öymen Gür

LIVABLE & ENVIRONMENT

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L I V E N A R C H I I I

LIVable **EN**vironments and **ARC**hitecture

3rd international congress

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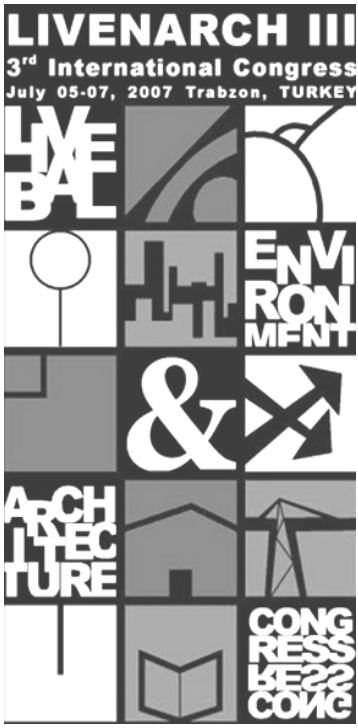
DEPARTMENT OF ARCHITECTURE

CONTEXTUALISM IN ARCHITECTURE:

contextualism as the resolution of identity-creativity dilemma



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Prof. Dr. Şengül Öymen Gür
The Chair of LIVENARCH III
Karadeniz Technical University
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July 5, 2007

PREFACE

LIVENARCH 2007-Contextualism in Architecture

Since their original structures have been dramatically changed by the effects of modernization and globalization cities and their architecture demand challenging approaches to planning, urban design and architecture in order to safeguard livability at every scale and meaning. However due to the impact of the economic forces of the dominating "center" of globalization, the loss of identity, character and integrity is a much graver issue in the less developed "periphery". The Modernization process with its radical interventions has devastating affects on traditional settlements. Recent design actions have contradicted, transformed and de-structured the essential character of traditional settlements on the one hand and according to many critics, have failed to produce livable new environments on the other.

Neither the palliative 'Neo-rationalist' postmodern discourses which profess identity and sustainability by revisiting social memory as a remedy nor the 'Minimalist' approach of the global "product-form" approaches offer critical solutions to "'place-form". Misunderstood regionalism gives way to utterly populist appearances; Minimalist glass cubes produce sterile environments.

In order to counteract the homogeneity and sterility of contemporary urban environments conditioned by speculative tendencies of power and maximized technology, reconstructive ideas concerning urban transformation such as "urban surgery" or "urban acupuncture" are proposed in the hope of reinstating social-physical integration, continuity and sustainability. In addition local values of building culture are advocated, attempts to deregulate power through participation and communication are esteemed, sustainable 'low rise-high density' urban "mega forms" are recommended as ameliorative urban transformation strategies. Is this the way to proceed?

LIVENARCH III (LIVable ENvironment and ARCHitecture) with the subheading “CONTEXTUALISM IN ARCHITECTURE: Contextualism as the resolution of identity-creativity dilemma” has been organized to provide a forum for the presentation and discussion of new ideas and approaches. The goal of the "Contextualism in Architecture" conference was to critically examine ways of mediating the totalizing and homogenizing effects of globalization, especially on urban form and architecture-city relationships. The objective was for scholars and professionals to discuss modes of interventions which do not retreat to imitation, dissimulation or minimalism, but rather to argue for creative solutions emerging from geographical and cultural locale.

Design research is for the main part still adhering to the conviction that scientific research efforts will increase planning capacity and predictive power with respect to the success of design solutions. Historical and empirical evidence however, cast doubt on this modernistic assumption. Hence the forthcoming conference is also set to challenge the knowledge based approaches and attitudes to architecture and urban design in favor of the indeterminate and uncertain field of design: imagination and projection.

The field as sketched above was not at all well-structured. Therefore we proposed a number of very general themes and sub-themes with metaphorical character. They were to serve as suggestions for possible contributions to the LIVENARCH (LIVable ENvironment and ARCHitecture) and for the final organization of topics at the conference.

We anticipated that theoretical foundations, frameworks, and concepts with philosophical, ethical and social implications could and should be addressed in relation to designing for social/cultural/contextual particularities and extremes-climate, geography, devastated cities, specially protected areas, the underprivileged, the peripheral and the marginal, etc. Of utmost importance were the contributions made by papers categorized as the theoretical and the historical: “The Fallacy of Contextualism in Architecture: Site, Building and Context” by Açalya Allmer who examines contextualist rhetoric by re-reading Colin Rowe and Fred Koetter’s seminal book Collage City (1978). In doing so, she focuses on the metaphors of textile and weaving, which Rowe and Koetter used in order to symbolize the interwoven relationship between a building and its site. "Grounding an escape, questioning context" by Levent Şentürk questions the idea of context as a potential center of power and thus the architectural knowledge which according to him is itself the context. “From Materialistic Contextualism to Metaphoric Contextualism In Architecture” by Nezih Ayıran points out that Roweian strategy of contecxtualism refers to existing urban volumes and scales, surrounding buildings, street patterns, bodies of water and the materials used etc. and is materialistic in this sense. He asserts that that the multi-layered, profound, sophisticated and dynamic approaches to design that are based on metaphors, embracing both past and future aspects of life, social development, narratives etc. exercised by contemporary architects are better contextual strategies. “Punk Ethic and Architecture” by Işıl Çokuğraş brings to the fore the value of diversity as the most vital element of context to which architecture should respond. Anand Ramakrishnan, in “Designing for a Bi-cultural Future – Modeling assimilation in the context of globalization” argues that globalization and the accompanying plurality should be viewed by the designers as a wonderful opportunity to create bi-cultural (multi-cultural) objects, which relate to more than one culture simultaneously thus resolving the identity-creativity dilemma. “A Critique of Environmentalism in Architecture: Comparative Analysis of World Expositions of 2000 and 2005” by Ayşen Ciravoğlu questions the integrity of the efforts to contribute to the environment and reveals the loss of meaning/context in environmentalism through exhibitions; Ozan Öztepe in “Ideas For Livable Environments After the Loss of Utopia” asserts that “The cities which became increasingly isolated from nature after the Industrial Revolution, should be integrated with the nature again… Economics should be considered as a basic criterion that vitalizes social, cultural, technological, ecological and political parameters”. Ironically, T. Didem Akyol Altun and Gülden Köktürk discuss the possibility of “other” utopias, as

the title implies, in their “Will Utopias Be Real? Micro technology and Living Architecture”

The interconnectedness of the term context and history strongly transpired through the papers submitted by a group of much resourceful contributors: “The Window of De Laborde: The Birth of the Historical Context of Architectural Site” by Yusuf Civelek suggests the embedded creativity in negotiating between the local and global, between the building and its site by referring to Félix Duban, Henri Labrouste and Léon Vaudoyer who persistently propagated the mixture of historical epochs pertaining to the context of the building and its site, and stating that they believed that antithetical things gave birth to something new, which would take place in the future; “Historical examples of contextualism in architecture” by Gamze Kaymak-Heinz brilliantly illustrates the containment of the context through the use of types, by the absorption of the types where some details are modified, as well as in the absorption of details by utilizing re-used material (spolia) and imitating ornaments, also where the system is modulated.

“The Duality of Localism and Universalism: The Interpretation of Critical Regionalism at Istanbul Hılton and Izmir Efes Hotels at the down of Tourism Architecture In Turkey” by Ahmet Erdem Tozoğlu, “Changing Life Styles, Transforming Traditional Houses: Çorum as a Case” by Ömer İskender Tuluk, “Ottoman Architecture in Trabzon; The Case Studies of the Cami-i İmaret-i Amire-i Hatuniye and the Cami-i Merhum İskender Paşa”, by Halil İbrahim Düzenli and Evrim Düzenli; “Constructing The Republic in Trabzon: Discussions of “Square”, “Monument”, “Museum”, and “Cinema” at the Municipal Proceedings (1936-1958)” by Evrim Düzenli and Halil İbrahim Düzenli are extraordinary papers underlining the double fold effects of “Modernization” in Turkey: the centre of decisions set examples for the periphery but the re-interpretation of mainstream of ideas by the periphery lack the meanings obliged by the centre. By drawing on the complexities involved in understanding the context they shed light to the hermeneutics of local histories of architecture. “From Astakos to İzmit: A Cultural Context of The City’s Architectural Continuity” by Sonay Ayyıldız and “Effects of Westernization/ Modernization on Turkish Life Style In Interior Design of House Buildings: From The 19th Century To The Present” by Deniz Demirarslan and Özgür Algan, Typological Analysis of the Doors in the British Period; the Case of Kyrenia, Cyprus” by Nazife Ozay and M. Selen Abbasoğlu, are histories of transformation on different scales of meaning. “Spatial Organization of Ninetieth Century Greek Houses in Balıkesir, Turkey” by Yasemin İnce Güney and Hatice Uçar through their meticulous work advocate that in a world where the totalizing and homogenizing affects of globalization are increasingly felt in every domain of life it is important more than ever to bring forth the specific characteristics of places, places that are endowed with architectural artifacts that are reflections of “creative nucleus” of different cultures.

Worldwide transformation cases came in abundance and underlined the “pros” and “cons” of current transformation practices. Cases of socially appropriate solutions in terms of context, style and appearance regarding urban transformations (streets, squares, open spaces, etc.), examples of context-sensitive architecture, building elements, furniture and objects were duly introduced by distinguished authors. “Isparta Çarşamba Bazaar Urban Design Project: The Effects of Changes In Local Administrations onto The Project Process” Hasan Haştemoğlu, Kamertap Sarı, Feyza

Sezgin betrays how political-administrative decisions retard the processes and operate on illegal monitory gains by the parties involved. “Issues of Urban Adjustment: The Saal Process 30 Years Later” by Madalena Cunha Matos and TÃ¢nia Beisl Ramos is an extraordinary contribution dealing with SAAL housing project, which was thought out as a means to give voice and power to the social movements that were rapidly growing in Portugal, at a time marked by a severe housing deficit. Their assessment of SAAL Project in terms of state of conservation, extent of change, and integration with the enfolding city highlights the importance of scale of the planned areas, density and location in the city and of initial conditions, including human factors of cohesion. “Cultural Identity Concern During the Process of Urban Transformation” by Tuğba Kiper and Pınar Köylü; “Renewal Design Centered on Local Identity: The Case of A Dismissed Manufacturing Architecture” by Erminia Attaianese, Gabriella Duca, Gabriella De Margheriti; “An Interpretation of Transformation in the Production and Consumption Culture: the Case of Bursa” by Mehtap Sağocak; “Ermenek In The Context of Articulation Problem” Neslihan Serdaroğlu Sağ, Esra Yaldız and Arif Sağ; “Presentation of Consumption-Based Spaces In A Postmodern Spatial Restructuring Within The Process of Globalization: Case of Forum Bornova– Izmir” by Eylem Bal and Ahu Dalgakıran exemplify either successful or disappointing cases of transformation from different cities and are very illuminating in this respect. “Contextualism and Adaptive Reuse: An Evaluation of a Case, La Rue Française” by Nilay Kayaalp and E. Özen Eyüce; “Revitalization of One of The Main Streets of Izmit” by Mehtap Özbayraktar; “Functional Transformation of Historical Pattern Within A Tourism-Based Development Strategy: Case of Kemalpaşa Street, Alacatı – Izmir” by Ahu Dalgakıran and Eylem Bal mainly concentrate on transformations of old streets which has been a hard core element of Postmodern historic trend.

Some valuable papers were concerned with cities as a whole: “A Method in the Context of Urban Planning and Urban Design” by Yelda Aydın Türk emphasizes a comprehensive method which comprises the context specific issues. In “A Context-Sensitive Model to Redistribute the Property Rights in An Urban Transformation Project” Levent Ünverdi and K. Mert Çubukçu states that there is no global approach to urban problems, and urban transformation projects are no exception. As an alternative to this “one-size-fits-all” approach, they propose a context-based model based on the local social, economic, demographic and physical structure to redistribute the post-project property rights in an urban transformation project. Some researchers focused on neighborhoods: In “Imaginary Remedies for Urban Diseases: Utopia Neighborhoods” Akin Sevinç discusses the past utopias and anticipates that new imaginary projects will guide us to the future. “The significance of neighborhood in Istanbul” by E. Ümran Topcu and A. Nilay Evcil discusses satisfaction with modern vs. traditional neighborhoods as part of the context. “The Effects of Lighting on the Silhouette of a City: The City of Safranbolu” by Nurhan Koçan, Koray Özdal Özkan and Selcen Özgül Özkan deals with specific problematic such as lighting and interestingly points out the fact that lighting of a city may cause a major difference in the perception of cities in general.

Landscape was also seen as one vital groundwork aspect of the context per se: “Transformation of Public Culture and Life in Ankara: Analysis of Contemporary Approaches in the Design of Turkish Public Spaces” by Aydın Özdemir, “Transformation of Landscapes” by Meltem Erdem and Ebru Erbaş Gürler, and

“Transformation of Ankara’s Open Spaces: A Case Study of Çankaya Botanical Garden” by Neslihan Kulözü concentrate on the affects of major transformations on urban landscapes and raise vital concerns regarding identity. Environment and behavior issues were also raised by some authors at landscape level: “A Model For Perceptual Illusion Usage In Environmental Design” by Serap Yılmaz Civelek and Sema Mumcu, “Positive Effects of Native Flora on User's Environmental Preference: Trabzon as a case” by Emrah Yalçınalp, Müberra Pulatkan, Mustafa Var and A.Gözde Ömeroğlu are such papers.

At a more theoretical level environment and behavior issues were challenged by Pınar Dinç in “Redefining the Role and Frame of Environment & Behavior Research In Terms of Its Effective Use Regarding the “Context” Issue”. Allan Parsons and Rakhi Rajani in “The Performative Edge: Place Exploration” propose a “performative approach” which includes generation of a more informed understanding of the anthropology of place; its better integration with the engineering of place; and the need to create transdisciplinary teams who consider the integrated performance of the social reality into which the design is to intervene. Beria Günal Bayezitlioğlu in “Searching for the Psycho-Social Quality of Dwelling in the Context of Human-Environment Communication Model” discusses the primacy of psycho-social quality factors in designing space, and B. Ayşegül Özbakır in “Can We Map Our Feelings for the Quality of Urban Places?” ventures a method of appraising human feelings.

Housing comprised a significant concern among the contributors: “Amelioration of the context of architecture, design principles for better housing environments” by Özlem Atalan and İsmail Günur, and “Condominiums as the New Housing Alternatives of Global Cities” by Rengin Zengel and Burcu Deneri focused on better housing principles in the age of globalization. “Examination of The Ataköy Housing In Terms of Physical and Social Context” by Hande Egel and Seda Tönük betrays fits and misfits in housing projects in general. Ayhan Bekleyen and Bahar Acar in “Evaluation of the Houses Constructed in the Scope of Return to Village and Rehabilitation Project” point out the difficulties involved in rehabilitation projects which address the immigrants from villages due to terrorist activities and aims at welcoming these populations back with allusions for better living standards. “Developing Contextualism and Assessing User Preferences for Landscape Design in Mass Housing Areas; A Case Study in Trabzon” by Yalçın Yaşar, Cengiz Acar and Banu Bekçi, as well as “How To Design a House in The Country” by Hüseyin Egeli bring up sustainability and contextuality issues simultaneously, the latter of which actually demonstrates convincing solutions. It is interesting to note that the term “contextualism” was almost coined by sustainability by a great many researchers, and this situation in itself can be taken as a token of assessment of “contextualism in architecture” or that the architecture should be contextualist.

For example, “The Issue of Sustainable Environment In The Building Codes, Regulations And Standards In Turkey” by Özlem Erdoğdu Erkarslan and Eray Bozkurt; “Architecture and Urban Planning in Nature/ Zoning Law Interaction” by Fikret Okutucu and Sibel Ecemiş Kılıç; “An Infra-free (IF) Project: Sustaining Human Life in a Biological Reserve Area” by Bahar Baser and Robert Schmidt III; “Ecological Design for Livable Traditional Settlements: A Study on Ayaş, Ankara” by Hülagü Kaplan, Özge Yalçıner Ercoşkun and Leyla Alkan; “An Investigation of Ecologically Based Principles of Recreation and Tourism Planning on Çal Village High Plateau

Settlements" by Zeynep Pirselimoğlu and Öner Demirel; "The Identity of Place as Constituted by The Bioclimatic High Rise Building" by Mesut B. Özdeniz and Isaac Lerner were such significant contributions to the notions of "context" and "future". "Design Principles of Traditional Antakya Houses from Energy Conservation Point of View" by Gülten Manioğlu and Gül Koçlar Oral, and "A Contemporary Construction System Usage in the Context of the Sustainability of Vernacular Architecture: Eastern Black Sea Region as a Case" by Nilhan Vural, Nihan Engin and Serbülent Vural were rational protracting. Even the city components were brought up as matters of sustainability: "A Research about the Evaluation of the Playgrounds in Istanbul from Sustainability Perspective" by Pınar Karakaş and Pınar Yavuz, "Life Culture: Sustainable Principles for Infilling in Historic environments" by Özlem Karakul, for instance.

High quality Papers which took environmental issues as points of departure enriched the congress. Especially noteworthy is "Interoperability for Building Performance Software" by Mustafa Emre İlal and Sibel Macit, which take a comprehensive well-grounded look into environmental assessment of buildings. "A Design Model For Post-Disaster Settlements: The Case Study in Dinar/Turkey" by Evren Burak Enginöz investigates the ways of coping with natural disasters for high risk contexts. Acoustics come up as an imperative issue in "Noise Control in Industrial Zones and in the Inner Spaces of Industrial Buildings" by Mustafa Kavraz and Ramiz Abdülrahimov. In "Thermal and Structural System Performance of a Steel House in İstanbul" Şule Filiz Akşit and Halet Almila Büyüktaşkın discusses thermal issues. Safety has become a prime problem in today's cities both in closed and open spaces, "The Factors Influencing the Feeling of Safety in Urban Open Spaces" by Sema Mumcu, Serap Yılmaz and Ali Özbilen, and "Designing Safe and Peaceful Environments: Spatial Determinants of Non-Violent Urban Crimes" by İrem Ayhan and K. Mert Çubukçu are very illuminating in this respect.

Under the sub-heading of creative design methods and tools, new design guidelines, methods, and processes congruent and contingent with the contemporary problems facing urban design and architecture were expected of contributors, as well as any finishing narratives, myths or fantasies. Papers falling under this group could be loosely grouped as design issues in general, architectural design topics and architectural education related ones. Emel Birer looked into the mental processes involved in designing in her study "Design, Emotional Intelligence and Creativity" and Rabia Köse daringly inquired the subject-object relations in "The Architect and His Building: The Nature of Subject and Object Interactions"; Sertaç Erten and Devrim Çimen analyzed and criticized the determining effects of urban design competitions in forming the preferences in design practice in "Urban Design Competitions: The Context Makes The Design Guidelines". "An Evaluation of Conceptual Editing in Basic Design Education" by Veyis Özek and Gülay Dalgıç, "Reinforcing Sensitivity To Context In Basic Design Course" by Özgür Hasançebi and Aktan Acar, "Architectural Design Studio: A Case Study for a Context-Conscious Approach" by Sema Soygeniş and İrem Maro Kırış all deal with sensitizing students to milieu and site related issues. "Architectural Styles, contextual compatibility and design education on perceived quality of buildings" by Ebru Çubukçu and İbrahim Akgül demarcate interconnected and entangled issues of context, sensitive design and education.

Valuable papers such as “New Architecture, Influential Elements, Contemporary Designs” by Tülin Görgülü, Ebru Erdönmez and Selim Ökem traces contemporary architecture worldwide and critically examines the expensive, impressive and sometimes utopist architectural designs that come out as consequences of differentiation desires, and discusses their possible negative effects on the physical environment; “Myths and Fantasies in Architecture of Dubai: The Loss of Architectural identity” by Zafer Sağdıç and Aysun Aydın undermines one such example almost as a case of the former. “Defining an Urban Public Space for Children: The Child Attraction Center” by Sibel Ertez Ural, Sezin Tanriöver, Serpil Özaloğlu, Nerkis Kural, Deniz Hasırcı conceives children as a significant element of social context and considers them as agents of change, interaction, innovation, and democracy; and believes that they have a catalytic role in the community. Thus they propose a conductive environment for them which will aid into the solidarity of context. “Living under the Materials’ Powerful Expression of Architectural Dominance” by Didem Baş Yanarateş, expound on advanced technology of materials, and regrets that buildings are erected as the sculptures of materials’ expressions which merely refer to the domain of “someone” instead of “somewhere”.

In a more general setting building assessment is discussed in architectural education in “A Field Study on Reconstruction of Architectural Education” by Emel Düzgün Birer and Gamze Özkaptan Alptekin and performance of architectural offices in “A Model for Computer-Aided Architectural Design Office Standards” by Şengül Yalçınkaya and Ayhan Karadayı.

Especially interesting is the discussion rendered by Nilgün Çarkacı and Semiha Yılmazer on the borders and demarcation of disciplines of architecture and interior design, in relation to the concept of context in their paper “Forming The Enclosure or Mass”. Regarding the interiors Müge Ertemli brings up the indoor quality “Indoor Air Quality: Construction Materials Selection Criterion for Sustainable Artificial Environment Design” and Tülay Özdemir raises an important issue related to ecological design in her paper titled: “Eco-design approach in furniture design”

Poster submissions in line with the congress theme were encouraged in this convening. Accompanying the abstracts two standard sheets [50X70cm] were presented by the poster contributors. A team of key speakers and referees are instituted as the jury in-situ for open discussions and evaluation. The first three of contributors are awarded prizes of excellence. Poster submissions to this congress have been as successful as the main body contributions. All poster submissions present a design idea either idealized mentally or proposed as a project at some level of education. Samples of magnificent submissions are to be found at the end of the third volume.

Şengül Öymen Gür
The Chair & Editor
July 5 2007
Trabzon-Turkey

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Letter to a Young Architect
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PLANNING STRATEGIES FOR THE HISTORICAL BUILDING FUND
"RECONSTRUCTION AND REVITALISATION - SUSTAINIBILITY AS THE TASK OF TODAY"

Peter L. Arnke

Arnke und Häntsch Architekten BDA

Dear Ladies and Gentlemen,

My report is about one of the most important tasks of architecture in the whole Europe: the reconstruction of our cities. I'm going to talk about high quality treatment of the currently existing building fund and about its successful development.

The main task of the new architecture is not to create imitations of Ancient monuments, not to copy already existing things and try to follow the "spirit" of Historical architecture.

The main task of architecture is to develop the city in a modern way, to give a historical city a new life – the life which fully meets today's requirements and the aims we set.

To solve this complex task we will need a correspondingly high level of planning.

Our knowledge about sustainability and understanding of its problems is an important basis for such planning.

It's a question of ecological, economic, social and cultural values.

The following points are important when talking about sustainability:

- Rational energy consumption and energy-saving solutions (when talking about Climate-design)
- Technical and economic solutions which meet the modern production requirements and know-how's
- Solutions which use available modern resources only there where it is necessary and makes sense.
- Optimization of building functions to keep up with modern requirements to a working place, changed consumer habits etc.

And last but not least:

- Creating comfortable living conditions
- The quality of living conditions should answer the modern tendencies of people lives and changed requirements to the living place.

This is important for every side of modern life: living, work and leisure (both for city inhabitants and tourists).

On the one hand I'm talking about the building itself, on the other hand, the surroundings are important as well (city and landscapes surrounding the building)

The Modern should differ from the Old in the area of architecture, and this difference should be deliberately marked with the materials and instruments available today.

It's evident that we must respect the cultural values. We should look for a unified high-quality solution which will combine both Modern and Old tendencies in architecture.

First of all, I would like to discuss the design and technical strategies of building extension and then illustrate them on example of completed projects:

1. A new build-in. A new extension is integrated into the existing construction.

2. A new building in the distance. A new extension is added to the existing valuable building in a "respectful" distance.

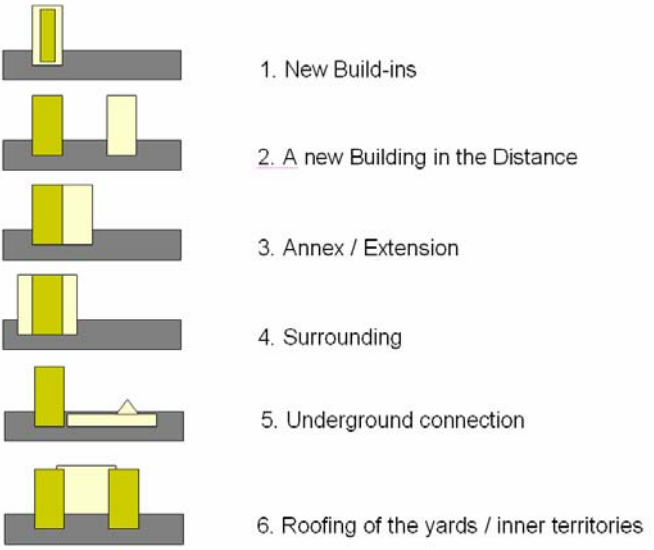
3. Annex/Extension. The new extending construction is built directly on top of existing building.

4. Surrounding. The new extending construction is build around the existing building.

5. Roofing of the inner yard. A roof is built over the inner yard of the existing building.

6. Underground connection. The existing building is extended underground. There are only few signs of this connection seen from the surface.

POSSIBLE DESIGN AND TECHNICAL EXTENSION MODELS



I would like to illustrate these models on several examples.

A new build-in – St. Mary Church in Neubrandenburg, architect Pekka Salmine, Helsinki, FIN

The church was erected in the 17-th century and was hardly damaged during the Second World War. The damaged building has been reconstructed according to the original design and a new concert hall has been added to the church. The new built-in tribunes were erected in the respectful distance from the historical part of the church. At the same time they allow good view at the playing musicians. The sound reflector made of transparent glass allows the spectators to see the original church.

A new building in the distance. Health Resort Bad Elster, architect Behnisch, Stuttgart, D

The Modern stands self-confident near the Old. The glass comes into the dialog with existing materials of the old construction. The Old looks prosperous thanks to the Modern. The transparent new extension meets all the requirements of a modern health resort.

Annex, Extension – the Building of Swiss Embassy in Berlin, architects Diener und Diener, Basel, CH

A new extension is added to the old building directly and is built from modern concrete which obviously differs from the material used for the existing building. The new building designed as a smooth construction with plastic forms stands out against the background of plane, profiled and relief old construction.

Annex – The building of Lower Court in Brandenburg on the Havel, Arnke und Häntsch Architekten, Berlin, D

A closed hostile building of former casern was transformed into a public and friendly looking building of Lower Court. The functional areas of the new building are easy to distinguish: administration of the court in the old part of the building (massive) and court rooms and foyer in the transparent new added annex. The building became square- and city-oriented thanks to the chosen materials and design.

Surrounding – Swimming Hall Schöneberg in Berlin, Arnke und Häntsch Architekten, Berlin, D

Transformation of the Swimming Hall – from strengthening and clearing of the construction itself to modification of the pool concept and turning it into the modern water-entertainment center. The existing building has been surrounded by different types of extending constructions. The main entrance in old historical style is turned to the city, and the part of the swimming hall turned to the inner garden has been extended by new inside and warm outside swimming pools. It was possible to use the most contrapuntal materials when working on this project:

Old – massive, stone
New – filigree, glass and steel

Transformation, surrounding – Faculty of Architecture, Technical University of Eindhoven (NL), architect Dirrix, Eindhoven, NL

Transformation of a laboratory building constructed in 1960-s into a university building with teaching rooms for architecture students of the Technical University in Eindhoven. The potential power of the old building was used during the transformation work. The new form came up as a result of partial demolition of the old building and adding of extensional constructions and buildings.

During the work on this project we had to deal with the question of how important the old building was.

Modifications of the old building were done up to the support poles of the façade.

Covering of the inner yard – Museum for History of Hamburg, Architekten gmp, Hamburg (D)

Glass covering of the inner yard was built to create additional space for the museum. The space of the covering can be used for temporary cafes, special exhibitions, meetings and other arrangements.

At the same time, the new created area works as a thermal buffer zone (climate shell) and contributes to the energy balance. In this project the new glass roof was created over the existing one leaving the necessary space in between, so that the old roof could be continuously used as before.

Covering of the inner yard – British Museum in London, architect Foster, London (GB)

Covering of the inner yard can be used long-term for different purposes: foyers, shops, cafes, exhibitions etc.

This solution has a strong connection with the chosen material: glass. We had to pay extra attention to the climate: passive systems should be preferred to active ones. In this respect, we had to keep in mind usage of natural phenomena – e.g. ventilation and cooling during the night.

Underground extensions - Louvre Paris, architect Pei (US)

Respecting the value of the existing building the space of the museum has been extended underground. The Old continued to play the dominant role. The glass pyramid as guide sign gives more light and allows finding the way on the underground level easily. The entrance to the underground level is easy to find and additionally marked by means of design and construction.

The underground parking place is connected with the ground floor. This allows keeping the Louvre Square free of cars and available for pedestrians. The underground level is an attractive entrance into several areas of the museum and can be used for waiting, relaxing, communicating etc.

CONCLUSION

The dialog of Old and Modern allows creating of unique architectural solutions which reflect the development of the building culture.

The new solutions built in the symbiosis of Old and Modern will have a high architectural quality and good chances for the future.

LETTER TO A YOUNG ARCHITECT

Alexandros N. Tombazis

Meletitiki - Alexandros N. Tombazis and Associates Architects, Ltd

Dear friend,

Please excuse this letter of advice; advice is easier to be given than received, and I am sure that you have been given enough already. But even so, I feel it is a pity to waste some 50 years of experience. So bear with me. I am sure you don't know what architecture is all about. Don't worry, neither do I.

Remember that being an architect is much more than just having a profession. It is a preoccupation. It can also be extremely rewarding.

Remember that building means injuring our planet. So, be gentle, tread lightly.

Remember that Architecture is all about inheriting from the past and passing on to future generations.

Remember that Architecture is so broad that it has no end. That is the problem, but its beauty too.

Remember that Architecture is all about the synthesis of art and techniques.

Remember that in synthesis everything is happening at the same time, just as in a crossword puzzle.

Remember that technology is not a substitute, but an important support of rational and creative thinking.

Remember that Architecture is team work. For your ideas to be materialized, you depend on others just as in music.

Remember that your ego can be built only on respect. Everyone is entitled to an opinion from which you cannot but learn.

Remember that you must train yourself to have a clear mind in order to convey and a sure hand in order to deliver.

Remember that Architecture is also all about responsibility. In this it differs from the other arts.

Architectural design is not a linear progression. It moves from the whole to the part, but it is also a process of moving back and forth till everything locks into place.

Remember that practice should be guided by theory, but while theory can strive to be pure, practice is built up on imperfections.

Remember to learn from the why's of everything from the past.

Remember to sense and feel the particularities and values of each place.

Remember to make climate your friend and not your enemy.

Remember that, further to just vision, there are many hidden dimensions in architecture.

Remember that light is the soul of Architecture.

Yours truly.

Keywords: architecture, sustainability, lessons from the past, theory, practice

HOUSING

Moderator: Neslihan Dostoğlu

Amelioration of the Context of Architecture, Design Principles for better Housing Environments
Özlem Atalan, İsmail Günur

Developing Contextualism and Assessing User Preferences for Landscape Design in Mass Housing Areas: A Case Study in Trabzon
Yalçın Yaşar, Cengiz Acar, Banu Bekçı

A Definition of How to Design a House in the Country Yard
Hüseyin Egeli

AMELIORATION OF THE CONTEXT OF ARCHITECTURE, DESIGN PRINCIPLES FOR BETER HOUSING ENVIRONMENTS

Özlem ATALAN, İsmail GÜNUR

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ABSTRACT

For amelioration of the context of architecture, from planning to the design of housing environments, after sustainable terrain analysis in accordance to land use principles, alternative approaches to design guidelines of housing units and housing groups will be studied.

Design alternatives of public housing versus traditional housing is studied, which but for its extensive use in todays settlements and several advantages, it has the disadvange of having been planned, all at once, like any mass production, for a number of unknown users, compared to traditional single family dwelling. İn the study, two main conditions are tested for the design of dwelling units and housing groups per ha unit:

Even though in the two phase practise, the suitability of housing groups to climate and topography, designed at the first phase is achieved, in the second phase, in reaching the architectural context, the integration of the architectural project with the settlement, has hardly been sucessful. On the other hand in case of unknown or heterogene users, personal band of trends of the architect on the user, shall not be neglected.

Keywords: Public housing, Traditional housing, Housing projects, Design guidelines

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Design alternatives of public housing versus traditional housing is studied, which but for its extensive use in todays settlements and several advantages, it has the disadvange of having been planned, all at once, like any mass production, for a number of unknown users, compared to traditional single family dwelling. İn the study, two main conditions are tested for the design of dwelling units and housing groups per ha unit:

1.a. If the general social and demographic structure, family size and percentages of the user groups are known, by the chosen housing units, adopted to local conditions forming the housing blocks around the circulation shafts, the housing groups per Ha unit are designed, and applied to the whole of the area. In this alternative, the main concern is the suitability and adaptability of the housing units to local conditions for a successful interior architectural design that respond to local requirements.

b. In this alternative, the architectural solution of the interior of the blocks that form housing groups designed at urban scale, is solved at second phase. Here, but for the probability of designing according to users profile, there is the disadvantage of limiting the architects work within the block dimensions, and integration problem of the dwelling project with the design of the group. Therefore there is a question of entity among the inner space- the stucture of the block- the outer negative space, and the pattern of the housing group.

c. With a heterogene social structure or insufficient knowledge of the user profile, housing groups per Ha. developed according to the distribution of housing unit percentege of family size percentage in accordance with the climate, geography and topography; the interiors of the housing units are left unfinished, after the sanitary shafts or the service spaces are build, or enables flexible use through sliding seperation walls, leaving the partition to users choise.

2. The second alternative is the case where the architectural project is designed where blocks formation, its connection, or modular reproduction and formation of the housing groups is considered and designed together with the housing pattern at urban scale. In case where tendensies, needs, social profile, the traditional fetaures of the users are known, with the interior-outer space interaction taken into consideration, probability of reaching the project quality is much higher, especially in housing not higher than five stories, where interaction with the natural environment is posibble, although for identity and creativeness, personel tendensies the architect would empose on the user, and social satisfaction and degree of success of the diversity of outer space as social confrontation and interaction areas is to be questioned.

In all alternatives of collective housing, there exist the problem of taking the tradition of settlement and local climate into consideration. The designing of the project in accordance with the tradition and local climate, would achieve the adaptation of the housing environments to the local conditions.

The conditions needed for the physical environmental control could be realised to a great extend, in addition to indices, by the control of building intensity ground use, through the use of intensitiy coefficient ‘Taks’ and building height ‘h’ by the local government. The following values of local climate could be taken into consideration as example for the physical environmental control.

For moderate local climate:
Max Taks: 0.20 Indices:0.80 Max H: 24m.

For dry warm climate:
Max Taks: 0.65 Indices:1.20 Max H: 12 m.

Also in all alternatives, designing all at once for a large number of unknown user is the main issue confronted in fullfilling the users expectations. Leaving the interiors of the housing units unfinished, after the sanitary shafts and the service spaces are build , or realising a flexible use by sliding seperation walls, leaving the partition to users choise.

The absence of expression of inner space or of the style on the facade, or the entity of the facade, could be substituted and secured by a 'design guideline'. Through a 'design guideline frame', the local caracter, like the proportion and dimensions of the open- closed projections and window openings of the buildings, can be flexibly controlled by the local authorities.

In a smaller scale housing group projects where urban design is carried out together with architectural solution, the probability of achieving contextual architecture is higher. Besides, these are generally four or less storied, single or multi family row houses. In larger scale collective settlements the designing phase is generally of two steps with urban design prior .

Public housing , depending on it's nature of repeating housing units, it has the advantages of modulation, prefabrication, economics in production, versus the disadvantages of being mechanical , monotonous and anonymous.

In two phased procedures, after the urban design step, by leaving the forms and dimensions of the blocks more flexible, we would free the architect in completing his work and expressing himself. In the following page, an attempt is made to entlist the local and the universal criteria and their interaction.

It is obvious that the social and demographic criteria cannot be estimated and met without individual confrontation with the family. When such special needs and expectations met with unfinished interiors, the integration of the facades can be ensured with a framework of 'design guidelines'. For this, the appointed proffessionels in local governments must be equipped with enough knowledge, self confidence and capacity of interpretation, and not the least, must be encouraged and backed by the elected political staff.

Figure1, 2. Appearantly the solution of the housing units were not sufficient to cover the needs of the inhabitants (İsmail Günur Collection, Singapore, 1990); A till the second half of the 20 th century public housing has achieved the task of storing as many families as possible (İsmail Günur Collection, Singapore, 1990)

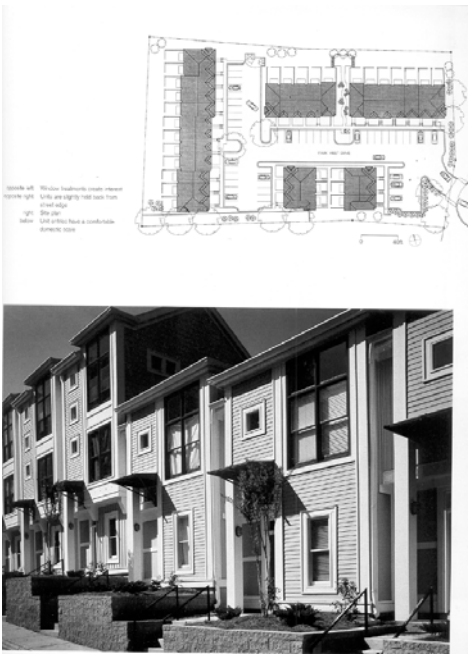


Figure 3. In rather small public housing groups of 3-4 stories of multi or single family housing it is more probable achieve contextual projects (Multi-Family Housing, 2003)

Figure 4. Small public housing groups (Multi-Family Housing, 2003)

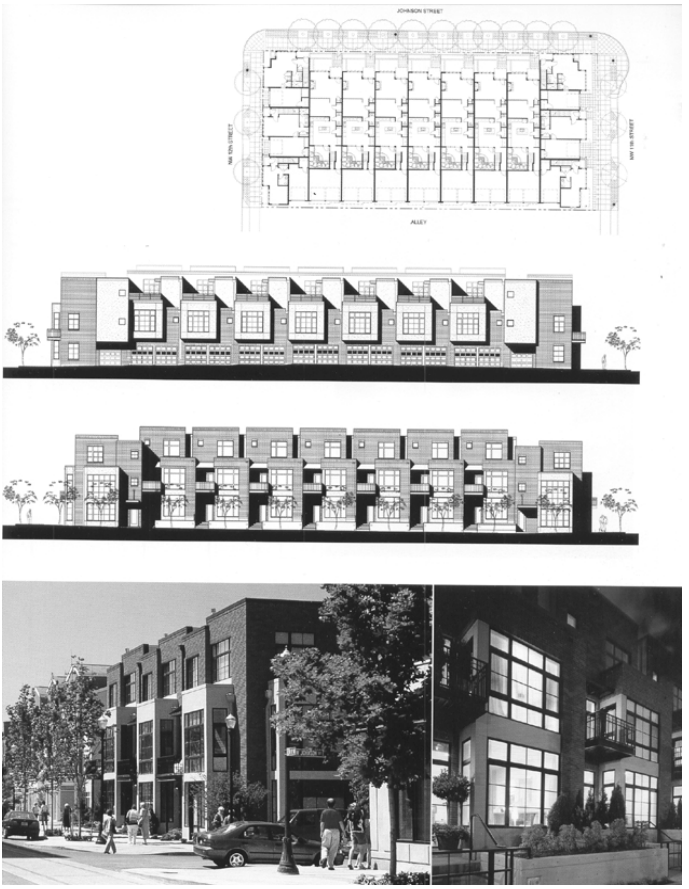
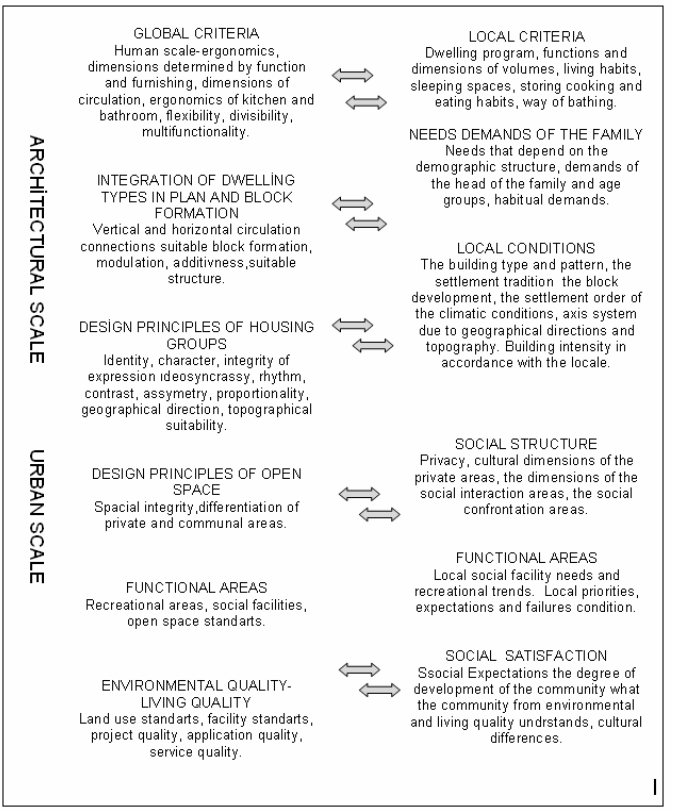


Figure 5. Although the modern function of oriel window is to be questioned, it is stil an esthetical design motive of today(Multi-Family Housing, 2003)



CONCLUSION

In realizing the traditional housing pattern, and climatic environmental control, using ‘intensity coefficient ‘Taks’ in addition to the indices, would identify the kind of local settlement aimed at.

To sustain the entity and the proportions of the facades, a flexible ‘design guideline’ frame shall be interpreted by the professional staff of the local government.

In small scale housing groups, where from architectural project to urban designing, the project is carried out single handed, and where limited number of users are confronted, the probability of satisfying the user is much higher.

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DEVELOPING CONTEXTUALISM AND ASSESSING USER PREFERENCES FOR LANDSCAPE DESIGN IN MASS-HOUSING AREAS: A CASE STUDY IN TRABZON

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ABSTRACT

In recent years, more residential areas occupy in urban landscape pattern through growing numbers of mass housing landscape areas. Conversion of separate housing units to mass housing areas interferes with landscape designs and city aesthetics opportunities. Although mass housing forms show similar design patterns in most cities and city districts, the usages and demands for them can differ with dweller preferences. Therefore, variability in function, aesthetics and expectations for mass housing necessitates diverse design solutions for landscape contextualism. In this research, a mass housing landscape area selected in Trabzon was investigated according to landscape design approaches. The design processes for this area were studied and determined in a result of studio approach that deals with various design aims. Consequently, multiple designs adaptable to development and suitable to users' expectations for selected housing example were redesigned. Also, some implication for landscape design and contextualism were put forward.

Keywords: Contextualism, Mass-housing landscape, Landscape design, Trabzon

INTRODUCTION

In environmental design including urban design, architecture and landscape architecture disciplines play important roles, both of the vocation explain that people activities and space qualities which human lives (Lang, 2006). Actually, on the integrative structure of the environment, while the architecture studies on indoor spaces; landscape architecture deals with outdoor spaces. Discipline of the landscape architecture has got an important place because it is livable, provides a livable situation outside the space suitable for human necessities and contains living elements. Therefore; it has currently become the most applied professional discipline (Carpenter and Walker, 1990).

The house is a multi-dimensional concept containing meanings more than simply meeting both the physical and psycho-social requirements of the user. Due to these properties, it is impossible to make a certain description of the house. Especially, while the technology changing rapidly under the current conditions is entering every area of our life, economic developments and changes in the field of education are consequently changing a diversifying social structure as well as styles of life. Changing family structure and style of life directly affects the expectations from the house (Zorlu, 2004).

Regarding the mass housing projects prepared by landscape architects, importance is attached to the features such as accessibility, heavy business with activities of the people, comfort, good view and sociability of the site while evaluating public spaces. Especially, while aesthetic and functional spaces are designed, an evaluation can be made by looking at both visual and physical connections of the site with its surrounding. And spaces containing easy accessibility have got a high capacity of a vehicle park; they are also suitable for the passing of the users. Success of a design depends on whether the site is comfortable and is seen well. To achieve the comfort of a design, opportunity must be provided for the security and cleanliness of the created spaces as well as their usage by the people, as they wish.

Designed spaces should optimally accommodate user needs and support their activities (Booth and Hiss, 2002). Direct participation of users in the design process for production of landscape design helps to achieve this by reducing informational and perceptual gaps between the users and the designer. Additionally, the landscape affects lives and cultures in important ways, given its pervasive nature and the intricacy of human-environment interrelationships that have psychological, social, political and economic dimensions.

This is perhaps most true of residential environments, where people spend most of their time, to which they relate most intimately, and around which notions of identity and territoriality get constructed. In the study, What are the existing patterns of user involvement in the design process residential environments? What factors affect the patterns of interaction and the kind and extent of decisions taken by the users and designers respectively? What are the barriers to increased participation of users? These questions were explored in the Turkey context.

The paper is based on systematic observation over years of landscape architectural practice and teaching in Turkey, substantiated by a study of seven projects by five landscape architects. Firstly, we briefly review to determine user the projects which are contains variety questions and different design concept has been discussed in the literature. In the next section the patterns of user participation evident in our study of seven projects which is presented are described using these variables and the influencing factors that emerged are discussed.

The importance of this study is used elements and techniques with landscape architectural conceptualism. This study is analyzed by landscape architecture to determine for physical environment. As you can see in existing study area, it was realized that professional perceptions of, and solutions to, the needs of the user groups were seriously flawed. The chosen forms, ‘hard’ and inflexible design solutions, and spatial configurations that were culturally alien and functionally

uncomfortable for the landscape area, led to erosion of identity and psychosocial stress (Newman, 1973; Sommer, 1974; Heimsath, 1977).

MATERIAL AND METOD

Study Area

Geographic situation of the city Trabzon, has negatively affected its urbanization due to its crowded population and constant immigration from the neighboring cities. Rather great demand for housing estates has reduced the area which must be left for landscape, causing landscape working to become a problem difficult to solve. In the housing estates built so far, users' daily needs such as the area of entrance, the car park etc, have been taken into consideration much more than their recreational ones.

In the research, only the visual potentials of the projects designs have been dealt with, but the evaluation of ecological features of the plantation designs in the projects has not been included (Acar, 2003). The green field of Çeşmekent to the south of Kuruçeşme in Trabzon has been chosen as the field of research.

Formation Of The Design Samples Belonging To The Site

In this research, at first, the survey of the area has been conducted on the level of plan and sight. As the main components in the process of producing alternative solutions for the site; form, measurement, colour and texture features have been reflected on the drawings in project designs in the designing process. In the projects, it has been intended to achieve the most suitable placement of the used places to the site. It has been intended to reach a solution, using different composite groups such as continuity, balance, block – blank etc in every planning, and samples of project designs have been produced, which can define the site best and are eye – catching at first glance. For the usage of all the places together, attention must be paid to the easy accessibility, comfort and safety of the users. Mistakes such as the visual direction of the front side of construction, existing plants to be preserved, sunlight – shade position, place relationships etc determined as a result of the survey study have been evaluated and six different alternatives have been produced for the subjects to make their evaluation. Below are the items of the project designs and features used for the development of these alternatives. Factor / Environment providing data for project designs:

1. Subject and content of the project, what will be done, what sorts of actions it contains and its capacity;
2. Legal, financial and technological limitations;
3. Necessities physical (communication, direction, illumination, control of noise etc); human (biological, anthropometric, psychological, socio-cultural); technical (usability, durability, aesthetics etc);
4. Demands: physical, human, technical, aesthetic;
5. Existing natural environment and external characteristics (mountainous, sea / lake, river banks, woodland, desert etc); topography (sloping, flat); geological structure

(hard, soft, slippery, earthquake region); cover of vegetation (the most prevailing); climate (mild weather, usually hot / cold, rainy / dry etc);

6. Existing man – made environment: sparse / dense settlement, vertical / horizontal increase in construction, shape / ratio / scale, dispersion (what exists most / least), historical elements (characteristics of the era etc), symbolic elements (statue, fountain, tower etc)

In this study, it has been tried to introduce a method that will be so helpful in making landscape arrangements. However completely this method is tried to be introduced, it is a process having many unknown features, as it is in all creative processes, and dealing with these unknown features is up to the personal skill and interpretation of the designer. Besides, the method suggested here helps to improve the habit of looking at a process consciously, and it does not mean that there is only one method used in designing.

In this context, the landscape design process can best be seen as a process of making decisions and design choices about various aspects of the existing study area and its components. Meaningful participation can be measured in terms of the extent of control over the decisions that the most favorite project. This decision making is spread over the various stages of the design process (Reich et. al, 1996).

The Client Brief Stage

Numerous decisions are necessarily taken in the course of design and construction of a landscape area. Although the landscape architect is aware and deals with most decisions in a considered manner-attention to detail is considered a hallmark of a good architect in professional circles which can limit their input. Also, the clients are unlikely to be able to articulate preferences about the ways in which requirements are to be met the landscape architect's active and systematic efforts to elicit the user's requirements and preferences, the extent of specification would be very limited.

Conceptual Design Stage And The Feedback Process

In design terms, the alternative ways in which the requirements of the user can be met are theoretically infinite. In practice, only a few can be generated by a normally skilled landscape architect. How many conceptual alternatives are generated, how and who selects the one to be progressively refined to approximate a 'satisfactory' solution also makes a difference to the level of user participation. Thereafter, the frequency, content and nature of the interactions between the landscape architect and the user determine to what extent the user actually shapes the final design. Also important is the medium of communicating design ideas architectural drawings, sketches, scale models, or any other.

Design Finalization And Detailing Stage

Landscape architects look forward to design finalization as it fixes an overall frame, even if in certain cases some aspects are still ambiguous. Further modifications and

alternations rarely require major overhaul of the formal composition and organization of elements. User' strong insistence on revisions until they are finally satisfied may be important.

In this study, visual impressions of the users have been revealed by means of the perceptions of the designs of the existing site and landscape arrangements. For this reason, the techniques of survey and Semantic Differentiation Scale have been determined as the method of this study. This feature is expressed by means of a scale made of the surveys; subjects were asked personal questions in the first section and totally 16 questions in the second section in order to be used for the evaluation of the existing site. Usage of differentiation scales of this kind has been evolved by Osgood and his friends (1957), and this feature is expressed by means of a scale made of the surveys, subjects were asked personal questions in the first section and totally 16 questions in the second section in order to be used for the evaluation of the existing site. By means of these questions, it has been tried to determine the imperfect features of the existing site. And in the third section of the survey, the subjects have been presented totally 6 sample works of model.

Evaluations

In the research, firstly, the users were asked questions defining the imperfect features of the site in order to determine the existing situation of the site, and then, the values of preference determined for the most appreciated sample project of landscape arrangement were determined proportionally according to the users.

FINDINGS AND DISCUSSION

Preferences Pertaining To The Existing Situation Of The Area

Functionality and inadequacy of comfort in the area of activity leads to the user stay a short while in the area and feel uneasy during the time they stay there. There is no comfort of the place while the user is conducting an activity in the area. You can see the results of survey below:

- Answers, it is understood that the user wants to have an activity in the area, but that it doesn't provide them such an opportunity. In short, the activities present in the area are inadequate for the user.
- When these answers one evaluated in consideration of the area users age, profession and level of education, that the people are middle aged and university graduates show that the users of the area represent the working sector. Therefore, that most of the users are at work during the week, limits the usage of the area very much. That is why the used area is inadequate for the user.
- The present situation aims to satisfy the children and the youth. And this creates a contradiction between in the sector of users and the activities in the present area. The children's playground and the sports field covering rather a great part of the present area, limit the sector of users. In designing

the present area, it has not been taken into consideration that the sector of users is made of middle aged people.

- The area has been designed in a way to satisfy almost all the needs of the children.
- The present area has got hard ground in general, has removed the parking problem. The places by the edges of the housing estate and the road dividing it from the east to the west have been used as the parking area. And the remaining hard ground is used as car park when the car park is inadequate.
- In the present area, entrance into the housing estate is realized through two gates, which are the east gate and the west one. The users of the area feel themselves in safe because the surroundings of the housing estate are secure.

According to performed analysis for study area, the projects were formed regarding some criteria. These criteria were give as following;

- The answers given by the subjects show that camellia, sitting area, pool and walking track are the most wanted things in the area. That the given answers are rather suitable for passive activities shows us that the present area lacks recreational facilities.
- It is obvious from the answers that the subjects need sitting places most in the area.
- It is seen that the natural data of the area have not been correctly evaluated. Scarcity of the green field in the area results from the incorrect planning of hard ground. Therefore, it has been impossible to obtain effective usage in the garden.
- The answers the subjects have given in relation to their preferences of water add liveliness to the area. The subjects want to remove the dullness they feel in the present area by means of their preferences of water.
- It is seen that the subjects are bored of the monotony in the field and so they tend to the methods of lively planting which they consider they'll add activity to the area.

When the answers are examined carefully, it is seen that among the essentials of the topics of complaint are faulty principles of planning used in the present area, imperfect arrangement of the places and monotony. Therefore, when looked at the answers the subjects, have given to the questions, it is seen that the expressions giving activity and liveliness to the area have been used.

Preferences Pertaining To Design Samples

The third section of the conducted survey has been prepared in consideration of the suggested model work. The questions in the third section of the prepared survey have investigated whether the models are appreciated or not. In conclusion the most

appreciated arrangement or design is Project 6. When Project 6 is examined carefully, it is seen that all the elements considered deficient in the area by the subjects have been analyzed in it. Approaching the project naturally has provided an opportunity for the usage of the green field and the element of water plentifully. That is why the subjects want the application of Project 6 most.

The arrangements that the subjects do not appreciate are usually the projects emphasizing the hard ground. The usage of quite large areas in the projects for activities cannot attract the user's attention because it decreased the privacy.

CONCLUSION

The areas of common usage belonging to large housing estates or the open spaces constituting topic have got the features improving the respect for the life styles strengthening social unity, cultural identities and the rights of other people, and consolidating the interactions between people. Besides being the areas reflecting the people's culture, beliefs, values, personal behaviors and process of social development, open areas play an important role in satisfying the personal and psychological needs of individuals.

In accordance with the psychology of user, how actively a space of a housing estate is used, depends on to what degree it is suitable for activities. People are much interested in the recreational areas they need and private places. So, just like the house gardens, the user's need for the recreational areas belonging to mass housing estates, using these areas continuously and establishing a close sensual relationship prevent the conscious user from damaging the place and contribute its usage. In one respect this is a subject in relation to the regional behaviors of that society. To sum up, what has been done in this study in connection with a housing estate and its surrounding is the research of what kind of physical environment people want to live.

The evaluation of open places from the point of quality in environmental arrangements has constituted an important part of the study. The following factors are fundamental to increase the usage quality of a designed space:

- The arrangement of the usage area must match the aim of usage,
- Necessary street furniture suitable for the activities that will be done in open spaces must be provided to increase the quality in the areas of usage,
- Security need must be satisfied by not only place analyses but also administrative precautions,
- Space analyses strengthening social relations must be increased in quality.
- Conditions needed to sustain the environmental quality in housing estates.

The conclusion of the questionnaires in this study, observed that users most preferred natural areas. For the reason of people who comes to towns from villages mostly that lives in the study area, wants to see materials which remind them of home. Therefore they make a connection with their surroundings and continue their habits. To look these connection;

- Users figures that the natural data of the area have not been correctly evaluated. For this reason, it was demanded that hard ground must be increases. So, it was provided that the uses of areas numerous function.
- Users aren't demanded that the area become monotony. Also users demand to seen that flower parterre, autumn and spring colors, mixed planting, grass area and fruit tree. Consequently, they will be seen the activity of their previous living areas.
- Users demanded that evaluate the area naturally. Thus, now they see green area, sitting area, walking trails, ornamental pool and child playing garden where they lived there before.
- Users demand to seen that water element which have huge surface in the area. Consequently, they can see ornamental pool and artificial pond in the living area as a river and waterfall in their village.

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A DEFINITION OF HOW TO DESIGN A HOUSE IN THE COUNTRY YARD

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MSGSU

ABSTRACT

The need for a house, surrounded with green areas, became as an urgent behaviour of most families, living in city center for a long time.

They start to look for finding suitable environment, away from the city borders. Mainly these residentials are near the seashore, in the valleys near a village, or on the hills, away from the other settlements, and hide in the olive and pine trees which are aged enough to offer their delicious olives and the wonderful smell of pine, as it is for Zeytinalanı-Egeli Houses.

The point is to create attractive zones for these kind of living conditions near to nature.

It is clear that the quality of the construction and the environmental organisations should be more than perfect. And for this reason, to have site area full with 18 houses to be built at the same time is not a very easy job, having a start at 8 a.m in the morning till 8 p.m. in the evening.

In construction site, dealing with the workers is taking lots of time, besides deciding about the different materials which will be used for special detailing, to give the whole buildings a unique identity.

Then the next important point is the architectural texture of these buildings should be convenient to the natural conditions in these rural areas. And their owners should be happy by living in these houses.

In the paper, Zeytinalanı-Egeli Houses in Urla/ Izmir will be defined as the case studies. The new built 18 houses will be explained, including their relation with the harbour of Urla, Iskele, the excavation area, Klazomenai, and also the symbolic olive production hub.

The characteristics of the architecture of the houses, in a very successful partnership with the present environment and with their structural solutions, including material selections, etc., can lit a very strong light for other examples, having similar properties, for a more LIVable Environment and Architecture.

THE DEFINITON OF THE COUNTRY YARD

Country yard is in the village of Zeytinalanı (Olive Grove), the westernmost village of Urla, a five minute drive from the harbor and from the town center.

Urla, a typically Aegean town, is a bustling market center and a haven for residents and tourists from the hassle of the city of Izmir, some 38 kms to the east. Once Urla was the busiest port of the ancient world, and the harbor village of Urla Iskele was the Ionian city of Klazomenai, now provides a safety place for yachts and fishing boats along a quay lined with fish restaurants, just five or six.

Still archeological excavation goes on in the town, already yielding, among other things, some striking terra cotta sarcophagi and the remains of an ancient olive oil production facility. Also two famous men of letter, Greek poet and Nobel laurate Giorgos Seferis(whose name is given to a charming boutique hotel) and Necati Cumalı lived here.

Also the area is 32km away from the Adnan Menderes Airport of ızmir, 30km away from the port of Izmir, 51km away from the port of Cesme and the closest exit(Urla) from the Izmir-Cesme motorway is 5km.away.

THE DEFINITON OF THE HOUSES

The third and final of the “Egeli Olive Grove Homes (Egeli Zeytinalanı Evleri) projects is nearing completion in the village of Zeytinalanı, Urla, Izmir (www.egeliproje.com).

In the project of the houses in this country yard, the use of varieties of natural stone and wood for facings, fireplaces and other details are creating unique solutions for every house, which is utilizing the lifegiving warmth of the environment as well as zealously protecting the surrounding elements. Here, the architectural conceptions utilize the wealth of the Aegean’s natural stone, the existing pine forests and olive goves, masterfully combining the tones and hues of the natural environment. Also there are additional selections for detailed construction such as the reuse of the careful stored excavated stone and topsoil,and together with materials as old railroad crossties and telephone poles, within the landscape with the area’s natural Stone and surrounded with old Stone walls, each of the forty-eight homes is unique, amply demonstrating architectural care and attention to a thousand an done details.

PLANS AND PROJECTS

Four dozen multilevel houses, each with a view of Izmir bay, are carefully spaced on hillsides among olive, pine and fruit trees. While the sleeping and more private spaces are on the lower level, just together with the garden surface, the entryways and living spaces are located on the ground level above. The total amount of square meter is ranging in size from 200 to 400m2, and the designs have taken into account the variations of sun, shade and breeze according to seasonal changes, and protect the privacy of the residents, so it is underlined that looking at the sea is recommended instead of having the view of the neighbors.

All houses are towards the sea picture, and any of them never close the other's view. All of them are having different types of solutions in planning. Even though, there are some general ones with square plans as no.7, no.14, and no.15, also they have different arrangements with decks and settlement coordinates. No.18 is a new house, built over an old house.

No.1, no.2, and no.3 are having a look towards the other side of the sea from the back of the hillside.

THE PROPORTIES OF THE HOUSES

- the contrast of the cladding materials are adding more value to the outlook of the buildings(as it is in no.12)
- the very well drawn spaces in the ground floor and in the garden floor, are calling the hints of how to be together with nature(as it is in no.12 and all)
- the very well decided painting of facades are managing the successful combination of the country yard with built environment
- the space organisation of the houses are flowing into each spaces in the entrance flooor with success(as it is in no.8)
- all houses are looking like picture frames, standed over the green grass area
- the importance of a fireplace is bolded in every solution
- some houses are having lounge/attic over the entrance level together sharing the same space(as it is no.5)
- the main forms of the houses in plan mainly are rectangular, square and circular
- the woden decks are eally wooden decks, constructed with wooden frame, including woden columns, remaining from former uses of them
- the connection of horizontal circulation areas inside the houses with the vertical circulation areas are really very successful, having the less area ro circulation comparing the living and sleeping areas

It can be prepared, a longer list due to other criteria, help the environment to be more livable.

CONCLUSION

The aim is always to have creative designs and innovative solutions for our livable environment.

When we take care of these topics, the identity of the defined area, a country yard or a city center or a hillside, is easily formulated in the name of having different and unique properties, as it is in Egeli Zeytinalanı Houses, in Urla, automatically.

While the goal of "the contextualism in architecture" is looking for solid clues to represent its importance in life, here in these built examples in Zeytinalanı, Urla, it can be easily seen the similarity between the texture of the context of former settlements and also with the unique and special features of the texture of the new settlement, underlining today's living conditions.

Here, there is an identity,
Here , there is a modernity,
Here, there is a globalization whose center is being dominated by economic forces,
Here, there is an urban transformation from city center to country yard,
Here, there is the use of technology itegrated successfully with the labor of human for getting really a livable environment, supported by a very well detailed architecture.

Photo 1. a house from the former phase of egeli zeytinalanı houses(photo taken by H.Egeli in 2007)

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www.egeliproje.com

HOUSING

Moderator: Peter Arnke

Examination of the Housing-Settlement Ataköy in terms of Physical and Social Contextual Approaches
Hande Egel, Seda Tönük

Evaluation of the Houses Constructed in the scope of "Return to Village and Rehabilitation Project" (RVRP)
Ayhan Bekleyen, Bahar Acar

Condominiums as the New Housing Alternatives of Global Cities
Rengin Zengel, Burcu Deneri

EXAMINATION OF THE HOUSING-SETTLEMENT ATAKÖY IN TERMS OF PHYSICAL AND SOCIAL CONTEXTUAL APPROACHES

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ABSTRACT

Ataköy is one of the first modern mass housing districts in İstanbul that is still exposed to expansion by on-going housing developments. The composition of the Ataköy mass housing environment has been realized in different phases over duration of approximately 50 years. The phases are developed according to different user group profiles in changing time periods. For that reason, Ataköy can be regarded as a unique environment that reflects influences of social context on architectural evolution in the same physical context. The recent expansion with on going housing development is called Part 6. Both the identity and the development purpose of this recent complex can be described as to carry a totally contradicting architectural language compared to the context.

Ataköy, in that respect, with modern, late modern and post-modern architectural styles, provides the potential to be examined both the breaking points and continuity in social and physical contexts in the last 50 years. So in the research, whole Ataköy settlement will be evaluated in terms of both social and physical contextual approaches. Evaluation will be presented according to the housing unit type descriptions, facade formations and periods in which the parts were developed. The evaluation and classification of the physical contextual outcome and its relation to social contextual approaches will also be presented to provide a discussion platform.

Keywords: Mass housing, Phys ical context, Social context, Modern, Postmmodern

INTRODUCTION

This paper will explore the aspects of interrelationship between prevealing economic, social aspects affecting building form and aesthetics from analytical perspective in Ataköy district. Ataköy is the first modern mass housing development district in Turkey. The first development phase of Ataköy started in 1955 and today eleven parts exists in the settlement which were developed until 2007 phase by phase. In that respect, the affect of social changes on built form along the 50 years time duration can obviously be seen in the context and worth analyzing. The following analyses of the researchers points out the necessity of the matter in Turkish Architecture while focusing on a definite district.

METHOD, MATERIAL AND PURPOSE

Contextuality is basically defined to be the degree or form of the relationship of new buildings to existing surroundings. However, while interpreting a new building or a critically approaching to design; often conflicts may appear about the same building or building group depending upon the definition variation of the term “contextual approach”.

To analyze the buildings and/or one of the main components that construct buildings researchers apply varying arguments and methods. Though these varying arguments may seem to be the subject of different discourses, in fact basic criteria is repeated in most of the discourses. For example; Vitrivius in his Ten Books on Architecture, as the first accepted book on Architectural Theory, defines the main components of buildings with the trio as Utilitas (function) , Venistas (form) , Firmitas (technology). Although the components seems not to change until from the time of Vitrivius, variations in items that compose components occurred parallel to the time, social and technical developments.

The relation of built form and culture should be explored on multi-disciplined platform by its nature. Hence the critical approach to the built form should be done in consideration of the culture of the era and the society. Moore states the influence of developing cyber-culture on the built form; and impact of globalization on culture. He refers to Dutton and Hurst Mann in explaining the relationship between culture and built form; “that the dominant understanding of the relationship between architecture and society propagated throughout the institutions of architecture is long overdue for critical reassessment. How architects construct an understanding of the social world and how the construct affects possibilities for practice are pivotal concern for architects”(Dutton and Hurst Mann, 1996, p:1).

Van der Voordt and Van Wegen defends form to be mainly determined by the context; “Factors that exert a significant influence include the site’s architectonic and urban design characteristics, its geographical situation (including its distance from the city center) and economic context. The importance of this last factor is expressed in the motto form follows economics or form follows profit”(Van der Voordt and Van Wegen, 2005, p:67).

To Tournikiotis¸ “architecture and society are clearly linked. Architecture is inextricably with the spirit of the age-the “Zeit Geist” and is thus seen as a visible manifestation of social evolution. In that sense, human freedoms are reflected in autonomous architecture”(Tournikiotis, P., 1999, p:23).

So this research examines social and physical environmental aspects of close interpersonal relationships from a cross cultural perspective. It begins with an analysis of the relations between social evaluations-changes that related to the life style and architectural design language depending on the zeitgeist.

CASE STUDY

In view of the problems in a period of increasing globalization, standardized housing is being provided inter nationally for cultures across the world as a necessity. But cross cultural studies on housing and house settlements should be based on the comparative evaluations of specific social and physical conditions which are extremely rare.

As a settlement developed in a 50 years time duration, it is important to evaluate the physical and social context of Ataköy in a comparative way to understand the historical development of housing culture. Though eleven parts that developed phase by phase has taken separately for the analyses, it is possible to make cross cultural evaluations of separate parts to be able to understand their affect on building forms.

In evaluation of this development of 50 years time duration, it is necessary to define cultural and economical values in respect of their effect on architectural styles.

Definition of terms

The Modern Movement enjoyed its richest flowering and attained its historic prestige during the decades between the two World Wars, when it was born in a spirit of renunciation of the old world, a commitment to addressing mass housing needs, and an enthusiasm for exploring the architectural potential of materials and technologies often disdained by the previous generation. It claimed the energy of talented, committed architects throughout Europe, even if it represented the ideas of a relatively marginal and socially homogeneous group of architects an resulted in only a modest number of buildings (Weston, R., 1996, p: 9). In that respect Modern Architecture was original, independent of tradition, liberated from imitation of the styles of the past and opposed to the convictions of the 19th century. Every thing was new that was to define the character of *'modern life'*.

Le Corbusier presented this original style with "The Five Points of a New architecture", which are; (Weston, R., 1996, p: 9)

1. The use of columns (which he calls as pilotis) to raise the house off the ground, freeing the site for the circulation of people and cars, emphasizing the cubic nature of the building y enabling the underside of the first floor slab to be seen and eliminating a basement - which he considered unhealthy in 'tubercular Paris'.

2. Developing the flat roof as a garden, recovering the ground 'lost' by building the house and making a private outdoor space for sunbathing, exercise or taking the view.

3. Exploiting the freedom created by the structural frame to position partitions were required – what he called the free plan.

4. Glazing, infilling or omitting the non-load bearing external walls to create privacy, windows or open terraces as desired the free facade.

5. Using a long horizontal window (la fenetre an longeur or ribbon view) to give even and generous lighting (a some what dubious claim which was not fully borne out in practice-the reasons were as much as aesthetic as practical).

After modernism, architects took Modernist principals and updated them. Although the grid principal was often still part of these newer structures, they experimented with curves and colors that would not be seen in the pure Miesian tradition. These newer buildings were usually completed in the 1960s and 1970s, and are sometimes referred to as Late Modernism (http://www.michael.leland.name/ modern/index.html). Late Modernist architects, such as Paul Rudolph, Eero Saarinen, Ed Barns, Philip Johnson and many many others, totally embrace modern theory and sought to extend and evolve Modern Architecture without the theoretical break implied by the Post Modernist. Ornament and History were not embraced and the theories and precedents set by the Modern Masters (Corbu, Mies, Wright and Gropius) were looked upon and models to build on
(http://www.designcommunity.com/discussion/23051.html). On the other hand, Post-Modermism as a whole is a synthesis of social, historical and formal imagination, of geometrical order and intense plasticity. Lampugnani defines Post Modernism as an opposition to “Modern Movement” or “Modernity”, that implies a more or less decisive break with the major goals of 20th century avant-garde, and re-integration with the ideals of the pre-modernist era (Lampugnani, 1996, p:269). In other words, Post Modernists main goal was to re-instill lost meanings that they saw in pre-modernist architecture but in a new, modern way
(http://www. designcommunity.com/discussion/23051.html).

Examples of Post Modern buildings generally embrace ornament as didactic and amusing, in Jenks’s words, “…decoration which tells you it is a sign of a sign” (Papadakis (Ed.), 1991, p : 78). Post modernism can be summed up with the freedom to use any images parallel to the freedom of marketing in free economy.

“While forces of modernization in the early 20th century tended to obscure local, regional and ethnic differences; Postmodernism focus precisely on these differences and bring to the fore that which had been marginalized by dominant cultures” (Ghirardo,1996 pp:7-8).

Definition of field

Ataköy, a settlement in İstanbul-Bakırköy region, is the first applied satellite city projects of Turkey. With the gunpowder factory built by Mahmut the Second, previously Ataköy as district out of İstanbul borders, was called BARUTHANE. Later in 1950’s, “Emlak ve Kredi Bank” developed a new settlement in the district for 50-60 thousands population with the new name as Ataköy. Today Ataköy has a resident population which is more than a medium scale city. Though Ataköy was considered to be a suburban area once, the settlement became a central part of the İstanbul city.

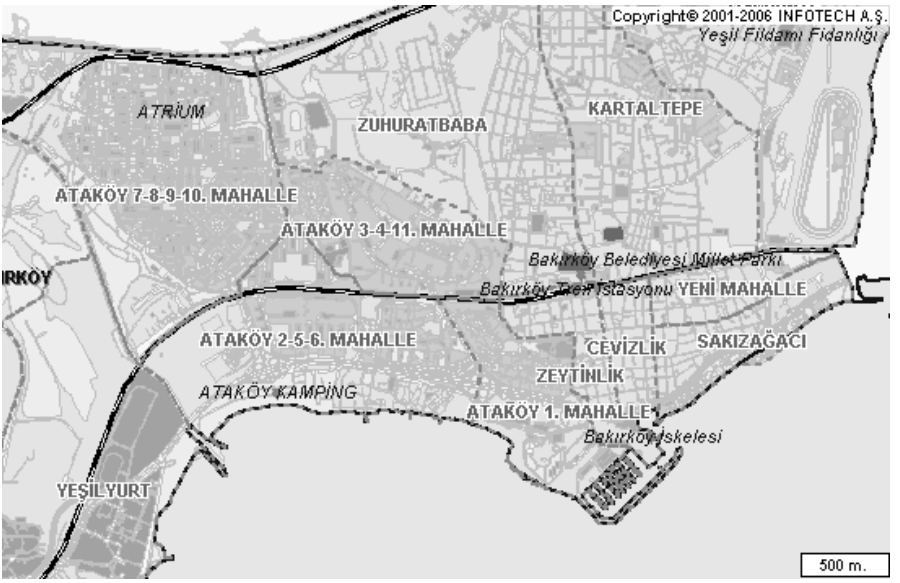

Figure 1. Map of Ataköy (www. bakirkoybelediyesi.org)

Figure 2. The façade characteristic of Part 6 with Post Modern Architectural language and Part 2 with Modern Architectural Language

Part 1 has developed for both high educated and also high income level group. However, the parliamentary group were not in favour of the development since the settlement was far from the city center.

Part 1: Phase of Construction: 1955-1959

Table 1. Contextual determinants of Part 1

House Type	Physical Context			Social Context	
	Level	Number of Units	Unit Area m²	Architectural Style	User Stratum
A Type	GF+12	48	~ 185	Modern Arch.	Parliamentarian+ Bureaucrats + Generally for High Income Level
B Type	GF+4	8	~260		
C Type	GF+7	21	~120		
D Type	GF+4	8	~240		
E Type	GF+3	6	~320		
F Type	GF+7	28	~140		
G Type	3	6	~140		
I Type	GF+3	6	~140		
IBType	GF+7	32	~120		
R Type	GF+12	48	~ 160		

For that reason the B, D and E type of blocks with the largest flat areas could not be sold for a while. They were used as apart hotels instead of residential purposes for that period. These luxury flats (B, D and E Types) include personal accommodation quarters with two entrances. With terrace roofs, strip windows, pilotisis, kind of free plan, open large balconies the architecture of Part 1 represents Modern Architecture.

Part 2: Phase of Construction: 1959-1965

Table 2. Contextual determinants of Part 2

House Type	Physical Context			Social Context	
	Level	Number of Units	Unit Area m²	Architectural Style	User Stratum
H Type	GF+9	54	~110	Modern Arch.	Bureaucrats + Generally for Middle Income Level
M Type	GF+9	54	~110		
J Type	GF+5	20	~190		
K Type	GF+12	48	~110		
L Type	3	6	~180	Post Modern Arch.	

Excluding low rise L type blocks, Part 2 carries all fundamentals of Modern Architecture like Part 1. The L type blocks, with its English Housing style uses the images of Post Modern architecture; attached houses, bricks at the facade, small balconies, square windows, classic sloped roof style etc. Both in Part 1 and Part 2, in most of the block facades, glazed mosaic tiles finishing has been used as popular

building material of the era. Moreover, all the interior finishing materials were also imported from Europe at that time. Excluding L types, whole Part 1 and Part 2 buildings are designed to be de-attached type of settlements with large surrounding green areas, parks, primary school, sea-side beach (for the usage of Part 1,2,3) and with their shopping areas. The shopping area is built in Modern style as well.

Part 3: Phase of Construction: 1964-1966

Table 3. contextual determinants of Part 1

House Type	Physical Context			Social Context	
	Level	Number of Units	Unit Area m²	Architectural Style	User Stratum
N Type	4	8	~80	Social mass Housing Character	Officials + Generally for Lower Income Level
O Type	5	20	~75 ~110		
P Type	4	8	~80		
TO Type	5	20	~80 ~120		

In Part 3, there was a necessity to use inexpensive material for the respect to the budget of the users. ……. So, the architecture of this part can be defined neither with Modern, nor Post Modern but more of a Social Housing example: The roofs are sloped, the windows and balconies are small, façade finishing material is pilaster, etc. Generally as social housing character; for the economic usage of the land the blocks are built in attached manner.

Part 4: Phase of Construction: 1970-1975

Table 4. Contextual determinants of Part 4

House Type	Physical Context			Social Context	
	Level	Number of Units	Unit Area m²	Architectural Style	User Stratum
O Type	5	20	~75 ~110	Social mass Housing Character + Modern - Late Modern Arch.	Generally for Middle and Lower Income Level
S Type	GF+12	50	~145		
TO Type	5	20	~80 ~120		

The low rise blocks of Part 4 carries the identity of Part 3 whereas the high rise blocks to be interpreted as to be somewhere in between modern architecture and late modern architecture. The high rise blocks rise on pillotisis, have variety of windows (square and horizontal), does not use free plan, -instead of open terraces- include

small balcony niches and french balconies. As social structure of Part 3 and 4 there is primary school, high school and a shopping area.

Part 5 : Phase of Construction : 1983-1986

Table 5. Contextual determinants of Part 5

House Type	Physical Context			Social Context	
	Level	Number of Units	Unit Area m²	Architectural Style	User Stratum
A Type	GF+14	88	~ 85 ~ 117 ~112	Addressed as Mass Housing in modern movement + Late Modern	Generally for Middle Income Level
B Type	GF+6	26	~130		
C Type	3	6	~130		
D Type	4	8	~130		
E1Type	GF+8	90	~ 95 ~ 115 ~ 120		
E2 Type	GF+9	100	~ 85 ~ 115 ~ 120		

As social structure of Part 5 a kindergarten, shopping area and a mosque take place. The high rise groups of this part neither carries Modern movement criteria, nor uses Post Modern architectural elements, but may be defined as Weston's term as "Mass Housing in modern movement". The low rise groups on the other hand may be defined to be in Late Modern architectural style with their French balconies and small balconies, inclined roofs, square windows etc.

Part 6, the recently which is being the developed part, is in fact defined to be a district with its own border walls and an entrance gate as a differentiating approach from rest of the Ataköy settlements. In this section the target user is new-rich clientele group with either has high education or not. Parallel to the free economy criteria and the taste of this market group, Post modernist approach, which implemented historical signs in the district is applied. The historical signs used in the façade are the portal, circular windows, large eaves, column like pilaster grooves, horizontal profiles, arches, round French balconies.

Part 6 : Phase of Construction : 2003-2007

Table 6. Contextual determinants of Part 6

House Type	Physical Context			Social Context	
	Level	Number of Units	Unit Area m²	Architectural Style	User Stratum
A Type	6	12	~260	Post Modern Arch.	For High Income Level
B Type	6	12	~230		
C Type	6	24	~190		
D Type	7	28	~160		

However, facade with its historical post modern language does the reflect post modernist space in the plans. The proposal of palm trees in landscape design also reminds of a kitsch approach. The denser use of land compared to the rest of Ataköy settlement is a kind of contradiction which promotes less greenery. The district is planned to have its own shopping mall, underground parking lots (3 parking area for each units) and sports areas.

Part 7, 8 : Phase of Construction : 1989-1993

Table 7. Contextual determinants of Part 7-8

House Type	Physical Context			Social Context	
	Level	Number of Units	Unit Area m²	Architectural Style	User Stratum
A Type	GF+5	60	~ 55 ~ 110 ~140	Late Modern Arch.	Generally for Middle and Higher Income Level
A1 Type	GF+14	150	~ 55 ~ 110 ~140		
B Type	GF+13	56	~120 ~140		
C Type	GF +4	90	~ 75 ~140		
D Type	GF + 3	78	~ 75 ~140		

As social structure of Part 7-8, 2 primary schools, 1 high school and cultural center is provided. The shopping activity does not exist within a defined shopping area but rather some blocks are designed to provide shops in their ground floors as a mixed use. The design characteristics of this part generally consisted of small-niche balconies, angular mass corners, variety type of windows (square and horizontal strip), inclined roofs ….etc. Three types of settlement character is seen in Part 7-8; attached and de-attached linear low rise blocks, de-attached high rise blocks and attached villas. It is necessary to note that first time underground parking areas are designed in this part for high income group of users.

Part 9, 10 : Phase of Construction : 1989-1994

Table 8. Contextual determinants of Part 9-10

House Type	Physical Context			Social Context	
	Level	Number of Units	Unit Area m²	Architectural Style	User Stratum
A Type	GF+14	150	~40 ~90 ~105	Addressed as Mass Housing in modern movement + Late Modern	Generally for High Income Level
B Type	GF+14	60	~120		
D Type	4	30	~85 ~115		
E Type	4	30	~ 85 ~115		
F Type	4	20	~ 85		
S Type	GF+8	108	~110 ~130		

Social Structure of Part 9-10 provides 3 primary school, 2 high schools, a cultural center, mosque and shopping mall. It is important to note that, the concept of shopping mall is used for the first time in this district. Generally de-attached housing settlement groups and partial under ground parking areas are given in Part 9-10. Like in Part 5, this part neither carries Modern movement criteria, nor uses Post Modern architectural elements, but may be defined also as “Mass Housing in modern movement”. Both in high rise blocks and in low rise blocks similar features are seen; small niche-balconies, terrace roofs, strip and square windows, etc.

Part 11 : Phase of Construction : 1990-1993

Table 9. Contextual determinants of Part 11

House Type	Physical Context			Social Context	
	Level	Number of Units	Unit Area m²	Architectural Style	User Stratum
Type 1	GF+5	42	~80 ~90 ~140 ~180	Late Modern Arch.	Generally for High Income Level
Type 2	GF+5	64	~80 ~90 ~140 ~180		
Villas	3	45	~280		

Apart from residential blocks, one government apart house, a primary school and sport complex exist in the social structure of Part 11. Shopping activity is provided in ground floor of some residential blocks as mix usage.

FINDINGS AND CONCLUSION

According to our research in terms of Physical and Social Contextual approaches of Ataköy Housing Settlement, our findings are as follows;

Modern Architecture is based on rationalism and functionalism in terms of development of mass housing settlements. The simple forms of the modern movement are the unavoidable consequence of the social, economic, and political conditions in which that architecture has developed with five main criteria; and they are the honest expression of the aesthetic demands of the era.

In that view, all buildings in Part 1 and Part 2 (excluding Type L) practice pure Modern Architectural Language.

The buildings in Parts 4, 5 and 9-10 used partially Modern Architectural Language. In other words, they do not represent a pure architectural language but somehow can be defined to be in a mixed manner.

After modernism, architects took Modernist principals and updated them to expand the vocabulary of modern architecture. They did not re-introduce historical styles, architectural archetypes and ornaments as imitation, but rather they used the symbolic meanings underplayed in the composition.

In that respect, L Type of Part 2 and most of the buildings of Part 7-8 and 11 used Late Modern Architectural language.

Post modernism may be defined as an opposition to “Modern Movement” or “Modernity”, implies a more or less decisive break with the major goals of 20th century avant-garde, and re-integration with the ideals of the pre-modernist era. Hence, in contemporary discourses the main idea of Post Modernist expression may be defined to act accordingly populist approach of marketing needs.

Seen in this light, both the buildings and the landscape design of Part 6 used Post Modern Architectural language. Parallel with the free economy the design composition has also developed in eclectic manner.

In consequence;

In discurse of social context, the architectural language of all the buildings in each of Ataköy settlement has developed in relation with the ZeitGeist of the era. In iscourse of physical context, the economic conditions and demands of the era was reflected with the land use decisions and the size of the unit.

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**Info about the unit sizes of Part 6,7,8, 11 has been provided by the interviews with Real Estate companies in Ataköy Settlement.*

EVALUATION OF THE HOUSES CONSTRUCTED IN THE SCOPE OF "RETURN TO VILLAGE AND REHABILITATION PROJECT" (RVRP)

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ABSTRACT

Subsequent to 1980, an intense migration from the rural areas to the cities in the East and Southeast of Turkey began. This migration which was rather based on security apprehensions was for many people the beginning of a life in unfavorable conditions in large cities. These people had to leave their villages and adapt themselves to new conditions in a new environment. For many people the conditions were so heavy that finally they wanted to return to their villages.

In 1994, a new project called "Return to Village and Rehabilitation Project" (RVRP) was developed by the Ministry of Interior to help those who wanted to go back to their villages. Thus, in the scope of this project, the poor living conditions of those who migrated would be improved and their pressure on the large cities (the jobless unqualified population) could be decreased. In addition to building shelters for those who returned under the RVRP, activities such as agriculture, stockbreeding and handicrafts would also be improved.

The purpose of the present study is to evaluate the dwellings constructed within the scope of the RVRP in İslamköy and Tur Hamlet connected to the Administrative District of Kulp. The density in these dwellings, the utilization of the dwellings and the issues, satisfaction degrees and reasons, changes in the space utilization, the user expectations have been studied regarding the user satisfactions. The expectations of the users and their complaints have also been determined. When the houses in the new building environment were evaluated, it was discovered that they did not bear any design concept related to that of the previous dwellings. The findings obtained from this study which reveal some serious inconveniences of the dwellings built in the scope of RVRP may shed light on the rural house design of the future.

Keywords: House, housing design, Return to village and rehabilitation project, User satisfaction, Post-occupancy evaluation

INTRODUCTION

Migration which means that people have to leave their living spaces for various factors is experienced in Turkey as it is everywhere else in the world. The migration movement from rural areas to the cities has increased in our country after 1950, and has gathered speed after 1980 (Özbudak and Bekleyen, 2006). After that date, to the known motives of migration, a new one was added especially in the Eastern and Southeastern parts of Turkey. That is terror.

In the Eastern and Southeastern regions of Turkey, security problems due to terror arose after 1980. Most of the people living the villages have migrated to big cities in their near environment. This unplanned and dense movement of translocation has been the cause of many problems such as sheltering and unemployment. Several projects have been implemented for the resolution of sheltering problems(1), however these have not proven sufficient. This problem was tried to be resolved though illegally built sheltering (gecekondu).

The Ministry of Interior (MI, 2006) developed a project in 1994 in order to decrease the problems in big cities and relocate these people, who could not adapt themselves to urban life, to places in the vicinity of their villages or to other appropriate places. This has been named as “Return to Village and Rehabilitation Project” (RVRP). The Administration of the South Eastern Anatolia Project has been assigned for the coordination of the project.

Those who wanted to go back to their village notified their requests in the year 1998 to the State of Emergency Governorship. The research studies concerning the matter(2) started in Diyarbakır, Şırnak and Siirt in the year 1999. İslamköy and Tur Hamlet of the Administrative district of Kulp in Diyarbakır have been found adequate for the implementation of this project. A total number of 50 houses were built in the year 2001, consisting of 30 in İslamköy Village, 20 in Tur Hamlet. In these dwellings built within the scope of RVRP, today 45 families have found shelter.

This user focused study is directed for the purpose of measuring the performance of these dwellings in rural area which are the first ones built within the scope of RVRP. The post occupancy evaluation of the dwellings has been made through surveys made with the users and additional data collecting techniques such as observations and interviews

This study contains important clues regarding the findings obtained, in indicating the necessity to use collaborative design concept and to set it as an example for the design inputs of similar projects. It is hoped that the results obtained within the scope of the study will also shed a light to the other housing designs to be built under the RVRP.

PRESENTATION OF THE METHOD USED IN THE STUDY AND THE NEW HOUSING FIELDS STUDIED

Method

This study researching to what extent the houses constructed within the scope of RVRP are meeting the needs of the users, is called Post Occupancy Evaluation (POE). POE, is a method used for the shaping of the existing environments in accordance to the forthcoming environmental needs and for the determination of design targets (Kirk, 1988), it is also described as the research of the user requirements. (Songür, 2001). This method is used; to measure the appropriateness of the building design to its purpose (Dinç and Onat, 2005), to determine the successful and unsuccessful aspects regarding the utilization of the existing environment (Preiser etc., 1988; Preiser and Vischer, 2005), to renew and develop the existing design criteria (Preiser, 2001; Preiser, 2005), to determine the utilization problems of the building, the views or the occupants and the changes occurred through the time (Karagenç and Ünügür, 2002). In order to obtain information regarding the building and its close environment, it is primarily necessary to use the spaces for a certain period (Vischer, 2001) as it is possible for the occupants to have more definite opinions about the space in time. Thus, the utilization issues of the space may be learned from the occupants. Furthermore, the changes occurred after occupancy in the physical properties of the artificial environment are quite important in order to determine the preferences of the occupants regarding spatial quality.

In brief POE is a method used to determination the usage style of the spatial pattern; and the wishes, complaints and preferences of the occupants regarding spatial differences and their reasons. Information is obtained through the questionnaires and interviews made with the user. The flow of information includes the evaluations of the user regarding the building and its close environment.

The 50 dwellings constructed in İslamköy and Tur Hamlet are the initial houses built within the scope of the RVRP. It is aimed that the results obtained from the post occupancy evaluations of these houses will contribute as a criterion to the design of the houses to be built in the future. In this user focused study, a questionnaire containing various questions related to the dwellings has been prepared. The suitability of the houses to the users has been investigated by the administration of this questionnaire as well as observations and interviews.

The parameters investigated in the POE of the dwellings produced in the scope of RVRP are as follows.

The spatial characteristics of the village houses
The spatial characteristics of the RVRP houses
- Occupant density
- Utilization of the closed spaces
- Utilization of the open spaces
- Satisfaction rates (comparison with the other houses they lived in) and the reasons
- Space utilization issues
- Spatial changes in the houses, user expectations and complaints

New Housing Fields Studied

Migrations first started in 1980 from the village which contained 160 houses at that time. Migration took speed in 1985 and in May 1994, the village became completely empty (Pirinç, 2000). From the 160 households, 60 migrated to the administrative district of Kulp; the rest migrated to big cities with Diyarbakır holding the first place.

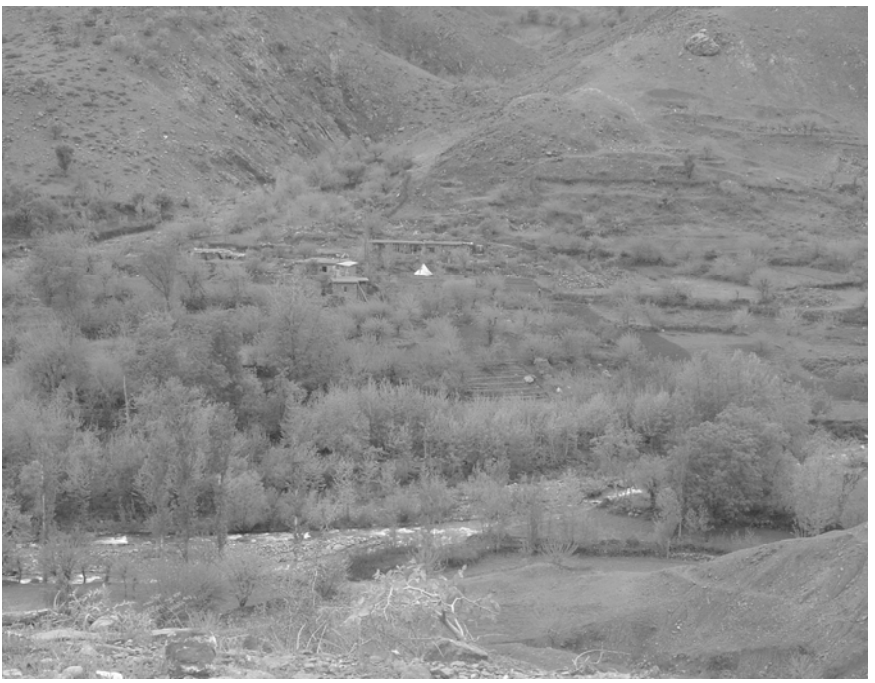

Figure 1. The old settlement area of İslamköy (Emptied village)

İslamköy and Tur Hamlet have a mountainous landscape. They are located at the north of the administrative district of Kulp of Diyarbakır. The distance between the administrative district of Kulp and İslamköy is 20 km., and Tur Hamlet is 23 km. Within the scope of the RVRP, İslamköy has been carried 2 km north of its former residential area. It is foreseen that the former settling area will be used as agricultural area. (Figure 1).

Proposition was made to the villagers wishing to return to their villages within the scope of RVRP to construct their houses with the financial support that the state would provide. However, the villagers wanted their houses to be constructed and delivered by the state.

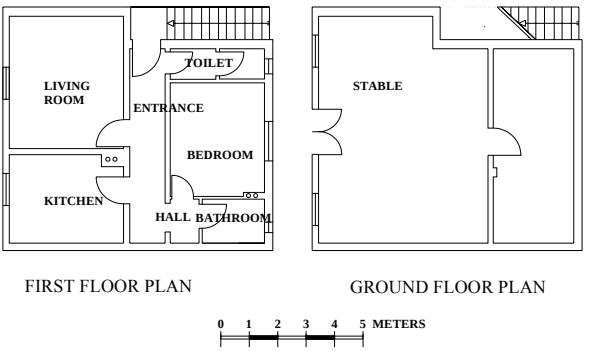

Figure 2. The plans of the dwellings built in Islamköy within the scope of RVRP

The first project proposed in this context was the construction of the houses with inner courts. (Pirinç, 2000). However, with the reason that they were not adequate for the climate conditions, the construction of these houses was cancelled. Then, a new dwelling where the stable is at the ground floor and the living space is at the upper floor was designed (Figure 2). This project is similar to the type projects of the General Directorate of the Rural Services. The minimum parcel size is 225 m^2. The total construction area of the dwellings is approximately 150 m2. The stable and the hayloft are located in the ground floor of the double storied dwellings, while in the upper floor there are the main living spaces consisting of two rooms (a living room and a bedroom), entrance, kitchen, hall, bathroom and toilet units. The dwellings have been built as the bearing wall buildings. The walls are of gas concrete. The covering of the concrete floor is in white mosaic tile while the door and window carpentries are in wood. The dwellings are heated with stove. The drinking water network of the village has been constructed in the scope of this project. The connection of Islamköy to Diyarbakır-Kulp road has been ensured through a stabilized road.

Figure 3. General view of the dwellings built within the scope of RVRP in İslamköy (30 Houses)

Figure 4. General view of the dwellings built within the scope of RVRP in Tur Hamlet (20 Houses)

The number of the dwellings planned in this area is 178. However in 2001, within the scope of this project only 50 houses were constructed, 30 in İslamköy (Figure 3), and 20 in Tur Hamlet (Figure 4). In İslamköy, 4 houses are still empty while in Tur Hamlet one of the houses is used as a mosque. 45 dwellings delivered in 2005 are inhabited today. As İslamköy has been transported to 2 km north of its old settlement area, it is closer to Tur Hamlet. Therefore the mosque in Tur Hamlet can be used jointly.

FINDINGS

This section of the study reveals the findings related to the spatial characteristics of village houses located in the old residence area and the post occupancy evaluation of the houses built within the scope of RVRP.

The Spatial Characteristics Of The Occupants' Former Houses In The Village

As the former houses of the village were demolished, their scale drawings could not be made and their spatial structures could not be fully studied. The information related to those houses has been obtained through the interviews made with the occupants.

In 2% of the village houses there was a single room, two in 36%, three in 36%, four in 24%, and 5 in 2 %. In brief, it has been determined that 60 % of the houses had three, four or five rooms. The average number of rooms in these houses is 2,9. 96% of the houses are two storied.

It has been determined that 57,78% of the former houses in the village had bathrooms and that 80.77% had it within the house. It has been determined that 73,33% of the houses had a kitchen unit. In 27% of the houses, the kitchen is used as a part of the house. It has been determined that 58% of the houses had no toilets

and that in 53 % of the houses containing toilets had them inside. 73 % of these houses had no water installation.

It has been determined that the village houses had stone walls and earth roof with wooden beams. The occupants have indicated that 93% of the houses had a space of iwan.

The houses were built with the use of the local construction materials in accordance with the large family structure. They display a rather dispersed settlement form.

Quantitative And Qualitative Findings Related To The Houses Constructed Within Rvrp

Occupant Density

In general, the main employment areas of occupants are agriculture and animal breeding. 41 out of the 45 families in the village have members working as village guards. 52% of the families have no social security.

Only six of the 45 families consist of large families living with their married children. The others are in general formed by core families. The average number of households is 6,8. It has been determined that 71,11% of the houses are used by families consisting of six or more people (Table 1).

Table1. Number of persons per family and their ratios

Number of persons in the families	Number of families	%
2	3	06,67
3	2	04,44
4	4	08,89
5	4	08,89
6	9	20,00
7	6	13,33
8	6	13,33
9	3	06,67
10	5	11,11
10+	3	06,67
Toplam	45	100,00

Utilization Of The Space

Room Utilization- The houses constructed in RVRP contain two rooms. According to the project, the larger one is the living room whereas the other one is planned as a bedroom. However, the occupants use the rooms for multiple purposes such as living, sleeping, eating, receiving guests. 83%of the occupants receive their guests in the larger room (living room), 13% in the smaller room, the rest in any of the rooms.

In general the large room is used for receiving male guests and the small room for female guests. In the usage of the rooms the traditional harem and selamlik separation is being continued.

Utilization of the kitchen – In 13,33 % of the houses with large families, the kitchen, in addition to being used for food preparation, cooking and eating actions, is a space that is also used for the purpose sleeping.

Utilization of Entrance- In addition to being used as the entrance to the house (putting on and taking off belongings like shoes, coats, receiving and sending guests), it is also the laundry in 12 houses where the washing machine is used.

Utilization of Stables- In addition to being the living space of the animals in very few houses, it is also the place where the fodder and provisions are stored. Furthermore in some houses it is also a place where the occupants use as a living space. In almost every house a fireplace has been added by the occupants to this unit which has been designed as a stable. It is also used a living area as it is cooler in summer months.

Utilization of External Spaces – The garden is the area where the firewood, the fodder of the animals and fertilizers are stored, where the fowl is bred, where food is cooked (tandouri place), and furthermore as the laundry area. As it is not large enough, it is not possible to grow vegetables in the garden where fruit trees have been planted. 49% of the occupants use the garden as a part of the stables by storing the fodder and the fertilizer. In the village, the animal fodder is not used as fuel but as fertilizer. 22% of the occupants have not limited their garden with any materials. The boundaries of 78% of the gardens are surrounded with drawn wires and with sticks and twigs.

Satisfaction Level From The Rvrp Houses And The Reasons

The occupants were asked to evaluate their houses according to a scale of five grades ranging from very good, good, medium, bad and very bad. None of the occupants found that their houses were very good. From the occupants, 11% found the houses good, 53% found them bad or very bad (Table 2).

Table 2. The occupant satisfaction levels of the RVRP houses

Satisfaction Values	Number of Occupants	%
Very good	00	00
Good	05	11
Medium	16	36
Bad	17	37
Very bad	07	16
Total	45	100

The occupants were asked to rank their satisfaction levels related to their former houses in the village, the houses where they lived after they migrated from the village and the RVRP houses. 91,11% of the occupants declared that they were much happier in their former houses in the village (Table 3).

Table 3. The ranking of the houses the occupants lived in until today (their former houses in the village, the one they lived in after the migration and those built in the scope of RVRP)

House	Number of Satisfactions	%
Former house in the village	41	91,11
House lived after migration	1	02,22
RVRP house	3	06,67
Total	45	100

When they were asked why they were more pleased with their former houses in the village, the users indicated that as they had been designed by themselves according to their needs they were sufficiently large and convenient; being built from earth and stone they were more adequate for the climate conditions.

The main reasons why the occupants were not satisfied with the houses they lived in after migrating, were the necessity of paying a rent and in addition their being old and unkempt.

The users explain their reasons for “not being happy with the RVRP houses” as the houses being small , their not being built on their own land , and with water leaking due to the lack of insulation of the walls and the roof.

Spatial Issues

The first space that is found to be small in the RVRP dwellings is the entrance. (Satisfaction degree, %91,11 bad or very bad). According to the occupants, the rooms and kitchen are the other spaces found small. 96% of the occupants are not pleased with the number of rooms (Table 4).

Table 4. The occupant appraisal of the RVRP house space size

Space	Satisfaction evaluation degrees related to size of spaces									
	Very good		Good		Medium		Bad		Very Bad	
	N	%	N	%	N	%	N	%	N	%
Room (Living room)	0	0	7	15,56	14	31,11	14	31,11	10	22,22
Room (Bed room)	1	2,22	0	0	2	4,44	16	35,56	26	57,78
Kitchen	0	0	6	13,33	26	57,78	13	28,89	0	0
Entrance	1	2,22	2	4,44	1	2,22	4	08,89	37	82,22

The occupants consider an obstacle for privacy the positions of RVRP houses to each other. They have stated that their former houses in the village were far from each other and located in a large garden ensured a greater privacy (Table 5).

Table 5. Occupants' evaluations about the positions of the RVRP houses.

Position of house	Number	%
Privacy	27	60
Not privacy	18	40
Total	45	100

The occupants are not satisfied from the spatial composition of these dwellings either. Especially the door of the smaller room being closer to the bathroom instead of the entrance; the bathroom and the toilet being distant from each other, the small size of their entrance (there is no multipurpose entrance as accustomed) are the main reasons for dissatisfaction. The percentage of those who are not pleased with the houses as they are excessively exposed to the sun in summer is 80%.

The Modifications Made In The Houses Built Within The Scope Of Rvrp, Occupant Expectations And Complaints

- Almost all the modifications in these houses have been made in the stable. The stable, in addition to its primary function is being used as the place of many activities (room, bread cooking place (tandouri), kitchen, storehouse (woodbin, fodder and purveyance storage), bathroom and toilet).
- When they were asked how many rooms these houses should have include, the respondents answered that 3, 4, or 5 rooms would be appropriate(33%, 65%, 2% respectively)
- The area where the houses have been built is at a distance of 2 km from the center of the emptied village. 96% of the occupants are of the opinion that the houses should have been built on their own lands.

- In the former houses of the villagers, the stables were either at the ground floor or next to the house. However, in the houses built within the scope of RVRP, the stables are at the ground floor. The villagers complain about this difference because of the smell. It is claimed that in the former buildings, which were made of stone and earth and which had thick walls, the smell was partially prevented. Therefore it is being emphasized that in the RVRP houses the stables should be at a corner of the garden.
- To the question "would you go back to your village if these houses had not been built?" 87% of the occupants replied that they would. Their lands in the village, their activities in farming, and stockbreeding strengthens their tendency to return to the village.
- To the question "If construction materials had been given, would you want to build your own house?" almost 100% of the occupants replied that they would. They state that they want to build a house that fits their lifestyle, which is sound, which has several rooms, which is appropriate to the region regarding its materials.
- Surprisingly to the question "Where would you like your children live when they would be married" 62% of the occupants told they would build a separate house.

78% of the occupants indicate that they would want to change the internal structure of their houses. These are;

- Changing the places of the room and the kitchen
- To change the place of the door of the small room (from the entrance instead of the hall)
- To change the place of the door of the large room (from a spot closer to the exterior door)
- To bring the bathroom and the toilet next to each other
- To unite the kitchen and the large room in order to have a larger room

CONCLUSION AND EVALUATION

The house designing and implementation strategies in Turkey do not allow the probable users to participate. In the unique planning designed by the state as well as the private sector, life styles are considered as the same and in fact are being ignored. The house plans, due to the positions of the rooms and the unity in sizes do not fit a flexible use. It is devoid of individual identity and, is excessively monotonous. (Gür and Bekleyen, 2002). RVRP houses are, in this respect, the presentation of the cliché plan type to occupants with different values. However, this plan type which is not suitable for the user brings along the issue of becoming over crowded. In the RVRP houses the average number of persons is 6,8. Each of the two rooms is being used by 3,4 occupants. According to the threshold values of Yörükan (1971, 2006a and 2006b) the number of persons for each room indicate a pathological level of crowdedness in these houses.

The number of rooms in the RVRP houses (2 rooms), is less than the number of the rooms in the former houses of the villagers (average 2,9 rooms). A noticeable drop is observed in the number of the rooms of the newly designed houses. This

insufficiency in the number of rooms of RVRP houses is tried to be compensated by the utilization of the kitchen, especially in large families as bedroom. Those using the kitchen as a sleeping space are mostly children. This may trigger a new problem. Because, it is known that psychological problems arise in the children who have no responsibility area of their own due to lack of space, who have to sleep in places such as the kitchen, corridor or entrance (Yörükan, 2006a; Yavuzer, 1982).

These dwellings are found smaller in comparison to the former houses of the village by the occupants. The size of the dwelling has reflected itself in the change of the family structure. Previously, the families had the traditionally large family structure. However, due to the small size of the RVRP houses, married young members of the family move to different houses. Consequently large family structure has left its place to the core family structure. This shows that the large family structure has not been taken into consideration in the design of the houses. On the other hand, the occupants in order to decrease the occupancy density of these small houses have allowed their married children to settle to separate houses. This has caused a change in the family structure.

The occupants of the RVRP houses constructed very close to each other unlike the former village houses which were dispersed indicate that they are uncomfortable regarding privacy.

RVRP houses, especially the entrance parts, are found insufficient by their occupants regarding the sizes of this space. 91,11 % of the occupants are not pleased with the size of this space. In the traditional lifestyle of the villagers, the entrance is not just a small space. It is multipurpose space where most of the daily activities are held. The users indicate that the rooms are not large enough to receive guests (especially night guests).

One of the most important spaces in Diyarbakır and the villages in the vicinity is the iwan. The iwan, in the general meaning, is one of the spaces that are most widely used from Egypt to Turkistan. This space of Middle Eastern origin (Akın, 1985) is the focal point of the traditional plan typology (Bekleyen and Dalkılıç, 2007; Bekleyen et al., 2004). In Diyarbakır and in the villages of the region this space is widely used.

Although 93 % of the occupants indicate that there was an iwan in their former dwellings, the houses constructed with in the scope of RVRP do not include this part. The fact that this important space typical to the region was not designed in the RVRP houses indicate that sufficient research had not been at the planning phase, and that it was omitted as a consequence. The iwan is a common living space where requirements like sleeping, eating, sitting are met in this region where the summer months are quite hot. The RVRP houses, regarding the absence of this space, do not possess a characteristic related to the region or the occupants. The occupants do not like the entrance of these houses, because they have an expectation to place the iwan at the focal point of the house.

As the houses are excessively exposed to the sun, the occupants indicate that their interior heat is excessive. However the main problem stems from the houses being constructed without insulation.

In the former village houses, the stables were either at the lower floor or next to the houses. The stable had thick stone walls and earth floor. The earth floor could absorb the smell. However, the concrete ground in the RVRP houses resulted in an excessive level of smell. For this reason, 98% of the occupants do not use the stable as a shelter for the animals.

Although the profile of occupant who would in these houses constructed within the scope of RVRP in Islamköy was known, the user requirements and the traditional living styles were not taken into consideration. Inflexible single type dwellings have been built without taking the sizes of the families into consideration. Furthermore, the iwan, the most important place in village life has been neglected in the designing process.

ENDNOTES

(1) Such as 500 Evler in Diyarbakır and Mass Housings (2050 houses) .
(2) Inventory Works carried out for the villagers who want to go back and the villages to be returned at

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CONDOMINIUMS AS THE NEW HOUSING ALTERNATIVES OF GLOBAL CITIES

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ABSTRACT

The concept of housing, as a building type that responds people's need for accommodation for centuries, has begun to be defined within a new terminology under the effect of changing urban dynamics, as a space involving more than a single function. The most important factor that triggers this development is the "entrepreneurial city identity" brought about by the network, which has emerged through the globalized world system, affecting urban transformations. This new type of behavior which emerged as the restructuring of city centers worldwide presents itself by shaping different housing preferences of different classes. Condominiums, which have developed in parallel to the needs of mostly the elite groups, lead to new building patterns in global scale.

Development of residential towers, which are shaped by the new lifestyles in and out of the city, stand ahead as an unavoidable reality. However, deviations that occur during the implementation phase of condominiums are considered as a major problem although the causes of their formation are regarded as a positive progress. The construction of multi-functional residential towers in Turkey mostly proceeds without any sufficient survey of infrastructure and planning activity. In this research, the main objective is to determine the criteria that should be taken into consideration during the design process of condominiums by examining the concepts that constitute these complexes. Necessary criteria within the context of city and building will also be determined within the research by taking several concepts into consideration such as the satisfaction of user demands, accordance of the building with its surrounding, the relationship with the city center and the contribution to the city silhouette.

Keywords: Condominium, Globalization, Culture of consumption, City, Urban transformation

CONDOMINIUMS: RESIDENTIAL BUILDINGS OF THE GLOBAL CITIES

Parallel to shifts in production modes during the process of globalization, the ways of urban living have also been subject to specific changes. Under influence of these changes, the individuals' expectations from their living units as a reflection of their daily lives, increases so profoundly that results in emergence of new residential areas at inner as well as outer parts of the city. While the house meets all the requirements brought by the social life in the course of changing circumstances, their typology also varies according to topographical structure of the region as well as the purpose of

building. On the other hand, as spatial environments lose their significance with regard to production, and as international communication gains importance, the globe may be depicted as turning into a giant business center. At this point, people keep on changing their places of living in search of more comfort and relaxation and demand for 'feeling at home' even in hotels they accommodate. Furthermore, despite the opportunity for renting houses for short periods of time in every city visited, the range of available tenure dwellings do not have all the comfort a hotel may offer with all its facilities. Under circumstances as such, there emerges a new sector of house-management to encounter all the demands at issue. The condominium type of buildings that aim at housing for the elites, meets the "time and transportation" problem, which is accepted to be one of the greatest problems of our day, while facilitating the living conditions via the diversified range of its functions and forms.

Akin to the system of co-op, the condominium type of buildings offers representational property ownership. In this context, it remains beneficial to elaborate the management systems of these buildings for purposes of fully comprehending their characteristics. Cooperative houses called 'co-op' vary much from the prevailing understanding of cooperatives adopted in Turkey. In this system, while purchasing a flat in a building with specific government and management frameworks of its own, there appears to be shares received from tenure as well as from other facilities of the building. The board of directors takes a crucial position to decide on whether a specific user may or may not purchase the property by depending on their social background as well as income level etc. In case the user is suitable for being involved in this cooperation, then the house is to be allocated to his/her use. All costs of the apartment building are covered from a shared budget and by way of purchasing the house, the user is to possess specific parts of the building as well. There may be shares to be received from ownership of the swimming pool, terrace or restaurant. In addition, as the building is to receive no income, the monthly fees to be paid reach high in amount. Those who are involved in management of the building employ at least 15-20 people for services ranging from maintenance to security and are concerned with all sorts of problems in the building.

As for condominiums, they offer multi-functional building units, which consist of super luxurious flats in multi-storied giant buildings where immovable property ownership becomes movable for the owner who benefits from a management system similar to that of co-ops. Their selling prices are much more expensive than those of co-ops, but yet the monthly fees cost much less. On the other hand, since the board of directors does not have any authority to reject or accept any user, the condominiums appear to be a much suitable investment tool for a stranger (*New York City-Emlak*. (b.t)). As one form of housing tenure preferred by those who visit a city for employment or for other purposes and aim at benefiting from comfort of the house as if in a hotel, the condominiums are in serve of their owners in terms of two aspects:

- Provision of housing available for the rapid pace of urban life
- Availability of income required for the rapid pace of urban life

In its first examples, this type of building is offered not for solving the housing problem that stems from increases in population, but for meeting the conditions necessitated by the style of life. With characteristics as such, the possession of buildings may be passed on from one's hands to another availing for easy ownership

of accommodation in the modern era, which further involves exemption from building costs for the time the condominium is not used by its house owner, and additionally, the provision of income from renting the property for specific time periods. As the building shelters all sorts of facilities, the tenant may benefit from plenty of services by way of not having to visit downtown particularly for short periods of time. The amount of money obtained by the board after deduction of rents for management costs may be returned to the property owner. By this way, even during those time periods that the dwelling is not resided, the property owner may receive income from his/her furnished dwelling that consists of all sorts of functions and facilities (M. Yücesan. (Interview, 21st of October, 2005).

Emerging initially as an outcome of the logic of "business" management, the fact that this type of building is adopted not as temporarily, but continuously-resided dwellings of the elite classes, render condominiums as the permanent dwellings of our day. Depicted as a reflection of the lifestyle in global cities, use of condominiums with such characteristics appear to become widespread as type of a housing supply that meets all sorts of requirements of the users in inner as well as outer areas of the city.

Parallel to the knowledge-based production system of the modern world, the interaction between different countries are as well reflected upon different styles of life, causing cultural habits and behavior to resemble one another at gradual dispose of the concept of traditional life. At this point, those individuals who carry on with their lives on basis of what is demanded in the current era tend to reside in such places where they can feel more comfortable and thus, adapt to their new modes of daily life. Erected on basis of different modes of consumption and life styles that vary by a number of different factors, the condominium type of buildings can, in this regard, be seen as the preferred dwellings of elite classes that symbolize economic power.

As a building type first constructed in foreign countries, the condominiums develop there much rapidly in terms of encountering the needs and presenting different alternatives in their characteristics. On the other hand, our country appears to be behind the changes taking place in lifestyles and spatial environments that are both shaped according to advanced world standards. In this respect, the alternatives offered for covering all the requirements of the user groups are much more limited in comparison to those of foreign countries. The past course of developments that our country were to go through at the point of major shifts in world views on the one hand, and of adaptation of our culture to universal life standards on the other, constitute the main reason underlying the delayed acceptance of this building type as one among the others. Within this framework, the analysis of foreign and domestic cases appears to be crucial for conceiving of different alternatives to be considered in terms of spatial criteria and formation of such design approaches that may enable creation of new buildings which can meet the specific requirements of users.

MAJOR COMPONENTS OF THE CONCEPT OF CONDOMINIUMS:

With their building types diversified on basis of different uses, the condominiums can be classified according to their location either in public areas, traditional residential areas, inner city rehabilitation areas or the newly-developed residential areas. This

classification is influenced by specific criteria that make up the concept of condominiums, which can be summarized as follows:

In Spatial terms:
- Building Height
- Multi-functionality
- Phenomenon of Place

In Psycho-social terms:
- Style of life
- Needs of Residents

In terms of Building Technologies:
- Technology of Steel Skeleton and Reinforced Concrete Building Systems
- Earthquake-resistant Building Technologies
- Sustainable Building Technologies

In economical terms:
- Costs
- Sustainability

Each one of the above-listed topics inherently supports the concept of condominiums. However, due to the fact that the design process is a part of building design programme and concerned with evaluation of the adaptability and sustainability of the function, this study tends to elaborate merely the phenomena of place, height and multi-functionality that each are determining in spatial terms.

PHENOMENA OF PLACE–HEIGHT–MULTI-FUNCTIONALITY IN CONDOMINIUMS

Two different strategies of design are fostered in context of place phenomenon in condominiums. The first one of these is to define place by pattern and settle within the “urban pattern” through use of memory and traces of the past. At this point, the intention is to make an interpretation concerned with the building design in relation to topographical features of the ground and what appears to be set forth in association. This emerges as a design strategy preferred rather at traditional housing areas and rehabilitation areas at the inner city. As for the second design strategy, which stems from a different discourse, the main purpose is entire independency of building and urban pattern from nature. By way of production of an artificial surface, the intention is to determine the contradictions in context of place-building. It is a strategy preferred in condominiums located rather at newly-developed settlement areas with lesser number of contextual limitations.

During the age of globalization, the rising tendency regarding the demand for more height appears to have determined the conceptual infrastructure of condominiums as a factor reflected in their shapes. In general terms, this is also affected by the changes not only in the need for housing, but also in terms of the transformations regarding the need for different shapes. In this sense, adoption of skyscrapers as a symbol of power, the rises in land values, the increased technical opportunities and the allocation of more urban lands to condominiums have all together constituted the main factors that promote the demand for more height. It is not coincidental for world condominiums to be altered in shape from condominiums in the form of horizontal terraces to those that rise in height to become the symbols of the cities they are

located at. Such alterations in shape support the desire of modern times for distinguishment and more height.

Indeed the most important difference that distinguishes condominiums from other housing types is the phenomenon of multi-functionality. While targeting at efficient use of time as it becomes more and more important in modern life, the condominiums not only shelter a considerable range of urban activities, but also provide the user groups, namely the elites, to spend their leisure times in their own communities. On the other side, the semi-public lands to be used also by the urban inhabitants contribute to the socio-cultural setting of the city by way of creating a point of attraction with the diversity of functions offered at dead parts of the city. The facts that their vertical alignments shelter maximum number of people and avail for maximum benefit from urban land, emerge as the most important advantages of condominiums since they provide new land uses in vacant lands that remain quite scarce within cities.

URBAN – ENVIRONMENTAL – SPATIAL DISADVANTAGES OF CONDOMINIUMs

Because of misinterpretations in implementation of such building types that raise the living standards of the 21st century building practices in both national and international scales, that create comfortable and relaxing spatial environments and that bring an order with regard to practices in urban planning, the increasing tendency in many countries is to have low-rise condominiums. As a result of disregarding some criteria in stage of designing these building types, which we hereby consider in context of multi-storied housing estates, the individuals find themselves as if trapped “in a virtual world”. Moreover, those design approaches which are devoid of any relation to urban planning turn metropolitan areas into such environments that consist of undefined spatial settings where buildings create disjointed focal points on their own. Having gained rapid popularity as multi-storied housing estates in metropolitan cities that undergo the process of globalization, the condominiums begin to take a crucial place in urban life as the new housing alternatives for the 21st century, but with plenty of disadvantages that inevitably accompany their advantageous aspects. These disadvantages can be defined as city – environment – design programme – infrastructure – technological limitations, listed in a range from macro- to micro-levels.

The macro-level considerations indicate that lack of any urban design data during phase of designing makes it much harder to reach harmony between the building and the urban pattern. While mis-locations ruin the urban silhouette, the avoidance of specific axes and routes during site planning creates problems in reviving urban life and in semi-public lands and urban transportation to be shared with other inhabitants. Therefore, the building fails to become a point of attraction on its own. At stage of building a harmony between the building and the urban pattern, the underestimation of any contribution the formations in shape may have upon the existing pattern leave harmful effects on urban identity as also accompanied by the difficulty in adaptation to the living environment. Being devoid of any site plan scheme that is to shape the area according to topographical data entails crucial problems in terms of infrastructure as well. On the other hand, those condominiums which offer a mechanized standard of urban living via technological implementations break users

off from green areas and create an imprisoned space isolated from urban activities. The most significant spatial disadvantage of the condominiums belongs to lack of integration between the main design concept and the spatial layout. By way of bringing different forms together and increasing the range of technological facilities, the adopted diversity turns into a chaotic order where it becomes much harder for the user to perceive of the existing spatial layout. Furthermore, the inclusion of numerous functions in the design programme, but with neglect of the extent to which user needs are encountered; and the insufficiency in investigating the number of different alternatives for house plans, both take place among the most significant problems of these building types. Those issues which question the extent to how much the social life in particularly the developing countries like Turkey is ready for such building types, the extent to how much the lifestyle related with the social production mode of the specific region may be adapted to the building type; to how accurate the architects can design the buildings to take place within existing practice of life and whether the need for housing can, to that extent, be encountered, all have been put on the urban agenda.

PROPOSED SOLUTIONS FOR IDEAL CONDOMINIUM MODELS

Concerning the condominiums regarded as housing type of the modern era, their adaptation to the life style of our day necessitates a multi-dimensional evaluation of this building type. In building an ideal residential tower, the building design principles shall be fostered in context of specific standards ranging from macro- to micro-levels. In this context, the design criteria for ideal residential towers shall hereby be presented as a set of recommendations as follows:

Criteria on Urban Scale

- As the building to be designed will be the product of modern lifestyle, it shall display such symbolic characteristics that will reflect the metropolitan identity both in and out of the city.
- In line with the main purpose in constructing these buildings that vary in type according to different areas of use, condominiums shall be planned in a way that brings life to and offer re-use of specific urban lands within which they are located.
- On basis of different land uses on urban scale, condominiums shall be designed in a way that defines the upper and lower districts of the city.
- At stage of planning, opinion poils, interviews with the local governments and cooperations with other disciplines shall be guiding in research of needed functions and available locations for residential towers.
- While relating the design of the spatial layout with specific axes and roads, their links with inner and outer districts of the city shall also be provided.
- Those plan schemes which do not adversely affect the silhouette and urban pattern of the district, but yet which have valuable contributions to urban space shall be preferred.
- With guiding considerations of other building activities carried out in the district, the functions that may be needed by users of condominiums shall be determined and those spatial alignments that are in serve of not only the users of these

buildings, but also the neighboring residents shall be designed and implemented in due course.

Criteria on Building Scale

- In order to widen the range of users where demands for housing address to user groups of all sorts, there shall be alternative housing types offered within the building.
- Guided by the concept of plan-flexibility in designing houses, those designs which avail the individual for self-expression in adaptation to areas of living shall be encouraged.
- In context of multi-functionality, via inclusion of those functions which encounter the basic needs of users and make up the common communication areas of residential towers, the planned layout shall support provision of public areas such as urban squares and green areas.
- The spatial layout shall be functional and legible and it shall also create an integrated framework within the building form.
- By way of establishing a balance between interior and exterior spaces in context of man-environment relationship, there shall be semi-open spaces like terraces provided for individuals to benefit from surrounding natural environments.
- In allocation of surrounding areas of the building to natural elements, the criteria underlying residential planning shall be based on sustainability and by this way, the individuals shall be able to live in an ecological building model where their bonds are not broken off from the natural environment in spite of the multi-storied setting of their living environments.
- The designs shall avail for scenery to be equally benefited by all housing units in rising building scale of residential towers.
- Through building the horizontal-vertical balance of the building form by topographical alignments, the spatial distributions of functions shall be most efficiently accomplished.
- Concerning the building structure, there shall be earthquake- and disaster-resistant advanced building technologies used for users to live in secure environments.
- The dwelling characteristics shall be based on comfort and relaxation through use of intelligent house technologies.

Regarding the level of adaptation to conditions of living entailed by the production and development scenario of the modern world, we reckon that a widening in world views of individuals may only be possible through rises in quality of their living standards and that this will in turn have an increasing impact upon the socio-economic welfare of communities within the process of social production. Under those circumstances where cities and spatial environments take place within inseparable integration of frameworks, it is manifest that those residential areas which reflect the living styles of specific user groups and are determining over the quality of individuals' participation to social production are bound to become more and more significant. In this respect, the architect is to undertake crucial tasks in planning residential towers as living spaces of the modern era. By way of taking the living conditions and needs of cultures into consideration within a framework where a number of various disciplines work together, we may draw into the conclusion that

the impact of holistic planning approaches upon the city and the individuals bears the potential to organize an ordered social life and that only those cities which go through such processes may be mentioned among the developed cities of the world. Nevertheless, it is manifest that residential towers are to be inherently multi-dimensional such that they cannot be isolated from the city at all. At this point, it is revealed that when spatial and functional data as well as data which are based on building form are presented within an understanding based on giving adequate service, only then can housing estates that raise the living quality of spatial environments may be produced. Therefore, as the importance given to living spaces increase and related consciousness is promoted, there will be such implementations relating the concepts of the urban and dwelling that will be increasing the standards for individuals' living quality, raise the performance level in social production and create orderly aligned inner and outer city spaces upon which social welfare appears to have attained a desired level.

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INTERIOR DESIGN

Moderator: Nur Esin

Forming the Enclosure or Mass
Nilgün Çarkacı, Semiha Yılmazer

Internal Air Quality for Design of Sustainable Artificial Environments: Selection Criteria of Building Materials
Müge Ertemli

Eco-design Approach in Furniture Design
Tülay Özdemir Canbolat

FORMING THE ENCLOSURE OR MASS

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ABSTRACT

The main reason of discussing the field of quite newly born interior architecture is a contemporary fact; “time equals money”. It has been a great concern for the architects of all periods somehow to constitute the interior and exterior relationship. Many attempts have been made in order to establish unity between outer shell and the enclosure. Even the profound architects of the modernist period, have stated that the architecture starts from within but never left their slogan “form follows function”. Are there any boundaries or relations between architecture and interior? Can we talk about similarities and differences? One of the most fundamental divisions in design is that of interior from exterior, enclosure from mass (Malnar and Vodvarka,1992). If we accept that, the reference of the enclosure is the human body, would the reality of architecture be an answer for all what the human needs. While we see the buildings in day light, open sight to all viewers, people pass by, lively streets, and receding interiors of these buildings, stay in the shadow. Then the night falls and the buildings witnessing lonely streets start unveiling the lively interiors, no one can pass by these interiors, but they inhabit them. There are similarities and boundaries between these two disciplines but the major factor is the social demand for specialization and time for realization. For the sake of life quality and time management, working in coherence would be more appropriate for architect and interior architect.

Keywords: Enclosure, Mass, Spatial quality, Professional interior architect

INTRODUCTION

The discussion rising around the young profession interior architecture brought up the resistance of architects, saying that building is one and is the domain of architects. Going further more and claiming that there is no profession as interior architecture, that the concern of the field can only be decoration and/or design of the interiors. It is acceptable that there is not very many articles published about interior architecture but this cannot be means or a vehicle to ignore a profession which is acknowledged world wide (Carkacı, 2001).

Spatial identity is of fundamental importance as a parameter for design, yet it is for the most part still ignored (Scuri,1995). That is why the need for another profession has come into view and that is, interior architecture.

Interior architecture emerged like any other profession where some related disciplines were not ready to answer all the questions, which, are related to social life. The questions started with the economical, social and political needs of the public. The modernist period was the cradle to separation of fine arts, architecture and interior design. The demand, which is generated by the intensity of information age, brought up the need for specialization, which would be an answer to the complexity of information, management of time, money, and other matters that has direct relation to human survival.

SHORT HISTORY OF THE PROFESSION:

Until the turn of the 20th century the term was not used in relation to the profession. In 1904, the term interior decoration was used. First courses in interior decoration are offered at the New York School of Applied and Fine Arts. After one year, Elsie de Wolfe who called herself America's first woman professional decorator obtained her first commission as an interior decorator. In 1913, she published the first true book on interior decoration, "The House in Good Taste". In 1920s, larger marketing effort of home furnishing has been put by department stores in USA. Manufacturing centers of home furnishings begin to develop. Art Deco period created greater interest in interior decoration of homes and offices. Dorothy Draper was credited as being the first woman interior decorator to specialize in commercial interior. In 1931, "Grand Rapids" Furniture Show was another event that drew attention to the profession, also helped a notion of meeting to create a national professional organization, AIID, American Institute of Decorators. National Office Furnishings Association (NOFA) and International Federation of Interior Architects and Designers (IFI) were established in 1963. In 1970s, the profession has found the true identity. American Society of Interior Designers (ASID) was instituted in 1975. After one year, 1976, Chamber of Interior Architects of Turkey was established. If one wish to attach further labels, the term social art is appropriate-particularly in an age, when laws, regulations, and professional liability have brought the field beyond its origins of interior decoration that is until the middle of the 20th century (Carkacı, 2007).

INTERIOR ARCHITECT: DEFINITION/ MISSION/QUALIFICATION

The professional interior architect is a person, qualified by education, experience and recognized skills, who

- identifies, researches and creatively solves problems pertaining to the function and quality of the interior environment;
- and performs services relative to interior spaces including programming, design analysis, space planning, aesthetics, and inspection of work on site, using specialized knowledge of interior construction, building systems and components, building regulations, equipment, materials and furnishing;

- and prepares drawings and documents relative to the design of interior space,

in order to enhance the quality of life and protect the health, safety and welfare of the public. The IFI General Assembly in Hamburg has adopted this document in 1983 (IFI, 1995).

MASS VERSUS ENCLOSURE

Some profound architects say that exterior is the result of interior, one cannot find truth in that, since the design theory has historically emphasized the exterior aspects of buildings, not the interiors. Only in the past two centuries have these distinctions become specialized in practice, and only in the past ninety years have they become professionalized. In history we have witnessed the importance has been given to the exteriors as well as the interiors. Some of the causes might be that the projection of political imagery, disposable wealth, and the fluctuation of power between aristocratic and bourgeois classes.

At this point of the discussion, several questions need to be raised. Are there any boundaries or relations between architecture and interior? Can we talk about similarities and differences? One of the most fundamental divisions in design is that of interior from exterior, enclosure from mass. The real distinctions and they are profound, lie in the contradictory character of exterior mass and interior volume, most significantly in the way we experience them. (Malnar and Vodvarka,1992)

BOUNDARIES/ RELATIONS AND DIFFERENCES/ SIMILARITIES

There have been some discussions interconnected to the facts of exterior and interior relations. This was done in the mere search of consistency. One of the attempts as to establish the coherence between exterior- interior relations was to reflect the outer façade of the building to the courtyard, which was considered as an interior, with a different scale and details. Palazzo Massimi in Rome by Peruzzi which was built in1535, can be an example to this kind of interior treatment. Not until the sixteenth century was there an attempt to visually unite exterior and interior, particularly in the works of Andrea Palladio (Malnar and Vodvarka,1992). The other attempt was by Frank Lloyd Wright when working on the Unity Temple project he decided using interior elements, as a tool, continuing to form the exterior features and as means to reflect the interior, to the façade of the building. In an interview in 1956 Wright commented on his design approach for Unity Temple “it was dawning on me that when I built that building that the reality of the building did not consist in the walls and the roof, but in the space within to be lived in”. (Malnar and Vodvarka,1992). Although that was his aim, there is little hint of this good intention because the interior is complete in itself with all its features.

Architects’ search for blending the exterior and interior was a valuable effort. But could it be a measure for aesthetically and functionally pleasing interiors?

Neither inverted exteriors, nor extroverted interiors can be of any help to the inhabitants of our century. Most architects have historically understood that the

interior is world apart from the exterior in terms of material, light, colour, scale and time passage with correspondingly different associations. While we see the buildings in day light, open sight to all viewers, people pass by, lively streets, and receding interiors of these buildings, stay in the shadow. Then the night falls and the buildings witnessing lonely streets start unveiling the lively interiors, no one can pass by these interiors, but they inhabit them.

It seems that the peculiar question of how to unite the interior and exterior has kept architects' mind helplessly busy. Attempts have been made to 'see' both aspects at once; some of the most successful have been by sculptors. (Malnar and Vodvarka,1992). It is actually totally two different situations and experience, to look into something and be in it.

"Glass House" of Phillip Johnson might be the best and fascinating example to define this attempt. Both architecture and interior can be perceivable as one image. What about the practicality? Can this be an answer to all needs of an occupant? Is light, material, perception of architecture and interior simultaneously and other factors of construction raise the quality of enclosure? As Arnheim indicates, "perceptually and practically, the worlds of outside and inside are exclusive. Later stages of Modernism defined the function in terms of formal considerations of structure and materials (Malnar and Vodvarka,1992). In that case little square meter has been spared for limited activities.

In interior architecture, the 'particularity' is the essence of the design process and venture. The boundaries cannot be accepted as a differentiation or division, but rather being something else beyond, to form the particular identity. The enclosure is no more a physical shell made up of the architectural structures. The reference here, is the human body, this three dimensional bulk with all the physical and emotional devices will use this space. These aspects, which makes interior architecture so subjective and so intimate, so unprotected to some calculations of science, so special to a singular circumstance and therefore so often ephemeral, also distinguish it from its more solid durable sister art of architecture.(Abercrombie,1990). It may be smaller than architecture but certainly not less deep. One of the main goals of interior architecture is creating a dialog with the structural shell and its contents, so the interior architect takes architecture as a point of departure. Does architecture take interior as point of departure?

Interior architecture can never leave things to accidental occurrence of related or identical events at the same time. The concept of forming the three dimensional enclosure would not allow the designer to do so. Interior Architecture embraces whole spectrum of architecture, interior design, interior decoration and art. Having said that, in the formation of mass and void will create a tension, which will open the doors to the fourth dimension. Fourth dimension is the scope of interior architecture.
There is a space and time relation composed of occurrences, events which are those things happening to someone at a given place and given time. (Kurtich and Eaken,1993). How these things happen? Is it only by the help of using light, colour, and texture, solid, void?

M.H.Baillie Scott was fond of saying "when in doubt, white wash" similarly Elsie de Wolfe worked with slogan "plenty of optimism and white paint" (Abercrombie,1990). If

any doubts take place in designing an interior, the out come will be chaotic in all aspects of interior architecture. Why the photographs of the architecture are mostly taken lack of people/physical reference, the mental process to judge the surrounding? How can one deny the effect of interiors on people, don't they impose certain behavior on us. Can any body praise the colour choice of Turkish Parliament House? If so, can one deny the effect of red colour and strong contrast that is taking place and creating a tension?

We know that scent, is not one of interior architect's weapon but it can turn into one. Try raki under the unpleasant green light, try to feel the aniseed, see if you can enjoy your green salad and see if it tastes as refreshing.

George Nelson said, "The humane environment is not a slogan, it is a mystery which can only be penetrated by humane people." (Abercrombie,1990).

CONCLUSION

Well educated interior architect need to understand the planer surface, the third dimension, fourth dimension, tradition, colour, natural and artificial light, furniture the human character of the interior, technology, accessories, details which contributes to the overall concept. So the fancy of pushing the profession interior architecture to an acute angle of "decoration" is not fare and acceptable.

The eighty percent of human life takes place indoors. It is more than a shelter for the requirements of a contemporary person. It was so in the 18th century as well. If we can also define interior architecture as "social art", we need to understand all the facts of human life and the impact of all dynamics on design decisions. The outcome of the collaborative work of the related disciplines will be beneficial for the public and also these disciplines as well.

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INTERNAL AIR QUALITY FOR DESIGN OF SUSTAINABLE ARTIFICIAL ENVIRONMENT: SELECTION CRITERIA OF BUILDING MATERIAL

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ABSTRACT

The 'sustainability' concept is surfaced in the Architecture in order to make designs and ensure continuity that will meet the requirements of the people without destroying the natural environment.

The construction materials take up an importance place in the scope of the sustainable architecture. The utilization of the local materials, renewable resources and recycling materials in the architectural structures while forming the physical conditions that meet the requirements of the users and designs that are compatible to the environment is the basic condition of the sustainable architecture. The human beings have aimed to benefit from the nature the most while structuring their artificial environment for thousand of years. They have structured their living quarters in accordance with the scale of the human beings based on the climate conditions of the district they live in and the local materials. It is observed that the users have ensured convenient comfort, formed quality indoor air and therefore formed sustainable living quarters with the utilization of the natural resources when we consider the conventional architecture structures as a source for the sustainable design criteria.

The construction which are artificial environments, should be the resultant of the physical, chemical and biological factors that ensure the life and development of the living and that continuously has an effect on thereof. The properties of the construction materials effect the human health on a determining scale with their inner climate and consequently with their comfort conditions. Hence, the factors that strengthen the indoor climate and the environment health in the holistic sense should be taken into consideration as well as the physical and mechanic characteristic that are expected from the material.

The primal characteristics that should be taken into consideration during the selection of the construction material should be the characteristics regarding the health of the living (human beings, animals, plants). The construction material that deranges the health goes against the aim of the construction in this sense since the aim of the construction is to create a convenient environment for the living. These environments that are designed can not be long termed or healthy if the environment in which the human beings spent their whole life is designed far away from the nature. The material can effect and derange the health of the living while it is produced or applied to the construction and during the period of utilization. The negative effects can reflect to the living either directly to the producer, applier and user or indirectly as a result of the environmental pollution.

Brick, concrete, tile, aluminum, steel, iron, wood materials are used during the formation of sustainable environment great amount of energy that is mostly derived from the fossil fuel is spent during the production of the materials, its utilization in the construction, its lifetime and its disposability carries importance from the perspective of sustainability when these data are taken into consideration during the assessment of the environmental effects of the construction material.

Keywords: Indoor air quality, Artificial environment, Natural environment, Building material, Sustainable

INTERNAL AIR QUALITY FOR DESIGN OF SUSTAINABLE ARTIFICIAL ENVIRONMENT: SELECTION CRITERIA OF BUILDING MATERIAL

Human beigns have been living in a designed environment from the very moment of their being, with constant communication with their environment. Building, being artificial enviroments, should be a combination of physical, chemical and biological factors allowing living and growth of the beings, keeping them under effect.

Given that humans spend about 90% of their life in the artificial spaces, it is not surprising that requirement of living in a healthy environment appropriate for environment and humans became one of the most important matters. When artificial enviroments in which the human beings spend mos of their life are designed away from nature, such designed enviroments may not be long term or healthy.

Concept of “sustainability” that have emerged for making designs to fulfill human requirements and ensure sustainability without any damage to the nature has increasingly gained importance today.

Classical and widely-used definition of sustainability has been made by Brundtland Commission set up by the UN. Createdto examine serious social and environmental problems of the universe and olve such problems in such a way that would not prevent constant development of the humans and consumption of resources of the future generations and develop realistic proposals, the commission conducted a study called Brundtland report, describing the sustainable development as “fulfillment of requirements today without prejudice to capability of future generations to fulfill their requirements” [1].

It is basic condition of the sustainable architectureto to create physical conditions in accord with requiremens of the users in the architectural buildings and use local materials, renewable resources and recycable materials when making designs suited to the natural environment.

When deciding on building materials in the design of artificial environment, you should think multi dimensionally. Analysis should be made and the most appropriate solution should be found by taking into consideration their effect on human health in addition to a great deal of criteria such as acordance with structure, compliance with environmental conditions, durability, aesthetical appearance, local mateiral, easy to acquire, cost-effectivenes and user requests.

Qualities of building materials having a significant place in the scope of the sustainable architecture concept affect internal air quality and, consequently, our health condition determinatively. Fort his reason, in addition to physical and mechanical characteristics expected from the material, the factors affecting health of human, internal climate and environment as a whole should also be taken into account.

Internal air quality is air purity in the space occupied by the human beigns. As it is difficult to define internal air quality, the definition “acceptable internal air quality” is used. This definition is made in the Standard ASHRAE 62-1989 as follows: “It is air which contains no known pollutants within harmful concentrations specified by the authorized orgainzations and 80% and more of the human beings present in this air do not feel any dissatisfaction with respect to air quality” [2].

BUILDING MATERIAL AND EQUIPMENT OF POLLUTION WHICH AFFECT AIR QUALITY INSIDE BUILDINGS

When building materials, one of the most important components of the in-building sources affecting internal air quality are manufactured, applied on the building and during their use, they may affect internal air quality to the detriment of human health. Adversive effects may either affect the people manufacturing, applying and using them directly or the livings through results of environmental pollution indirectly. Evolving types and quantities of pullutants vary depending on characteristics of the material. The pollutants damaging internal air quality may be classified as chemical, biological and particle pollutants.

Volatile organic components (VOCs), coming out from the building materials and diverging in atmosphere in gaseous form, are pimary chemical pollutants. Consisting of aldehydes and formaldhydes, these chemicals are used in varnishes, flooring, pressed wooden products used for wall and ceiling (chipwood) and adhesion of laminated products as well as numerous buildings materials. Furthermore, Pentachlorphenol, which is used as preservative on materials such as PVC resin and wood, resin and adobe most widely used in a number of places in the buildings, also affect internal air quality by means of toxic chemicals they give off. Radon is another chemical pollutant and effect of radon in the internal space varies depending on the geographical structure of the region, construction material of the building and insulation system.

Volatile organic components and formaldehydes, with their high toxicity, are cited among the most important internal spece pollutants. [3]
Common volatile organic carbons in the intenal space air an their sources are summarized in Table 2.

Table 1. Sources of Volatile Organic Components Present In Internal Air [4]

Sources	Typical pollutants
Commercial products	Alyphatic hydrocarbons(n-decane, dallanmý° alcanes, aromatic hydrocarbons(toluen, xylene), halogenized hydrocarbons(metyl chloride), alcohols, ketones(acetone, metyl ethyl ketone),aldehydes(formaldehydes), esters(glucolethers), therpens (lymonen, alphapinene)
Paints	Alyphatic hydrocarbons(n-hexane, n-heptane), aromatic hydrocarbons(toluen), halogenized hydrocarbons(metyl chloride, propylene dechloride), alcohols, ketones (metyl ethyl ketone), esters(ethyl asetat), ethers(metyl ether, etyl ether, butyl ether)
Adhesives	Alyphatic hydrocarbons(n-hexane, n-heptane), aromatic hydrocarbons (toluen), halogenized hydrocarbons(metyl chloride, propylene dechloride), alcohols, ketones (metyl ethyl ketone), esters (ethyl asetat), ethers(metyl ether, etyl ether, butyl ether)
Upholstery and Fabrics	Aromatic hydrocarbons(styrene, bromized aromatics), halogenized hydrocarbons (vinyl chloride), aldehydes(formaldehydes), ethers, esters.
Construction Materials	Alyphatic hydrocarbons(n-decane, n-dodecane, aromatic hydrocarbons(toluen, ethyl benzene), halogenized hydrocarbons(vinyl chloride), aldehydes(formaldehydes), ketones(acetone), ethers,

As it is understood from the above table, organic chemicals are present in the structure of paints, varnishes, adhesives and construction materials. Studies made show volatile carbon components are commony found in the buildings here these materials and products are used. [5]

Formaldehyde is generally present in the heat insulation products in form of fiber, chip and chip boards, plywood, laminated wood and foam and, additionally, most of building products such as carpet, fabric, paper, paint, polish an varnish contain urea formaldehyde.

Tablo2. Formaldehyde values measured on the glued (artificial) wooden boards. [6]

Board Type	Type of Formaldehyde	Formaldehyde Quantity ∝g/m″/hour
MDF	UF	210-2300
Plywood-furniture	UF	7-1700
Plywood -furniture-vinyl plated	UF	3-300
Plywood	PF	2-83
Chip Board	UF	100-2000

Taking an important place in the building products containing formaldehyde, the formaldehyde-glued wooden boards disperse formaldehyde more than other building materials. The measured values in a study are given in Table 3.

Molds, another biologic pollutant, causes big problem especially in the houses, well insulated and heated centrally.

Lead, a particle pollutant, is present in high levels in the internal space when the building walls are painted with lead paint and welding is made by using lead materials. Furthermore, fiber materials used for insulation purpose also fall in this group [7].
It is inevitable to study alternative solutions or to take some measures to reduce their effects by taking into consideration these negative characteristics that adversely affect internal air quality.

Table 3. Building material and equipment of pollution which affect air quality inside buildings.

		Sources
Chemical	Volatile organic components (VOCs) Formaldehydes Vinyl chloride (PVC) Naphthalene Pentachlorphenol	Some paints, solvent-containing varnishes and polishes, some coating products, insulation materials in form of foam, building materials and tools made of PVC resin, insulation covers containing coaltar, preservatives applied to the materials such as wood, brick, adobe, etc.
	Radon	Soil, brick, natural stone and construction materials and components containing natural ston (underground-sourced materials)
Biologic	Bacteria (mold, fungus)	Humidified and decayed carpet and building materials, polluted central ventilation systems
	Viruses (dust mites, small livings)	Building components not maintained and cleaned as required
Particles and Fibres	Asbestos fibers	Decayed and frayed insulation, plaster and other building materials and components containing asbestos
	Fiber	Insulation materials such as glass wool, rock wool and ceramic wool
	Lead	Worn, loosen lead-based paints

SELECTION CRITERIA FOR CONSTRUCTION MATERIAL

In order to examine basic characteristics related to the building materials in terms of sustainability, it is required to categorize the material on basis of a certain understanding. For evaluation of the material, certain criteria should be carefully taken into consideration depending on usage place and manner of the material.

- Energy amount required during production
- Toxic materials generated as waste material or by product during production process
- Recycability of material
- Reusability of material
- Availability from local sources
- Production and application possibilities other than central big facilities
- Effects on personal health and comfort level of the space.

In the studies made in line with the reasons described above, use of brick and wood as facing material for formation of external shell on he bulding, use of materials such as wood, adobe, brick as wall structure material; use of wall papers, natural and artificial wooden boards and carpet surface covering in the internal surfaces are considered more appropriate comparetd to other materials. Wooden and stone floring is recommended as flooring materials.

According to this evaluation, especially natural materials are noticeable with their positive characteristics. Local conditions are also determinative in selecting proper material. [8]

Considering traditional architectural structures as source of sustainable design criteria, it is seen they provide comfort for users by use of natural resources, form a quality internal air and, consequently, create sustainable habitats. In the past, organic materials (wood, straw, reed) were used by 30-40% and inorganic materials (adobe, brick, natural stone, lime) at rate of 60-70% on the buildings. As examples of proper application methods of stone, wood and adobe, the traditional buildings actually give the most modernist response to search of alternative for selection of metiral and creation of a healthy internal climate. Today, on the modern buildings, especially in the bigs cities, the artificial building materials, alien to the beings and human metabolisms are used at rate of 90-100%.

In order to determine whether a building material is appropriate for human beings and environment in biological and ecological sense, we may take advantage of the tables prepared by “construction biology and ecology” Institute in Germany. As a result of these evaluations made on basis of 16 criteria, each construction material was score, giving biologic-ecologic value. According to the said evaluation, maximum score indicating quality of a construction material is 3.0 and minimum one indicating poor quality 0.0. [9]

Construction Material	Evaluation Criteria																Note
	A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	R	
Wood	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3,0
Fungus	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3,0
Chip Board	1	1	2	2	3	3	3	3	-	1	2	3	2	0	1	-	1,9
Hard Fiber Board	1	2	3	2	3	3	3	3	3	1	2	3	2	2	2	-	2,2
Wood (Covering)	2	2	3	2	3	3	3	3	3	1	2	3	2	1	2	-	2,2
Mag.-based chip insulation	2	2	3	2	3	3	3	3	3	3	3	3	3	3	2	-	2,7
Cocos Fiber	3	2	3	2	3	3	3	3	3	3	3	3	3	3	3	-	2,8
Cinder Cotton	0	0	0	0	0	2	3	3	-	0	0	3	-	-	0	-	0,9
Glass Wool	0	0	0	0	3	1	3	3	-	0	0	3	-	0	0	0	0,9
PU Foams	0	0	0	0	3	0	3	3	0	1	0	3	0	0	0	0	0,8
PVC Products (hard)	0	0	0	0	3	0	1	2	0	0	0	3	0	0	0	-	0,6
Synthetic Resin Adhesive	0	0	0	0	3	0	-	-	-	0	0	3	0	0	0	-	0,5
Synthetic Resin Varnish	0	0	0	0	3	0	-	-	-	0	0	-	0	0	0	-	0,3
Synthetic Impregnated Products	0	0	0	1	3	3	-	-	-	3	3	-	-	0	0	-	1,3
Beewax Products	3	3	3	3	3	3	-	-	-	3	3	-	3	3	3	-	3,0
Asphalt, bitumen papers	1	0	1	1	3	3	-	-	0	0	0	-	-	0	0	-	0,8
Steam retaining folios	0	0	0	0	3	0	-	-	0	0	0	-	0	0	0	-	0,3
Brick (perforated)	2	3	3	2	2	3	2	3	3	2	1	3	2	3	3	-	2,5
Adobe	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	-	3,0
Ceramic Products (unglazed)	2	2	2	2	2	3	1	2	-	1	0	3	-	3	3	-	2,0
Concrete (with reinforced steel)	0	0	0	0	1	1	0	1	0	0	0	0	0	3	0	0	0,4
Briquette	1	0	1	2	0	2	2	2	-	2	1	0	-	3	0	0	1,1
Gypsum (chemical)	0	0	0	1	0	-	1	2	0	2	2	3	-	3	1	0	1,1
Cement-based plaster	1	0	2	1	0	3	1	2	-	1	2	0	1	3	1	-	1,3
Lime-based plaster	2	2	3	2	3	3	1	2	-	2	3	2	2	3	2	-	2,3
Limestone	1	2	3	2	2	3	2	2	-	1	2	1	-	3	2	-	2,0
Synthetic-resined plaster	0	0	0	1	-	0	1	2	-	0	0	3	0	0	0	-	0,5
Linoleum	1	2	3	2	3	3	2	2	3	2	2	3	3	3	3	-	2,3
Glass	0	1	1	0	3	0	0	0	-	0	0	3	0	3	3	-	1,0
Asbestos Cement	1	0	0	1	1	-	2	2	0	1	2	3	-	3	1	0	1,2

Evaluation Criteria

A-Natural Construction Material,
B-Experience Gained,
C-Environment Problems,
D-Power Requirement,
E-Radioactivity,
F-Electric Characteristic,
G-Thermal Characteristic
H-Acoustic Characteristic,
İ-Microdalga Permeability,
K-Diffusion Characteristics,
L-Hydroscopy Characteristic,
M-Moisture Rate/Drying process,
N-Regeneration Process,
O-Toxic Characteristic,
P- Odour Characteristics,
R-Skin resistance

Tablo4. Biologic and ecologic values of the construction material

In order to create sustainable space and internal air quality, the construction materials of hygroscopic nature providing diffusion such as wool, adobe, brick, wool and fungus. These materials help preservation of air quality by filtering toxic materials in the air.

Materials applied to the surfaces (paints, varnishes) should be of open pore. As especially plant-based paints, beewax and resins do not seal off pores of the materials on which they are applied, they do not block air current. [9]

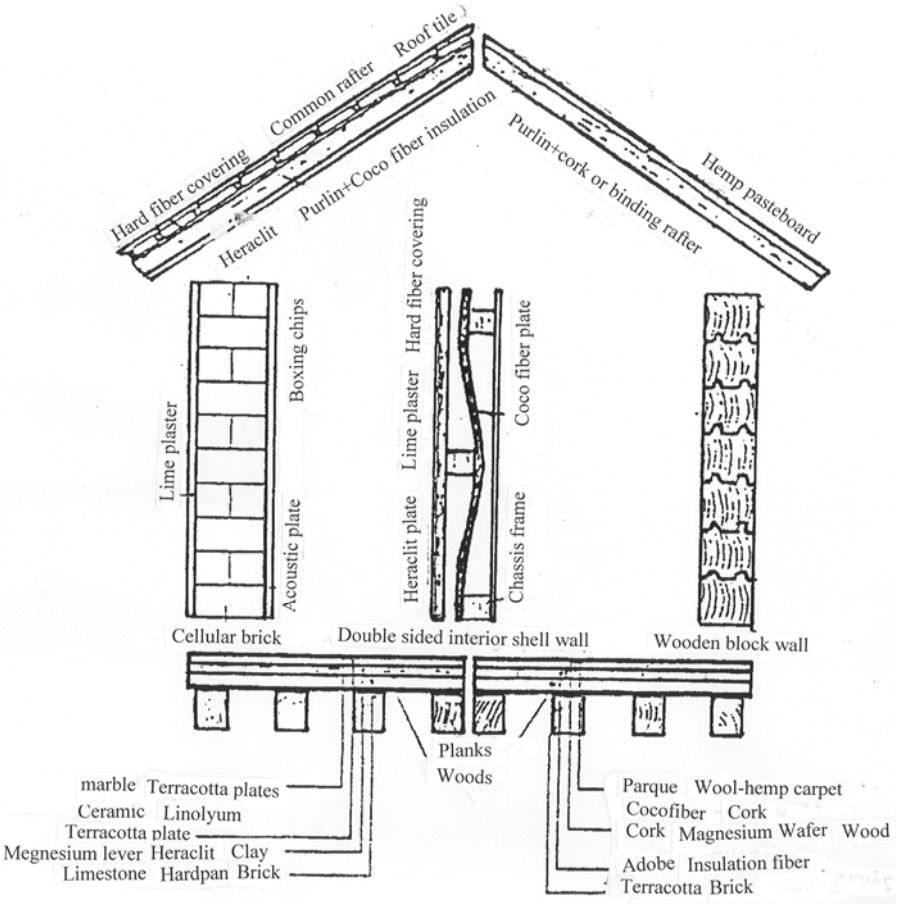

Figure 1. Sustainable Construction Materials: constructions materials and constructions recommended on flooring, wall and roof for sustainability as well as materials with heat and sound insulation, providing diffusion.

Measures providing internal air control against pollutants steming from construction materials may be categorized under three headings.

Measures for material content: Pollutant diffusion of a material varies depending on type, amount and degree of effect of that pollutant, materials which are used for production of it or applied later, causing various characteristics to the material.

Reduction of such materials being harmful for human beings despite of their some positive effects or use of harmless materials instead of them would be measures to eliminate the problem. In some countries, there are legal regulations restricting and liiting use of such harmfull substances used during production stages of the materials [10].

Production of alternative materials which have same or similar performance with other materials, but to not contain contents harmfull to human health is considered positively in ecologic and biologic sense. Use of such materials made be made widespread by means of encouraging and motivating approaches.

Methods preventing formation of pollutants in the building: Prevention of pollutants through destruction of the polluting source is the most effective way for control of internal air quality. If measures taken against content of construction material prove to be inefficient, in other words, production of materials having such type of harmful content continues, it would be effective not to use at all or use sparingly of materials which are exactly known or suspected to be harmfull for internal air quality. Here, in order to make correct selection, sufficient knowledge of ecologic and biologic characteristics of the materials is required. For this purpose, development of a labeling system giving information about materials shall make it easy to make comparison between the building materials.

Measures reducing effects of pollutants generated in the building: If emergency of pollutants cannot be prevented by destruction of the source, it is important to study and apply ways of minimizing their interaction with the human beigns. If proper material has not been selected at the design stage for various reasons, methods of preventing or reducing harmful effects of them may be applied. The simplest way of them is to cover a material diffusing pollutant so as to prevent it from diffusing it; and, secondly, these should be removed out by means of an effective ventilation in order to reduce level of pollutants generated in the internal space. In the internal space, it is also possible to eliminate or reduce pollutants in the space by using various ventilation products, filters and radon-reducing materials.

Improvement of other conditions in the building also reduces effect of the pollutants. For example, achievement of a proper temperature and moisture in the building reduces formaldehyde output. Furthermore, keeping the spaces clean and replacement of the old materials also contribute to reduce effect of the pollutants. [11]

It is of great important that building designers, material manufacturers and users should know material characteristics well and use building materials which do not impair internal space air quality. That material selection is made on basis of aesthetic and economic concerns, rather than human health and sustainability shows how producers and consumers have poor knowledge in this matter. In addition to making users, designers and producers knowledgeable, the sustainability should be emphasized by means of arrangements in production and use of materials and future-oriented solutions should be generated.

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ECO-DESIGN APPROACH IN FURNITURE DESIGN

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ABSTRACT

The focus of this paper is to show the approaches of "*the design in conformity with the natural processes*" which takes into consideration of the furniture with the effects on environment during the lifespan starting from the design phase and continuation with the production phase. The designs in conformity with the natural processes require to use the elements such as disassembly, recycling, re-using, re-meaning, updating, being used instead of another thing, with the materials environmentally friendly. In this paper, "the design in conformity with the natural processes" is mentioned as "*eco-design*". Eco acquires a meaning which maintains the reduction of the concepts of both economy and ecology together. Eco-design, in this sense, is used as *design environmentally friendly*, which contributes to the economy. Eco-design combines environmental factor with design. The designs, which reduce the effects threatening the environment and human health at the minimum rate, re-define using life of the product and material in different dimensions and enable it to reuse, can be defined as "eco-design". The purpose of the paper is to show the "eco-design" approaches in conformity with the environment in all phases which determine the life circle of the product, such as: design, production, use, recycling, and reuse.

Keywords: Furniture design, Ecology, Eco-design

ECO-DESIGN FURNITURE

One of the important investments to environment is the design approach to direct the production-use-reproduction circle as being aware of the industry-user-environment needs of the designers. Traditional approaches aiming development and conservation of the environment conditions are based on the solutions inclined to preventing of pollution or waste. But these approaches are focused on reducing the present pollution, without taking into consideration the design phase.

This is still a disposable world, as anyone can see from the vast amounts of garbage dumped every day into landfills around the globe. But a growing number of manufactureres and designers want to change their methods. By rethinking how things are made, they hope to eliminate waste, or recycle it back to the earth or to industry. To to this, the entire life-span of a product is being reconsidered, from initial

design to the end of its useful life. They call it cradle-to-cradle thinking.Figure 1. It may sound utopian, but it is actually becoming a 21 st-century reality [1].

Figure 1. Jonas Hauptman's reseat lines are made of reconstituted North American aspen wood flakes held together with formalde-hyde-free adhesive. The furniture isn't strictly cradle-to-cradle, because not all the materials are recyclable. But the small amount of wood it uses quickly biodegrade composted [2].

The furniture coherent with natural processes is created during the design process. The design process of furniture requires some significant questions to be asked as below:

- What are the main purpose and the usage area of the furniture?
- In which way of the furniture is used?
- What is the size of the furniture?
- What is the physical life of the furniture, which is to be planned?
- Is it clear that the design targets ensure the easiest way of maintenance, disassembly and recycling of the furniture?

These questions play an effective role for the designer to focus on introductory points of *"eco-design"* aproach, as well as on answers and solutions to be able to attribute the first ecological impression to the product. However, the design approach in conformity with the natural processes requires teamwork not only for the designer, but also for the companies, teamwork between the several departments of the company, such as purchasing, marketing, reseacrh and developlent, environment, health and security, quality control departments.

The eco-furniture design approach is that the product is created and developed considering the design desicions in furniture design such as cost and time efficiency, increasing the quality of furniture and its using life, decreasing the use of input materials and energy resources during the production stage, together with the whole economic, functional, aesthetics and ergonomics criterions which are affective on the design procedure.

In the eco-design approach, while the furniture is just in the design process, structural and material choices become important. These choices should be as below:

- The minimum use of materials.
- The use of recycleable materials and decreasing the energy use to the minimum level.
- The design with the materials which aren't composit.
- Designing the furniture to be dissambled into the parts.
- Ensuring a long using life.

To design in conformity with the natural processes, designers can suggest fewer materials, mainly steel, plastics and aluminum, and rely on mechanical fasteners instead of glue to put the chair together, such as Steelcase' Think Chair. Figure 2. Disassembly is a key part of the eco-design furniture approaches. If materials can be taken apart, furniture can be recycled. If they are mixed together, that can not happen. Materials end up being remade into other furniture, such as park furniture, just one step away from the local dump.

Disassembly is only a start for the eco-design furniture. Designer can measure the furniture's impact on the environment throughout its life cycle. Their analyses consider the ecological effect of procuring raw materials and manufacturing, transporting, using and disposing of the furniture.

Figure2. Disassembly is a key element of the eco-design furniture approaches. Steelcase's Think Chair is 99 per cent recyclable and can be taken apart inless than five minutes [3].

PRODUCTION

As a necessity of consumption economy, to get a product to be consumed as soon as possible, the producers have been accelerating the production speed by giving a new aesthetics values to the products of which the basic function is the same. Rapidly increasing population and the motivation of the new products offered to the consumers as in need increase the consumption speed. But these products, in a short time, turn into “garbage” and the environment enter into a process that it can not dissolve this garbage by itself.

Another important point in eco-design approach is the recyclable costs. Design approaches should be focused on to be able to provide “the conformity of the furniture with the natural process” consuming little energy, by paying attention to energy consuming necessary for recyclable. So, economical and environmental factors should be thought of in each phase of the design and it should be provided that the producer firms take part in this process.

In 2002, Steelcase, the world’s largest office furniture manufacturer, took up the green design cause and set to work on making a chair that was good for people and the environment. Office chairs, it turns out, are not as benign as one might think. They have been accused of depleting the ozone, polluting air in offices, even disrupting harmones and raising the risk of cancer. What’s more, they are rarely built to last. According to the U.S. Environmental Protection Agencey, an estimated three million tons of office furniture is chucked into landfills each year in the United States alone [1].

The issues to be considered in the production stage by the designers are shown below:

- the use of non-renewable materials,
- production processes,
- the amount of energy consumed in the extraction / processing system and how energy use can be minimised (local production, reduced transportation, renewable energy),
- finishes (many coatings contain harmful emissions for the atmosphere and for our health).

USE

We can not update an interior easily but the furniture is the equipment that we update easily in constructed environment. In furniture groups, the furniture that are the mobile elements of the interior, are updated often by user. User needs to change very often his furniture that is an important element of the constructed environment, according to the value system updated, as a result of the tastes motivated and changing at times. At this point, the unsustainable furniture that turn into garbage products, give importance to eco-design approaches. Environmental consciousness is related to concepts of creativity and originality in this sense. Together with new technologies, new needs have caused the product to be redesigned, and so, a new circle to start. A similar product or function is presented to consuming society with

different aesthetics appearance and price differences. Therefore, by the consumers' desire of having a new product, the furniture which completed their consumption period should be designed "*in conformity with the natural processes*" without becoming garbage. Concept of sustainable architecture and sustainable environment can acquire a meaning only if they are dealt with within all scales. Eco-design approaches evaluated in all scales from industry product to design of the architectural environment should be taken into consideration for an environment sustainable in conformity with the natural processes.

The consumers having environmental consciousness think that in the purchasing decisions, *eco-designs "in conformity with the natural processes*" are much more effective than the others. The defined codes inclined to producer-designer-user mean the standards of the furniture should have and also provide their variety. Strengthening the codes of this triangle inclined to the user is important in way of making the user conscious individually. It will be a good step for making the consumer society more conscious on this subject that *eco-design codes* include the features related to environmental consciousness and the meaning of the life circle, shortly, they explain the consumption period and recycling story of the furniture. Apart from this, new technologies have provided that the artificial materials get an organic and natural appearance. This appearance of the materials is a deceptive condition for consumers in determining the recycling feature of the design. So, eco-design codes gain importance in informing the consumers.

Unlike many other types of industrial products, furniture uses few resources in use. So moving beyond concepts of resource use and wastes produced, the largest impact of furniture in the use phase is how long furniture is used. The biggest environmental consideration for furniture designer is to question the purpose and determine the applicable useful lifespan of the furniture.

We are in close contact and relation with the furnitures in different ways such as eating, sleeping, resting and working activities. Even we make some furnitures especial belongings by attributing them specific meanings. For example, people have their favourite sofa - they form relationships with meaning of furniture. This meaning may have little to do with cost but much more to do with the aesthetic and subjective qualities of the furniture. These are important issues for designers to consider when contemplating product lifespan, use of resources and customer delight. Furniture which we use our home tends to be bought with longevity in mind. Therefore good quality workmanship and the use of materials that age well are often the best design choices for promoting durability. Although furniture does suffer from obsolescence, it does so less than other product sectors. Furniture obsolescence does not necessarily equate to final disposal but instead to secondary reuse through auctions, flea markets and other formal and informal mechanisms of exchange such as jumble sales, family hand-me-downs, fates and local adverts. Durabilitiy is exception to furniture design. Some people with less money or those with a more nomadic existence might purchase furniture on purely a functional and cost basis. They do not see furniture as an investment for their home. But require the utility of furniture to live more comfortably. In such cases disposable, shorter life furniture might be more appropriate than more durable alternatives. Figure 3.

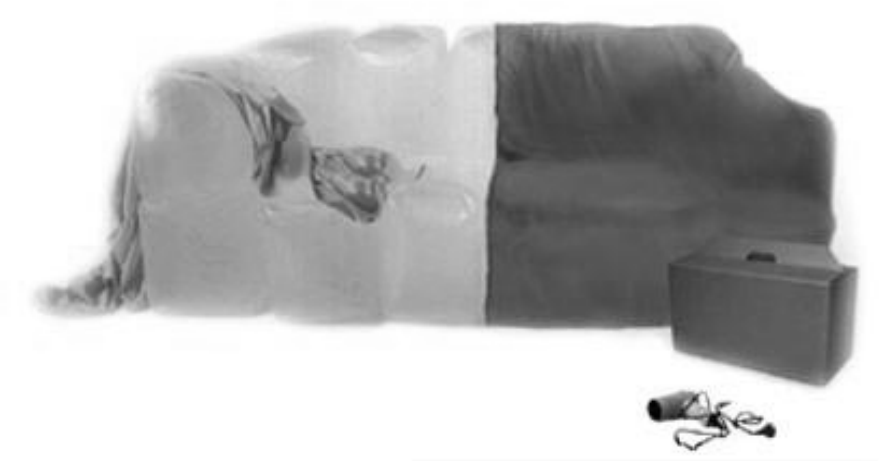

Figure 3. IKEA for example, produces 'SoftAir.'- a lightweight, blow-up plastic furniture concept aimed at those who have limited disposable income and those who want versatile furnishings. SoftAir is inflatable like its early relatives and is relatively durable. IKEA sell the SoftAir range with a 10 year guarantee but even this timescale is perhaps less 'durable' compared to that of more traditional furniture (100 years +). The total reduction of materials, energy, transport and stock volume of SoftAir (compared to conventional furniture) adds up to 85%, with the materials being 100% reclaimable and recyclable [4].

Office furniture can have different lifespan concerns to those of the domestic furniture. Instead of selling furniture to customers some office furniture suppliers design and sell space and focus on optimising the overall office function of which furniture is a part, for their clients. This is often viewed in the context of an overall service and thus the provider may lease the furniture which, after a specific time, is returned, reused, disassembled and eventually disposed of. This is one way of dealing with the changing nature of the workplace driven, for example, by desk-sharing, tele-working, and opportunities that new technologies and process of working bring to the traditional office environment.

RECYCLE

Anxiety is mounting concerning the prodigal way in which we are using up the Earth's capital assets. For some time environmentalist have been urging us to live off the interest and preserve the remaining capital. The furniture industry is the sector which carries the most guilt in this respect with its voracious appetite for raw materials. This has led to mounting pressure to employ recycled materials. If designers only make a product recyclable, there will never be a demand for recycled materials in the future. If there is a demand for recycled materials the supply will follow certainly.

How can the recycling of a design which reaches to the user be provided? Recycling is to develop a strategy which determines the life circle of the product, while at the design phase yet, rather than a strategy inclined to provide the re-use of the product which has completed its consumption period. Figure 4.

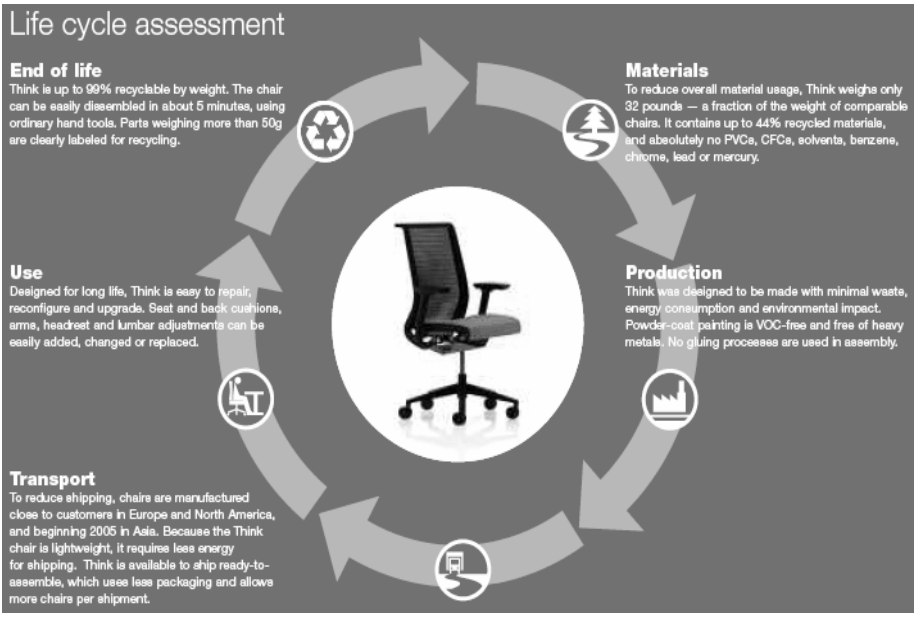

Figure 4. Recycling is to develop a strategy which determines the life circle of the product [5].

Extending furniture durability is the general eco-design goal of the furniture lifecycle. This means trying to design furniture to avoid the pitfalls of furniture obsolescence through changing tendencies of fashion and interiors. While this might not be so much of a problem for more traditional furniture, it is an issue for shorter lifecycle furniture, office furniture, public furniture - furniture that has little scope to develop person-product interactions other than the pure functionality of the piece. Furniture is less likely to be valued when the issue of ownership becomes blurred or, in other words, people don't tend to look after stuff that isn't theirs.

Furniture can be produced from a wide variety of materials. Such variety means that the environmental impacts of furniture production also vary quite depending on the materials and processes chosen. Some materials are based on nonrenewable resources, such as metals and plastic. They both require considerable amounts of energy to process them into usable forms for production. Both metals and plastics do not stand up environmentally well on the surface to alternatives such as timber. But, they do have some plus attributes. They are particularly durable and will withstand a

range of various conditions. Unlike wood they do not necessarily require a great deal of protection such as coatings, finishes to enhance durability. For outdoor furniture and extreme weather conditions, some protection may be required. Furniture tends to have a relatively longlife in comparison to many other products. Therefore using such materials undoubtedly enhances the lifespan of the product. For instance, using a chrome element in furniture may introduce a unique feature which the owner becomes very attached to. The meaning of furniture conveys deep debates on aesthetic qualities. Just as many other issues need to be acknowledged it is therefore very difficult to quantify the environmental credentials of furniture based on analysis of materials or production techniques. On the other hand, some metals and plastics have more environmentally damaging extraction and production processes than others. As a general rule the use of recycled materials is a better environmental choice than reliance on virgin materials.

The table below illustrates the energy used in processing virgin and recycled materials and the comparative percentage energy savings made by using recycled material.

Table 1. The energy used in processing virgin and recycled materials and the comparative percentage energy savings made by using recycled material [4].

Energy needed to process ***(BTU /pount)***			**Amount of energy saved by recycling** ***(%)***
Material	***Virgin ore***	***Recycled material***	
Steel	8300	7500 (40% scrap) 4400 (100% scrap)	10 47
Aluminium	134,700	5000	96
Copper	25,900	1400-2900	88-95
Plastics	49,400	8800	23

The furniture examples to be considered recycled material in the production stage by the designers are shown below. Figure 5, 6.

Figure 5. Material: seat from 75% recycled plastic or recycled paper. Steel base 15% recycled steel. Design: Colin Reedy. 1995. The chair is essentially two monomaterial parts which permits easy future recycling. The steel frame is welded and painted with a powder-coating process. The seat shell, from recycled plastic or paper, rests on the steel frame and is easily adjustable. Plastic shell: compression-moulded sheets of 2mm postconsumer recycled plastic are cut out. After being heated in the oven, the flexible shell is clamped into moulds of the correct shape and allowed to cool. Gridcore body: the recycled paper seat shell is laminated in 3 layers with wood adjustment spines glued into place. Its easily adjustable slant may be upholstered or stained with waterbased dyes. No mechanical fasteners are used, the seat shell is welded. This production process minimizes energy usage and applies no toxic substances. In addition, all material scrap is returned for direct recycling to create a system of zero-waste [6].

Figure 6. Design: Cassina Inter-Decor Japan Inc., 1992. Meterial: 100% recycled paper and steel or aluminium rods. The seat and back are 100% recycled

paper shaped with thermo-setting resins to which heat and pressure were applied. The structure consists of tubular or aluminium rods [6].

REUSE

Much of the environmental focus of the past has been concerned solely with the production sphere. But all kinds of take-back or reuse systems that enlarge the lifetime of a piece of furniture are equally relevant. Market institutions such as second-hand dealers that enable furniture reuse prior to final disposal are already popular and well established in many European economies. Other business concepts such as sharing or leasing furniture have only a niche status in the economy and need further development, exposure and testing.

In brief, the aim is to extend product life through design for durability, reuse, refurbishment and materials recycling to keep furniture out of the solid waste stream, by:
avoiding colours or designs that go out of fashion quickly;
avoid glues, metal clamps and screws in favour of 'push, hook and click' assembly;
the use of in-mould labels rather than paper and plastic labels which can be mistakenly washed off or removed [4].

Figure 7. Bale Chair is an ingenious way of reusing material. It's made of moulded plywood certified by the FSC (Forest Stewardship Council), and the webbing straps are 100 per cent recycled polyester [7].

Figure 8. Wilkhahn Picto Chair.An office chair designed to have a long life. The product is made for easy repair, disassembly and reuse and can be recycled up to 95% the numbers of parts are mechanically joined, without glue. All plastic parts weighing more than 15g are marked for identification. To aid collection and disassembly end of life Wilkhahn has developed a system for taking back the product and remanufacturing it after the initial use: the cloth covers are detachable for cleaning, repair or replacement [8].

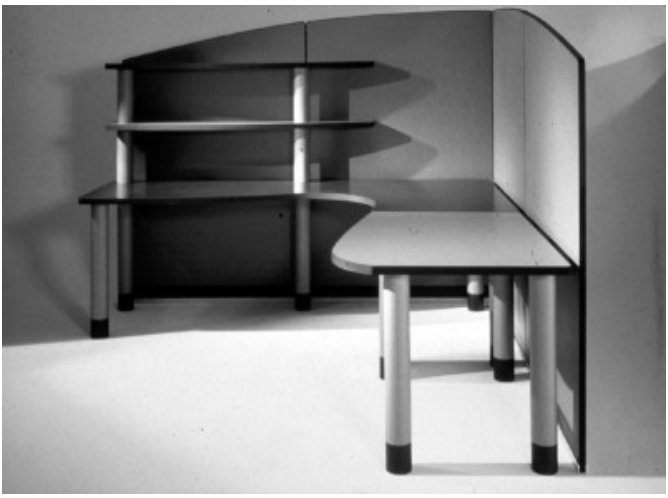

Figure 9. A reception desk which is part of a range of modular open office furniture, made of recycled, organic or reused materials, organic paint and won back PVC masking strips. Eco-Work proves that ecological materials, if intelligently applied and sensibly produced, may serve as a source of creative inspiration [6].

CONCLUSION

Just because of the limited and scarce resources on the world, like in the other fields, the eco-design criterions should be taken into account also in the furniture desing and production. Eco-design furniture approach created and developed in design statge. The design approach in conformity with the natural processes requires teamwork not only for the designer, but also for the companies, teamwork between the several departments of the company, such as purchasing, marketing, reseacrh and developlent, environment, health and security, quality control departments.

Eco-design approaches evaluated in all scales from industry product to design of the architectural environment should be taken into consideration for an environment sustainable in conformity with the natural processes. Design approaches should be focused on to be able to provide “the conformity of the furniture with the natural process” consuming little energy, by paying attention to energy consuming necessary for recyclable. So, economical and environmental factors should be thought of in each phase of the design and it should be provided that the producer firms take part in this process.

Design approaches should be focused on to be able to provide “the conformity of the furniture with the natural process” consuming little energy, by paying attention to energy consuming necessary for recyclable. So, economical and environmental factors should be thought of in each phase of the design and it should be provided that the producer firms take part in this process.

To assemble around a global value such as ecological and environmental issues can change the vision of producer, designer and also consumer. The quality of our existence is directly related to the quality of care we show for our environment’s realities. There are lots of things that eco-design can do in socially acceptance of the furniture.

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DESIGN ISSUES

Moderator: Kutsal Öztürk

A Model Proposed for Designer / User Communication to Reinforce Quality in the Space
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A MODEL PROPOSED FOR DESIGNER: USER COMMUNICATION TO REINFORCE QUALITY IN THE SPACE

Beria GÜNAL BAYEZİTLİOĞLU

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ABSTRACT

To design and construct a building which fulfills its intended purpose, architects require not merely a mechanistic brief but real insight into its modes of use, both intended and continuent. Necessity to benefit from multidisciplinary human sciences, like as environmental and behavioural sciences, has been an obligatory because of psychological and social ways of architecture. Now, architects have to consider and evaluate the human factor which is suggested by social sciences, in design. It is clear that to provide processing platforms where will gotten knowledge exchange between designer and user is necessary. Increasing the architect's responsibility especially at postoccupancy evaluation studies will be useful to percive the user's dimension of the design.

The purpose is to get some behavioral and spatial clues in the general goal of "to improve the life quality by increasing the space quality" with the help of psyhco-social quality factors which have effect on percieving the space quality. Life quality is related with life style of the people. Suitability and harmony between the life style and space is important to get good (healthy) results in the life time. A communication model will reduce the number of differences between the space created by designer and the space percieved and utilized by the user.

We investigate the spatial quality which communicates with and expresses the personality of people. In other words, if the space has a meaning for its user, it turns into a "place", possessing its own individual spirit. This transformation of the space is very important for us because, in the house constuction industry, generic plans produce broadly similar dwellings for the majority of users. The data which is obtained from observing the communication between space and people, will provide feedback information to the designer including giving them indicators of the psycho-social quality exhibited by the residence. For this reason, I tried to determine the parameters of psycho social quality by studying the human-space interaction. Additionally, spatial satisfaction is being used as one indicator in evaluating environmental quality. Then the communication between space and user, space and designer, user and designer, effects the user satisfaction.

"The Space-User-Designer Communication Model" is assembled. The space and the human are the main components of this communication model. In the hierarchical sequence, the space is classified from interior space as smallest scale to the city space as bigest scale and also is investigated under the titles of architectural space, semiology, spatial meaning, spatial components, spatial quality. The space in this research is defined like above. Again, the human has user identity and architect identity and also it is thought as the mechanism of perception, cognition and behaviour in this research.

Communication units, messages, and being relationship within the communication concept are the components of any communication system. Also these components are used in “The Space-User-Designer Communication model”. Meanwhile, the mechanism of sensation-perception, cognition-evaluation and behaviour(feedback) are observed in any communication system. These behaviour norms (perception-cognition-behaviour system of human), occure in their sequence in “The Space-User-Designer communication Model”. Besides this, the concept of privacy, personal space, personalization, territoriality, back stage behaviour, going towards behaviour are the architectural behaviours. We understand the residential satisfaction by observing the architectural behaviour of user. As before mentioned above, also residential satisfaction is an indicator of house quality.

The aim of making case study is to prove the model that is assembladged in this research, is work on or. And also, to obtain the feedbacks from the users of the residances and to share the same feedbacks with the architect of these residances are aimed.

The conclusions were evaluated under two different topics. One of them is “theoretical and metodological conclusions” that is possible to gain operativity of “the space-user-designer communication cycle”. The behaviour types of users occure after deciding of residential satisfaction and they are the feedbacks of space-user communication circlet. The other topic is “the conclusions towards the applications”. Academic research and insight are used very sparcely by architects in professional practice. The architects will have the feedbacks which are obtained from space-user-designer communication cycle and also will use these feedbacks at new residance designs. So the architect will have the pyscho-social knowledges that are obtained from space-user-designer communication cycle outputs.

When a new residance will be designed by the architects, this residance will be more close to the psycho-social quality. So the space-user-designer communication model is tested and seen that it is effective and useful.This method is offered as a usefull model to the architects to create their own vocational pyscho-social data base.

Keywords: Quality, Communication, House and space, Psychology

INTRODUCTION

User is one of the most important context components of architecture. In order to design context sensitive designs better communication with user or potential users should be produced and enhanced. Besides, also space transmits the messages from designer to user. This study propose a communication process model and space, user, designer are included in this model. The Space-User-Designer Communication Process Model is tested with two dwelling units and the results prove that this model work on.

While researchers try to define the main aspects of the relationship between human behavior and environment in psychological studies about environment, architects endeavor to acquire the information that will enable them to produce good buildings which are harmonious with environment. Architects take the human factor as defined by social sciences into account along with technical knowledge and artistic approach in their designs. However, the architect’s knowledge of human behavior is not updated and is limited to his/her insight. The immediate exchange of knowledge does not happen between the architect and the potential user--the architect and the first user--in professional practice. Therefore, developing the efficiency of various venues

which provide the exchange of knowledge between the designer and the user and raising the architect's consciousness about the psychology of the user become very important. The quality of life is related with the consciousness of life and the harmony between lifestyle and space is important to the user's satisfaction. One way of testing the quality of space is to see whether it is harmonious with the actions that emerge from the lifestyle. It will improve the quality of the design, if the designers employ the physical results perceived by the users in the new design processes rather than guessing these results.

The expectation of quality has increased due to the facts like higher levels of education, culture, and income; globalization and the emergence of information society. Although quality of building, maintenance, repairing, and appropriateness for use have been examined in quality studies, the psychosocial quality has been neglected due to difficulties in testing and great number of individual differences (Altas Esin N. 1994). Quality is defined as the capacity for meeting the requirements in ISO 08402 (1987). Yet, the quality of space must be tested according to its capacity for meeting the physical requirements of human beings as well as their psychological requirements. The purpose of this study is to figure out the clues for psychosocial quality through data based on life in order to raise the quality of space as well as the quality of life. The primary goal is to reduce the difference between real space and perceived space. This study therefore deals with the ways in which one can determine the clues of psychosocial quality by examining designer-user communication.

THE SIGNIFICANCE OF HUMAN-SPACE INTERACTION

We can find the most comprehensive definition of space as an actor in user-space communication in Eczacıbaşı Encyclopedia of Arts (YEM 1997). According to that definition, space is "the section that is limited with the action of human beings" and it is the very essence of architecture. According to İzgi, space has an abstract dimension that cannot be measured and that is based on the perception of its effects (1999). This abstract value gives space its specific character. In addition to objective physical data, our feelings are also important in perceiving space. Perceived through experiences, space is an emotional thing that involves movements. Every movement affects our feelings. As diverse physical data come together and help us to have a general view, space strengthens our perception.

Various writers emphasize the fact that the designer/creator of space and the user or reader of space attribute it different meanings. Therefore, it is important to provide a unity of language between the designer and the user/reader. The language of space is a tool of communication in the user-space communication. As the designer transforms the space which he/she forms in his/her head into a real product, he/she must reach the user and must express himself/herself. The designer must form the spatial elements permeated with meaning by selecting from culture, traditions, and expectations of society and blending them with his/her knowledge and experiences in order to achieve this. According to Rapoport, spatial meanings can be communicated only when they are clear and strong (1990). The goal therefore is to provide clarity. Gur argues that "space is comprised of signs prepared for human activity and behavior from the user's point of view... architecture is made up of signs that provide

the exchange of knowledge just as in language" (2000). The user perceives and reads the tangible signs of the designer in user/space communication. Accurately formed spatial signs affect the user's perception and lead to positive response.

The following definition of quality, "appropriateness for use or the capacity to provide for the requirement," is proper for spatial quality (Ozsoy, Altas, Ok, Pulat 1995). Only technical standards are not enough for spatial quality. There requirement to be user standards based on the psychological requirements of the users (Altas 1994). The parameters that underlie spatial quality can be categorized as design, building, maintenance and use. The quality of design includes the quality of project management, the quality of preparations, conceptual quality, the quality of detailing, and the harmony of the parts. The psychosocial quality of space is categorized under the title conceptual quality. This is seen in Altas's model of quality parameters (1994). The quality of space should meet both the user's physiological requirements and his/her psychological requirements such as security, comfort, prestige, socialization, activities, peace, and beauty. Psychological requirements should be provided with considering the specificities of culture from which they emerge. The fact that both designer and user share the same cultural characteristics reduces the difference between the designed space and the space perceived by the user and brings the designer closer to psychosocial quality.

Apart from their many definitions and characteristics, cultures determine the ideals that limit individuals' decisions and choices and their worldviews. They bear the clues for the accepted behavioral patterns in a specific society in a specific period. It is important that the designer finds these clues because it will improve the spatial quality. The designer should observe and read the user's behaviors that are acceptable within the society in that specific time period. The user will feel happy and satisfied in the space in which he/she can adapt the accepted behavior norms.

Another actor in space-user interaction is human being. Human being takes the identity of designer and user in this study. According to Fitch, a human being is comprised of three basic mechanisms: metabolism, sense perception, and muscle-skeleton (1972). Static and dynamic anthropometric aspects of a human being and his/her sense perceptions are fundamental his/her interaction with the environment. In this study, a human being, pointed as the focus of space-user-designer interaction system, is dealt with as a system of sense perception, cognition and behavior. Sense perception is to gather data through senses; cognition is to process and interpret these data referring to the memory and it is the evaluation of the data; behavior is to respond to perception in both purposeful and instinctive ways by showing physical movements and other types of reaction.

SPACE-HUMAN COMMUNICATION AND SPATIAL SATISFACTION

Human being as a user expects the space to be designed in order to meet his/her requirements and achieve his/her goals. Therefore, even though they do not realize it fully, the communication between the user and the designer is important as they directly interact with each other. As quality is tested through the capacity for providing for the user requirements, the information gathered from the user about the

performance of the space provides the clues for psychosocial quality variables in space-human communication.

Communication is simply the exchange of messages. It is an exchange that takes place between two human beings, a human being and a community, a human being and the environment, society and the environment. A message comprises the information that is transferred or a feeling or a thought that is expressed. There is one sender and one receiver in this exchange. The elements in a communication model are source and target and the channel and communication environment. Source sends the message; target receives and interprets it. If target gives feedback about the message he/she interpreted, then target becomes source. The way between source and target through which the message transformed to a sign is sent is called channel. There is a channel for every sense: visual channel, audio channel, touch channel, smell channel, and taste channel. Person, object, and events involved in a communicative situation that affect the communication process make up the environment of communication (Cuceloglu 1991).

When we talk about human communication, we refer to instruments such as environment of communication, sources and targets, messages, and feedback which is usually a verbal expression. The instruments in space-human communication nevertheless are the residence as the environment of communication, space as the source, spatial elements as messages, the user as the target, and user behavior as the feedback.

Cuceloglu states that when two people who encounter notice each other, the communication starts. When architectural spaces and users meet, space-human communication starts. Porteus explains the working of the communication process as follows: “A stimulus that comes from the environment is perceived by the organism. Perception is to notice a stimulus through senses. The perceived thing is transmitted to the brain. To be perceived by the brain is to interpret an object through previous experiences. When the perceived things is conceived and adapted, it becomes part of cognition. The organism responds to the first stimulus. The response is feedback and it is realized through referring to an image known previously” (Figure 1).

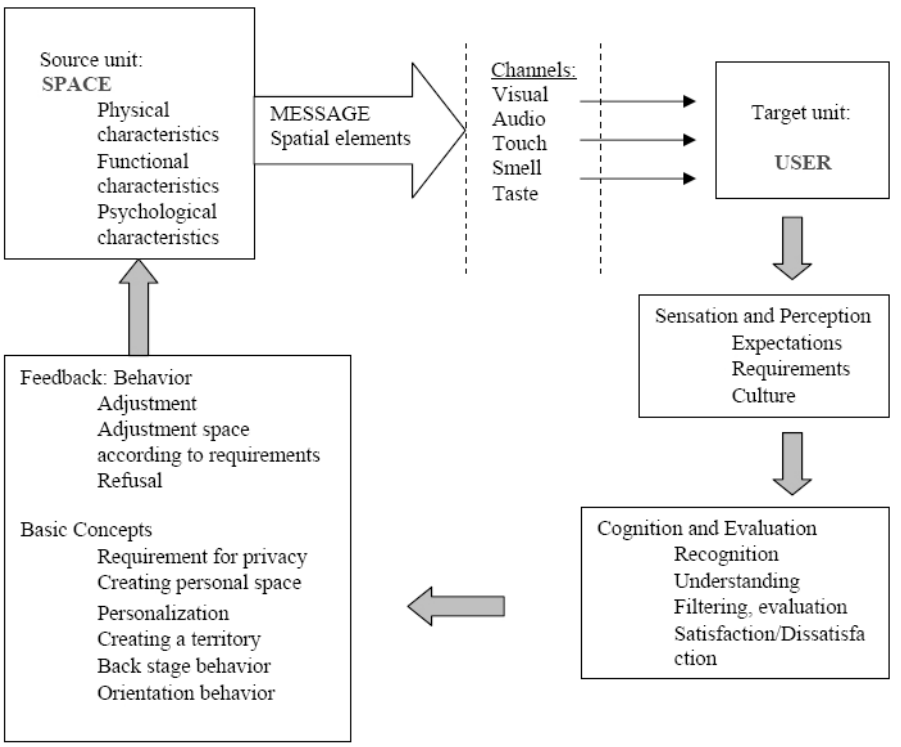

Figure 1. Communication Process

The purpose of this study that looks into the process of communication between designer and user is to reveal the behavioral patterns of user. In the process of user-designer communication, the communication starts when user enters into a specific space for the first time with the perception stage and continues with his/her response to that space after mental processes such as filtering from cognition and evaluation. The response which can be in the form of verbal or nonverbal expressions and behavior constitutes the feedback. We can acquire data to be communicated to the designer of the space by interpreting user's behavior. User shows his/her satisfaction or dissatisfaction during cognition-evaluation stage. He or she displays a specific attitude as to control that physical space, adapt it to his/her requirements, and realize his/her preferences and desires. This attitude involves either getting adjusted to the residence or changing interior or exterior elements or moving to another residence. Such attitudes are the results of emotional satisfaction (Priemus 1986).

Privacy, personal space, personalization, creating a domain, behaviors behind the scenes, orientation behavior are the factors that influence spatial satisfaction and lead users to the above mentioned attitudes. Designing spaces that allow users' privacy, domestic privacy, and social privacy that emerges from relationships between family and guests or neighbors, and also from relations among office mates has positive effects on residential satisfaction. Furthermore, users' having the

capacity for controlling visual, audio, and smell aspects of the relations with others plays an important role in spatial satisfaction. Changing parts of the residence, feedback in space-human communication, is a sign for personalization of space. During this, users transmit information to space with which they communicate and they impose their will on their environment. Designing spaces that respect users' domains, which they control through rules and symbols and become aggressive when violation occurs, influences spatial satisfaction.

RESİDENCE AND RESİDENTİAL SATİSFACTİON

The residence focused here is a physical space created by a designer, limited with walls, ceilings, and floors. It provides for the user's requirements and has functional, symbolic, and cultural characteristics. Besides, this is a residence for living and it reflects its user's observations; it is formed by its user's personality, motivation, and culture and also forms its user's behavior. The residence has certain fundamental aspects that provide for the requirements known to everybody. The measure, shape, style, decoration, color, composition are objective elements that influence psychosocial quality. Because the spatial elements are in the position of source in the space-user-designer relations, the meaning of the residence and its parts must be clear, understandable, codifiable, and strong. It should communicate the meaning attributed to it accurately. Because the residence has an objective reality, the types of residence that are focused should consist in examples in which form, demonstrative presentation of architecture, use, aim, value and symbolic meaning are taken into account. Demonstrative and symbolic meanings are important in terms of foreseeing behaviors. Designers should know the demonstrative meaning which is read by the users of a specific environment and find out how users respond to (feelings, values, and judgments) what is presented (Hersberger 1974). The effects of the residence on its user may cause numerous feelings. The effects of the environment may excite, please or bore the users. Even if the user comes across with a space the function of which she/he does not know, she/he can like its formal aspects. That space may have the right combination of design, color, and texture. Emotional meaning is also a learnt response that depends on experience. The factors that influence psychosocial quality are emotions. Psychosocial quality can be investigated through an examination of the emotional meaning of the space.
Residential satisfaction is the emotional and judgmental response that an individual produces upon his/her encounter with the residence. As a result of an evaluation of residential satisfaction, the quality of the residence is revealed by the user's emotional responses. Residential satisfaction is a reflection of the extent that the residence allows users to achieve their goals. The tension caused by the difference between the residents' wishes and the conditions of their residences is in the basis of the concept of residential satisfaction. If the tension is too high, then the residents may move out.

In the above mentioned communication process, making a decision in the evaluation stage that comes after the perception and cognition stages proves to be a sign of residential satisfaction. The definition of residential satisfaction entails that user has a response to and a certain attitude towards the residence in which he/she lives as an element of space-user communication process. The response and attitude are the products of the evaluation that emerges as a result of the degree of satisfaction.

Because satisfaction is a criterion in testing the quality of the residents, the degree of satisfaction, which is the result of evaluation, provides information about emotional quality, namely, psychosocial quality. However, residential satisfaction is not absolute. Since the residential conditions are unstable, in a given period, residential conditions and satisfaction may change.

Studies that evaluate residential satisfaction give priority to individual's evaluation of the residence and its environment. In addition to their preferences, tastes, ideals, and expectations, individuals' perception of natural or architectural spaces is conditioned by their character, identity, and social status. They produce positive or negative emotions as they perceive a specific place; in other words, they feel either satisfied or dissatisfied. Their feelings of contentment or personal satisfaction based on their personality lead to specific forms of behavior. The desire to control the physical space and use it for his/her requirements lead a person to behave in a specific way and this is the first condition for satisfaction.

An individual's desires and expectations related to the residence are connected with his/her previous experiences with residences, perception of his/her status, feelings of personal efficiency and his/her potential to climb the social stairs (Campbell 1976). Satisfaction or dissatisfaction with the residence may increase or decrease depending on the conflict or the harmony between user's wants and expectations and reality.

Human beings are highly capable of adapting to changing conditions. They try to personalize the space even in limited conditions. Yet, it is not good to make sudden changes and indulge in extremities. By finding out the limit of acceptable changes, one can determine human beings' capacity for adapting to specific conditions. In other words, it is important to find out the limits of a human being; in what conditions a human being faces psychological or behavior problems. The fact that human beings can adapt uncomfortable conditions should not prevent researchers from considering their preferences (Gutman, Westergaard 1974).

SPACE-USER COMMUNICATION MODEL

When a space designed by a designer meets with its user, a communication process between the space and the user begins. Space as the passive sender constitutes 'source' and 'user' constitutes target. The message codified in the form of spatial elements comes from the space as source and is perceived by user as target. The message is filtered through cognitive processes and evaluated which results in a specific response. This response can be observed as behavior and it constitutes 'feedback.' Evaluation in cognitive stage results in satisfaction or dissatisfaction and leads the user to a specific form of behavior. This behavior takes forms as adaptation to the space, changing the space or leaving the space. The reasons for such behaviors which constitute the feedback are psychological and they are the variables of psychosocial quality.

As in any communication process, the user as target becomes source when he or she gives feedback and his/her behaviors become messages. Then the designer becomes target and he or she is supposed to get the messages. Therefore, the

process works both ways. First, the message sent by the designer who uses spatial elements is perceived and evaluated by the user who sends back feedback. Secondly, messages as verbal expressions or behaviors sent by the user who now is in the position of the sender are perceived, filtered through cognitive process, and evaluated by the designer. This is shown in figure 2.

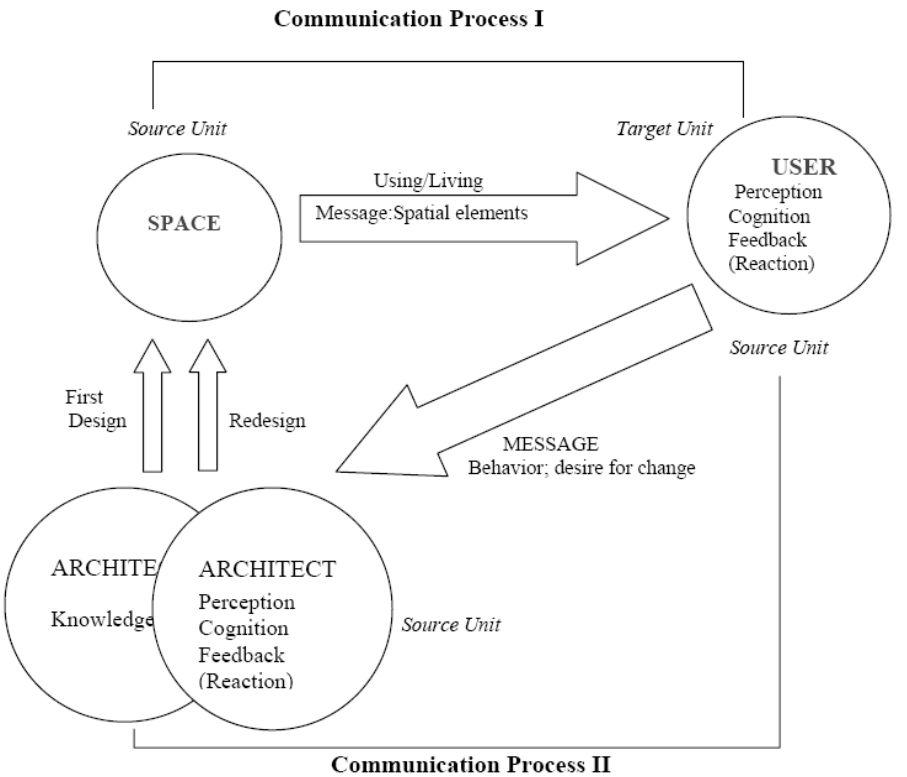

Figure 2. Space-User-Designer Communication Process Model

Lack of communication between a user and a designer is due to breakups in the second part of the communication process. In architectural practices and in daily life, a user cannot convey the information that he/she gets from his/her communication with the space to the designer. Yet, the messages that are transmitted to the user by the designer via space continue to be accumulated and transmitted as long as that specific space persists. The user evaluates the messages from the space, filtering them through the cognition, but the feedback--results of evaluation--cannot be communicated to the architect or they are communicated to other architects, not to the architect of that specific space. In this case, space-user communication works one-sidedly, that is, the communication process does not work both ways. Therefore, a lack of communication between user and designer emerges. Communication is not

one-sided, but it is a two-way and reciprocal process by definition. The space-user-designer model proposed here aims to prevent the lack of communication. This model will not lead to behavior such as changing the space, having to adapt to the space or leaving the space. On the contrary, it will help satisfy users and approach the ideal of producing quality spaces. If designers use this model regularly in their products, they can gather numerous psychosocial data. The use of the data will enable designers to design spaces that show improvement in terms of psychosocial quality and will facilitate revisions in design process that lead to a sustainable higher quality of space.

Table 1. The Adjectives Corresponding to Psychological Requirements Used in the Questionnaire

Psychological Requirements (Sungur and Çağdaş, 2003)	Adjectives (Ayyıldız, 1999, sf.165)
Social Relationships	Good relations with neighbors Social communication Lively
Safety	Safety Powerful
Activity	Healthy (body and soul) Social (asocial) Active Full of surprises
Peace	Peaceful Cozy, warm Simpatico Harmonious inside Harmonious with the environment
Beauty	Beautiful Modern Good architectural quality With style Attractive Original
Prestige	Modern Splendid Ostentatious Interesting Impressive
Comfort	Comfortable Restful Spacious Luminous Large Organized, useful Developed

METHODOLOGY

In this world of quality, the maintenance of space-user communication is a necessary condition in order to sustain spatial quality in residences. Some Turkish firms that build residences seek to communicate with the buyers of their products about maintenance and repair. However, the feedback they receive is not communicated to the architect of that residence (Inceoglu 2003). In the field study of this thesis, the communication was established with the help of 'space-user-designer communication process model' and the results were evaluated. The second part of communication process which normally did not take place was completed and the working of the model was tested. The field study took place in three stages. In the first stage, architect-user communication was questioned and the first part of space-user-designer communication model was provided (see picture II). In the second stage, gathered data were transmitted to the designer of the residences that were the subjects of this study. Finally, in third stage, the definitions and adjectives that indicate satisfaction were analyzed and the fact that whether the user and the designer used the same language was questioned.

The aim of the first stage is to understand to what extent the residences under scrutiny met the psychosocial requirements of the user and how the user interpreted this. A questionnaire that aimed to gather users' psychosocial evaluations of the residences and observe the spatial effects of user's adaptation behavior was formed and put into effect. The questionnaire prepared in order to gather emotional data was a multiple choice test. The adjective pairs chosen from literature and used in the questionnaire were classified in a way that would define the psychosocial requirements (see thesis 3.3.1. section) of users (Table 1). The questions in the questionnaire were prepared by using the adjectives that would indicate the extent of residential satisfaction.

Since all conditions for comfort are provided in the residences built for people with high-income, these residences were chosen as the subjects of study in order to show the importance of psychosocial parameters in residential satisfaction. The residences in the field study are chosen from Bahçeşehir satellite town. This area is located in the northwest of Küçükçekmece Lake on the European side of Istanbul. It was planned with the aim of "creating a healthy and beautiful residential environment for upper middle class people" in 1986. People started to move in Bahçeşehir condominiums in 1994, which are 35 km. from İstanbul and connected to the city with TEM interstate or E5 highway. It has been a residential area for more than ten years and its population is 20.000 according to the latest records. There are 5092 residences there. 896 of those are consisted of A,B,C,D,E,K,L type independent few-storey residences with gardens and 287 of them are K and L type residences. K and L type buildings were chosen here because they are the earliest buildings in section I and stage I and their designer could have been easily reached. These buildings have been used as residences for ten years and this fact provides sufficient evidence as to determine the user satisfaction or dissatisfaction. 44 K type and 12 L type users were interviewed. Among those polled, there were people whose age varied between 36 years old and 60 years old and they came from upper-middle class families. They were educated and well-read people. Most were users who moved in the houses there the earliest. Providing a suitable profile for the purposes of this study, they

presented an opportunity for observing the feedback in the communication model laid out here.

Their responses to the questions in the poll helped determine their satisfaction or dissatisfaction with their houses. The form of behavior that the user adopted at the end of the cognition-evaluation stage of the communication model revealed the extent of his/her satisfaction/dissatisfaction. The emotional reasons behind satisfaction or lack of satisfaction were found out through the adjectives that were related with psychosocial quality.

In the second stage of the field study, in order to complete the second part of the "space-user-designer communication model," the architect of the houses was interviewed. The purpose here is to reveal the results of the first part of the communication process to the architect. The architect was given the feedback on the buildings he produced ten years ago and he was asked to evaluate the information and the second part of the communication process was therefore completed.

The purpose of the third stage of the field study is to question what the adjectives, which were used in order to understand the emotional responses, signify for the user and the architect. The realization of the communication in the space-user-designer communication process depends on the consistency of the meanings of the messages. The poll was conducted in the style of a series of interviews. The adjectives used in the questions were defined by both the architect of the buildings and the users.

THE FINDINGS

Those who were polled think that social activities in the satellite town are rather weak and they say that this has rather negative effects on their ideas about their houses. The interview with the architect revealed that lack of social activities was a fault of the master plane. The relations with neighbors are not too strong in the residential buildings that are the subject of the study, yet this was not something that the architect originally planned.

Table 2. Modification in the Spaces of the Houses

The spaces that have been modified	Ratio (%)	N=56
Garden	74	
Living Room	60	
Kitchen	49	
Bath Room	49	
Parent's Bedrooms	37	
Other Bedrooms	28	
WC	28	
Dining Room	23	

Most users had modified their houses. The areas which had the most modification were the garden and the living room. It is remarkable that public and semi-public sections of the house in which users can develop their family and social relations had been modified primarily (Table 2, 3).

Table 3. Types of Modifications

Modifications	Oran (%)	N=56
Redecoration	74	
Renovating the Garden	70	
Painting	65	
Changing furniture	58	
Enlarging the Space	53	
Adding Open Spaces	40	
Modification in the façade	26	

Some modifications were due to the faults in design; in other words, detailed solutions for requirements could not be brought about during the design stage. Yet, some other modifications had to be done because there was not effective control in the building stage. In addition to these, users made some modifications according to their own tastes. After modifications, users came to love their houses more; some began to find their houses attractive, and some became fond of their houses. Some became more satisfied and happy with their houses (Table 4).

Table 4. Feelings and Thoughts About the Houses

Feelings and Thoughts	Ratio (%)	N=56
They love and assimilate their houses	86	
They are glad in their houses	83	
They find their houses impressive	79	
They feel satisfied	73	
They are happy in their houses	84	
The house has an image and an identity	56	
They are happy with their houses and they will continue to live here	93	
The house brings prestige	40	

According to users, the most important feature that gives the houses their image and identity is their location. This result is also confirmed by the architect of the houses.
In the space-user communication, all three levels of the feelings of satisfaction/ dissatisfaction were detected in the feedback that the user gave after the receiving the messages codified in the form of spatial elements and filtering them through his/her cognitive processes according to the proposed communication model. 71% of the polled ones adapted the house to their lifestyle by modifying it. 29% went through an adjustment period and got adjusted to the house and the environment, but did not

modify their houses. Four people among those who were polled refused live in their houses and started to think about leaving Bahcesehir. Two of the four modified their houses and the other two did not, yet modification did not change their decision about leaving.

In the second stage, the architect was interviewed. The interview revealed that because of the planning of the houses and the condition of the land, some compromises were made. Although the architect could have understood some, he did not approve most of the structural and design-wise changes. In third stage of the field study, a difference between the way the users defined the adjectives and the way the architect defined them emerged. This shows that many architects do not have much idea about the experiences that can be gained from the evaluations of the architectural products and the academic studies about these.

THE RESULTS

The types of behavior--discussed in the 'Findings' section--observed at the end of the process of satisfaction/dissatisfaction are the results that stem from the feedback which consists in the first part of the communication process. The emotional interaction that gives way to such results was communicated to the architect of the buildings which are the subjects of this study. By evaluating these results, the architect can provide a psychosocial database which he can use in his later building designs.

Space-user-designer communication model proposes a strategy that helps improve the communication between user and designer. This strategy can also be used in the evaluations of the houses after use. In Bahcesehir satellite town, the results of the evaluation of the houses which was done with the use of this strategy show that this strategy is useful in terms of engendering feedback. Some firms organize such feedback-producing activities, yet they cannot gather information that can be communicated to the designer. The same results have also shown that the communication model works. If every designer regularly uses this model as an after-use evaluation strategy in their products, they will gather numerous psychosocial data. This will provide with a database and will inform the psychosocial quality parameters. How the architect can organize the use of this model will be the subject of a later study.

The use of this database which can be put together during the design process will bring the spaces yet to be designed closer to the psychosocial quality. Besides, this will facilitate the revision, improvement, and modification of the design process. As a result, a sustainable quality of space can be developed. Including the after-use evaluation, this study can be used for preventing lack of information. It can become a solution to many problems in architectural practice.

The most important disadvantage of the model is the lack of an organizational model that will put the study into use. Since the production firms and architects are equally responsible for the creation of quality buildings, the firms may help facilitate this communication. In the following field studies, developing this model as an evaluation model, which can be easily practiced, is aimed.

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THE ARCHITECT AND HIS BUILDING: THE NATURE OF SUBJECT AND OBJECT INTERACTIONS

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ABSTRACT

One of the most important criteria in architecture is the compatibility of an architectural work with the ideals of the society. Another value that most conflicts with this is the reflection of the architect's own individual merits through his works. This objective brings along qualities such as originality and privilege as an old and long-term criteria. However, each architect demonstrates his privilege via the communication between himself and his work. Therefore, the characteristics of a building bear properties of the architect as a human-architect. This is the fundamental assumption of this paper.

Within the scope of the paper entitled The Architect and His Building: The Nature of Subject and Object Interactions, firstly definitions were made of the concepts of identity, personality and character, which are as a whole an inseparable part of human life; also, how these concepts, which are synonymous with life, are reflected in architecture, how the architect's personality traits take shape in the character of the building and the effects that a building leaves on a human being during the interaction were investigated. In this context, in order to examine the characters of architects and their properties reflected on the building, four sample buildings were chosen from each of three national and five international architects and surveys were conducted on a total of thirty-two buildings. Moreover, twelve attributes that will be most effective in determining the character of the architect-building were specified and statistical result graphics were prepared in accordance with them. The architects included within the study are respectively: Alvaro Siza, Mario Botta, Daniel Liebeskind, Rem Koolhaas, Frank Gehry, Turgut Cansever, Doğa Tekeli-Sami Sisa and Behruz Çinici. The twelve groups of attributes involved in the study are the following: Extroverted-introverted, rule-bound-unruly, emotional-reasonable, context-free-context-bound, leading-obeying, strong-weak, original-populist, dominant-recessive, mysterious-legible, dynamic-static, innovative-familiar and impressive-easily forgotten.

As a result of the studies that have been conducted, it is clear that while the architect's characteristics which lead him to what is right and good guide today's architecture and the prominent and distinguishing qualities that each of them forms individually earn them the quality of an architectural platform, at the same time the products obtained through worries about form indicate the destruction of the subject and disintegration of identity in a process of rapid development. At this point, bearing in mind Comfort's words "A human being with no character is a thing", the following conclusion is arrived at: No sacrifices must be made regarding personal values so that society will not be ruined.

Keywords: Personality, Character, Personal identity, Architect, Building, Interactions.

"One who wishes to be good
Can not be good unless he does
Good things"

Aristotle

THE DESCRIPTION OF THE PERSONALITY

The common origin of the term personality in foreign languages is the word **'persona'.** Real meaning of the word in Latin language is the mask theatre performers wear. In time, the word turned into **'perseuna'** which means unity alone and it became the starting point of word personality. (Yanbastı, 1990). **Personality** is described as the explicit property peculiar to the individual and conscious individuality. An other description is the characteristic behaviour and way of thinking that define the individual's interaction with the environment (Atkinson, 1995).

Measurement Of Personality

Psychologists make measurements by creating a scale and placing the personality properties on this scale. On the scale, there are adjectives such as good–bad, active–inactive, brave– coward. Tests that provide the measurement of the personality are carried out on both the individual himself and individual's family in a comfortable atmospehere. As occasion may require, test results are acquired after the individual is observed by the psychologist. From the results attained, personality profiles are drawn and necessary schemes are formed (Cüceloğlu, 1992).

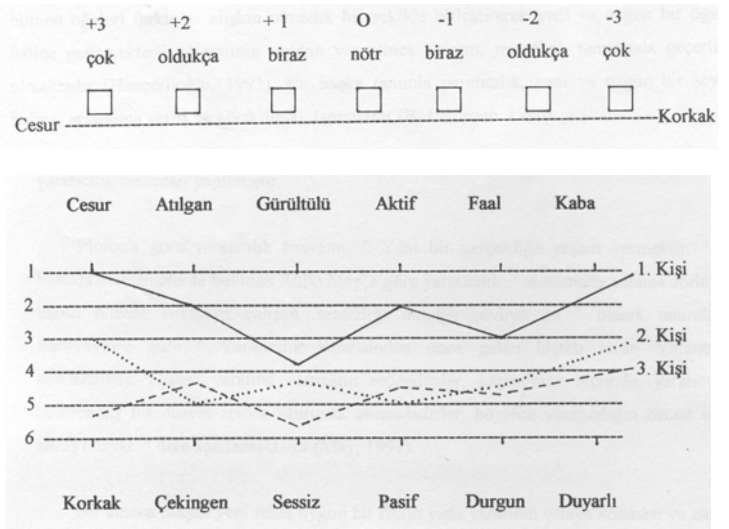

Figure 1. Personality Scale

Although personality and character descriptions seem to be identical concepts at first glance, when the subject is examined elaborately, it may be seen that character changes for the better and goes towards the affected according to Kant; whereas personality is the expression of feelings which are more inherent after the domination of ego from the trio 'i.d, ego and superego'.

CHARACTER

Lately, the word character which has entered Turkish from the west languages has been replaced with IRA. The word character comes from Greek word 'charassein' which means form. With its most common description, IRA (character) is the basic feature that distinguishes one from another (Hançerlioğlu, 1996). Psychologically, character is the total of distinguishing features that introduce the psychological structure of an individual or society and that provide to classify them in a category comparing with the other individuals or societies. Character, which composes an element of complex and dynamic spiritual structure called personality, includes all of the typical behaviour and learning methods used to communicate with facts in their environment. An other description of the character is the ability to display the personality in a powerful and decisive way (Axis, 2000).

Character is not only identified with human, but also displays itself in every field of the life such as painting, sculpture, music, literature, art, architecture and everywhere the artist can reflect his characteristics in his work. In all original arts, character introduced strongly in connection with the artist's personality, develop with having an emotion and perception ability and these are reflected in the work. The work formed with these features have a quality and mark. The most important factor that contributes most to formation of character in art and different branches of art is the character of artist. The work is personalized with the feeling of the work's dominant features that emerges as a reflection of human character in a strong and leader way. In all original arts, character introduced strongly in connection with the artist's personality, develop with having an emotion and perception ability and these are reflected in the work. The work formed with these features have a quality and mark. The most important factor that contributes most to formation of character in art and different branches of art is the character of artist. The work is personalized with the feeling of the work's dominant features that emerges as a reflection of human character in a strong and leader way.

Related to the architectural character, while Loudon says: "The character in a building should be outstanding, distinguishable, one and appreciable rather than other features of the building." (Loudon, 1983), Greenough says: " When I describe the beauty as a promise of function, the action as the presence of function and finally the character as the copy of function; in fact, it is accepted that I have made only one description. Highly advanced architecture is the presentation of the character." (Greenough, 1976).

THE DESCRIPTION OF IDENTITY AND IDENTITY IN ARCHITECTURE

The constant and basic property of a person that provides them to be distinguished from other people or groups is their identity (Axis, 2000). It is the whole of conditions that provide a person to be a certain personality (M.Larousse, 1986).

“Identity problem in architecture” is a phenomenon whose importance has been well to the fore for ages and and has been displayed in various ways. During the last years, identified or unidentified architecture is mentioned as a criteria in architectural occasions. Today, our buildings in which the form is steadily drawing apart from the meaning, have been the indication of the elimination of the arctihectural subject and fraction of the identity (Callinicos, 1990). It is obvious that the main reason underlying for this fast change in the buildings is that we fail to become individuals and to protect our cultural merits.

Identity Classification In Architecture

The Identity Of Architectural Works: Buildings show their identities, why they have been built and what they are with visual messages such as the building of a school, a museum, sanctuary or a hospital.

The Identity Of The Architect: While listening to a musical work, if we can know whether it belongs to Mozart or Brahms, it means that a successful and marking work explains its composer’s identity and style.

The Identity Of The Society: Buildings have the identity of the society to whom they belong. For example, in Turkish architecture, oriels, jambs and buttresses form the front-line character and in Japanese architecture, there are light cloak surfaces, horizontal spaces, sloping and folded roofs used with minimalist approach (Rasmussen, 1994).

Explanation Identity Of The Building: While some buildings leave a bare affect by standing moderate, some come to the fore by drawing more attention. Neither all buildings that give an identity to the city can be dominant, nor can all of them be recessive. The basic cell and health, joy and harmony of the city texture presents the explanation of the successful cities in the history (Kuban, 1992).

Culture Identity Of The Architecture: Buildings explain the views, aesthetic options, life styles, in short, cultural identities of the people who live in and use it. Every person arranges the place or environment according to their cultures and they want the architect to do the same. If there is different culture types they miss, then they will be keen on creating buildings and surroundings convenient for that culture identity.

Formalist Identity Of The Architecture: An architectural work–whether objective or subjective – may emerge as the result of a heavily design method. As a consequence of this, either the arbitrary manner of the architecture may be dominant or objective decisions may be dominant.

Method Of Management – The Identity Of The Regime: Buildings may be given the mission to explain the management methods and ideologies of the societies. Through this, architecture may be used as both a means and a target to indicate the identity of the political regime.

Monumental Identity Of The Architecture: Architectural works also function to remember the persons or happenings.The pyramids in Egypt were constructed for pharaos and Einstein Tower by Erich Mendelsohn in Potsdam was designed to symbolize the immortality of Einstein as well as its practical function.

Quality Identity Of The Architecture: Architectural works not only involve qualitative values such as nice, successful, true, good, noble, perfect; but also involve values such as exeggerated or kitsch.

The Identity Of The City: Architectural works define the identity of the city, as well. To illustrate, the mosques define Istanbul's identity. As Mrs.Gür refferred, we should observe how the identity of the cities formed rather than what their identities are. The major features that provide the characteristics of an urban site are the tophographic structure of area, vegatation and climate features, the population density, traditions and customs of the area and the materials provided by the nature and construction techniques (Gür, 2002).

With the descriptions and theories examined; the study prepared in connection with the inherent personality, character that goes towards good, nice and right and finally identity concepts described will now go on with its investigation part.

INVESTIGATION DESIGN: CHOICE OF ADJECTIVES

Due to the fact that the matter is very extensive and it has controversial aspects, an investigation method that provides to experiment the suppositions and is depended on subject has been chosen. In the examination of architects' structure identity and character, as dependent on the defined adjectives, buildings have been chosen from the most present in the literature and in their evaluation, an experimental group was made use of. In the examination of the characteristic features of the architectural works and the affects of them on the people, the adjectives that demonstrate primarily the common and dominant aspects of structure and human character to attain statistical data have been chosen. Adjective choices have been determined not based on aesthetic assesses such as colour, texture, rate, measure; but based on the affect both the architect and his work will have. The evaluations made from these adjective groups will give information about structure character and the architect as a human being. The adjective pairs chosen have been given below in terms of their convenience for their targets:

1. Extrovert – Introvert: By means of this pair, it is aimed to find out whether the front – line characters of buildings display an extrovert manner or an introvert affect.
2. Regular – Irregular: It is aimed to find out whether the buildings are loyal to basic architectural rules or they display anomy with individual approaches.

3. Emotional - Rational: It is aimed to find out whether the buildings display a lyrical approach depending on design understanding or they display a rationalist manner with rigid solutions.
4. In Context – Out Context: It is aimed to find out whether building display a harmony with nature and culture depending on architect choice as much as topography has allowed or the building rebels the geography, climate and history.
5. Leadership – Dependence: It is aimed to find out whether architectural buildings have the properties that are innovative and qualified during design or it forms the front – line depending on the conventions and the past.
6. Strong – Weak: The power of the building is in association with its ability to explain itself in city concept, its form, tools, colour choice. It is aimed to find out whether the building can explain its power and its quality or it remains weak together with other buildings.
7. Original – Populist: It is aimed to find out whether the feature of the building reflected in the front – line is innovative and effective or it is just the continuing of a very well known manner.
8. Dominant – Recessive: It is aimed to find out whether the building is dominant enough to draw more attention than the other buildings in the environment or it displays a recessive manner having trouble in explaining itself.
9. Mysterious – Legible: It is aimed to find out whether front – lines leave a mystical and surprising affect on people or it displays a legible manner with its fair qualifications.
10. Dynamic – Static: It is aimed to find out whether the building excites the people with its front – line movements or it leaves a boring and static affect.
11. Innovative – Familiar: It is aimed to find out whether the building structure displays a different, new and unknown manner or it is the repetition of the well known architectural works.
12. Marking – Forgettable: It is aimed to find out whether the building stays in mind for a long time or it is an easily forgettable one with its temporary features.

ARCHITECTS AND FINDINGS

Eight different architects have been chosen to look through their works and their works' differences from one another. Now, we will examine the differences among some architects who lived at the same time. Here is the architects and the reasons why they have been chosen: Alvaro SIZA, Mario BOTTA, Daniel LIBESKIND, Rem KOOLHAAS, Frank O. GEHRY, Turgut CANSEVER, Doğan TEKELİ & Sami SİSA, Behruz ÇİNİCİ. As it will be more efficient, a poll and a slide show have been prepared. It has been carried out with the test subjects.

Alvaro SIZA (Portugal – 1933)

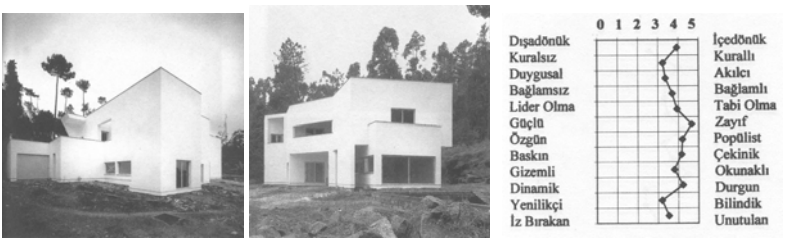

Figure 2. House in Vieira De Castro (Portugal)

Figure 3. Porto Architecture Academy (Portugal)

Figure 4. Galicia Modern Art Center (Spain)

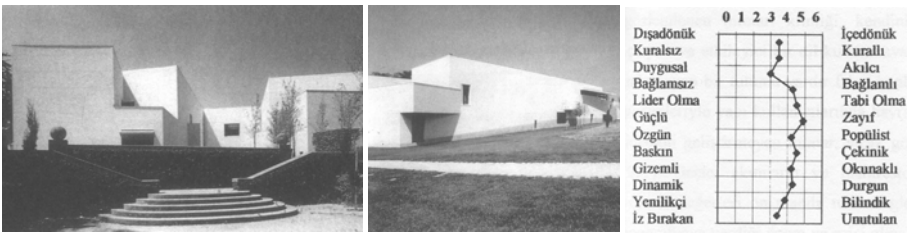

Figure 5. Serralves Modern Art Museum (Portugal)

Adjective Evaluation Of Buildings By Alvaro Siza "Strong Buildings": Siza says his designs start the moment he enters the terrain; after he gets information about the place the building will be erected, he talks to the dwellers and users during the preparation; he tries to define the area's traditional architectural features. He claims that while doing his first sketches in terrain and during gathering information, he takes action according to contradictions, agreements, being crossbreds and transformations (Testa, 1998). Siza's architectural identity observed as of 1958, when he began his work, has a manner that does not display itself at first glance, and that does not use a striking language, and that does not charm the person who meets him; but contrary to these, his works charm the users with modernist, functionalist and context – based solutions (Frampton,1997). The architect who is not egocentric, reflected his modesty in his works, as well. He was not up to temporary trends, tried to catch the global architectural identity taking the user and local values into account. Serenity and silence, his personal traits, were reflected in his buildings with various light games.

According to the results obtained from chosen samples, the most obvious characteristic of Siza buildings is that they are **strong buildings**. That the leadership is pretty high is another dominant characteristic. Another high value is context as he gives vital importance to topography and conventions. And accordingly, his buildings builded in this way are static. In buildings where the context is approached, the rate of calmness display itself equally. The attention and formalism observed in buildings which have an explanation peculiar to themselves and have an identity is highly present. His works, which are familiar, contextual, static, mysterious and introvert, are not inclined to mark for a long time.

Mario Botta (Switzerland – 1943)

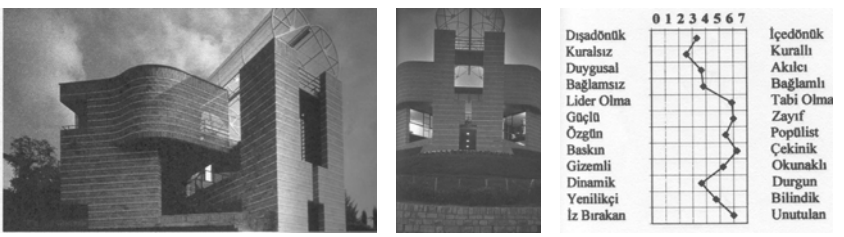

Figure 6. House Breganzona (Switzerland)

Figure 7. Office and House in Via Ciani (Switzerland)

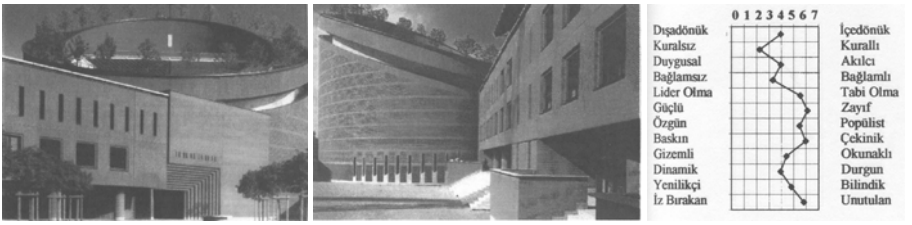

Figure 8. Evry Cathedral (France)

Figure 9. Cymbalısta Synagogue and Jewish Culture Heritage Center (Israel)

Adjective Evaluation Of Mario Botta Buildings "Dominant Buildings": Mario Botta is an exception in usual tendencies of architectural world. He has a personality which has unique features and is very hard to find in popular architects. Botta, who says he has developed individual architecture language, forwards in his own way peculiar to himself without the need to tell his architectural language with theoretical sayings, explanations and reasons. He has purified himself from prejudgements (Öztürk, 1990). Botta, known as the man who closed the age of ideologies with his view of the modern, political, sociological advances, is described as anti – ideological, anti – spiritual and anti – intellectual. The saying " man should try to find his roots in his own country, in his own cultural and historical environment." explains the design principle (Bestsky, 1994). When Mario Botta's works from 1959 to today were examined, he created his own personal style with house buildings and his style reached a maturity with religious buildings, commerce buildings and art galleries (Jodidido, 1999). Symmetric order and spaces have become his symbol. The architect, who is very loyal to the place he was born in, indicate this contextuality in his works, as well.

According to the results obtained from chosen samples, the most obvious characteristic of Botta buildings is that they are **dominant buildings**. His buildings are strong and efficient as a result of his dominance. Context is inevitable for Botta and he is highly contextual. He practiced the features of Ticino, the place he was born in, in other countries. He is an architect who will be remebered for many years.

Daniel Libeskind (Poland – 1946)

Figure 10. Jewish Museum (Germany)

Figure 11. Felix Nussbaum Museum (Germany)

Figure 12. Bremen Filarmonu Orchestra Saloon (Germany)

Figure 13. Victoria and Albert Museum addition (England)

Adjective Evaluation Of Daniel Libeskind Buildings "Original Buildings": According to Libeskind, architecture combines the past, today and future by fulling a space. He emphasizes that architectural drawings get indication identity in modern age and they have become static and silent abettors in the seductive attempt to build (Libeskind, 1989). If we could follow the indicator which is a physical carrier and go towards the inner reality of a drawing, a ver natural extension becomes clear with the reduction of representation into a figural system, even though it seems unnecessary at first glance (Panofsky, 1997). Daniel Libeskind's architectural identity, as of 1987, when he began his work, displays a similarity with his personal identity. Libeskind, who started his work life through musical training, decided to be an architect in 1970 and so, started to present his buildings retardedly (Tanyeli, 1997). Educated in philosophy and history, Libeskind successes in turning theoretical knowledge into practice. There is an aspect which combines past and today in his projects. Architecture is not only to full the space, but also to carry philosophical and spiritual meanings. In his buildings, he has been able to catch a certain rhythm spirit in contradiction and complexity.

According to the results obtained from chosen samples, the most obvious characteristic of Libeskind buildings is that they are **original buildings**. He has verified the thoughts that he has explained his architecture with an innovative and dynamic language by covering intersecting complex and contradictive surfaces with different materials. While having strong buildings, also dominance and leadership show themselves equally in his works. The architect, who follows a theoretical, historical and philosophical path without depending on topography, is away from context; but thanks to his original style and his having a musical rhythm, his works get a similar value in the level of being mysterious and emotional. Libeskind has a dominant character and he leaves an extrovert affect on people.

Rem Koolhaas (Holland – 1944)

Figure 14. Villa Dallava (France)

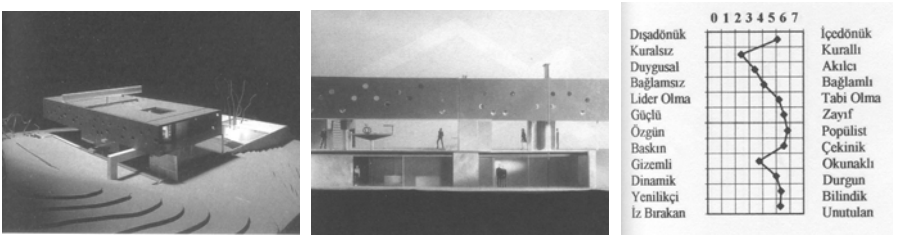

Figure 15. House Bordeaux (France)

Figure 16. Ahmere Downtown (Holland)

Figure 17. Educatorium University Building (Holland)

Adjective Evaluation Of Rem Koolhaas Buildings "Original Buildings": Koolhaas describes his own architecture with following words: " What is defining for me is to try to set up a connection with modernization as a truer action base. Architecture is a more independent art compared to other disciplines. I am looking for modernism in design. When deconstructivism is looked through innerly, I think, there is lack of sophistication, a deficiency of deepness and this composes its disability. It has an other difficulty when it is looked externally. In the aesthetic supposed to be chaotic, it is that it seems to be only trend convenient for the chaotic age. And it is obvious that it eliminates its intellectual deepness." (Jencks, 1988). Rem Koolhaas's architectural identity, as of 1982, when he started his carrier; his works have been presented retardedly as his journalist and scenarist aspects were advanced (Lucan, 1990).

According to the results obtained from chosen samples, the most obvious characteristic of Koolhaas buildings is that they are **original buildings**. The architect, who follows a different understanding in his each design, presents an extrovert and dominant values. By combining his dominance with a dynamic locality understanding, he goes forward to the one which is innovative and strong. In his bare and sophisticated buildings, his designs, which have sensitivity and delicacy have reached leadership level with visual difference. By gicing importance to context, his elaborate works marking enough to be remebered for years.

Frank O. Gehry (Canada – 1929)

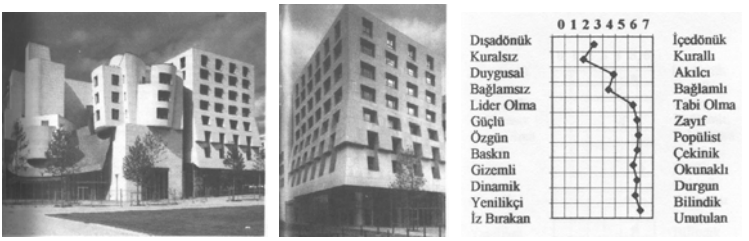

Figure 18. American Center (France)

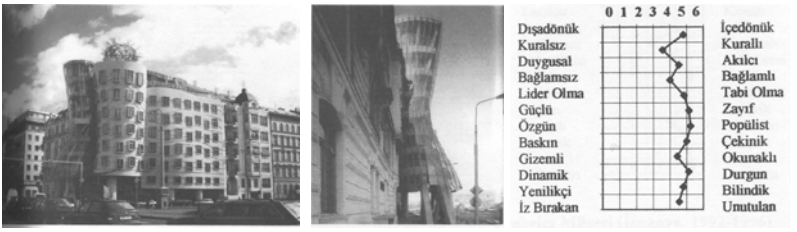

Figure 19. National Holland Building (Holland)

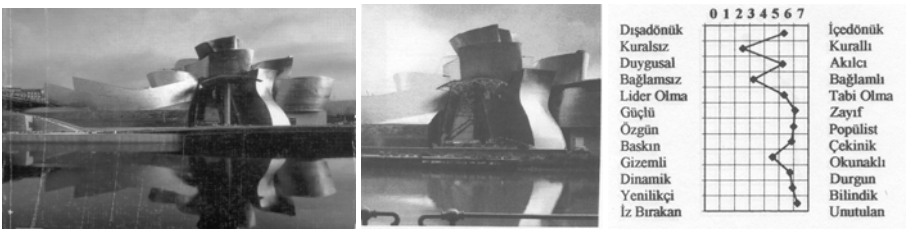

Figure 20. Guggenheim Bilbao Museum (Spain)

Figure 21. Guggenheim New York Museum (England)

Adjective Evaluation Of Frank O. Gehry Buildings " Original Buildings": With his peculiar style, Frank O. Gehry explains his carrier from the first designs to today with following words: "As a response to temples and columns which my colleagues started to imply to Neoclassic terms, I have begun to use symbolical forms. Scilicet, there is a tendency backwards in architecture. So, I went to the oldest and handled fish form which is 1 million years older than human. I started to make equipments, sculptures similar to fish. While using form of fish, I realized that the construction of two – pitched forms effected me and I made technical and practical studies on how to turn righ – angled structures into curved surfaces (Burns, 1990). Now, I can convey the structures I designed into the life as a freezed picture with a high level computer system. In my opinion, what is primary in architecture is to handle the objects as they are and to use your instinct." (Tanyeli, 1992). Frank O. Gehry's architectural identity, as of 1959, when he started his carrier; starts when art has combined with practice. The practical world he created is the detector between him and inaccessible visibles which are well away from him (Esin, 1989).

According to the results obtained from chosen samples, the most obvious characteristic of Gehry buildings is that they are **original buildings**. Gehry may be described es the architect of "bests". His extrovert values are in low levels by completing his being mysterious with an emotional visuality. His works, which he has carried out through a high – tech computer system, have a high attention and formalism. And his works are marking enough to be remembered for a long time.

Turgut Cansever (Antalya – 1921)

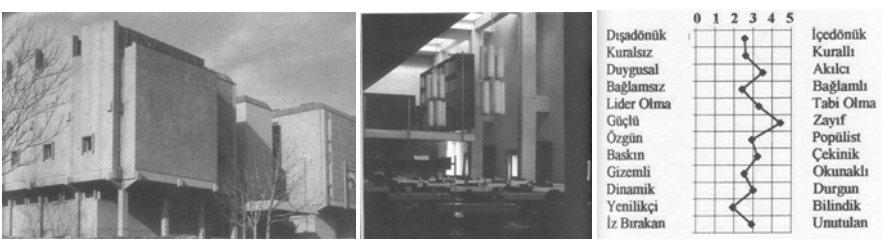

Figure 22. Turkish History Instutition (Ankara)

Figure 23. House Ertegün Restoration and Additonal Building (Muğla)

Figure 24. Underwater Arheology Instutition (Muğla)

Figure 25. Demir Resort (Muğla)

Adjective Evaluation Of Turgut Cansever Buildings " Strong Buildings": The name of Turgut Cansever has been heard with the arcihtecture awards he won. He explains his thoughts on architecture with following words: " A work of art emerges as a result of presence – universe imagination's reflection in buildings. Every decision the artist arrived while creating his work, forms according to his imagination about presence and the powers of imagination. With these features, art takes its part in the field of religion and morale. Responsibility and consistency emerging from the wholeness conscious of form and presence imagination, is the step turning mankind into human. So, during the fromation of architecture, all of the presence matters shoul be taken into account altogether. The wholeness of presence rules and powers create everything and provide it to continue. The concept of wholeness is the most eminent of all." (Cansever, 1992). Cansever's architectural identity examined as of 1949, is observed with his directing his conservative personality to his works in a

consistent, conventional way. To provide the eternal place feeling, there is a direction to sky in his works (Madra, 1989).

According to the results obtained from chosen samples, the most obvious characteristic of Gehry buildings is that they are **strong buildings.** The feature that makes his buildings strong is that he considers human and architecture as a whole and handles them in a context. Light passes he used in his buildings, front – line rates convenient for human measure and nature's obedient texture increase the context value according to the studies carried out and accordingly it brings together the values of calmness, being subject, recessiveness and being introvert. The architect, who has the attention he himself created according to his own values, presents legible buildings with a firm explanation. With his use of local motives, conventional plans, he shows populist approaches in a communist manner and he has a front – line value in equal value with this one. Like every other dependent and calm buildings, Cansever's works is not permanent in memories.

Doğan Tekeli & Sami Sisa (Isparta – 1929 & Istanbul – 1929)

Figure 26. KTU Academic Center (Trabzon)

Figure 27. Lassa Tyre Factory (Izmit)

Figure 28. Halk Bank General Management (Ankara)

Figure 29. Metrocity Housing and Shopping Center (Istanbul)

Adjective Evaluation Of Doğan Tekeli & Sami Sisa Buildings " Strong Buildings": Doğan Tekeli and Sami Sisa present a very rare example of a team work. They give importance to the concept of continuousness and they explain their views on architecture with these words: " Our primary architectural aim is induction and functionality. We equalize technical development and perfection with the concept of civilization. Before starting the design, to examine the conditions of the place at first and, if there is, to find reference points which will form architecture are important. In architectural platform in which there are opportunities to product lots of factories and industry buildings in our country, our objective is to present healthy designs with mild passes by reducing the architecture not to machine but to human measure. We are anxious to gather structural, technological and functionalist anxieties together." (Tekeli, 1990). Their architectural identities, as of 1954, when they started their carriers, their sharing the life in most fields such as military service, education and occupation helped them to produce high quality works (Tekeli, 1992). In the strong building solutions, they were able to combine the concept of continuousness with the technology.

According to the results obtained from chosen samples, the most obvious characteristic of Tekeli & Sisa buildings is that they are **strong buildings.** They have dominant and leader building character. The less innovative and dynamic their designs are, the more possible that they are going to be forgotten.

Behruz ÇİNİCİ (Istanbul – 1932)

Figure 30. Güllük Resort (Muğla)

Figure 31. Soyak City (Istanbul)

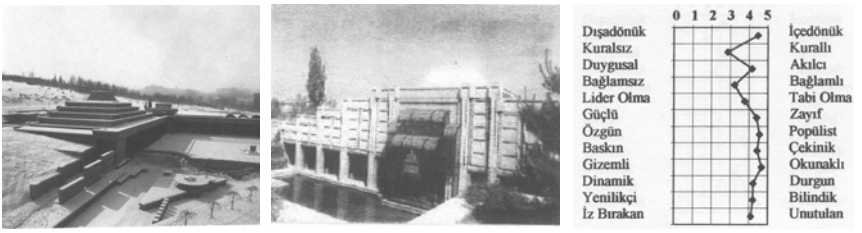

Figure 32. The Mosque of Great National Assembly of Turkey (Ankara)

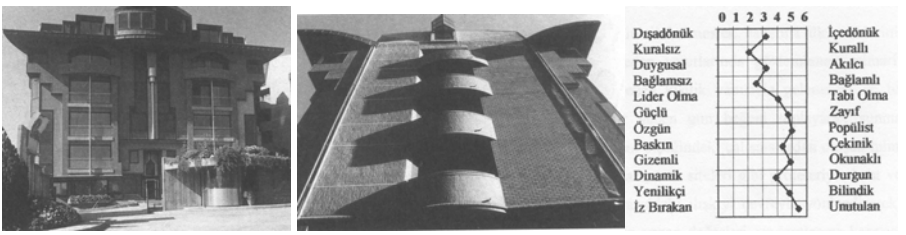

Figure 33. Mercan & Platin City (Istanbul)

Adjective Evaluation Of Behruz Çinici Buildings " Strong Buildings": Behruz Çinici, with his 46 years experince in architecture, explains his point of view on architecture with folloewing words: " I have always looked for new messages for the future generations with globalism in one side and Anotolian – Turkish architecture's search for thousands of years os association and essence. I respect the nature and society and depended on the traditions, they are not a language to speak for me, but the most valuable words to which I always apply. It is no doubt that architectural works are products of thought and they conceal inside the question and the answer together inside themselves. I was up to neither ampiric data of the realism nor ideological data of idealism. I always believed that we can get rid of the complexity of realism which invaded us only by means of ideas and mental exercises. Architecture is independent from visions rather than simple forms and styles. The main value in architecture is the place. And its basic function is human." (Tanyeli, 1999). Behruz Çinici's architectural identity, as of 1956, when he started his carrier; is loyal to his past and trusts in his identity. And he is in a traditional and consistent continuousness and he presents his architectural works with admire day by day (Güzer, 1989).

According to the results obtained from chosen samples, the most obvious characteristic of Çinici buildings is that they are **strong buildings.** The architect, who handles our traditional motives with a modern interpretation, has high values with his original and rational solutions. He is in a dominant manner with the symbolic front – line order he indicated. Çinici, who thinks he is in a global architectural identity, respects the concept of context and forms his works on this direction. The architect, who also has leadership, have had the opportunity to practise his projects he presented combining history and architecture, in city occasions.

RESULT AND EVALUATION

As the abstarct of the study carried out to concretize the relationship between the identity of the architect and the identity of the building, we may make the evaluation of adjective – architect – building trio as following:

Alvaro Siza, with his personal traits like modesty and not overwhelming, formed the building characteristic with calm, silent and convenient for the human measure in his buildings. He gave the feeling of strong buildings with deaf surfaces, blind front – lines, brave spaces and amorph galleries.

In the designs, carried out in different countries, of Mario Botta, known with his loyalty to Ticino, the place he was born in, the fact that he used traditional materials and geometrical forms is the most obvious evidence of his being contextual.

Daniel Libeskind, who started his carrier with the music education he got and then with the investigations in the fields of history and philosophy, combined musical rhythm with the history and philosophy while designing his architectural structures and this proves that he reflects own personal identity to his works.

Rem Koolhaas, who started his carrier in another field like Libeskind and chose architecture afterwards, displays his journalist and scenarist aspects by handling

each building in a different way. Architect's buildings having firm plans according to his general manners, have been presented to the users with a rational explanation. Koolhaas has been evaluated by being classified as original buildings.

Master architect Frank O. Gehry, who started his carrier as a truck driver and chose architecture afterwards, obtained architectural forms coincidentally as a consequence of using forms of fish, and his personal traits like exeggeration have been reflected in his works, as well. Gehry, who describes architecture as a freezed picture and whose buildings remind the people of a city sculpture, forms his architecture's characteristic with pitched, bended and organic lines. Gehry designs, classified as original buildings with the impression they left on people, are not going to be erased from the memories of people for a long time.

Turgut Cansever, who turns his conservative personality that develops as parallel to his life style and his thoughts, into whole and conventional elements and directs his design understanding, is seen to reflect his manner and characteristic to his buildings. Cansever, who left the impression of strong building with the studies carried out on people, protects his conventional and Sufistic thought.

Doğan Tekeli & Sami Sisa, who display the best example of team wotk, succeeded in producing very consistent and rational buildings thanks to their sharing a common life in such fields as military service, education and their business carriers. They made their buildings rationalism and modernism by combining the continuousness with the technology in their strong building solutions. Their works, which leave an impression of strong buildings on people, gained their characteristic aspect with their functional solutions.

Behruz Çinici, who presents his architectural works with his loyalty to the past and trusting in his personality in a traditional and consistent continuousness, forms typical characteristic feature by using light games, angles in his buildings in which decent geometry is dominant. Çinici, who leaves strong buildings according to the result of the study in which their affects on people were investigated, has carried his characteristic into his buildings, as well.

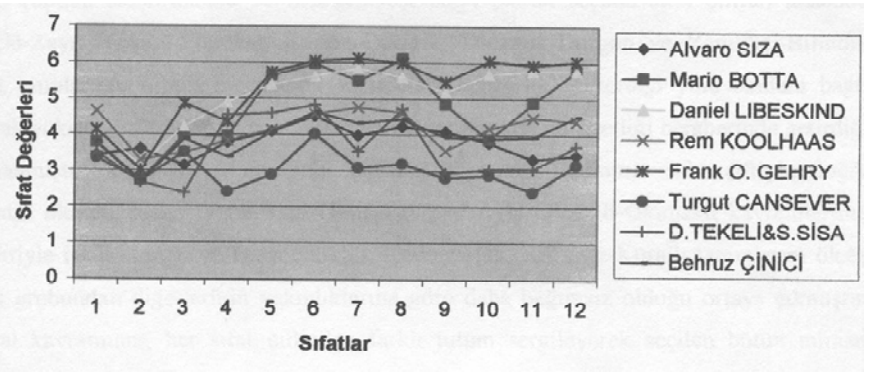

Figure 34. Architect and Adjective Scale

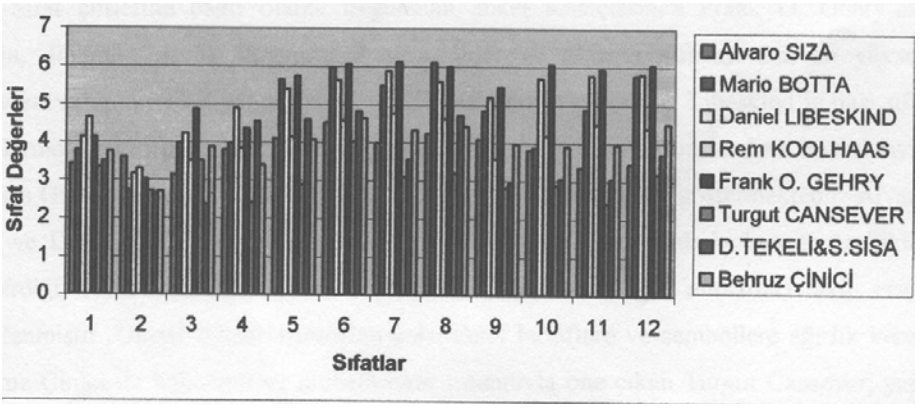

Figure 35. Architect and Adjective Scale

Study fairly shows that architect's designs and structure characters form according to their own personal traits. Today, when pluralism and originality is dominant in architecture, the architect who protects his own path and his designs that gain a character as a result of the reflection of architect's personal traits into his building are remembereb by people and they become very active.

In the concept of studies carried out, the traits that make the architect right and good direct our current architecture and the obvious and distinguishing features individually emerged give him his architectural identity. On the other hand, the anxiety of form of architect in this time of fast construction leads to the elimination of the subject and the break – up of the identity. And finally I think just not to eliminate the society, architects should not forgo their personality by reminding you of Comfort's words: " The person who has not a character is just a tool."

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BETTERMENT OF THE CONTEXT OF DESIGN SO AS TO IMPROVE THE USAGE OF CAAD AT DESIGN OFFICES

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ABSTRACT

Computer-Aided Design (CAD) is used as supporting tool during design and construction documents preparation process. CAD enables producing, keeping, sharing and using of knowledge again and again. An important point is how the architectural product is produced in design process. If the architectural design documentation process starts previously determined standards and rules, there will be fewer problems that are faced in the future. Same technical problems of time management, productivity, and sharing of knowledge will occur because of working with different disciplines such as structural engineering, mechanical engineering, electrical engineering etc. Above mentioned problems force us to organize and to document information flow among different disciplines. This was the starting point for this study.

There is a need for a common architectural design office standard manual which is a common language of the usage of different software's in order to utilize best of CAD softwares possibilities. Another aim was to increase the personal productivity so as to achieve expected efficiency from CAD software. Fast access to information will be realized and there will be a reliable data storage system for the design professionals. By this way, a prototype model for computer-aided architectural design (CAAD) office standards will be created.

To realize this, at the beginning, face to face interviews were executed with designers in the architectural offices located at various cities in Turkey. The result was interesting. In spite of complicated architectural design/production activity and large team-works activities, there were almost no "systematic design office standards" in the offices that were interviewed. Then an extensive questionnaire was distributed to the architectural offices all over Turkey to expose the problems of team-work and pitfalls of CAD usage.

After analyzing the questionnaire, an "architectural design office standards manual" has been prepared. In this paper, mentioned manual will be introduced and will be opened to discussion.

Keywords: Computer-aided architectural design, CAAD, Drawing standards, Team work, Design office manual

INTRODUCTION

Today, traditional methods of architectural project production have been left out and digital production methods have been started to be used. This trend effected the design process and design organization as well. New methods of production brought new possibilities and easy access to reach information. It is now much easier to make group study compare to traditional way. Information, which is produced digitally, is accessed easily many professionals would participate the same projects without time and place limitations (Karadayi, 1990).

Most common CAD softwares which are used in architecture and other engineering professions are AutoCAD and ArchiCAD in Turkey. As well known, CAD softwares help to produce share and re-use of information In order to utilize CAAD softwares, one must possess good information system management model. This paper introduces such “CAAD office standard’s model” for AEC applications. The important points are to have proper plots, efficient use of human and other sources, and easy information share with architecture and other disciplines. This study focuses especially on efficient use of CAAD softwares by architects.

ORGANIZATION OF DIGITAL PLATFORM IN ARCHITECTURAL DESIGN

The digital platform provides endless options to the end user. By well organization of the digital platform, best performances will be extracted. The CAAD standards could be defined as rules, regulations, methods, and office manual to proceed AEC drawings, information, reuse modification and share of them (URL-1, 2005).

Because the increasing usage of CAAD softwares, architectural firms demanded urgent need for CAAD office standards. Standardization of CAAD software usages brings harmony, accuracy and easy access to technical information. Below is a list of CAAD standardization’s benefits (URL–2, 2005);

- Drawings that are produced at the first stage can be used second and later stages without re-producing them. Therefore, the information flows very fast and efficient.
- Drawings become more reliable and openly accessible at any time and place.
- Less time is spent for changes and additions to the projects.
- A well organization for drawings lessens the possible mistakes, errors and defects.
- Architectural and other engineering disciplin become more productive. Teammates, who are working on a same project, work in a harmony. The number of problems is reduced because of well communication between all parties.

PREPARATION OF THE MODEL

At the beginning, an interview survey is done in architectural offices in order to get the big picture. Generally, there was lack of a systematic approach to design process in its entirety. Even during team work, there were many defects. Starting from this point, the intention was to create a “standard model” for computer-aided architectural design offices. Then, this model would be architectural design office standards manual. In order to find professionals’ problems and needs an extending questionnaire was prepared. The questionnaire was distributed to 30 architectural firms which use CAAD system in their offices in different cities in Turkey (e.g. Istanbul, Ankara, Izmir, Bursa, Samsun, Trabzon, Muğla, and Giresun)

After receiving and evaluating the questionnaire results, needs of the architectural design firms are determined and listed. Then a draft CAAD design office standards in selected offices is done. This draft office standards manual is distributed to 5 chief designers in selected offices. Their opinions were asked during several face to face and telephone interviews. After gathering all the critiques and comments of chief CAAD officials, final CAAD design office standards manual is completed.

Existing CAAD design office standards from some other countries are inspected and studied. The major sources of universal standards were AIA’s CAD Layer Guidelines Architectural Graphic Standards, CSI’s Uniform Drawing System, and NIBS’s U.S. National CAD Standards. They mingled with the needs of Turkish AEC practitioners. Since the AutoCAD is the most common CAAD program in Turkey, sample cases are applied with this commercial software. AutoCAD is common among AEC firm because of its universal design capabilities. The software can be tailored for personal needs. AutoCAD was flexible enough for our case studies (Yalçınkaya, 2005).

A MODEL FOR COMPUTER-AIDED ARCHITECTURAL DESIGN

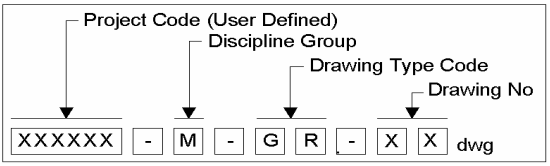
CAAD drawing standards are consists of file management and graphic standards.

CAAD File Management

Drawing Files on Electronic Environment

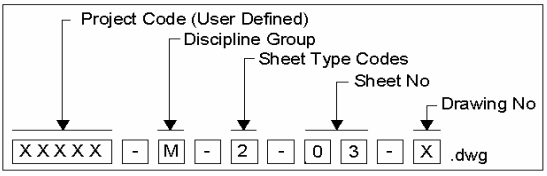
CAAD drawing files consists of two kinds of information model files and sheet files. Model files contain all the information about a building to be constructed, for instance columns, walls, doors etc. All the physical building component information is in this file. Sheet files, on the other side, are used only for plotting. Sheet file contains information about margins, border lines, title block etc. It consists of one or more model files (URL–3, 2005).

All these files must be saved and archived for future use and other legal procedures. Therefore, they may be named systematically. The files are named as shown in Figure 1 and 2 (URL–4, 2005).



Project Code	:	First characters present project code. The definition is made by draftsperson (no space limit)
Discipline Group	:	Presented in Table 1. Represented in single character. (M: Architecture, S: Structural)
Drawing Type Code	:	Presented in Table3. Represented in two characters (KP: Floor Plan, GR: Elevation).
Drawing No	:	It is represented in two number character (e.g. 01-99)
Example	:	Ministry of Health-M-GR-01.dwg ; (Ministry of Health Hospital, Architectural, Elevation, Proposal1)

Figure 1. Naming of model file



Project Code	:	First characters present project code. The definition is made by draftsperson
Discipline Group	:	Presented in Table1. Represented in single character. (M: Architecture, S: Structural)
Sheet Type Codes	:	Presented in Table 2. Represented in single character. (Plans: 1, Elevations: 2)
Sheet No	:	Represented in two characters (01–99).
Drawing No	:	Represented in single character.
Example	:	Joe Doe House-M-3-O2.1dwg (Joe Doe House, Architectural, BB Section , Proposal 1)

Figure 2. Naming of sheet file

Table1. Disciplines

Designator	Discipline Groups
G	General
M	Architectural
S	Structural Engineering
P	Landscape Architectural
İ	Interior design
E	Electrical Engineering
T	Plumbing/Mechanical
D	Other Disciplines

Table 2. Sheet Type Codes

Sheet Type	Designator
General	0
Plans	1
Elevations	2
Sections	3
Details	4
Schedules	5
User Defined	6
User Defined	7
3D Views	8
User Defined	9

Table 3. Drawing Type Code

Discipline Groups	Designator	Description
All Disciplines		
	KP	Floor Plan
	VP	Site Plan
	TP	Alteration Plan
	CP	Equipment Plan
	GR	Elevation
	KS	Sections
	DT	Details
	ML	Schedules
	3B	3D Views
Architectural		
	TP	Ceiling Plan
	DP	Furniture Plan
Interior design		
	TP	Ceiling Plan
	BP	Finish Plan
	DP	Furniture Plan
Structural		
	KP	Tablet Plan
	TP	Base Plan
Plumbing/Mechanical		
	TP	Fixture Plan
	KP	Control Plan
	BP	Piping Plan
	IP	Heat-Ventilation Canal Plan
Electrical		
	ZA	Low Current
	KA	Power Current
	YC	Loading Rule

There is a template file addition to above mentioned files. A template file contains standard settings. Many routine jobs are previously set up before starting a drawing.

Template files can be created for every paper sizes and plot scales. Many settings such as dimension and text, styles, and other variables could be previously designed and saved. This process saves quite a time and all drawings become consistent with each other (URL–5, 2005).

Archiving of Drawing Files

File folder structure is organized for every size offices. The purpose of doing this is to standardize the process. Figure 3 shows the E-CAD (CAD drawings order in electronic environment) (URL–6, 2005).

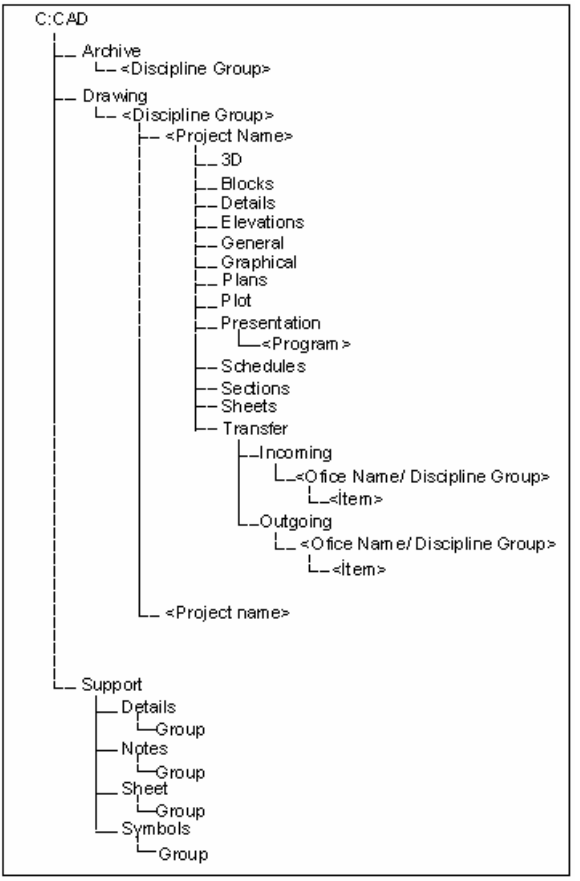


Figure 3. E-CAD subfolder overview

File folder tree consists of 3 major folders: Archive, Drawing and Support

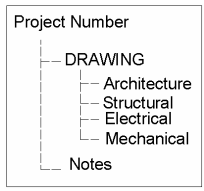
Archive: Archiving is necessary for legal and practical reasons. When the archive files transferred to CD, tape, backup devices, the files should be saved as read-only format. Archive files are named with date information YYMMDD (last two digits of year-month-day), Concept or Final project letter (C for Concept, F for Final), and last three digits numbers. For example: 990204F012 (04 February 1999 is the date, Final project and number: 012)

Drawing: Files containing the actual projects drawing (2D or 3D). Discipline Groups list is given in Table 1. Subfolder is created for each discipline and related files are saved into this subfolder or sub-subfolders.

Support: Title blocks, text files and shared files are kept within this folder. These files should be accessed used by every team members (URL–7, 2005).

CD Label and Folder Structure

CD's must be labeled accordingly in order to proper archive. Generally file folder structure of the CD is shown on Figure 4. The project must be saved on the CD as read-only format.



CD Label

Firm Name	:	Person or institution's name
Project Name	:	Name of the project is written
Project Issue/Phase	:	E.g. house, hospital, school etc. If a project saved at a several stages this is used.
Project Number	:	Special number which is designed for each project
Date	:	Saving date of the project to the CD
CD No	:	Number of CD's that belongs to same project
Drawing	:	Shows the drawings that belong to what profession.
Consultant Name, Phone and Fax No	:	Consultant's name an telephone number, if there any consultant

CD Folder Structure

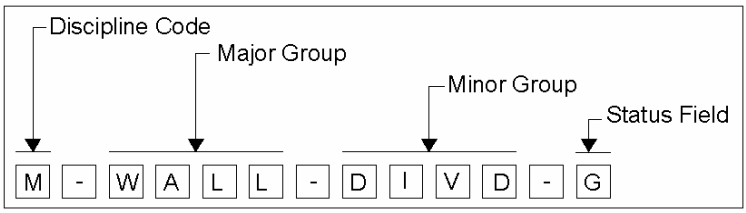
Project Number	:	Special number that is designated to each
Drawing	:	Drawing within the CD
Notes	:	Explanations about the projects

Figure 4. CD labeling and CD subfolder overview (URL–8, 2005).

The Layers

The layers are basic elements of CAAD and they are efficient way of organization of variety of information. The layers provide sharing and co-ordination of information easily.

The layers are important for organization of information. It could be understandable by every discipline. Contents and naming of layers are also important. AIA developed a system for layer naming. We have adopted and adjusted this layer numbering system. Layers should be organized in a hierarchy. It should be in alphabetical order and abbreviations should be easily remembered. Since the selected system is modular, the user can add and delete names according to his/her needs. These arranged layer list bring extended flexibility to users. If a user cannot find proper layer name, he/she can add new layers to sub groups (See Figure 5) (URL–9, 2005).



Discipline Code	:	Represented with one character (see Table 1, M: Architecture, S: Structure)
Major Group	:	It defines building components (door, window,etc) It consists of four characters
Minor Group	:	İt defines major group mode detailed, four digit characters are used
Status Field	:	It is reserved for new unpredictable cases (see Table 4) (URL17- 2005).
Example	:	M-WALL-EXTR-K (Architectural Exterior walls, Existing to remain)

Figure 5. A sample naming of layer

Table 4. Status Field Presentation

Layer Name	Kod	Status Field Description
*-****-C	C	New work
*-****-K	K	Existing to remain
*-****-Y	Y	Existing to demolish
*-****-I	I	Future work
*-****-G	G	Temporary work
*-****-N	N	Items to be moved
*-****-T	T	Relocated items
*-****-S	S	Not in contracts

Note:'*' sign discipline group and **** sign major group

Graphics Standards

In order to have efficient CAAD office order, graphic standards are also important. Graphic representations consist of lines, arcs, symbols, texts, and their height/weight, color and styles.

Standards for Lines

The type and thicknesses of line represents information about the object. CAAD system provides many possibilities in terms of the thicknesses of lines. 8 different line (0.18, 0.25, 0.35, 0.50, 0.70, 1.00, 1.40, and 2.00) thicknesses are defined (URL–10, 2005).

Defined thicknesses are matched with colors. Main purpose of using colors is make easy understanding of drawing on the computer screen. The color codes also help to get plots and thicknesses much easier. Table 5 shows pen thicknesses which are defined as 10 and multiplication of 10's. Rest of the pen thicknesses, repeat of first 10 numbers until number 200. This usage of different colors for the same thicknesses of lines provides freedom to choose among many colors (URL–6, 2005). For example, for pen thickness of 0.25mm there is variety of color codes: 2, 12, 22, 32, 42, 52, 122, and 152 etc.

Table 5. List of line thicknesses depending on colors

AutoCAD Color Palette Number	AutoCAD Color	Plot Color	Line weight /mm
1	red	black	0.18
2	yellow	black	0.25
3	green	black	0.35
4	cyan	black	0.50
5	blue	black	0.70
6	magenta	black	1.00
7	white	black	1.40
8	dark grey	black	2.00
9	light grey	black	User defined
10	-	black	User defined
from11 to 20		black	Defined thicknesses from 1 to 10

Standards for Texts

The text in the drawing should be read easily. For this reason in any scale of drawing, the text height should not be less than 0.25 mm except special cases. Standard text height for the text is selected as 2.5, 3.5, 5 and 7mm. Table 6 shows the list of text heights varry depending on usage will be decided by project manager. Table 7 show text heights (URL–12, 2005).

Table 6. Text styles depending on height and characters

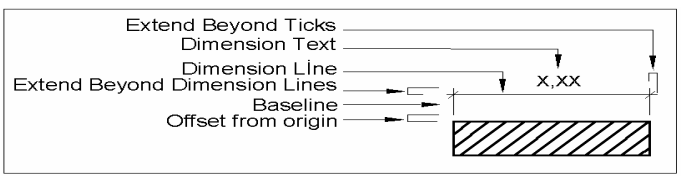
Usage Aim	Text Size	Text Font
Dimensions	2.5mm	Times New Roman
Explanatory Notes	2.5mm	Times New Roman
General Notes	3.5mm	Times New Roman
Space Names	3mm	Times New Roman
Schedules	2.5mm	Verdana
Axle Presentation	5mm	Verdana
Basic Titles	5-7mm	Arial
Sub-titles	5mm	Arial
Micro-titles	3.5mm	Arial

Table 7. Text font sizes depending on plotted scale

Scale	Plot Text Size					
	2	*3*	*4*	*5*	*6*	*7*
1:200	400	600	800	1000	1200	1400
1:100	200	300	400	500	600	700
1:50	100	150	200	250	300	350
1:25	50	75	100	125	150	175
1:10	20	30	40	50	60	70
1:5	10	15	20	25	30	35
1:1	2	3	4	5	6	7

Dimension Standards

Text styles of the dimensions are chosen as Times New Romans. Dimensions text must be adjusted according to the plotted scale of drawing. Standard sizes and other information of dimension elements are given in Figure 7.



Dimension Components	Size
Line weight	0.25mm
Arrow size	0.5mm
Text height	2.5mm
Extend beyond ticks	1-2mm
Extend beyond dimension Lines	3mm
Offset from origin	1-2mm
Baseline spacing	12mm/8mm
Offset from dimension line	1mm

Figure 7. Sizes of dimensioning elements

RESULTS

Computer technology has been effected the architectural design process. Design team can work without the limitations of space and day/night restrictions because of networking capabilities all over the world. Therefore, time becomes more important and harmony of the design team becomes vital. Many people from different disciplines get in and out of the same project in any time, thus there should be a set of physical and written project documentation production. For a well communication over the electronic environment, a common technical language must be created. Therefore we intended to provide this common technical language.

Communication is very important, especially on fast track production lines. In order to have proper, correct and at the same time fast design production, the team should use common drawing formats, common graphic standards (Çetiner, 2006). After our questionnaire and survey study over architectural firms in Turkey, we noticed there is no common information sharing standards. There are weak in-house standards in single architectural firms on the other side. But this is not enough for complete standardization .Even though the CAAD softwares'provides many advantages.

This study is completed as a response to the problems mentioned above. A CAAD standard model is created. The purpose was to prevent unnecessary time spent for redundant tasks, and it provided a similar graphic language for the entire project. At the end the authors expected to have a standard model for architectural offices in Turkey. Presented CAAD standard manual can be used by medium to large sized architectural offices which use CAAD system for project production. Besides institutional benefits, personal usage is also possible. This manual can be used by its entirety as well as partial usage. The standards brought not only a common and proper language but also brought correct usage of CAAD softwares'.

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DESIGN ISSUES

Moderator: Allan Parsons

Design, Emotional Intelligence and Creativity
Emel Düzgün Birer

Can We Map Our Feelings for the Quality of Urban Places?
B. Ayşegül Özbakır

DESIGN, EMOTIONAL INTELLIGENCE AND CREATIVITY

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ABSTRACT

Architecture is a profession that is as general as it is special, as subjective as it is objective and as universal as it is individual. All this controversy embodied by architecture is also reflected on its education. In the pursuit of special from general, subjective from objective and finally individual from universal, special attention must be paid on the education of the "individual". Creative thinking is seeing problems in the existing knowledge, advancing novel ideas and hypotheses, coming up with new ideas, recognizing the relationship between ideas and developing new combinations. Essentially, creative thinking is a design approach. In the first half of the 20th century, researchers such as Sigmund Freud, Alfred Adler, Abraham Maslow and Wayne Dennis portrayed creativity as a complex sum of personal talents. Adler depicted creativity as the power of motivation towards a subject and as a need to satisfy unsatisfied urges within the psychodynamic perspective. Within this perspective, motivation is a component of emotional intelligence.

This study treats creativity as a design approach and explores its relationship with emotional intelligence.

Keywords: Emotional intelligence (EQ), Creativity, Design, Motivation

INTRODUCTION

The character of man is one in which experience is kept in memory for a long time. Each of these experiences makes up a stimulant for human beings. Human beings are able to make a new connection with everything that they see, hear, touch and smell when searching for a solution about any matter by keeping their minds busy. The more they face more stimulants and react the more their memories get richer and the more their nervous system will improve. When they come across new stimuli by the second, they try to make a connection with previous stimulant by using their memories. These connections can be both easy and complicated. Complexity of the connections reflects the creativity. As a result of the studies made in this field, it is observed that the creativity is different from the intellect that was given much more attention previously. Creativity, however, can be significantly increased with education.

In a study performed by Vallach and Kagan (1984), the connections between creativity and intellect of an individual in an education environment have been tested. According to the results of this study;

1. The ones having low creativity and high intellect are able to combine the freedom and comfort with self-control.

2. The ones having high creativity and low intellect might go into a conflict with the school environment. They can see themselves as deficient or invaluable.

3. The ones having low creativity and high intellect are, at last, addicted to the school success. They spend a lot of effort to be successful and they get hurt when they fail.

4. The ones having low creativity and intellect however, have trouble adapting to school and fall into chaos (Karakelle, 2000).

All human beings can come up with creative products if they receive creative education. With this understanding, many questions may come up to our minds. What is creativity? What are the things effecting the creativity? How can stimulant change with human being development etc.? Engle and Snellgrove (1977) point out two groups of factors having an important role getting human being's attention. First group the factors relating to stimulant. And the second group; the ones relating with the person. The main factor of the relating to individual is motivation. Motivation is a component of the emotional intelligence.

EMOTIONAL INTELLIGENCE AND CREATIVITY

Creativity in a wide meaning is to destroy existing taboos, be open to others' experiences, exceed ordinary things, take a step to unknowns, break the imposed opinion line and introduce a new one, come up with various alternative solutions for a specific problem, discover something new, make a new connection or make connections between existing feelings, introduce a new opinion and to invent an unknown technique or a method (Rıza, 2000). Stimulants are the things that intellect comes across with by using five sense organs that are communication channels (Rıza, 2000). That the individual is careful with a stimulus and gets reactions takes place in individual's memory as a specific experience. In direct contradiction to this, that the individual is not careful with the stimulus means that this stimulus has no place in individual's life. Stimulus can be anything. Creativity, as the problem of this stimulant, is based on making a connection between them.

The sources of the emotions are fundamental needs. Afterwards, an opinion is defended as that the stimulant makes up emotions and make us move and then that the emotions, connected to the values, are ruling the life. Now that the stimulants are the channels for us to reach our aims, the question "what is directing our behaviors" has directed human beings to search for the sources of emotions and feelings and has started arguments on individual's excellence and weakness. At the present day, psycho-physiology and MR studies are focused on the differences in anatomic

structures of the brain creating the emotion and feeling in various cases. In the studies performed by Damasio and his friends, it is shown that the cognitive activities and emotional activities in brain are integrated (Kaynak, 2002). Emotions move trust, entirety, empathy, flexibility, reliability, creativity, cooperation and initiative. Emotions are motivating; emotions determine the destination to be gone. The word “motere”, root of the word "emotion" derived from Latin, means moving.

In the field of education, it is expected for students to be successful. Here we come across with "inner motivation", as a concept, that is reminded by this expectation. In this case, it is not possible to differentiate the “inner motivation” concept from the emotional intelligence. Because, it might be expected for individuals having emotional intelligence to perform their inner talents without any external factor and the individual motivation is the pass to the inner action. Developments in psychology display new inventions to explain human being's behavior and mental structure. "Emotional Intelligence" concept which is found out that it is much more important that IQ to reach to success in psychology, displayed by Goleman for the first time, is a matter to be examined within the content of study.

“Emotional Intelligence (EQ)” conception, the most important step taken relating to the emotion in recent years, was taken in hand by Reuven Bar-On in 1988 for the first time. EQ conception used by John Mayer has been later on developed by Daniel Goleman who is the responsible psychiatrist for the matters of behavior and brain science. Goleman (2002) whom tried to prove that the EQ skills are more important than IQ, called as cognitive intellect, in his book, "Emotional Intelligence", published in 1995, defines EQ as: “EQ is that the individual understands her/his own emotions, approaches with empathy to others' emotions and arranges her/his emotions to make life richer.” According to Goleman, the thinking part of the brain reproduces from the emotional part of the brain. The thinking and emotional parts of the brain usually work together in everything done and being successful and happy are obtained with emotional intellect skills of human beings. In all types having more than a basic nervous system, the most primitive part of the brain is the brain handle covering the top of the spinal cord. This root arranges the fundamental vital actions of the brain. It can not be said that this brain thinks or learns. From this primitive root, called as brain handle, emotion centers have grown. After millions of years, since the complicatedly curved cambiums, which have made up the upper layers, formed shaping as onion, thinking brain, in other words “neo-cortex"(new crust) has formed. Since thinking brain is more developed than the emotion centers, the connection between those are explained: emotional brain existed much more long time ago than rational brain. With the development of the first mammals, the basic layers of the brain had formed. These layers covering the brain handle is called as “Limbic" system that means ring. This new nervous area has added emotions to the brain repertoire. Limbic system has developed two important skills in time: learning and remembering (Goleman, 2002).

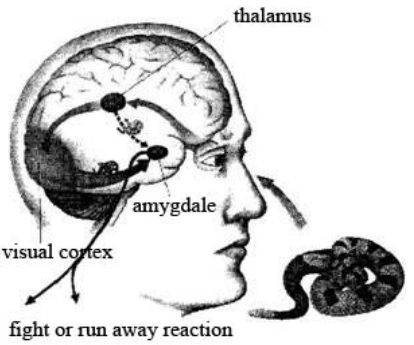

Figure 1. Reactions in brain to the visual signal (Goleman, 2002, p.35)

“Amygdale” is an almond shaped mass formed from interconnected structures located under the limbic ring and above the brain stem. As each being on one side of the brain, there are two amygdales that are close to the side part of the head. There lies in the center of emotional intellect, the connection relating to the process of amygdale and neo-cortex. According to a study made by LeDoux, it is shown that the sense signals go to thalamus before going to brain and then reach to the amygdale with single synapses. Sense signals go to thinking brain neo-cortex from thalamus with the second signal. This situation ensures amygdale to react before neo-cortex which is completely sensing the data after evaluating them in different levels of the brain circuits and at last is starting a finer tuned reaction. This situation explains that the emotional brain is reacting before rational brain (Figure 1) (Goleman, 2002).

When EQ (Emotional Intelligence) is evaluated as positive behaviors range, there are five main factors affecting the behaviors of an individuals and developing in this way is possible by trying to use the components in the most effective way. These are:

1. Self-Awareness
2. Self-Regulation
3. Motivation
4. Social Skills
5. Empathy

In the first half of the 20th century, researchers such as Sigmund Freud, Ernst Kris, Alfred Adler, Abraham Maslow, Wayne Dennis has taken creativity in hand as a whole complex of individual skills in their studies. Adler, has seen the creativity, in psychodynamic opinion, as the motivation power to a subject and need for balancing the emotions which they feel incomplete. Creativity is taken in hand as a traumatic experience that improves starting from childhood and as situations occurred suddenly and unexpectedly. In this approach, explanations made by making subconscious and connections between motivation and creativity have formed a beginning for studies which will later on taken in hand as humanistic opinions (Takala 1993; Collins and Amabile 1999; Kahvecioğlu, 2001).

Other studies for examining the creative personality, also known as humanistic approaches, on the contrary to psychoanalytic opinion, have refused the acceptance of creativity to be formed outside of the ego control of the individual and with unconscious behaviors. Creative period, within the thinking action period, has defined the rotations, moving themselves in the brain, as the formation of new patterns that are moving with gathering function in a conscious way, from the matter taken in hand, and connected to the motivation forming up at the result of structure of the individual and external factors (intrinsic and extrinsic) (Takala, 1993; Kahvecioğlu, 2001). At this point, creativity is a part of the emotional intelligence.

With psychoanalytic approach, formation of the “creative opinion" has been defined as the formation of rational discretion that is for intended purpose right after unconscious discrepancies and primitive forcing powers in brain occur unconsciously and suddenly and as analyzing the content formed unconsciously (Hebb, 1972; Finke and others 1992; Adams, 1998; Kahvecioğlu, 2001).

DESIGN, EMOTIONAL INTELLIGENCE-CREATIVITY

Fundamental function of an education program for creativity and synthesis in architecture education is that stimulating the subjective skills. Along with the objectivity of the scientific methods, subjectivity of creativity is also studied. Harmonizing the objectivity with subjectivity within the frame of a program is one of the main subjects of the education programs.

When taking willingness concept, necessary for moving these brain actions, in hand within the context of modern architecture education, we again come across with "creativity" action that will form with "motivation" concept. If the major period of the architecture education is thought as taking place in design studios, then the individual will not only ask for learning the effective but also he will face with new discoveries. When Dr. Alex Osborn draws up the steps in creative opinion as feeling the problem, providing the necessary material for the problem, evaluating it by testing various solution ways and interpreting the solution ways, he seems as if he were mentioning the search for methods in architecture design studio.

In defining the creativity process, Wallas (1926-1970) introduced that the analogies, among the opinions developed within the period, have four steps. These four steps used by many studio managers as data are:

1. *Preparation* phase for collecting the realities relating to the problem
2. *Incubation* phase in which being concentrated on the problem
3. Having a flash reflection metaphorically in the brain within many sources, determined by the solution and occurred suddenly, sudden mental insight and *illumination* phase also called as (aha)!
4. Determining and realizing (*verification* phase) the reality of the result in where entered deeply and in a detailed way by comparing the limitations relating to the necessities of the problem (Kahvecioğlu, 2001).

Guilford, who interpreted the studies made by Roe on the biographies of the artists and scientists, by capturing attention that there is not many separating characteristics

in individual for creativity, explains that the creative people are tended to work too much, that they can work long hours and have a general motivation that is receiving the sources of these studies. Characteristics such as creativity, high level thinking skill and learning curiosity are the characteristics that are making positive contributions to the inner learning motivation.

Wankat and Oreovicz have developed the Motivation & Scientific Learning Cycle to help students improve their mentalities. This learning cycle is based on Piaget's concepts. In searching phase, the information presented to the student in a controlled way will cause imbalance. Naturally, the student will feel the need for getting over this imbalance and will think that it is necessary do something for it. In the following phase, supporting data and structures will be presented to the student. In this way, student will be able to harmonize the new data with the old data. In third phase, student will be able to apply the new concepts. Period for gaining the supportive data and compromising the new data is called "balancing" (1)

Eysenk takes the creativity in hand, in the light of all of these studies, as an achieved action and introduces basic variants as shown in Table 1. Along with psychodynamic, psychoanalytic and humanistic points of views, creativity is examined in the light of socio-cultural and history-metric (approach relating to the biographic and historic records of the individuals) approaches.

Table 1. Fundamental Variants Affecting the Creativity (adapted source: Eysenck, 1996, s.209; Kahvecioğlu, 2001)

Cognitive Variants	Intelligence	Creativity as an achievement
	Knowledge	
	Technical skills	
	Special skills	
Environmental Variants	Political-religious(spiritual) factors	
	Cultural factors	
	Socio-economic factors	
	Educational factors	
Variants depending on the individual	Inner motivation	
	Self confidence	
	Disparity	
	Creativity (individual differentiating character)	

Amabile (1983) has discovered that there are 6 factors supporting creativity. Amabile counts the inner motivation as one of these six factors. However, along with this, he also mentions two necessary factors as well. These factors are:

1. Skills concerning the sector
2. Skills concerning the creativity

Amabile has indicated that these factors procreate more creativity with inner motivation (more than award and external pressure) (Clark, 1977). Inner drive pushing human kind to create will also bring the solution as well (Batırbaygil, 1996). Rowe suggests that the opinions, relating to buildings and accommodations in which people will live, are shaped and realized in architectural design and that we should consider it as fundamental tools for asking questions and searching. In this meaning, space content has left its place for place content. After this definition, it is seen that solving a problem in architectural design has only gain a meaning with coming up with a problem. In this case, the architect has to improve his/her knowledge and criticizing skills and understanding and discretion power to understand the problems and deal with them (Yürekli, 1991). All of these will be possible by improving the emotional intelligence.

CONCLUSION

Mednick (1962) who has indicated that the creativity is extremely similar to the imagination, but the thing imagined is not the creativity, at this point has separated the creative thought as the clause being more beneficial than the original thought. He has defined the creative thinking process as forming new combinations by closing up some of the connotation elements, which is useful for a specific task and is fulfilling the specific terms to each other. He has applied his RAT-Remote Associates Test, developed by himself to his students and has indicated that there is a 70% of a coincidence in the correlation formed between the scores in this test with performed creativity concerning the success results in their educations (Baron, 1994). This is a study that taking the achievements of the students in the design studios in a creative way.

Another study is the poll made by Uluoğlu in 1990 with architecture students. In this personal characteristics research that a good architecture project student must have; a student being researcher has taken the first place with the answers of 13,7% of the students, where motivation has taken the forth place with answers of 7,8% of the students. Other fifteen characteristics indicated however, are the characteristics that an individual must have in the factors of the EQ elements. In the same research, under the heading "roles in studio/developing personality", the one giving thrill and motivation has taken the first place with 26,9% of the answers. In the question “How design should be taught", activating the student, which means motivating the student to the studio, has taken the first place with the answers of 22,1%.

As a result, thinking in a creative way which realizing the problems and blanks in data, developing ideas and hypotheses, producing free idea, seeing the connection between the ideas, obtaining new combinations by improving thinking parameters is a design approach. Design, beyond all kinds of the conditioning, is symbolizing a free view, getting rid of the taboos and a search for known to unknown. Based on these ideas, in education philosophy focused on creative thinking and design-prevision:

1. Learning how to think, how to learn and setting these functions dominant to design and prevision within a systematic texture.
2. Providing a strong, privatized, functional data structure.

3. Arranging the education environment and education system ensuring the creative thinking and design prevision skills to be formed and developed.
4. It is thought that the learning necessity and will of the individual is the most important factor when developing individual thinking parameters (Erdener, 2003).

While these studies are performed the emotional intelligences of the architecture students _whom are based on the creative synthesis_ are aware of his/her environment and is able to use his/her own motivation as a forcing power, are very important for developing the designs in their studio studies. It is already understood that providing the instructors, who are fundamental dynamics of education, with contemporary understandings about motivation is a modern requirement. Consequently the obligations for students, who are the existence reason of the system, to be educated for their EQ's to obtain a conscious behavior relating to the achievement orientation.

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CAN WE MAP OUR FEELINGS FOR THE QUALITY OF URBAN PLACES?

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ABSTRACT

Satisfaction from a place is essential for quality of place (QOP) measurements which can be analyzed through different perspectives. These measurements involve a multi-faceted understanding of the coming together of both physical and living environments. While QOP can be viewed from a personal point of view, it can also be explained in a more collective approach as it relates to other concepts such as quality of life (QOL) and well-being.

This paper discusses how to measure the performance of our places from different perspectives. Measuring the QOP is a hard task since it involves both objective and subjective dimensions. Most of the researches on QOP have focused on either subjective or objective measures and a limited number of efforts have been made in recent years to collect both types of indicators. Hence, the main objective of this paper has been to offer a new definition for QOP where both dimensions are integrated and to introduce a new methodology where the information technologies such as geographical information systems (GIS) and remote sensing (RS) can be applied to understand the contribution of these two dimensions of QOP.

Keywords: Quality of place, Objective and subjective indicators, Geographical information systems, Remote sensing

INTRODUCTION

Satisfaction from a place is essential for QOP measurements which can be analyzed through different perspectives. These measurements involve a multi-faceted understanding of the coming together of both physical and living environments. While QOP can be viewed from a personal point of view, it can also be explained in a more collective approach as it is related to other concepts such as quality of life (QOL) and well-being.

QOL has been defined by many researchers from different points of view. For example, according to Pacione (1982), QOL is a term that is intended to refer either to the conditions of the environment in which people live (such as air and water pollution or poor housing, for example), or to some attribute of people themselves such as health or educational achievement. Although the meaning of the term

"quality" is agreed to imply a sense of satisfaction of the people within the environment in which they live, the attributes and the measurement techniques for the concept have always been problematic. Pacione (1982) argues that although 'income' is an indicator of QOL, how satisfied people are with their environment (meaning such elements as green spaces, housing conditions, traffic problems, clean air, etc.) is also very important. QOP allows focusing on the assessment of the place that the individual or the community lives. While disciplines like psychology, economics or sociology are interested in analyzing quality of lives experienced by individuals or groups, other disciplines like urban planning and geography are specialized in analyzing the related qualities of those places where these individuals and groups live on a daily basis.

Measuring the QOP is both complex and a hard task since it involves both objective and subjective dimensions. A definition in objective terms would refer, for instance, to measures of income and expenditure. Satisfaction and happiness, by contrast, would be subjective terms (Michalos, 1983; Wilkening and McGranahan, 1978). Most of the researches on QOL, well-being and QOP have focused on either subjective or objective measures. A limited number of efforts have been made in recent years to collect both types of indicators within the same study based on the belief that one type of indicator can contribute to the interpretation of the other (Townshend, 2001; Williams *et al*., 2001; Langlois and Gilbert 2005). Many factors, including personal and social characteristics such as age, income or education, intervene between the objective world and an individual's evaluation of it, and these may act as filters to distort objective conditions. Therefore, individual perceptions transform what is initially seen as a universal objective situation into a highly individualistic interpretation of that condition. Although subjective indicators also have their problems such as a lack of common meaning/understanding for all concerned (Knox, 1976), it is essential to measure the privately evaluated aspects of QOP by people simply because the same circumstances and same environment may be enjoyable and satisfying to some but not to others. Thus, this paper will contribute in finding a better way to utilize both types of indicators, developing a new definition of QOP and a new methodology.

LITERATURE REVİEW ON THE CONCEPTS OF QOL, WELL-BEING AND QOP

Quality of a place is considered as an essential requirement for building a "competitive" city. Economically successful and vibrant cities of the future are those that engage the creativity of their residents, encourage and welcome immigrants, invest in the work of artist and scientists and maintain authentic and environmentally sustainable urban places. Since the real economic development in recent years is people-oriented, organic and community-based, there has been an increasing interest in measuring the QOL of urban communities and QOP (Pacione, 1982; Paim, 1995; Beesley and Russwurm, 1989; Keng and Hooi, 1995; Langlois and Anderson, 2002; Hanna and Walton-Roberts, 2004; Sénécal, Hamel and Vachon, 2005; Langlois and Gilbert, 2005; Urry, 2005).

Over the past decades, the literature on urban studies and geography has demonstrated a growing interest in measuring QOL and social indicators in cities, both in Canada and around the world. Social indicators movement (which QOL

studies have their roots from), alternatively described as “social accounting”, “social reporting” or “monitoring social change and QOL”, involves the measurement of social conditions as they vary in time and space (Smith, 1973). The main idea of this movement is that the nature and performance of the social system is as important as of the economic system. In 1966, Bauer (1966) was the first person to originate the term “social indicators”, using it in a project he undertook for the National Aeronautics and Space Administration (NASA) in the mid 1960s. According to this author, social indicators were “*statistics, statistical series, and all other forms of evidence that enable us to assess where we stand and are going with respect to our values and goals*”. It is also important to indicate the particular political climate of the 1960s when the first time doubts were raised in the highly economically developed countries about economic growth as the major objective of their societal progress. Hence, it was this time period that preferring quality to quantity has become a public demand.

In the 1970s social indicators research was gaining acceptance as a field of academic social science resulting in regular social reporting efforts and specific data generation for societal monitoring (Smith, 1973; Liu, 1975; Campbell, 1976). It was also in this period that two broad types of social indicators, “objective” and “subjective”, were introduced.

Objective indicators are those trying to describe both the physical and the social environments in which people live and work (like health care provision, education, unemployment rate, leisure activities or housing condition). They represent social and physical facts independently of personal evaluations whereas subjective indicators are designed to describe the ways people perceive and evaluate conditions around them (like job satisfaction, perception of distributional justice or class identification). During the 1960s and 1970s, many different studies emerged, such as Liu’s (1976) report on conditions in American cities using objective indicators, as well as surveys such as Bradburn’s study (1969) using subjective indicators. However, *“…most of the main statements and reports published up to the early 1970s were almost entirely non-spatial in their content”* (Pacione, 1982, p.496). The “spatial dimension” was introduced to QOL studies with the entry of geographers into this field such as analysis of QOL at local, city or regional and international scales. Although the roots of “territorial social indicators” were in the 1970s (Smith, 1973), much of the development has occurred in the 1980s. This time period witnessed an increasing interest in the complementarities of the objective and subjective indicators. One of the most important ideas of the 1980s was the awareness of the importance of linking social indicators to public policy, and engaging stakeholders’ engagement in the development and selection of indicators.

In addition to changes in the focus of QOL studies, the 1980s were also the time of significant economic change. For example, globalization resulted in changes in urban functions that in turn had different sociological and physical effects on city neighbourhoods. These have been observed in many Canadian cities. As Ley and Bourne (1993) explain, “*…there is evidence that such gaps in well-being between metropolitan areas have intensified over the past twenty years*”. Moreover, according to Statistics Canada (2000), neighborhood inequality has been increasing since 1980 and the need for policy-relevant, intra-city research on QOL has never been stronger. For these reasons, many researchers have conducted QOL studies in different cities

in Canada (Williams *et al.*, 2001; Townshend, 2001; Sénécal, Hamel and Vachon, 2005; Langlois and Gilbert, 2005).

Among other studies, Townshend (2001) stands out from a geographical perspective where he analyzed the contribution of neighborhoods social structures to the geography of well-being in Lethbridge, Alberta. Being an original contribution to the QOL literature, this research integrates a traditional *quantitative description* of urban social structure with the *qualitative dimension* more associated with QOL studies. Hence, Townshend's study not only contributes to the QOL research, but also he takes urban factorial ecology one step further. He points one of the principal criticisms of these models, which is their inability to incorporate behavioral, cognitive or affective characteristics of communities. Townshend (2001) has shown that there is much stronger statistical explanatory relationship between "experiential community structures" (like the behavioral, cognitive and affective experiences of place) and the geography of well-being than there is between the census-based social structural variables and well-being.

One aspect to highlight in Townshend's (2001) study is the difference between the term "QOL" and "well-being". According to him, QOL is more complex than well-being because it includes well-being in addition to other individual psychological attributes and it can be linked to both objective and subjective domains. Differences between QOL and well-being have also been underlined in Wheeler's study (1991). He notes that the global well-being of an individual is determined by seven dimensions: emotions, beliefs, temperaments, behaviors, situations, experiences and health. On the other hand, Chamberlain (1988) considered the concept of "subjective well-being" to have both "cognitive" and "affective" dimensions.

Among other important contributions to the reflection on the role of the environment on QOL comes from the Quality of Research Unit of the University of Toronto (Raphael *et al.,* 1996). These authors were interested in developing a broader conceptualization of QOL of the elderly than had been used in previous studies. The conceptual framework they proposed had three life domains: being (who one is), belonging (one's fit with one's environment) and becoming (one's purposeful activities in life). These life domains are all shaped by two factors: importance and enjoyment, such that QOL results from the individual's own perceptions and evaluations. The questionnaire they developed consisted of 111 items applied to elderly people based on a score for both factors (importance and enjoyment) on a scale of 0-5. The QOL scores have been calculated using the Formula The range of the QOL scores are between -3.33 and +3.33) below (which will also be proposed in the methodological framework of this paper):

$$QOL = [(\text{importance score}/3) \times (\text{enjoyment score} - 3)] \quad (1)$$

The study of Raphael *et al.* (1996) was original because it showed that QOL indicators can be used for determining the health and service needs of seniors, and analyzed both importance and enjoyment with respect to the life domains of an individual.

Another recent study, from Anderson and Langlois (2002), explores the effect of the environment on QOL. The model they propose has an objective and a subjective

sphere that influence both the environment and the individual. QOL is part of the objective sphere, and is assessed by the ability of the environment to meet the physical needs of the individuals. Well-being, on the other hand, resides in the subjective sphere, and emerges from the assessments individuals make of the social and physical circumstances of their lives. Well-being is based on QOL, but is an extension and elaboration of it as their model will be explored more in detail in the proposed conceptual framework of this paper.

QOP, as such, has been introduced by Andrews a few years ago. He defines QOP as: "*…an aggregate measure of the factors in the external environment that contribute to quality-of-life (QOL), which I in turn define as a feeling of well-being, fulfillment or satisfaction on the part of residents of or visitors to that place.*" (Andrews, 2001, p.201). According to this author, cultural amenities, crime, green spaces, and congestion are a few of the factors determining local QOP. Additional popular measures include:

physical planning factors such as availability and diversity of housing and transportation options,
economic factors such as employment opportunities and stability of property values,
social factors such as educational opportunities, crime rates and sense of community,
political factors such as trust in government and civic engagement.

An important issue raised in the literature concerns the adequacy of QOP measurements whether QOL perceptions and QOP measurements are linked or not. Andrews (2001) reports that QOP measures fail to capture all of the factors in the external environment that contribute to QOL. The links between them have been problematic because QOL is perceived at the individual level by people with distinct world views, whereas most QOP measures are aggregates applied to large populations. On the other hand, there is a problem of not uniformly availability of data across place types (for example, while census data is provided at census tract areas, public health data at the county level). Besides, individuals have different preferences, which create a difficulty in establishing a relation between measured QOP and perceived QOL. Because of these reasons, it is hard to expect a strong linkage between two terms.

To conclude, there is a high potential of studying QOP since it helps to keep in balance the various elements of our urban system such as environmental protection, sustainability and social equity. The interactions between economical growth and the hierarchy of personal needs imply the need for conducting QOP studies. In addition, public demand for improvements to the QOP has also encouraged public officials to act and revise their policies. For this reason, Andrews (2001) argues that researchers and analysts are expected to offer facts to the public debates which includes the state of knowledge about QOP and efforts to measure, model and prescribe changes to it.

LITERATURE REVIEW ON RS AND GIS APPLICATIONS ON QOP

After reviewing the literature about the concepts of QOL/well-being/QOP, this section is devoted to analyzing the attempts in information technology (RS and GIS) for measuring these concepts. The literature survey made about the GIS and RS applications on QOP studies showed that many methods have been used to derive relationships between the remotely sensed data and socio-economic structure of cities.

Application of multi-band and color infrared photography to the evaluation of housing quality, neighbourhood environment, and socio-economic criteria was conducted by Northwestern University and the University of California-Riverside in a joint research program during 1968 to 1970. Much of this work built upon the earlier studies of Green (1957) and Mumbover and Donoghue (1967). Wellar (1968) used large scale aerial photography in nine spectral bands to evaluate the quality of housing and neighbourhood environment. He found that 20 of the 24 items used by the American Public Health Association as criteria for housing environment appraisal could be consistently interpreted from the photography. When we analyze those studies of the 1960s and 70s, it can be observed that these years saw a gradual change in the conventional approach to remote sensing with the introduction of color, color infrared, multi-band, small scale, and space photography where digital images were collected through satellites. As a natural result of the trend towards smaller scales and greater coverage, research using these advanced techniques has emphasized regional rather than intra-city application, with the exception of housing quality studies (Westerlund, 1972).

Since the launching of the first Landsat satellite (first named as ERTS 1), most of the research in urban areas has been directed towards urban land use or land cover classification, which is in marked contrast to the studies of housing density, housing quality, poverty areas, demography and other socio-economic factors which were so apparent with larger scale aerial photographs. A number of researchers have, however, pointed to the potential of Landsat for image surrogate application. Erb (1974) suggests that a measure of vegetative cover can be used to determine density and age. Todd *et al.* (1973) discuss associations between the classified imagery and published socio-economic data. One association suggested was that between medium family income and various land use classes. Inner city classification compared well with the distribution of low income areas, while wooded suburb classification was essentially correlated with high income areas. Another extensive study of relationship between Landsat data and socio-economic data was carried out by Landini and McLeod (1979). The Landsat data items were used as independent variables in a multiple regression analysis to predict a number of socio-economic variables. Single family land use and open vacant use were shown to be the most significant Landsat data items in predicting total population.

Associated with the greater use of Landsat data has been the increasing application of computerized methods. Furthermore, with the development of the first GIS in the mid-1960s, the “Canada Geographic Information System (CGIS)”, the research in urban areas has experienced major improvements. The Canada Land Inventory was an effort by the federal and provincial governments to identify the nation’s land resources and their existing, and potential uses. It’s not before the 1980s that GIS

really began to take off when the price of computing hardware had fallen to a level that could sustain a significant software industry and cost-effective applications. It is, therefore, since these years that spatial analysis and cartographic modelling techniques in GIS and digital image processing techniques in remote sensing could enhance each other's operations in urban applications (Hutchinson, 1982; Richards *et al.*, 1982; Wang and Newkirk, 1987).

When we analyze the studies of the 1960s and 70s, it is observed that the socio-economic and physical variables that have been used like income level, educational achievement, occupation or housing condition, are still the relevant types of variables for the assessment of QOL. However, at those times, both the social and the physical structure of the cities were different from the metropolitan cities of today. Therefore, while the variables selected for those studies still keep their relevancy, the meaning attached to them has undergone a significant change due to the new urban dynamics. In addition, with the technical improvements in RS, GIS and computer technology as it is explained above, it is now easier to carry out such studies from satellite images that enable users to make digital image enhancement processes according to the goals of their research studies (Lo and Faber, 1997; Fung and Siu, 2000; Reginster and Nagot, 2005).

A very recent study conducted by Reginster and Nagot (2005) aimed to analyse empirically the effects of environmental quality on residential location choices in two Belgian cities, using a detailed description of the urban environment derived from remotely sensed data and using GIS tools. These authors have discussed that according to urban models which include amenities, environmental quality may influence land rents and location by income in the city. Their spatial representations are constructed using GIS functions. Their results confirmed that the impact of greenery on location choice and the existence of a higher environmental quality at the periphery than near the center of the two cities.

Gomes and Lins (2002) have also studied urban QOL through an application of the integration between GIS and Multi-Criteria Decision Analysis (MCDA) to aid spatial decisions. The research presents a hypothetical case study to illustrate the GIS-MCDA integration towards a selection of the best municipal district of Rio de Janerio State, Brazil, in relation to quality of urban life. The authors surveyed the existence of the variables that could represent the quality of life (particularly the variables that are related to the quality of the public services) in the Brazilian agencies of information and how to use them to subsidize the decision-making process. As for the selected criteria, they argue that an urban society where the essential needs are almost satisfied, such as leisure options, climate, ease of movement and architectural/urban factors, must be included to evaluate the quality of urban life.

Being one of the very few and recent examples of QOL studies in remote sensing field, the study of Lo and Faber (1997) is of particular interest for this paper. The basic assumption of the study is that there is a relation between greenness and the QOL. The results of their study showed that there is a strong relationship between biophysical parameters extracted from remotely sensed data and socio-economic data. Being one of the biophysical variable, Normalized Difference Vegetation Index-NDVI- (a good measure of greenness), gives a useful way of QOL assessment of a place and it is a good indicator of the socio-economic conditions of the area. It has

used two integration approaches: “Principal Component Analysis (PCA)” and “GIS overlay”. Although they are not new methods for remote sensing applications, the study brings a different perspective for QOL assessment. Due to the improvements in RS and GIS techniques, more recent vegetation indices yielding better results, post-classification and new spatial analysis techniques will serve for the increasing of the accuracy of these studies. In the last decade, over forty vegetation indices are introduced in the remote sensing literature, to measure the vegetation cover in different applications (Bannari *et al.*, 1995a). Since soil brightness, environmental effects, soil color, moisture and shadow are major complex mixture of vegetated areas; vegetation indices make an effort in minimizing the effect of those sources and enhance the vegetation response. In this paper also, a new vegetation index, “Transformed Difference Vegetation Index (TDVI) developed by Bannari *et al.* (2002), is proposed in the methodological framework to understand the greenness component of QOP.

PROBLEM DEFİNİTİON BASED ON THE LİTERATURE REVİEW

Based on the preceding both conceptual and technical literature review, two problems are identified here onto which the research problem definition will be built. The first problem rises from the lack of consistency between the definitions of “QOL”, “Well-being” and “QOP”. As it is discussed in the literature review, these terms differ from each other. The lack of such a differentiation has led to misunderstanding of the concept of QOP and hence, many studies shown limited results to express urban quality of place. Therefore, one can conclude that an important problem in QOL/well-being/QOP studies is the clarification of the terminologies as Langlois and Anderson (2002) have pointed out.

Another problem is linked to the operational definition of QOP. As it is shown in the literature review, objective and subjective indicators are used to measure QOL/well-being/QOP. However, there are not many studies that try to integrate these two different aspects. In addition, some special considerations should be taken into account for both the objective and subjective dimensions. For instance, the followings can be regarded as important key elements in the objective dimension:

1. *The selection of indicators:* The indicators should provide government or other actors such as environmental scientists, non-governmental and community groups, stake holders, real-estate developers and residents with useful information of the sort that could aid decisions on the allocation of finance or make public policies.
2. *The aggregation of indicators to one element:* A major decision had to be taken on how to aggregate many different measurements to form a general indicator of QOP.
3. *The weighting or non-weighting of the indicators:* Many attempts to develop social indicators without employing a personal survey have simply applied equal weightings to all the components of life quality in deriving an aggregate measure. This can be criticized that weighting all the measures equally could be misleading.

For subjective measurements, the followings have been regarded as problems:

1. *Validity:* It is sometimes not practicable to obtain good measures of how people evaluate their lives and its various components.
2. *Interpretation:* The person who evaluates the survey data might not be well qualified or be influenced by different actors (because each person is unique and has different criteria for evaluation).
3. *Completeness:* Infinite range of possible human concerns.

There are also some problems attached to the measurement methods of QOP, both in statistical and RS and GIS techniques. The advantages and disadvantages of the studies introduced in this literature review can be summarized as follows:

- The studies of the 1960s proved that socio-economic data related with urban systems have high correlation with the physical data, which is extracted from remotely sensed data. Moreover, the variables for detecting QOL/QOP can be similar, but the meanings attached to those variables have altered, therefore those variables should be updated according to the needs of today. Furthermore, the data used to make such an assessment is incapable of monitoring rapidly changing urban environment. High-resolution satellite image data obtained from new sensors (SPOT-HRS, Quickbird, IRS or IKONOS) is useful for these purposes since they are economic and consider a large territory.

- Secondly, when the studies that used such satellite imagery (Landsat MSS) starting from the 1980s have been conducted, it was concluded that they were usually incapable of bringing new dimensions to the QOP assessment. Although the data used for the studies were new like Landsat or SPOT images, the methods were not efficient to point to the changing meaning of the variables. For example the indices as housing index or NDVI components derived for urban quality of life assessment using remotely sensed data can not be considered alone for a comprehensive evaluation. For example “greenness” cannot be the only criteria as a physical variable that has relationship with socio-economic variables.

- Therefore, new physical variables, other than housing conditions and greenness, should be derived for such analyses. The suggestions can be, for example, the accessibility to emergency services, education, commercial and governmental usages or metro stations, which directly affects every citizen’s life every day and hence an indicator of a place’s attractivity in terms of QOP.

Because of the reasons explained above, the next section will be devoted to the elaboration of a new conceptual framework that tries to solve the first problem, which is an effort in solving the problem of confusing terminologies between QOL, well-being and QOP. The goal is to make a new definition of urban QOP and build its relationship with QOL and well-being. Then, the methodological framework that will be introduced will find a solution to the second problem, which arises from the operational definitions. In this case, the goal is to find a new way to measure both objective and subjective dimensions of QOP with different sources of data using information technologies.

TOWARDS A NEW CONCEPTUAL FRAMEWORK FOR QOP

The literature survey made in the previous section has shown that problems rise in QOL studies from two dimensions: first is the lack of common understanding of the terms “QOL”, “well-being” and “QOP”. Secondly, the measurement techniques do not yield successful results that are capable of showing different aspects of QOP. Therefore, this paper will make a significant contribution to QOP literature by introducing a new conceptual framework that integrates these dimensions through GIS and RS.

The research questions in formulating the new conceptual framework for QOP in this paper are as follows:

1. What is the role of place in determining one’s QOL and well-being? Is it possible to link QOP with QOL and well-being?
2. What are the components of a place that determines its quality? How are these components located in the objective and subjective domains? And what is the relationship between those two domains?
3. Given the same physical environmental characteristics (in the objective domain), how do the evaluation and perceptions of individuals living in the same neighborhood differ from each other (in the subjective domain)? Is there a difference in their evaluation in terms of “importance” and “satisfaction” levels? If so, how can be these two levels measured?
4. Is there a way to integrate the objective and subjective domains of QOP and how can it be measured?

A number of key themes emerge from the literature review as being crucial in answering the research questions raised above towards a new conceptual framework for QOP. As the starting point, the first attempt is to underline the role of place in determining one’s QOL and well-being. QOP is concerned with both the living and natural environment. In other words, many factors that affect every citizen’s daily life such as services, facilities, amenities, water and air quality, amount of green areas or economic vitality and social equity are embedded within the concept of QOP. These QOP factors, that are within the objective dimension, contribute to and a part of QOL evaluations. However, place is also construed through a repository of shared memories, feelings and traditions (Corcoran, 2002). Thus, feelings of place attachment are significant markers of QOP. This is particularly relevant in the context of the individual’s own evaluations about the place. The ability of adaptation to that place through one’s own aspirations and experience determine the level of satisfaction of that place, which in turn together with other factors determines the personal well-being. Hence, QOP is linked to well-being in the subjective dimension.

Figure 1 shows the proposed conceptual framework. It differentiates the terms “QOL”, “well-being” and “QOP” and makes the linkage between them. For this purpose, the model proposed by Langlois and Anderson (2002) has been used as a basis and has been modified. The model they propose has an objective and a subjective sphere that take into account both the environment and the individual. QOL is part of the objective sphere, and is assessed by the ability of the environment to meet the needs of the individuals. Well-being, on the other hand, resides in the subjective sphere, and emerges from the assessments individuals make of the social

and physical circumstances of their lives. Well-being is based on QOL, but is an extension and elaboration of it.

Since Langlois and Anderson (2002) started a discussion towards an integrated model of QOL and well-being, the new approach proposed for this paper will therefore include QQP into the model as an integrative component. According to Figure 1, QOP has been placed at the intersection of objective and subjective spheres. The reason of assigning QOP into the subjective sphere stems from the fact that its variation, with respect to different geographical locations, depends on the evaluation of different socio-economic and cultural characteristics of individuals. Therefore subjective indicators may be used to measure QOP. However, it can also be assigned to objective sphere since physical characteristics of the environment determines the degree of QOP which may be achieved through objective indicators such as the amount of greenness in the area or accessibility to public services etc. So, while QOL tries to explain all life domains in an objective dimension (for instance, a spatial analysis of aggregate levels of income, education, health distributions), QOP would tell how individuals in a specific area would perceive their living and natural environment as a liveable place with taking the special characteristics considerations of that area. Therefore, the new definition for QOP has been updated in this paper as:

"QOP is an integrated measure of the objective and subjective factors that an individual is satisfied with his/her living and natural environment".

With this new definition of QOP, an attempt has been made to introduce the "spatial dimension" into the QOL and well-being model that was proposed by Langlois and Anderson (2002) as a missing part of the puzzle. Furthermore, a special effort has been given to integrate both the objective and subjective dimensions in the same model. The reason is that, as indicated in the literature review, many researches have been based on either objective or subjective indicators. A limited number of studies have been conducted using both of the indicators, however, today; the trend is to base it on both.

PROPOSED METHODOLOGİCAL FRAMEWORK

The proposed methodological framework is given in Figure 2. Generally, three types of information explaining QOP will be gathered in statistical, RS and GIS environments in both objective and subjective dimensions. The three types of information (based on study of Townshend, 2001) are as follows:

1. Social structural information (objective dimension).
2. Physical structural information (objective dimension).
3. Experiential community structural information (subjective dimension).

The objective dimension of QOP explains both the social and the physical structural information which is measured objectively. Social structural information is issued from the census-based variables like income, ethnicity, family status or education level whereas physical structural information helps to analyze the "place" in terms of accessibility to public services and the characteristics of the urban land use.

As it has been discussed in the proposed conceptual framework, place is also aggregation of shared memories, feelings and traditions. Thus, feelings of place attachment are significant markers of QOP. This is particularly relevant in the context of an individual's own evaluations about the place. Both social and human capital and the ability of adaptation to that place determine the level of satisfaction of that place. Hence, QOP is linked to well-being in the subjective dimension. With this goal, the methodological framework introduced in this paper proposes to analyze "experiential community structure" through questionnaire data.

Social Structural Information

The first step to obtain this information is to calculate the percentage values for the selected variables from census data at census tract level (CT). This is necessary since the values of each variable are different, like income level, education or household size, etc. Next, PCA_{st} (Hereinafter referred to as the "*principal component analysis in statistical environment")* will be used to see the relation between different types of census data and to analyze the spatial differentiations within the neighbourhoods through the help of resulting components (C_i, where i=1,2,3,…,N). These components will also be used, later, to determine the neighbourhoods where the questionnaires to be distributed.

After obtaining the components, a QOP index (OQP_{ct}) is derived by linear weighted summation at CT level using census data in the objective dimension. The eigenvalues will be used for giving weights to each component.

$$QOP_{ct} = (\sum_{i=1}^{N} e_i . C_i) / N \qquad (2)$$

Final step of the framework proposes to map the index scores at CT level. This map will then be rasterized in order to use in the Multi-Criteria Evaluation (MCE) at the final steps.

Physical Structural Information

At this stage, remote sensing data and other urban data layers (hospitals and other emergency services, transportation modes, education services and land use) are proposed to be used in order to obtain the physical structural information which is a component of objective QOP. From remotely sensed data, vegetation cover and land use information will be gathered through TDVI, PCA_{rs} (Hereinafter referred to as the "*principal component analysis in remote sensing environment")* and Parallelepiped Classification procedures. The value of TDVI varies from 0 to 1 as greenness increases. For integration with social data, the TDVI values have to be aggregated into CTs. The TDVI values of pixels found within the boundaries of each CT, hence, will be averaged to give one value.

Moreover, a land use classification map will also be obtained from satellite image. For this purpose, the classification procedure will use the integration of GIS and RS

techniques together with the help of a post-classification algorithm. As a first step, PCA_{rs} will be applied to the image data. The resulting components and the TDVI will be subjected to a mixed approach of parallelepiped and maximum likelihood classification procedure since conventional image processing techniques based on spectral observation are often not sufficiently accurate for urban studies. The problem is that one spectral class may often represent subsets of more than one object class. Besides, the land use information obtained from an image doesn't provide any knowledge about how that land is used like commercial, governmental or industrial. While GIS stored urban land use data has the advantage of providing such information, on the other hand, it has the disadvantage of giving a static model of the urban environment and less detailed information on the vegetation cover. To overcome these problems, a post-classification modification algorithm that contains a set of decision is proposed to be applied. After obtaining the final land use map, the percentage for each land use category will be computed since the number of pixels falling in a CT will be known.

The information on the accessibility to public services like emergency, health, education and transportation will be obtained using ancillary data in vector format. With ArcView Spatial Analyst, the accessibility of each CT for a public service will be calculated using the "straight distance" algorithm. The results of these analyses will be the layers for accessibility to each public service and in raster format to be used in further steps of the study in Multi-Criteria Evaluation (MCE).

Experiential Community Structural Information

To extract experiential community structural information at the individual level, questionnaires are proposed to be distributed in selected neighbourhoods. For each CT, a subjective QOP index will be computed based on a study of Raphel *et al*. (1996) as explained in literature review. The questionnaire they developed consisted of 111 items applied to elderly people based on a score for both factors (importance and enjoyment) on a scale of 0-5. For this paper, the equation that Raphel *et al*. (1996) used is adopted and modified to calculate a "subjective QOP index (SQOPI)" as follows:

$$SQOPI = (Importance / 3) \times (Satisfaction - 3) \qquad (3)$$

In this calculation, "importance" scores are considered as weights for converting "satisfaction" scores into SQOPI values. The items in the questionnaire rated as "very important" produce "very high" SQOPI scores for items where high satisfaction is indicated by the respondent. Furthermore, items rated as "very important" produce "very low" SQOPI scores where lack of satisfaction is indicated. Items rated as being less important produce more moderate SQOPI scores.

SQOPI values range from -3.33 (which means "not at all satisfied with very important items") to +3.33 (which means "very satisfied with very important items"). If the value of the SQOPI is above "0", then it can be considered as the respondent has a positive QOP perception, but if it has a value of below "0" then the QOP is negative for that individual.

While dividing importance scores by 3 merely restricts the range of QOP scores, it also makes explicit that a rating of 3 for importance (leading to a weight of 1) is associated with QOP score being equal to the unweighted satisfaction score. The subtraction of 3 from satisfaction scores serves to set the range of satisfaction scores from +2 to -2 and allows higher importance scores to increase the magnitude of QOP scores.

At the final step, an average value of SQOPI index (ASI) will be computed depending on the number of respondents (k), in order to use in the MCE stage as follows:

$$ASI = (\sum_{i=1}^{k} SQOPI_i) / k \qquad (4)$$

Integration of Objective and Subjective dimensions

To integrate all different sources of data, MCE technique is proposed. This technique is chosen since it allows the user to join several criteria at the same time which is the goal of many urban applications (Voogd, 1983). According to Eastman (1999), this technique uses one of the following procedures: “Boolean overlay” whereby all criteria are reduced to logical statements of suitability and then combined by means of one or more logical operators such as intersection (AND) and union (OR).

The second is known as “weighted linear combination (WLC)” wherein continuous criteria (factors) are standardized to a common numeric range, and then combined by means of a weighted average. The result is a continuous mapping of suitability that may then be masked by one or more Boolean constraints to accommodate qualitative criteria, and finally threshold to yield a final decision. Eastman (1999) also argues that the Boolean strategy dominates vector approaches to MCE, while WLC dominates solutions in raster systems.

The methodology in this paper proposes to use the second method of MCE since all the layers are in raster format at CT level. Therefore, the resulting QOP map will be a continuous mapping style showing which sectors are good at for the selected criteria of QOP or vice versa.

CONCLUSION

All over the world, people are engaged in activities those are related with places. Every year millions of people buy or rent a house with little more than visual evidence of QOP. While homeowners redecorate or build additions to the buildings, neighborhood organizations put pressure on people to tidy their yards. The small room in a residence even becomes the place and home for a student for many years. Similarly, the city walls become the most important place for artists who write their tags and graffiti. Qualities of these places may include aesthetic, economic, social, political, environmental, human health, public safety, and other concerns. From another perspective, QOP is also essential for building a “competitive city” which is determined by the opportunities that the city can provide. For these reasons, not only

physical characteristics of the neighborhoods or their social structure but also the perceptions and satisfactions they induce play important roles in the assessment of QOP. Because of this complex structure, the main objective of this paper has been, first, to offer a new definition for QOP where both objective and subjective dimensions are integrated and secondly, to introduce a new methodology where the information technologies such as GIS and RS can be applied to understand the contribution of these two dimensions of QOP.

The proposed conceptual framework in this paper is a significant effort towards a discussion to differentiate QOP from the other two concepts of QOL and well-being. The model introduced defined QOP not only at the intersection of QOL and well-being but also in two dimensions: objective and subjective. The links between the QOP, QOL and well-being indicated that while QOL tries to explain all life domains in an objective dimension, QOP would tell how individuals in a specific area would perceive their physical environment as a liveable place with taking the special characteristics considerations of that area.

Moreover, the new methodological approach presented in this paper not only enables users to understand both objective and the subjective dimensions of QOP, but also shows how the integration of RS and GIS can assist for measuring those dimensions. With the help of many different data sources (census, survey, remotely sensed and GIS data), it is hypothesized that the full picture of QOP will be provided in better ways and the spatial differentiations among the urban neighbourhoods will be analyzed.

Another expectation from this methodology is that to obtain the link between the two dimensions, objective and subjective, and to show whether one can be explained in terms of the other or not. Since there are many variables from different sources of data included within the new model, it is assumed that some correlations would yield better understanding of the QOP while others might not be very clear to understand. For instance, while the QOP for the young and elderly population might differ, there might be slight differences among different genders although the objective QOP index would be same for all.

Finally, this paper started, for the first time in QOP studies, a discussion of the integration of qualitative and quantitative methodologies using different components such as social, experiential and physical structures through information technologies. The model introduced in this study can be applied in various places where the behavior of different community structures can be monitored. Since the community information is, generally, subject to changes over the time, it is also recommended to conduct the methodological framework introduced in this research to be monitored in a regular time period. Such a monitoring model will help to understand both the existing QOP within the neighborhoods and also the future performance of the planning policies whether a modification is needed or not. Moreover, despite the fact that the common understanding for “quality” has been attached to economical growth in the past decays, the future urban policies should seek the competitiveness through an integration of social, environmental and governance quality.

It should also be noted that the integration of both objective and subjective dimensions not only provides a good framework to analyze the QOP but also helps to

integrate citizens into the planning policies more. With this method, the governments can achieve the goal of participatory planning practice in an efficient way where the citizens' feedbacks are involved.

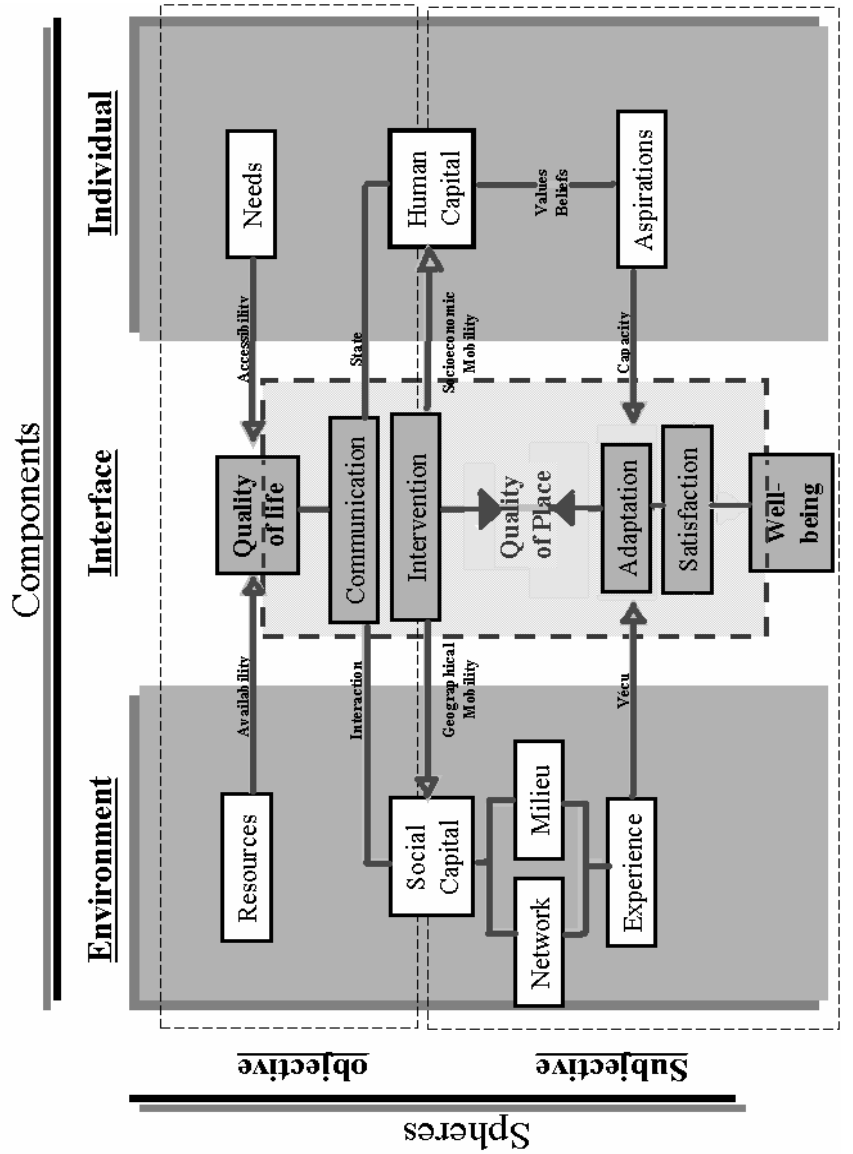

Figure 1. The new conceptual framework (based on Langlois and Anderson, 2002).

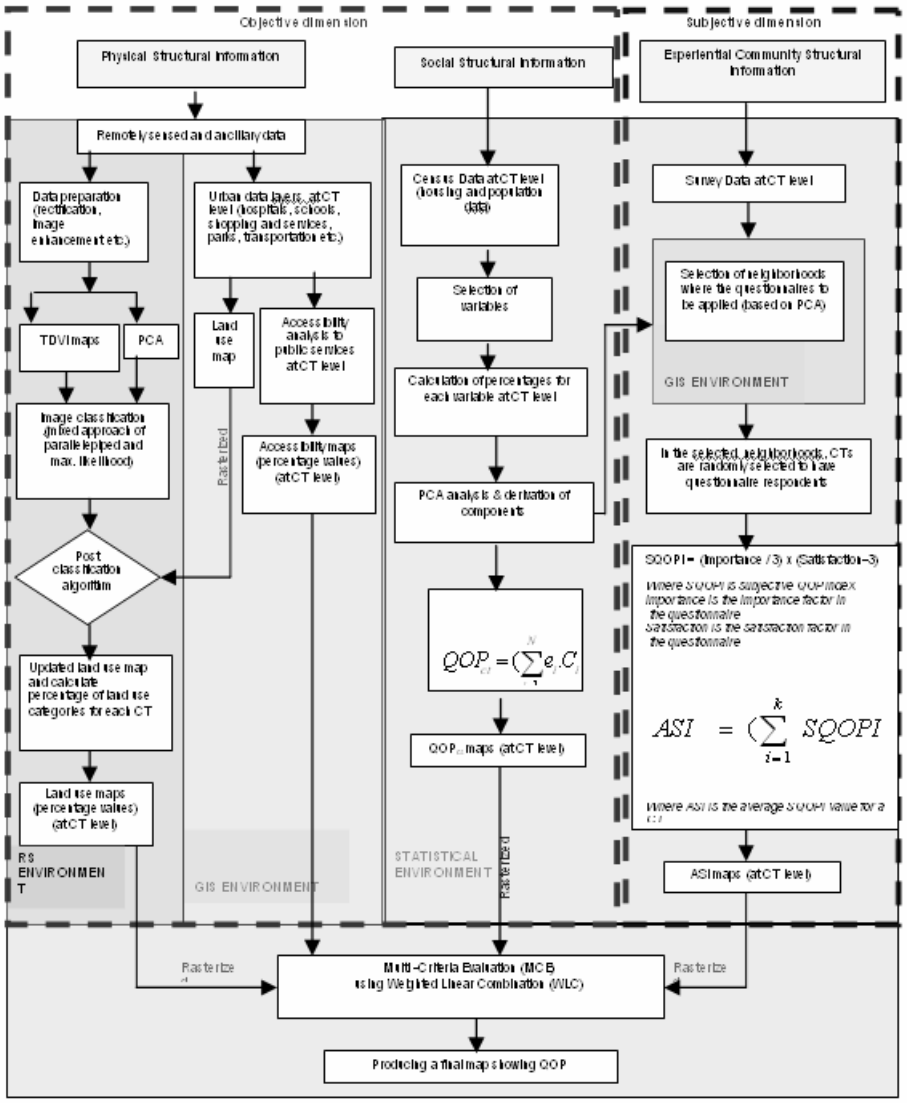

Figure 2. The proposed methodological framework for QOP

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DESIGN EDUCATION

Moderator: Jon Lang

Architectural Design Studio: A Case Study for a Context-Conscious Approach
Sema Soygeniş, İrem Maro Kırış

An Evaluation of Conceptual Editing in Basic Design Education
Veyis Özek, Gülay Dalgıç

Reinforcing Sensitivity to Context in Basic Design Course
Özgür Hasançebi, Aktan Acar

ARCHITECTURAL DESIGN STUDIO: A CASE STUDY FOR A CONTEXT-CONSCIOUS APPROACH

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ABSTRACT

This paper is about the process of a design studio given to students of architecture, in their second year, as their first architectural design study . The objective of this design course is to provide students with the tools to solve a design problem using their creativity and knowledge in response to a specific context. The design problem, that is subject to this study, deals with the problems of dwelling in an urban environment with strong relation to its context. Students while tackling with the basics of architectural design, need to develop awareness on the context, in macro and micro scales. In that respect, a specific residential area in the city that faces gradual change, has been given as a site to work on.

The project theme concentrates on contemporary local and global architectural problems, specifically integration of house and workplace and transformations that take place in urban environments due to changes in life style. In this context the project problem is formulated on an existing site in İstanbul, which is a neighborhood comprising of low rise housing. Today, new traffic axis and developments around the region force change in the fabric. Residential character of the neighborhood is being transformed into work places. The peculiarity of the site/context, form the basis of the design problem. Neighboring sites are assigned to each student which makes it possible for the students to work interactively.

Analysis of the development of housing in the world, and in Turkey, reveals a transformation in terms of the use and the users. Work place function seems to be integrated more to the households due to the changing requirements of the city life. This concurrance had been effective in the content of the design problem in which house and work place can be integrated under the same dwelling in this specific part of the city.

Through the design process the students worked on a project where specific architectural and urban issues could be explored. They developed projects responding to the existing conditions of this specific neigborhood. Case studies explain the responses students develop throughout the semester.

Keywords: Design studio, Context, Dwelling, Transformation, Identity

INTRODUCTION

Associated with the growing effects of globalism, contextualism in our century, inevitably becomes a subject brought to public notice more often. While globalism keeps transforming different sites of physical, social, cultural and economical environment and tends to make everything look the same, contextualism stands for protecting them from change and loss of identity. They stand at opposite poles, and seem to originate in and produce different sources of power. A common track of supportive thinking on behalf of contextualism would be the belief that developing sensitivity for the context, brings solutions to societal and architectural problems. Architecture overall is a response to context. Architecture, surely, is in relation with the context in all terms. In the universal context; spaces, including the spaces of globalism are being produced everyday. Supermarket, cafe , fastfood, retail chains are invading everywhere spatially with the same identity and images. However context contiues to be significant because it is related to the origin of culture and society. As architects and educators, we intend to reconsider 'context' and 'contextualism' at different scales, architecturally and pointing out such significant subjects of lively discussion as modernization and globalization.

DESIGN STUDIO

In architectural education, design studio plays a vital role. The curriculum develops around the design course, so that knowledge and data are provided for students to support the work they perform in the design studio and to initiate their creativity. There are certainly a variety of ways and methods on how to teach in design studio, all based on various concern issues such as the studio setting, method of instruction, the level of interaction. The case study that is subject to this paper, emphasizes the importance of context in the design process, moreover tends to define the context as a tool for interaction in the act of learning as well as a mean to integrate education to real life and consequently develop students' creativity and knowledge in their progress of becoming architects. In most of the studies on design teaching, the immediate context or the given site is only considered as one of the variables forming the design decisions. As Broadbent puts it, there are certain ways of producing pragmatic, iconic, analogic, canonic design, each using different types of information that are adapted from different disciplines such as psycho-analytical, mathematical or interactive approaches and methods. Following Schön, in Goldschmidt's table, categories that form the design knowledge and leading methods in design teaching, mentioned by authors Rapoport, Hillier & Leaman, Goldschmidt, Heath, Broadbent and Schön, are classified in two groups, as declarative and procedural. In all studies by these researchers that Goldschmidt mentions, context as environment takes place in the declarative knowledge group among cultural, functional and material resources. (Goldschmidt, 2007) In our approach in this study, context, i.e. the urban context as well as the immediate environment i.e. the neighborhood, is treated as part of both declarative and procedural categories. Our design brief specifies the urban context in general and the immediate context as special as dinamic issues of concern. In Goldschmidt table, representational, communicational, programmatic and methodical issues make up the category of procedural knowledge and most of the researchers' work, except Broadbent's and Schön's, do not refer to these issues. In our case study, 'context' is taken to be perceived as a live component, active at all

stages of design work, playing role as a subject of generating ideas, provoking creativity and interaction. Consequently we denote a crucial role on ‘context ‘as a procedural knowledge category. Context develops or modifies the design all through the studio process.

The experience shared here, is about the process of a design studio held with the students of architecture, in their second year, as their first architectural design study. Students, in their first year, take Basic Design studio followed by Design Studies in the second semester. These courses comprise of small design projects concentrating on basic architectural principles such as form, movement -architectural promenade- and function as separate issues related to each design problem. The studio that is the concern of this paper, in this respect, is the students’ first architectural design experience. Keeping in mind that our students got acquainted with the basic architectural principles in their first year, we planned as educators to concentrate on actual and contemporary issues such as the architectural problem of the house and its change, modernity and the changing urban environment, with an emphasis on the context.

The brief given, as stated above, deals with the problems of dwelling in an urban environment and defines a strong relation with the context. The selected site borders an area where context of changing urban environment and changing immediate environment intersect. At the extended borders of the site, the existing low density housing meets high rise office buildings. The traffic axis, connecting two of the most busy districts of the city, Zincirlikuyu and Maslak, is very close to the site, and this axis has also been strengthened even more by the newly constructed branch of the subway system. The city continues its growth in the direction of Maslak and Sarıyer and the skyline of Levent - Maslak area has already been shaped by the early examples of highest buildings of the city. Some existing buildings and building sites are being sold, and planned to be modified. Various projects are being produced regarding the future cityscape of the area. These conditions define a place of energy and building activity; an area of speed and movement at its maximum. Being surrounded by a fabric in movement and by highrise office buildings, small, lowrise housing and retail units and the function of housing are distressed under serious threat and pressure. Change is forced in the fabric in terms of function, form and density in this axis.

A closer look at the site on which the project problem is formulated, would take us a little back in history. In such a picture, Levent I is a district that had been developed in 1949-51 as a planned neighborhood comprising of low rise housing of certain types, 411 units in total and a commercial center. Density planned was 66p/sqm. The neighborhood was designed according to a geometric pattern where housing units are located perpendicular to the roads. Houses are of different types and sizes, including 1, 1 ½ story single and twin houses and 2 story apartment units with 3, 4 and 5 rooms. (Anon 1952) After the completion of the construction work, Levent region, together with Atakoy region, a similar, contemporary development, became and survived as the only well planned, residential centers of Istanbul where green area, low density housing and commercial center were integrated, resulting in good examples of space organization. Boundaries of Levent region stayed more or less protected for a period of 4-5 decades, and then started going through gradual but radical change. The neigborhood when first formed, used to stand at the periphery,

however it has become a highly populated area of the city and defines a central location today.

With the introduction of high rise office buildings in the area, the residential character of the neighborhood is under the threat of functional change. However, this pressure can only cause slight changes in the existing fabric, because of the constructional restrictions applied at the site. Inspite of the steady land use, there is a functional change in the area. Houses are being transformed into work places. Transformation in the neighborhood is only on functional basis, density and building heights remain the same but small additions and changes effect the architectural character of the neighborhood. The peculiarity of the site i.e.context, defines an architectural issue in urban scale and form the basis of our design problem. We introduced in the brief, the integration of house and workplace which would coincide with the existing trend of change, a contemporary local and global architectural problem. With this we at the same time aimed to keep the character of the neighborhood. Analysis of the development of housing in the world, and in Turkey, reveals a transformation in terms of both the use and the users. Work place function seems to be integrated more to the households, due to changing requirements of the city life. This concurrance had been effective in the content of the design problem in which house and work place can be integrated under the same dwelling in this specific part of the city. With this approach we aimed to emphasize the importance of mixed use in city centers. We want to pinpoint the negative effects of zoning in macro scale.

The site described in the design brief is located in the neighborhood where there is an urban park surrounded by roads and housing lots. Through the proposed lot division we wanted to keep the scale of the area. We assigned a different site to each student. By assigning neighboring sites we wanted to achieve an interactive studio where context is a medium for interaction. In the design process students while dealing with the existing conditions of the site, had to respond to the developments in the neighboring sites by their peers. This would enable them to note the way their peers deal with the design problem and lead them to work in cooperation and communication with others. The brief also included an individual contribution to the process. As a starting point students selected clients and developed a client profile. In order to facilitate the creativity process and to make a reference to the issue of identity, we organized a 3 day workshop where students needed to define a theme to desribe their client and explain this on a 3D construction/artifact. This was an exercise to explore theme and space. The second phase of the studio was the design process of a house in that specific context. Students spent some time in understanding and analyzing the site they worked on. Through the given problem students needed to explore the definition of house, the conventional and contemporary trends in house design, a current issue. Students working in neighboring lots came together in certain intervals to see how their design influenced the others. They needed to cooperate with each other, making proposals, comprimises and criticizing each other to finalize their design decisions.

CASE STUDY

Evaluation of the final work showed that students responded the design problem in a variety of ways. Our studio theme oscilated between the 'relatively static' and 'dinamic' elements in the environment ie in macro and micro context. What was static in the environment were the existing park, the main and secondary roads and the existing fabric of this particular environment. The dinamic elements in macro scale was the city, the urban life and specifically for this site the transformation of function in this neighborhood. Parallel to this, dinamic charater of the city was reflected in the projects by the introduction of different and neighboring sites as a project problem. In a way they were responding to the dinamic condition of the city in micro scale. In their response to the design problem some issues were specified distinctly.

-Response to the static element i.e. the urban park
-Response to urban contex in terms of seclusion/interaction
-Response to urban fabric in terms of figure-ground
-Response to transitional character of the site in terms functional zoning
-Response to dinamic character of neighboring sites

Some students in their response to context took the static element, the park as the starting point. Doğucan who was designing a house for a climber wanted to integrate the house with the park. The house was oriented toward the park and the space was designed to let light and view to the interior. This was also emphasized by the form of that space which has the formal characteristics of a rock ie (fractals) to climb. Through the design the building became an organic part of the landscape. The space has an open, flexible plan. The rigidity of the cubic and solid form is broken by the introduction of fractal form detailed as a light structure. The transparency of this part contrasts with solid mass of the main body. This portion is designed as the private interior training area of the client. While transparency contrasts with privacy, it provides connection between the exterior and the interior taking nature inside.

In another project Merve, located the house near the park also responded to the park formally. In this example the house was designed for a photographer. Taking the analogy of photograph frame further, the student designed the building as masses designating different zones in the house. As a symbolic identity of the client the dark room mass, is surrounded by other masses of various funtions oriented in response to environmental factors. In placing the openings, she created a dichotomy in terms of orientation towards the park and closing to the urban life.

Response to the urban context in terms of seclusion and integration has been explored by some students. Birce wanted to emphasize the difference between the private and the public by designing a wall lining the street looking towards the park. The house she designed was in a way developed behind the wall, creating a secluded semi private area. She had controlled openings, projections toward the park. Behind the wall she created spaces that were open to the private garden where integration of interior space and nature was provided. By designing the house as two units- home and workplace- she provided exterior living area and responded to urban fabric in micro scale.

Many projects responded to the changing character of this particular site by designing the house and the workplace as two separate units creating an urban pattern. In this approach,

Twelve students wanted to emphasize the importance of open private space in an urban evironment, at the same time responding the existing scale of the environment by fragmenting the area. Rest of the students designed house and work place as one mass. Students through the location of their building created a common open area continuing along the lots.

Filiz, in her project responded to the existing roads and designed two separate entrances, one leading to the house, the other leading to the work place, creating a 45 degree angle between two volumes. This kind of layout created a semi private open space, fragmented volumes emphasizing the two different entries.

Located at a corner lot, Ezgi designed a house and an atelier for toys. She created an atrium between two masses to provide an open play area for children. She made use of two different roads at the corner lot and located the building close to one of the roads, creating a large sloping garden reaching the other road. The form of the atelier, following the contour of the road, directed the opening towards this green area.

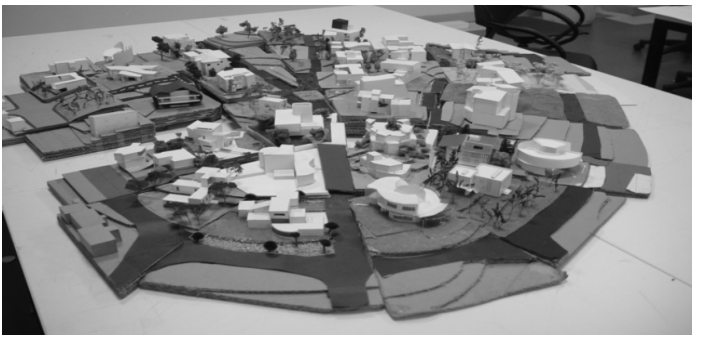
İrem, by her response to the topography, blended the building into the site. The building took the form of tilted up fragments of earth, curving, sloping. Juxtaposition of inclining surfaces was her proposal for this urban site.

Many of the students preferred to combine the two functions in one unit. Gözde's site was located at a corner lot. She responded to the corner, by designing a continuous curvilinear wall, creating a protected open area, looking towards the garden. Gözde and some others' projects, where the house and work place were designed as one unit, seemed to be more sensitive to creating continuous green bands and were in harmony with the existing figure ground.

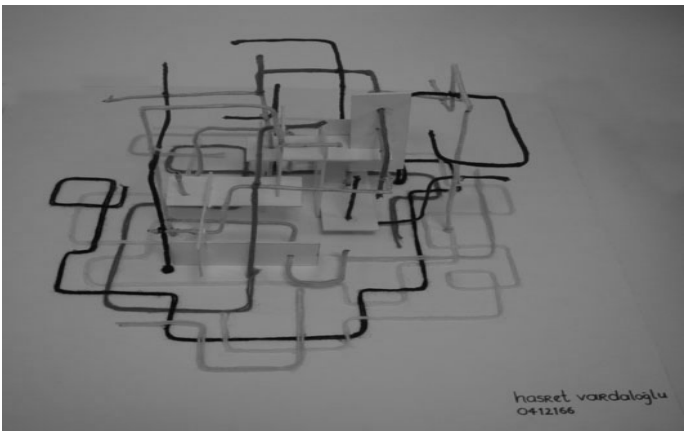
CONCLUSİON

Throughout the design process, the students worked on a series of projects where they could explore specific architectural and urban issues at a variety of levels. They could respond to transformation in urban and in site scale; to existing and changing conditions of the specific neighborhood. They realised the notion of concept development which they practiced through workshop. They considered the issue of identity related to questioning of the conventional definition of 'the house' and through development of 'client profile' during the workshop stage. They also extended the search of identity as 'individuality versus typology' and 'identity versus variety'. This was also an effort to identify with the contemporary approach to mass housing where sameness could be overcome. The students provided interaction in terms of spatial development in close neighborhood, where they dealt with an always changing context.

It has been observed by the end of the semester, the students who have attended this studio, developed awarenes about the ongoing transformation that takes place in that specific part of the city. They experienced coordination with the fellow friends working at neighboring sites, in the development of 'figure-ground'. They worked on the concept of individuality in contrast to sameness in housing. Evaluation of the projects reveal that the input either given or developed by the students have found expression on the final product. Students at an early stage of their architectural training practiced tackling with wide range of architectural and contextual issues.



Working Model



Example from Workshop

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AN EVALUATION OF CONCEPTUAL EDITING IN BASIC DESIGN EDUCATION

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ABSTRACT

Forming ideas and creativity are both mental processes closely related to each other. Since the general student-profile is based on passive and superficial learning strategies (not a target strategy), it is vital for the instructors to enable them actively participate in the design education programs (target strategy). Basic design education process is a means of making relations between the realities of the physical world and the ideal one formed in the imaginations of the students.

The inner vision and self consciousness to overcome the factors limiting the considerations as subjective data are the procedures that are realized in the subconscious world of the student who has to connect the “image diagrams” as mental subjective data on one side and the taught theoretical facts in the courses as objective data on the other side.

Basic design education is based on the following four stages:

1- definition of the problem or theme,
2- formation of the mental process as “conceptual sets”,
3- discussion of the conceptual sets among the students,
4- editing the expression.

In the first stage the student is asked to comment on the given theme of the workshop. The second stage is the period in which the student is free in his own world with his subjective creativity by doing some brainstorming. In the third stage the subjective data are shared among the students to finalize the “conceptual sets” determining the mentioned theme. In the last stage the student expresses his own composition by himself. The aim of this stage is mainly to enable students transform their independent “image-diagrams” into design product while the creative subconscious remains possibly free without any interaction.

This paper evaluates the practices based on “conceptual editing” and emphasizes the importance of the originality of the design products.

Keywords: Basic design, Creativity, Subconscious, Image-diagram, Conceptual set

WHY 'CONCEPT'?

Concept, as a denotation, is a general and abstract design of a thought or of an object in mind. It is a general design that combines and covers the common properties of objects or occasions (www.tdk.gov.tr). Concepts are based on thoughts. Each concept is a produced knowledge. A concept reflects the combination of the 'image' which has a special form and concrete form, and 'thought' which has its general nature (McGinty, 1979). Concepts are abstract but they are visualized with the help of images and they are carried to the concrete entities.

Concept producing is a creative and intuitive process that is carried on in the designer's mental potential. Its goal is to discover and explain what is new. The designer visualizes the concepts with the help of images that stands for the concepts in mind and the way the images are expounded within their activity field.

It is significant to visualize, concretize a thought, a concept, and to build their visual explanation when the design is constructed by concepts. During the design operations, creating an initial point that will make up the form, and displaying this form includes the process of 'concept developing-producing' or 'conceptualizing'. So, 'concept' is an initial point that is special to the designer (Ulusu, 1990).

In T.U. Faculty of Engineering and Architecture, Department of Architecture, it is applied by the way of creating a model based on concept constructions in basic design course (taught in the first year of architecture studies) that consists of theory and practice.

MODEL

This education program aims to make the candidate architects create an analytical design model and a systematic of thinking with concepts by using their creative and cultural substructure/background. Making the students create an image in their minds, is the starting point of this model. Conceptualizing the images is being directed by the students creating sub- concepts. It is very important not to set limits for the imagination of the student groups, for it is vital for discovering new things and developing creative thoughts. The aim is progressing of the logic discipline based on perception-analyzing-construction. The students who are educated in different directions and qualities before higher education, who are from different social backgrounds and whose architectural points of view are not developed yet, go through an instructive stage in the program. The consciousness of the individual is completed with the relation of the physical and social environment that is conceptualized on mental substructure.

The complement of consciousness based on creative mental substructure of the individual is possible with the instructive process including education and experience, and interaction of mental potentials that evaluates the creativity of the individual. This interaction makes up the direction of the designing process from abstract to concrete. A working model is created that is based on concept constructions with this point of view. (Figure 1)

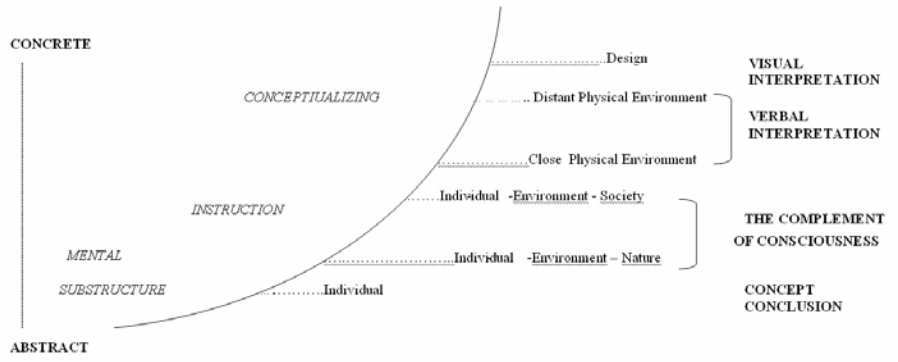


Figure 1. The Experience of Design

DECLINATION OF THE MODEL

Phase 1: Concept Conclusion

Abstract concepts such as *past, future, freedom, happiness, courage, imagination, fear* are used in order to reveal independent creations in the mental substructure of the student. After the problem field is set up by the instructors, the students are expected to express the given concepts by using their creativities. Assigned titles are studied for 4 hours practicing classes for each. The studies are held in two sessions of 30 people. In these studies, students make up concept conclusions which are shown in Table 1. 60 works were gathered from each problem field. One of them is picked to be used here as an example (Table 2).

Table 1. Concept-Meaning-Student Conclusions

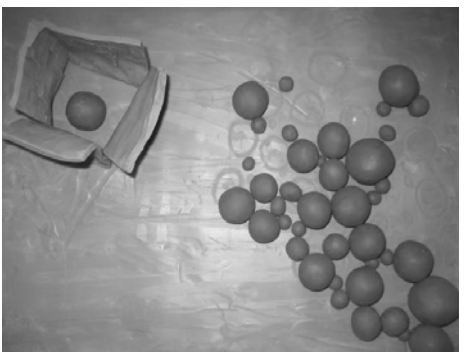
CONCEPT	Meaning *	Student Conclusions
PAST	-That is passed, -Left back in time, -About to be rotten, -Time that is left back from today, history, -Life that is left back.	-Composed of repeats, -Full of memories, -Connection with future, -The explanation of a memory in the past (exam stress), -A process full of obstacles.
FUTURE	-Yet to come, time to be lived, futurity, -Forward in time, expected to happen.	-Getting rid of concerns with the help of the beloved, -Getting over difficulties, -Uncertainty, -Peace.

Table 1. Concept-Meaning-Student Conclusions

FREEDOM	-Acting or thinking with no limits or coercion, -The condition of being no strings attached, -Independence, the condition making decision based on personal thoughts and free will.	-Escaping from slavery, -Respecting other people, -Getting rid of monotone way of anything, -Getting rid of gaps (general, family issues), -Being against rules, -Free existence, -There is no freedom at all, -Succeeding in finding personal ways, getting rid of conflicts, -Bowing to no one.
HAPPINESS	- The state of being fortunate, elated, the feeling of completing yearnings or cravings constantly.	-The moment of achieving peace after conflicts and chaos.
COURAGE	-Personal trust when forcing difficult or dangerous things, -Bravery, having a brave heart and daring, -Being audacious and gutsy.	-Risking and breaking the present patterns, -Trying to do the impossible, acting crazily and feeling no offence.
IMAGINATION	-Created and designed in mind, the thing that is wished to happen, dreaming, image, -Things that are seen like shadow.	-A look to the things to be done in the future, -A look that has no end, -The fact that is strongly desired, -Turning into self, escaping from conflicts, -Future achievements, -The will to get over obstacles.
FEAR	-Concern and sadness that comes out against a danger or a dangerous thought, -Probobility of evil or harm, danger.	-Claustrophobia, -Fear of loosing beloved ones, -Fear of being vulnerable against pressure, -Fear of dying, -Fear of isolation or loneliness, -Fear of taking attention, -Fear of earthquake, -Fear of drowning, -Fear of being wounded, -Fear of being humiliated, -Fear of being unknown, -Fear of loosing against time, -Fear of being excluded in society, -Fear of failure.

*cited from www.tdk.gov.tr

Table 2. Composition of "Fear"

Design Problem : *Fear*	
Student Identity : 04-13.Sümeyra Özel **Scenario** :Fear of loneliness. Individuals fight against loneliness by coming together and forming societies. Society is a safe shelter for the individual whereas the excluded ones are condemned to be alone.	
Working Data : **1.Education Information** : Basic design elements (line, direction, space, shape, scale, proportion, color, value, texture, light-shadow, movement) and psychic influences. **2.Personal Substructure*** : Attaches importance to subjective evaluation, No planned life style, Prefers producing solutions to instant solutions, No substructure information mostly based on graphic expression, Attaches no importance to the power of imagination, Mostly scientific, Willing to participate, Does not prefer change and variety, Attaches importance to productivity.	

*T.U. Faculty of Engineering and Architecture, Department of Architecture, Basic Design Course Questionnaire Data

Phase 2: The Completion Of Consciousness

In this phase, two different practices, which are in relation of environment-nature and environment-society, are being thought. The students are expected to create the composition of abstract concepts such as *culture* within individual-environment-nature relation. They are expected to create the compositions of abstract concepts such as *continuity* within individual-environment-society relation. Producing concepts about the problem field is also expected from the students.

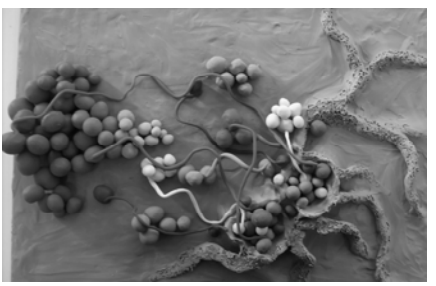
Assigned titles are studied for 4 hours practicing classes for each. The studies are held in two sessions of 30 people. In these studies, students make up concept conclusions and they are seen in Table 3 and Table 5. 60 works were gathered from each problem field. One of them is picked to be used here as an example. (Table 4, Table 6)

Table 3. Concept-Meaning-Student Conclusion

CONCEPT	Meaning*	Student Conclusion
CULTURE	-The complete worldly and spiritual values in historical, social development process, creating these values, transferring them to the next generations, the sum of mediums and organs that shows the individual's civilization level to his/her natural and social environment -All of the artistic products that is unique to one society or a public group, -Developing the pleasures, criticizing and reasoning with the way of learning more and living, experiencing, -Knowledge that the individual gains.	-Experience, savings, -Wholeness, -Creating reactions, -Love, -Dilemma, -Mind and emotion, -Knowledge, -Fusion, -Phasing, -Variety, -Liveliness, deepness, -Mental savings, -Ascending, -Bridge(future and past), -Monotone ways within the complexity, -History, -Conflicts-separation, -Discrimination, -Deepness.

*cited from www.tdk.gov.tr

Table 4. Composition of "Culture"

Design Problem : *Culture*	
Student Identity : 106-41 Öznur Bayraktaroğlu **Scenario :**The combination of different substructures is a versatile event. The gathering of these associations in one undivided body is the culture of the societies.	
Working Data : **1.Educaion Information :** Basic design elements (line, direction, space, shape, scale, proportion, color, value, texture, light-shadow, movement) and psychic influences. **2. Personal Substructure* :** Attaches importance to subjective evaluation, Has planned life style, Prefers producing solutions to instant problems, No substructure information mostly based on graphic expression, Attaches no importance to the power of imagination, Mostly scientific, Observer, Does not prefer change and variety, Attaches importance to creativity.	

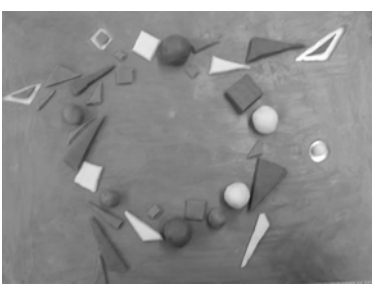
*T.U. Faculty of Engineering and Architecture, Department of Architecture, Basic Design Course Questionnaire Data

Table 5. Concept-Meaning-Student Conclusion

CONCEPT	Meaning*	Student Conclusion
CONTINUITY	-Being continuous, constant, the state of going on without a break, permanency.	-Permanency in nature, -Life, -Space, -Continuity of feelings, -Human life, -Continuity in architectural environment, -Power of experience and savings, -Character, -Development in architecture , -Loneliness, -After death, -Change of feelings, -Responsibility, -Human existence, -Thoughts, -Love, -Mother love, -Events, -Architecture.

*cited www.tdk.gov.tr

Table 6. Composition of "Continuity"

Design problem : *Continuity*	
Student Identity : 106-04 Gökçen Hacıoğlu **Concept** : *Life* **Scenario** : The only thing that continues is 'life'.	
Working Data : **1.Educaion Information** : Basic design elements (line, direction, space, shape, scale, proportion, color, value, texture, light-shadow, movement) and psychic influences. **2. Personal Substructure*** **:** Attaches importance to subjective evaluation, No planned life style, Can not produce solutions to instant problems, No substructure information mostly based on graphic expression, Attaches no importance to the power of imagination, Mostly logical, Observer, Prefers change and variety, Attaches importance to creativity.	

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Phase 3: Verbal Interpretation

This is the phase in which the individual creates a relation with the physical environment. The student is expected to make comments on the relations with the close physical environment and the distant physical environment. The composition of the concept of *space* in close environment relation, and urban rate in distant environment relation is created, whereas the student is asked to produce concepts about the problem field. Assigned titles are studied for 4 hours practicing classes for each. The studies are held in two sessions of 30 people. In these studies, students make up concept conclusions and they are shown in Table 7 and Table 9. 60 works were gathered from each problem field. One of them is picked to be used here as an example. (Table 8, Table 10)

Table 7. Concept-Meaning-Student Conclusion

CONCEPT	Meaning	Student Conclusion
SPACE	The emptiness that separates the person from the environment to some extent, the place that allows the individual to carry on his/her actions. Creating an architectural space means setting limits to the part of the nature or landscape that a man can apprehend (Hasol, 1993).	-Being protected, -Returning to the womb, -Induction, -Limiting, -Shelter, -Freedom, -Need, -Change, -Life, -Variety, -Peace and affliction, -Safe, -Conflict, -Search of environment/medium, -Isolation as a result of differences, -Home.

Table 8. Composition of "Space"

Design problem : *Space*	
Student Identity : 106-03 Sevda Özyıldırım **Concept** : *Borders* **Scenario** : Spaces satisfy people's need to belong somewhere but they still separate people from the world. During setting up the borders of the space a person isolates himself from the entire universe. The end of the borders inside is emptiness and this emptiness grows more and more.	
Working Data : **1.Education Information :** Basic design elements (line, direction, space, shape, scale, proportion, rate, color, value, texture, light-shadow, movement) and psychic influences. **2. Personal Substructure*:** Attaches importance to subjective evaluation, No planned life style, Prefers producing solutions to instant problems, No substructure information mostly based on graphic expression, Attaches importance to the power of imagination, Mostly scientific, Willing to participate, Does not prefer change and variety, Attaches importance to creativity.	

*T.U. Faculty of Engineering and Architecture, Department of Architecture, Basic Design Course Questionnaire Data

Table 9. Concept-Meaning-Student Conclusion

CONCEPT	Meaning	Student Conclusion
EDİRNE	Name of a city	-Being strange, feeling foreign, -Loneliness, -Monotony and boredom, -The state of being incomplete, -Discontinuity (between new and old settlement), -Entering into confusion, -Direction (each path leads to a certain destination), -Conflict, -Enthusiasm (In Selimiye's architecture), -Neutral (it is working but feels uneasy), -Changing, -Chaos, -Simplicity, -Ambiguity, -Silence, stillness, -Discontinuity-irrelevancy (in the urban settlement).

Table 10. Composition of "Physical environment"

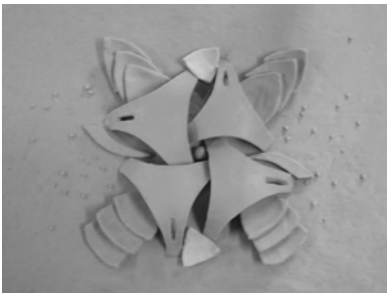
Design problem : Urban enviroment-Edirne	
Student Identity : 106-42 Ebru Solak **Concept** : *Chaos* **Scenario** : Istanbul is big but there are many reasons not to get lost in it. In Edirne, everything looks similar and this causes a chaos.	
Study Data : **1.Education Information** : Basic design elements (line, direction, space, shape, scale, proportion, rate, color, value, texture, light-shadow, movement) and psychic influences. **2. Personal Substructure*** : Attaches importance to subjective evaluation, Has a planned life style, Can not produce solutions to instant problems, No substructure information mostly based on graphic expression, Attaches no importance to the power of imagination, Mostly logical, Observer, Does not prefer change and variety, Attaches importance to creativity.	

*T.U. Faculty of Engineering and Architecture, Department of Architecture, Basic Design Course Questionnaire Data

Phase 4: Visual Interpretation

This is the last phase of the individual's journey from abstract to concrete. In this phase, the student is expected to produce concepts and explain them without concept conclusions about the assigned problem field. They are also expected to emphasize the architectural constructions of the produced concepts according to their knowledge levels.
Assigned titles are studied for 4 hours practicing classes for each. 60 works were gathered from each problem field. One of them is picked to be used here as an example (Table 11).

Table 11. Composition of *"Psychological indecisiveness"*

Design problem : Contrast	
Student Identity : 105-55 Ramazan Karagöz **Concept** : P*sychological indecisiveness* **Architectural Construction** : Tram Station **Scenario** : Psychological indecisiveness (the change of the tide), that exists almost in every part of life, also effects on architectural objects that are products of life. Trains go through our lives. Orange colored parts represent the tram station. Blue colored parts represent the tram wagons. The function of the psychological indecisiveness is carried on by the tram.	
Working Data : **1.Education Information** : Basic design elements (line, direction, space, shape, scale, proportion, rate, color, value, texture, light-shadow, movement) and psychic influences. **2. Personal Substructure*** : Attaches importance to subjective evaluation, Has a planned life style, Prefers producing solutions to instant problems, No substructure information mostly based on graphic expression, Attaches importance to the power of imagination, Mostly logical, Observer, Prefers change and variety, Attaches importance to productivity.	

*T.U. Faculty of Engineering and Architecture, Department of Architecture, Basic Design Course Questionnaire. Data

EVALUATION

According to questionnaire data, as a matter of education before university, it is seen that almost none of the potential architects have substructures based on visual interpretation. It is also observed that the students are not aware of their own potentials. During the practice works, it is observed that there are big differences in interpreting the concepts that are stemming from the students' different cultural substructures/backgrounds. Instructive information, which is the content of the course, is the commonality of the students. The model that is practiced within the context of the two semester long course is based on these multi component conditions.

CONCLUDING

The university education that is aiming the professions is mostly based on informational programs ignoring the mental potentials of the individual. The more the mental activity is boundless and free, the higher the creativity goes. The dimensions that come from outside such as 'experiencing-learning' decrease the possibilities of creativity. After this interaction, creativity falls to its weakest level (Figure 2)

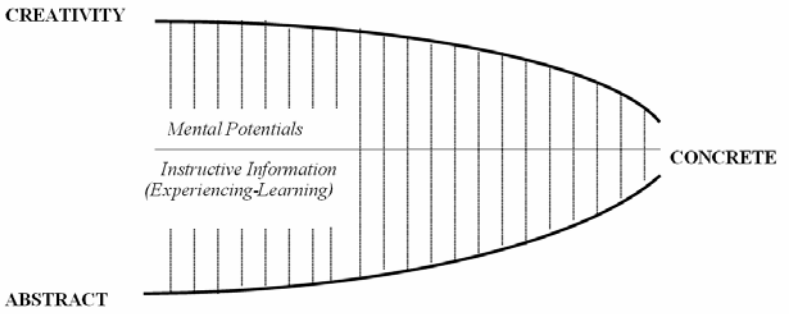


Figure 2. Interaction during design

For architectural education, what is thought should be a model focused on 'the student'. This means that the mental potential and substructure of the student should always be considered during all instructive processes. Professional/technical information should always stay as guiding element whereas the creative capacity should be the element that defines the identity of the architect.
In architectural education program, the way the Basic Design course is practiced in our university, carries the designer's mental potential to the forefront.

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REINFORCING SENSITIVITY TO CONTEXT IN BASIC DESIGN COURSE

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ABSTRACT

The basic characteristics and primary goals of Architectural Education are considered with many qualities including

-sensitivity to complex rational, emotional and aesthetic qualities of architecture and design,
-creativity,
-abstract thinking.

Students are expected to master on those skills and the particular knowledge area of design and architectural space by means of “learning by doing”. This is the goal of architectural education. On the other hand, the lack of those qualities in students is usually presented as the main obstacle to achieve those goals. There might be confusion over the goals and processes in architectural education. It could be caused by the lack of a frame for understanding design, learning through design, and designing through learning in education.

In this study, this frame is assumed as an instrument or interface integrating the pedagogical issues, architecture and design in the form of learning. Within the scope of this study, this frame is put as CONTEXT that helps us to comprehend the relations between the instructor’s experience and knowledge, student, space and design as an interactive experience.

The CONTEXT of architectural education emerges with Basic Design studio. The Bauhaus based Basic Design had institutionalized a particular design, art and architecture ideology as a universal idea. This idea, however, had been reproduced and stripped from its essence during its dissemination since it lost the connection with the essential social, political and aesthetic background. This lost became obvious with the transformation of design assignments, which are supposed to form the aesthetic ideology and sensitivity as a DESIGN PROBLEM. That is to say, design problems have been deduced into principles and concepts without any context. Then, design learning has replaced by a mechanistic design recycle causing mere visual – formal replicas without content. Basic Design has become a generic method for mediocre students of mass education.

The scope of the study covers only Basic Design Studio since it is the initial level where learning, design and space are articulated by means of design problems. The aim of this study is to discuss Design Problems as the context of “design learning process” and the instrument of “doing”. A critical review Design Problems can establish efficient design learning processes, better design thinking and qualified architectural design / architecture even within a mass education. Context-based approach in education is a method and a way of thinking. It could

help students to acquire architectural space as system of complex relationships rather than independent floating objects.

This study claims that basic design problems are knowledge and experience based interfaces. The problem definition identifies the purpose, method, and the process. The problem indicates the concepts, instruments and the possible outcomes in the form of design issue. That is, the Design Problem is the CONTEXT of creative learning process, which takes place as the interaction of instructor, knowledge, student and problem. This study states that interaction among the parts covers three interrelated layers and constitutes a qualified design learning process:

Problem: A pedagogical apparatus formed by means of concepts, principles and tradition. It aims to reproduce and disseminate a certain design and space ideology.

Re-defined Problem: Re-constructed problem by student with reference to a number of coordinates of knowledge, experience and goals (of education and of student).

Performance and quality: Expected improvement of student. It appears and can be evaluated in structuring the problem as a design and learning process.

Keywords: Context, Basic design, Design problem, Architectural education

REINFORCING SENSITIVITY TO CONTEXT IN BASIC DESIGN COURSE

There are numerous studies defining the skills and qualifications aimed by the architectural education. How the students can achieve them is a complicated issue offering unlimited experience and methods. Architecture, as a discipline, has been implementing diverse methods and pedagogical tools to deal with that issue. Inevitably, the source of those alternating solutions are the outcomes, or side-products, of the imported theories and knowledge from the other fields, since they have been proposing particular “way of knowing” and “way of doing” by definition. Systematic design processes, algorithms, design patterns and protocol analyses, semiological approaches, structuralism, post-structuralism, deconstructivism, and so on so forth, have come with particular knowledge body. Moreover, the theoreticians and practitioners have tried to construct learning particular learning and design experiments for the reproduction and dissemination of their ideology.

It is a fact that, education and its pedagogical tools are the most effective ideological instruments in order to reproduce, institutionalize and improve the theory. In this respect, architecture schools have became laboratories and workshops for the reproduction, internalization and justification of the new architectural knowledge since the Renaissance. The history of Architectural Education, art and architecture show that the form of education, features of the pedagogical tools cannot be detached from culture, by which the essential circumstances of the avant-garde and new could emerge. With the detachment knowledge of the object –beside ontological and epistemological content, the knowledge of the FORM, and aesthetics - from the object and its production, the characteristics and the tools of architectural education altered. As a matter of fact, architecture as an issue of construction mastering, and architectural space as a building drawn onto the site in full scale, evolved to a discipline producing not only professionally planned – designed and commodified physical reality, but also abstract – intellectual categorical knowledge to be tested.

The knowledge abstracted from physical reality came with the questions of how to utilize that categorical knowledge in architectural design process to create space; and how to form this process as a teaching and learning activity. How could architectural education make that intellectual and professional knowledge and design process reproducible in the form of learning and teaching activities? Actually, the reciprocal interaction between the knowledge and the tools of its pedagogical reproduction, which shape each other, is a touchstone for this presentation. Every paradigm needs to implement its own indoctrination. Transformation, thus, was inevitable. The most obvious change was from mimesis to combine diverse knowledge and design process in the form of design learning experience. This shift should be read parallel to the interdisciplinary researches in psychology, learning, cognitive development, art history and aesthetics, since only then the paradigmatic shift in the identity of the architect, the tools and methods of education, and the body of knowledge – content of the architectural education could be grasped.

The efforts of academic body to respond to the overwhelming changes through diverse approaches and tools to teach architectural design are dense, and continuous. On the other hand, the content of the discipline, and the education, has been determined, occupied, and manipulated by the massive professional activity in the real world, which is under the hegemony of “socio-economic” agenda, and its reflections on the cultural production. The agents of this activity, however, have close connections with the schools, as it should be. Furthermore, there is number of academicians studying on the works of those agents as well. The contradictory part is that the intellectuals designing and building through their Modernist ideals were replaced by “Star Architects” collaborating with “critics” writing post-rationalizations on the skyscrapers in Chine or, libraries in the USA.

This “floating” architectural production requires a closer look, since it is not clear if the prevailing discourses and methods in education support and reproduce it ideologically and pedagogically. Knowledge is being constructed as HYPERTEXT through networks. Architectural practice is processing via a global manufacture belt. The architectural – cultural identity of the era is blurring, architectural images are becoming too anonymous, whereas the architecture is being dissolved geographically, culturally and ideologically. Architectural space has no interaction with PLACE any more. The CONTEXT is neither among the “raison d’ être” of architectural space, nor a design input. This lost reflects on the education as dissolution in content and pedagogical tools.

The critical point is that the universal design principles and abstract language of the Basic Design Course seems to pose a similar, context-free manner. The language of the Basic Design Course, usually by mistake, are accepted and appreciated as the “true and beautiful” appearance of the visual reality. In the first quarter of the 20th Century, its approach had promised to decrease the tension between the artist designer, who have subjective and relative positions, and the objects and phenomena, which were obeying the rules of causality. It offered a method based on perceptual constants, aesthetics of the western art dated back the antiquity, and the requirements of the socio-cultural dynamics. Despite the relative position of the observer / designer, the relations between the components of the visual reality were identifiable and universal. Designing was manipulating those relations independent from the content. The utmost concern was to achieve a GESTALT. Unfortunately, the

representation of the relations became the visual language of the true form of the world. On the other hand, this shift cannot be figured out without any reference to the socio-cultural paradigm and economical context initiated – sparked it.

The history of the Basic Design Course is beyond the scope of this study.(1) But the common argument is that the theory and pedagogical structure of the Basic Design Course were the result of social, historical, economical and cultural CONTEXT. The roots of the form language and visual aesthetics of the course could be traced via ancient Greek culture, Christian interpretations, Renaissance, German philosophers' space concepts, and the avant-gardes of the 20th Century.(2) It could be said that, the course crystallizes a particular contextual sensitivity through an abstract – intellectual knowledge body and proper visual representation of it. The level of abstractness and intellectual quality are parallel to the evolution of the human kind in science, technology, art and philosophy.(3) The source and the direction of the sensitivity can change with respect to the context. In USSR, Inkhuk and Vkhutemas, it was class-consciousness; at the Bauhaus, it was sensitivity to the development of production and social structure on the basis of the integration of arts and crafts; in the United States, it was the market competition and commodity. The Basic Design Course has a powerful context, aesthetic judgment, and particular design methodology. It promises a particular architecture in content and form.(4)

For this reason, the Basic Design Course could not be inserted into any kind of architectural education program. On the other hand, as the biggest misunderstanding of the architectural education, its abstract language was confused with didactic tools of mechanistic learning methods. It was treated as the lifevest for the mediocre students of the mass education systems, since it offered teachable and learnable principles, elements and reproducible results with a granted quality by anyone.
As it could be seen, the language and aesthetics of the Basic Design Course is contextual by definition. Its design approach and spatial ideology cannot justify any other space syntax. Then, how can we prevent it to become a pedagogical tool considering mere design process stripped off architectural space having particular physical or cultural context?

The dissolution of the contextual approach in architecture and education start with the misinterpreted Basic Design Courses in the first year of the architectural education. In many schools, architectural design is reduced to a visual composition. The connection between the space and design has been lost. Consequently, space is replaced by universal but unique design process floating in midair without a context. The exercises of the course are the catalysts of that deviation. Abstract and charismatic design problems have been inherited from one generation to the other, and appreciated as the magical wands of "learning by doing". The design of the problems as pedagogical materials - tools, however, has been disregarded. Design problems have been deduced into principles and concepts without any context. Then, design learning has replaced by a mechanistic design recycle causing mere visual – formal replicas without content. Basic Design has become a generic method and set of pedagogic material for mediocre students of mass education. A comparative study on the results of the Basic Design Course products in different Architectural Schools will show that the learning process, individual development and performance of the student have fallen behind the visual appearance of the end product.(5) It is because of the lack of a frame for the learning by design, design by learning, that is to say so

called learning by doing, which elaborates the Basic Design Course as a pedagogic structure. As a result, the experimental design learning has change into the visual replications, intentionally or as a re-discovery, of the expected graphic compositions.
As it was mentioned above, the Basic Design Course proposes a certain design language and spatial ideology, which could be promoted, or not as a professional and academic attitude. If not, the Basic Design Course could not be integrated with the rest of the program, and should be reviewed, since it is not a result or function of the socio-cultural or physical context. On the other hand, if it has its own legitimacy within the given context, then, the design problem in the Basic Design Course can be re-discovered as a pedagogical instrument of creating awareness for the CONTEXTUAL APPROACH in architectural design.

The basic components of the architectural design education are student – designers, instructor – design mentors, and the social-physical environment of their interactive communication – studios. The channel of their communication is design assignments, defining a “problem field” to be examined by means of “learning by doing”. The basic design problems are knowledge and experience based interfaces. The problem definition identifies the purpose, method, and the process. The problem indicates the concepts, instruments and the possible outcomes in the form of design issue. It provides notions, poses related knowledge fields. That is, the Design Problem outlines, or better becomes, the CONTEXT of creative, conscious and sensitive learning process, as the interaction between the mentor, knowledge, and the student. A proper design of that context could shift the center of interaction from the “master-instructor” having knowledge and authority, to the design process experienced by both side. This new orientation could expand the students’ field of action and thinking, which could foster students’ creative design and learning process.(6)

How can we develop a generic structure for Basic Design Course Problem as a context that could widen the horizons of the students, facilitates creativity, fosters diverse – alternating solutions? It is of importance to set pedagogical and psychological structure of that approach. First of all, creativity in design process is not an “adventitious” phenomenon. According to Dacey and Lennon (1998), the creative process is composed of 5 complementary steps of perception: the comprehension of the whole picture, exposed by the problem; the emerging scheme – organization - idea imposed by the visual information taken from the given problem; reformulation of the problem; releasing from the biases; proposing a solution.(7) Then the exercise / problem should be the initiator of that progress. It is structured with respect to the whole perspective of the program. Its content reflects the design and architecture culture of the mentor. It is the carrier of the pedagogy and ideology of that particular architectural design education program. On the other hand, the student-designer encounters it with respect to totally different categories of knowledge, cultural background and ideology. The purpose, expectations and tools of the student is completely different and out of the scope of the course. As a consequence, the student would redefine the problem on his/her basis. This is the breaking point of design learning process. The utmost concern of the architectural design education in the first year should be providing a learning environment structured through interrelated knowledge bodies and design experience, which would help the student to define his or her individual, creative and progressive problem field within the given exercise (redefinition of the problem).

This could happen if only the curriculum and the content are structured together, with regard to the expected particular architecture and design ideology-culture. The program should be monitored and evaluated by the education specialist, who could facilitate the progressive learning experience as an institutional education issue. The learning profiles of the students (styles, strategies, etc.) should be outlined and certain flexibility in the program should be provided.

All these pedagogical issues should be taken for granted indeed. This is the first step for developing an awareness of CONTEXT in students. Contextual approach starts with the coordination of the knowledge, experience, learning on space and time axes. The second step should be the re-introduction of space-time dimensions to the abstract design paradigm of the Basic Design Course. As it was mentioned above, the withdrawal of that dimensions from the design learning has reduced the Basic Design Course activities to the manipulation of the “universal principles of Design” among the “universal elements of Design”. Such a reduction, usually, ends up with graphic – compositional puzzle-like images looking for the right position on the plane, which is the most dangerous gap between the architectural design and the Basic Design Course.

The assignment should force the student to recapitulate and define the problem area of the exercise. Then the student can open the channels between the other fields of knowledge, and courses. This communication with other components of the education would help them synchronize learning and design processes. It should motivate them to propose different intellectual levels –from idea to end product - that give feedbacks to each other while moving forward and backward. The problem structure should allow, and orient the students to define particular conditions and parameters for each level. Different conditions and parameters help them think diversely. Moreover, students can understand and re-form the nature of the problem only by manipulating those parameters.

All those didactic instructions given above seem contradictory with the nature of creative design and learning process. As a matter of fact, the content, structure, and the base of the education environment should not confused with the learning itself. A productive learning experience can be achieved only through innovative, creative and flexible methods, but they are again methods, which should be planned, monitored, assessed, discussed and revised.

The basic consideration of the instructions is to create a learning environment for the students’ development. It should be remembered that it is not a “controlled” development, but rather a monitored and reinforced progress. Although student does not need to know the pedagogic structure and components, the Basic Design Course should reveal its design and architecture culture explicitly. Furthermore, the program should allow him or her to expand designerly ways of thinking. This is crucial for the basic concern of design learning: The re-definition of the problem. If the exercise can create a difference in their thinking and motivate them to discover design learning within the context of the Basic Design Course, rather than their previous experiences and social-cultural background, then certain goals are achieved for the sake of architecture.

It is a fact that the abstract graphic language and the visual compositions of the Basic Design Course were the functions of socio-cultural context. The universal elements, principles, and solutions are based on a strong design ideology and form theory. Many architecture schools have been implementing the course with no regard to its historical, theoretical, and cultural context. This approach caused too much dissolution in content. It seems that this dissolution created a deep gap between the course in the first year and the rest of the education and the professional practice. This gap could not be the justification of a "unique and context-free" design culture in contemporary culture production. On the contrary, to fill this gap, it is of importance to utilize the capacity of the Basic Design Course exercises. The main goal of the course is to create a critical – analytical perspective. Therefore, even without a physical – social context, design problems can be structured as knowledge based interfaces forcing intellectual and critical interaction with the context. Developing design problems as the intellectual context of design learning experience could initiate a shift in architectural education paradigm, from so called master-apprentice myth promoting the hegemony of instructor, to a critical research and experience-oriented approach. Thus, the raise of context-conscious architect-intellectual is seemingly inexorable.

ENDNOTES

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DESIGN EDUCATION

Moderator: Kristof van Assche

Architectural Styles, Contextual Compatibility and Design Education on Perceived Quality of Buildings
Ebru Cubukcu, Ibrahim Akgul

A Field Study on Reconstruction of Architectural Education
Emel Düzgün Birer, Gamze Özkaptan Alptekin

ARCHITECTURAL STYLES, CONTEXTUAL COMPATIBILITY AND DESIGN EDUCATION ON PERCEIVED QUALITY OF BUILDINGS

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ABSTRACT

This study tested the effect of (1) architectural styles, (2) contextual compatibility, and (3) length of design education on perceived quality of the buildings. 51 planning students (20 male X 31 female; 31 first X 20 fourth year students) rated color photographs of four buildings (representing modern and post-modern styles and low and high level of contextual compatibility) on preference. Participants also reported the importance level of six criteria which may had led their preference decision. The criteria included: (1) the physical characteristics of the building (such as scale, form, material of the building), (2) the contextual fit of the building to its surrounding, (3) the architectural style of the building, (4) the familiarity with the building, (5) knowledge of authorities comments, and (6) personal feelings. Results showed that the length of design education, architectural style and contextual fit effected preference judgments. In parallel to expectations, first year students gave more positive preference ratings than fourth year students. Modern buildings were more liked than Post-Modern buildings. On the contrary to expectations, buildings that do not fit to their surrounding in terms of location, exterior mass, and façade received better scores than buildings that do fit. The effect of architectural style remained significant when first and fourth year students analyzed separately. The effect of contextual fit remained significant only for first year students. As for the criteria used in preference judgments, results showed that first and fourth year students' decisions dwelled on the same criteria. Personal feelings, physical characteristics of the building influence preference judgments more than other criteria (such as familiarity and authority comments). These findings suggest that aesthetic evaluations of buildings are based on architectural style and personal feelings. The effect of architectural style on aesthetic evaluations increases with increases in length of design education.

Keywords: Design education, Perceived quality of building, Architectural styles

INTRODUCTION

Since 1960s environmental preference in general, and perceived quality of the buildings in particular, has been an important research area in the field of environmental psychology and environmental aesthetics (Nasar, 1992; Bechtel & Churchman, 2002; Bell et al. 2000; Stokols & Altman, 1987).

In that field, a voluminous literature has focused on whether design professionals and the public understand and evaluate the environment differently (Groat, 1982; Devlin & Nasar 1989; Nasar, 1989; Devlin 1990; Wilson & Canter, 1990; Stamps, 1991; Hubbard 1996; Purcell, 1995; Wilson 1996; Gifford et. al., 2000; Brown & Gifford, 2001). Studies which found differences in the aesthetic evaluations of design professionals and the public tended to explain this difference with the length of design education.

Studies in that field also focused on architectural styles to explain environmental preference. Such studies showed that if a person likes one particular building of an architectural style, he or she also likes the other examples (Wilson 1996). In addition, design professionals and the public differ in the styles they like and dislike. While architects like `high` styles, the public likes `popular` styles (Nasar, 1989; Purcell, 1995).

However, most of these studies ignored the contextual compatibility of a building to its surrounding while examining the design professionals' and the public's environmental preference. Yet, it is clear that how well a building fits into existing visual context would impact perceived quality of that building. Groat (1992) argued that the contextual fit can be examined in three areas: (1) the fit of location (alignment, set back distances, and angles), (2) the fit of exterior mass (shape, size, and roofline), (3) the fit of façade (color, and materials).

This study aims to fill this gap by testing the simultaneous effect of architectural styles, and the contextual compatibility on perceived quality of the buildings by designers and non designers (students in different grades would represent designers and non designers).

Previous studies on environmental aesthetics have employed a laboratory based empirical approach, which requires respondents to judge color photographs of physical environments against a seven point semantic differential scale (such as like-dislike and prefer-does not prefer). Thus this study followed a similar procedure and tested (1) the effect of the length of design education, architectural style and contextual compatibility on perceived quality of buildings and (2) the degree of importance of various criteria (such as architectural style, contextual fit, familiarity, and personal feelings) in determining perceived quality of buildings and if the degree of importance of each criteria differs between students who spent less and more time in design education.

METHOD

Participants

51 students (20 male, 31 female) studying in City and Regional Planning Department of the School of Architecture at Dokuz Eylul University volunteered to participate in the study. 31 participants were first year students to represent the non-designers and 20 participants were fourth year students to represent the designers.

The Photographs

Ten color-photographs of buildings selected from architectural journals and books. The buildings selected represented Modern and Post Modern styles and were mainly designed by well known architects. Four judges (professional architects) were asked to name the style each building represents and rate the goodness of example (1 = very bad example of the style, 7 = very good example of the style). Four buildings, which were named as the same style by all judges and rated as a good example of the style (received at least 6 as the mean score), were selected. Seagram Building (Mies Van Der Rohe) and Guggenheim Museum (Frank L. Wright) represented the *Modern Style*, SFMOMA Modern Art Museum (Mario Botta) and AT&T Building (Philip Johnson) represented the *Post-Modern Style* (Figure 1). Two buildings were museum buildings and two were office buildings. All buildings were from United States. All images included the whole building view with the neighboring buildings and land uses.

Two judges, who were graduated from a design-based program, were asked to categorize each building to two levels of contextual compatibility with its surrounding (low X high). They were told to use three criteria in determining the degree of contextual fit; (1) location (alignment, set back distances, and angles), (2) exterior mass (shape, size, and roofline), (3) and façade (color, and materials). The judges agreed that for each style, one building represented high level of contextual fit (Seagram building and AT&T building) and one building represented low level of contextual fit (Guggenheim Museum and SFMOMA Modern Art Museum).

Figure 1 . The buildings used in the experiment: (A) Seagram Building (Mies Van Der Rohe), (B) SFMOMA Modern Art Museum (Mario Botta), (C) Guggenheim Museum (Frank L. Wright), and (D) AT&T Building (Philip Johnson).

Procedure

First, participants received a written and a verbal brief description about the study. Then, they rated color photographs of four buildings on preference, using 7 point scale (1 = dislike, 7 = like). They were told to give their honest opinion as there was no right or wrong answer and told to evaluate the quality of the architectural building rather than the picture quality. They were then asked to rate the level of importance of six criteria in determining their preference decisions. Again, they used 7 point scale (1 = was not important in my decision at all, 7 = was very important in my decision). The criteria included: (1) the physical characteristics of the building (such as scale, form, material of the building), (2) the contextual fit of the building to its surrounding, (3) the architectural style of the building, (4) the familiarity with the building, (5) knowledge of authorities comments, and (6) personal feelings.

Statistical Results

Three sets of analyses were done. The *first* set of analyses examined if gender, the length of design education, architectural style and contextual fit effect building preference. The *second* set of analyses examined if the effect of contextual fit and architectural style on building preference remained the same with increases in the length of design education. The *third* set of analyses examined if the level of importance for six criteria (such as architectural style and contextual fit) in determining the level of building preference differs between students who spent different lengths of time in design education.

Table 1. The effect of gender, level of design education, architectural style, and contextual fit on architectural preference

	N	Mean*	Std. Deviation*	Significance of Difference
Gender				
Male	80	4.79	1.73	t = 1.10, df = 202, p>0.10
Female	124	4.50	1.87	
Length of Design Education				
First Year Students	124	5.02	1.64	t = 4.09, df = 202, p<0.01**
Fourth Year Students	80	3.99	1.91	
Architectural Style				
Modern	102	5.28	1.77	t = 5.66, df = 202, p<0.01**
Post-Modern	102	3.94	1.62	
Contextual Fit				
Fits to surrounding	102	4.23	1.69	t = -3.10, df = 202, p<0.01**
Does not fit to surrounding	102	5.00	1.87	

*The preference ratings vary from 1 to 7, where 1 represents 'dislike' and 7 represents 'like'
** significant at 0.01 level

Table 1 shows the effect of gender, the level of design education, architectural style and contextual fit on building preference judgments. As the independent sample T-test demonstrated, all factors, except gender, had an effect on preference. In parallel to expectations: first year students gave more positive ratings than fourth year students, modern buildings were more liked than post-modern buildings. On the contrary to expectations, buildings that does not fit to its surrounding in terms of location, exterior mass, and façade, received better scores than buildings that does fit to its surrounding.

A General Linear Model Analyses tested the statistical significance of the effect of each factor after accounting for other factors (Table 2). Results showed that the effect of each factor remained significant after accounting for other factors.

Table 2. General Linear Models testing the effect of gender, level of design education, architectural style, and contextual fit simultaneously on architectural preference.

Source	df	Mean Square	F	Sig.
Gender	1	2.28	.916	.340
Length of Design Education (First Year X Fourth Year Students)	1	49.76	19.94	.000*
Architectural Style (Modern X Post-Modern)	1	92.00	36.91	.000*
Contextual Fit (Fits to surrounding X Does not fit to surrounding)	1	30.59	12.27	.001*
* significant at 0.01 level				

Figure 2 demonstrates if the effect of contextual fit and architectural style on building preference differs between students having different lengths of design education. For contextual fit, the buildings that do not fit to their surrounding were more liked than the others, by both the first and fourth year students. However, the difference was significant only for first year students ($t = -3.55$, $df = 122$, $p<0.01$). For architectural style, modern buildings were more liked than the post modern ones, by the first and fourth year students. The difference was significant for first year students ($t = 5.47$, $df = 122$, $p<0.01$) and fourth year students ($t = 2.87$, $df = 78$, $p<0.01$).

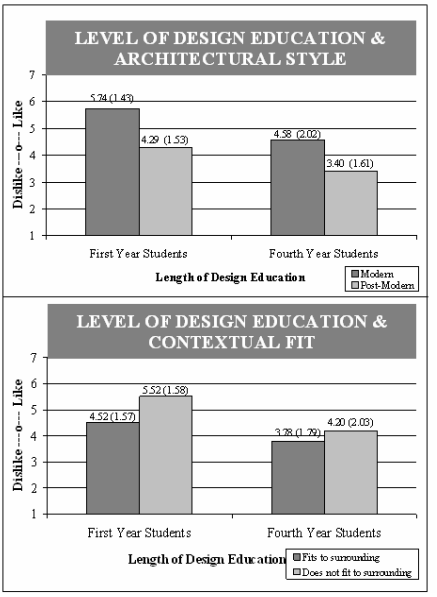

Figure 2. The effect of architectural style and contextual fit on building preference by different lengths of design education

Table 3 shows the mean scores of the level of importance for each criteria that participants may had used in their preference decisions. Results showed that the importance rank of each criteria was similar for first and fourth year students. Both groups used personal feelings as the most important criteria which was followed by physical characteristics of the building, contextual fit of the building to its surrounding and architectural style. Authorities' comments and familiarity with the building were the least used criteria in determining the level of preference. Note for the importance of familiarity with the building, first year students stressed higher importance than fourth year students. Although this result contradicts with common expectations, it does not deserve further inspection as this criteria is the least used criteria by both groups.

Table 3. The importance of various criteria that may had been used in determining the level of preference by first and forth year students.

The Criteria	**Total* (n = 51)**	**First Year Students* (n = 31)**	**Fourth Year Students* (n = 20)**	**Statistical Significance of Difference**
Personal Feelings	6.49 (0.67)	6.52 (0.68)	6.45 (0.69)	F (1,49) = 0.11, p>0.10
Physical Characteristics	5.96 (1.30)	5.90 (1.42)	6.05 (1.10)	F (1,49) = 0.15, p>0.10
Contextual Fit to its surrounding	5.45 (1.57)	5.48 (1.48)	5.40 (1.73)	F (1,49) = 0.03, p>0.10
Architectural style	4.53 (1.57)	4.77 (1.36)	4.15 (1.81)	F (1,49) = 1.97, p>0.10
Authorities comments	2.80 (1.89)	2.94 (1.77)	2.60 (2.09)	F (1,49) = 0.38, p>0.10
Familiarity	2.20 (1.65)	2.68 (1.74)	1.45 (1.19)	F (1,49) = 7.62, p<0.05

* Mean (Standard Deviation) are given. For each criteria 1 = low level of importance in determining the preference, 7 = high level of importance in determining the preference.

DISCUSSION

This study examined the effect of architectural styles, the design education, and the contextual compatibility on perceived quality of the buildings. Results suggest that aesthetic evaluations of buildings are clearly based on architectural style, physical characteristics (such as scale, form, material of the building), and personal feelings. The effect of architectural style and the effect of physical characteristics were more pronounced for designers (fourth grade students) than non designers (first year students). However, the effect of contextual fit on aesthetic evaluations was unclear.

For the architectural style, the results supported the findings of previous research (Nasar, 1986; Hubbard, 1996; Wilson, 1996) which found a statistically significant effect of architecture style on preference judgments. Modern style is more liked than the post-modern style. This difference was more pronounced for fourth year students than first year students. This finding also supports a pervious study which

investigated the architectural style preferences at two schools of architecture and at five different stages of their education (Wilson, 1996) and found that architectural style preference is shaped by the training given in a specific school and by the level of design training. Note, this study was conducted in one school. Given the differences across different design schools, more work need to be done in other design schools, with other examples of each style and with other architectural styles (such as high-tech) before generalizing the result of 'the most liked architectural style is the modern style'. Perhaps the other styles will be more appreciated in other schools.

For the effect of personal feelings on preference judgements, the results partially supported the findings of a previous research (Hubbard, 1996). This experiment provided evidence that personal feelings are more important than any other criteria (such as contextual fit, familiarity with the building and authorities comments) in determining preference judgments. However the effect of personal feelings remained the same with increasing length of education. This contradicts with the findings of a previous study (Hubbard, 1996) which found that personal feelings are more important for non-designers than designers. This inconsistency may possibly stem from methodological differences as this study used first and fourth year students to represent non-designers and designers. Future research may compare the effect of personal feelings of first and fourth year design students to design professionals and to public.

For contextual compatibility, the results were surprising. Buildings that do not fit to the surrounding in terms of location, exterior mass, and façade were more liked than buildings that do fit. This unexpected result may also be stem from methodological limitations. Recall, this study used two examples for each style because of time constraints. Whether the unexpected results of the present study will apply to different examples of each style remains to be seen. Moreover, this study classified the buildings to two levels of contextual compatibility (low and high). Perhaps a wider classification of contextual compatibility with more examples of each style may yield a different result: increases in contextual compatibility causes increases in preference.

This study, like many before, was focused on young people from the same culture. Subsequent work may test building preference of various ages (children, elderly) and various cultures.

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A FIELD STUDY ON RECONSTRUCTION OF ARCHITECTURAL EDUCATION

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ABSTRACT

Architectural education must be re-designed according to the changing conditions in the world.

Globalization and world wide circulation of services also affected the education systems both from the students' and universities' point of view. Students attending to the universities prefer to attend at least one semester to a university in a foreign country, to get experienced. Universities try to accredit their programs both nationally and internationally, and to exchange their students and lecturers in order to pull down their borders. This cooperation and integration trials force the universities to reconstruct their education programs at least to enable their compatibility.

A field study in order to reconstruct the architectural education program of Istanbul Kültür University is explained in this paper. Nine well known universities in the world and three well known architectural departments in Turkey was selected and investigated in this study. These schools were evaluated within their conditions. Basic approaches, course distributions and course contents of the education programs were analyzed in details and these analyses were adapted to newly developed IKU architectural education program within the realities of Turkey.

Keywords: Architectural education, ECTS

INTRODUCTION

Architecture is a part of art and a part of science, including both socio-cultural and technical issues in the service of humanity. Creating an architectural environment appropriate to the socio-cultural structure of the society, conservation of historical environment as a cultural heritage constitutes the part of art in architecture. Considering technical requirements to create safe, secure, sustainable, ecological, energy saving architectural environments constitutes the technical part of architecture. Architecture belongs to the whole world and also to its location, as being a cultural element putting forward the civilization level.

The relationship between socio-cultural deterioration and living in spaces deprived of architectural culture, inevitably acquire shape on our lives. In order to improve socio-cultural level of the community, more attention must be paid on architecture and architectural education (1).

In this context, there must be two main purposes in architectural education; first of all educating creative, talent and open-minded designers/builders and who are conscious about professional liability and ethics. Secondly creating good world citizens who has mature thinking system and who has ecologic sensation and communal responsibilities.

AIM OF THE STUDY

Under the circumstances of globalization and world wide circulation of services, architectural education programs are to be revised and reconstructed in order to make new generation architects ready for the new world. Turkey is in the preparation period for attending to the European Union and universities in Turkey have to consider the rules of conventions of European universities besides other universities in the world as USA. Universities need to accredit their programs by national and international accrediting associations for ensuring their students' equivalency. National accreditation reviews are done on foundation schools by YOK (Yüksek Öğretim Kurumu-Higher Education Council of Turkey) in Turkey. Architectural training on graduate basis takes four years. Master programs take minimum of two years. Istanbul Kültür University is one of the leading private foundation universities in Turkey. IKU Faculty of Engineering and Architecture, Department of Architecture has 280 students. A field study was realized in Department of Architecture in IKU (Istanbul Kültür University) in Turkey, according to revising and reconstructing the program from this point of view.

DEVELOPMENT OF THE PROGRAM

Methodology

Conventions according to architectural education of European Universities have not been defined clearly yet, but some basic rules have been established by UNESCO-UIA (International Union of Architects) Validation System for Architectural Education document (2).

In USA, NCARB (The National Council of Architectural Registration Boards) defined the architectural education program criteria in details. These criteria were not in contradiction with the UIA rules, so they were accepted as base rules for the developing program in IKU. NCARB distributed the architectural education courses into some basic groups and defined the approximate weights (hours) of these courses in total course hours.
Nine international well-known architectural schools were selected for this besides these schools; three of the best architectural education programs in Turkey and also the existing program in Architectural Department of Istanbul Kültür University were also investigated.

An overall inspection was realized to understand their mission, vision, their education systems and content of the programs. Each education program then was analyzed according to the rates of the basic course groups in total course hours, defined by NCARB. Some graphics were designed in order to make comparisons between these

programs. The common approaches and trends were determined and adopted to the newly developed program in IKU.

Reconstructed Architectural Education Program of IKU

In Europe, which the borders through the countries are disappearing day by day, to be able to establish an effective cooperation among higher education councils is the main goal. SOCRATES, one of the education programs of EU (European Union), aims to bring the European dimension to the education and to increase the education quality by empowering the cooperation among the participant countries. With the beginning of ERASMUS, which is one of the action plans of SOCRATES that allocated to the higher education, there has been a serious problem for both themselves and higher education councils to recognize their studies abroad. ECTS, known as European Credit Transfer System, forms one of the main goals of our study. ECTS has been developed to ensure the cooperation and compatibility of the courses in higher education among the EU countries. Arranging the course credits in respect of ECTS, one of the prerequisites to be on the register of ERASMUS program, will ensure our education program to run with international qualification and comprehension.

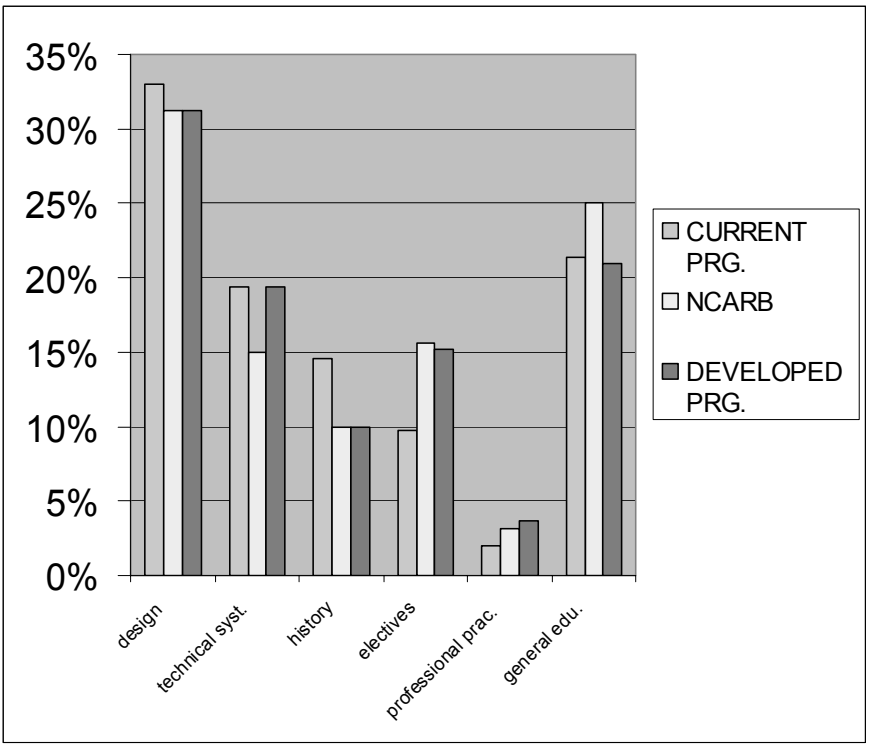
This developed program is being based on the criterions which are introduced by The Union of International Associations and The National Council of Architectural Registration Boards, which is supervising the validity of architectural diplomas in U.S, relating to architectural education. The program has been inquired in Turkey as well and match-credited according to ECTS.

UIA was established by organizing the National occupational institutions in Europe. Implementation of the UNESCO – UIA' s Architectural Education Provision performs various studies to ensure the validity of the programs given in the architecture schools of UNESCO – UIA Architectural Education Acceptance Committee and to ensure validity systems which are currently in or will be brought in the future to be recognized. In this study, UIA having the authority to determine the characteristic standards, worldwide, which must be carried by an architect, is utilized when determining the lessons' subjects and contents.

Undergraduate education in architecture does not have a common structure in Europe. Various approaches are observed between ratios of lecture groups in different programs except design studios constitute the main column. Criteria established by NCARB, for architectural education in America, has directed us with our study on contents of lecture groups, their ratios in total course credits, their relationships with design studios. According to NCARB, the subjects that an architectural education program should include are collected in six groups: General Education, history-human behavior and environment, technical systems, practice, design, electives.

Common aspects of the selected architectural education programs; nine internationally accepted architectural departments like Berkeley, MIT, Cornell in USA; Bordeaux, Delft, ETH, Stuttgart University, Helsinki Technical University in Europe, Kyoto University in Japan and three of the biggest architectural departments of Turkey (İTÜ, ODTÜ, Yıldız Technical University) were analyzed.

Table 1. Comparison of course ratios of current IKU program, NCARB and developed program



The fundamental structure of the developed program has been constructed as the levels of the architectural design studios determined by NCARB, as the medium in which the synthesis of all the courses are made and in the context of the determined rates of other course groups. Accordingly design studios have been given the percentage of 31%, elective courses 16%, general education 25%, history/behavioral sciences/environment 10%, professional practice 3%, and technical systems 15%. Furthermore, relations were established between semesters according to the levels of the design studios determined by NCARB, and the objectives and content of each semester has been determined according to these levels. The context and weight of the courses which will support the architectural design studios were structured in the context of this arrangement.

As seen from Table 1, there is a significant difference between the suggested ratios of technical systems course ratios of NCARB and the developed program. This situation comes from the importance of technical knowledge that the students need because of Turkey's geographical position in the world. As taking place on earthquake zones in the world, students are to be educated more on structural systems. Especially, the fact that students are gaining professional competence with

their undergraduate diploma at the end of four years, yet in Turkey, so it is decided that students must be concentrated on technical subjects. This critical decision resulted with some other variances in elective, general education and professional practice course groups because of not to exceed the total course credits.

CONCLUSION

Globalization has changed the facts of life for architects and architectural education consequently. Architectural educational programs should be differentiated considering their mission and vision, but some common evaluation criteria is needed for validation of the programs.

Five year education and two years of practical training is a compulsory requirement of UIA architectural education. However, according to the laws and regulations within the Higher Education Legislation, the undergraduate education in Turkey is four years at the moment. Due to this reason legal arrangements are being made in the direction such that, following the undergraduate degree education for four years, students in Turkey can obtain the right of architectural professional practice responsibility after they receive two years of graduate education. In this direction, the numbers of elective courses in the developed program have been increased and their content was prepared according to the graduate programs. Thus the students have been provided the chance to get prepared for the graduate education, by taking elective courses during their undergraduate education according to their area of interest and continue their graduate education and receive professional practice right in the future.

ENDNOTES

(1) UIA/UNESCO Mimarlık Eğitimi Şartı, UIA Belgeleri 2001, TMOBB Mimarlar Odası, Ankara, 2001.
(2) UNESCO-UIA Validation System For Arhitectural Education, XXII UIA General Assembly, Berlin, 2002

DESIGN TOPICS

Moderator: Alexandros N. Tombazis

New Architecture, Influential Elements, Contemporary Designs
Tülin Görgülü, Ebru Erdönmez, Selim Ökem

A Critique of Environmentalism in Architecture: Comparative Analysis of World Expositions of 2000 and 2005
Ayşen Ciravoğlu

Myths and Fantasies in Architecture of Dubai: The Loss of Architectural Identity
Zafer Sağdıç, Aysun Aydın

NEW ARCHITECTURE, INFLUENTIAL ELEMENTS, CONTEMPORARY DESIGNS

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ABSTRACT

Architecture symbolizes a fiction that is in a constant motion and pursuit. Since the building of the first shelter until today, architecture had a structure that has undergone several tides and changes and it seems to keep on doing so in the future as well. For these tides and changes have too many inputs, the field of architecture expands to contain various kinds of styles and tendencies to such an extend that in some occasions it overflows on itself.

One of the most important reasons that triggered the pursuit for change in architecture is the effort of the cities and the multinational companies that have been competing in the economic and executive levels to be different than the rest. The architectural designs and the buildings that come into existence make use of quite expensive technologies and materials, and there are always those who pays the price. Today we live an era that comes forth with images. The multinational companies are ready to do everything for image and their corporate images. The most important elements that trigger this phenomenon are;

- The architectural rivalry environment in the cities,
- The double effect of the computers on the architectural designs (both in the ripening stage of the design and in the project process),
- The development of the construction and material technologies.

The dominant use of the computer technologies in the architectural design process, made use of the experimental methods possible and liberated the building forms architecture inherited from the mechanical paradigm. The energy efficient and the transformable material use, meanwhile, have also come to be important objectives in the design processes.

The aim of this paper is to bring the impacts of new advances in economy, design and technology into discussion through examples from the world. The attempts of the cities to come forth with innovative architecture, the effect of the computational technologies in architectural design, and advance in the material and construction techniques, shall be dealt with examples. The expensive, impressive and sometimes utopist architectural designs that come out as consequences of differentiation attempts, and their possible effects o on the physical environment will be discussed.

Keywords: Competing cities, Contemporary designs, Computer aided designs

Scrutinizing the effects of globalization merely from a socio-economical perspective is not sufficient since one of the most significant effects of it can be observed in the spatial changes that affect both people's physical and psychological living quality. Spatial changes occur in the context of functions and missions the cities undertake, and become more and more evident as the recently designed buildings happen to influence the physical environment of the cities.

After the improvements in information technology the material value structure had a new determinant: the movement of values. The value of a commercial firm used to depend on the amount of its production in the past. Whereas today the movement capital by means of information flow through media determines the stock exchange values of a firm or tendencies and the cross currencies. Media and the information has itself become valorized. Images (that are not products with physical presence) like corporate advertisements are mediated through informative channels with the highest prices possible and just an image to appear on web sites and TV broadcasts means a complex link of money transfers in between a number of corporation accounts around the world. The capital is in need of media for its mobility and this process has become irreversible. The traditional value structure in agricultural and industrial societies depended on the notion of exchange and the capital is determined by the amount of production. People used to exchange things that had physical presence where money was the instrument to represent that exchange. The production, the transportation and the consumption of goods all occurred in a physical place and in a measured amount of time. In today's world, while the traditional value structure is still persisting there is another determinant that can be defined by the link of value transfers which is only present in terms of information flow. This information flow, while requesting a physical medium, is freed from physical presence. Without the importance of where the transfer is being made and how long the distance might be, the relation of it to the other transfers has become more important. Because most of these transfers are being made with an approximation to the limit speeds –that is the speed of light, it will be useless to question the notion of place and time as we can discuss in the traditional exchange system of the past. (Okem, 2006).

The feudal societies of the past depended on an agricultural structure based on capacity of people to produce an economic viability from the use of land. Industrial structure also relies on people but less so on land. This has been a traditional form of western economic, political and social organization, requiring people and raw materials for its viability (Eisenman, 1995).

The economical system we are trying to explain until now is neither land nor people based. It is basically an information-based society. It requires neither land nor raw materials. Its population is heterogeneous and has no base in either blood, land, language, or tribe. It also combines public and private interests, business and government, in a new relationship. The best example of it is Singapore, which is a new kind of organism, based on information economy. Metaphorically it is a city state, with no land and no traditional idea of people. (Eisenman, 1995) With the terms of Eisenman this borderless city state is called information city. Other closely linked terms which could conceivably have been used are world city, supervilles and global city.

Keyder (2000) states that when the term 'global city' first appeared, it had it basis rooted on several assumptions. Capital was global, and its spatial organization was hierarchical holding sovereignty over the cities carrying regional significance in the second level within the whole structure. Those cities which have regional significance were linked to cities with local significance. Cities with the highest level of significance in which global control functions and productive sectors that serve international clients concentrate, are provided with the lion's share from the investment and workforce averages by making those services become the most dynamic sector of the economy. This model assumes the existence of a post industrial development in which the investment sector has a shrinking rate of employment and expanding volume of services. In global cities, the indicator of success is the emergence of high rank of value added services linked with control functions that require specialization (Keyder, 2000). In some occasions, global cities gradually takes place of the nations and become city states. Moreover, global cities have been associated with a serious competition which generated buildings and urban functions that connote power, wealth and extravaganza.

Figure 1. Global population growth, and commercial flux (Rozenblat, 2000)

The general characteristics of the information city can be laid out in different contexts. First, the geographic dispersal of economic activities is a key factor. The more dispersed a firm's operations across different countries, the more complex and strategic its central functions become. One other term to define an information city is that these central functions become so complex that increasingly, the headquarters of large global firms outsource them. They buy a share of their central functions from highly specialized service firms: accounting, legal, public relations, programming, telecommunications, and other such services. Information cities are, in this sense, production sites for the leading information industries of our time. The other denominator of an information city is the number of headquarters and the strengthening of cross-border city – to – city transactions of networks. At the limit, this may well be the beginning of the formation of transnational urban systems. The economic fortunes of information cities become increasingly disconnected from their broader hinterlands or even their national economies. We also see greater cross-border networks for cultural purposes, as in the growth of international markets for art and a transnational class of curators, and for non-formal political purposes, as in the growth f transnational networks of activists around environmental causes, human rights, and so on. These are largely city-to-city corss-border networks, or at least, it appears at this time to be simpler to capture the existence and modalities of these networks at the city level (Sassen, 2000).

For people and commercial units on the global axes that take on the control functions are located in such, global cities reflect the economical reconstruction that happen in global scale, they also reflect the employment structure and the changes that occur in connection with it in the levels of population and class formation. Be it producer, or consumer those cities provide to global actors services concerned with control over knowledge and trends, the distribution of symbolical signs of status, and the flow of financial resources (Keyder, 2000: 224)

New York, London and Tokyo are considered the global cities with the greatest strategic importance. In this telematic global network their importance not only depends on a financial and knowledge based structure but also on their location on the world. Global cities are the keystones in control, coordination, process and distribution of knowledge in today's capitalist development (Thornes, 2004).

Transnational corporations that give economical and consequential administrative decisions exist in cities as such where the flow of capital, knowledge, and technology is maximized and this fact renders somehow a relative power on their behalf.

At this point the question emerges: "Has the economic development of the cities been in the authority of the local administration or have they been administered by TNC's?" Many interpreters have asked such questions trying to interpret the formation of the urban decision making and administrative mechanism in the world of globalizing cities (Thorns, 2004).

According to Friedman, cities are spatially organized socio-economical systems. The most important aspect of it he underlines is that cities serve as a center through which money, labor, knowledge, goods and other economical variables flow. Working as a population attracting magnet, cities consequently gain economical and political power increasing its spatial variety and complexity.

Rapid information flow and communication have increased the importance of global cities within the finance system. Diminishing of spatial borders has brought forward the system of global cities, some being more attractive than other. Competition for attractiveness opens them up to capital. (Aslanoğlu, 1998).

Parallel to those progresses, while the spatial borders start to diminish, the sensitivity of capital to relocate itself to a different place increases. Increasing their differences some cities aim to attract capital. As Friedman noticed in his conceptualization, 'global city' is not a recent phenomenon. This concept is a product of long processes that took start with the development of capitalism. Cities that exist in higher position of inter city hierarchy function in a global scaled process of control. From such a functional point of view, starting from New York, London and Tokyo, it is possible to distinguish 20-25 global cities around the world. Economical, historical and geopolitical circumstances determine the function the city is to have. Yet again, the city takes on an ever increasing role in economy and has to create attractive environments to invite the capital (Aslanoğlu, 1998: 113)

It is inevitable for developing countries not to be affected by the process of globalization. People in such countries are eager to welcome transnational capital flow from around the world's metropolises, people of which not only seem to be

richer, more educated and more accustomed to global culture to be shared but are more close to access infrastructural links which provide technological support and capital flow. The main tension that occurs during the globalization of those metropolises stems from the double determination of the context they exist in. This is part of the flow of transnational capital, goods, people, information and signs which require such metropolises to be studied in the domain of a global system that transcends the border of a nation. On the other hand, they are under the geographical and legislative sovereignty of their own governmental organs. Even though this does not have to constitute a restriction against globalization in an era where the power of governmental organs are diminishing, it would mean some self specific bargains are taking place that effects the acceptance mode of global fluxes each within different contexts. (Keyder, 2000: 223).

Those that interpret globalization as a heterogeneous process state that it is a transcultural interaction and criticize the view that globalization is a product of western modernity. Still the west and the rest configuration that centralizes the west hardly seems possible for reasons stated below:
The gradual shift of power outside the west (the empowerment of countries like Japan, and countries that are called Asian Tigers like Malaysia, Southern Korea and Taiwan)

More and more people's (as a fugitive or immigrant) going west crossing the borders as the consequence of mobility increased with the effects of globalization hence starting to question the stereotypes in the beginning. This is related with the increase in the speed and intensity of communication.

Another effect of globalization is known to be the condensation of information and image flow. The borders of the nations do not constitute a limitation for the images and views transferred through the informational networks. As Robin and Norley state, an image sphere is formed around those borders (Aslanoğlu, 1998: 157). In this context cities in China like Shanghai, Beijing, and Hong Kong appear with new and different urban images. To Baudrillard, the consumption of signs have become an item in today's agenda. The sign value has been added on the exchange value of the goods' (objects') utilitarian value. Baudrillard exemplifies this as follows: The exchange value is an image of the utilitarian value of things (simulacra). Objects are distanced from their original state as they acquire an exchange value. However the sign value is even more abstract than the exchange value and can be considered as the image of an image (simulacrum of simulacra). Today's capitalist societies consume the images and reality is replaced by those images. Lash and Urry assume the production of images in a similar way. Those are either post industrial informational goods with cognitive content, or artworks with aesthetic content. The acquirement of aesthetic value is achieved by the increasing design value of industrial goods within the production process. The sign value over the objects increases by the expanding research and development investments (Aslanoğlu, 1998:163).

In an environment of uncertainty and transience, advertisements and media images acts as an associative role within the cultural practices and those images turn into commodities. Acquirement of the image has been an important issue in the self actualization of the individual. Production of images, in a competitive medium, is

important in the provision of prestige. The creation of it also occupies an important position in the inter-corporate competitiveness (Aslanoğlu, 1998:111)

URBAN AND ARCHITECTURAL CONTEXT

Informational technology requires 'neat buildings' and that is why rather than redesigning old buildings new ones are built. (Thorns, 2004: 91). Such a discourse is efficient enough to show architecture is now an image and have become a consumable object.

In such a global competition, Paris constitutes a remarkable example that has almost been reformed by the 1980's. It is a city that has enriched its urban form with new architectural designs as well as protecting its historical heritage. Mitterrand's initiative named Grand Projects of Paris which has been carried out as a state policy has yielded very important consequences and intensifying the role of this city in the global level. The pyramid designed for the Louvre Museum, National Biblioteque, Grand Arche , Opera Bastille and such can be mentioned in the content of this movement upon which international interest was drawn in the context of architectural agenda. Yet Baudrillard, criticizes one of the most remarkable example of those Grand Projects, namely Piano's Pompidou Cultural Center, trying to lay out the relationship of international capital network, architecture and culture. He calls this widely appreciated design as Beaubourg Machine or Thing. He claims it is a puzzle of signs and flux, of networks and circuits and a simulacrum of cultural values undermined from the very outset by the architectural shell. 'thing' as he prefers to call it, openly declares that our age will no longer be one of duration, that our only temporal mode is that of the acceleratd cycle and of recycling: the time of transistors and fluid flow (Baudrillard, 2001)

Figure 2. The Beaubourg Machine or Thing [1]

Another example is Berlin which has been object to change after the demolition of the wall by the beginning of the 90's. Like Paris, Berlin too has gone through a reconstruction which aimed to bring to fore the global face of the city. It should be noted that in Europe then, some people claimed those progresses were an attempt for the formation of a new city alternative to Paris.

The image of the city today has been shaped by tomorrow. The visitors to Berlin not only come to see the historical core but pay a special attention to New Berlin as well. Places meant to be seen are not only concentrated in the city center, but significant samples of the architectural and urban progress in the recent 10 years can also be observed in the eastern and western skirts of the city too. At he end of it, the New Berlin is realizing the architectural renovation which it owes to its past. In the recent years Berlin has come to be one of the most remarkable architectural expositions of the new century. In this process the real intention was not to increase the number of the new buildings in Berlin but was to bring two separate parts of the city together by the help of those new buildings after the fall of the wall in 1989 making it grow to become a unified whole.

The interesting thing about the urban and architectural developments in Berlin is the significance in the amount of projects given to foreign architects. This can be considered the sign of the will to turn Berlin into an exhibition of the most well known architects and make it the contemporary display of Germany. To Tanyeli, as a consequence of such an accelerated construction activity Berlin has become a three dimensional architectural journal and can no longer be conceived as a city. It lacks the aura, or the specific flavor a city contains. Berlin is now a media that presents in an alienating attitude, quite a number of well designed and well practiced buildings only a journal can achieve. Those architectural works constitute neither the elements of life nor of something that can be called the identity of Berlin. Yet, the settlement called as the city can only come into existence when the architectural meaning acquires an urban content with less architectural motivation, or when it acquires a fulfillment of experience and consumption. This is what is almost completely not present in Berlin (Tanyeli and Kuban 2002).

Figure 3. Potsdamer Platz – Three dimensional architectural journal [2]

One of the cities that comes to forth with similar specifications is Amsterdam. Starting from 1999 it started to change in particular with the new transportation axes supported by new residential areas, clerical and commercial centers crowned with assertive buildings. When the common characteristics of the buildings dated to the golden ages of Amsterdam that starts from the year 2000 are considered, three aspects come to the fore. Capital, flaunt and wide big roofs. These are the buildings constructed with exceedingly expensive materials, great voids located on the façades, structurally unmanageable cantilevers and wide long canopies.

Figure 4. ING Houses, architects Meyer and Van Schooten [3]

The transformation of disfunctional harbor isles has led the formation of interesting residential areas. Two gigantic quays located at the eastern docks of Amsterdam have been re-functioned as residential areas in line with the planning decisions given by the West 8 group. Züidas region developed as a commercial center is about to turn into a show ground for different architectural attitudes with many completed buildings and many to be completed in the near future. With surprising geometries, immense voids and cantilevers accompany high rise buildings and commercial centers, the recent ten years is considered the golden age of architecture. Yet, a question is waiting to be answered: Has Amsterdam become a better place to live after all those assertive projects? The answer: May be more exciting...

As well as the competition among the western cities, new projects, new images and signs have emerged in the developing countries and in the Far East too. International capital groups and local authorities founded by them are ready to construct buildings far more assertive and flaunt from each other. It is now time for the architects to prove themselves both in philosophical and technological sense.

Advances in computational technology have huge effects on how we conceive architecture today. Anexact geometry not able to be described mathematically can now be constructed via parametric volume modulations with the help of B splines which implies the loss of the primacy of plan drawings, Euclidean space and dictate of the cardboard model. An other important effect of computational technology is the rapid prototyping technology which involves the CNC(computer numerically controlled) milling and stereo lithography that make available the smooth transition between the model construction and the scope presentation. Data used in modeling can also be used for real construction which would mean the non-euclidean forms once were not manageable could now be realized both in design and production phases.

Figure 5. PTW Architects, National Swimming Center (Olympic Green), Bejing, 2004-2006, project exhibited in 2004 Venice Architecture Biennial, section: Atmosphere (Berik, 2004)

The computational technologies also meant the principle of the mother of all arts for architecture would become lost at least for some time now for teachers and researchers have to orient themselves towards other specialist areas. The dictate of immobility is also lost for the replacement of classical architectural display formats with animation and VR (virtula reality) technology have become a fundamental part of research for conveying the idea of space. The primacy of the building is also lost for a whole new virtual world opens up for the architecture: virtual supermarkets, shopping malls, entire towns where day to day life takes place. (Könings, 2003)

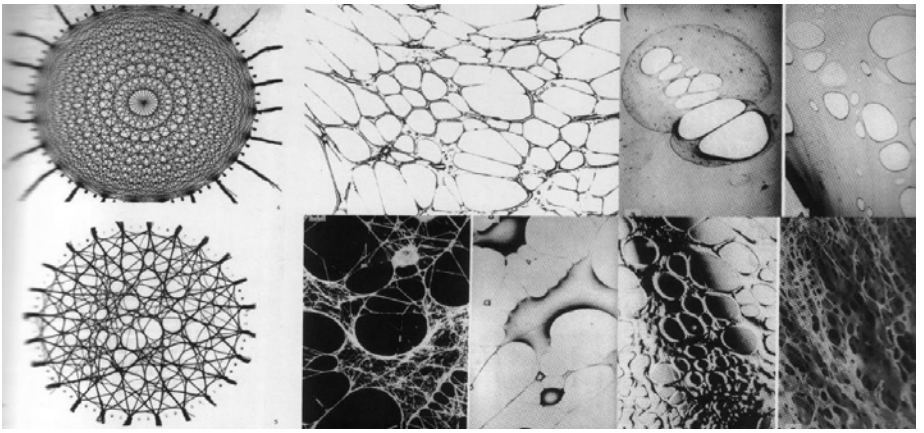

Figure 6. Form Research Process (Wool Water Technique) by SoftOffice (Lars Spuybroek, Chris Seung-woo Yoo, Kris Mun, Florent Rougemont, and Ludovica Tramontin) (Spuybroek, 2003)

CONCLUSION

In today's architectural scene, the concern to create image as a consequence of globalization both in urban and architectural scale, have led to a highly competitive medium. The computational technology has utilized the production of new materials and great many opportunities in construction techniques liberating architects in design and making assertive buildings forms possible. This competition involves the question of not only who owns the highest building but at the same time of which country accommodates the most extraordinary building. Parallel to the problem of identity loss initiated by globalization the phenomenon of placeless architecture has come to discussion. Architectural design have become distant from contextuality and become more and more experimental. At this point architects can said to be dragged into a professional impasse since the number of such experimental designs increase a question of authenticity is likely to emerge. The architectural conservation in the west drives architects to satisfy their professional practice desire in the developing countries that are motivated by image creation. The increasing information flow has made the brand new forms, designs and buildings recognizable and discussable on the architectural platforms. The notion of the interior has also changed and become a surprising reflection of the exciting megastructure at the outside. In a way, the functionality is underrated and the aim of architecture now is to affect the users psychologically. Spatial illusions are created getting use of materiality.

Relationship with the history indicates imitation of the past. Best example to it could be the exaggerated recreation of the Eiffel Tower of Paris in China getting use of today's constructional technology. This is what maybe called the challenge of the 21st century: More assertive, higher, more technological and more extravagant...

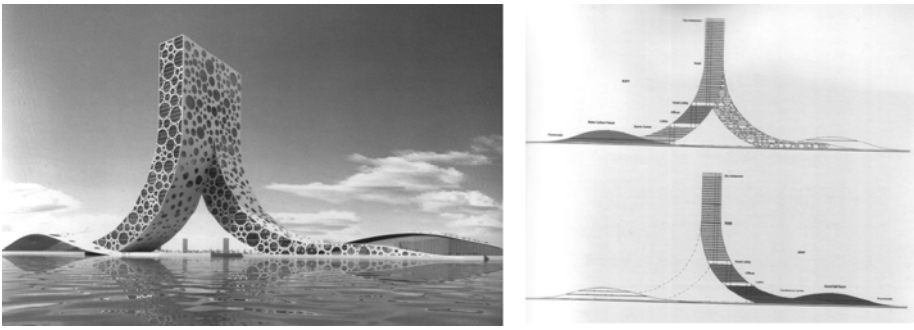

Figure 7. Shanghai's Eiffel Tower (Anon, 2006)

In the last twenty years the production of "theories" of architecture and design has dramatically accelerated in a way that emphasizes the particular role of architectural theory as it has been continuously developed over five centuries. The function of these "theories", now as always, has been to adapt architecture to the needs of Western social formations, serving as the connection between the overall structure of a society and its architecture. In this way architecture has been modified to respond to *changing* social demands; architecture thereby becoming assimilated to society through "theoretical" operations. The corresponding changes introduced by "theory" into architectural practice serve to perpetuate the basic structure of the society and at the same time maintain architecture itself as an institution within Western social formations (Agrest and Gandelsonas, 1996).

In a way, the new architecture have completed its institutionalization in the recent twenty years through theorization and practice. This would mean that what was new then is now apt to become institutionalized. This process is necessary for architecture to endure and keep its existence intact. However, architecture also needs to destabilize its own institutional aspect to produce new architectural practices which would again be assimilated to the society through theoretical operations. This circular process is endless and implies, at this moment of the history, that the effects of globalization on architecture can be expected to face a series of criticism.

It is evident that 21st century will be quite sumptuous. The impressions we get gives the clue of how the future will be shaped. However, we should also ask will the cities we try so hard to preserve their identity and historical character, become like futuristic movie sets of Hollywood after the construction of so many buildings we may call experimental, placeless and narcissist? Real problem, we think, lies at this point.

ENDNOTES

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(2) http://www.hansjoachim-weiss.de/galerie/berlin/bilder/Potsdamer-Platz_01-02.jpg date: 14.05. 2007
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A CRITIQUE OF ENVIRONMENTALISM IN ARCHITECTURE: COMPARATIVE ANALYSIS OF WORLD EXPOSITIONS OF 2000 AND 2005

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ABSTRACT

Environmental approaches are currently the major issue among all levels of society, from the governmental degrees to the professionals and the public. Parallel to this, they are also the main concern of architecture. Environmentalism, evaluated from the perspective of underlining the importance of place, bringing forth the solutions unique to space, can be seen as an interpretation of contextualism and, taken in this scope, might be a solution for discussions related to the identity-creativity dilemma in architecture. However, today we can talk about a new kind of thinking where environmental movements in architecture are criticized according to their different perceptions of environment and ecosystem. For instance while many people believe that sustainability, the latest terminology of environmentalism, can represent a meeting point for groups and sectors having diametrically opposed interests, others think that the concept is a passing fashion, something ephemeral, merely reflecting political opportunism and lacking any real substance.

In these circumstances, this paper investigates different approaches dealing with the environment on two past world expositions (EXPO 2000 in Hanover, Germany and EXPO 2005 in Aichi, Japan) stemming from the need to illustrate current criticisms on man-architecture-environment relationships. Looking at the environmental movements' popularity, it is not surprising to see that the two recent world expositions put environment and sustainability in their mottos. However, this approach accurately underlines a contradiction: as good models of globalization and making architecture their showcase, world expositions form the places where enormous amounts of resources are used. Therefore, here it is possible to question the integrity of the efforts of trying to contribute to the environment and to reveal the loss of meaning/context in environmentalism and architecture. The case study points out many current attitudes towards the environment caught between dilemmas and contradictions such as East versus West, technology versus nature, man versus nature.

Keywords: Environment, Sustainability, Critique, EXPO 2000, EXPO 2005, Germany, Japan

INTRODUCTION

As we all know as results of industrialization, population growth and different consumption patterns of humankind worldwide, we currently live with air, water and environmental pollution, climate change, diminishing of natural resources, exhaustion of food, clean water, and energy supplies. These facts show that in this century where the damage that humankind has made to the environment is, beyond being observable, something that we experience with all our senses. Still it is a positive outcome that today, facing these facts, societies are forced to review their production and consumption patterns in all sectors, and luckily environmental approaches are currently the major issue among all levels of society, from the governmental degrees to the professionals and the public. Parallel to this, they have also been the main concern of the architectural community for at least the last forty years.

According to our knowledge, the building sector forms an important part of the nations' economies. However buildings use up large quantities of materials, natural resources and energy throughout their life from design and construction to their subsequent upgrade and redevelopment. Products selected for construction not only consume resources and energy, but also produce air and water pollution. Even though these facts state that architecture as an act makes an enormous environmental impact, in the recent past, interrogating the profession's relationship with the environment is realized related to human beings, and this scope has limited the subject to visual, physiological and psychological effects. For instance environmental approaches in architecture begin with "man and nature", "man and behavior" studies and organic architecture, evolve in time from human-centered attitudes such as human psychology and human comfort to nature-oriented movements such as green, ecologic and sustainable architecture. Today, sustainability, the latest and widely used terminology of environmentalism stresses the overall problem including economic, ecologic and social aspects.

Environmentalism, evaluated from the perspective of underlining the importance of place, bringing forth the solutions unique to space, can be seen as an interpretation of contextualism and taken in this scope might be a solution for discussions related to the identity-creativity dilemma in architecture. However, when we look at the state of art of the architectural practice medium, we can observe that current adaptation of the concept needs to be subject to intense interrogation. Today we can talk about a new kind of thinking where environmental movements in architecture are criticized according to their different perceptions of environment and ecosystem. For instance, while many people believe that sustainability can represent a meeting point for groups and sectors having diametrically opposed interests, others think that the concept is a short-term, passing fashion, something ephemeral, that merely reflects political opportunism and lacks any real substance.

For this reason in this paper it is intended to interpret many shades of environmentalism in architecture. To reach this goal, at the start, a brief evaluation of current critiques of environmental approaches in architecture over the terminologies of environmentalism and sustainability is given. Later on, different architectural attitudes built on contradictions found in environmentalism, such as man versus nature, nature versus technology, East versus West, will be compared. To illustrate this, a case study on world expositions (in other words world fairs, universal

exhibitions or EXPOs) is conducted. As is known, EXPOs are places where, on a given theme, innovations, the future of the mankind and the world, and nations' identities are put forth with the help of architecture. For this reason, evaluating and comparing two recent world expositions, which placed environmentalism in their mottos, clarify humankind's dealing with current trends of contextualism, environment and architecture in this century.

A CRITIQUE OF ENVIRONMENTALISM IN ARCHITECTURE

It is obvious that today the concepts of environment, ecology and sustainability are discussed related to different perspectives. Human-centered or ecosystem-centered, dependent upon subject-object relationship or holistic approaches are main departure areas. According to Bookchin (1988), environmentalism is nothing more than environmental engineering. It does not question the main concepts of the current society, especially human control over nature. Similarly, Beaufoy (1993) sees environmentalism as a managerial approach to the problems, secure in the belief that they can be solved without fundamental changes in present values or patterns of production and consumption. According to the writer, this concept was applied by those who wanted to face up to the ecological crisis, but who did not want to adopt radically different ways of life. This has led to concepts of sustainable development and green capitalism. Many people have warned of what they saw as the ineffectiveness of capitalism in solving environmental problems and of the dangers of green consumerism. Looking from this framework, according to Beaufoy (1993), corporate enthusiasm for sustainable development can be defined as a "virtuoso conversion", a "masterpiece of business pragmatism". The definitions of sustainable development are found to be vague, technocratic and inoperative. The ambiguousness of the concept (which is defined in that way on purpose), makes it an umbrella for all groups and sectors representing totally opposite interests (Pol, 2002). For this reason, the platform of compromise that sustainability offers seems to be beyond being an ethical act points to a political hypocrisy.

Undoubtedly the discipline of architecture is also affected by this approach. Professional organizations, architects and academicians, who want to benefit from the social responsibility tag that the concept of sustainability offers, show an intensive interest in the environmental debate. According to data of 2003, just in the American Library of Congress alone there are 4,410 books on sustainable development (Brand, 2003). Stemming from this fact, the actual cause that lies underneath the intensive interest of the profession of architecture in environmentalism seems to be the need to relate to a concrete/justifiable/acceptable/social responsible context in this century where we can observe that time and place lose their meanings, and as a product of this, the forces of globalization are forming context/place-free mediums in our environments. However, here the deficiency of a critical evaluation of the concept is felt because architecture, due to its definition, is an act against ecology and the environment. Despite this, design parameters within the environmental movement have not departed significantly from the approaches of the last century and the climatic responses of vernacular architecture. Still, the general interest shown in the concept of sustainability in the name of professional legitimacy and social responsibility, ignoring the things that are said above, results in one of the most

important merits of the spending society: rapid consumption. This determination necessitates the examination of the architectural practice in a critical way.

A CASE STUDY ON WORLD EXPOSITIONS OF 2000 AND 2005

In this part of the paper, stemming from the need to illustrate current criticisms about man-architecture-environment relationships defined above, different approaches dealing with the environment on two recent world expositions will be investigated. Looking at the environmental movements' popularity, it is not surprising to see that the two past world expositions put environment and sustainability in their motto. However, this approach strongly suggests a contradiction: as good models of globalization and making architecture their showcase, world expositions form the places where enormous amounts of resources are used. Therefore here, it is necessary to question the integrity of the efforts of trying to contribute to the environment and reveal the loss of meaning/context in environmentalism/ architecture. EXPOs can also be seen as places in search of a cultural identity which is why an overview of current expositions gives many clues about the future of our cities.

For this reason here, after a brief evaluation of the world expositions, two ideas and their implementation in EXPO 2000 and EXPO 2005 are given in order to reveal similarities and differences of the approaches of this century towards the concepts of environment and context. It is aimed to bring into question of whether environmental movements in architecture are only a motto or do they represent a difficult task waiting to be fulfilled. The evaluation and comparison of the two world expositions brings into light the current criticism on architecture's dealings with environment and the concept of sustainability. Examination of EXPO 2000 in Hanover (Germany) and EXPO 2005 in Aichi (Japan) point out many current attitudes towards the environment caught between dilemmas and contradictions such as East versus West, technology versus nature, man versus nature.

A Brief Evaluation of World Expositions

As is known, universal expositions that bring nations together using an effective method of social communication, especially in economic and cultural ways, starts with the Industrial Revolution. In the 19th century exhibitions stemmed from the need to present and share universally developments in production and technology. Besides being places where nations exhibit their political power arising from their production and culture (Madran, 2000a), world fairs are also big architectural representation mediums where cultural identities are visualized and nations are represented through their architecture. In this context starting from 1851, over a content of 150 years, EXPOs have become important organizations that reflect their period and effect history of economy, culture, society, art and architecture (Altun, 2007). Besides, the exhibitions that stand out as an element of prestige for the organizing countries carry the potential to transform the development and future usage of the urban areas that they settle (Durhan, 2006).

Speaking briefly about architecture of the expositions, we can see that from 1851 to 1876 the events were held in exhibition palaces. In 1876, in Philadelphia, a new system was developed. This new system, followed by world fairs up to the present, gives spaces for thematic exhibitions and nations and allows the construction to be handled individually. In 1893 in Columbia, contrary to the glass and steel usage in the past, buildings were designed of more durable materials in order to stay after the expo (Madran, 2000a). In 1900, in Paris, national pavilions, which presented a specific interest in local culture, showed that in the 20th century, ways of global communication would gain new meaning. In 1904, in Louisiana, as the area was a park and the buildings should be removed after the exhibition, designers constructed temporary and recyclable buildings. In 1915, in Panama-Pacific, the Fine Arts Palace built for the exhibition was later converted into a museum. In 1992 in Seville, an eco-tech pavilion was built. The use of solar energy and the location of water tanks on the west façade to prevent overheating were examples of relating to environmental problems. Designed by Nicolas Grimshaw, the British Pavilion was built to be temporary and all parts of the building were designed to be demounted and reused after the expo (Madran, 2000b).

On EXPO 2000 and 2005

EXPO 2000: "Humankind-Nature-Technology: A New World Arising", Hannover, Germany

Main Theme Master Plan and The Environmental Bonds:

The theme of Expo 2000, "Humankind-Nature-Technology: A New World Arising", is a result of the UN Program-Agenda 21 signed by 179 nations at the Rio World Summit in 1992 (Madran, 2000a). The goals of EXPO 2000, in the spirit of Agenda 21, were to minimize land use by utilizing existing fairgrounds and ensuring 100% post use of newly developed areas. For the first time in EXPO history, the exhibition was held on a site of which about 70% was already being used. For this reason everything built around the expo plaza was to be retained with the exception of the pavilions on the western side of the fairgrounds which were to make open space for trade fairs (Speer, 2000). The expo area was located on 160 hectares. The existing 100 hectares of the expo area belong to Deutsche Messe, 60 hectares were the section added to this area with parks, open spaces and infrastructure (Çam, 2000). The master plan of EXPO 2000 was prepared as a cooperative effort involving the competition winner Arnaboldi and Cavadini and the offices of AS&P (Albert Speer & Partner) and Kienast Vogt & Partner. Evolving Gardens, designed by landscape architect Kamel Louafi, was an integral part of the master plan, from controlled nature to a natural park, Evolving Gardens takes its name from this transition. Black pines marked the beginning of the garden which included a patio, a waterfall of 3.5 meters, lime trees, orange trees, a Mediterranean garden, a sand garden, a bamboo garden, a machine house, a sand house and a tea house (Louafi, 2000).

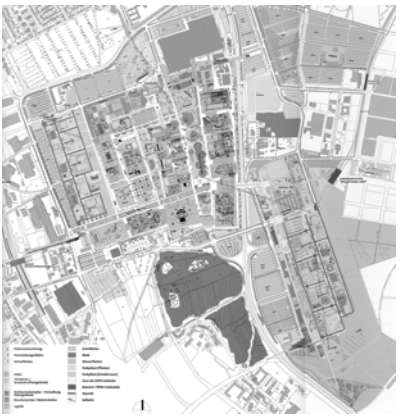


Figure 1, 2. Site plan of EXPO 2000 (Anon., 2000); Current aerial view of the area

Buildings/Structures and Environment:

The remarkable designs in the plaza, besides the national pavilions, were the Expo Roof, the “cyclebowl” and the Pavilion of the Churches. The Expo Roof, designed by Thomas Herzog and Partners, located in the main square of the existing fairground, was made of ten wooden umbrellas each 20 meters tall and covering a 40 by 40 meter area. The roof covering consisted of a fully recyclable plastic membrane that allowed sunlight to pass through but blocked excessive solar radiation. Rainwater was diverted down along the supports creating a fountain effect. The “cyclebowl” designed by Atelier Brückner was a pavilion of circulation systems. The climate was controlled by a natural energy-saving ventilation and exhaust system, a shade system and a circulating water cooling system (Anon, 2000). The only building on the plaza that had a future plan, was the Pavilion of the Churches. Designed by Meinhard von Gerkan, the building was dismantled and reconstructed on the grounds of a monastery near Mühlhausen in Thuringia (Speer, 2000).


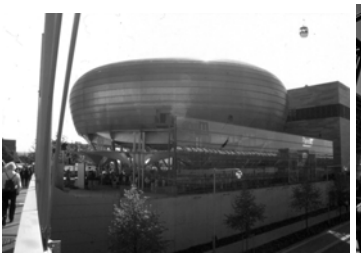


Figure 3, 4, 5. Expo Roof; Cyclebowl; Pavilion of the Churches

National Pavilions and Environment:

It is reported that 180 nations participated in EXPO 2000. 50 of them built their own pavilions, others were located in one of the 20 halls built for this purpose (Madran, 2000a). Although all buildings and infrastructure were supposed to conform to "ecological" standards of design, they didn't demonstrate any radical revision of thought of design and construction. This was more likely to be found in the international pavilions, some of which were designed by architects who have strong reputations of challenging the status quo. Japan has maintained its expo patronage of experimental design with a giant construction made out of paper, designed by Shigeru Ban. Peter Zumthor designed for Switzerland a labyrinthine construction of stacked wooden beams held together by huge steel springs and bars and devoid of contents. MVRDV created for the Netherlands a 40 meter high pavilion of five levels, each bearing a microcosm of different types of Dutch landscape, with a floating roof supporting turbine windmills (Melhuish, 1999).

Figure 6, 7,8. Japanese Pavilion (Anon., 2007a); Swiss Pavilion; Dutch Pavilion

EXPO 2005: "Nature's Wisdom", Aichi, Japan

Main Theme, Master Plan and Environmental Bonds:

EXPO 2005 was held in Aichi Prefecture, in a forest near the suburbs of Nagoya on an area covering approximately 173 hectares and with the contribution of 120 nations and more than 22 million visitors on the theme of "Nature's Wisdom". The theme implies "fusing Asia's traditional wisdom with modern science and technology, to create a better world where humankind and nature can co-exist in harmony". The main goal of the master plan was to take advantage of the geographical conditions of the forest, to invite the world for the coming century to develop new relationships with nature. The site was to be preserved in its natural state as much as possible; for instance the original plan of the expo area was changed in order to preserve the habitat of goshawks (Anon., 2006a). According to Kengo Kuma, who headed the Venue Planning Project Team, in order to restore the human-nature interface, the use of box-shaped buildings like the typical exposition pavilion should be rejected. Showing images of nature inside such boxes or covering its walls with greenery would not mean anything. It is essential that these boxes be rejected and instead an interface through which humans and nature can be brought together smoothly in the

forest be created. Exhibition pavilions in EXPO 2005 were of a modular type that were easy to assemble, dismantle and reuse. The countries' pavilions were located in the areas that have already been developed such as baseball fields and tennis courts and housed inside of easily dismountable modules allowing for easy deconstruction without construction waste. The same was true of the corporate pavilions, which used special mounting and bolting techniques to enable 100% clean dismounting. After all, the whole site was supposed to be rid of most pavilions and other buildings and be restored to its previous state within two months of the end of the expo (Anon., 2006b).

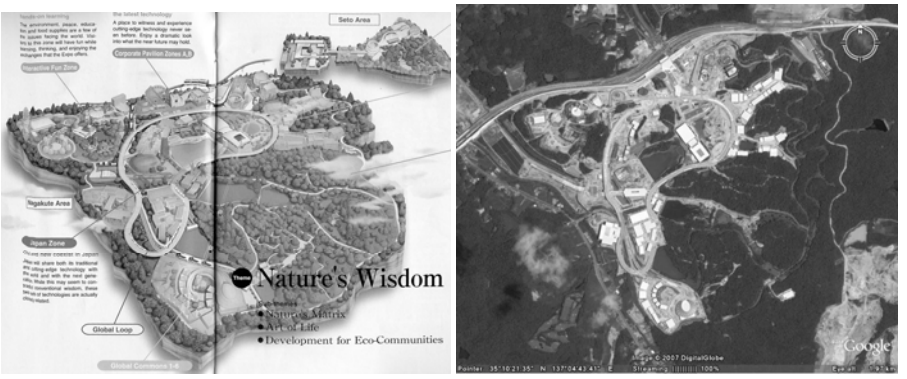

Figure 9, 10. Site plan of EXPO 2005 (Anon., 2005a); Current aerial view of the area

The whole setup and site design of the expo was supposed to make the least possible impact on the environment and to leave no "ecological footprints". If you consider the construction of the Global Loop, an elevated pedestrian way surrounding the expo area, you can see that it is erected to minimize visitor's impact on the environment. Besides it is designed to have an elevated view of the natural surrounding. A full-scale recycling program and the achievement of zero waste emissions were the goals of the expo. Taking into account the future impact of the event after it closes, some of the pavilions and other facilities were to be turned into a permanent base for international research on environmental conservation and industrial technology. Bio-lung, a vertical wall filled with flowers and plants in the expo area, with a height ranging from 4.5 to 15 meters and a length of 150 meters, highlighted by mist and light, was a technological effort for suppressing the heat-island effect seen in urban areas. More than 200 different plants and flowers were planted in this wall. Bio-lung was made for the purpose of improving the environment of busy city areas where enormous amounts of CO_2 are emitted causing serious problems such as global warming phenomenon or heat island effect (Anon., 2007b).


Figure 11, 12. Global Loop, Bio-lung

Buildings/Structures and Environment: National Pavilions and Environment:

The most remarkable national pavilion of EXPO 2005 was undoubtedly the Spanish Pavilion designed by F.O.A. (Foreign Office Architects). The other interesting pavilions were the Croatian Pavilion, the Portuguese Pavilion, the Czech Pavilion and the Indian Pavilion neither corresponding to the main theme. The Japanese pavilion, which had a direct relationship with environmental problems, supplied its electricity using new forms of renewable energy. This was a pavilion in which visitors could experience new forms of environmental technology and materials, including a cooling effect brought about by a roof using photocatalytic tiles and sprinkled water, as well as an exterior bamboo cage that reduces the amount of sunlight getting through (Anon., 2007b).


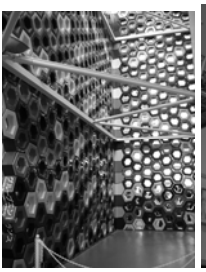


Figure 13, 14, 15. Japanese Pavilion; Spanish Pavilion; Croatian Pavilion

Other Environmental Precautions: One of the important solutions presented by Expo 2005 towards the global issue of environmental protection is that it tried to adopt eco communities, new social behavior and systems that take into consideration nature and the environment. In this context it was a very strict policy that no plastics were allowed to enter the expo area. Also, visitors experienced, with the help of sanitation staff and volunteers, the separation of their trash into nine different types. Food or beverages at various facilities, were served with biodegradable-plastic eating utensils born through environmental technology. Another contribution were the environmental technologies introduced. For instance, with the promotion of *linimo*, a means of transportation which floats above the track by electromagnet power, fuel cells that operate through methane fermented from the waste they generated at the venue, robots cleaning the expo area and fuel cell hybrid buses, it is intended to give the state of the art in green technology. However, because of the enormous number of visitors (intensive interest and curiosity of the Japanese people which deserves extreme appreciation), without making reservations in advance, it was not possible enter the pavilions and see the advancements outlined above (Anon., 2007b).

A COMPARATIVE ANALYSIS OF WORLD EXPOSITIONS OF 2000 AND 2005

Undoubtedly, considering the current conjuncture that we are in, thinking about the challenges that we have to face in terms of our natural surroundings in the 21st century, it is not particularly interesting to see that the last two world expositions place nature, and accordingly environmentalism, in their motto. However what is interesting in these two events is to observe humankind's similar and different deals with its surroundings and to calculate the consequences. By reading between the lines of the documents, it can easily be seen that both organizations put humankind and technology ahead of nature. Despite the fact that through recycling and saving energy, global citizenship and eco communities were experienced in Japan's expo, still the main impression received from both events was that advanced technology can be of use in resolving global issues. For instance, the Bio-lung application presented in Japan's expo seemed to present once again that the solution is not to change our thinking about the environment in a radical way but to solve the problem with the help of technology which seems to put more pressure on the environment.

As once more seen in this study, nature has different meanings in different cultures, especially between East and West. This attitude is most evident in the difference in site selections of the expo events. Obviously EXPO 2000, stemming from the economy and management of resources, was seen as an opportunity to improve the existing fairgrounds. Contrarily, in EXPO 2005, the event located in a forest was an opportunity for people to encounter nature and green technology. The difference in comprehension of the nature also becomes evident in the post use of the expo sites. Where the Germans plan to use the site as much as possible and for this reason built permanent structures, Japanese aim for temporary use as they are willing to erase every mark made at the site, such as the usage of temporary pavilions and an elevated pedestrian bridge.

World fairs since the first exposition have always been global showcases for international architecture and construction technology and have provided inspiration for architecture: Joseph Paxton's Crystal Palace in London in 1851, the Rotunda in

1873 in Vienna, the German Pavilion by Mies Van der Rohe in 1929 in Barcelona, the Philips Pavilion by Le Corbusier in 1958 in Brussels (Bothmer, 200). In these events, architecture becomes a much stronger means of communicating the messages that contributing nations as well as host country want to transmit. It is sometimes more important than the exhibited products because nations prefer to present their innovations and mentality with an architectural product. When evaluating our cases according to this determination, it is possible to observe in the German expo, even though a small portion, there were efforts to create more environmental friendly architectural solutions, including the Japanese pavilion. However in the Japanese expo, as the site was planned for temporary usage, the nations were given existing buildings of which they could only renew the interior space and facade. This approach, evaluated on an ecological level, seemed to make a positive contribution, since building something new uses lots of energy and resources. However this prevented nations contributing to environmental problems architecturally. And this underlines the main contradiction that we architects face in environmentalism in architecture: While on the one hand energy and resources are saved, on the other hand we are facing the danger of losing spatial quality.

CONCLUSION

As outlined in this paper, efforts of searching for context today have been mainly tied to environmental movements. However environmentalism in architecture has many contradictions. What this paper aimed to show is that the architectural profession should become transparent in theory and practice in terms of environmentalism. Instead of labeling architectural products as environmental, sustainable, green or ecologic, we have to rethink the current conventional architectural practice and its debate.

Obviously world expositions stem from political and economic purposes. Still, the cases examined here outline that architecture has a long way ahead before reaching the goal of “coexistence with the environment”. The examples show that there is no simple resolution to architecture’s damage to the environment and ecosystem. We can conclude that even though there are different approaches worldwide, none of them currently satisfy both humankinds’ (aesthetics) and nature’s (resources and energy) needs. And this shows how architects use the rhetoric of environmentalism in order to justify/legitimate their profession. The expos also present that what can be done to protect the environment is outside of our profession, such as advanced techniques to save energy, reduce carbon emissions, etc. Most of these can be attached to the buildings with the support of mechanical engineers.

Looking from the discipline of architecture, we can determine that globalization and consumption society relationships significantly shape the built environment. In this context, even an environmental terminology, sustainability, can become the formula of presenting the environmental look without changing current practices. However, it is not questionable that the “real” environmental approaches should include serious criticism towards the habits of the spending society in its substance. Even though there are many people pointing out the ineffectiveness of current environmental approaches in architecture, as the economy is based on this habit it is obvious that the world will continue the illusion of being seen as caring for the environment while

on the other hand sustaining the living standards and current habits of consumption. For this reason we will see the contradictions outlined in the previous chapters, the so-called ecologic buildings and environmental friendly exhibitions in the future.

Still, it is not intended to state that there is no hope for environmental context in architecture. This paper suggests that we can link all the dimensions of the subject as an ecosystem with individual and social behaviors, values, lifestyles, forms of production, technologies, policies, social structures and undoubtedly with spatial requirements such as quality, sensation, sensitivity, health and comfort in a much more transparent theory and practice. However, it should be noted that, today, reaching the goal drawn above and debating/experimenting on new directions regarding our physical surroundings is only possible by an extensive self-critique of environmentalism and architecture.

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MYTHS AND FANTASIES IN ARCHITECTURE OF DUBAI: THE LOSS OF ARCHITECTURAL IDENTITY

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ABSTRACT

It is known that searching for a concept, which is an abstract idea or a mental symbol in architecture, has been changed due to the impact of economic forces along with the process of modernization and globalization in the 21st century. Therefore, the context in architecture, which refers to paradigms, architectural conditions and circumstances, has also been dramatically changed according to the 'conceptual extravaganza' in architecture.

Without doubt, Dubai is the new center of economic power relations in the 21st century. Because of this, Dubai is a symbolic platform where economic forces can find place for them to build their architecture 'beyond boundaries of concept'.

Thus, the paper will be focused on how 21st century's architectural myths and fantasies that are standing on the same platform, losing architectural identity and contextualism as examples in Dubai prove. Dubai is the capital of fantasy world in our century and also where mythical designs stand beyond 'boundaries of the concept', such as Palm Island, Globe Island, Ski-Dubai, Mall of Emirates, Burj al-Arab and so on. The paper will have criticism of these projects above and a reading which includes the history of the 'loss of context' by including these examples.

Keywords: Concept, Context, Myth, Fantasy, Identity

THE POWER OF THE RELATIONSHIP BETWEEN CONCEPT AND CONTEXT IN ARCHITECTURE

Architecture, which comes originally from Latin word of *architectura* (http://en.wikipedia.org), is the art and science of designing buildings and structures. A wider definition would include with its scope also the design of the total built environment, from macro-level of urban planning to the micro-level, creating every details related to general frame of architecture. Architectural design addresses not only aesthetics but also function within the same time. It also manipulates some subjects such as order, harmony, space, volume, texture, light, shadow and etc. or abstract elements in order to achieve pleasing aesthetics. This distinguishes it not

only from applied science, but also from engineering, which usually concentrate more on the functional and feasibility aspects of the design of constructions or structures. Also beyond engineering, it is seen that architecture includes concept, which is an abstract idea or mental symbol denoting all of the objects in a given category or style of entities interactions, phenomena or relationship between them. Pretheoretically, concepts are the constituents of thoughts. Therefore, concept has become a term of art among philosophers and partly because of the diversity of projects and concerns that tend to get lumped under this one heading (http://plato.stanford.edu). According to Deleuze, 'There is no simple concept. Every concept has its own components and is defined by them. Thus, every concept has a code. Even if every plurality is not conceptual, it is a plurality. There is not any concept having only one component: even first concept, which is the starting concept of a philosophy has lots of components…every concept refers to another…' (G.Deleuze- F. Guattari, Felsefe Nedir?, YKY, Istanbuul, 2000, pp.23-26). Architectural concepts are abstract in that, they omit the differences of every details in a building or a space, as if they were identical. To have an architectural production, a concept, which is 'foundation' of production, is needed. Different architectural concepts can give different identities on the world architecture. Thus, new and unique architectural styles are born. Design and identity are resolutions of contextualism.

Here, the definition of context should be given. The movement when concept mutates from being object to being subject, 'context' is created. Thus, the context in architecture refers to paradigms, conditions and circumstances in architecture. Therefore, it can be said that concept is virtual and context is actual. Here, virtual and actual should be defined; *virtual* means something that is 'almost' something else, and *actual* means a status of possible worlds. Thus, roughly, *virtual* is the data or income taken by the brain, and *actual* is the data such as feelings, ideas and etc. outgoes from the brain.

Architect creates his architectural design with a unique concept, which shows his motto. Thus, his architecture becomes a space, which is used by us, people using that space. The context is feelings, ideas, experiments and relations that we have either with in each other or between the space and us.

THE EFFECTS OF MODERNIZATION AND GLOBALIZATION IN ARCHITECTURE

Since historical structures of cities have dramatically changed by the effects of modernization and globalization, the scope of architecture from micro-scale to macro-scale has been also changed. It is known that, there were three certain rules in 1920s' modern architectural style; purity, order, harmony. It can be said that searching of 'certainity' is destroyed since 1920s' modern architectural style till today. In 1980s' the general suppose of the globalization is to feel and to see all of the color variants of different cultures all around the world. However, on the contrary of this idea globalization creates a 'particular world', which has only one grey color instead of all other color variants. Here' it should not be forgettable that grey is a color, which is a mixture of white and black, and there are many different grey ton-sur-tons.

Thus, today even if there is a general definition of technological architecture all around the world, every city has its own construction practice; every city should be discussed within its own values and its own specific life standards.

ARCHITECTURAL MYTHS AND FANTASIES IN DUBAI AT 21ST CENTURY

All ideas can be structured by improving of all new technologies, and more than this, having new building materials give a huge platform to create those new ideas due to modernization and globalization in the 21st century. Therefore, it can be said that there are (nearly) no limits on architecture. Having no limits in architecture opens a vast and empty land to create myths and fantasies. Context is killed by the architectural play in Dubai, while the frame of rules has been created also by Dubai. Therefore, context, of which none of architects could stand on outside, has been destroying by 'extravaganza of concept' (Kojin Karatani' Metafor Olarak Mimarlik, Metis Yayinlari, Istanbul, 2006 pp.152-157). Here, to understand this extravaganza, Baudrillard's simulacra and simulation theory should be mentioned. According to him, simulation is known for discussions of images and signs, and how they relate to our contemporary society, wherein we have replaced reality and meaning with symbols and signs; what we know as reality actually is a simulation of reality. The simulacra of Baudrillard refers are the signs of culture and communications media that create the reality we percive: a world saturated with imagery, infused with communications media, sound, and commercial advertising. These simulacra of the real surpass the real world and thus become hyperreal, a world that is more-real-than-real; presupposing and preceding the real. It can be said that there is a simulation of concept in Dubai's architecture. Thus, it can be said that Dubai's contemporary architecture is an architectural simulation. (Oguz Adanir, Baudrillard'in Simulasyon Kavrami Uzerine, Dokuz Eylul Yayinlari, 2004, Izmir).

According to Wittgeinstein, 'designing is similar to a game, on which rules are creating while we are playing' (Wittgeinstein, Philosophical Investigations, p.39).
Thus, architecture became a chess game, which has unbreakable rules. Meanwhile, this chess game flew on a 'transcendental filter', and thus, instead of breaking existed rules, players of this chess game recommended new games with new rules. Today, there is no game and there is no 'new rules', just as in architecture of Dubai.

ARCHITECTURE IN DUBAI

Burj Al-Arab

The Burj al-Arab is a luxury hotel in Dubai, and was briefly marketed as "the world's first seven-star hotel". It was designed by Tom Wright of WS Atkins PLC. At 321 metres (1,053 ft), it is the tallest building used exclusively as a hotel. It stands on an artificial island 280 metres (919 ft) out from Jumeirah beach, and is connected to the mainland by a private curving bridge. It is an iconic structure, designed to symbolize Dubai's urban transformation and to mimic the shape of an Arab dhow.Construction of Burj al-Arab began in 1994. It was built to resemble the sail of a dhow, a type of Arabian vessel. Two "wings" spread in a V to form a vast "mast", while the space between them is enclosed in a massive atrium. According to Tom

Wright, who is the architect of burj al-Arab "The client wanted a building that would become an iconic or symbolic statement for Dubai; this is very similar to Sydney with its Opera House, or Paris with the Eiffel Tower. It needed to be a building that would become synonymous with the name of the country. Several features of the hotel required complex engineering feats to achieve. The hotel rests on an artificial island constructed 280 meters offshore. To secure a foundation, the builders drove 230 40-meter long concrete piles into the sand. The foundation is held in place not by bedrock, but by the friction of the sand and silt along the length of the piles. Engineers created a surface layer of large rocks, which is circled with a concrete honey-comb pattern, which serves to protect the foundation from erosion'.


Figure 1, 2. Burj al-Arab, Dubai.

Dubai Mall

The Dubai Mall is a giant mall scheduled to be built at in Dubai, UAE, by Emaar properties, as part of the New Dubai project. This mall claims to be the largest mall in the world when completed. It will cover a total area of more than 12 million ft², with 10 - 15 individual smaller malls built inside it, consisting of 9 million ft² of shopping retail space (comprising of a total of more than 1000 stores). Featured attractions include the world's largest gold souk, the 850,000 ft² Fashion Island, one of the world's largest aquariums, an Olympic-sized ice skating rink, Oasis Fountain Waterfall, WaterFront Atrium and a view of the world's tallest building, Burj Dubai.

Figure 3. Dubai Mall

The Hydropolis

Currently under construction in Dubai, Hydropolis is the world's first luxury underwater hotel. It will include three elements: the land station, where guests will be welcomed, the connecting tunnel, which will transport people by train to the main area of the hotel, and the 220 suites within the submarine leisure complex. It is one of the largest contemporary construction projects in the world, covering an area of 260 hectares, about the size of London's Hyde Park."Hydropolis is not a project; it's a passion," enthuses Joachim Hauser, the developer and designer of the hotel. His futuristic vision is about to take shape 20m below the surface of the Arabian Gulf, just off the Jumeirah Beach coastline in Dubai. The £300 million, 220-suite hotel is due to open at the end of 2007 and will incorporate a host of innovations that will take it far beyond the original blueprint for an underwater complex worthy of Jules Verne.There are only a few locations in the world where such a grandiose dream could be realised. A high proportion of today's architectural marvels are materialising like fanciful mirages from the desert sands. We have come to expect extravagant enterprises to be mounted in the Middle East, and especially in Dubai.

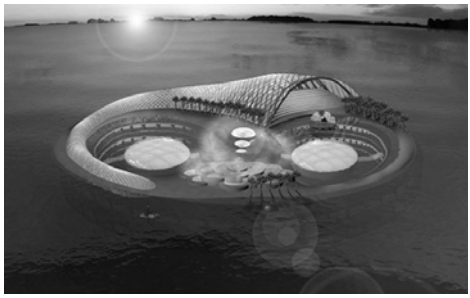

Figure 4. The Hyropolis, Dubai.

Entirely assembled in Germany, this underwater hotel was immersed with broad of Dubai at the end of 2006.

Ski- Dubai

Ski Dubai is claimed to be one of the largest indoor ski resorts in the world, with 22,500 m2 of indoor ski area. It is a part of the Mall of the Emirates, which is one of the largest malls in the world. Ski Dubai is part of the Majid Al Futtaim Group of Companies. The properties of the project are: 22,500m² covered with real snow all year round – (equivalent to 3 football fields), 85 metres high (approximately 25 stories) and 80 metres wide, full capacity of 1500 guests.

Figure 5. Ski-Dubai, Dubai.

Palm Islands

The Palm islands in Dubai are the three largest artificial islands in the world. They are being constructed by Nakheel Properties, a property developer in the United Arab Emirates. The islands are The Palm Jumeirah, The Palm Jebel Ali and The Palm Deira. The islands were commissioned by Sheikh Mohammed bin Rashid Al Maktoum in order to increase Dubai's tourism. Each settlement will be in the shape of a palm tree, topped with a crescent, and will have a large number of residential, leisure and entertainment centers. The Palm Islands are located off the coast of The United Arab Emirates in the Persian Gulf and will add 520 km of beaches to the city of Dubai. Between the three islands there will be over 100 luxury hotels, exclusive residential beach side villas and apartments, marinas, water theme parks, restaurants, shopping malls, sports facilities and health spas.

The Palm Jumeirah

The creation of The Palm Jumeirah began in June 2001. Shortly after, The Palm Jebel Ali was announced and reclamation work began. The Palm Jumeirah consists of a trunk, a crown with 17 fronds, and a surrounding crescent island that forms an 11 kilometer-long breakwater. The island itself is 5 kilometers by 5 kilometers. It will add 78 kilometers to the Dubai coastline. The first phase of development on the Palm Jumeirah will create 4,000 residences with a combination of villas and apartments.

Figure 7. The Palm Jumeirah Island, Dubai.

The Palm Jebel Ali

Construction of The Palm Jebel Ali began in October 2002. The project is expected to be completed in mid 2008. Once it has been completed it will be encircled by the Dubai Waterfront project.

The Palm Deira

The Palm Deira was announced for development on October 2004 and completion is expected in 2015, when it will become the largest of the three Palm Islands with 41 fronds. According to the company Ten Real Estate, "The Palm Deira will cover 14 kilometers (8.7 miles) in length and 8.5 kilometers (5.3 miles) in width and have an area of 80 square kilometers (861 million square feet). It consists of residential property, marinas, shopping malls, sports facilities, and clubs. The residential area will be located on the fronds and will contain 8,000 two-story town houses in three distinct styles - Premier Villas, Grand Villas and Vista Town Homes.

The World Island

The World is a man-made archipelago of 300 islands in the shape of a world map currently being built off the coast of Dubai, United Arab Emirates. The World is one of a series of artificial island projects in Dubai, along with the Palm Islands, and like the other islands The World is being built primarily using sand dredged from the sea. Each island ranges from 23,000 m² to 84,000 m² (250,000–900,000 square feet or 5.74–20.66 acres) in size, with 50–100 m of water between each island. The development will cover an area of 9 km in length and 6 km in width, surrounded by an oval breakwater. Developers on The World will be able to create their own environment within the project through a process known as Terraforming - literally meaning earth-shaping. Islands are sold as continuous plots with both land and water areas; the developer can then reshape the islands to create unique features such as private beaches, coves, harbors, and marinas by moving the sand within designated setbacks and regulations. Four different types of island are available to developers at The World. Low Density islands are located at the perimeter of the masterplan to ensure maximum privacy with open vistas to the large water bodies allowing for convenient access for mega yachts and other large vessels. Resort islands are dedicated to hotel and resort developments and may also include residential and limited commercial uses; land parcels are conveniently located near marinas, providing the ideal location for intimate boutique hotels, spa sanctuaries or world class resorts. Mid-High Density islands are low-rise, mixed-use communities complete with commercial offerings to meet the needs of residents whether a full-time or vacation home. Commercial islands are strategically located adjacent to major transportation centres or navigation channels and will offer an array of retail venues, including fine dining, canal seaside cafes, and leisure. The World, is a series of more than 300 man-made islands.

Figure 8. The World Island, Dubai.

CONCLUSION

Concept is important as a component of design in architecture because it effects the 'being' of examples of contemporary architecture and thus urban planning. So that Dubai, where is the new center of economic forces today, is the right place to understand the outlines of the relationship among concept, context and contemporary architecture. It is known that modern architecture had a certain point of view and a certain story to tell. Meanwhile, the story of architecture has been changed from the point of 'being certain' to 'being uncertain' and thus to the point of 'being simulation'. Thus, as a city Dubai is the most important platform on where 'simulation' has a place to make its own show. Here, it should not be forgettable that architectural concepts are like *nebulas*, they are always changing; they have an endless potential of changing. The given 'order' of architecture by the power of the capital, is and equals to Dubai. The foundation aim of the city is not only to join to, but also to be a part of the rest of the world by its economical power. There is no coincidental architecture: thus, Dubai was given a birth, a birth of its own architectural context. So that, 'loss of context' in architecture becomes 'transformation of context'. Thus, new concept(s) can be also born by the transformation of context and 'extravaganza of concept' is seen in Dubai. Therefore, projects (which are among) such as Palm Island, Globe Island, Ski Dubai, Mall of Emirates and Burj al-Arab can be structured in Dubai as the words of 'particular language', the language of contemporary architecture.

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ENVIRONMENTAL ISSUES

Moderator: Ayhan Karadayı

Living under the Materials' Powerful Expression of Architectural Dominance
Didem Baş Yanarateş

Will Utopias Be Real? Microtechnology and Living Architecture
T. Didem Akyol Altun, Gülden Köktürk

LIVING UNDER THE MATERIALS' POWERFUL EXPRESSION OF ARCHITECTURAL DOMINANCE

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ABSTRACT

Materials have preferences to be formed, such as water goes to be globular; earth goes to be petrified etc. And the factor forming the building materials as spaces implies the intension. The intension that we expect for living in would be satisfied as space, but the intension that we do not expect would be surprised. However the surprises do not imply always a satisfaction:

Following the material evolution, the metal domination in engineering has been officially started on by the technology of iron casting thriving through the development of steels and going on with the light and the specific alloys. However this is not an age of one material. As the development of recent metal alloys is getting deceleration mode, the acceleration in new generation composites is causing an immense range of material for design. This is the age of advanced materials and the spaces which are built with their expression of architectural dominance. The material's inherent preferences are replacing through the preferences peculiar to designer. By the unlimited possibilities in manipulation of material characteristic, the ready-made products have become to be produced for not to be used but thoroughly to be consumed in short terms due to a planned obsolescence. The stimulated consumption in industrial design marketing has been already accepted in architecture and interior design where a rigged scoring system is inspired for spatial components and their materials. Thus the material selection criteria for designer is going to become to be summarized as "how much you dare to pay?" or "Are you ready to kill for it?"

By the purposes of the paper it is going to be underlined that insistence forcing us to live in "the spaces to build" as the sculptures of materials' expressions which referee to the domain of "someone" instead of "somewhere". In the paper it is going to be advocated that "the spaces to live" have to be not only the part of built environment but the participant of living one where the materials are integrated in the dynamic process of design conceptualizing them by the formation in the flow of a life, such as the globular formation of a flint stone in the flow of a stream.

Keywords: Building materials, Design, Sustainability, Identity, Architectural culture

INTRODUCTION

All the materials have forms free from the intension of design.

However, throughout the eras materials have been re-formed as expressions of divine power meaning the humanity faculty of creation in forms. Desire for the power leads the inspiration of re-created forms in spite of the preferences inherent in materials. Through the implication of materials construed in each new forms, the history of architecture meanwhile the history of man, have been consisted by the motive of humane hegemony. So it can be apparently followed in all history beginning from the ancient times that the values of goods and spaces have been evaluated through their materials due to their strictness of constraints in extraction, processing and application, such as constructing the heaviest in highest, carving the toughest detailed in smallest, using the rarely found –the most exotic- in hugest amount etc. It seems as the way to reviving in all ages due to the amazing built which is domain by overcoming the constraints of materials in the extreme. Thus, the mausoleums such as pyramids or the goods such as swords or masks symbolizing with the degree of the nobility, the sovereignty and even either the divinity have been assessed with proportionally increased value through their materials implications of the highest technology could be reached in age and also beyond the age that they had been belonged. If the empires, pharaohs, nobles of those ages had lived today where would they prefer to bury and what would they have taken with them?

Adopting the stance of “Mechanical Design” Michael F. Asby questions and answers this circumstance as: “Their titanium watch, perhaps; their carbon-fiber reinforced tennis racquet, their metal-matrix composite mountain bike, their shape-memory alloy eye-glass frames with diamond-like carbon coated lenses, their polyetherethyl-ketone crash helmet.” (1) This answer is considerably clear for underpinning the amazing evolution of materials through ages: Instead of distinguished materials were dominant on whole architecture even an age, today there is an immense range of advanced materials where the evolution has been started from “the material for design” towards “the material design”.

Also the menu of building materials processing for spatial designs is enormously expanded that the quantity of known materials such as wood, stone, steel, glass etc. have been replaced by various regenerated materials which the most of them can not be defined, the several of them more and less known with the trade names of manufacturers from the ready-made product catalogs. The unlimited design facilities free from any constraints of material is tending to become a narcissism where in short term consequences as a contradiction in the mean of architecture basically concerted as “the art of living”. Thus according to the spatial design the contradicted value system due to materials makes the question above to be re-asked differentiated in two ways: Firstly **“**If the empires, pharaohs, nobles of those ages had lived today where would they want to be buried after they had died?” and secondly “where would they want to live for their last days before they had died?”. In another words, if we talk about a space instead of a product as a design we mean to ask “where would they want to be buried? and where would they want to die?”. The spaces replying the each question are being expected to meet in rarely common material implications. So the purposes of paper can be defined as to underline and to

discuss the contrary material approaches adopting in differentiated spaces where they look like theatrically-draped or well-tailored suit.

For along time the hegemony of metal in engineering started with iron casting technology has been going on through a faster evolution from the development of steels to light and specific alloys since 1960s. Thus appropriating till this age, the engineering materials has properly referred as “the metals”. On the other hand, as the revolutionary prevalence of polymers and also the re-combined materials in the mean of hybrids has caused a compulsion in term of design demonstrating in the definition such as “material design” instead of “engineering materials”. Basically, it refers the intensions to submit new possibilities for designer which can not be limited by any constraint due to material. That can be shorted as “If you wish we make your design lighter or heavier, more flexible or more rigid, more opaque or more transparent…Let us make your design “the more”.”

Through the designer drive such as not to be content with engraving of dancing figures on material instead of using a material that can dance or evoke to dance, the concerns of the discipline become to evolve from ‘constructing the materials in space by means of technology’ to ‘forming the material as space in the mean of technology’.

The progress in regenerated materials as special alloys, polymers, elastomers and also hybrids inspire to have a tissue-like surface that can be dressed indivisibly fitted to any form as the designer wish. So the space is going to consist as a sculptured body where the material is indivisible element of those surfaces in the sense of spatial wholeness. Thus what is couched in this material is going to have the formal and textural expressions of the components which are distinct from being consisted in nature implying the detection of stronger man’s mind. The binary opposition of already existing environment and the one being created as man-made evolves in terms ‘passive’ or ‘dominate’ preferred rather than ‘natural’ or ‘artificial’.

What is accepted such default in the existing environment is considered as ‘getting old’ and the materials of this environment having signs denote the deficiencies of this process are defined as ‘passive’ in design. On the other side, the dominate process of man-made is determined in definition of conserving the premier body new, as like it is constructed, in facing of whatever and however the conditions occur in time. The requirement for the materials fitting for innumerable design practices causes a compulsion in technology to get the perfect one which is eliminated from all structural defects. The inherent characteristic of those materials can be shortly defined in term of ‘unique’. Thus in material discipline for architecture, this intention of perfect is vouched as in the mean of ‘not to be deformed’.

The surfaces, components of a spatial design, have to be new in life-time. Through the intention, the material science is subjected to regenerate material on the purpose of getting ‘the maximum’ instead of ‘the optimum’. Thus, it is expected from those materials to preserve their stabilities on physical and chemical inherent superiorities for any condition considered as can be occurred in all uses.

However, a constitution emerged in such an intension of perfect is going to cause an unavoidable contradiction in the basic of natural being. In fact, ‘Getting old’ is not a start for a terminating process but a start of a metamorphic cycle. In this cycle, each

component of nature has its own role to maintain the constitution of existing environment in various life-forms sequentially altering at deliberate periods and this is the way that makes the nature to renew itself and to stand alive till the end of the cosmos.

"For a long time, machine –made perfection was the aesthetic Standard. Now that may be shifting to an appreciation for the irregularity, the softness, the handmade quality and workmanship of natural building materials. The shiny, smooth machine surfaces of mechanical materials do not age or wear well. " (2)

Sim Van Der Ryn

The re-generated materials do not permit design to have an oldness value in time but they guarantee it to become a waste in a very short time indeed. The designs are looking smart as with mechanical smoothly surfaces although the traces of tearing appear to consist they begin to lose their appeal for user. That is the noticeable faith as precarious state which does not require a design to be preserved instead of to be wasted. For instead a hand-made wooden artifact can have a surviving acceptability inspite of all its defections occur in time such as the irregular traces of knots, checks, the shakes between growth rings or the shrinkage existing in whole. At the same time a laminated fiber product has no tolerance for any defection to deserve any state of preservation with a similar wisdom.

"Since the Industrial Revolution, a plethora of new materials have been produced that have widened the scope of manufacturing enormously. In parallel, their means of implementation has developed at such a pace that talk of the man-machine systems is redundant, since automation has practically ousted the human from the manufacturing cycle. The golden rule in industrialized countries, where supply often precedes and directs demand, is to produce more to consume more. As there is no ingestion without excretion, the consumer society today is faced by overabundance and by the deleterious effects of its own waste; the relationship between humankind and the environment has become a cause for concern." (3)

Also that is the way to sell or earn more by encouraging the consumption more in a planned obsolesce value system. The principle based on such a value system does not expect man to appropriate a design belonging to user for preservation in long period, and on the other side it is being purposed to assign man as consumer ready to change a design as soon as "the later" comes. In what degree such an approach can worth an acceptable evaluation for an architectural space? It states a clear contradiction in the meaning of architecture which is illogical to build a space not accepted to be belonged by its user due to the peculiarities of physical and socio-cultural environment where it is being lived referring as "the place". On the other hand, there has been always a great desire also for architecture to build an art work as a sculptor articulated an amazing power symbolizing the dominance of architectural creation through the ages. Towards a sustainable architecture since industrial revolution it is being debating on through the severing considerations in "rethinking of architecture". Also sculpturing huge bodies having preference of technology is being seemed as narcissism based on a departure point which accounts the mission of architecture as "the art of living". So the goal of the mission is being compromised on architecture to build as a living organism to be belonged by

environment instead of to build as a diamond like sculptor for preserve in a refused environment. That means an inspiration towards the architecture as metamorphosis of life itself existing in “the place” contrary to the sculptured bodies in machine-made perfection.

Through the approaching ages the life is getting more and more permitted by architecture where it is being almost sacrificed. This aptitude in a scoring system due to the material “the place” not only means possible reserves for construction but it refers the resource of life where the architecture should be belonged as integrating the built to the rhythms of existing environment. And also the spaces created as art works should have common senses participating in both the built and the natural environments referring as a constitutional metabolism identifying the place. Advocating the stance the architect has being charge of the where we are living and has no right to create isolated self referee built sculptures.

CONSEQUENCES

The architecture should not be considered merely as the dynamic adaptation of technology in evolved materials, although in the term of “art of living” its dynamic adaptation to all participants of existing environment should be also assessed. Meanwhile, using material in design should not only be considered and evaluated by the ranks of expressions implying how it is achieved to be changed more by the technology. On the other side it is underpinning that there should be an alternative value system for the materials building up the architectural metabolism scoring through how much a designer succeed it to integrate with “the life” processing as “the place”. That brings about such a formal expression construed on materials having signs which are adapted by the erosion in the life-flow of architecture.

As the consequence it can be said that instead of intended surprise, the intended pleasure can be achieved in healing architecture where the materials constituted the whole in details on the contrary used as more in building. That means also a detection of the binary opposition in existing scoring system of design intensions through “the materials having price” or “the materials having value”.

ENDNOTES

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WILL UTOPIAS BE REAL?
MICROTECHNOLOGY AND LIVING ARCHITECTURE

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ABSTRACT

At the present, as a lot of theorists and sociologists said, it is a fact that there is an important transformation in the world and industrial society has been evolving into information society just as it happened in Industrial Revolution. This transformation process, is regarded as the third grand social revolution of mankind, has begun with the rapid development of the microelectronic and computer technology, and has affected the architecture that is one of the most permanent transporters of the cultural production and cultural identity.

Architecture has been trying to find solutions to the main problems of the time, to design spatial concepts for a new and better society with the expectations of a developed environment humans from past to present. In this context, it can be seen that the fast developing science and technology have affected the architecture in many different aspects from design process to materials and construction systems and also help realize utopias identified as experimental architectural designs and intellectual production about future.

In the architectural media, the interdisciplinary relationships between architecture and programming on computer, complex algorithm information, genetic engineering, artificial intelligence, microelectronics, robotics and nanotechnology are frequently discussed. Through these relationships free forms can be constructed, the buildings that were described as utopia in the past can be transformed into reality and buildings can be designed like a living organism by new materials and technologies. Also different living areas like seas, mega structures, and horizontal cities are researched with the rising population; moreover, constructing colonies in other planets can be visualized beyond the limitation of our planet.

In this paper, the effects of the development of science and technology on contemporary architecture have been evaluated generally, and also utopist architectural designs of the day which have been designed by interdisciplinary relations especially between architecture and mathematics, electronics, robotics, genetic and nanotechnology and which may have an impact on architecture of the future have been investigated; new ideas have been developed about the potential of these relations.

Keywords: Transformation, Genetic, Robotics, Micro-electronics, Nanotechnology

THE EFFECTS OF SCIENTIFIC AND TECHNOLOGIC DEVELOPMENTS ON ARCHITECTURE

Scientific thought and research methods have been changed by rational ideas after the Enlightenment Revolution in the 18thcentury. In scientific areas, the new world view, based on investigating laws of nature, superseded the old world view, which explained the nature by relating it to God and religion. The effects of scientific and technological revolutions, which gained speed after the Industrial Revolution, were only disclosed in the 19th century in architecture and they caused a new concept called modern architecture to be born.

As a product of developing technology, machine affected the modern architecture with its order, processing, economy and has been reflected in abstract and geometrical sense. But then the machine was aesthetisized literally like a model in the utopist designs of Archigrams in 1960's, which has a design exactly matches the machine, or the main buildings of high-tech ecol, designed almost as a robotic machine. Scientific researches are reflected in architecture with organic forms which simulate the nature, but these designs have regular and defined geometries depending on the deterministic world view in this period.

After the Second World War, the idea of the emergence of mathematical rules of processing machines and digitizing rested on the computer and information technologies and resulted in the transformation of the mechanical paradigm to electronic paradigm. In parallel to that transportation of design to computer, which increased the mathematical ability to analyze, brought with it a new design concept and approaches in architecture.

Computer software, called CAD/CAM technologies, which transfer the design to drawing, make 3D-digital modelling and rendering, enable new design forms. These forms have complex types of geometry has determined by mathematical functions and parametric algorithms and have a new vectoral geometry, which is not Euclidian. Different forms which haven't been designed can be produced from different mathematical functions like spatial bubbles (Blob) or pits (Bleb) or twisted surfaces (Fold). (Image1)

At first, computer technology was only a tool to design exciting and original forms. In time, architects have begun to use information technologies as an element of space, have integrated infrastructural systems, sound, image, text, simulations, projections and screens, sensors into space. Besides, they have designed flexible and liquid spaces with technological equipment, which can interact with users, respond to external stimulations and be changed by environmental effects (like wind, sunlight, pedestrian and vehicle circulation). Aegis Hyposurface, which has designed by Decoi, and has mathematically generated patterns is an interactive surface responding to the changes in the surrounding environment. (Image 2) It is activated by the user input, sound, video source and pre-configured effects. The movements of the visitors in the environment are reflected by the deformation and the changing color of the surface. Similarly "Muscle Body" Project of Oosterhuis can respond differently with their sensors that are sensitive to human movements (Yavuz et al., 2007). (Image 3).

Furthermore, complex mechanical systems have integrated with buildings, and "intelligent buildings" which have all equipment and advanced automation for users have emerged. In parallel to that, "ecological architecture" which uses renewable energy sources, conforms to nature, consumes low-energy and produces its own energy, has been developed. Today, rising importance of the concept of sustainability and protection of nature, and intense researches reflect upon the architecture in many different aspects such as formation and aesthetic of buildings, ecologic or recycled materials, and some mechanical energy saving systems integrated into buildings.

In conclusion, at present the technological buildings shaped by alternative opportunities with transformations in many building elements from structural systems to materials, from equipment to installations constitute part of contemporary building stocks. What's more, there are some interesting design ideas that can be named as utopias of our age. These ideas take advantage of researches in the sub-branches of main sciences in addition to the computer technologies.

UTOPIAS OF THE DAY: Genetic, Nanotechnology and Robotics

In the 20th century Le Corbusier metaphorically likened the house to living machine. Although in the 21st century, it is predicted that the buildings will be a really living organism not like machines, but like organics. Actually this idea harbours aims of designing buildings in harmony with nature and protecting its the symbiotic equilibrium, as with the smart buildings, the ecological and sustainable architectural approaches mentioned above. This could be made possible by designing living buildings through natural processes in nature with the assistance of molecular nanotechnology and microelectronics technologies. John M.Johansen claims that a new species of architecture that takes advantage of the remarkable capacities of electronic intelligence is evolving (Johansen, 2002:22).

The science of genetic has been developed importantly in a short time, by analyzing the genetic code of human and finishing the Human Genom Project in 2000. The discoveries in the field of genetic and biology have given birth to "genetic architecture", which aims to create buildings that reproduce themselves with their genetic codes, grow, survive and even die.(Çakır et al., 2000:55). Buildings designed in a process of computer coding, will grow and perform just as living organisms directed by their built-in DNA do. Accordingly, architects will think of not the resulting product but of the design process. And just as a genetic engineer studies the DNA architects will explore ways to design software that will develop product on its own. This software will use the genetic algorithm method which is one of the evolutional computation techniques inspired by the Darwin's evolution theory.

Genetic algorithm suggested by John Holland in 1970's is a searching and optimization method based on canonical selection rules. This method, which has differences in respect of traditional optimization method, uses coded formats not an object set, and works according to probability rules but needs target function. It searches a specific part of the solution thoroughly yet does not search the mathematical space at all. Therefore, it is a fact that solution appears through an

effective searching in a short time (Goldberg, 1989:1-7). Another advantage of this method is that it investigates the population concurrency this it is fastened to local optimum solutions.

Genetic algorithms which have achieved fast and optimum solution to complex problems can be adapted to several problem sets. The calculation time is increased through traditional searching methods applied in great solution space. But, for these types of problems, the acceptable solutions can be found via genetic algorithms in a short time (Gonzales, 2000: 683). Genetic algorithms especially give efficient solutions to types of problems in which solution space is wide, discontinuous and complex.

The solution of any problem by genetic algorithm makes the problem evolve virtually. Through this process, the computer can produce new forms similar to the evolution in nature. These programs use a coding system that contains the numbers of “0” and “1” as in the DNA-array.

Its process steps are as follows:

Solution Coding: All solutions in the searching space are coded as sets. This process is designated as bit of sets of the same size including all the solutions (Jang, 1997: 176; Yeniay, 2001: 38).

Reconstruction of First Population: A solution group is constructed which is coded in probable solutions. In this case, the solution group is called population and then the solution codes are called as chromosome. In chromosome characteristics, the binary system which includes a single meaning for computer is used (Yeo ve Agyel, 1998: 269).

Calculation of Fitness Value: Fitness function of a given particular chromosome gives a numeric fitness value in direct proportion to the ability or through usage of solution which represents the chromosome. This information helps to select more efficient solution in each generation. If fitness value for a solution is high, living and recombination chance and also the representing rate in the next generation are great (Yeniay, 2001: 38-39).

Recombination Application: Sets in recombination operator are copied according to object function and help to select individuals that will transfer the fine hereditary properties to the next generation efficiently.

Crossover Application: In order to, inquire the potential of existent genome tank, the crossover operator is used so as to include new chromosomes with better attribute than those of the previous generation. Generally, crossover is applied to selected family types as a probability which is equal to a given crossover ratio (Jang, 1997: 176).

Mutation Application: When crossover is not a satisfying solution, the producing process of new chromosomes from existent chromosome is implemented with mutation. The main purpose of mutation is to provide or conserve genetic diversity.

New Generation Reconstruction: New generation with recombination constitutes the parents of the next generation.
All the steps repeated until the ultimate number of the determined generation is reached.

Iteration is terminated then. According to target function, the best set is selected.

Each point in the solution space is coded with the binary set called chromosome and has a fitness value. Instead of one point, genetic algorithm consists of point sets as a population. after a few generations have passed, a new population in each generation is constructed using genetic operators such as crossover and mutation. The population includes members with more satisfactory fitness value. And this corresponds with Darwin's evolution model based on mutation and natural selection (Jang, 1997: 175-176).

No software that can realize these trials, which can only be experienced in the computer medium for architectural designing have been produced yet. On the other hand, there are a lot of designs incorporated with genetic and nanotechnology.

At Interactivator, designed by John Frazer in 1995, a seed in a computer model transfers its genetic codes to the other seeds by cell division and disperses to all models (Image 4). According to fitness value which is calculated for computer medium, successful genes in genetic algorithm are selected as in the nature. Then these genes are exposed to crossover and mutation operations and different architectural forms are produced in working process of the model (www.ellipsis.com). (Image 5)

The project of embryological houses of Greg Lynn suggests 6 prototype parental houses which have different genetic characteristics from one another. (Image 6) Thousands of different houses can be produced by means of mutation and natural selection of these prototypes. (Image 7) Despite the fact that all of them have the same number of the aluminum spines, the steel beam and panel components, each prototype has a different character and property. The structure of the design, produced as an example for an exhibition in Moma, constitutes a double-facade cover and steel beams with circular section. The first cover is a semi-transparent screen constructed using aluminum and glass panels and the second is the shading layer (www.glform.com). (Image 8)

These studies are based on producing form by genetic algorithm. But Johansen's designs have the utopia of really living buildings. The "Molecular Structure House" (Image 9) and the "Multi-Storey Apartment Building" (Image 10) designed by Mohamad Alkhayer and John M.Johanser for the year of 2200 would be started to settle the molecular modelled code designed by them in the ground into a vessle filled with special fluid chemicals like a potted seed. The order of the processes are as follows: taproots, which would composed the basis of the building, upper building, inside-outside horizontal skeleton, grid system, inside-outside walls, platforms or flats, gaps and mechanical systems will be completed via molecular divisions in 9 days (Image 11). Building could refresh their own forms, spaces and materials according to varying conditions and users' requirements (Johansen, 2002: 133-134).

Nanotechnology, another branch of science, affects the architecture especially in materials. It intends to elicit new behaviors in dimension of nanometer through quantum theory, to design and synthesizes new nanostructure or to bring in new miraculous properties in nanostructure and to use these new properties in new functions. Nanotechnology needs much more scientific and theoretical researches than all the other technologies.

Nowadays, when the dimension of materials is reduced to nanometer criterion, quantum behaviours supersede the declared traditional behaviours and its physical properties are beginning to change. Chemical and physical properties disclose very different and fantastic behaviours as regards structure dimension, details of particle structure, and the type and location of a different particle connected with the system. Consequently, electronic properties such as electric conductivity are changed conspicuously with the adherence of foreign particles to the existent the nanomodel. When the foreign atom is a transition element, the nanomodel that it adherence to, can gain magnetic properties. Briefly, the physical properties of a nanostructure, can display the important changes normally depending upon its resistance, its dimension, size and bending structure. For example, even though a diamond crystal constructed by carbon atoms is not normally a good conductor, the one dimensional carbon atom chain can be rendered quite a good conductor by means of nanotechnology.

Today, we know that when the irreversible calculation is realized, because of entropy which is increased, the information of one bit must spend about 10-21 Joule energy as thermodynamic. Multiprocessors in new generation desktop computers such as Intel Pentium 4 consist approximately of 40 million transistors and run at around 2 GHz. If we think that contemporary microprocessors spend about 100 Watt, computers in the future will run on 100 Microwatt power, and if possible, they work in thermodynamic limits. Note that one microwatt is equal to 10^{-6} Watt (Image 12). Therefore, it is a fact that by way of expected developments in transistor, memory and system design with nanotechnology, cellular phones will become a super computer like a computer which has powerful microprocessors at present (Çıracı et al., 2006:15).

Even now, many intelligent materials are researched into based on the development of nanotechnology such as shape-memory alloys which return to the original shape at a particular temperature after stretching, piezo-electric materials which can be widened and narrowed by voltage, composite materials which have properties of two and more materials, and also some materials which can copy themselves, change their transparency and colors, transmit information, sound, light to each other through sensors (Dave, 2001:96-97).

Nanotechnology is also used in other industrial areas. Samsung silver model fridge, in which bacteria contacts with a surface covered by nanosilver and nanosilver particules break down the cell, thus causing the bacteria to die. The Mercedes firm in the automotive industry produces effective paint that is waterproof and protects against scratches, as well as glass and mirrors that can easily be cleaned, and also nanofilter air conditioners killing bacteria and viruses also reducing exhaust gases. Nanopolimar LCD display used in Sony firm has super colored bar, fast image replication and super image phase. KODAK's photo paper has great powers of endurance to humidity, temperature and ozone and is not affected by light.

Antimicrobial socks do not smell very bad, since the millions of invisible nanosilver particles in them destroy the fungi and maintain their antimicrobial influence at a proportion of %99,9 even after 50 washings. Lancome Hyrdazen reduces to stress influence and helps the skin to be fit all day long. Rosacea Care Sunscreen does not let through the destructive UV light and still allows sun-tanned complexion (Bayındır, 2007: 5-9).

Furthermore, it is claimed that in the future, external surfaces of buildings would be changeable according to computer instructions, would change between liquid, solid, gas conditions of matter, would be sometimes dull and solid or sometimes transparent and liquid.

Robotics which contains many disciplines like electronics and mechanics is developing by increasing the capacity and speed of computers. In a robot, motors, mechanical equipment and a control unit which contains algorithms which entered by designers take placed

A few decades ago, robots had restricted ability in contacting with small areas and they were clumsy huge structures. Today, however, robots as small as insects, can be constructed. They are used in many areas such as automotive and paint industry, but their moving capacity is limited. Because axial rotation in very small areas with lots of robots working at the same point is impossible for the day. In the future fast and humanlike robots of very small dimensions should be produced by nanotechnology.

RESULTS AND SUGGESTIONS

From the outset, it should be understood that living buildings are still theoretical in nature. As we move into the future, the fields of microelectronics, genetic, nanotechnology and molecular engineering represent a new frontier in architecture. However, architects have thought about a better and sustainable environment and space quality in the future because sources of the world have become restricted and ecology has gained more and more importance. Therefore, architects who have been supported by researches in other scientific areas have developed alternative approaches for the future of architecture in cooperative work with scientists. When these approaches are evaluated, it can be claimed that especially genetic, molecular-nanotechnology and robotics could started a radical revolution in architecture as in many other areas. And as a result architecture could reach a very different stage from now.

Some ideas can be investigated in addition to the designs of the days. Could architectural spaces be created which can organize and reproduce themselves with their genetic codes and cells, and which can grow, survive and even die? Could buildings managed by their own DNA, like living organism, interact with the environment and repair their own damage. In other words, could “living buildings” be constructed? Or could our buildings be constructed by superb robots in the future?

If analysis of mechanism based on the cell reproduction can be realized and applied to architecture, buildings could be raised to use any atom or molecule as building

block -instead of bricks for example- like raising flowers in pots (Utkutuğ, 2002:23). Just as a plant or tree is produced from a seed, a building could be erected from a small cocoon.

Millions of microchips, sensors which contain genetic codes and algorithms and intelligent nanomaterials could be compressed and buried into the cocoon by nanotechnology.(Image 13) Architects would reach this cocoon via a main computer and code their design criteria using an interface which facilitates the installation of design on the computer. They could determine the form, structure, covers, surfaces, interior spaces and materials of buildings by this interface. Then the next step will be the settlement of the cocoon in the building area. So algorithms in the cocoon could be run and built producing materials which could be efficiently reproduced by genetic codes.

Firstly columns and joists of buildings and then outside surfaces could be formed by genes of the cocoon. When all algorithms in microchips have been completed, the constructed building would be a hearing, feeling, listening, that is to say, a living building through the use of sensors. Hence, it could detect the outside environment (such as sunlight, wind, weather and structural distortion), be well-adjusted to varying conditions using its genes and repair deformations in its structure.

Another foresight is an idea that buildings could be constructed by using nanorobots with developments in robotics (Image 14). After the designing of the robot skeleton, humanlike robots could be constructed with covered materials which resemble of human skin on the skeleton. Through programming and remote controlling, these robots could be used in the construction of buildings. Moreover, robot usage will decrease the building and employees costs. And also micro robots will construct buildings using natural reproducing, developing, evolving process and faster than the nature.

Ray Kurzweil, in his book of ‘The Age of Spiritual Machines’ in 1999, stated that if the technology develops in that speed, computers would pass the human brain in terms of memory capacity and operation speed (Utkutuğ, 2002: 15). As a matter of fact, today’s computers that are integrated into buildings can observe some conditions such as temperature, air circulation, energy consumption and wind load by their sensors and can respond if they have already been programmed. Although we crawl on all fours, living buildings or cities constructed by robots could be made possible with coordination of architecture, science and technology when considering the development of mankind in the last two centuries. Thereby, a more livable environment could be constructed from really living buildings. To express with Johansen’s words, “much of yesterday’s fiction is now reality, and much of today’s fiction may be reality of the future.”() If buildings can be constructed by nanorobots automatically like plants, architects will design the software which transmits the design to microchips. As a consequence, architects would have to cooperate with other disciplines, obtain information, gain experience on an unprecedented scale.

All this may raise a question about whether architects will be needed in the architecture of the future. It can be claimed that designers would only be transformers of characteristics of the product to software for anyone to reach his/her dream house by just touching the keypad and for buildings to be “raised” like plants by automatic

nanorobots. If we go beyond that, trillions of mechanical buildings that could accrete immeasurably, would go out of control, cover the earth, and decide that they do not need us to survive, which means that they could live without us whereas we could not live without them. Could there be such days?

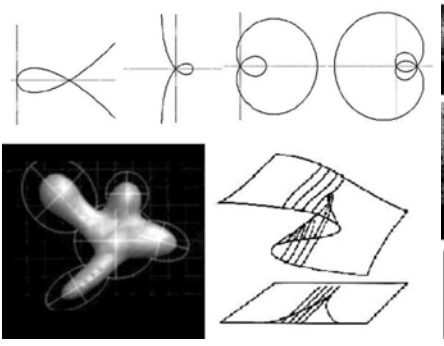

Image 1. Formation of Blobs, Blebs and Folds

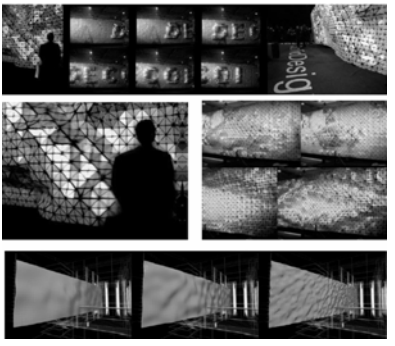

Image 2. Aegis Hyper surfaces by Decoi

Image 3. Kas Oosterhuis, Muscle Body

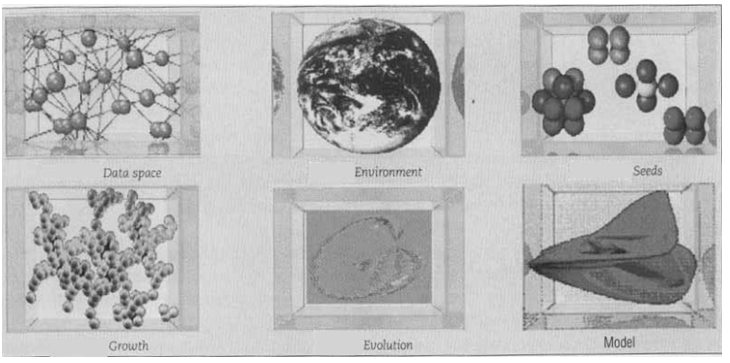

Image 4- Interactivator, working process of model

Image 5, 6. Generating different forms in the developing process of model; Six different prototypes of Embryologic Houses;

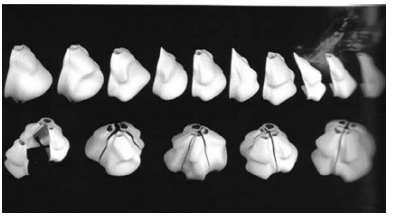

Image 7. Produced houses with genetic algorithm method

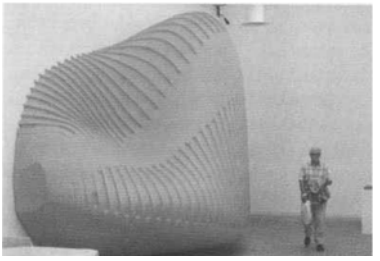

Image 8. The Embryological House model exhibited in MOMA

Image 9. The Molecular Structure House

Image 10, 11. The Multi-Storey Apartment Building; The nine-day formation process of Molecular Structure House.

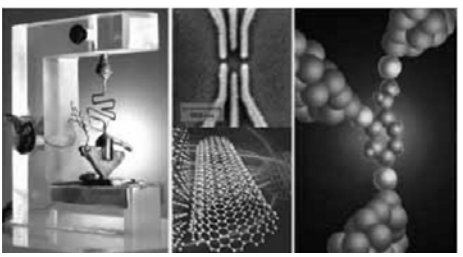

Image 12. Yesterday: The first transistor pruduced in 1957. The dimension of its was around centemeters. Today: The semiconductor one electron transistors is worked at the room temperature and the carbon nanotube transistors is trying either low power and fast. Tomorrow: Can be the millions of transistors constructed in one chip via molecular transistors?

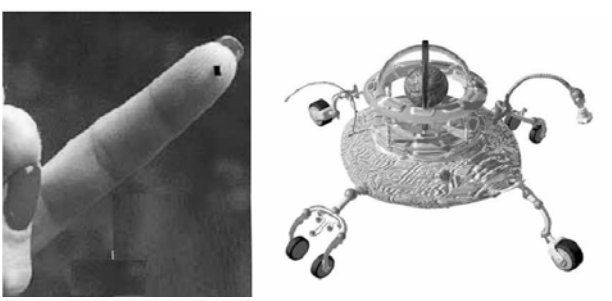

Image 13, 14. Nanosensor chip; Nanorobots

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ENVIRONMENTAL ISSUES

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INTEROPERABİLİTY FOR BUILDING PERFORMANCE SOFTWARE

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ABSTRACT

Issues such as global warming and energy crises have brought Green Design to the forefront in the AEC-FM (Architecture, Engineering, Construction and Facility Management) industry. Building green, is synonymous to designing for a given local ecosystem. Unfortunately, the increasingly global markets are making this approach "inappropriate" to some. Objective measures of Building Performance are required to offset such economic pressures. However, a lack of integration among building performance analysis tools and design environments is impeding the workflows among designers and engineers.

This paper will provide a history of past integration efforts as well as introduce the current state of interoperability research in the AEC-FM industry. We will compare various building representations currently under development. These newer representations are mostly based on XML technology and we will include an example utilization of ifcXML. The example presented will be the development of a data exchange mechanism between a room acoustics application under development and a CAAD system.

Keywords: Interoperability, Integration, Representations, ifcXML, CAD

INTRODUCTION

While globalization is promising a higher quality of life in developing nations, it is creating new markets for outdated technologies and its production know-how. Issues such as global climate change and diminishing oil reserves have been motivating factors for development of newer sustainable technologies in the developed world. These technologies are replacing the older inefficient alternatives that are becoming affordable for low income countries.

Population Reference Bureau's 2006 World Population Data Sheet (2006) estimates world population to be 6.5 billion. Only 1.2 billion of this total live in developed countries. The promised "increase" in the standard of living becomes an alarming projection given the per capita total energy consumption values in Figure 1.

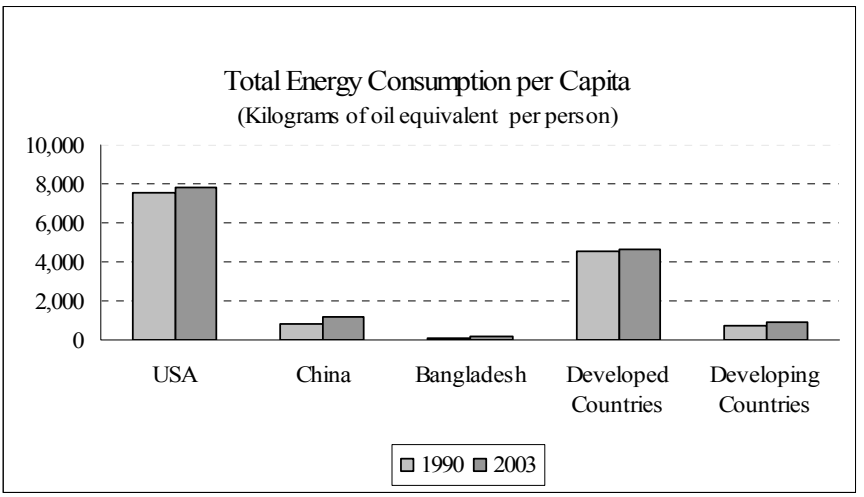

Figure 1. Total Energy Consumptions per Capita

Traditional office buildings with deep floor plans and sealed envelopes have proven to perform poorly over their lifecycles. They have high operating costs, high ecological impact and low occupant satisfaction reducing overall productivity. They even have health risks. Combination of contaminant out-gassing materials and improper heating, ventilation and air conditioning (HVAC) are the main causes of Sick Building Syndrome. Unfortunately today, in developing countries such buildings are being offered as showcases of “progress”.

In contrast, developed nations are creating new standards for sustainable development that only comes through an awareness of context. A good example is The U.S. Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED) rating system (2007). Under this program designs collect points by meeting various sustainable design criteria that strongly promotes use of local materials, passive systems, and an understanding of the local ecosystem. This voluntary program has been very successful and has become an important marketing point for real estate in North America. It has even been adopted as building code for government buildings in Vancouver, Canada.

Bioclimatic designs of Ken Yeang and T.R. Hamzah is another good example of new context sensitive approaches (Yeang, 1999). The design team for the National Library of Singapore competition entry started out with the goal of providing an environmentally friendly building. They adopted a strict energy efficiency criteria that targeted an annual energy consumption of less than 175 kWh/m2. (The average office building consumes 265 kWh/m2 in U.S. (EIA 1998), and 220 kWh/m2 in Singapore.) Predicted consumption for the final proposal was 159 kWh/m2 (Lam, Wong and Chandra 2001). Such multi-disciplinary collaboration at early stages of design is still rare in practice even in developed countries, yet the advantages are clear.

State of the art equipment and control systems are employed in the National Library of Singapore, yet the majority of energy gains is the result of massing decisions and passive shading schemes. The Intelligent Building is a much misunderstood concept. An increased number of sensors and actuators only increase the level of automation. An Intelligent Building, however, is one that is *designed intelligently* to maximize passive systems and reduce ecological impact. An integrated design approach that takes into account various interactions among different systems of a building is required.

Integration of various systems within a building such as structural components, HVAC equipment, data/power/telecommunication networks, furniture, lighting fixtures, etc requires the collaboration of architects, engineers and consultants. This multi-disciplinary effort needs to be coordinated by architects who are sensitive to performance requirements. They need to be able to speak the language of engineers and consultants who take part in design / construction / operation of buildings. Today, however, architects rarely analyze the performance of their designs. They leave it up to engineers and consultants who get involved late in the process, after many constraints are set by decisions made during the early stages of design.

Even if architects, as designers of our built environment, become more sensitive to the performance characteristics of their designs, they currently lack the proper analysis tools in computer aided design environments they utilize. Almost all analysis tools are developed by engineers who are experts in their domain, for their own use. These tools are not only hard to understand for architects, but also their stand alone nature requires a separate detailed description of designs to be input manually. Eventhough both CAD systems and analysis tools have advanced rapidly, an adequate scheme for integration still eludes the research community. Research over the last 30 years have focused on creating the Integrated Design System, a computational design environment where architects are able to draw their designs as well as receive immediate feedback with regard to performance criteria and code compliance.

Since the second half of 1990s, Information and Communication Technologies as the primary enabler of globalization have advanced rapidly after adopting the distributed computing paradigm. Distributed computing breaks down monolithic systems down into independent components that are developed individually to take on sub-tasks and communicate with other components. This scheme is especially useful in collaborative environments and is being adopted by the A/E/C industry. The quest for the Integrated Design System has become the quest for Interoperability among Enterprise Software.

BUILDING REPRESENTATIONS

Just as collaborating agents require a common language, collaborating software components require a common representation of products and processes that are to be designed and managed. For the AEC industry, International Alliance for Interoperability (IAI), a consortium of more than 400 organizations from 24 countries, has been developing the Industry Foundation Classes (IFC) (IAI 2006). After more than 10 years of development IFC has still not been adopted widely. Alternatives,

proprietary as well as non-proprietary, are currently under development. In the next section we will provide a summary of these building models intended as a platform for interoperability.

IFC

IFC development is based on STEP (Standard for Exchange of Product Model Data - ISO 10303). The IFC object model is created using the EXPRESS language defined by STEP. Data exchange is performed utilizing STEP facilities. Most common mechanism for transferring EXPRESS based instance data is the STEP Physical File (SPF) format (ISO 10303-21). Two other methods were EXPRESS-X query language, and SDAI bindings (C++ interface). In an effort to allow processing of IFCs through the popular XML (Extensible Markup Language) format, IAI derived an XML schema from the EXPRESS schema providing a fourth data access mechanism. This schema is called ifcXML (Liebich 2001) and does come with its shortcomings. ifcXML schema is not fully conformant with the EXPRESS schema. The EXPRESS to XML mapping (ISO 10303-28) that is used by the automated translation drops some constraints, inverse relationships and derived values. Furthermore, the ifcXML files are 2 to 10 times larger than the SPF files (Nisbet and Liebich 2005).

aecXML

IAI follows a “top-down” approach for IFC development. The comprehensive model that is expected to meet all requirements of all domains, is developed centrally without any vendor involvement. Vendor implementation takes place after a version is released. This approach to modeling has been criticized by many industry professionals and the alternative “bottom-up” approach is represented by the aecXML effort (IAI-NA 2007).
aecXML was initiated by Bentley in 1999 with the objective of developing within one year XML schemas for the AEC industry. This effort was again coordinated by IAI. This scheme called for the development of multiple domain specific XML schemas that would be collected under the aecXML umbrella. The common objects were to be consolidated to form the Common Object Schema.
Initially the freedom to work with a smaller more efficient model attracted many vendors, however, aecXML was able to collect only two schemas: LandXML for infrastructures and gbXML for energy analysis.

LandXML

LandXML is an effort to standardize civil engineering and survey data for land development. The schema defines objects like parcels, roads, and pipe networks for the exchange of data between stakeholders in land development projects. The effort started at Autodesk, but is a non-proprietary model that is accepted by other major CAD vendors as well. The standard is now managed by a consortium of interested partners. (LandXML.org 2007)

GreenBuildingXML (gbXML)

GreenBuildingXML schema allows for a detailed description of a single building or a set of buildings for the purposes of energy and resource analysis. It was developed by GeoPraxis, an engineering consulting firm to automatically get data from 3D CAD applications into its web based analysis service - Green Building Studio. Its simplicity compared to IFC, is attracting many building performance researchers towards gbXML. ArchiCAD and Revit are two major CAD tools able to export gbXML files (gbXML.org 2004).

AEX

FIATECH is a research, development, and deployment consortium established in January 2000. Its mission is to develop, deploy, and commercialize technologies that realize Fully Integrated and Automated TECHnologies (FIATECH 2007). “Automating Equipment Information Exchange” (AEX) Project started in May 2002 to develop XML specifications to automate information exchange for the design, procurement, delivery, operation and maintenance of engineered equipment. Mapping between ifcXML and AEX model for centrifugal pumps have been tested successfully. (Begley, Palmer, and Reed 2005) However, FIATECH does not have any projects that are directly aimed at representing a complete building.

bcXML

eConstruct was a project supported by the European Commission’s 5th Framework Programme. The objective was to help the European Building and Construction (BC) industry to build faster, cheaper and better, by developing, demonstrating and disseminating a new Communication Technology that is specifically tailored to the industry's needs. The communication was to be based on a new schema called Building and Construction eXtensible Mark-up Language – bcXML - to be developed (Tolman et al. 2001). Unfortunately bcXML is not being used or developed since January 2003.

Proprietary Building Models

Since the 1907s, CAD tools have advanced rapidly. Early systems only handled 2D drawings. Over time, 3D capabilities were added, databases were incorporated, building elements were defined, smart building components and parametric objects were developed. Today, major CAAD (Computer Aided Architectural Design) systems are all based on what is known as a Building Information Model (BIM). Each vendor has developed a BIM of its own and is trying to attract customers through its interoperability capabilities.

Graphisoft’s ArchiCAD emphasizes Green Design and has built-in links to the following analysis software: EnergyPlus, Ecotect, ArchiPHYSIK, RIUSKA, and Green Building Studio. Also ArchiCAD is able to export in IFC SPF, ifcXML, gbXML formats.

Autodesk Revit has recently partnered with Integrated Environmental Solutions (IES) to provide analysis capabilities. IES provides comprehensive analysis through its line of <Virtual Environment> software suite. Revit is able to export in IFC SPF and gbXML formats

Bentley Architecture has not implemented any integration with specific analysis applications. Bentley is relying on IFC-based interoperability and is the first CAAD tool that is IFC2x3 compliant.

AN INTEROPERABILITY EXAMPLE

ESTARA - Educational Simulation Tool for Architectural Room Acoustics is a new educational building performance analysis application under development at the Department of Architecture in Balıkesir University. It is intended for use mostly in educational settings to introduce basic concepts in room acoustics. It will provide capabilities for comparing various calculation methods and sound propagation paradigms as well as an interface to support parametric studies to communicate the impact of various design decisions on performance indicators.
To allow students to input design data through a user interface they are already familiar with, ESTARA needed to be linked with CAAD environments. IFC was chosen as the platform for data exchange. With the ability to work with IFC files, ESTARA stays independent of CAAD tools but allows students to prepare models for simulation in any CAAD tool that is IFC compliant. The ifcXML schema introduced in 2001 simplified the integration of IFC into the Java environment ESTARA interface is being developed in.

Development Process

Development of the ifcXML link integrated into ESTARA followed the process illustrated in Figure 2. First, the ifcXML2x2 schema published by IAI is sent through a JAXP compiler that creates the required Java classes that correspond to XML entities found in the schema. Then, these classes combine with the framework that comes with the JAXP package and are used to develop the parser for ifcXML instance documents. The parser extracts information relevant to ESTARA from the ifcXML instance documents and instantiates ESTARA objects and populates the system database needed for parametric studies.

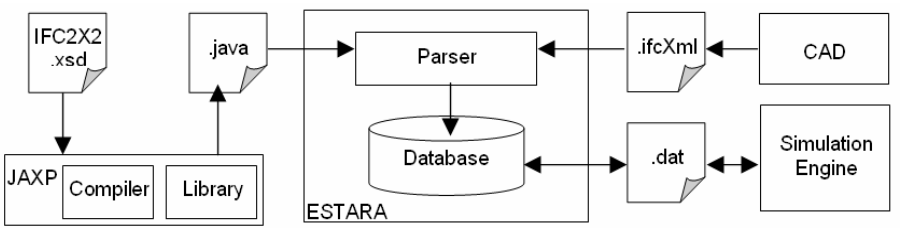

Figure 2. Development process

The ifcXML parser has a modular architecture. Separate components handle instantiation of corresponding ESTARA objects, extraction of geometric information, and extraction of material information. As IFC, and IFC compliant CAAD systems evolve, the ifcXML schema might need to be interpreted differently. In such cases only the relevant component will need to be updated. A Pre-processor locates the relevant IFC elements and instantiates corresponding ESTARA objects. The Geometry Extractor extracts and converts coordinate information. The Material Extractor locates the materials of IFC objects, matches them against ESTARA's material database and assigns the matching materials to the relevant ESTARA surfaces. All ESTARA objects are sent to the system database.

Object Mapping

The IFC specification is rather large and is expected to increase in size as it meets the demands of the whole AEC/FM industry. The four layer structure of IFC that makes such extensions possible is illustrated in Figure 3. The Resource Layer, defines resources such as units of measure, geometric representation, and other fundamental types. The Core Layer, defines the Kernel and Core Extensions. The Kernel contains objects that are not AEC/FM-specific such as the general notions of a Product, Process, an Document. The Core Extensions include AEC/FM-specific extensions to the Kernel objects. The Interoperability Layer contains Shared Building Elements (e.g. walls, beams, stairs, doors, windows) and Shared Building Service Elements (e.g. HVAC, plumbing, electricity). The final layer or module provides further detail in specific domains such as Architecture and Facilities Management.
The information required to run a room acoustics simulation is not very complex and for ESTARA, elements from the Resource Layer and the Core Layer provide the adequate input.

The building model users interact with within the CAAD environment does not map exactly to IFC objects. Some information is lost as the model is exported into ifcXML format. Another simplification happens when ifcXML parser extracts the required information from the ifcXML file. ESTARA does not require all of the information available in the IFC model. This transformation is illustrated in Figure 4.

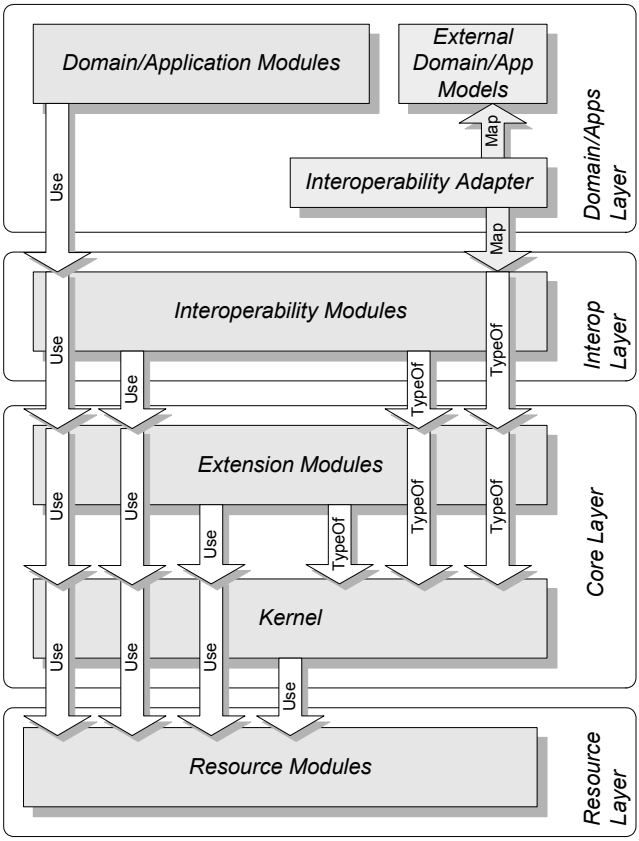

Figure 3. Four Layer Structure of IFC

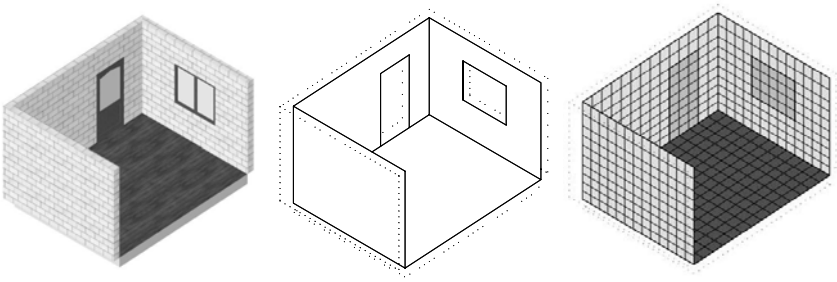

Figure 4. Transformation from ArchiCAD to IFC to ESTARA

For its simulations, ESTARA engine is only interested in the interior surfaces of enclosing walls. Therefore, the parser only creates surfaces as boundaries for the space. ESTARA uses reflectivity patterns and absorption properties for materials. These domain specific properties reside in ESTARA's database. Users define materials for elements in the CAAD system and this type information gets passed via ifcXML. If the material specified does not exist in ESTARA's material database, user intervention will be necessary.

Limitations

Currently only ArchiCAD is able export ifcXML2x2. ifcXML parser has not been tested with other CAAD systems. Also, there is no facility within ArchiCAD to check if the model creates a model consistent with ESTARA input requirements. Users are expected to work within the following restrictions (in ArchiCAD):

- A "Zone" needs to be defined representing the Space.
- Spaces have to be completely enclosed.
- Sources have to be placed using a "Speaker" library element
- Receivers should be placed using a "Listener" library element.

CONCLUSIONS

Built environments will not be improved just through development of mass produced globally applied technological solutions. Context aware local optimizations are required. Local climate, materials, practices and expectancies all play a part in evaluating a building and thus its performance and sustainability.

The high performance building requires the adoption of Integrated Design principles that transform design into an interdisciplinary team effort. Although advances in communication technology is empowering these mostly geographically distributed teams, the lack of integration among their various software tools is impeding the workflow. The need for interoperability has become more pronounced than ever.
The proliferation of competing building representations as interoperability platforms, however, is creating confusion among researchers. Consolidation of these models towards a non-proprietary standard is a vital need. IFC has been criticized with its foundations in legacy technology that is STEP. ifcXML is a solution for this problem that seems to provide a viable alternative for those wishing to avoid STEP. However, a more important criticism in of IAI's "top-down" development remains unanswered.

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NOISE CONTROL IN INDUSTRIAL ZONES AND IN THE INNER SPACES OF INDUSTRIAL BUILDINGS

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ABSTRACT

The acceleration in industrialization in the early 19th century and the resultant mechanization, fast increase in world population, and increase in urban population as a result of intense migration to the cities brought about the problem of noise. The increase in the variety of the transportation vehicles (land, sea, air and metro), works in industrial buildings, works done with machines of new technology, construction works, etc. create intense noise in outer areas on the one hand, and these noise sources affect the interior spaces negatively on the other. As well as in outer areas, noise is very common in inner spaces especially in the workshops of the industrial buildings.

Noise which affect the normal way of living and health of people and which causes deterioration in productivity in production has been considered one of the most important problems in environmental pollution. In order to prevent human beings from its negative effects, noise must be kept within certain standard levels by taking some measures.

This study presents an experimental study in detail about noise control in the workshops of industrial buildings with barriers of different shapes and layers placed between the noise sources and receivers. This experimental study was carried out in a private factory at Arsin Organized Industrial Zone in Trabzon, and investigated the noise reduction values of the barriers in terms of the use of different materials in the layers of the barriers and of the distance of the barriers from the noise source and receiver.

Keywords: Problem of noise, Noise control, Industrial areas, Industrial buildings, Barriers

INTRODUCTION

The acceleration in industrialization from the early 19th century on resulted in the production of extremely diverse industrial products. The production of these products contributed to the improvement of mechanization and, as a result, contributed to the increase in the noise production both in the inner spaces of buildings and in outer areas. Despite all the advancements in technology, noise control problems have still been unresolved.

The increase in the variety of the transportation vehicles (land, sea, air and metro), works done with the machines in the workshops of industrial buildings equipped with new technology, construction works, etc. create intense noise. In addition to these, various domestic power equipment that we use at home in our daily lives also creates noise. The noise sources in outer areas have a negative effect on the inner spaces. Noise which negative affect the normal way of living and health of people and which decreases productivity is now considered one of the most important problems of environmental pollution. For this reason, the level of noise must be kept at certain standard levels. In order to do this, some measures must be taken both at urban and building levels. Exterior noise must be kept away from urban living spaces at the stage of preparing city development plans and noise maps.

This paper explains the protection of living spaces from industrial noise, and noise control in the workshops of industrial buildings. This study also presents an experimental study in detail about the noise control made with barriers of varying lengths and layers which were placed between the noise source and receiver in the inner spaces of industrial buildings. The experimental study, which was carried out at a private workshop in Arsin Organized Industrial Zone in Trabzon, investigates the noise reduction values obtained through the use of barriers with varying forms in terms of the materials used in their layers and in terms of both their distance from the noise source and receiver.

NOISE CONTROL

Noise is described in building acoustics as unwanted sound and has a negative effect on the physical and psychological health of human beings. For this reason, the noise created by various noise sources in both inner spaces and outer areas must be taken under control. Noise control is achieved: 1. at its source, 2. at the receiver, 3. by placing barriers between the source and receiver (Irvin & Graf, 1979; Chayon & Soize, 1998).

Noise Control At Its Source

In general, noise that is controlled at its source is produced by the operating machines, their motors, machine parts, other components that work with the machines, etc. The measures against the noise and vibration produced by these machines and components can be taken by:

- assembling the machines on surfaces which have vibration insulation,
- adding vibration insulating material on machine parts,
- replacing gears drive machinery with belt drive machinery, • replacing the hammer effect machinery with hydraulic effect machinery
- covering the noise-producing parts of the machinery with special noise absorbing materials
- replacing noise producing metal parts of the machines with lowest noise producing metals, etc (Beranek, 1992; Özdeniz, 1992).

Noise Control At The Receiver

If noise cannot be taken under control at its source, controlling it at the receiver must be considered. High noise problem in industrial buildings usually affects workers that work near the noise producing machinery. Workers can be protected against noise with ear protectors or by the changes in working methods. If ear protectors prove to be ineffective in spaces where noise level is high, the receiver can be protected by placing him in an acoustic cabin where he can control the machinery with remote control devices.

Noise Control Along Noise Transmission Route

The measures to be taken along the noise transmission route between the noise source and receiver are applied with the interventions in the affected area between the source and receiver without any intervention in the noise source and receiver. In general, this is achieved by:

- placing the receiver away from the source,
- placing noise absorbing materials on the upper sections of the walls and on the surfaces of the ceilings in the inner spaces,
- collecting the noise producing machines in one place and separating them from the workshop area with walls,
- placing various types of barriers between the receiver and noise source (Sharp, 1973; Şerefhanoğlu, 1996).

Noise Control In City Planning

Fight against noise starts with the measures to be taken at city level. The necessary measures to reduce noise in cities where development has just started or in cities whose development plans are newly prepared must be taken at the preliminary stage of planning. For this reason, industrial zones should be designed according to the prevailing wind; depending on the type of industry, a special buffer zone must be built between the industrial zone and residential areas; as well as evergreen groves, such necessary facilities for the city as bus terminals, parking lots and various warehouses should be placed in this area. An example to the planning of a city against noise is given in Figure 1 as a diagram. Preparing noise maps that show the noise values in the industrial zones and residential areas in the big cities are important. The development in the city must be carried out according to this map

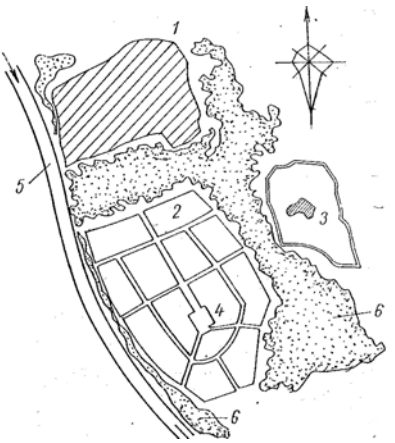

Figure 1. The site plan of a settlement: 1. industrial zone, 2. residential area, 3. relaxation area, 4. city centre, 5. main road, 6. green buffer zone

Lowering the height of the main roads and railroads below the height of the settlement or placing various artificial barriers along the roads will be useful in reducing possible traffic noise in residential areas in a city (Figures 2a, b).

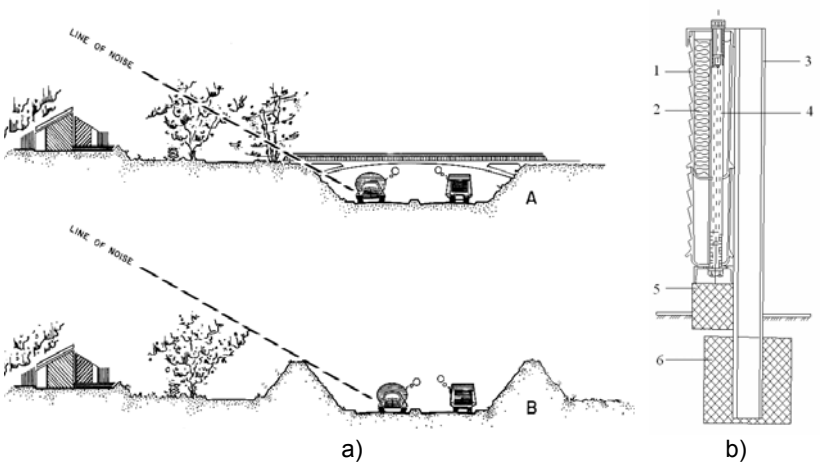

Figure 2. The appearance of various barriers along roadsides: a. barriers made with natural material, b. barriers made with artificial material
1. Covering material on the surface facing the noise source, 2. Noise absorptive material, 3. Covering material on the surface facing of receiver, 4. Air space, 5. Barrier base, 6. Base

Evergreen trees and bushes among these trees are useful barriers used in noise reduction. These barriers should also be used extensively in the buffer zones between industrial zones and residential areas.

In addition, insulation applied on the outer sides of buildings is also useful in cutting the contact of city noise with buildings. When such insulation is applied to the walls and roofs of the industrial buildings, it stops the noise from spreading out.

During the design stage of industrial buildings, it is important to consider the locations of constituent spaces relative to each other and the location of most noisy workshop relative to the outer area. In this context, it is necessary to create a barrier effect by placing the high noise producing workshops in the middle of the industrial zone and by surrounding these noisy buildings with low noise producing workshops. It is important that the walls and roofs of noisy workshops have high-noise insulation and that, if necessary, the windows and doors be double-layered or noise emission from these sections be lowered Cheng, 2002; Abdülrahimov, 1993).

ACOUSTIC BARRIERS AND THE PARAMETERS AFFECTING THEIR PERFORMANCE

This paper investigates barriers in detail since they were used as noise control elements. Acoustic barriers are used in outer areas and inner spaces in order to reduce the level of pressure created by the direct effect of the noise source on the receiver. The effects of barriers that are placed between the noise source and receiver for the purpose of reducing the noise are determined according to some physical parameters. These physical characteristics and their minimum requirements are defined as follows:

Design Parameter	**Minimum requirements**
Dimension	Dimensions must be bigger than the wave length of the smallest frequency that is important for design.
Location	It must be as close to the source or receiver as possible.
Noise absorption	In order to increase the noise reduction effect of the barrier, noise absorptive material should be used in the inner layers.

THE EXPERIMENTAL STUDY

The experiment was carried out at the workshop of HİTAŞ A.Ş. in Arsin Organized Industrial District in Trabzon. The workshop contains different production sections that produce different levels of noise. This study evaluates the noise reduction levels of the multilayered planar barriers according to changes in their unit weights. The barriers were 4 and 8 meters long, each of which was made up of unit modules that

was 1 meter long, 2 meters high and 0.15 meters wide. The data obtained through the experiments with L- and U-shaped barriers are not included in this study.

In the experiment, the source and receiver were placed on an axis which was at a right angle to the barriers. The measurements for noise reduction values of the barriers were taken when the position of the receiver was fixed as 1 meter away from the barrier, and when the noise source was placed at two different positions as 1 meter and 2 meters away from the barriers. Bearing in mind the position of work in the measurements, the noise source was 1 meter above the ground, while the receiver was 1.5 meters above the ground. The noise produced by a wood cutting machine in a certain period of time was recorded and used as the noise source. Separate measurements were taken with barriers with and without glass wool as an intermediate layer. The noise levels recorded at the receiver position were obtained using a calibrated Type 2209 Precision Sound Level Meter produced by Bruel & Kjuer and an Oktav Fitler Set Sound Level Meter.

Because the weights of the barriers were to be taken into consideration in evaluations, the unit weights of barriers were determined for each case depending on the materials used in the layers of barriers. The forms of barriers made up of 0,0005 m. steel, 0,0005 m. aluminum, 0,001 m. steel (St), 0,001 m. aluminum (Al), 0,0015 m. steel, 0,05 m. glass wool (Gw), 0,012 m. gypsum boards (Gb) are classified in Table 1 in terms of their unit weights.

Table 1. Materials used in the barriers and unit weights of barriers

barrier no	surfaces of barrier layers		unit weight without glass wool (Kg / m^2)	unit weight with glass wool (Kg / m^2)
	surface facing the receiver	surface facing the source		
1	0.0005 m. aluminum	0.001 m aluminum	4	4.9
2	0.001 m. aluminum	0.0005 m. steel	6.6	7.5
3	0.0005 m. aluminum	0.001 m. steel	9.2	10.1
4	0.001 m. steel	0.0005 m. steel	11.7	12.6
5	0.0005 m. steel	0.0015 m. steel	15.6	16.5
6	0.0015 m. steel	0.012 m. gypsum board	19.2	20.1

Noise Reduction With 4- And 8 Meters Long Planar Barriers

The measurements taken with 4-meter long planar barriers with glass wool as an intermediate layer when the receiver was 1 meter away from the barriers are shown in Figure 3; and the measurements taken with 4-meter long planar barriers without glass wool when the receiver was 1 meter away from the barriers are shown in Figure 4. As seen in the graphics in Figures 3 and 4, the increase in unit weights increases the noise reduction values. This increase is, on the average, 0.5 dB in low frequencies, while it is 0.5-1 dB in mid frequencies and about 1 dB in high frequencies.

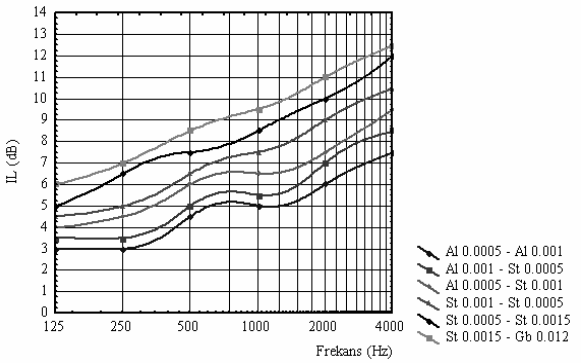

Figure 3. In terms of increase in weight, the noise reduction values of the barriers which were placed 1 meter away from the receiver, which were 4 meters long and which had glass wool as an intermediate layer

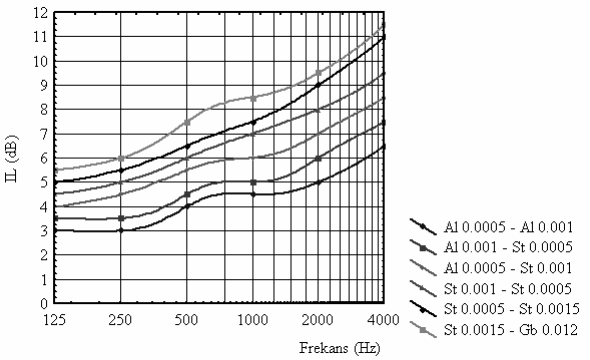

Figure 4. In terms of increase in weight, the noise reduction values of the barriers which were placed 1 meter away from the receiver, which were 4 meters long and which had no glass wool as an intermediate layer

The measurements taken with 4-meter long planar barriers with glass wool as an intermediate layer when the receiver was 2 meters away from the barriers are shown in Figure 5; and the measurements taken with 4-meter long planar barriers without glass wool when the receiver was 2 meters away from the barriers are shown in Figure 6. As seen in the graphics in Figures 5 and 6, the increase in noise reduction values (in octave band frequencies) as a result of the increase in unit weights are the same with the values obtained when the receiver was 1 meter away from the barriers.

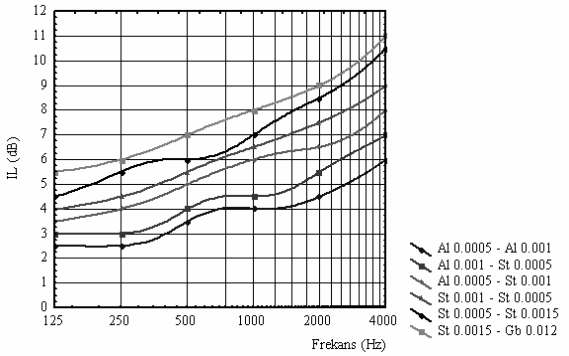

Figure 5. In terms of increase in weight, the noise reduction values of the barriers which were placed 2 meter away from the receiver, which were 4 meters long and which had glass wool as an intermediate layer

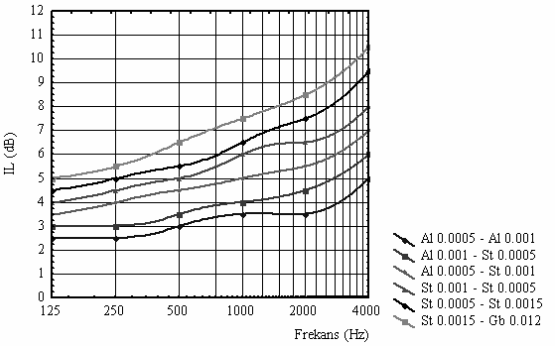

Figure 6. In terms of increase in weight, the noise reduction values of the barriers which were placed 2 meter away from the receiver, which were 4 meters long and which had no glass wool as an intermediate layer

The measurements taken with 8-meter long planar barriers with glass wool as an intermediate layer when the receiver was 1 meter away from the barriers are shown in Figure 7; and the measurements taken with 8-meter long planar barriers without glass wool when the receiver was 1 meter away from the barriers are shown in Figure 8. As seen in the graphics in Figures 7 and 8, the increase in unit weights increases the noise reduction values. This increase is, on average, 0.5 dB in low frequencies, while it is 0.5-1 dB in mid frequencies and about 1 dB in high frequencies.

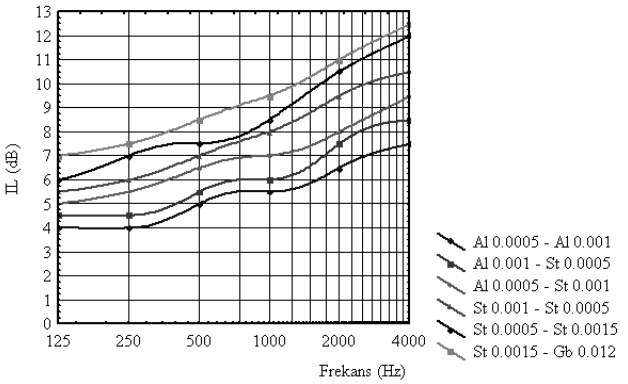

Figure 7. In terms of increase in weight, the noise reduction values of the barriers which were placed 1 meter away from the receiver, which were 8 meters long and which had glass wool as an intermediate layer

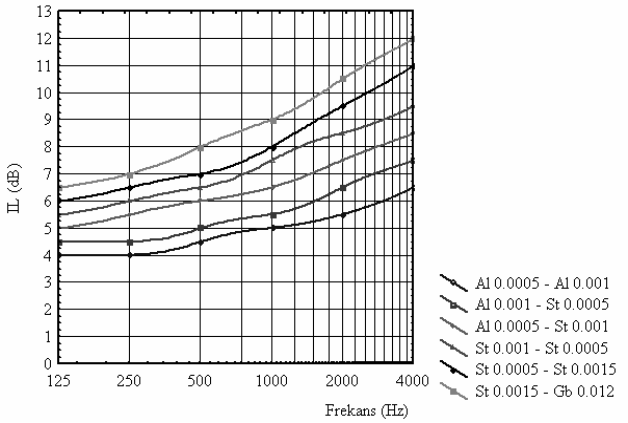

Figure 8. In terms of increase in weight, the noise reduction values of the barriers which were placed 1 meter away from the receiver, which were 8 meters long and which had no glass wool as an intermediate layer

The measurements taken with 8-meter long planar barriers with glass wool as an intermediate layer when the receiver was 2 meters away from the barriers are shown in Figure 9; and the measurements taken with 8-meter long planar barriers without glass wool when the receiver was 2 meters away from the barriers are shown in Figure 10. As seen in the graphics in Figures 9 and 10, the increase in noise reduction values (in octave band frequencies) as a result of the increase in unit weights are the same with the values obtained when the receiver was 1 meter away from the barriers. However, these differences increase up to 1.5 dB in high frequencies.

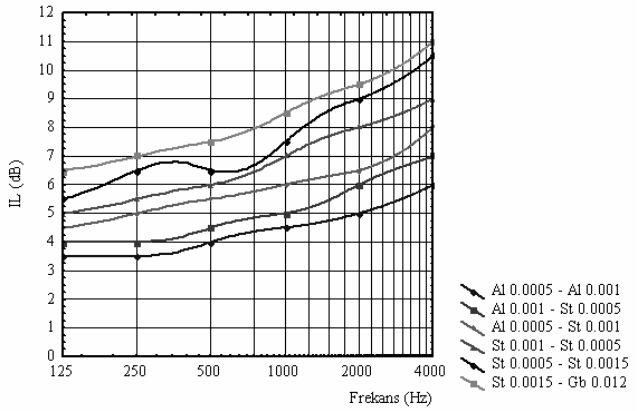

Figure 9. In terms of increase in weight, the noise reduction values of the barriers which were placed 2 meter away from the receiver, which were 8 meters long and which had glass wool as an intermediate layer

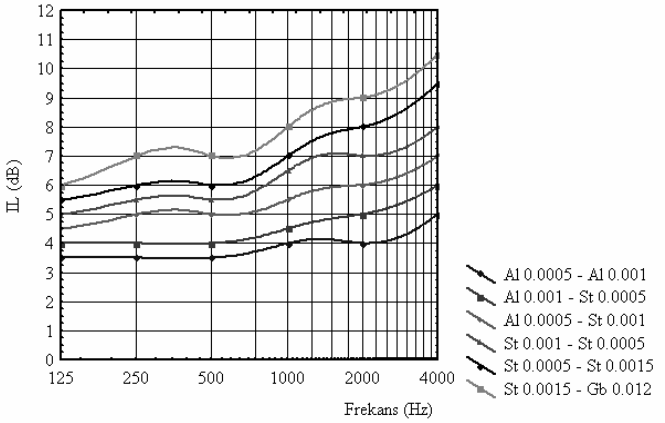

Figure 10. In terms of increase in weight, the noise reduction values of the barriers which were placed 2 meter away from the receiver, which were 8 meters long and which had no glass wool as an intermediate layer

CONCLUSIONS

This paper presented the data about the necessary measures to be taken for noise control in the outer areas of industrial zones and inner spaces of industrial buildings in terms of design, and evaluated the findings of an experimental study made with barriers that are used as one of the most effective methods in noise control. The measurements in the experiment showed that the type of material is not effective in noise reduction values while unit weight is. Increase in unit weight increases the noise reduction. This increase is directly proportional to the increase in frequency. Noise reduction values in barriers with glass wool as an intermediate layer is high especially in high frequencies.

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THERMAL AND STRUCTURAL SYSTEM PERFORMANCE OF A STEEL HOUSE IN ISTANBUL

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ABSTRACT

Structural steel framing, while long exploited for the construction of industrial structures in our country, is finally being used for housing in Istanbul. They are conceived as prefabricated, modernist and environmentally responsible. Good planning and organization are of paramount importance. Special requirements as economy of construction, easy handling of material, use of composition materials have to be taken into consideration. Every aspect of the house must be treated with ingenuity and sensitivity. Equal attention must also be given to detail and esthetics. Since the houses are prefabricated, disruption to the site is minimal and the only site works are foundations and connections. Erection is very fast. Structural strength of steel allows large open living areas. Internal layout can easily be configured to suit individual circumstances. The inherent flexibility of the modular systems allows views. In addition, energy consciousness has become increasingly popular in housing design because of the storage of energy sources in today's world. The search for an 'energy sensitive building' strives to reduce energy consumption during production and occupation.

This paper is to introduce approaches which can be used to determine thermal performance of the building envelope and structural steel system. For this purpose, thermal performance and structural system are discussed on a case study -steel house for a residential construction project - built in Istanbul.

Keywords: Steel house, Residential construction, Thermal performance, Structural steel framing, Energy consciousness

INTRODUCTION

Although the superior structural performance of steel is well accepted in the industry, there is still a need to emphasise its overall qualities as sophisticated building material. The use of steel is not only limited to industrial or large scale structural applications. It can easily be used for residential construction as well. Nowadays, steel framed housing is beginning to gain a greater market share in many countries of Europe, reflecting the relatively high use of steel in this sector in the USA, Japan, and Australia. In the UK, France and Scandinavia where steel use is maximum, hot rolled steel has been used in a number of housing systems and in medium-rise residences

(Ogden, 1998:187). And in our country, while long exploited for the construction of industrial structures, steel is finally being used for housing in Istanbul.

THERMAL PERFORMANCE AND STRUCTURAL SYSTEM OF THE CASE STUDY

In this study, Millenium Park Houses “A Type” are examined (Figure 1-4). These houses built of steel are located in Kurtkoy, a new developping area on the Anotalian side of Istanbul close to Sabiha Gökçen Airport. They are distinguished with their different character than the standard buildings around the region both in terms of architecture and functions.

For the evaluation of the buildings, the following steps are taken into consideration:

- evaluation of thermal performance of the building envelope
- evaluation of the structural system

Figure 1. Photo from the settlement

Figure 2. Photos from the Building

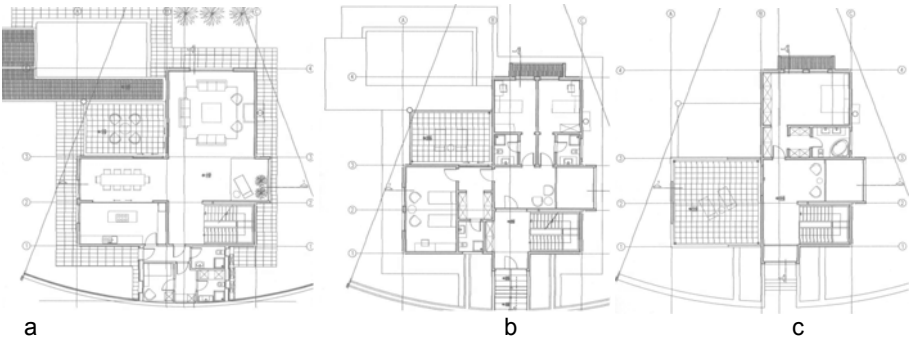


Figure 3. Floor plans (MAM, 2006) a. Ground Floor, b. 1st Floor, c. 2nd Floor

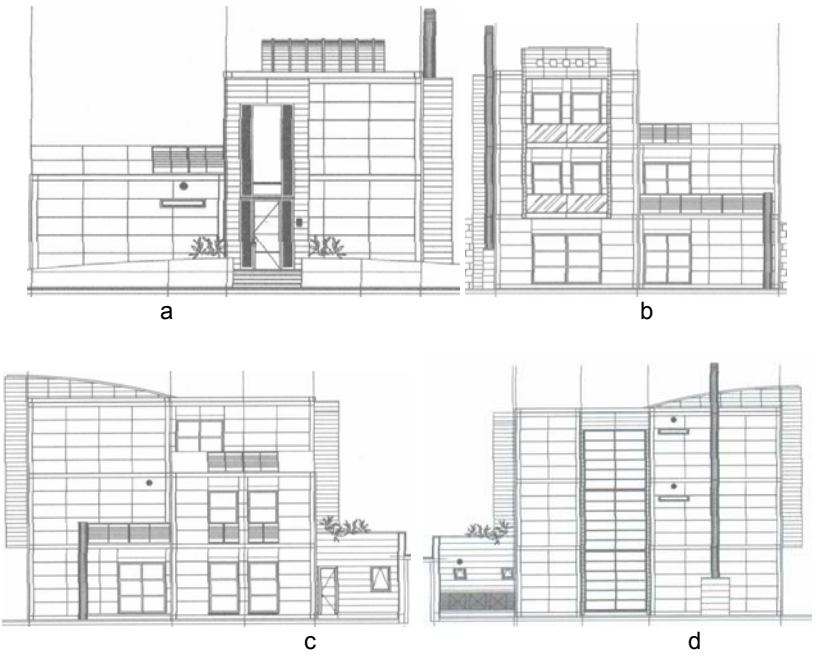


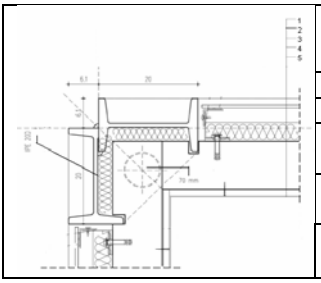
Figure 4. Building Elevations (MAM, 2006) a. North Elevation, b. South Elevation, c. East Elevation, d. West Elevation

Thermal Performance

The demand for enegy increases with population and technological devolopment despite the depleting energy resources of today. The search for on “energy sensitive building” strives to reduce energy consumption during production and occupation. A considerable portion of energy sources in Turkey is consumed for active heating, climatization of buildings. In order to minimize the energy consumption, buildings and settlements should be designed as optimal passive heating and climatization systems (Akşit, 2004: 203).

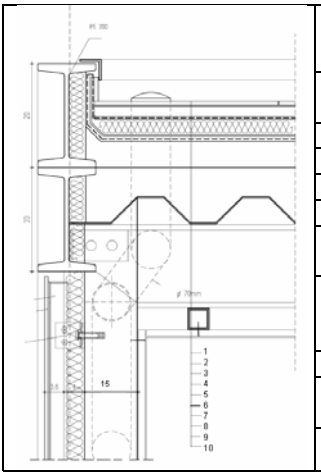
In this section, thermal performance of the building envelope is evaluated. The actual values of the building envelope are calculated and these values are compared with recommended values of TS825 “Rules of Heat Insulation in Buildings”(TS825, 2000). And also, energy demands of the building are calculated and controlled according to the Standard.

Application details and material specifications related to heat loss occuring in opaque component, window, floor and ceiling are shown in Figure 5 and Figure 6. Overall heat transfer coefficients are calculated for opaque component (U_D), floor(U_t) and ceiling(U_T).



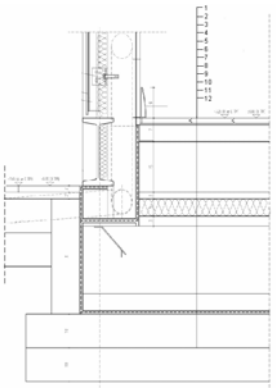
No	Materials	Thickness (d), m	Thermal Conductivities (λ), W/mK
1	Compact laminate panel	-	-
2	Rough or splined boards	0,04	0,030
3	Aerated concrete blocks with standard mortar	0.15	0,14
4	Gypsum plaster (without aggregate)	0.01	0,35
5	Wall painting	-	-

U_D =0,384 W/m^{2}K



No	Materials	Thickness (d), m	Thermal Conductivities (λ), W/mK
1	Ceramic	0,005	1,03
2	Cement screed	0,02	1,4
3	Water insulation	-	-
4	Rough or splined boards	0,08	0,030
5	Water insulation	-	-
6	Cement screed (slope:%1,5)	0,03	1,4
7	Dense concrete, (TS 500), concrete with natural aggregate - Reinforced	0,10	2,1
8	Trapezoidal sheet	-	-
9	Metal construction – INP160	-	-
10	Gypsum plaster	0.01	0,35

U_T =0,339 W/m^{2}K



No	Materials	Thickness (d), m	Thermal Conductivities (λ), W/mK
1	Laminated wooden parquet	0,018	-
2	Cement screed (slope:%1,5)	0,05	1,4
3	Dense concrete, (TS 500), concrete with natural aggregate	0,13	2,1
4	Cement screed	0,05	1,4
5	Rough or splined boards	0,08	0,030
6	Cement screed	0,03	1,4
7	Radye temel	0,20	2,1
8	Cement screed	0,05	1,4
9	Water insulation	-	-
10	Dense concrete, (TS 500), concrete with natural aggregate	0,10	2,1
11	Stabilized	0,10	2,1
12	Soil	-	-

U_t =0,315 W/m^{2}K

Figure 5. Building Envelope Details

Figure 6. Detail Photos

Istanbul is located in the 2nd degree-day region according to the standard. The actual values calculated for the case study are found to be lower compared to the recommended values for the 2nd region of the Standard TS825 “Rules of Heat Insulation in Buildings”. As a result, minimizing heat loss is easier for heating period. Actual values and recommended values are seen in the following table.

Table 1. Actual and Recommended U Values

	U_D (W/m^{2}K)	U_t (W/m^{2}K)	U_T (W/m^{2}K)	U_p (W/m^{2}K)
Actual U Values	0,384	0,315	0,339	2,80
Recommended U Values for 2nd Region (TS825, 2000)	0,60	0,60	0,40	2,80

As seen in the application details, because of the use of aerated concrete and heat insulation in the exterior wall, the value of heat transfer coefficient related to the opaque component is quitely decreased. In a smilar way, the U value related to the floor settling to the ground, is also decreased compared to the recommended value. This also significantly causes a decrease for the heat loss.

The energy demand calculated is 76,52 kWh /m^2 while the enery demand recommended for this building is found to be 87,51 kWh/m^2 according to TS 825 "Rules of Heat Insulation in Buildings" which is the actual standard used in our country. As a result, since calculated energy demand is less than recommended energy demand, the building is accepted to be appropriate to the standard.

Structural System

There are 92 A type house in the settlement. For this type 2511.6 tons of steel are used. Total cost of the project is declared to be 110.000.000 USD.

As structural system, concrete was used only in the foundation and mainframe of the building is made via steel profiles connected by bolts. Columns are made of IPE 200 and beams and roof elements are made of INP 80 and INP 140 galvanized metal profiles. Floor system is formed of metal trapezoidal sheets with a layer of concrete on top of it. Walls are made of aerated concrete blocks. Lateral displacement is prevented by vertical bracings (Figure 7).

Figure 7. Photos from the Construction Phase

According to ISO 12944, C2 corrosion protection painting with 15 years of life duration is used for the steel framing.
Since all the elements are prefabricated and fixed quickly to the concrete foundations, the duration of the construction is minimalized.

RESULTS

According to Authors' opinion, this project is a good example for speedy and qualified residential construction in Istanbul. It is obvious that Istanbul needs such steel framed projects more than any time or place in Turkey because the expected big earthquake. Energy sensibility, lightness, precision, prefabrication, material recycling, strength are further strong points that together easily make steel, the building material of today and the future.

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ENVIRONMENTAL ISSUES

Moderator: Hülagü Kaplan

The Factors Influencing the Feeling of Safety in Urban Open Spaces
Sema Mumcu, Serap Yılmaz, Ali Özbilen

Designing Safe and Peaceful Environments: Spatial Determinants of Non-Violent Urban Crimes
İrem Ayhan, K. Mert Çubukçu

A Design Model for Post-Disaster Settlements: The Case Study in Dinar/Turkey
Evren Burak Enginöz

THE FACTORS INFLUENCING THE FEELING OF SAFETY IN URBAN OPEN SPACES

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ABSTRACT

Increasing number of crime and consequently increasing fear of crime have become important factors threatening the quality of life in cities. People tend to avoid using places which they think unsafe or the duration of stay for this kind of places are shorter than the others. This caused issues relating to safety such as how to make urban open spaces safer and the physical features influencing the feeling of safety become more emphasized in recent environmental psychology researches.

The aim of this study is to determine the spatial features influencing the feeling of safety and what kinds of places are perceived as safe. Depending on Appleton's prospect and refuge theory a questionnaire was done in an urban park in Trabzon, Turkey. Responses about the safest place in the park and the features made that place safe were obtained.

It is found that the areas mentioned as the safest are located in the central parts of the park which leads to high visual access to its surrounding and are spatially defined places with architectural elements like statue and shelter. The features which made activity places in the park safe are categorized as:

- The affordances for visual, auditory or locomotive access,
- The presence of other users,
- Protection from natural features like sea, sun, wind or rain,
- Spatial features like topography, shelter, statue, corner.

Keywords: Safety, Urban open space, Prospect-refuge theory

INTRODUCTION

The importance of safety in urban areas and fear of crime become more emphasized in the area of environmental psychology. Many researchers defined fear of crime as a serious threat to the quality of life (Stamps, 2005a; Fisher & Nasar, 1992; Nasar& Jones, 1997; Blöbaum & Hunecke, 2005). When individuals feel unsafe fear of crime evokes. Fear often elicits stress reaction, to avoid, to reduce, or to cope with a threatening situation. It limits activities, makes people fell like prisoners in their homes and neighborhoods, disrupts neighborhood cohesion and worsens health. As a stressor it may well lead to intense physical symptoms and disease (Nasar & Jones, 1997). So understanding the features of safe areas may help designers create lively urban spaces.

Context which refers to a specific set of physical, social, and personal aspects of environments and the relationships between them has the potential to affect perceptions of humans and all behavior occurs within it (Clitheroe, Stokols & Zmuidzinas, 1998). The feeling of safety is both associated with physical context features such as visual and locomotive connection of the location to its surroundings, land use types at the surrounding areas of the location, the enclosure or/and distance of the surrounding buildings and social context features such as user and usage types, relationship between users. Through ongoing experience, humans develop mental images of their surroundings. These include images of safe and unsafe areas. In theory these images help humans to quickly identify object, evaluate consequences, and act. There seem to places and situations that evoke higher levels of fear than others (Nasar & Jones, 1997). What kind of spatial features of a place do make there categorized as safe and what kind of them do make a place categorized as unsafe? What kinds of places do evoke the feeling of safety most? What are the relevant factors influencing/ threatening the feeling of safety in urban public spaces? In this study we heavily emphasized the impact of the physical features on feeling of safety.

There are many researches that examined the relationship between the feeling of safety or the fear of crime and various physical features such as safety and the visual, locomotive permeability relationship (Stamps, 2005a); enclosure and safety in urban spaces (Stamps, 2005b); concealment, entrapment, lighting and perceived danger (Blöbaum & Hunecke, 2005); prospect, refuge, escape and fear (Nasar & Jones, 1997); spatial arrangement of vegetation and safety (Jorgensen, Hitchmough & Calvert, 2002); curvature, length and width of urban alleys, mystery and perceived danger (Herzog & Flynn-Smith, 2001; Herzog & Miller, 1998); legibility, mystery, visual access, and perceived danger (Herzog & Kropscott, 2004); prospect, refuge and emotional quality of a place (Nasar et al., 1988).

The most common physical features declared by these studies are enclosed places which offer a hiding place to a potential offender and a wide range of vision. These physical features refer to basic concepts (prospect and refuge) of Appleton's theory (1975) and most of the researches mentioned below used this theory to construct their theoretical frame to explain the relationships between various features and the feeling of safety.

Appleton (1975, 1988), by means of his prospect-refuge theory, explains what kind of environmental facilities quicken, simplify access of environmental knowledge and what kind of environmental features display these facilities. According to Appleton (1975, 1988) evolutionary development of humanity has led humans to prefer setting in which, without being seen (refuge), they can see a broad vista (prospect) and such preferences increase their chance of life by affording a safe observation point and the capability to safely see, predict, and act in relation to potential predators, prey, mates. If one can see his/her own enemies without being seen by them, then one's chances of survival are greatly enhanced. Range of vision is directly related to survival. An unimpeded opportunity to see is called a prospect and it refers to the ability of humans to gather information and evaluate it, to decide how to use it. An opportunity to hide is called refuge and it refers to the degree to which an environment affords the security for people to explore it and gather the information.

An important criticism on prospect- refuge theory was made by Fisher and Nasar (1992). They claimed that potential offenders desire a refuge, a hiding place, from which they can wait, attack, and if need be take the victim out of sight. Fisher and Nasar (1992), in accordance with this information, re-evaluated Appleton's theory, using Appleton's ideas of prospect and refuge they created a general typology for evaluating a victim's perceptions of safety based on different levels of prospect for the victim, refuge for the offender. According to this typology individuals would feel least safe at enclosed places such as places with dense shrubs that afford offenders refuge and victims limited prospect. They would feel most safe in places where offenders lack refuge and victims have prospect. In another study Nasar and Jones (1997) defined two environmental properties depending on Appleton's definition of prospect and refuge which would threat the feeling of safety: entrapment and concealment. Entrapment refers to the difficulty a person would have escaping if confronted by a potential offender. Physical concealment (or blocked prospect) refers to a visual occlusion of space big enough to hide a potential offender and from which the offender could watch and emerge to attack. Concealment refers to the affordance of the feature from the point of a potential offender, whereas blocked prospect refers to the affordance from the point of view of a passer by. Depending on this information our assumptions are as followed:

- Visual, locomotive, and auditory connection with surrounding areas is an important affordance which contributes to the feeling of safety.
- Extensive view increases the feeling of safety.

In order to examine the assumptions a questionnaire were conducted with 148 users of a well-known and heavily used park in Trabzon-Turkey.

METHOD

Study Area

Study area is the Hungarian Turkish Friendship Park, which is in the centre of the city; it is also easy to reach and used frequently (Figure1). The reason why it is used and visited frequently is that it is on the seaside and has 120 year old background also it has the Ganita cafe, which is the only natural place in the seaside of the city.

There are lots of activity opportunities in this place. Sitting, fishing, eating-drinking in private corporations**,** ferry tour, listening music, music and dance performances and activities in playgrounds might be counted among the mostly performed activities. Besides it has been considered that the features like differences in density of vegetation and variation in the topography will offer various refuge opportunities. Another efficient factor in choosing this area is that visitors of this area are on a wide range in terms of their sociodemographic characteristics.

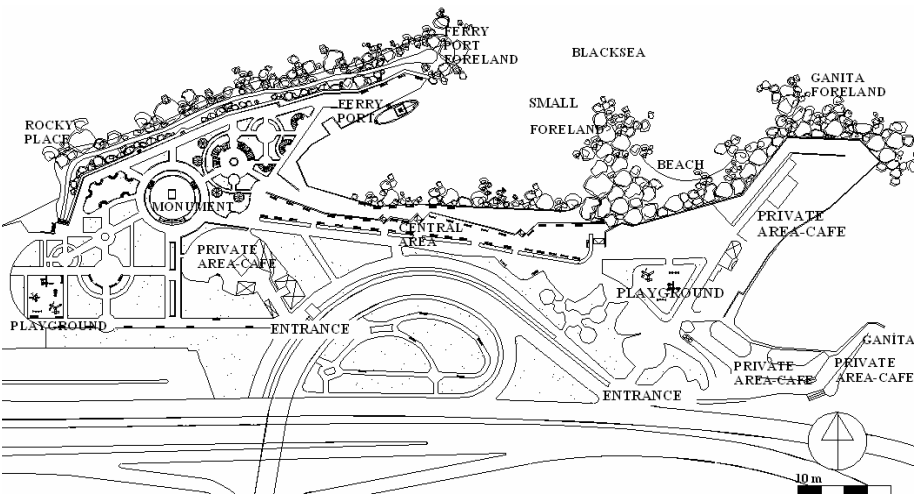

Figure 1. The site plan

The Questionnaire

A plan of the site given to the participants and participants requested to point out the most dominant place in term of safety. Furthermore they are asked to explain which feature of that place made them evaluate there as safe. The questionnaire conducted with visitors in the study area. In order to get more reliable comments on features of the area, the questionnaire only conducted with people who have a good knowledge of the area. Interviewer said users of the park that there is a questionnaire conducted about the park and asked whether they would like to participate in or not. Thereafter interviewer asked volunteers whether they know the park well or not and how many times they have visited the park. Survey conducted with people who stated that they regularly visit or well know the park. It was pointed out to the participants where they were sitting thus participants comprehended the plan clearly. Participants were told that they would choose anywhere included to study area as a response to the safety but only one place for it, the area could be at any size which they would prefer.

Between the months September and October of 2006, reporter interviewed with 148 people in weekdays and weekend afternoons.

RESULTS

The Safest Areas in the Park

Areas stated by participants, have been overlapped by means of AutoCAD 2004 program and thus most demanded regions have been determined. Areas which overlapped less than 10 answers have not been selected and they have been added to “other” category (Figure2, Table1). Then χ2-test was conducted by SPSS 11.0 to determine if this classification is statistically meaningful. The results of the χ2-test showed that the categories are statistically important: χ2=20,925, 3df, p<0.01.

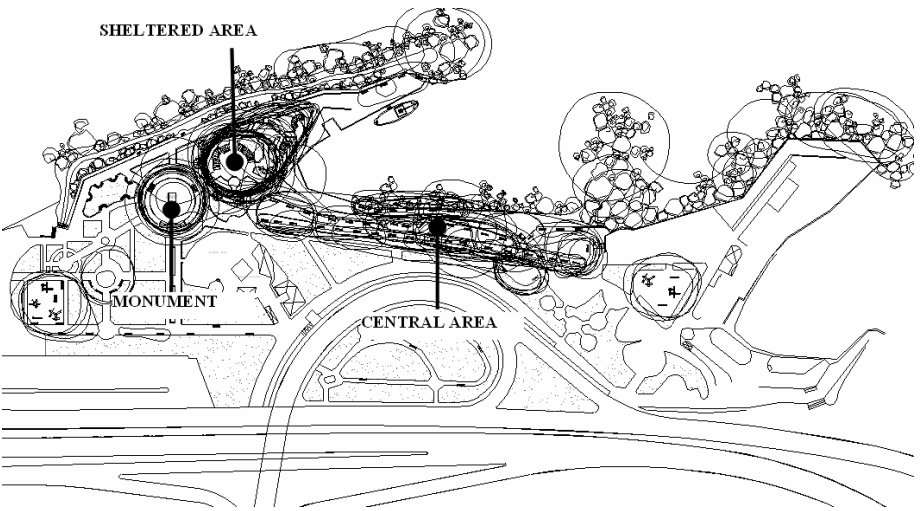

Figure 2. The overlapped answers of users and most frequent safe areas in the park.

Table 1. The classification and frequencies of safest areas

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Central Area	41	27,7	30,6	30,6
	2. Sheltered Area	35	23,6	26,1	56,7
	3. Monument	13	8,8	9,7	66,4
	4. Other	45	30,4	33,6	100,0
	Total	134	90,5	100,0	
Missing	System	14	9,5		
Total		148	100,0		

The classification of the areas determined as safest in the park is as followed:

1. *Central area*: the most frequently used area of the park with a wide vision and well defined with changes in topography and border elements.
2. *Sheltered area*: because of its location (close to entrance, monument and central area) and openness around the area it has a good visual connection with other parts of the park.
3. *Monument*: A monument of Kanuni Sultan Süleyman (Suleiman the Magnificent) who was the tenth Sultan of the Ottoman Empire, facing the entrance with clear edges. A landmark in the park.

The Features of the Safest Areas

After determining the safest areas their features were analyzed and categorized. Prospect-refuge theory and the research of Nasar and Jones (1997) were taken into consideration in classification process. In their study Nasar and Jones classified the environmental features mentioned by respondents into two main categories as physical and social. The social features refer to presence of other users and their relationships.

Figure 3. The safest areas in the park.

The physical features refer to which provide affordances for calling help in case of emergency such as visual, auditory, and locomotive permeability or connection. Also another physical feature group was added to classification. In this group the answers which mentioned spatial features without implying affordances for calling help were gathered. The last group in the classification refers to protection from natural features which are also mentioned in the classification of hazards by Appleton. The classification of the features of the safest areas in the park is as followed:

- *The affordances for visual, auditory or locomotive access*; some representative comments from this group follow: “everyone can see me”, “I can see across the area”, “It provides visual connection”, “I can see main pedestrian movement”, “In case of emergency I can easily escape from here”, “In case of emergency anyone can hear my voice”. 29% of comments referred to this group of features.
- *Spatial features like topography, shelter, statue, corner*; some representative comments from this group follow: “spaciousness”, “back side is protected”, “corner”, “there are shelters”, “equipped place”, “the edges are clear”, “it’s protected by topography”, “around the monument”. 26.4% of comments referred to this group of features.
- *The presence of other users*; some representative comments from this group follow: “a lot of people around”, “generally users of this space are families”, “plenty of activity and people around me”, “the most frequently used area”. 24.3% of comments referred to this group of features.
- *Protection from natural features like sea, sun, wind or rain*; some representative comments from this group follow: “away from the sea”, “away from the waves”, “protected against wind”. 7.4 % of comments referred to this group of features.

Then χ2-test was conducted by SPSS 11.0 to determine if this classification is statistically meaningful. The results of the χ2-test showed that the categories are statistically important: χ2=19,434, 3df, $p<0.01$.

For central area the most frequently cited features are from the affordances for visual, auditory or locomotive access group and the existence of other users group. Spatial features such as topography, shelter, statue, corner group followed these. For sheltered area the most frequently cited features are the ones from spatial features group. Affordances for visual, auditory or locomotive access group and the existence of other users group had the second and third places. For monument area affordances for visual, auditory or locomotive access group then spatial features groups were cited frequently

CONCLUSION

The feeling of safety in urban open space is one of the most important factors affecting the quality of life in cities so this factor must be taken into consideration in design process in order to create lively urban spaces. Thus the issues such as what kind of design principles or spatial features must be considered in planning progress, the way of relationships between environmental context and the open spaces become more emphasized. In this study we examined these issues and tried to determine what kind of places cited as safe in urban open spaces by users and why they think that place is safe so what kind of features contributed the feeling of safety. The results of this study supported the findings of previous studies about safety. The results and design principles based on these results listed as:

- Similar to findings of Stamps (2005a) Fisher and Nasar (1992), and Nasar and Jones (1995) respondents mentioned the areas which have visual, locomotive, or auditory connections with their surroundings as safe. The

safe areas provide the affordances for being able to see potential offenders in time and act to avoid an attack by providing *openness around the area and unobstructed extensive view of their surrounding*. This information also supports Appleton's prospect-refuge theory by which he claimed that humans prefer places where they can see a broad vista (prospect) and such preferences increase their chance of life by affording a safe observation point and the capability to safely see, predict, and act in relation to potential predators, prey, and mates. He also mentioned that range of vision is directly related to survival consequently places which offer unobstructed wide view contribute to the feeling of safety. Because of this, *places without enclosure and located close to main pedestrian movement or other heavily used activity areas* are safer then others.

- On the other hand designers must avoid designing places which are *small, physically confined with barriers such as tall, dense vegetation, and building walls or fences* (Fisher and Nasar, 1992) which provide potential offenders hiding places.
- *Dense vegetation areas must be planned away from pedestrian routes and activity areas*. As Nasar and Jones (1997) mentioned in their study this kind of places provide affordances for hiding and as the distance to a hiding place decreases, the occluding edge of the hiding place blocks more of the view, thus improving the concealment for a potential offender and making it more difficult for the passerby to observe and escape someone in hiding.
- Another important finding of this study is the contribution of "presence of other users" to the feeling of safety. This finding supports the study of Nasar and Jones (1997). Respondents in this study mentioned the presence of other users as an important feature for calling help in case of attack. Nasar and Jones explained this case as "surveillance" which implies both reducing concealment and acting to help a victim escape a crime observed. Because of this *the urban open spaces which are far away from frequently used parts of the city and have few users and the places in an open space which are far away from main pedestrian movements and activity areas are qualified as unsafe*. Also the kind of users is an influencing factor for the feeling of safety; respondents especially marked the places as safe where the users are frequently in groups of family members such as places close to playgrounds. Respondents cited the reason as the kind of users (families or groups) for being safe for this kind of places.
- Spatial features which don't imply affordances for calling help reflect the contribution of *well-defined places with clear edges and equipments* to the feeling of safety. Many users cited "edges" and "corner" as a feature in this category. This finding can be explained by "edge effect" term. While determining the features of good sitting and standing places, Gehl (1987) stated that people tend to seek support from the details of the physical environment and referred to this term:

> "At the edge of place, one is less exposed than if one is out in the middle of a space. One is not in the way of anyone or anything. One can see, but not be seen too much, and the personal territory is reduced to a semicircle in front of the individual. When one's back is protected, other can approach frontally, making it to keep watch and to react."

He also mentioned that the edge zone offers a number of obvious practical and psychological advantages as a place to linger, or sit.

- Although cited least frequently as contributed to the feeling of safety, "protection from natural features" category showed that the distance from sea or waves, exposure to wind or rain are also influencing factors for the feeling of safety.

In this study we tried to determine features of the safe areas based on the prospect-refuge theory and the findings of the studies used this theory. However, since the factors influencing the feeling of safety in urban open spaces have a wide range such as gender, using the area at night or during the day, personal victimization experience; the features of the safe areas determined in this study must not be taken into consideration independent from other factors.

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DESIGNING SAFE AND PEACEFUL ENVIRONMENTS: SPATIAL DETERMINANTS OF NON-VIOLENT URBAN CRIMES

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ABSTRACT

Crime is undoubtedly a great source of environmental discomfort in urban areas. Examining the spatial factors that stimulate crime is thus vital for designing safe and livable cities. This research aims to explain the variations in burglary crime rates within urban areas using spatial and socioeconomic variables with a special focus on physical characteristics of the city. Over 30 social, demographic, cultural, economic and spatial variables derived from the literature review are tested using data for a sample of 44 randomly selected streets in Izmir, Turkey. In the selected model specification, the total number of burglary crimes committed between 1998 and 2006 at the street level is the dependent variable. The independent variables include (1) length of the street, (2) total length of walls on the street, (3) distance from the city centre, (3) total length of parking lots adjacent to the street, (4) average housing value, (5) distance from the closest the police station, (6) presence of a bus stop and (7) presence of non-residential land-use. The results from the Ordinary Least Squares regression indicates that burglary crimes at the street level increases with the total street length and total length of walls on the street. The burglary rates decease with (3) distance from the city centre, total length of parking lots, (4) average housing value, distance from the closest the police station, and with the presence of a bus stop and non-residential land-use.

Keywords: Crime, City, Socioeconomic factors, Spatial factors.

INTRODUCTION

The definition of crime has varied across time and geography, and it is hard to come up with a globally accepted one. However, understanding the sources of crime is more crucial in crime prevention and creating livable environments. This research aims to explain the variations in burglary crime rates within urban areas using spatial and socioeconomic variables with a special focus on physical characteristics of the city. Particularly, the physical crime factors referred in the literature are tested in a developing country urban setting, the city of Izmir. Izmir is the third largest city in Turkey, characterized with high non-violent crime rates, as common in most mid-to-large-size developing country cities.

The remainder of the paper is organized as follows. Section 2 consists of a literature review. Section 3 presents the modeling method. Data sources are described in Section 4. The empirical analyses are presented in Section 5. Section 6 concludes the paper.

LITERATURE REVIEW

Empirical Studies

Early ecological studies suggest increasing crime rates with lower economic status and higher unemployment rate and poverty. Latter studies classify crime factors into three groups: (1) socioeconomic factors, (2) demographical factors, and (3) spatial factors. These factors are highly context based and depended on the geography, where crime is studied. However, it is useful to review the crime geography literature to define the set of physical urban crime factors to be tested.

A number of studies use data for a single settlement to assess the relation between city and crime. Cahil and Mulligan (2003) analyze the effect of social, demographic and economic variables on crime rates studying the geographical distribution of crime in Tucson and South Tucson (Arizona, USA) using 1995-1999 data. Andersan (2005) and Rondeau et. al. (2005) study the crime factors in Vancouver, Canada. Johnson and Bowers (2004) study the burglary data in Merseyside, England, considering time and space clustering. Ceccato et. al. (2002) study the changes in crime patterns for robbery, burglary, car theft and vandalism in early 1980, in Stockholm, Sweden, using the spatial statistics. Lay et. al. (2005) analyzed the effects of the shape of space on presence and understanding and they researched the location of marketing how effect the presence and appearence of space in Porto Alegre, Brasil. This study focused on the relation of social and spatial factors with crime. Murray et. al. (2001) analyze crime occurrence in Brisbane City, Australia using geographic information systems (GIS) and spatial analyze techniques. This search focused on the geographic locations including railways, roads, public transits, supermarkets, polis stations, fire-fighting stations, city centers and rivers. Ergun and Yirmibesoglu (2005) analyze the variation in crime rates in Istanbul neighborhoods between 2000-2004 from a social and economic perspective.

A sizeable amount of research is conducted using cross-section or panel data. Ackerman (1998) study the change in the crime rates with respect to the city size and the dependence of the city using socioeconomic variables. Violent crime and poverty crime rates in American cities are compared using data for 1976-1984 and 1985-1994. Cubukcu (2000) studies the settlement characters and the crime rates in the U.S. at the state level using a regression model. Gruenewald et. al. (2006) analyze the relation between alcohol outlets and violent crime in California, USA. Mcclain (2001) focused on the city crime in the U.S. and Western Europe, and discusses the crime reducing and control programs. Another study about ABD is belonging to Johnson and Bowers (2004). They calculated the Wilkinson et. al. (1998) study the relation between mortality, social confidence, the case of the median space income and inequality of the distribution of income. Yarwood (2001) studies crime in rural areas.

Several authors outline the design criteria for crime prevention at the urban level. Cozens (2002) searched the continuation of evolution of the city and focused on the prevention of the crime with design of space. The goal of the study was create confidence, livable and continuation spaces. Nana (2003) focused on the physical crime prevention at the residential area and street levels.

Factors Of Crime In The Literature

There are four main groups of crime factors in urban areas defined in the literature: (1) social and cultural factors, (2) economic factors, (3) demographic factors, and (4) spatial factors. Here, the variables used to measure these factors are reviewed with a special focus on economic, demographic and spatial factors.

Economic factors are one of the most important group of factors that affects crime rates in urban areas (Sezal, 2003; Cubukcu, 2000; Cozens, 2002; Lay et. al., 2005) and the geography of crime is susceptible to the economic changes (Ackerman, 1998; Ceccato et. al., 2002). Ackerman (1998) noticed the effect of low economic status on crime. Cubukcu (2000), Wilkinson et. al. (1998) and Rondeau et. al. (2005) show evidence that income affects the crime rates. According to Andersan (2005) average of family income is the strongest indicator of crime. Ackerman (1998), Cahil and Mulligan (2003), Gruenewald et. al. (2006), Sezal (2003) and Wang and Minor (2002) suggest that poverty is a significant crime factor. Ergun and Yirmibesoğlu (2005) touch on the relation between economic conditions and crime in developing countries; reminding that the mixed economic conditions increase the crime and violence rates. Gruenewald et. al. (2006) show that poor rural areas are exposed the most rate of the violent crime. Ergun and Yirmibesoglu (2005) report similar results for urban areas. Cozens (2002) notice that higher crime rates are observed in societies with higher rates of homelessness. On the contrary, Ceccato et. al. (2002) claims that richness will increase crime rates as richness charm offenders.

Gruenewald et. al. (2006) note that high violence rates emerge in city centers where the high income groups and low income groups live side by side. Gruenewald et. al. (2006) and Ergun and Yirmibesoglu (2005) report lower crime rates for richer and homogenous-in-richness neighborhoods. Ceccato et. al. (2002) claim that economic polarization, as a result of income-based spatial segregation within the city, affects the geography of residential burglary: The risk of the residential burglary increases with an increase in income. Ceccato et. al. (2002) show that residential burglary crime cumulates in poorer parts of the Stockholm, whereas the high risk of the auto theft and theft from the auto is higher in richer parts. Cozens (2002) claim that well-kept areas charm crime.

Another much-discussed crime factor group in urban areas in the literature is demographic factors. Ackerman (1998), Cahil and Mulligan (2003), Rondeau et. al. (2005) and Gruenewald et. al. (2006) show that population density is an important crime determinant. Gruenewald et. al. (2006) reflect that violent crime exists in high density areas. Rondeau et. al. (2005) claim that highly population areas have higher potential for crime occurrence. Migration as a social patterns modifier is another demographic crime factor. Ergun and Yirmibesoglu (2005) show that crime rates are higher in older districts of Istanbul.

Distance from the city center, location of police stations, land-use patterns, the age of the settlement are among the spatial crime factors discussed in the literature. Newman (1972), McClain (2001) and Ergun and Yirmibesoglu (2005) claim that, crime rate reduces when distance from the city centre increases in American cities. Lay et. al. (2005) report that 72% of the people surveyed were victim of crime at the city centre or situated there. Rate of vandalism and auto theft at the public areas cumulates at the city centre and residential burglary is the highest level (Ceccato et. al., 2002). Ergun and Yirmibesoglu (2005) and Ceccato et. al. (2005) also claim that crime rate increases at the fringe of the city.

Lay et. al. (2005) set the relation between city safety and politic effects. Cubukcu (2002) finds evidence that if police number reduces in an area, crime trend will increase. Erkan (2005) mention that vandalism in public transport vehicles reduced about 59% between the years 1983-1986, after the assignment of public transport patrols in Houston, Texas. On the contrary, Levitt and Dubner (2005) claim that police number has no relation to crime rates. Likewise, Yarwood (2001) add trying to set the relation between crime, crime space and distance from the police station can be fallacious.

Land-use is another spatial crime factor. Rondeau et. al. (2005) suggest that where people spend their spare times are important for crime rates. Similarly, Monin (1976) and Ergun and Yirmibesoglu (2005) claim that lack of activity is a crime generator. Cozens (2002) claim that increasing the legal activity in public areas helps decreasing crime rates. Ceccato et. al. (2002) noticed that vandalism rate cumulates it the small commercial regions of Stockholm. Rondeau et. al. (2005) and Erkan, (2005) noticed that the user density of streets and shopping centers affects vandalism. According to Ceccato et. al. (2002) small scale trade units in the city are important for reducing the crime rates. For this if big shopping centers replace with the small units in the city, crime will increase. Andersan (2005) add that crime rates are higher at the highly populated business areas. Whereas, Gruenewald et. al. (2006) claims that density of retail commerce foundations has no affect on violence rates. The lack of car parking areas is also a crime determinant. Ceccato et. al. (2002) claimed that cars that are parked on the streets are more open to theft in Sweden. Stollard (1991) and Ceccato et. al. (2002) note that car theft reduces in areas where legal and illegal surveillance increase. Finally, Stollard (1991) and Cozens (2002) claim that landscape elements such as trees and bushes may function as hiding places and thus increase crime rates.

MODEL AND DATA

The total burglary crime rate is modeled as a function of economic and spatial characteristics with,

$$CRIME = f(\boldsymbol{E}, \boldsymbol{S}), \quad (1)$$

here,
CRIME: Total number of burglary crimes,
E: Vector of economic factors,
S: Vector of spatial factors.

A sample of 50 streets are randomly selected within the city of Izmir, Turkey. 6 of the selected street had to be eliminated from the data set due to incomplete data. Thus the analysis is conducted using data for 44 street with varying spatial, social, cultural, economic, demographic characteristics. The streets have also varied in terms of land-use type including industrial, commercial and residential.

A total of 33 social, demographic, cultural, economic and spatial variables derived from the literature review are tested. The tested variables include total length of the street, distance to the city center, distance to the sub-center, distance to the nearest police station, economic status, number of bus stops, number of lightning elements, average number of storey, area of parking, empty land, presence of walls, fences etc., presence of bushes and trees, presence of main road intersection to the street, distance to the main road, whether the selected street has a main road character, presence of commercial, industrial land-use, presence of alcohol outlets, presence of recreational areas, observance of vandalism, presence of passenger ways, presence of shanty areas, presence of dead-ends and presence of natural surveillance.

In the selected final model, the depended variable and the independent variables are as follows:

SUM_CRI: Total number of burglary crime between 1998-2006 (dependent variable),
LNG_STR: Total length of the street (m.).
SUM_WAL: Total length of walls on the street (m.),
DIS_CEN: Distance from the city centre of Izmir (m.),
CAR_PAR: Total length of parking lots adjacent to the street (m.),
ECO_STA: Average value for one m² building on the street for 2006 (YTL.),
DIS_POL: Distance from the closest the police station (m.),
BUS_STO: Presence of a bus stop (dummy variable).
FUNCTIO: Presence of non-residential land-use (dummy variable).

The dependent variable, SUM_CRI, the aggregate number of burglaries between 1998 and 2006 at the street level is obtained from the Police Department of Izmir. The aggregate data consists of 10 different groups of burglar data: (1) pickpocket, (2) stealing by snatching, (3) theft from auto, (4) auto theft, (5) animal theft, (6) theft from the house, (7) theft from the business, (8) theft from the bank, (9) theft from the public foundations and (10) others. There are over 270.000 burglary records for the city of Izmir for the studies years.

Data for the variables LNG_STR, LNG_STR and DIS_POL are obtained by using GIS functions on satellite images of Izmir. For SUM_WAL, CAR_PAR, BUS_STO and FUNCTIO field surveys were conducted. Data for ECO_STA is obtained from local municipalities. The descriptive statistics for the depent and independent variables are shown in Table 1.

Table 1. Descriptive Statistics for the Sample (n=44)

Variable	Minimum	Maximum	Mean	Standart Deviation
SUM_CRI	0.00	1170.00	68.05	225.83
LNG_STR	16.94	17588.00	1063.16	3058.31
DIS_CEN	1667.34	20763.00	8658.43	3975.45
ECO_STA	10.00	975.00	181.05	221.17
FUNCTIO	0.00	1.00	0.39	0.49
BUS_STO	0.00	1.00	0.20	0.41
CAR_PAR	0.00	5025.20	298.35	997.44
SUM_WAL	0.00	4040.00	273.34	685.02
DIS_POL	163.62	10284.00	2156.22	2381.13

The model is estimated using ordinary least square (OLS). The results show that the model can explain over 97% of variation of in burglary rates (R^2=0.971). As expected, the total burglary rates increase with an increase in total street length and the total length of walls; and decreases with a decrease in distance to the city center, economic status, total length of parking lots adjacent to the street. The burglary rates also decrease when bus stops and non-residential land-uses are present on the street. Interestingly, the results show that the crime rates decreases when distance to the closest police station. All variables but two are statistically significant at the .10 level. Distance to the police station and presence of non-residential function are significant at the 0.15 level. Parameter estimates are presented in Table 2.

Table 2. Parameter Estimation*

Variable	Unstandardized Coefficients	Std. Error	t-statistics	p-statistic (Pr> [t])
Constant	74.147	25.733	2.881	0.007
LNG_STR	0.086	0.012	6.951	0.000
DIS_CEN	-0.006	0.002	-2.682	0.011
ECO_STA	-0.092	0.047	-1.958	0.058
BUS_STO	-52.103	26.118	-1.995	0.054
CAR_PAR	-0.110	0.034	-3.191	0.003
SUM_WAL	0.130	0.021	6.153	0.000
DIS_POL	-0.005	0.003	-1.595	0.120
FUNCTIO	-28.193	18.915	-1.491	0.145

* : Dependent Variable is SUM_CRI

CONCLUSION

Crime is undoubtedly a great source of environmental discomfort in urban areas. Thus, examining the spatial factors that stimulate crime is vital for designing safe and livable cities. Over 30 spatial, demographic and economic crime factors referred in the literature are tested to see whether these factors have an observable effect on burglary crime rates.

The results show that burglary crime increases with the total street length. This result has no surprise as the crime rate is measured at the street level. It is expected that more crime is conducted in longer streets. The number of burglary crimes increases by 0.086 for every 1 meter for the observed time period.

The economic status variable is found to be negatively linear to burglary crime. That is to say when the average price of 1 m2 building increases by 1 YTL, the crime rate decreases by 0,092. This result is consistent with the claims in the literature (Cozens, 2002; Ackerman, 1998; Wang and Minor, 2002; Sezal, 2003; Ceccato et. al., 2002; Cahil and Mulligan, 2003; Ergun and Yirmibesoglu, 2005) as people with higher incomes tend to reside in expensive neighborhoods and they are less likely to commit a burglary crime.

The burglary crime rate is found negatively linear to the distance to city center. The crime rate decreases by 6 for every kilometer when moving from the city center to periphery. The results are similar with American cities studies by Newman (1972) and McClain (2001). Lay et. al. (2005) and Ceccato et. al. (2002) claim that criminal activity is denser in the city center compared to the urban fringe. According to Ergun and Yirmibesoglu (2005) and Gruenewald et. al. (2006), the cause of the high crime rate in the city centre is economic polarization.

Presence of a bus stop on the street also decreases burglary crime rate. Presence of at least one bus stop decreases the observed crime rate by 52.103. That is also expected as public transport enhances visual surveillance. This result alone reassures that there are innumerous side benefits of providing public transportation in urban areas. The result is also consistent with Murray et. al.'s (2001) findings.

Another source of natural surveillance is the presence of non-residential activities including commercial, industrial and recreational functions. Presence of such urban functions decreases the burglary crime rate by 28.193. Results are consistent with the findings in the literature (Ceccato et. al., 2002; Jacobs, 1961; Ackerman, 1998; Gruenewald et. al., 2006; Rondeau et. al., 2005; Cozens, 2002; Ergun and Yirmibesoglu, 2005; Wilkinson et. al., 1998; Monin, 1976).

Stollard (1991) and Ceccato et. al. (2002) consider that parking lots are elements of natural surveillance and suggest that they have a reducer effect on burglary crimes. The results indicate that presence of parking lots is also negatively related to burglary crime rates. A one meter additional parking lot adjacent to the street decreases burglary crime rate by 0.011. Ceccato et. al. (2002) note that presence of car parking areas, reduce the crime rates. Cars which park on the streets, expose more than parking at a garage or own parcels.

Presence of walls on the street has a negative effect on surveillance and the results indicate that they increase burglary crime rates. This result is also parallel to the literature Stollard (1991). A one meter wall on the street increases the crime rate by 0.130 for the given period of time. Although walls are built to defend, they are often used as hiding places by the burglars.

The results show that distance from police stations are negatively related to burglary crime rates. That is to say, higher crime rates are observed in the streets that are closer to the police stations. A plausible explanation to this result is that police stations are the physical structures where mostly paper work is done and the people under arrest are kept for a relatively short period of time. Instead, crime prevention programs are highly dependent on patrol units (Erkan, 2005). However this explanation alone cannot explain the fact that more crime is conducted in streets that are closer to the police stations. In fact, police stations are placed in denser areas with higher accessibilities. These areas are more accessible by the criminals as well. Thus, the distance to the closest police station variable is a measure of accessibility, which tens to be positively related to crime rates.

The results obtained from this study are extremely valuable in terms of providing design guidelines for a safer and peaceful environment. It is well-understood that design can do a lot for natural surveillance. Presence of parking lots, public transport stops and mixed land-use have a diminishing effect on burglary crimes. Whereas, using walls doesn't work for a safer environment which is a sign to reconsider the ever-increasing number of gated communities. However, the results of the study should be used with caution. It is useful to note that, the findings are for a mid-sized developing country city and for non-violent crime class, burglary crime. A much wider study is needed to generalize these results for all urban areas and for other types of crimes, especially violent crimes.

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A DESIGN MODEL FOR POST-DISASTER SETTLEMENTS: THE CASE STUDY IN DINAR/TURKEY

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ABSTRACT

Post-disaster occupants may have different expectations from their post-disaster houses in relation with their living conditions, social and cultural structures formed in their previous urban or rural settlements.

Therefore, the objective of this study is to introduce a design model for the post-disaster houses in rural or urban areas that is appropriate for the user social and cultural backgrounds, requirements and preferences.

Within the scope of this case study, expectations, reactions and preferences of occupants about the post-disaster houses were compared to their socio-demographic background, disaster experience, perceptual changes, individual values, living habits and spatial occupancy durations and correlations in variables were explored. These correlations showed us that, the design of post-disaster houses in accordance with occupants' changing needs and preferences that is appropriate to the regional living conditions, the issue of having no adaptation problem is mainly depended on serious design decisions.

Keywords: Post-disaster houses, Housing preference, Residential satisfaction, Socio-cultural backgrounds, Design model

INTRODUCTION

For the sake of survival, human beings become helpless in overcoming the big loss when they go through in post-disaster period. In order to re-organize the socio-economical life of survivors, the post-disaster period recovery actions should be identified in detail. The construction of post-disaster houses and settlement areas play important roles in these actions. Almost complete damage of the physical environment, moreover disrupted social environment of the people who lived in these areas, unpredicted amount of the property loss and the sudden change in their living conditions increased the negative outcomes (loss of motivation, ill health, depression, e.g.) in their lives, thus the increasing level of environmental stress has been tied to these conditions.

However, post-disaster occupants may have different expectations from their post-disaster houses in relation to their living conditions, social and cultural backgrounds, spatial preferences, conventional building construction methods, which are required by their previous urban or rural settlements. If these requirements are not achieved adaptation problems can be seen.

Therefore, with the help of a case study, the objective of this study is to introduce a design model for the post-disaster houses in rural or urban areas that is appropriate for the user social and cultural backgrounds, requirements and preferences.

OLD SETTLEMENT AND POST- DISASTER HOUSES IN DINAR

Dinar (population 35,000 in 1990) is in a sparsely populated rural agricultural city center in the "Lake District" of southwestern Anatolia, Turkey. Mostly farming, breeding animal and family poultry or governmental works are the profit sources of Dinar.

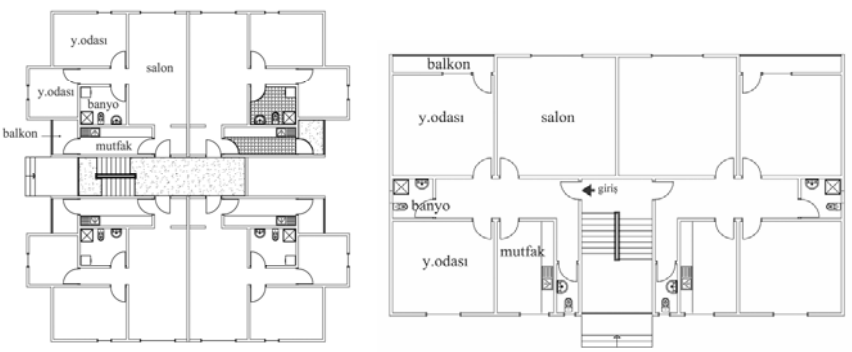
It was struck by an earthquake, its magnitude, 6.1 Richter Scale, in 1st October 1995. The damage that it created on habitat is; 1,228 houses were totally destroyed or heavily damaged, 990 houses were moderately damaged, and 1,558 received minor damages and minimum of 90 men, women, and children died in their homes or in public buildings. Over 250 people injured. The (lodging / accommodation/ sheltering) problems can be accounted as striking results of the impact of this natural disaster more than its resembling ones in history.

Buildings in Dinar were one to five storeys (mostly were one or two storeys buildings). The first levels of multi storey buildings in the center of Dinar were usually occupied by commercial retail stores. Almost all the five-storeyed apartment buildings were destroyed or heavily damaged. These buildings, as with the buildings on the main streets, were built with reinforced concrete. But mostly, one or two storeyed buildings' were built by either solid or hollow brick walls as also seen in village settlements of Dinar.

Permanent post-disaster housing construction was finished one year after (in 29th October 1996) the earthquake disaster. In the center of the Dinar there are two types of post-disaster houses. First type has 4 storeys and 16 flats in total. 4 flats were planned in each storey of the building. Second type also has 4 storeys but has 4 shops in ground floor and 6 flats in upper floors totally. Every storey has only two flats.

Post-disaster houses in center of Dinar

Crowded families in the center of Dinar who get used to live in one or two storey buildings and have no experience of apartment life, start a new life in small apartment flats with new neighbors. The post-disaster houses don't have eligibility for daily usage. According to their social and cultural life style, these apartment flats with two bedrooms have insufficient space for large families, not flexible for constructing additional parts, cause serious problems and stress on survivors. Before the disaster, when they need a new space, could easily add parts, but the strict structural features of the post-disaster houses don't let them. Because of that, instead of living in post-disaster houses, most of the survivors built the new one without controlled by local authority.



Two types of post-disaster house plans in center of Dinar

With the new urban master plans of Dinar, instead of narrow, disordered, spontaneously developed streets within one or two storeyed, solid or hollow brick walled buildings with large gardens; new gridal formed wide streets and four storeys buildings constructed by tunnel mould system with small gardens, were organized. Post-disaster houses with shops were built on the main streets and new intercity motorway to make additional new city trade and shopping centers.

The old and new streets in Dinar City

In villages of Dinar there is only one type of post-disaster house. It is one storey building with a detached storeroom in a small garden. Survivors, according to their needs, built additions and changed some part of their post-disaster houses which can make the structures of the houses weaker against to new earthquakes

Therefore, with the help of the case study held in Dinar district, additionally Aktoprak and Gencali villages in the countryside of Afyon, we might easily understand the user background, requirements and preferences for suitable design of the post-disaster houses in rural or urban areas.

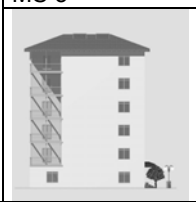
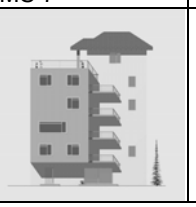
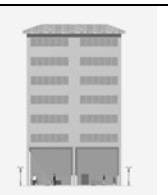
Post-disaster houses in villages of Dinar

METHOD

The case study was done with the people living in villages of Dinar (Aktoprak Village and Gencali Village) and center of Dinar City with the method of individual face-to-face interviews and conducted among the selected sample of a total of 70 earthquake survivors. The sample group consists of 35 people living in center of Dinar City, and 35 people living in rural area of Dinar City. The case study was applied in two steps. In first step with a “fill in questionnaire”, in order to learn about socio-demographic structure (age, education, income, job, social development and standards, family structure, neighborhood relations, etc.) and about features of their old houses and the settlement before earthquake happened and thirdly getting responses and opinions about their permanent post-disaster houses.

Additional parts of post-disaster houses in villages of Dinar

Showing the house images

One Storey	OS 1	OS 2	OS 3	OS 4
				
Two- Three **Storeys**	TS 1	TS 2	TS 3	TS 4
				
Multi Storeys	MS 1	MS 2	MS 3	MS 4
				
	MS 5	MS 6	MS 7	MS 8
				

House images that were shown to survivors

In second step with the help of house images (one storey, two-three storeys and multi storey houses) asking questions to the survivors which are related with housing preference (strength, safe, eligibility and aesthetic view) and find out the answers of design criteria in new physical environment by using survivors perception and experiences.

According to answers of the survivors, data were inserted to variable tables. By using these variables; expectations, reactions and preferences of occupants about the post-disaster houses were compared to their socio-demographic background, disaster experience, perceptual changes, individual values, living habits and spatial occupancy durations. And by using chi-square test, correlations in variables ($p \leq 0.05$) were explored and meaning of the dispersals was evaluated.

RESULTS OF THE CASE STUDY

In the context of case study, held in Dinar district, additionally Aktoprak and Gencali villages, these results were found in analysis of architectural design of post-disaster houses in rural or urban areas;

- Need of garden, according to family structure: Differences were found in preferences of garden use according to occupant's economic responsibilities in family, need of semi-opened areas, number of person living together in one flat, age and living experience in other settlements. Because of that, according to the need of open areas and gardens in a disaster area, we have to decide the size and form of the garden(s) and also design different types of house plans with or without garden.
- Living in an apartment, being citizen: In rural areas like Dinar, people use to live in one or two storeys buildings instead of multi-storey apartments. They were forced to live in an apartment building (four storeys post-disaster house) with many families who never know each other before. A new experience of living in an apartment life, make deep social problems. Because of that before starting to design we have to make a research about the height of the existing old buildings, social and cultural life style of the disaster area.
- Use of semi-opened space: The size, form and number of balconies or terraces that are needed in houses show differences, related to social and cultural life in disaster areas. Because of that before starting to design we have to know about customs in use of semi-opened spaces in disaster area.

Need of semi-opened space

- Feature of building elevation and aesthetical appearance: In design of the elevation, order of windows and balconies, proportions and structure give an aesthetical appearance to the building but also make survivors feel the strength and safe in their new houses.
- Building, garden and street relations: In rural and urban settlements, according to occupant's needs, we have to make different levels of relations (privacy, semi-privacy and public spaces) between building, garden and street.

Building, garden and street relations in post-disaster houses

- Flexible design: The post-disaster houses in Dinar have insufficient space for survivors' social and cultural life style, not enough room for large families. Because of that, to find out the number of space, which is needed by the occupants, we have to know about the family structure and search the average number of people living in a family. And also we have to design flexible spaces for new additions, which may not be harmful for structure against to new earthquakes.
- Density of occupants in houses: Different types of post-disaster house must be designed according to number of flats and density of people, which can be accepted by occupants.

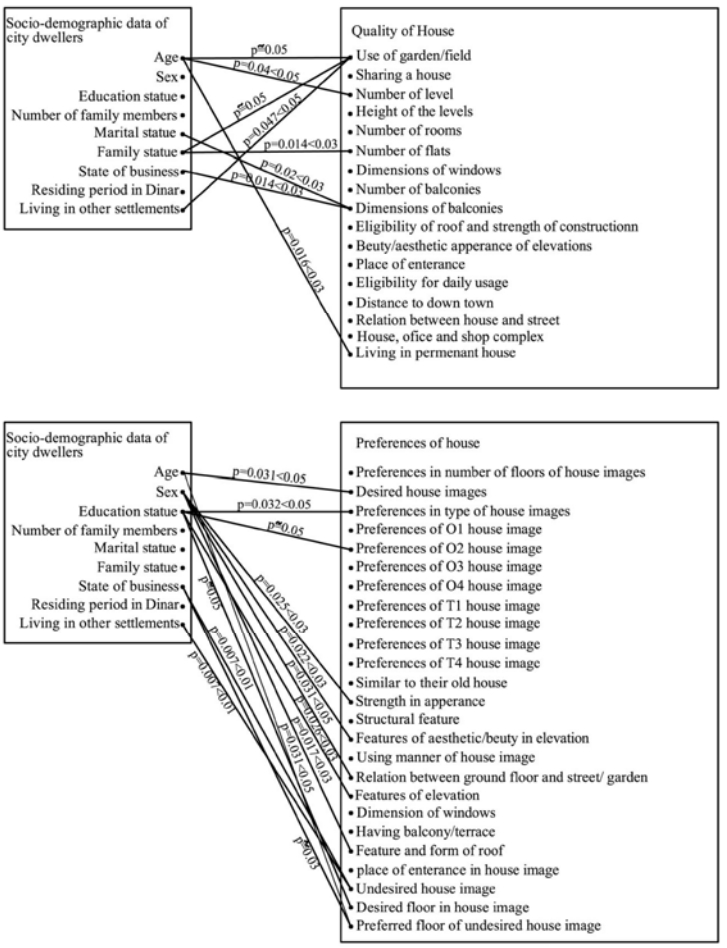
Need space for different functions in rural settlements

- Fear of earthquake: People in Dinar are afraid of four or more storeys post-disaster buildings, because they think that, when an earthquake starts, getting outside from these houses is impossible compared to one or two storeys buildings which seem better in rescuing and make them feel in safe.
- Depending on farming: In rural settlements, people make farming. They need additional parts for different functions such as bread house for making bread, a stable, a poultry-house, a sheep-fold, larger storeroom, a garage for their tractor

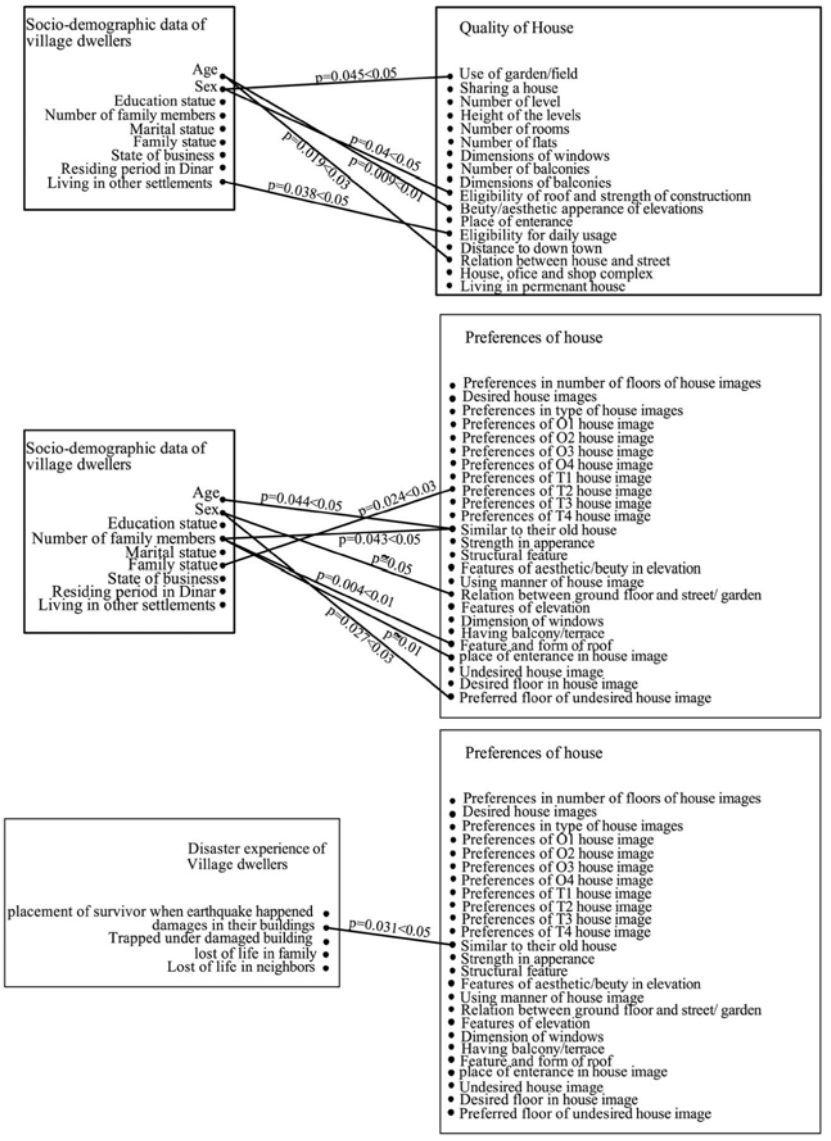
Because of that we have to make one or two storeys post-disaster house designs that can be developed horizontally.

The results of the case study showed us that, the design of post-disaster houses in accordance with occupants' changing needs and preferences that is appropriate to the regional living conditions, the issue of having no adaptation problem is mainly depended on serious design decisions.

Therefore, before starting to reconstruct the post-disaster settlements, we need a model in which data on demographical structure, cultural characteristics, disaster experience, spatial occupancy habits included and post-disaster house usage in general should be evaluated with a high rate of user participation.



Correlations of city dwellers / Correlations of village dwellers



Correlations of city dwellers / Correlations of village dwellers

A DESIGN MODEL FOR POST-DISASTER HOUSES

Within the help of the case study, a design model for post-disaster houses is proposed, in which design input as knowledge and experience of each post-disaster house construction will be transferred to the next design and construction processes. This model consists of four stages: preparation, design, construction and post-occupancy evaluation;

- Preparation: In this preparation stage, governmental and non-governmental organizations make researches about socio-demographic variables, cultural attributes and manners, climatic variables, disaster experiences and the psychological problems that are seen in disaster area and also decide about new construction sites and distribution of the post-disaster houses to the survivors.

- Design: This design decisions stage consists of three parts: post-disaster house alternatives, user participation and design of post-disaster houses.

Post-disaster house alternatives: In this pre-design part, different plan and elevation alternatives are prepared according to the construction materials and working sources that are found in the disaster area.

User participation: Suitable design for post-disaster houses in accordance with occupants' changing needs and preferences that is appropriate to the regional living conditions is mainly depended on user participations. Because of that in this level designer use the images of post-disaster house alternatives to evaluate them with the survivors by face-to-face interviews. With the help of post-disaster house images and questionnaires, designer(s) learn about occupant's needs, residential satisfaction, housing preference, order of the spaces and stressors in the disaster area.

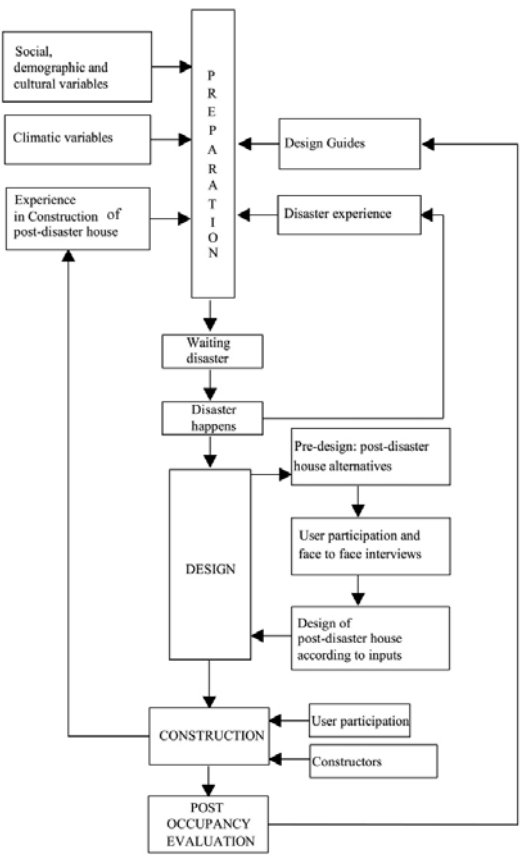
Design of post-disaster houses: With the help of the inputs from interviews and preperation level, post-disaster house designs are done.

- Construction: Within the scope of this construction stage, two different construction methods are proposed, which have both advantages and disadvantages compared to each other. The methods are chosen according to material and working sources in disaster areas and the participations of survivors. First proposed method is user own construction and the second one is conventional construction method.

User own construction: In this method, according to master plan (decisions about sites, roads, general settlement plans and types of post-disaster houses) users participate to the construction. Each survivor selects one of the suitable post-disaster house projects, then obtains the construction materials and starts to construct their house due to master plan with the help of controllers. Advantages; constructions are under controlled so structure of the houses are strong against earthquakes. Because of survivors' own construction, no need for new additions, houses reflect their identity, having no adaptation problems, psychological and environmental stressors are decreased. Disadvantages; because of their first construction, teaching the construction details and knowledge takes time.

Conventional construction: In this method, a constructor does construction of the post-disaster houses. Survivors participate to the design stage, but not construction. Advantages; construction is done faster than other method. No risk, problems will be solved by constructor. Disadvantages; this method increases the costs, all buildings similar to each other (stereotypical) because of that adaptation problems and uncontrolled additions can be seen.

- Post-occupancy evaluation: In this stage, design guides that can be used in new design and construction stages, are introduced according to occupants' experiences of living in post-disaster houses. All variables such as order of opened; semi-opened and closed spaces, additions, residential satisfaction and housing preferences are composed into the design guides with the help of written and visual questionnaires. In each experience, design guides will be investigated and revised and after that it can be used as a reference for new design processes.



A model for post-disaster reconstruction

CONCLUSION

The results, which are obtained from case study, show that almost complete damage of the physical environment, moreover disrupted social environment of the people who lived in this area, unpredicted amount of the property loss and the sudden change in their living conditions increase the pessimism in their lives, thus the increasing level of environmental stress has been tied to these conditions. And we can say that the effects of disasters can be decreased by a model on the “design” of the post-disaster houses in rural or urban areas that is appropriate for the user background, requirements and preferences.

So that in this paper, a design model for post-disaster houses is proposed which helps us as a reference for arranging pre-design data, introducing design measurements, choosing construction methods and making design guides in design and construction processes. And also which is revised according to new inputs as knowledge and experience of each post-disaster house construction and transferred to the next design models

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POSTER PRESENTATIONS

An Investigation of Modelling by Using Computer Techniques in Landscape Architecture
Buket Özdemir, Öner Demirel, Uğur Işık

The Environmental Impacts Caused by the Recreative and Touristic Usage of Highland Tourism Centers in Trabzon
Banu Bekçi, Zeynep Pirselimoğlu, Ertan Düzgüneş, Öner Demirel

Bridging Invisible Boundaries
Anastasia Karandinou

Reading Ecological Factors in Designing Traditional Housing in Hot-dry Climate Region
Itır Öztürk Türkyılmaz

The Usage of Internal Place (Space) Plants in Architecture
Çiğdem Sakici, Banu Bekçi

Importance and Positions of Plants Lighting in Landscape Lighting
Çiğdem Sakıcı, Mustafa Var

User Preferences and Psychological Effects of Waterscape
Tuğba Düzenli

Planning and Designing of Open Space for Youth
Tuğba Düzenli

The Importance of Zoos as an Urban Components
Serap Yılmaz

AN INVESTIGATION OF MODELLING BY USING COMPUTER TECHNIQUES IN LANDSCAPE ARCHITECTURE

Buket Özdemir, Öner Demirel, Uğur Işık

RES. ASS. BUKET OZDEMIR
ASSOC. PROF. DR. ONER DEMIREL
ARC. UGUR ISIK

MODEL OF THE CAMPUS OF KARADENIZ TECHNICAL UNIVERSITY OF TURKEY

3RD INTERNATIONAL CONGRESS LIVABLE ENVIRONMENT ARCHITECTURE, JULY 5-7 2007
KARADENIZ TECHNICAL UNIVERSITY / TRABZON

PLANTS IN THE LANDSCAPE GROW, CHANGE AND DIE.

TOO OFTEN, WELL MEANING DFESIGNERS PLACE PLANTS INTO ENVIRONMENTS WHICH LOOK GREAT WHEN THER ARE YOUNG, BUT BECOME TOO LARGE FOR THE SPACE; OR, ALTERNATIVELY, WOULD LOOK GREAT WHEN MATURE, BUT GROW SO SLOWLY THAT THEY LOOK TOO SMALL AND OUT OF PLACE FOR YEARS AFTER PLANTING.

COMPUTER MODELS CAN HELP, BY VISULIZING DIFFERENT AGES AND FORMS OF PLANT MATERIAL.IMAGE PROCESSING, OR PARAMETRIC GENERATION CAN BE USED TO GENERATE FOLIAGE COLORS AND DENSITIES FOR DIFFERENT SEASONS.

3D SOLID MODELS OF BULDING MODELED AND RENDERED IN 3D STUDIO MAX.

2D SOLID MODELS OF TREES ARRENGED BY PHOTOSHOP.

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THE ENVIRONMENTAL IMPACTS CAUSED BY THE RECREATIVE AND TOURISTIC USAGE OF HIGHLAND TOURISM CENTERS IN TRABZON

Banu Bekçi, Zeynep Pirselimoğlu, Ertan Düzgüneş, Öner Demirel

THE ENVIROMENTAL IMPACTS ORIANTED BY THE RECREATIVE AND TOURIST USAGE OF HIGHLAND TOURISM CENTERS IN TRABZON

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Abstract

One of the projects of the Ministry of Tourism is "Highland Tourism" which has been started in 1990 in order to "Diversification and Generalizing the Tourism in the Other Regions". For these purpose six highlands has been declared as "Tourism Center" in Trabzon since 1990. The Ministry of Tourism has condensed the regional studies on the tourism centers and aimed to use the tourism, as an imported tool for the development of region as a sub-sector.

In recent years, highland tourism centers have become important alternative areas especially for the Eastern Black Sea by covering the daily and weekend needs of the local people. This areas offer variety of facilities to the tourists with its natural and cultural resource richness values as well as traditionally sustained highland tourism culture (economical, recreative).

The ascending recreational and tourism purposed tenancies, in ecological values which are also known as sensitive ecosystem composes a compulsion component upon these lush places. Natural environment components, composes a projectile power for the tourism and recreation activities. When the tourism being evaluated as the creative source of plateau and natural environment values, abolition of negativities of tourism and discussion of cautions must be bring up.

In this study, with the declared plateau tourism centers in Trabzon's country borders and undeclared plateau tourism centers, recreational and tourism varieties and facilities would be assess by comparing and also environmental effects which are grow out of the people tenancy would be explicate.

Purpose: The purpose of the survey is to review the regulations that have been held towards recreation and tourism, and infrastructures in live with the trends and demands of the visitors and local people living in the highland settlements declared as tourism and attractive centers in the city of Trabzon.

Conceptual Framework: Highlands have gained a great value as natural mountain fields as for he people living in that area by their economical activities and as place for seasonal settlement which is unreachable in winter season for a long time period long years of period. Highlands form an important tourism potential by their natural natural beauties and highland activities sustained centuries ago. This potential has become a new concept in understanding of tourism. This is the newly emerged "soft tourism" approach which has been created by the escape from mass tourism with various environmental concerns.

High Plateu name	High	Distance	Green Area	Existing Structure	Infrastructure	Recreation
Tonya-Erikbeli	1800 m	24 km south of Tonya	There are rich forest and grass areas	Small dealer, butcher, green grocer, country cafe, guest house with 15 beds	Electricity, water and phone provided	-Camping -Short period accommodation -Jeep safari -Trekking -Stopover linking highlands to each other
Çaykara-Uzungöl	1250 m	99 km to Trabzon	There is a spruce forest around the lake which was formed after the landslide in Haldizen stream Valley	Accommodation with bungalows, food and drink facilities	Electricity, water and phone provided	-Trout and carp fishery -Trekking -Wildlife tracking -Grass-skiing
Akçaabat-Karadağ	1946 m	44 km to Trabzon	Rich habitat with wild life forests and meadows	Accommodation building with 120 beds	WC, electricity, water and phone provided	- Traditional settlements - Wildlife tracking - Festival of doing in emigration time - Festival of Hıdırnebi High Plateau settlement - Trekking - Jeep Safari, souvenir sale
Maçka-Şolma	1700 m	50 km to Trabzon	Spruce, Hornbeam forest purple forest roses, zifin flowers	Fountain, country cafe highland settlements	WC, elcctricity, water and phone partially provided	-Camping -Jeep safari -Grass-skiing -Traditional settlement, trekking
Araklı-Pazarcık	1750 m	83 km to Trabzon		Accommodation, food and drink facilities, butcher, green grocer	WC, electricity, water and phone provided	-Trekking -Rafting in Karadere -Traditional settlement
Araklı-Yeşilyurt Yılan Taş Yaylası		64 km to Trabzon				- Festival of Cultural and art activities in Yılantaş

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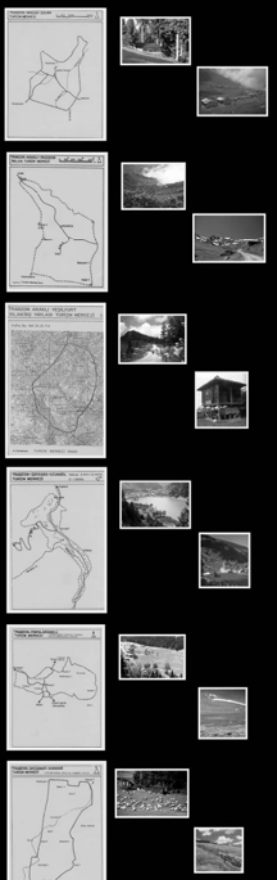
Legal Framework: According to the law, highlands are the state owned properties. (belong to the national treasury). They are all out of the land registry system governed by the state ownership. These areas whose governing rights are given to the country council offered to the use of villagers by the certificate allocated by village headman. There is no private ownership. They are the "state properties" in Turkish law system and defined as public properties. Ownership could be possible only after the preparation of development plans.
The ministry of tourism in Turkey has started various studies in line with the efforts towards "alternative tourism models and distribution in the other regions" in order to reduce tourism pressure in the Aegean and Mediterranean region and to distribute the supply capacity through out the year and country since 1990 as the main component of the soft tourism concept. One of the important studies is the highland tourism. The minister of tourism has declared six highlands of Trabzon as "Tourism Centers" in the framework of "provincial tourism database and tourism development plan in 1987-1991-1998. The numbers of tourism centers are 26 in the Eastern Black Sea Region.



Study Area and Research Method: With the decision of Council of Ministers in Ministry of Tourism and within the context of "Province Tourism Inventory and Tourism Development Plan" 6 highlands were declared as tourism centre in Trabzon. These are; Tonya Erikbeli, Çaykara Uzungöl, Akçaabat Karadağ, Maçka Şomla, Araklı Pazarcık and Yılantaşı Plateaus.
In this study, first of all, the conventional plateau usage that is perpetuating in the plateau tourism centres was analysed. Nonetheless, in order to determine the impact of "highland tourism" that is tried to be developed from 1987 to present day on the natural and cultural resources possessed by highlands observations and investigations were carried out in addition to interviews with local people and visitors.

Discussion: With the declaration of the plateaus as a tourism centre and preparation of the Environment Arrangement Plan's, the Plateau Tourism Centres were divided to 4 departments; a) Plateau Settlement Areas b) Plateau Tourism Facility Areas c) Areas whose natural character will be protected while land use continues. d) Forest Areas. In these classifications usage for the day (restaurants, unit of sale), camping site with tent, public association area (health, education, picnic areas, etc.), blink platform, helicopter landing area, important traffic ways, ancillary roads, important pedestrian lanes are determined and eventuated the construction of some of them.
In these executed plans, difficulties caused by the plateau's legal, natural, communal and economic properties. In the basis of these difficulties lie inability to provide public participation in the application of these plans and lack of coordination in studies between institutions.
As a natural result of this, highland areas in terms of natural values started to lose their characteristics day by day with these regu8lations and applications and their environmental values have deteriorated became of road constructions and increasing construction of settlements.

2

BRIDGING INVISIBLE BOUNDARIES

Anastasia Karandinou

READING ECOLOGICAL FACTORS IN DESIGNING TRADITIONAL HOUISING IN HOT-DRY CLIMATE REGION

Itır Öztürk Türkyılmaz

LEADING ECOLOGICAL FACTORS IN DESIGNING TRADITIONAL HOUSING IN HOT-DRY CLIMATE REGION

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Abstract

When the traditional houses in different regions are examined, we see that they show quite different characteristics. With the changes in ecological factors, the inner and outer space organization, the activities held in these spaces, and therefore the formation of these spaces show differences. Climate is a determining factor in house formation and open space creation, though it is not the only factor. Change in climate results in different formations. This study explores in detail the differences caused by the effects of two ecological factors, climate and topography, in traditional houses and their spatial components.

In this study, the sample houses were chosen from Diyarbakır and Mardin, two cities from the hot-dry climate region. Sample houses were investigated in terms of their ecological characteristics, entrance characteristics, inner-outer space relationships and spatial transitions. In addition, the inner-outer space activities in the houses were analyzed. With an evaluation of the data obtained through analyses, recommendations were made about the necessity of an investigation of the spatial components and elements that form the traditional houses and their environments, about the ecological factors that affect them, and about their relationships with the present day houses.

INTRODUCTION

Since the primitive societies up to the present day, many living spaces and environments were built and many different types of building emerged. Though technological developments contributed to the improvement of these buildings and their environments, houses with diverse plan types were built in countries that had the same technology at the same time. This shows that there are some factors that guide or limit people. The plan type of a house and its environment are shaped according to the region and ecological factors in which it is [1]. In this context, the spatial formations in different regions are the products of social, cultural, economic and physical conditions, and come into existence through the interaction between the elements both in its own system and outside its system. According to Turner, traditional architecture appears in different formations in hot and cold climate regions [2]. It can be concluded from this that the traditional houses and their exteriors exhibit different characteristics depending on the different ecological factors in different regions.

Different traditional settlemeents

All of the climatic factors, especially the temperature and rain, have been effective on house development. In regions where winter is cold, the houses are more closed and the life is more introverted whereas in hot regions life has almost completely been moved to the courtyard developed outside the house. The type, intensity and frequency of rain have been effective on roof formation. On the other hand, the important climatic diversity in Anatolia and the many climatic sub-regions have created a great diversity in architectural solutions. However, climate is not a determinant on its own in the diversity of the houses. In this context, when we look at the two regions of different climate, in Mediterranean and Aegean regions which have Mediterranean Climate we see buildings whichs have open sofas, which are integrated with courtyards and which use the courtyars throughout the year while in regions which have cold winters and hot-dry summers, courtyards have become open rooms of the houses, and even such different spaces as aiwans which are the extensions of courtyards have been formed [3].

The traditional houses in hot-dry climate region

Settlements in Hot-Dry Climate Region (Southeastern Anatolian region)

The settlements where the temperature is high in summer times and where temperature differences between day and night are high show an adjoining and intense building character, which aims at minimizing the effects of direct sunlight by shortening the building surfaces. The lack of clouds in summer times makes it very important to create shadows both inside and outside the house in order to obtain climatic comfort. The climatic comfort in settlements is obtained through the house, high garden walls and the streets surrounded by these walls; through the courts and green and water elements which are used as shadowing elements; and through building and planning materials [4].

Mardin and Diyarbakır houses from the Southeastern Anatolian Region were chosen as the examples to this climate region since they are the authentic examples carrying the characteristrics of the region.

The traditional houses in the urban texture of Mardin which has a sloping settlement area show a vertical development and they were built in a planning view which is compatible with the ground slope. The reflection of this in Mardin has been the use of the topography as terraces. In Mardin where the natural structure of the ground presents an original example to the formation of courts and houses, the housing estates which have developed on a high pitched ground bear the court characteristics of the Southern Anatolian Region while the courts of the houses which are located at different levels display a different open space character in the texture developed in the third dimension as a result of the development of flexible structures [4].

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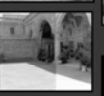
The flat-roofed, multistorey characteristic of the Mardin house which generally contains two storeys and sometimes three or four storeys was developed in a long process. In the beginning, the houses are planned as two-storey buildings. However, as the family enlarges, the houses follow a vertical development and become three- or four-storey buildings. Mardin houses are built completely in block solid wall system and a pale yellow limestone is used as the main building material [5].

The upper floor is used in summertime and the lower floor in wintertime. Courts, rooms, basement rooms and terraces are connected with passages and stairs. The roofs of lower floors are used as the terraces of upper floors. In this region, too, court is the main space that shapes the house. Mardin house develops around the court and the ground floor contains rooms, kitchen, cellar, toilet and aiwan/riwaq. All spaces are reached from the court [6].

An important component of Mardin House is the aiwans that usually face the south. It is a shady space in hot summer days, and a sunny space in winter days. It takes all kinds of wind. In Mardin, courts and terraces are the spaces that are used intensely. Aiwans are the centers of family life.This half-open and open space is used throughout the year and is a colorful, busy and important social space [3]. Unlike the daytime, the nights in summertime are cool, which cause people to sleep at nights on the terraces on bedsteads called "tahts" [7].

As a result of congested construction, some Mardin courts do not contain any vegetal elements and some contain little vegetal elements.






A view from The Mardin house



A view from The Diyarbakır house

In Diyarbakır, the traditional housing estates are in an organic city texture and the streets were built to allow the movement of only human beings and animals, which is consistent with the character of the region. Houses are usually placed around a large court and contain one or two storeys. The high court walls that form the street boundaries and the blind fronts of the houses make the streets shady [18].

The Diyarbakır house is built around a large court, contains two or three storeys over the basement in general, and is completely closed to the outside. [9].

One of the most important elements of Diyarbakır courts is the pool that is present almost in all courts and aiwans. The pools in aiwans are in general small, lobed, circular or polygon such as hexagon and octagon. The circulation of water in the court and aiwan creates coolnes [9].

Flowers are given a special importance in Diyarbakır courts. Parts of each court ground are designed as flower beds and seasonal flowers are planted.

With its nuclear position, the ecological environment and microclimate that it creates, and the standard that it has brought to private life, the Diyarbakır court is an open room and a space where all the daily activities of a house take place. In addition to being the place for other activities, it is used as a sleeping place specially in summer time. Bedsteads called "taht" are set up on the flat roofs and in courts and people sleep on them [3].

3. RESULTS

Creating spaces that are compatible with the man and environment is necessary for human ecology. Today, as a requirement of industrialization and westernization, traditional house textures are destroyed for the sake of technology, and instead similar types of houses, which are designed for different cultures and regions, are built in all regions. In this way, the traditional and long-used physical environmet is changed and ecologically unhealthy environments are created.

When we have a closer look at Mardin and Diyarbakır houses, which were selected from hot-dry climate region, we see that changes in ecological characteristics show discrepancies in traditional houses and their environments. In the Diyarbakır house, the even topography resulted in a horizontal development in single-storey buildings while in the Mardin house, which is in the same climate region, the high-pitched topography entailed to build two-, three-, or even four-storey houses.

- Because the conditions in the outer environments of the houses that were investigated in the hot-dry climate region contain the comfort conditions of human body, most activities that are held in the inner spaces are also reflected in the outer spaces. The reflection of the activities in the outer spaces resulted in the creation of such open spaces as courts, terraces, and terrace roofs, and such half-open spaces as aiwans and riwaks.
- With the changes in ecological conditions regional differences appear in traditional houses and their environments. Although climate is not the only determinant in the development of houses towards the outside, it is one of the most important ones. This is determined through the different activities that are held outside the houses in different climate regions, and in the spaces that are created parallel to this.

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2

THE USAGE OF INTERNAL PLACE (SPACE) PLANTS IN ARCHİTECTURE

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THE USAGE OF INTERNAL PLACE (SPACE) PLANTS IN ARCHITECTURE

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Abstract

The plants are the most important design components for arranging a human belonging place. Today we all use interior plants in our houses, work places, or our living spaces. None of us is quite aware of the needs of these plants to survive such as the amount of light, temperature, humidity, and soil. We are all aware their aesthetical beauties but this study attempts to find out how these beauties can be protected and the best places for them within the space.

The functional effects of the plants that are used in interior spaces according to their architectural forms are quite important. Besides their visual and psychological effects, they also carry some functions in the space. In this study, interior plants that are the important elements of the interior design will be investigated in terms of functional and aesthetical dimensions. Moreover, within the arrangements to be made in interior spaces, how the most suitable plants can be chosen with a view to the role of Landscape Architecture, the plant elements, and the functional and structural in terms of the space will be highlighted. The aim of this study is to find out the importance of using Interior Plants in the suitable places and ways, and what types of plants are suitable for what types of spaces will be studied.

INTRODUCTION

Interior space plants are those which can be grown artificially in vases or various containers after they are separated from their ecologic atmospheres and which they can live in their own internal spaces, and which they may have flowers or leaves or both (Yazgan vd 1990). While the plants that are grown in external spaces derive their energy from the natural power of the nature (such as rain, sun light, nutrients in the soil), interior space plants' ecologic needs have to be provided us. Otherwise they die in a short time (Yazgan vd 1990). The main purpose of the design in the internal place with the plants is formed livable, functional and aesthetic places for people with use the plant's various features in the architectural place. A herbal material choice formed for an internal place design, acquires for the plant's delivered custom function. Beside these functions the plant's physical descriptions become important too. There are no certain rules for using the plant in the internal place, merely, plant's filling a gap and how to contact with the other functions and the plant's ecological requests are important (Yazgan vd 2003).

The requests of the plants run-time environment and the place which will be placed in must be close to each other. Plants annex beauty and tranquility to the place and annex activity and imagination to the people. The plants which are used in the internal places mustn't be forgotten to be a living being. They have vital demands to carry on their existence and to lay out their development in the best way like the other living beings. So long as the needs proved, the plants would supply achievement in functional and aesthetic ways to the existent place. But there is a need for investigating one one the dimensions and the functional elements of he space as well as the activities of the users together with inanimate objects in the space.

Characteristics of Place

Characteristics of place are separated into three parts; *(i)* Site conditions (temperature, light, humidity and aspect), *(ii)* Constructional characteristics of place (Shape, dimension, color and texture of place), *(iii)* Functional characteristics of place (house, bureau, factory, hotel, shopping center, office block, nursery, etc.). For success of planting design done in an internal place, site conditions of place should be near to site necessities of plants which will be used.

Planting of Internal Places According to Their Sizes

Place size must be considered in planting design. A place can be small, medium or big. Plant species and positions should be decided according to the place size.

There are small places to attract attention at all buildings. There are plants to adapt in any case even where living conditions are very limited. Especially flowered plants give liveliness and color even dullest corners.

At almost all rooms, there are absolutely some places which are small for putting goods but big for disregarding. In these places, even one plant placed delightfully will give warmth to room. On the other hand, a plant group selected and combined carefully will solve the same problem.

Living rooms, studios and bureaus are the most suitable places for big plants.

Plants carry some functions as well as such visual and psychological functions as framing, relationship, invitation, opening space or closing space, or dividing into sections. These can be grouped as below. They gain identity to the space as well as making the forms in the structure livable, increasing their aesthetical values and covering unwanted sights. They are also used as physical barriers, bring color and elegance, create different atmospheres, fix the circulation, separate areas in the spaces and combine the spaces together as well as pointing certain spots. (Austin 1984).

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Functional effects of plants in respect of their physical characteristics

Vegetal material selection for an internal planting design is taken shape by the special functions of plants at place. When the plants undertake these functions, their physical characteristics gain importance too.

Euphorbia pulcherrima

Color: The most attractive physical characteristic of plants is color. For this reason, especially plant color is effective when attractive focus points and accents created. Plant color can be used as background to attract attention for some objects at place.

Form: According to the plant's form feature, functional effects can be separated such as;

Column and Colon Forms: They compose accent and attractive points. Because of being used mostly in the design work, mustn't be forgotten of composing more than one focal point can cause stress medias. They are effective in enclosure, restriction, space creating and changing the media height.

Pervasive – Horizontal Forms: They are adequate as ground cover. Thus, they are allocating the spaces from each other which have different function. They show the space widely. They combine different elements visually in design.

Circular – Global Forms: They have exact and distinct external lines. They create visual emphasis.

Pyramid – Conic Forms: These have exquisite and distinct external lines. They create visual emphasis.

Pendulous and Wisteria Forms: They direct the eye to below. They display characteristic in the best way in somewhere that insulated from other plants. They soften the structure's exact lines. And monotony is caused for being used so much.

Texture: Plants interfuse amendment with textures of them in a space. They compose emphasis and attractive points. Brutal textured plants effect dimension of the space too. They predicate the space small. Therefore; they can be used in wide spaces for human comfort. However, thin textured plants, are used for composing neutral backgrounds, composing orderly delicate surfaces and constituting visual diversity. They give width sensation to the space.

Measurement: Plants measurement affects directly the size of the space,composition interest and all design structure. Booth (1983) separate the plants to their size such as;

The plants which are 4.5 – 6 meter: They characterize the space in vertical and head above platform. They can compose fence in vertical way or they can set the corner points. With these, emphasis and focal points can be composed.

The plants which are 3 – 4.5 meter: They can be used as a wall. They can contain the transaction way by forming corridors. These plants form curtain too, provide confidence. They create a background for the object that is wanting to attract attention, emphasize the object. They have separator characteristic for spaces.

The plants which are 2 – 3 meter: They are providing conduction between longer and shorter plants. They are providing privacy for being over the eye degree.

The plants which are 1 – 1.5 meter: They are above the eye degree of a seated person and below the eye degree of an afoot person. They are composing low screens, corrupting the monotony of the flatness that is lengthen on the floor.

The plants which are 1 meter and under of it: They can illustrate the space and they can separate the spaces by not averting the vision. They are mostly composing physical barrier instead of visual barrier. Consequently, they are providing circulation by not closing the vision of the person in the space. They fulfil vertical binding task between not being any relation with elements.

Ground Cover: They determine the corners in the design. By not using the harsh architecture elements they expose the shape's external lines on the floor. They put pattern and texture peculiarity to the floor. Between a paving field, and an area that covered with ground cover's space borders come into by not being a physical intransigent. They draw to the floor and provide the sightseeing in the space. They compose invariable, neutral backgrounds. They mount different elements in visual way.

2.3 Plants Usage Location in Inter-space Design

While constructing architectural planting design for a position, with design criterion plant growing criterion must be taken up concurrency. Right along with the most important criterion in decoration is plant form and especially must be thought of the whole needs of the plant which centered upon light need. (Powell, 1984)

High Fan Shapely Plants: This plant fills the corners, supports big chairs and covers radiators. However, real positive sides are propagation at the top and covering less space at the bottom.

Small Shrub Shapely Plants: These plants with their round forms mitigate the furnishing view while they placed alongside the furniture. Because of being accepted very big in the table and instead of composing a group they must be used by oneself. (Powell, 1984)

Column Shapely Plants: Occasionally; because of the limited space, column shapely plants are given preference. If should be affirm in the abstract, column plants are more adequate in the hard, bent and limited internal spaces.

3. RESULTS

Because of People search for privacy, peacefulness, confidence, and comfort in the spaces, plant's functionality that is used in the existing space has very important place in people's life. However, at the present days the people are using unconsciously their plants in this internal space and because of this, they can't profit the advantages so much. Moreover, the plant that is used for functional purpose in the internal space can turn into disadvantage. Consequently, the plants which are going to be used in internal space must be disposed according to definite design criterion. These can classify such as ;

• Adequate to plant's natural growing and development environment that are going to used in internal space must be composed artificial spaces.

• In small spaces with using blooming plants are provided colour and briskness, In medium sized spaces with gathering singular plant or attentive elected types are provided warmth to the space, In great spaces with using great plants are provided the people's feeling like that they are in open-areas.

The plants that are used in internal spaces support the design.

• The plants that are used in the internal space's design can undertake so many functions in the design such as directing, collecting and physical barrier composing. Consequently, an identity can bring in to the design.

• The plant's selection that is going to be used in internal space's design shapes according to the undertaking functions in the space. Therefore, there is a need of the dominant plant in the internal space's design. And also this can be made by attracting attention to the form, dimension, texture or the colour of the plant or by supporting other plants.

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2

IMPORTANCE AND POSITION OF PLANTS LIGHTING IN LANDSCAPE LIGHTING

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IMPORTANCE AND POSITION OF PLANTS LIGHTING
IN LANDSCAPE LIGHTING

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Abstract
Outdoor lighting has become an important necessity for people since that first ages and has grown up day by day. It is necessary to make the suitable lighting designs and to provide to join with various activities for people who work nearly whole day in the outdoor because people use outdoor activities at night too. Appearance of outdoor and architecture can be revealed again with a mystical effect using various techniques by the help of lighting that is suitable architectural conception.
Lighting plant compositions is a special subject under outdoor lighting. Very nice, showy and attractive appearances can be obtained with right plants lighting. Lighting provides not only extraordinary appearance but also security. For example, when decorative tree is lit, path's safety can be provided by spreading light. To show the maximum affect, it is necessary to know lighting aim and dream wishing affects. And it is necessary to know the types, locations, and angles of fixtures that are suitable these aims. Composition, expected visual effects, and imagination desired effects. In this determination, changes take note consist of direction of light and fixture location. Designer must decide to protect plants daytime appearance or to organize a new view. This study is shown that before they start plant lighting, designers should know physical characteristics and physical appearance of plants very well and they should light by using suitable lighting techniques by the help of these.
Keywords: Lighting, outdoor lighting, exterior lighting, landscape lighting, plants lighting

IMPORTANT POINTS IN LIGHTING OF PLANT COMPOSITION

Before lighting design is started, whole information about project should be obtained by designer. Because of this first of all Plant Examination Project gathering whole information about existing plant in area should be prepared. In this examination it is important to get true information about physical appearance physical characteristics of plant. The most important thing is that designers who draw project of the area should decide in which points plants must be emphasized and which areas are hide from users by the help of this examination project. This is important for success of this project. When they do lighting, too, they must emphasize this information

Physical Appearance of Plants
Plant's habit (plant can show difference between young form and old form),
Plant's growth speed and characteristics,
Plant's appearance according to season (formation of first leaves and flowers in spring, fruit in summer, turn yellow and red in fall or dormant appearance under snow in winter)

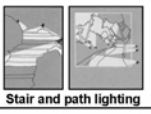

Appearances of Plants in Season Change with Lighting

Leaf Type

Plant's shape can be controlled with trim,
Whether plants show trunk, branch or shoot beauty or not,
Local statistics and characteristics features.

Trunk Characteristic

Branching Pattern



Stair and path lighting



Day Appearance Unlighted Appearance Lighted Appearance

Physical Characteristics of Plants
Physical features of plants have huge importance in lighting projects. According to these features direction of light, fixture location and quantity of light are determined. When lighting is done, these features must be known very well and taken care of. These interesting appearances attract attention when they are lit. These physical characteristics can be arranged as follows
Texture: Texture consists of subjective appearance of leaf size and form, branching pattern, exact scale of plant, and openness of leaf overlap.
Leaf Type: Leaf type consists of shape, size, colour, overlapping pattern, density, translucency, and opacity. Leaves may be thick and leather or thin and diaphanous. Both oxides may have matt and fuzzy surface or naked and bright surface. These considerations will direct the choice oh light source and appropriate lighting technique. Front lighting emphasizes detail of leaves and back lighting emphasizes shape of leaves.
Branching Pattern: Plants may have dense or open branching. When it is desired to emphasize this feature, both the dormant and leafed-out states should be taken into consideration in lighting project for both evergreen plants and deciduous plants. The branching may be inherently beautiful or mangled mess. Fixture location depends on canopy dimensions and appearance. Fixture is located inside or outside the canopy to emphasize the trunk.
Foliage Colour: Colour changes during the year should be known in same plants, foliage changes colour from fresh growth to mature growth, when going dormant in the fall or during the flowering period. In some plants one side of the leaf is different from other side. Varieties of plants can have different leaf colours.
Trunk Characteristics: The bark may be peeling, flaking, mottled, deeply furrowed or cracked. Fixtures are located near the trunk and when up lighting is applied; tree can be seen as it has no interaction with the ground.
Trunk Pattern: Some young trees gain a beautiful form in the course of time, whereas some trees gain a complex shape.
Flowering Characteristics: Time, period of flowering, flower colour, size, and shape are important in lighting.
Dormancy Characteristics: Some plants disappear in the winter, while some of the dormant gain very attractive appearance.
Growth Rate: In some periods of their lives plants show fast growth rate and in some periods they show slow growth rate. Some of them grow slowly at the beginning and grow fast in later ages and some show the reverse situation. This rate is important to determine the place of the fixture.

Fixture's Location in Lighting of Plant Compositions

Suitable lighting technique that will be used in special plant lighting is determined as plant's role in composition, expected visual effects, and imagination desired effects. Designer must decide to protect plants daytime appearance or to organize a new view.

Direction of light affects plant's appearance. Direction of light consists of five types

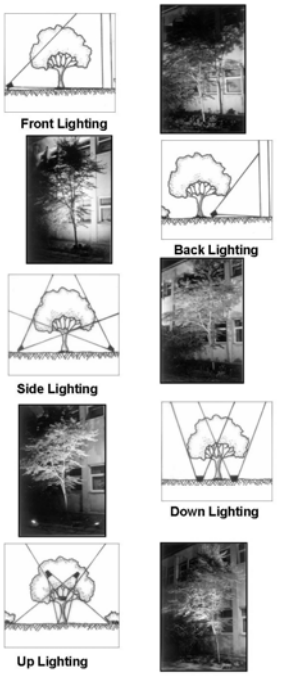
Front Lighting: Front lighting gives detail and colour plant's appearance and emphasizes form. It establishes relations among the elements of composition. This lighting increases or decreases texture depending on distance from plant materials of lighting element. Appearance of objects is dull because of eradication of shadows. Objects are revealed with their fundamental colours by front lighting.

Back Lighting: Back lighting provides interesting appearances in the landscape. Plant separates from background by back lighting so this lighting creates productivity. While it eradicates colour and detail, it shows only form. Back lighting creates the halo of light around object's edges. This lighting decreases capacity and tissue and produces extreme contrast.

Side Lighting: Side lighting strengthens tissue, increases texture and creates strong shadows.

Down Lighting: Down lighting creates long shadows, decreases volume and sharp contour of the object. This lighting provides a natural appearance because it follows the direction of sun.

Up Lighting: Up lighting emphasizes detail and colour in the best way. Creates glow in leaves, so it creates a dramatic effect. This lighting emphasizes form and colour of leaf and canopy.



CONCLUSIONS AND DISCUSSIONS Outdoor lighting has become an important necessity for people since that first ages and has grown up day by day. It is necessary to make the suitable lighting designs (and to provide to join with various activities) for people who work nearly whole day in the outdoor because people use outdoor activities at night too.

Artificial lighting does not only make the outdoor safe but also gives aesthetic. Appearance of outdoor and architecture can be revealed again with a mystical effect using various techniques by the help of lighting that is suitable architectural conception. Landscape areas, plants arrangements, rock gardens and ponds that do not attract attention enough in day or are looked differently in daylight, are looked differently point of view and can be brought more showy and attractive appearance.

The lighting technique, the location, direction, colour, and quantity of light must be determined depending on the aim of lighting or the desired effect of lighting. Quantity and direction of light and fixture location should be needed to fix truly for both aesthetic and security. In landscape design done by landscape architects, lighting is not the last analysed one in design.

Decorative plants are seen as a visual object with true lighting in outdoor. It must not be tried to make day view with lighting. Using a few fixtures reveals good results instead of using only one fixture and small and more amount lamps must be used instead of a big lamp. Generally, low power lamps (not over 150 watts) must be preferred. Lighting which can be effective during the year must be designed. Every season provides interesting appearances for outside lighting according to its properties. Interesting appearances can be created by light. If the shadows are controlled they have magic effects, otherwise they create meaningless effects.

Coloured lighting must be restricted. It changes the present colours and it creates different effects. Light sources must be hided with plants, shutters, and the other living and non-living things. The light must be located as not to disturb our eyes.

To create the most ideal visual effect working between some occupations such as landscape architects, lighting designers, and other experts is necessary.

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USER PREFERENCES AND PSYCHOLOGICAL EFFECTS OF WATERSCAPE

Tuğba Düzenli

The studies conducted have shown that the limiting elements psychologically relaxes people. Ruddel and Hammitt (1987) have found out that people prefer limited places. Appleton suggested that the most preferred areas are those close to the limit elements, which provide the opportunity to take shelter. The users generally prefer these places where they can easily see without being noticed and far from disturbing noises [4]. The element of water can create such satisfactory places by meeting these demands by people.

The element of water also plays a directing role in outdoor places. In the formation of the place, water has a great effect. It can direct people to the point to be focused according to manner of use. The linear water channels or rectangular pools have a directing role. These kinds of elements of water can be in consistency with the activity of transportation and walking.

Figure 1. The element of water limits the place by separating it from the noise and bad appearance, apart from its functional service [5].

Figure 2. The element of water at Williams Square has the quality to direct people towards the entrance [6].

Figure3. An example for directive use of water

The components within the place can be used as symbolic or meaningful elements. For instance, the element of water can be used as a separatist element for the activity areas and as a symbolic element, apart from its refreshing role. Furthermore, it can serve as a decorative water element built as a curtain for noise.

Figure 4. The element of water has a role separating the circulation areas, apart from its functional service [7].

Figure 5. The use of water for focusing purposes [5]

Figure 6. The use of water for focusing purposes [8]

The element of water within a place sometimes constitutes a strong element by separating from the general composition of the place functionally, symbolically or formally. This enables the use of water for focusing purposes. These kinds of elements of water can be in consistency with activities such as gathering or waiting.

Figure 7. The element of water undertakes a separatist role between the road and the activity area [5]

Figure 8-9. Two different examples for the sustaining use of water.

When the element of water within the place goes forward by following a circulation, it can be sustaining. These kinds of elements of water can be in consistency with the activities of walking and promenade.

3. CONCLUSION

In summary, when all these studies are examined, it comes to light that water is an important element in landscape design, existence of which considerably increases the environmental preferences of people. But the element of water should harmonize with the physical features of the space and the activities taking place in the surrounding environment. It should also meet the physical and psychological needs of people associated with their activities.

02

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PLANNING AND DESIGNING OF OPEN SPACE FOR YOUTH

Tuğba Düzenli

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PLANNING AND DESIGNING OF OPEN SPACE FOR YOUTH

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ABSTRACT

YOUTH USE PLACES IN THE ENVIRONMENT MUCH DIFFERENTLY THAN THE GENERAL POPULATION. ADOLESCENTS EXPRESS ENVIRONMENTAL PREFERENCES THAT REFLECT THESE DIFFERENCES. THESE DIFFERENCES IN USE AND PREFERENCE REFLECT NEW DESIGN CHALLENGES. FEW PLACES ARE BEING DESIGNED WITH THE LANDSCAPES IN THE PUBLIC SECTOR FOCUSES ON THE REQUIREMENTS OF OTHER AGE GROUPS SUCH AS YOUNG CHILDREN AND ADULTS.NEEDS AND PREFERENCES OF ADOLESCENTS TAKEN INTO ACCOUNT. FOR THIS REASON, THIS PAPER EXPLORES HOW TO BEGIN DESIGNING PLACES THAT ADDRESS THE UNIQUE NEEDS AND PREFERENCES OF YOUTH.

THE COURSE OF YOUTH DEVELOPMENT IS SHAPED BY A VARIETY OF FACTORS, INCLUDING THE ENVIRONMENTS IN WHICH YOUTH DEVELOP. SOME GUIDING PRINCIPLES FOR PLANNING AND DESIGN ARE BASED UPON A REVIEW LITERATURE IN THE ADOLESCENT DEVELOPMENT. SUGGESTIONS FOR IMPROVED PLANNING AND DESIGN OF OPEN SPACE FOR YOUTH. FURTHER SUGGESTIONS ADRESS THE IMPORTANCE YOUTH PLACE UPON SOCIAL INTERACTION WITH PEERS, AND THE IMPORTANCE OF STRONG SOCIAL NETWORKS FOR YOUTH. FINAL RECOMMENDATIONS FOR RESEARCH OF LANDSCAPE ARCHITECTURE AND UNDERSTAND TO THE NEEDS OF YOUTH AND SOCIETY.

KEY WORDS: YOUTH, OPEN SPACE, ENVIRONMENTAL PREFERENCES

1.INTRODUCTION

The designers aim to understand the potential user needs while designing the places. Thus, they need to define the needs of various user groups. Children, teenagers, adults are various users whose needs should be identified. Studies related the places of teenagers are limited. This causes neglecting the personal experiences (emotional, social and physical) for these ages. (1)

The researches have shown that the spatial use of youth is different from that of general public. The reason is the difference in their environmental preferences. These preferences and differences should reflect to design. While creating places, their benefits to youth should be taken into account. Increasing the relations with the environment, opportunity to get socialized with peers and other groups, participating into the activities to solve problems and skills development are of great importance for youth. (2)

During the last two decades, the studies related to the relations of youth with their environment have increased. Kevin Lynch (1977), Colin Ward (1977) and Roger Hart (1979), researches from various countries and various academic fields, have pioneered to observe the urban experiences of young people. Firstly, Lynch (1977) carried out a research, titled "Growing up In Cities", on small young groups from various citied. He examined how the youth used their environment, how they assessed it, and how the urban places are identified during their development. This study was a pioneer and paved the way for the studies on youth. It is an important study since it is long lasting, and includes various cities. This is an approach comprising different methods. (2)

1

2.ADOLESCENT USE OF SPACE

Most of the researches related to the use of place of adolescents have focused on the favourite places, place preferences and the places assessed. Researching the favourite, assessed and preferred places enable youth to make the identification of their environment. However, the relationship between the preferences and the benefits of places has yet to be researched. Korpela and Lieberg (3,4)have found out that the environment around the house is favourite, and that the private places are more favourite than public places. Some other findings have suggested that youth prefer shopping malls, commercial places and open space areas close to their homes.

The youth not only have free time, but also have lots of free time activities. Nowadays, the models of life styles do not reflect the class difference, but symbolizes the cultural identity. The question of why the researches conducted are differential comes to mind. The reason for this is that the free time activities of the youth are also different. The free time activities should be assessed in terms of structural content and social content (5)

Csikszentmihalyi and Larson have suggested that the young people prefer two types of activities during their free time (6):

*Relaxing Activities: these include getting socialized and these are activities such as watching TV, listening to music, reading, eating, etc. these are important activities by which they relax and these contribute to personal development.

*Sports, Games, Art and Hobbies: When the youngsters participate in these activities, they fulfil emotions such as motivation, freedom and challenge.

Owens (1) described the characteristics of outdoor spaces which teenagers need and value. As a result, the most preferred areas have turned out to be as follows:

-38% advanced gardens
-17% backyards
-17% commercial area

natural gardens, places close to school, underdeveloped outdoor places, urban grounds, theme parks, and views are other preferred areas.

The study titled "Gathering Spaces" has focused on designing places for adolescents. When interesting places are created for them, their relation with the environment increases, their opportunity to get socialized increases, and skills development level raises.

In this research, it was suggested that some opportunities should be provided to adolescents. These are as follows:

-Reflection (Contemplation)
-Socialization (interaction)
-Challenge

The characteristics of outdoor places preferred by youth have been identified as follows:

-Places where they can be in nature
-Where they can be with their friends or be alone when desired
-Where they can see without being seen (prospect refuges)
-Easily accessible places
-Places they can call their own

3.CONCLUSION

As a result, it is important to identify the elements to be attached importance while suitable, useful, and urban outdoor places are planned. The needs, desires and how their relationship with outdoor places should be identified, and the outdoor preferences of youth should be taken into consideration.

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2

THE IMPORTANCE OF ZOOS AS AN URBAN COMPONENT

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THE IMPORTANCE OF ZOOS AS AN URBAN COMPONENT

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ABSTRACT

Zoos are the most important way of learning about animals for citizens. They are also effective education environments for teaching natural habitats of animals. Because of this, zoo design must be a successful exhibit of animals identical to their natural habitats. Thus the mental image of people about animals in wildlife can be formed appropriately. Consequently people can realize that they share this world with other species and learn not to disturb their natural habitats.

Because of these reasons, this study aims to obtain principles which contribute to form successful zoos, and the role of the modern zoological park is determined.

Key words: zoo, exhibit design, natural exhibition, landscape immersion exhibits

1. INTRODUCTION

The accelerating decline in biodiversity due to human activities is one of the most environmental issues (1, 2). In order to safeguard the richness of life forms globally, it is esse to raise public awareness of the need to preserve biological diversity (3, 4). The conservation animals and the provision of nature education are both important tasks of a modern zoo.

In order to stop destruction of natural environment and so as to human beings and other creatures carry on their lives together sharing the same natural environment, it must be emphasized that awareness-raising process is important. In this context, in order to protect natural environment and natural life there must be concentration on introduction and education.

If zoological gardens make use of their enormous educational potential, they will become an important place for nature education (8) and undertake an important role in conveying the love of nature to great masses of people and in global efforts to educate people. But education efforts will achieve their goals by means of zoos and these places should be designed in a form that reflects the natural life of animals.

2. THE ROLE OF THE MODERN ZOO

1. CONSERVATION: Protection of habitat is the best way to preserve a species. These habitats, however, are becoming smaller and smaller. The explosion of the human population and the need for land has already led in many countries to an alarmingly high loss of forest, to the drainage of swamps and to erosion, caused by overgrazing through domestic animals. More and more wild animals are being driven into small pockets of original habitat and the populations are being separated from each other. If a population is no longer viable in its natural environment since this has become too small and too isolated, it certainly would be better to catch the last remaining specimens of certain species and take them into zoos or similar institutions (12).

2. RESEARCH: Research provides a more contentious basis. The proximity of zoo animals allows studies of their physiology and behaviors that would be dangerous and difficult in the wild. Behavioral research in zoos is the dominant activity but is inherently problematic. The differences in their rules make precarious any extrapolations with or comparisons between the behaviors of animals in wild habitats and those in zoo, and data collection is usually for the purpose of solving captive-animal management problems, rather than contributing to the scientific literature (14).

3. RECREATION: Recreation is intimately linked with education in zoo. This fusion is a primary difference between zoos and many other recreational events. Studying visitor behavior, perceptions, and attitudes are useful tools to evaluate the zoo regarding its educational and recreational goals. Existing information suggests that zoo visitors want to see active animals, and they want to interact with keepers, guides, and interpreters (15, 16); and they are motivated to visit because of entertainment or recreational reasons over educational and other reasons (17).

4. EDUCATION: A zoo can function directly to broaden its visitors' base of environmental and scientific literacy. It can provide insights into the behavior of animals and of man himself. It should interpret wildlife in relation to nature and illustrate the evolution of animal life and adaptation to environment. Broadly, zoo education reveals the interrelationship of animal societies and, ultimately, of animals and man (18).

3. EXHIBIT DESIGN AND LANDSCAPE IMMERSION

Zoological parks began to expand their facilities and build naturalistic exhibits, and public awareness regarding conservation and animal welfare increased. New trends in zoo exhibit design began with the following types of exhibits: naturalistic exhibits, behavioral exhibits, habitat exhibits, zoogeographic exhibits, and landscape immersion exhibits (20).

"Natural exhibition" was thought of much earlier by Carl Hagenbeck (1910), who opened a new zoological park outside of Hamburg, Germany, that displayed animals as seen in the wild. Hediger (1950), the "founding further" of zoo biology, also recognized early on the need for a change in the way captive animals were exhibited. Hagenbeck created artificial rock formations as a backdrop for the animals. The cage bar was eliminated as a physical and visual barrier and replaced by moats, many of which were hidden, to contain the animals and to permit unobstructed views of the staged display. The use of vegetation, rocks and logs, similar to stage props, helped create long panoramas containing various animals and an illusion of the animals within a "natural habitat". Hagenbeck's goal was to artificially create a landscape as good as nature. This creative design approach recognized the importance of the setting, the position of observer and the animals' spatial needs in presenting them for the visitor. Buildings hidden or camouflaged structures contributed to the visitors' deception and illusion. Hagenbeck's accomplishments inspired similar zoo design by others and changed the appearance of zoos forever (13, 14, 20).

The most widely discussed and impressive of these exhibit types is **"landscape immersion"**. The concept of landscape immersion began in the 1970's and its goal is to essentially immerse the zoo visitor in the habitat of the anima1s. Invisible barriers separate humans from the animals, and anything that would detract from the experience (such as buildings, vehicles, and workers) is removed or hidden with vegetation. A goal of landscape immersion is to make it appear that the animals dominate the scene and that humans are on a "mini-safari". The visitors are in the animal's habitat rather than the animals being in a human-dominated park (20). Powell explained that the landscape- immersion approach was "an astonishing departure from conventional zoo design because it reflected a pronounced shift in philosophy" from the homocentric to the biocentric view, and Coe added that the new approach allowed the viewer to become physically and psychologically immersed in the simulated created habitat. It appealed, he says, "first to the emotion and secondly to the intellect" (14).

4. CONCLUSION

Zoo visitors should have he opportunity to learn something about each animal's environment through natural habitat displays, to explore the mysteries of wild animal behavior, to be informed by special displays.

Zoos with an educational focus and with animals displayed in authentic environments exerted a posi... more traditional zoos created an increase in negative attitudes to wildlife. There was a measurable intensification ... people's indifference to and fear of wild animals after seeing them in an ugly environment. In any case, zoo designers and educators cannot expect people to fully understand what an animal is if it is not presented to them in context.

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EXHIBITION

A Syncretistic Settlement in Sarajevo, Bosnia Herzegovina

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A SYNCRETISTIC SETTLEMENT IN TRABZON AND SARAJEVO

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PURPOSE OF THE PROJECT

After Rapoport a strong phenomenological belief which pervades architecture is that cultures build their environments in the most convenient style over time. Their world view and cosmological beliefs determine their use of space as well as their production and subsistence behavior. However all such settlements of the world have been undergoing fundamental changes due to the all encompassing and influential modes of once modernization, now globalization. Human attitudes toward life and society have undergone changes and are constantly changing since the outbreak of rapid industrialization and virtualization. However societies are not satisfied with the accelerating affects of technology and its consequences of individualization, isolation, and feelings of nihilism. They express nostalgia for their deep rooted values, both social and physical. Therefore in this project we aim at discovering the values embedded in traditional housing and settlements, as well as the necessary changes occurring in modern styles of living in order to design syncretistic housing so as to improve the living conditions of people. Syncretistic in this sense is that which combines cultural values attributed to traditional houses and modern needs and comfort requirements.

PROCESSES INVOLVED IN DESIGN APPROACH

Information Gathering Phase: The first phase of any design approach starts with information building. In this particular design project which is also the subject matter of a joint cultural study, the students from Turkey were expected to observe and analyze the traditional Bosnia-Herzegovina housing proper to Sarajevo, Travnik, Mostar and Poçitel; to read and depict human behavior in the past; to interview people especially from Sarajevo in order to understand what values they attach to these houses, and do they still persist? They had to do sightseeing, sketching, drawing and re-elevating. They had to render streets and compile the results of interviews and questionnaires.

An available land proposed by the municipality-a transformation had been determined in advance. Therefore during their observational visit cross countries students spent apposite time and made all sorts of land studies which included historical tracing, topographical featuring and climatic priorities and measures known to the past builders applied at similar sites.

Alternatives Production Phase : This phase was carried out in students own homeland. Now that the information was ready and processed students embarked on the case. The housing to be designed should consist of no less than 200 houses for approximately 1000 people on 5ha with necessary amenities. Various orders known to urban design could be proposed at this stage: street housing, court housing, dispersed housing, chain housing in the form of either low or mid –rises. In order not to discourage creativity students should be motivated to conceptualize unprecedented solutions.

Choice Phase: Through evaluations against predetermined criteria for definitions of comfort, appropriateness, beauty and meaning a choice was made to specify the most promising alternative proposed by the student.

Development Phase: Thus, students from Sarajevo developed a settlement model plus a variety of syncretistic houses for Trabzon area and the vice versa; students from Trabzon developed syncretistic housing types and settlement models for Sarajevo and its vicinity.

Development Strategy: The Sarajevo side wedged with its existing approach. Students of 14 were allotted into 3 teams on their own will. Turkish side favored individual studies protracting their past and were divided into 3 groups of independent students guided by 3 professors and 3 assistants each.

Presentation Phase: To be presented at the end of the term were:

1. Site plan; scale 1/1000 showing the pedestrian and vehicular ties with the existing city.
2. Site plan scale 1/500 with proposed amenities and roads; silhouettes from desired vistas.
3. A blow-up from the most explanatory group of housing-ground plan; scale 1/200
4. Plans, sections and elevations of all house types; scale either 1/100 or 1/200
5. Details where necessary; scale 1/20, 1/10, 1/5 etc.
6. Model of the blow-up at the same scale and/or renderings from various vistas. Models of individual housings

ITINERARY

Turkish Side: Visit to Sarajevo in the first week of the Spring Term. Stay for 4 nights. Sightseeing and information gathering. Getting to know the “other culture and counterpart friends to be”. Visit to Sarajevo at the end of the term for the evaluation of projects and for the exhibition of material in the “Turkish House”. Joint cultural events to be designed in detail further.

Bosnia-Herzegovina Side: Visit to Trabzon in the second week of the Spring Term. Stay for 4 nights. Sightseeing and information gathering. Getting to know the "other culture", etc.

FOLLOW-UP EVENTS

1. An Exhibition of the joint workshop at the Turkish House (Cultural Center) at Saraevo at the end of the term (as cited above).
2. An exhibition of the joint workshop at LIVENARCH III Congress at Karadeniz Technical University during July 5-7 2006.
3. A book of mutual experiences of involved cultures, co-authored by the academic staff and examples from studio projects which deserve mention.
4. Further exhibition at conducive and appropriate settings in Ankara and Istanbul.

TEAMS

Team 1: Prof. Şengül Öymen Gür , Research Assist. Halil İbrahim Düzenli

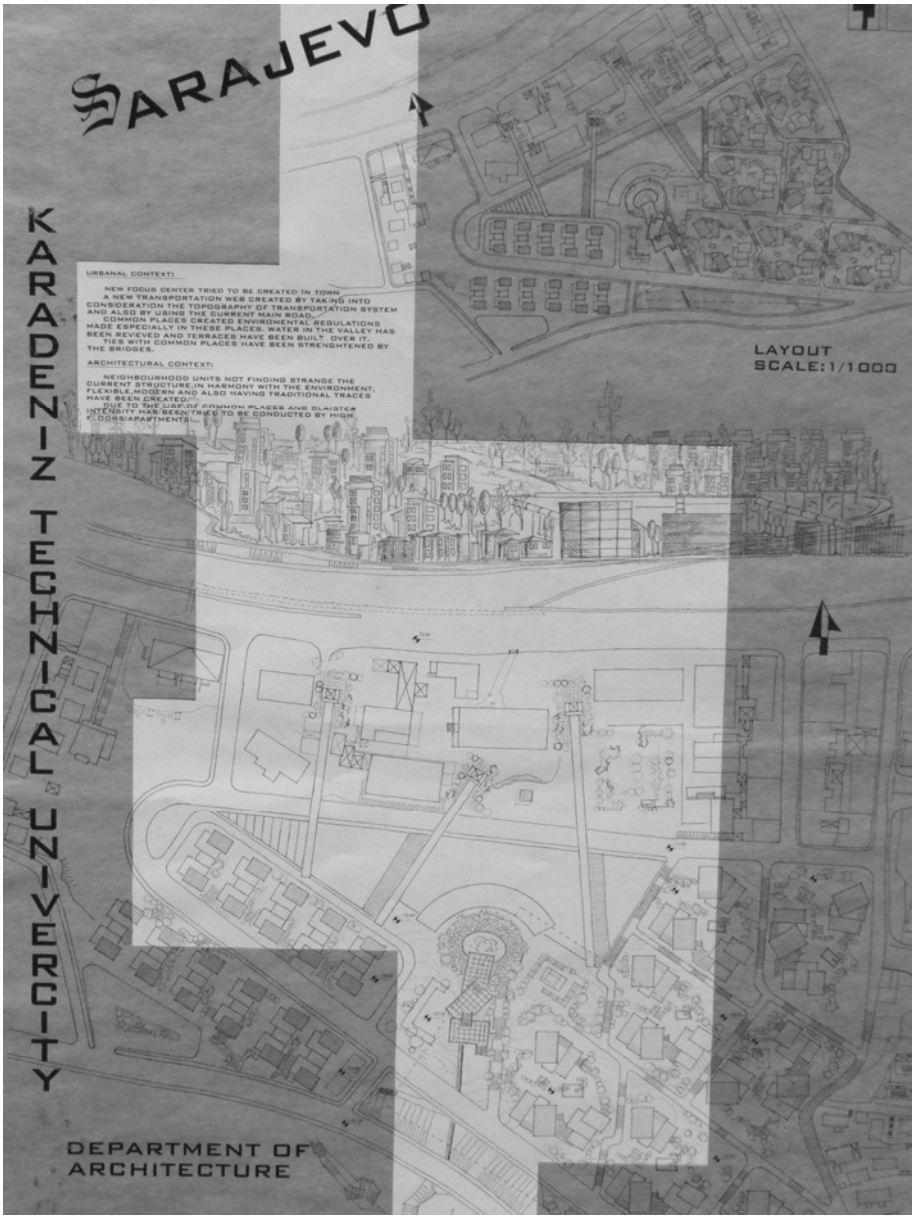
Team 2: Associate Prof. Ali Asasoğlu, Research Assist. Evrim Düzenli

Team 3: Assistant Prof. Ömer İskender Tuluk, Research Assist. Fulya Üstün

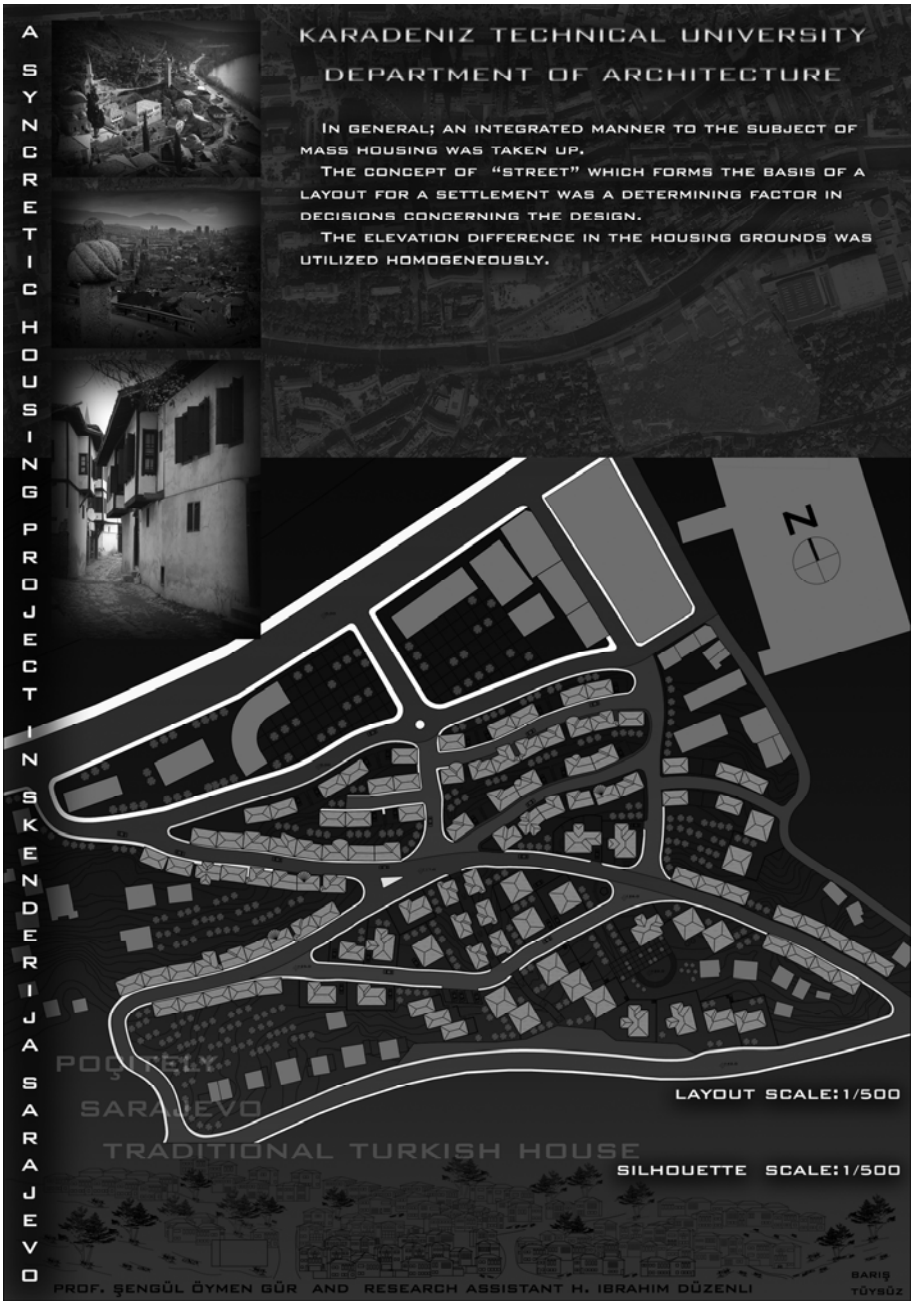
POSTER PRESENTATIONS

Proposals made by individual students are exhibited at LIVENARCH III as part of Poster Submissions (see details at www.senguloymengur.com)

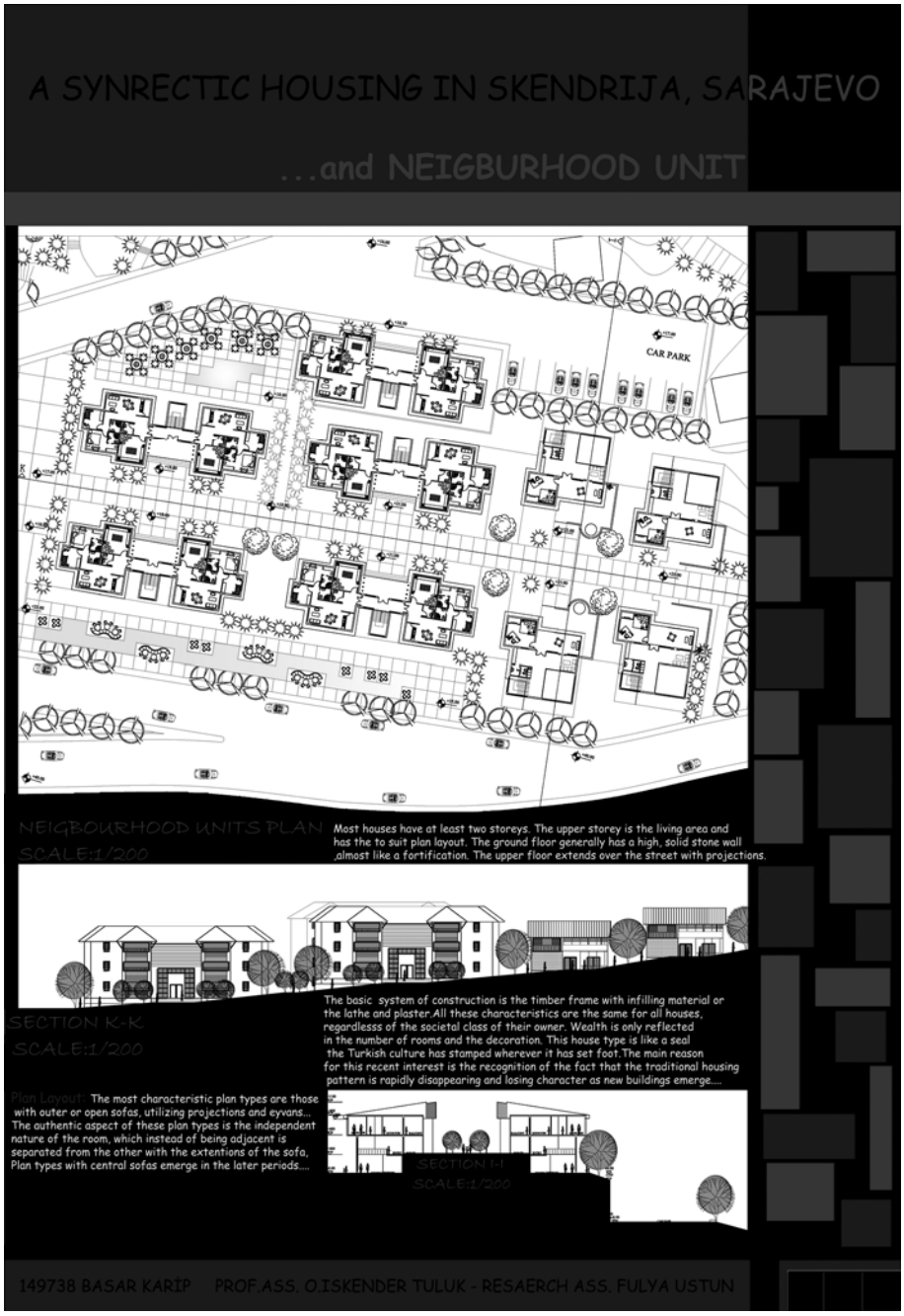
Ahsen ÖNCEL


SARAJEVO
KARADENIZ TECHNICAL UNIVERCITY
DEPARTMENT OF ARCHITECTURE
LAYOUT
SCALE:1/1000
URBANAL CONTEXT:
NEW FOCUS CENTER TRIED TO BE CREATED IN TOWN
A NEW TRANSPORTATION WEB CREATED BY TAKING INTO CONSIDERATION THE TOPOGRAPHY OF TRANSPORTATION SYSTEM AND ALSO BY USING THE CURRENT MAIN ROAD.
COMMON PLACES CREATED ENVIRONMENTAL REGULATIONS MADE ESPECIALLY IN THESE PLACES. WATER IN THE VALLEY HAS BEEN REVIEVED AND TERRACES HAVE BEEN BUILT OVER IT. TIES WITH COMMON PLACES HAVE BEEN STRENGHTENED BY THE BRIDGES.
ARCHITECTURAL CONTEXT:
NEIGHBOURHOOD UNITS NOT FINDING STRANGE THE CURRENT STRUCTURE,IN HARMONY WITH THE ENVIRONMENT, FLEXIBLE,MODERN AND ALSO HAVING TRADITIONAL TRACES HAVE BEEN CREATED.
DUE TO THE USE OF COMMON PLACES AND DAIGHER INTENSITY HAS BEEN TRIED TO BE CONDUCTED BY HIGH

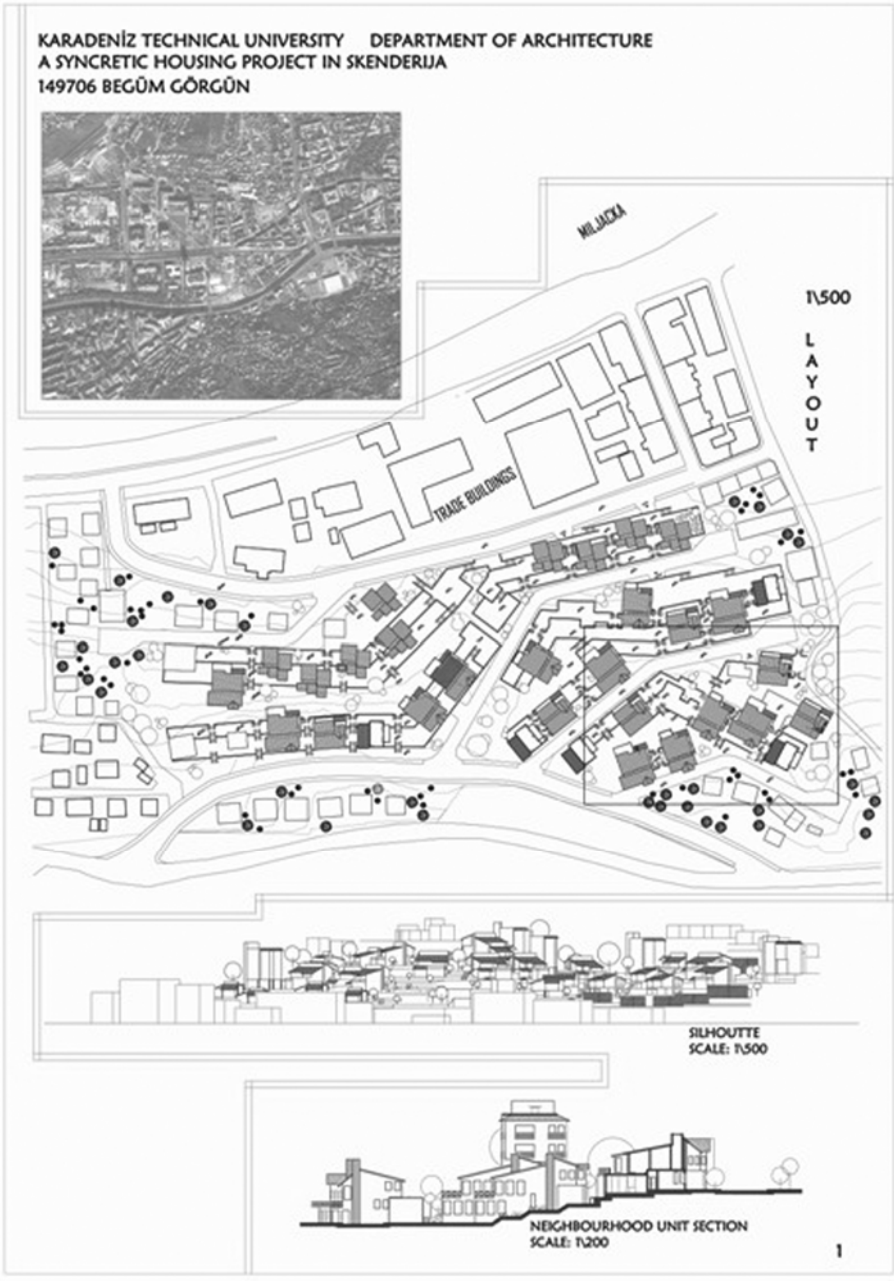
Barış TÜYSÜZ



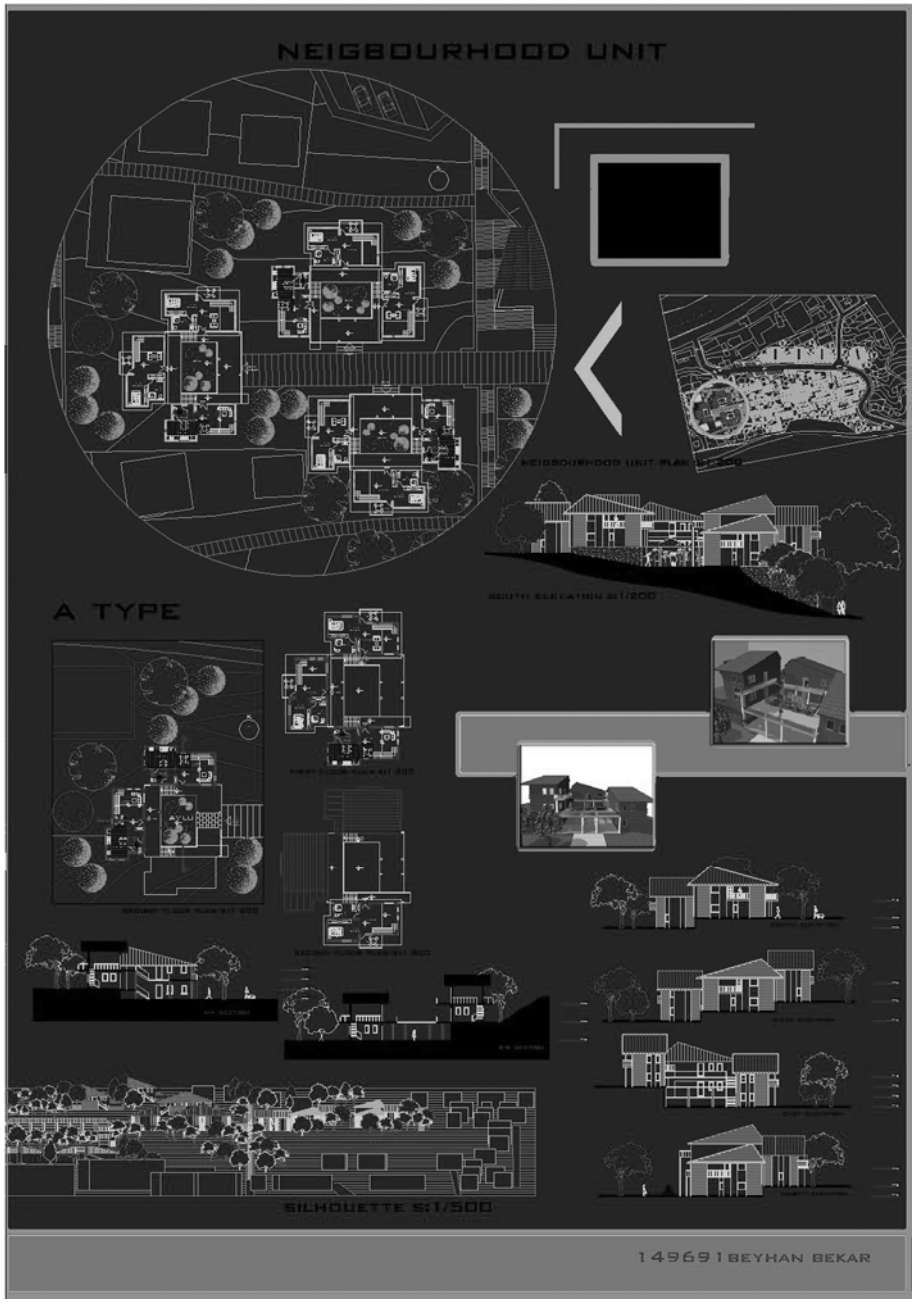
Başar KARİP


A SYNRECTIC HOUSING IN SKENDRIJA, SARAJEVO
...and NEIGBURHOOD UNIT
CAR PARK
NEIGBOURHOOD UNITS PLAN
SCALE:1/200
Most houses have at least two storeys. The upper storey is the living area and has the to suit plan layout. The ground floor generally has a high, solid stone wall ,almost like a fortification. The upper floor extends over the street with projections.
SECTION K-K
SCALE:1/200
The basic system of construction is the timber frame with infilling material or the lathe and plaster.All these characteristics are the same for all houses, regardlesss of the societal class of their owner. Wealth is only reflected in the number of rooms and the decoration. This house type is like a seal the Turkish culture has stamped wherever it has set foot.The main reason for this recent interest is the recognition of the fact that the traditional housing pattern is rapidly disappearing and losing character as new buildings emerge....
Plan Layout: The most characteristic plan types are those with outer or open sofas, utilizing projections and eyvans... The authentic aspect of these plan types is the independent nature of the room, which instead of being adjacent is separated from the other with the extentions of the sofa, Plan types with central sofas emerge in the later periods....
SECTION H-H
SCALE:1/200
149738 BASAR KARİP PROF.ASS. O.ISKENDER TULUK - RESAERCH ASS. FULYA USTUN

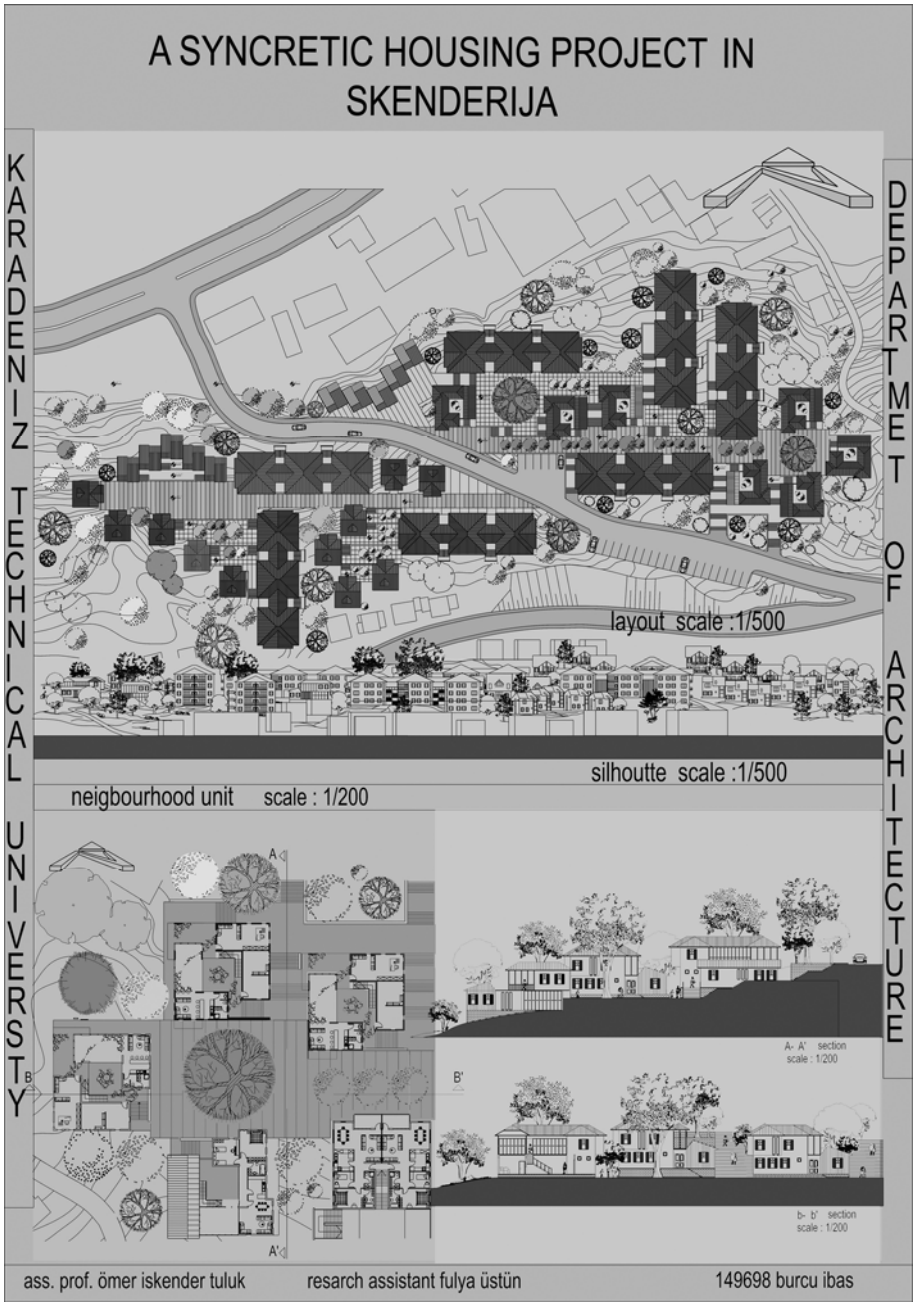
Begüm GÖRGÜN



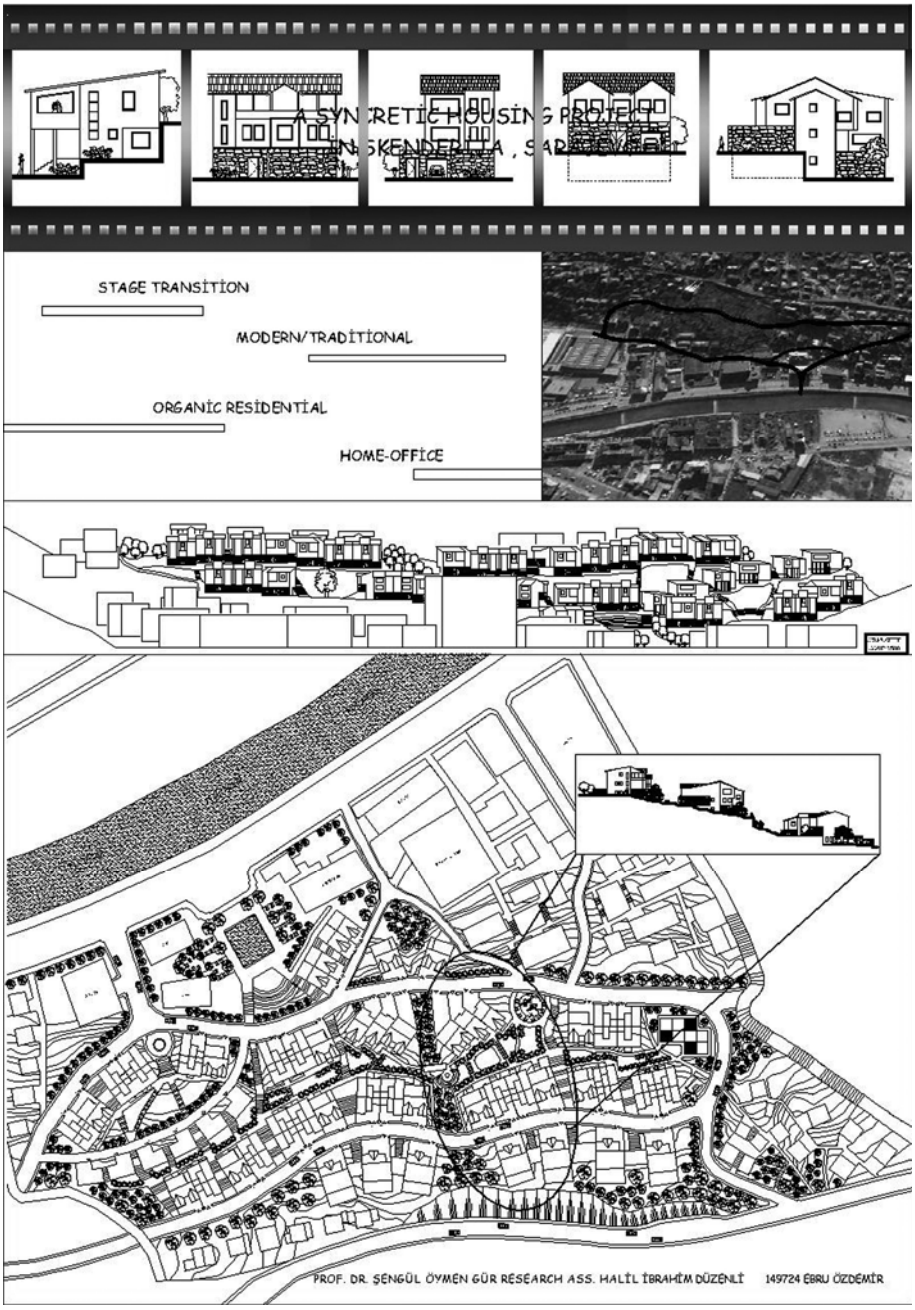
Beyhan BEKAR



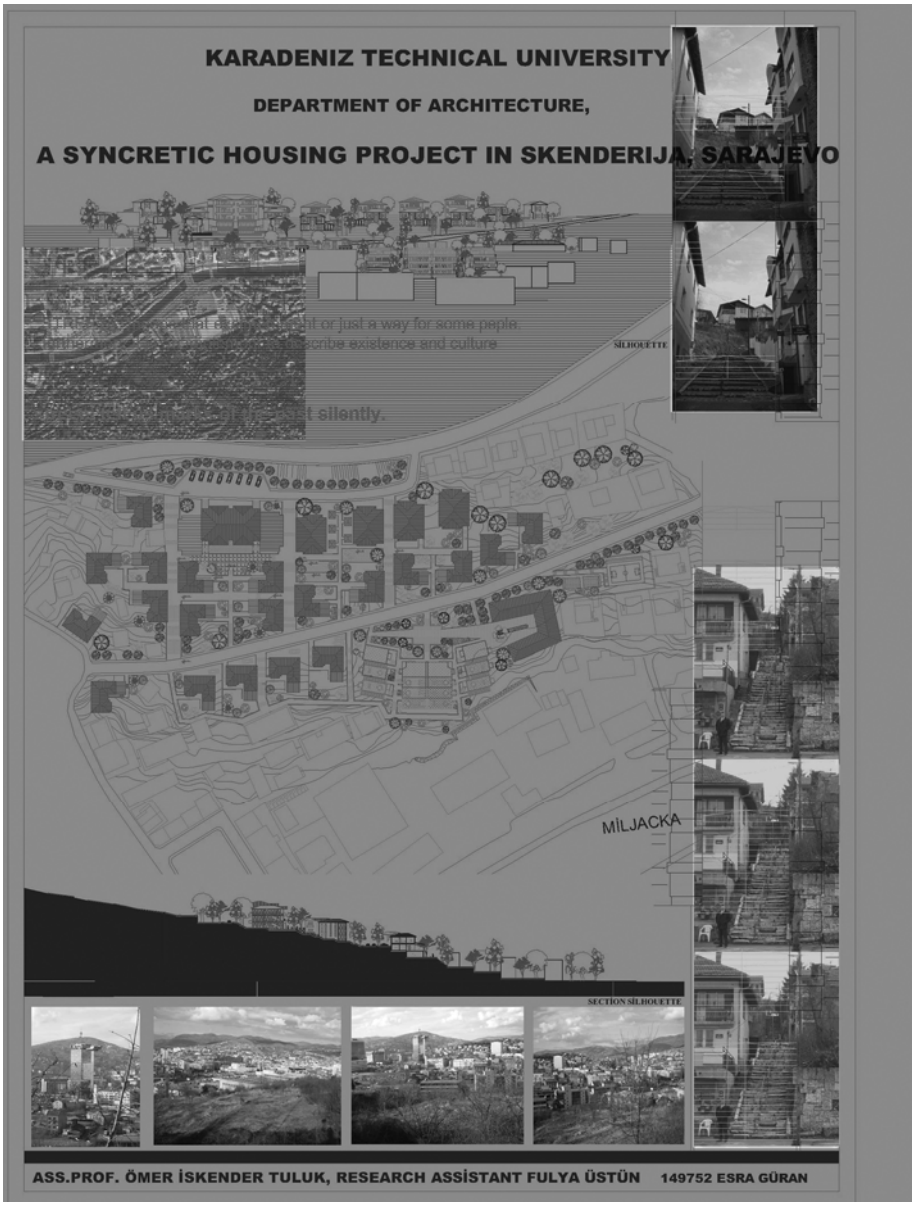
Burcu İBAŞ


A SYNCRETIC HOUSING PROJECT IN SKENDERIJA
KARADENIZ TECHNICAL UNIVERSTY
DEPARTMET OF ARCHITECTURE
layout scale :1/500
silhoutte scale :1/500
neigbourhood unit scale : 1/200
A- A' section scale : 1/200
b- b' section scale : 1/200
ass. prof. ömer iskender tuluk
resarch assistant fulya üstün
149698 burcu ibas

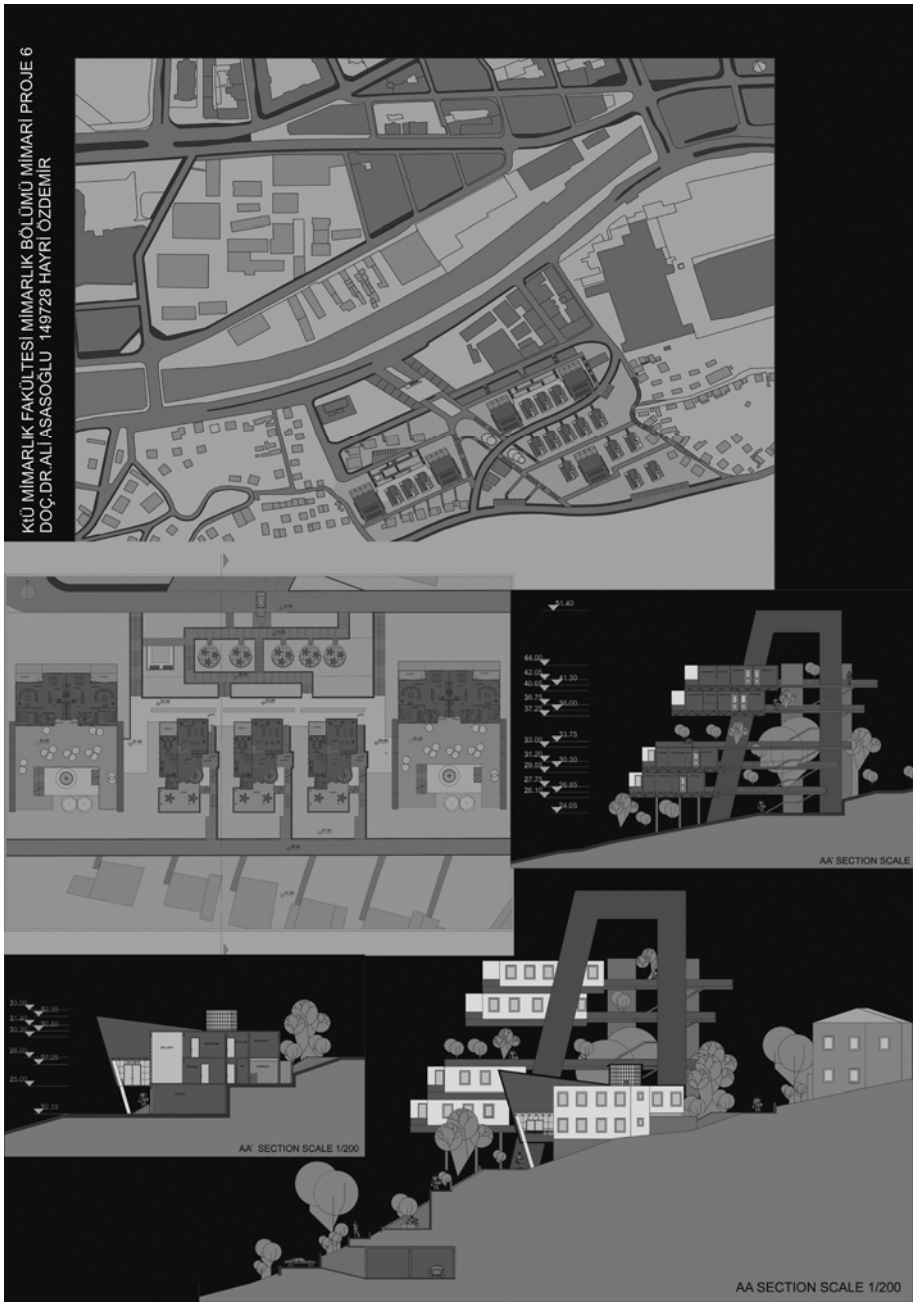
Ebru ÖZDEMİR



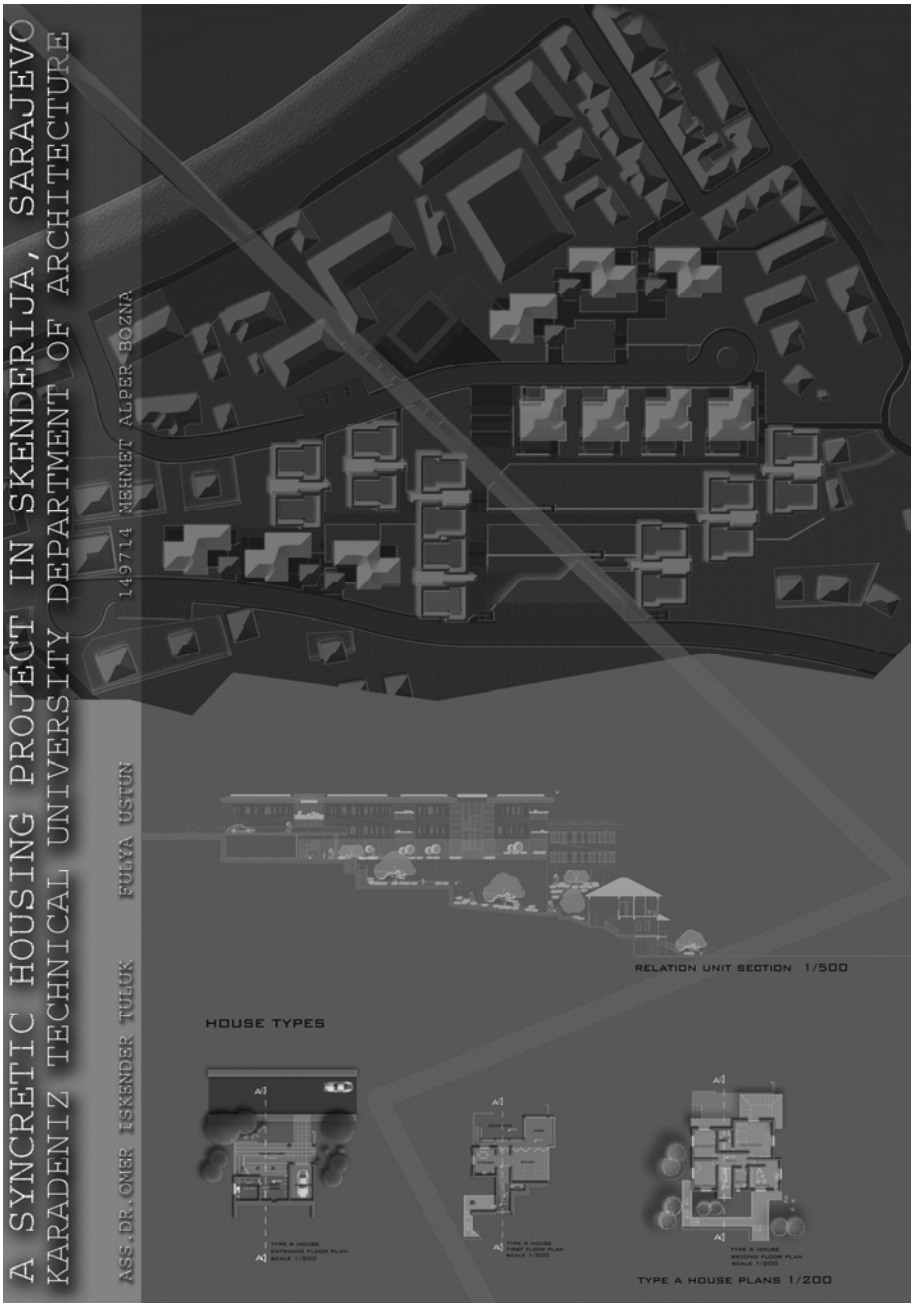
Esra GÜRAN


KARADENIZ TECHNICAL UNIVERSITY
DEPARTMENT OF ARCHITECTURE,
A SYNCRETIC HOUSING PROJECT IN SKENDERIJA, SARAJEVO
SILHOUETTE
MİLJACKA
SECTION SİLHOUETTE
ASS.PROF. ÖMER İSKENDER TULUK, RESEARCH ASSİSTANT FULYA ÜSTÜN 149752 ESRA GÜRAN

Hayri ÖZDEMİR



Mehmet Alper BOZNA



Mehmet İlter ÖZDEN

A SYNCRECTIC HOUSING PROJECT IN SKENDERIJA,SARAJEVO

KARADENIZ TECHNICAL UNIVERSITY

DEPARTMENT OF ARCHITECTURE

DOC. DR. ALI ASASOGLU
ARAŞ. GOR. EVRIM DUZENLI

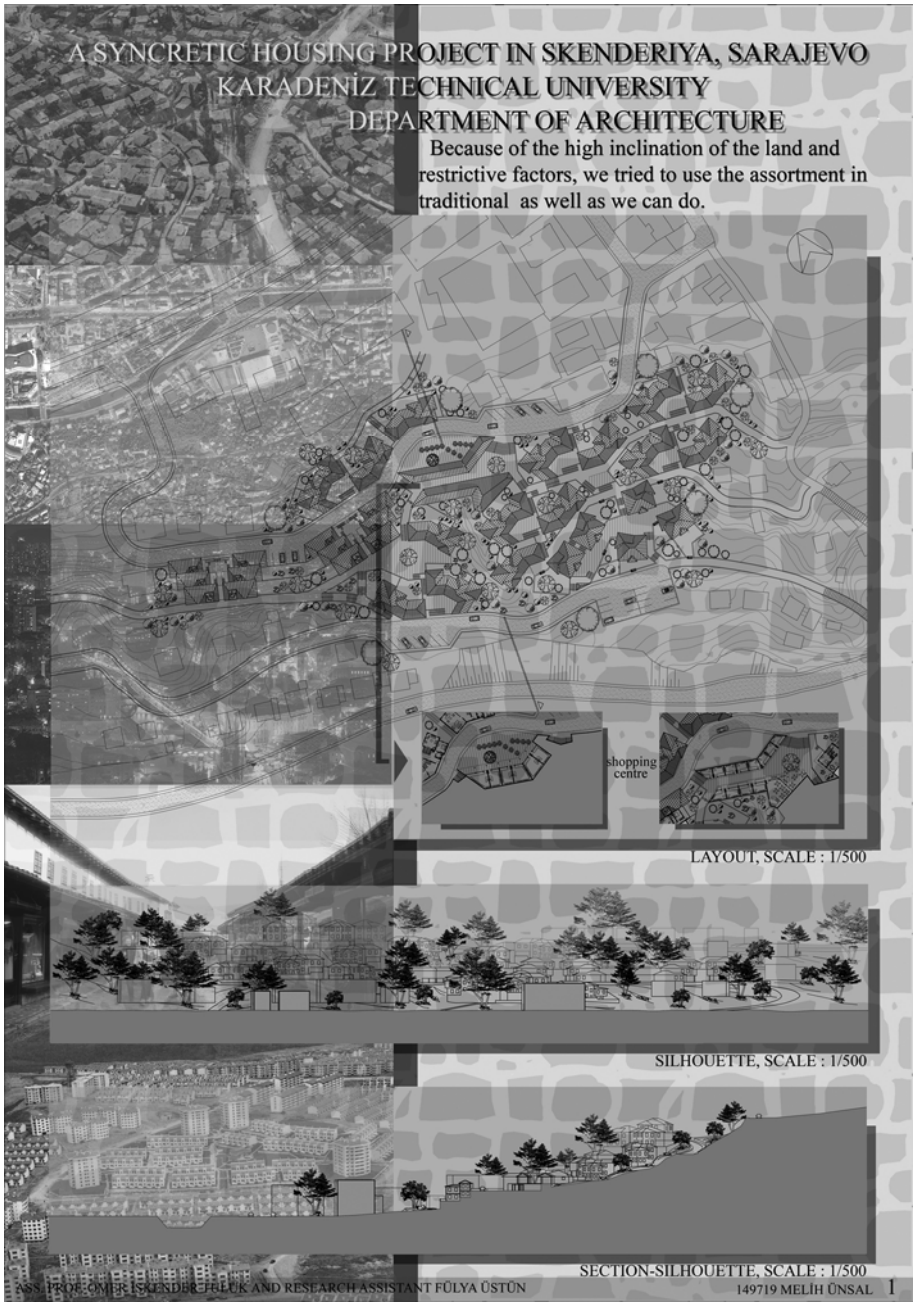
149716
MEHMET ILTER OZDEN

LAYOUT
SCALE:1/500

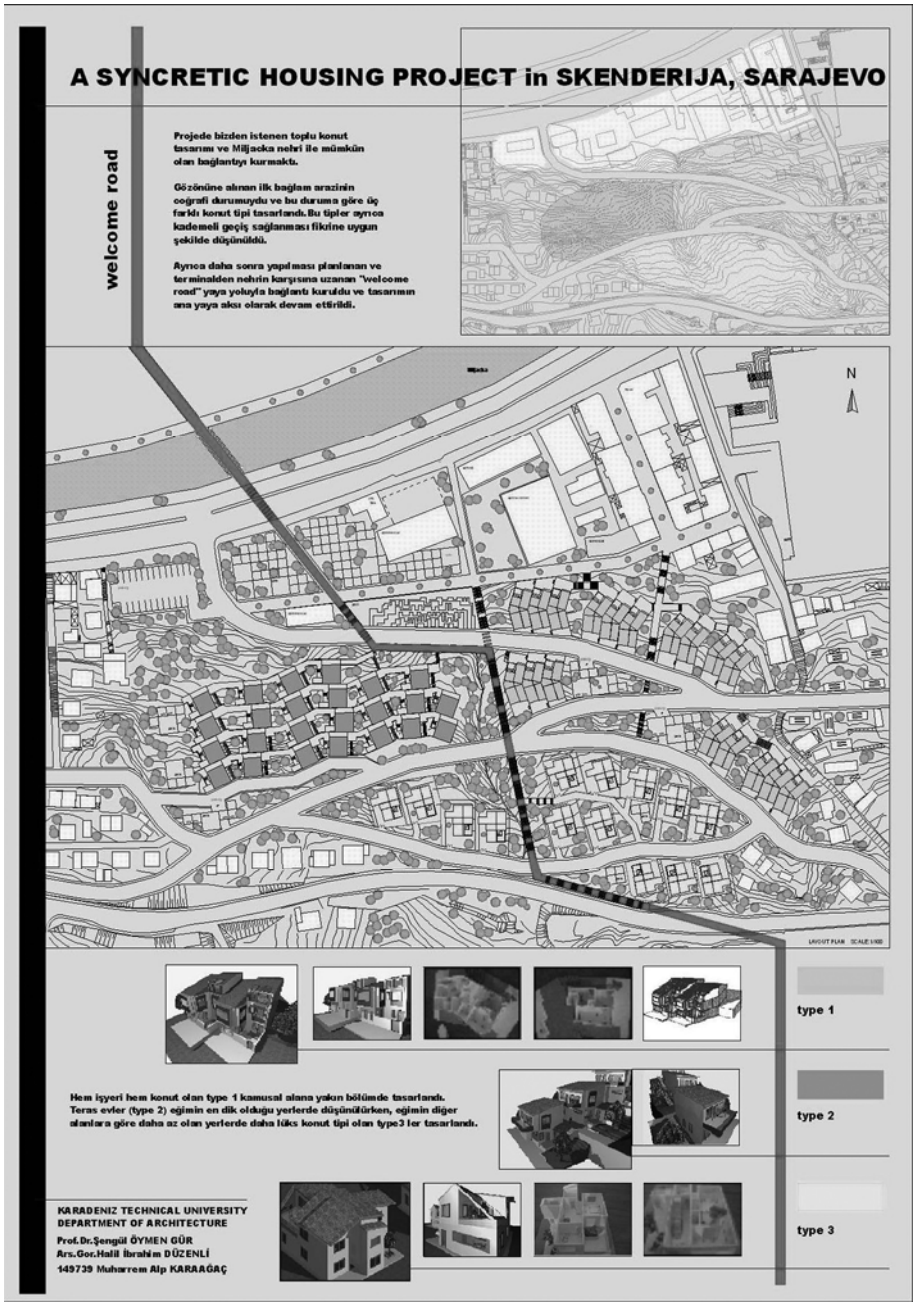
SILHOUETTE
SCALE:1/500

THE ANATHEMA OF THE PROJECT IS TO CONSTITUTE TERRACES AND BY THIS WAY
TO FORM COURTYARDS WITH THE AIM OF
PROVIDING NEIGHBOURHOOD RELATIONSHIPS AND SOCIAL RELATIONSHIPS.
IT'S INSPIRED BY THE POCITEL FOR THIS PROJECT.
THE LOWER PART OF TERRACES ARE UTILIZED FOR AUTOPARK.
SITTING AREAS AND CHILDREN PARKS ARE DESIGNED FOR EVERY COURTYARD.
CROSSING OVER THE TERRACES ARE CONSIDERED AND IS PROVIDED BY STAIRS.
SCENE AND SUNLIGHT DIRECTION HAS BEEN EFFECTIVE FOR PLACING THE HOUSES.
GROUPS OF HAVING DISTINGUISHED INCOME ARE CONSIDERED WHILE THE CREATION OF TYPES.
ALSO, GREEN AREA IS MADE DOMINANT OVER ALL THE WARD FOR THE SEPERATION FROM THE CITY OF CONCRETE
AND THE THE PROVIDING A NATURAL AND A HEALTY PLACE.

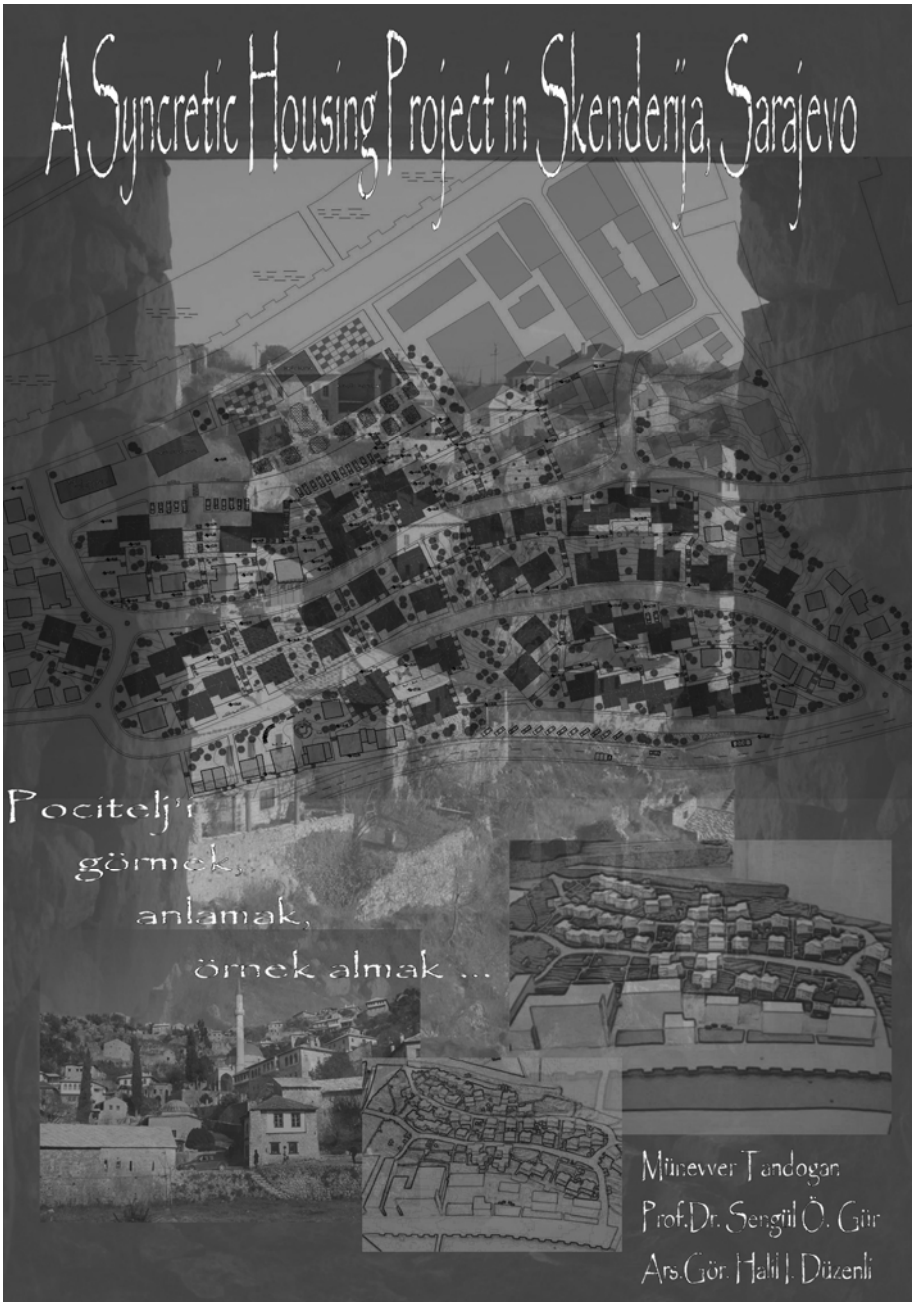
Melih ÜNSAL


A SYNCRETIC HOUSING PROJECT IN SKENDERIYA, SARAJEVO
KARADENİZ TECHNICAL UNIVERSITY
DEPARTMENT OF ARCHITECTURE
Because of the high inclination of the land and restrictive factors, we tried to use the assortment in traditional as well as we can do.
shopping centre
LAYOUT, SCALE : 1/500
SILHOUETTE, SCALE : 1/500
SECTION-SILHOUETTE, SCALE : 1/500
ASS. PROF. OMER ISKENDER TELCK AND RESEARCH ASSISTANT FÜLYA ÜSTÜN
149719 MELİH ÜNSAL 1

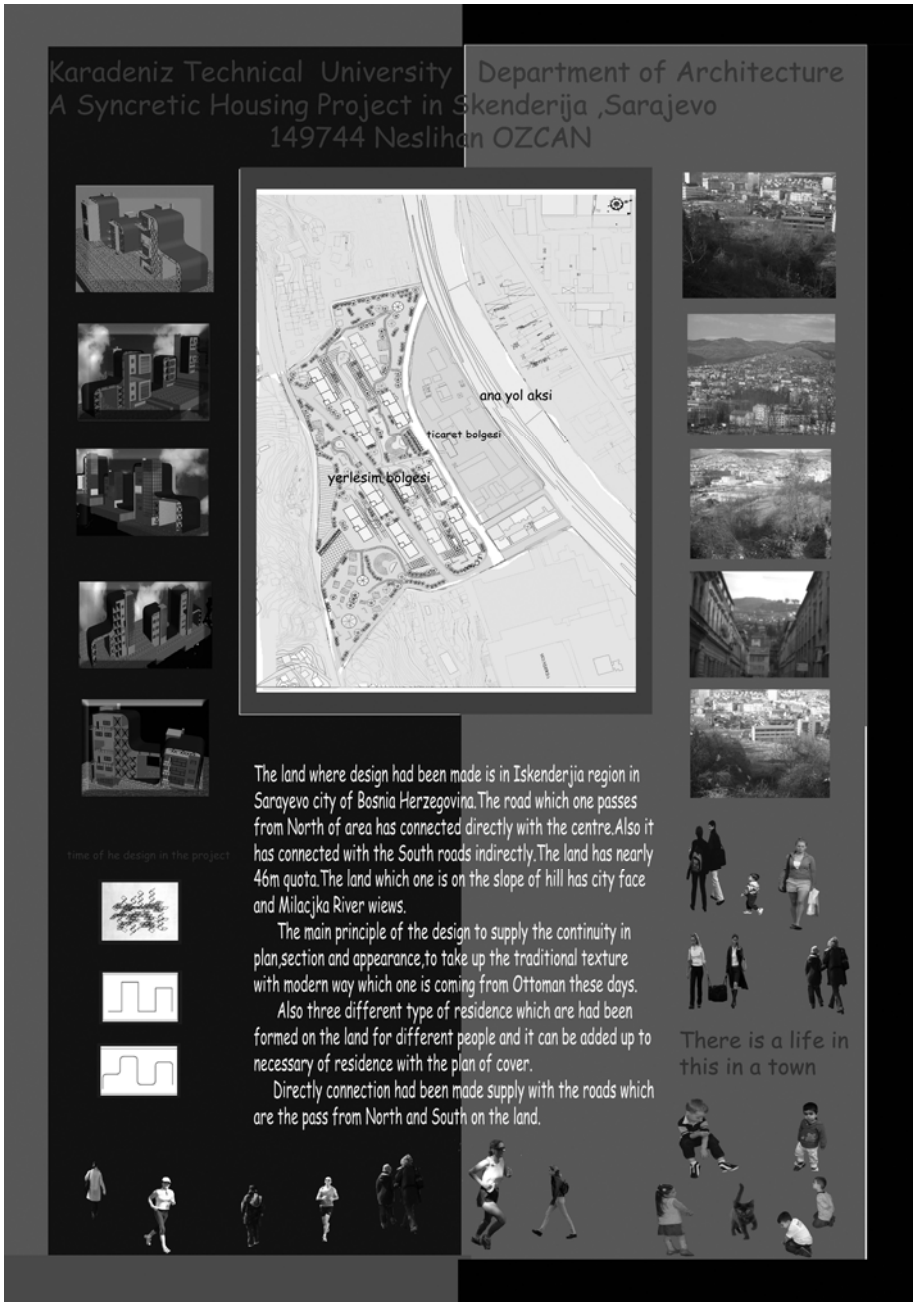
Muharrem Alp KARAAĞAÇ



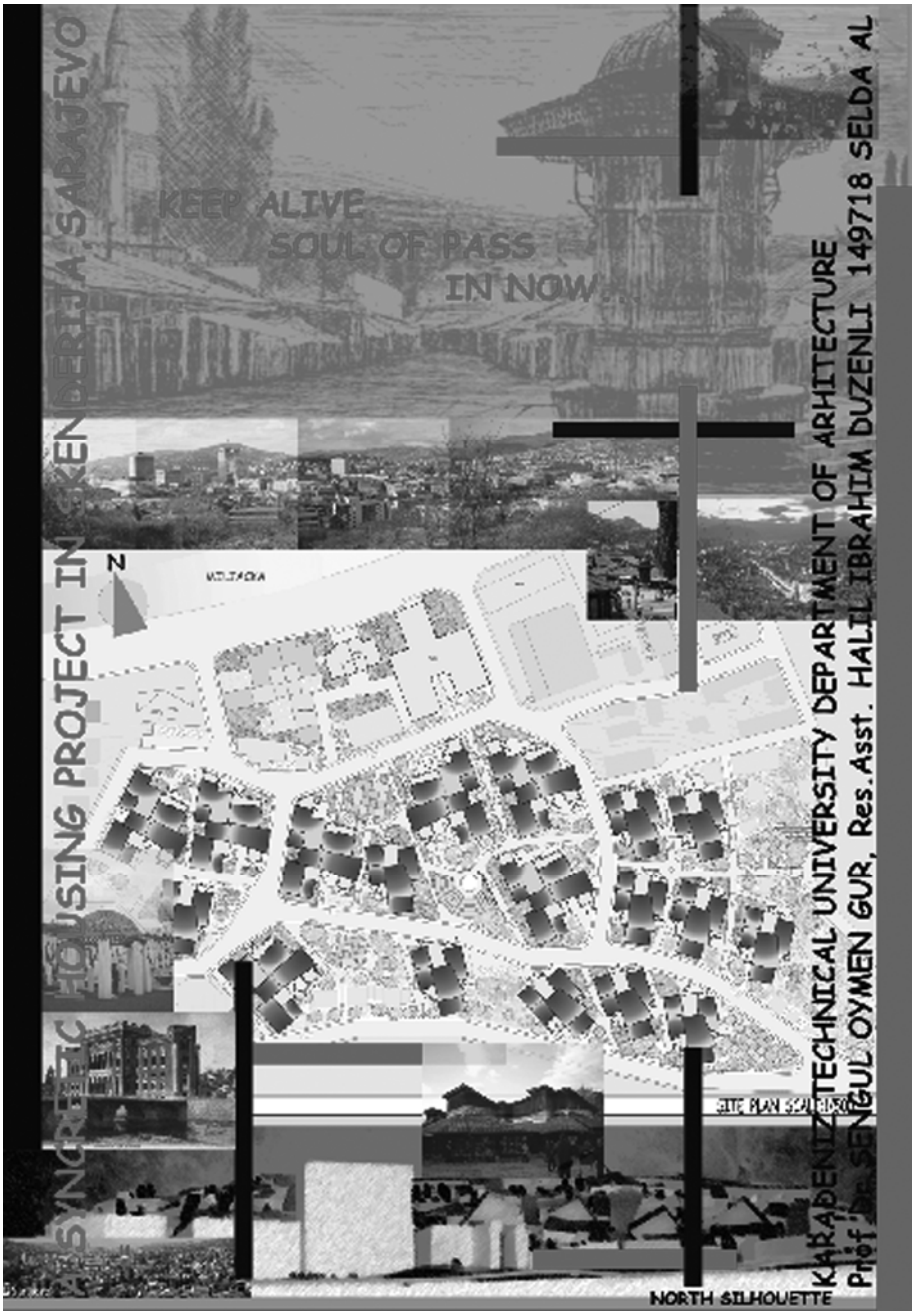
Münevver TANDOĞAN



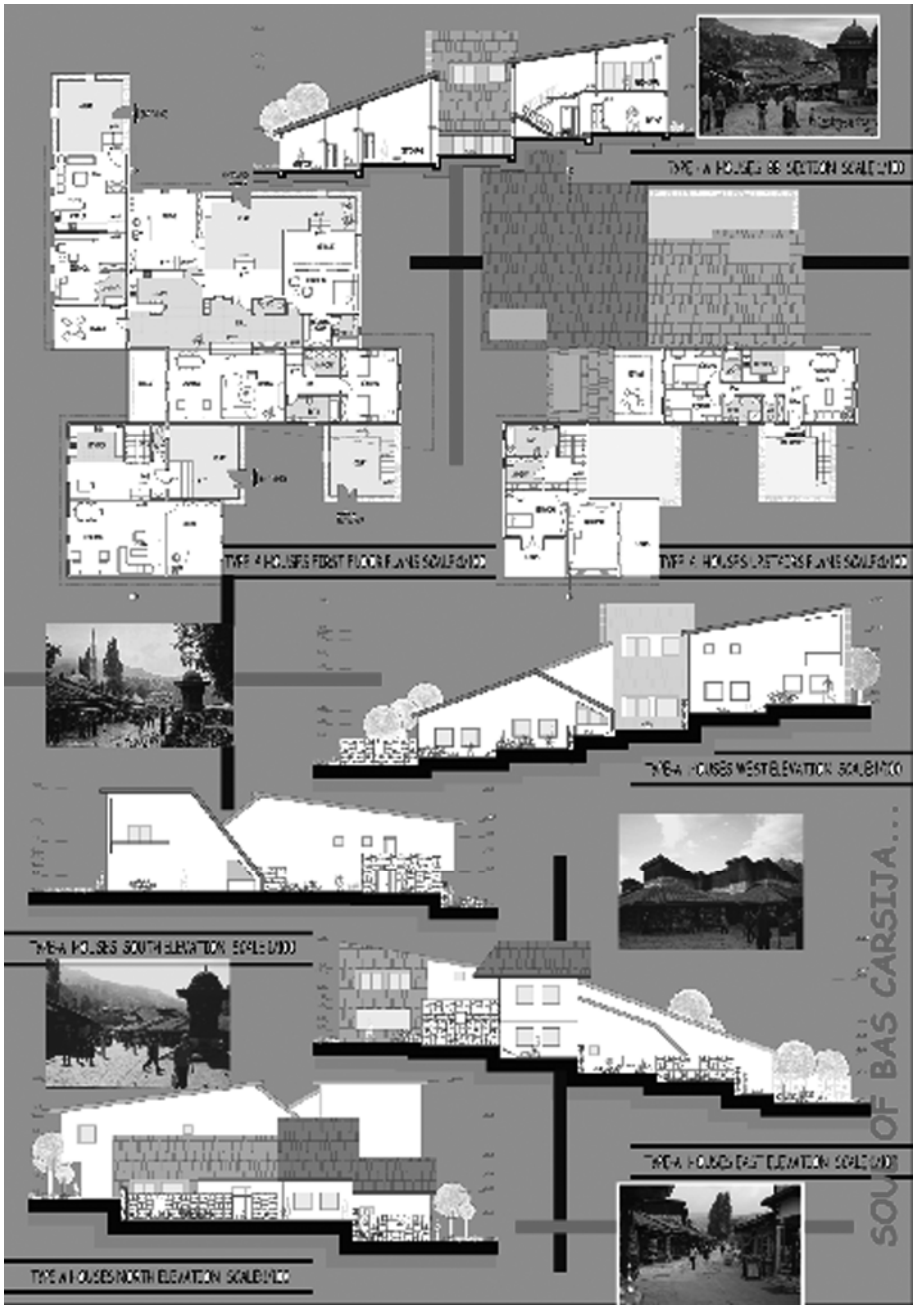
Neslihan ÖZCAN



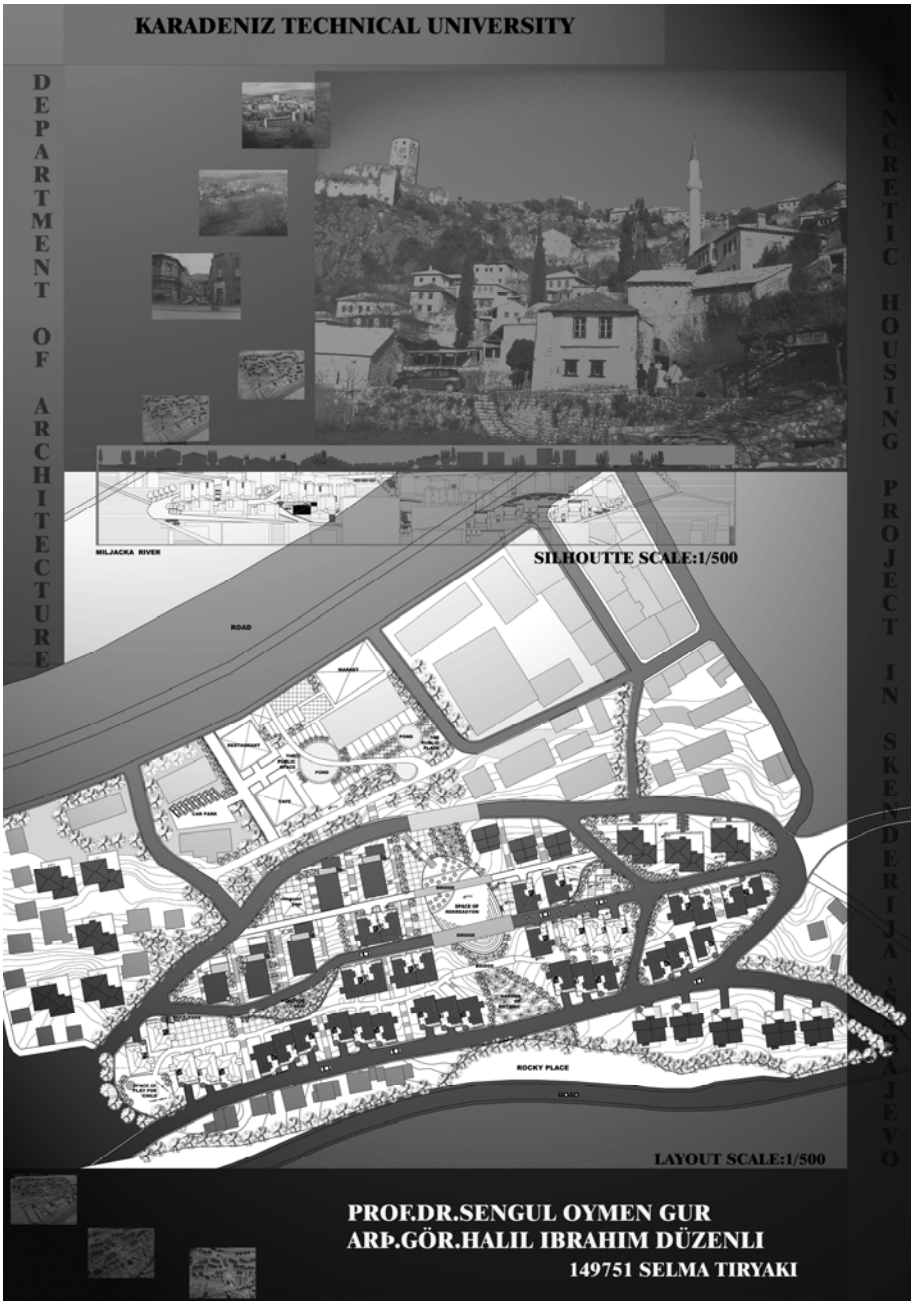
Selda AL


KEEP ALIVE
SOUL OF PASS
IN NOW
N
NORTH SILHOUETTE
KARADENIZ TECHNICAL UNIVERSITY DEPARTMENT OF ARHITECTURE
Prof. Dr. SENGUL OYMEN GUR, Res.Asst. HALIL IBRAHIM DUZENLI 149718 SELDA AL

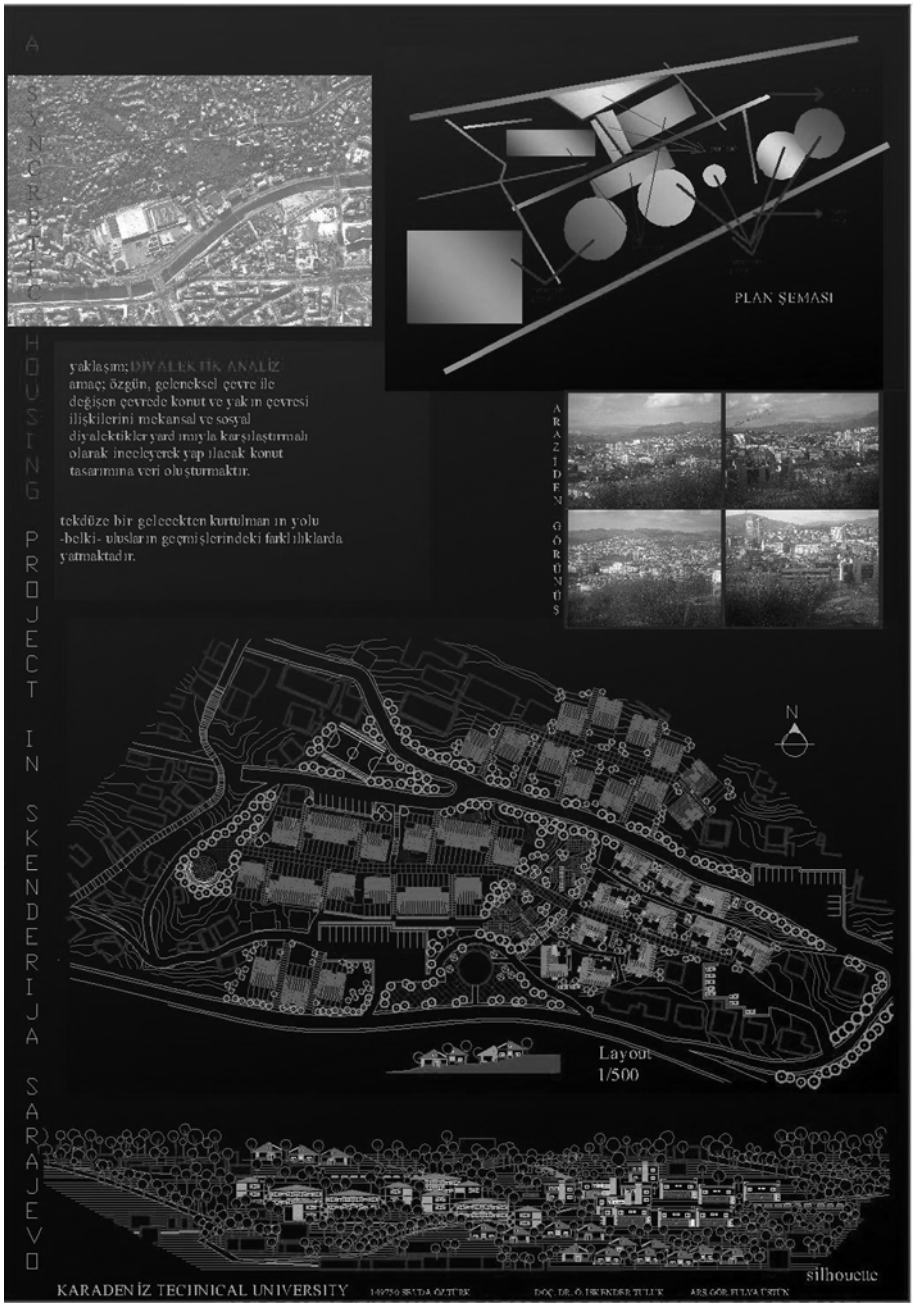
Selda AL



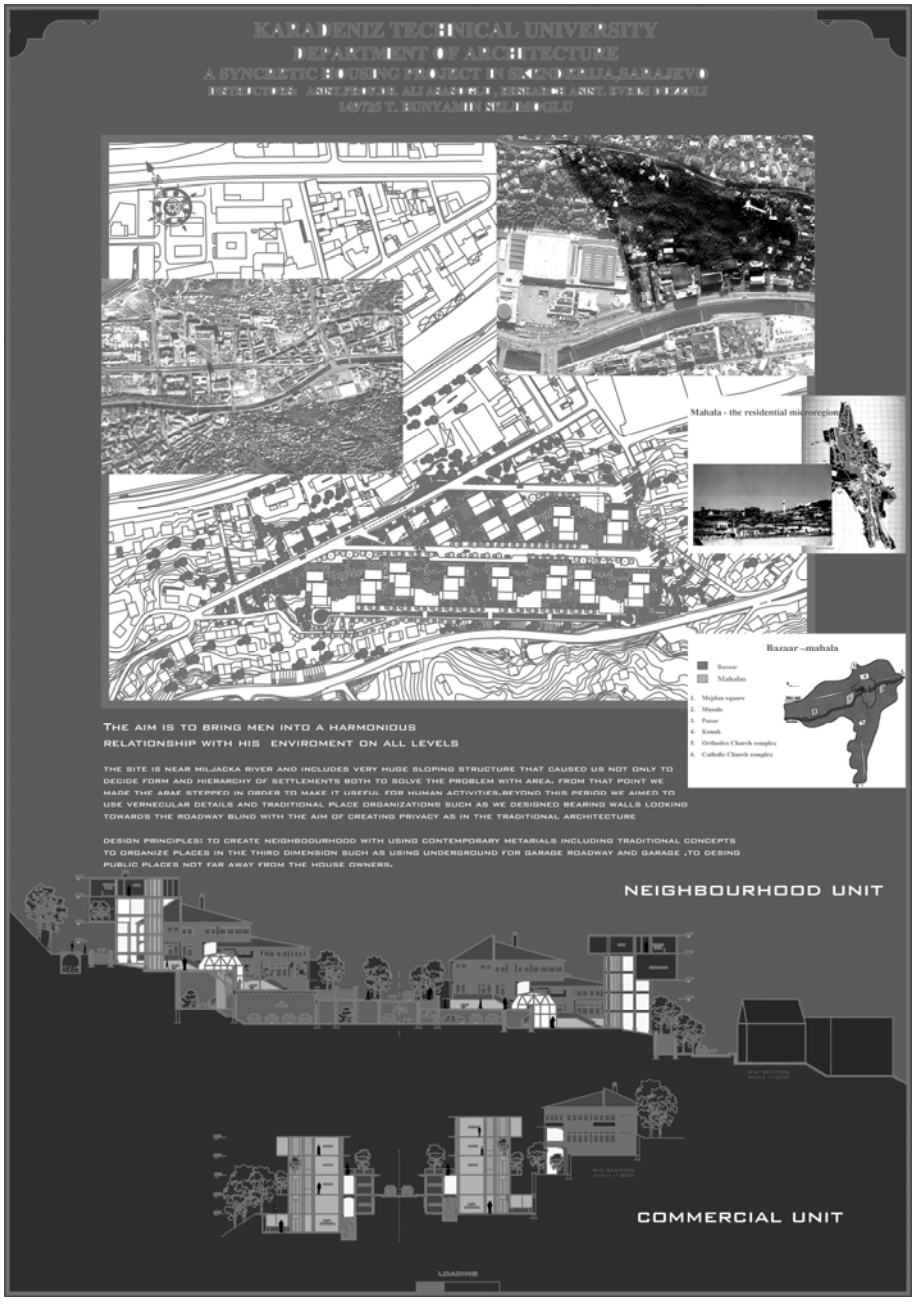
Selma TİRYAKİ



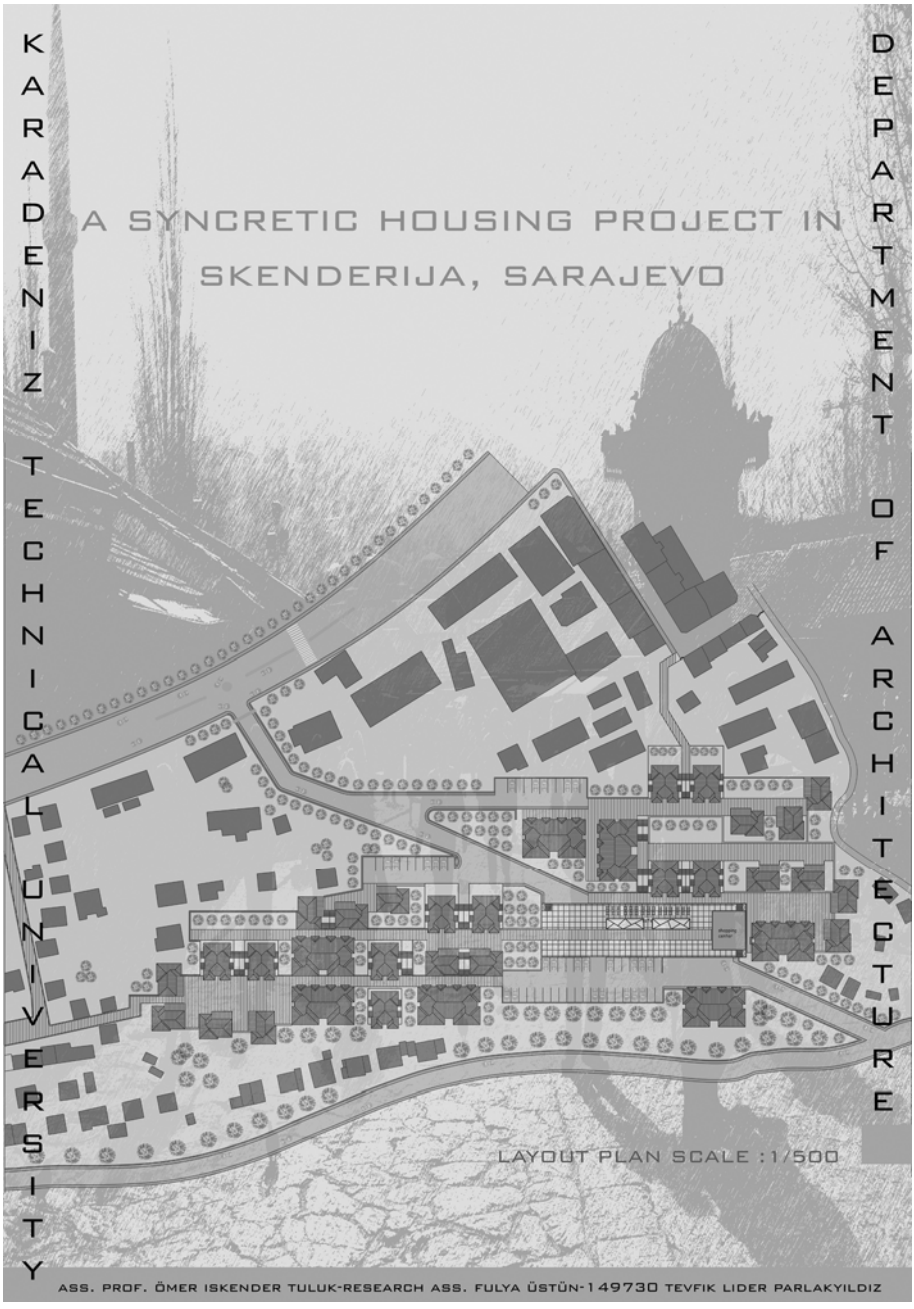
Sevda ÖZTÜRK



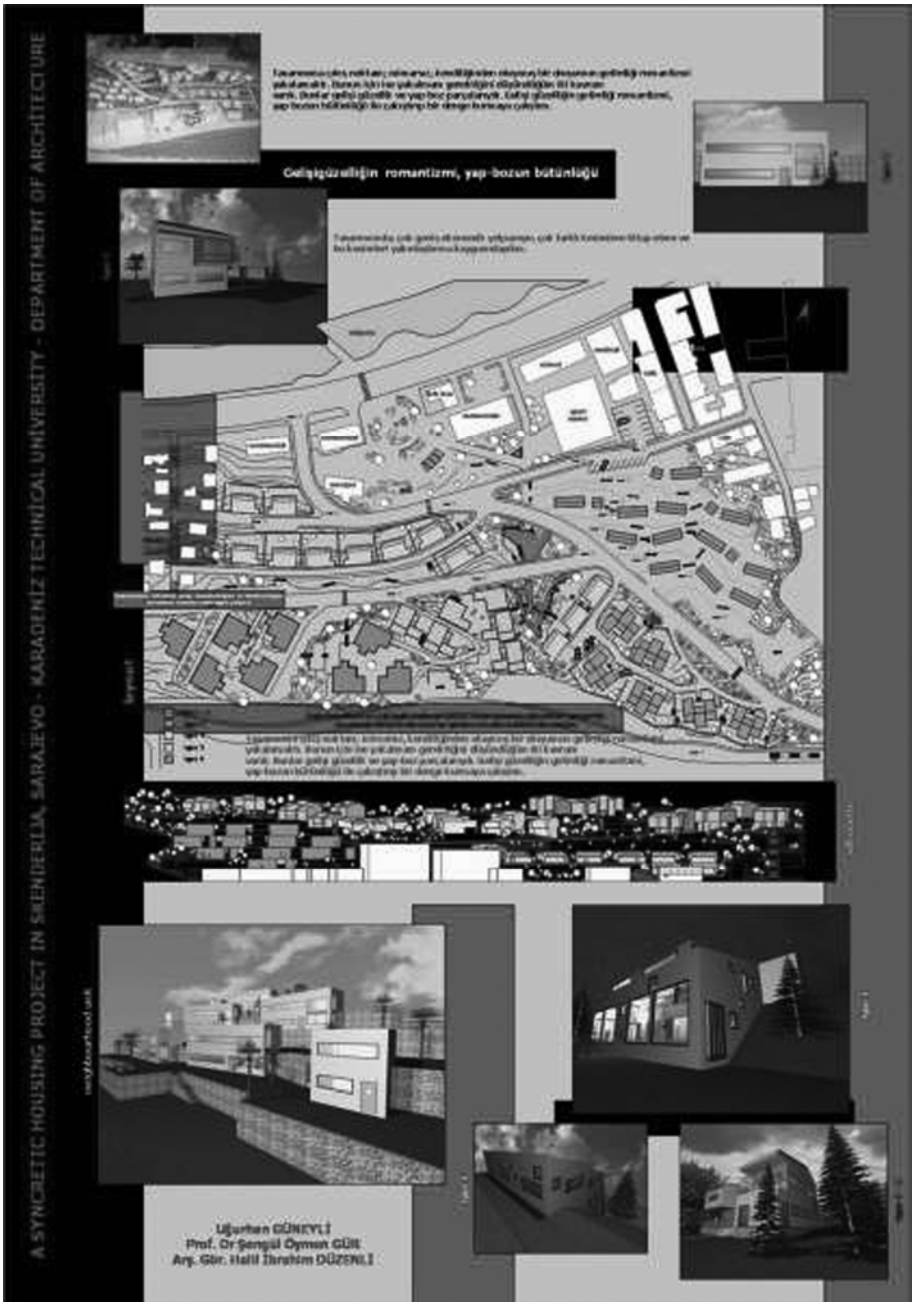
Tahsin Bünyamin SELİMOĞLU



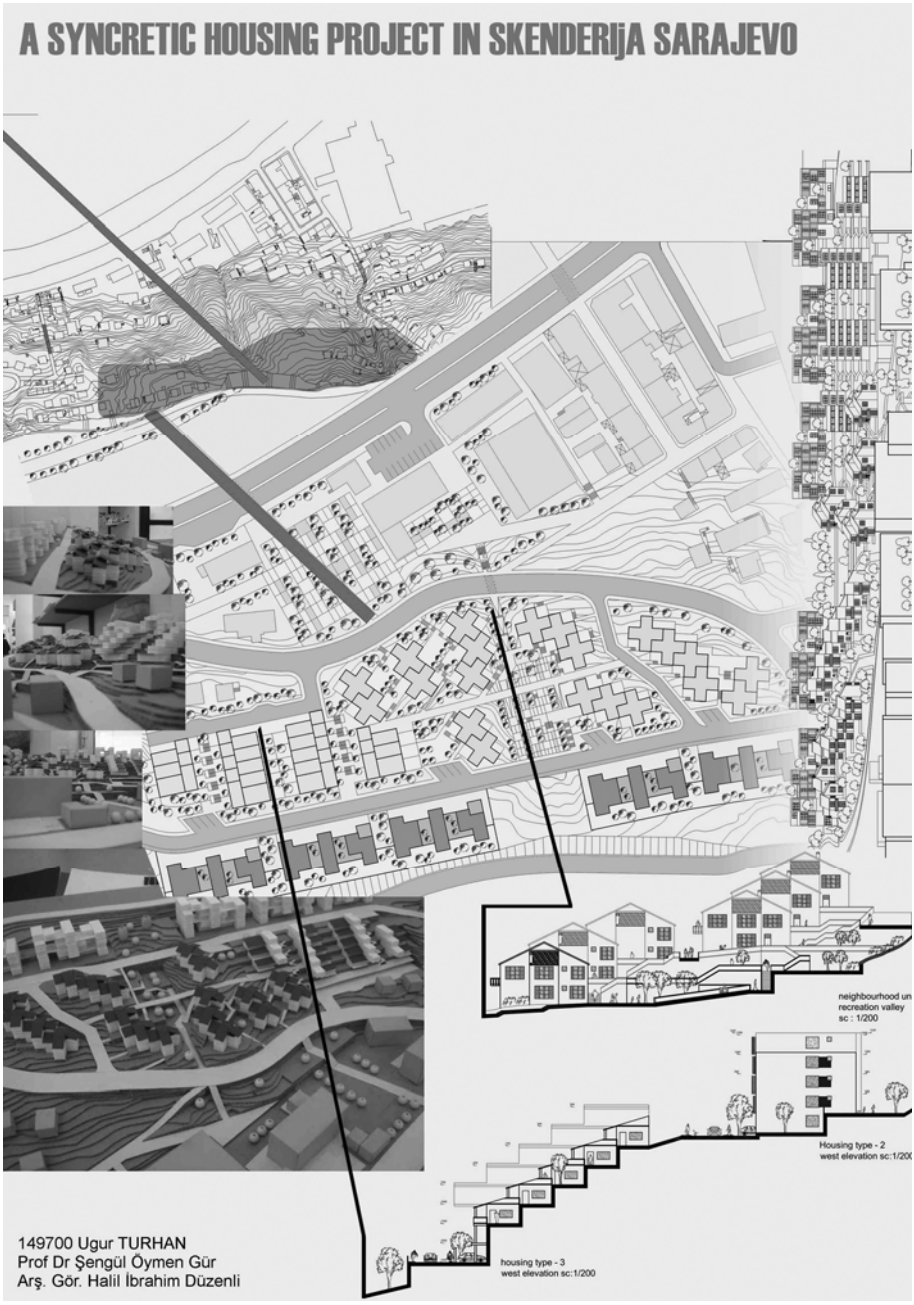
Tevfik Lider PARLAKYILDIZ



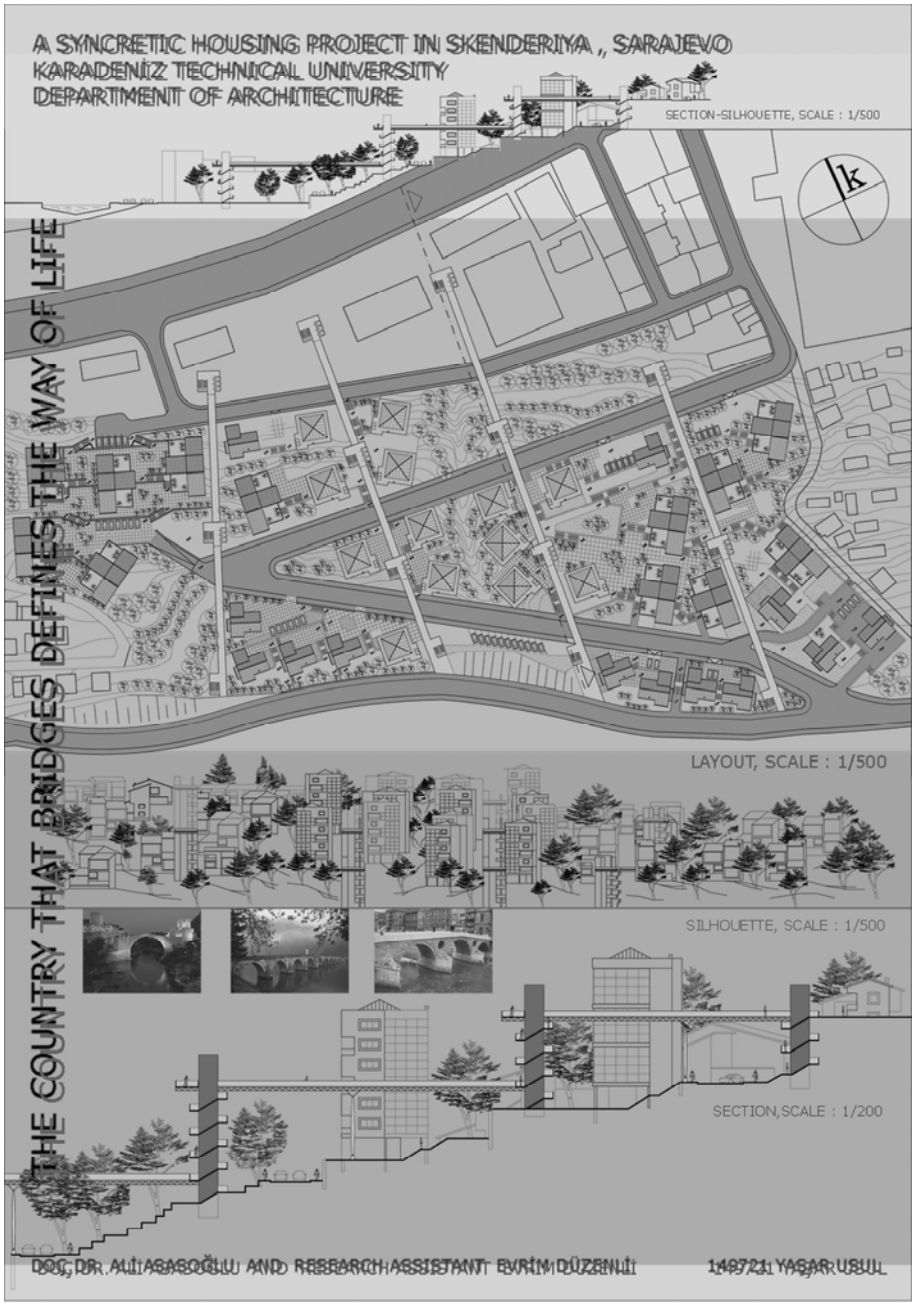
Uğurhan Hilmi GÜNEYLİ



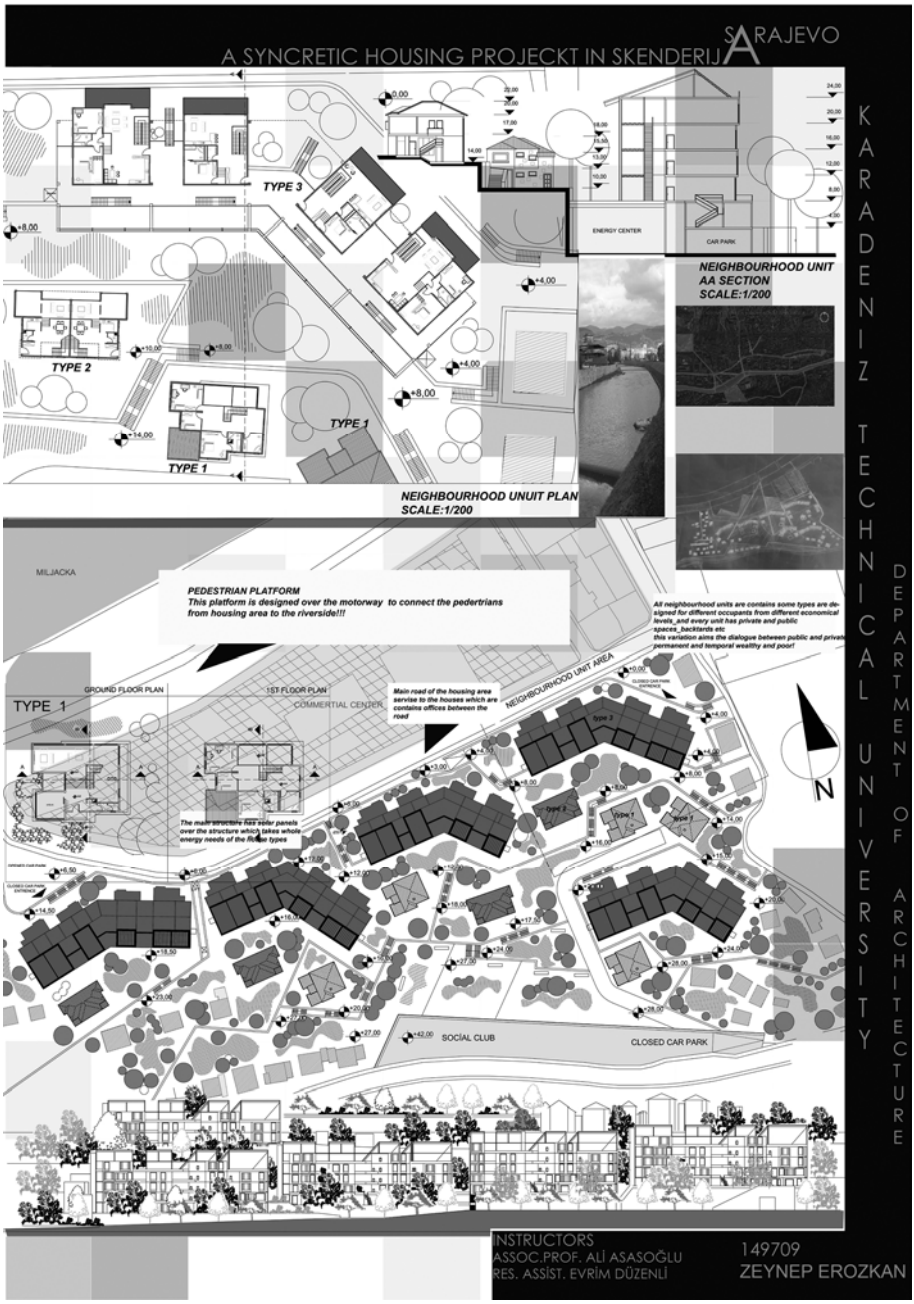
Uğur TURHAN


A SYNCRETIC HOUSING PROJECT IN SKENDERIJA SARAJEVO
neighbourhood un
recreation valley
sc : 1/200
Housing type - 2
west elevation sc:1/20
housing type - 3
west elevation sc:1/200
149700 Ugur TURHAN
Prof Dr Şengül Öymen Gür
Arş. Gör. Halil İbrahim Düzenli

Yaşar USUL


A SYNCRETIC HOUSING PROJECT IN SKENDERIYA , SARAJEVO
KARADENİZ TECHNICAL UNIVERSITY
DEPARTMENT OF ARCHITECTURE
SECTION-SILHOUETTE, SCALE : 1/500
THE COUNTRY THAT BRIDGES DEFINES THE WAY OF LIFE
LAYOUT, SCALE : 1/500
SILHOUETTE, SCALE : 1/500
SECTION,SCALE : 1/200
DOÇ. DR. ALİ ASAROĞLU AND RESEARCH ASSISTANT EVRİM DÜZENLİ
1/497.21 YAŞAR USUL

Zeynep ERÖZKAN



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LIST OF CONRIBUTORS

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