ST. PETERSBURG | 2018

ICNTAD CONFERENCE

4th INTERNATIONAL CONFERENCE ON NEW TRENDS IN ARCHITECTURE AND INTERIOR DESIGN

4th International Conference on New Trends in Architecture and Interior Design

Proceedings Book

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4th INTERNATIONAL CONFERENCE ON NEW TRENDS IN ARCHITECTURE AND INTERIOR DESIGN

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Dear Colleagues,

I am honored to invite and send you this call for papers on behalf of Congress Organization Board of ***"4th International Conference on New Trends in Architecture and Interior Design"***, to be held at Saint Petersburg, Russia between May 11-13, 2018 bringing a new and professional point of view to Academic Conference organizations.

A limited number of Papers with the below mentioned topics will be accepted for our conference:

- Criticism of sustainability / Unsustainability
- Philosophy of architecture / Architecture without philosophy
- Professional settlement of interior architecture
- Spatial organizations by furniture design
- Intangible skin of space: lighting design
- Tangible skin of space: material
- Ideology in architecture / Ideology of architecture
- Spaces without space: 3D virtual spaces
- Math of space: spatial analysis and parametric design
- Artistic value of space
- Architecture without architect
- Cultural codes in architecture
- Flexibility in design
- New trends in spatial design education

One of the successful papers presented at the 4th ICNTAD 2018 will be chosen by the reviewer committee to be published on Beykent University Journal of Science And Engineering BUJSE (ISSN: 1307-3818) after necessary revisions pointed out by the reviewer committee are met. Main but not limited criteria for this selection will be the originality of the paper, academic quality of the study, suitability of the methodology used, presented results' and conclusion's potential to cause an interdisciplinary discussion.

The most distinctive feature of 4th ICNTAD'18 from other conference organizations is that the academicians working interdisciplinary can also attend to presentations performed in different specialty fields and they will also have the opportunity to meet with other academicians coming from various parts of the world. On the same dates, there will also be International Conferences upon the disciplines of Chemistry, Statistics, Econometrics and Physics will be also held in the same venue. While attending 4th ICNTAD'18, participants are most welcome to attend other conferences

We kindly wait for your attendance to our conference to be held on May 11 – 13, 2018, with a hope to realize a satisfactory conference with its social activities as well as the scientific ones and leaving a trace on your memories.

Regards

Prof. Dr. Burçin Cem ARABACIOĞLU

10 MAY 2018 THURSDAY

18:30 – 21:00 : REGISTRATION

11 MAY 2018 FRIDAY

08:30 – 17:00 : REGISTRATION

MAIN HALL

09:00 – 09:30 : GRAND OPENING CEREMONY

09:30 – 09:40	**B R E AK**

HALL 1

09:40 – 10:40
Welcome Speech : Prof. Dr. Burcin Cem Arabacıoglu / Mimar Sinan Fine Arts University
Conference Chair

KEYNOTE SPEAKER :Prof. Dr. Fedor V. PEROV / St. Petersburg State University
Speech Title : *Trends in the development of historic cities taking into account the identification features of the existing urban environment*

10:40 – 11:00	**C O F F E E / T E A B R E AK**

HALL 1 / SESSION A

SESSION CHAIR	**Prof. Dr. Fedor V. PEROV**	
TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR
11:00 – 11:20	**AN OVERLOOKED ISSUE, USER: "INTEGRATED HEALTH CAMPUSES/CITY HOSPITALS" OF PUBLIC PRIVATE PARTNERSHIP**	**Sezin Tanriover**
11:20 – 11:40	**THE IMPACTS OF THE BUILDING AND STREET INTERFACE RELATIONSHIP ON URBAN SPACE QUALITY**	**Melike Orhan**
11:40 – 12:00	**MODULARITY AS A TOOL FOR FLEXIBILITY IN DESIGN: ANALYSIS ON A POP-UP OFFICE**	**Dilsa Gunaydin** - Ezgi Haliloglu Kahraman
12:00 – 12:20	**THE POWER OF PROPAGANDA: NAZI ARCHITECTURE**	**Fulay Uysal Bilge**

12:20 – 12:40	**PERCEPTIONS ABOUT THE PROFESSION OF INTERIOR ARCHITECTURE BEFORE AND AFTER EDUCATION: A CASE STUDY IN ANTALYA, TURKEY**	**Shirin Izadpanah**

13:00 – 14:00	**LUNCH**

14:10 – 16:00	**TECHNICAL TOUR**

17:00 – 17:45	**LIVE CONCERT by CONFERENCE PARTICIPANTS**

17:45 – 19:30	**HOTEL DEPARTURE FOR BOAT TOUR (Incl into Registration Fee)**

12 MAY 2018 SATURDAY

08:30 – 17:00 : REGISTRATION

HALL 1 / SESSION B

SESSION CHAIR	**Assoc. Prof. Dr. Damla ALTUNCU**	
TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR
09:20 – 09:40	**AN ESSAY ON INTERIOR DESIGN FOR THE MONTESSORI PRE-SCHOOL EDUCATION SYSTEM**	**Eda Olcer**
09:40 – 10:00	**PRE-SCHOOL DESIGN IN THE INTERACTION OF USERS AND DESIGNERS**	**Elif Ozturk -** Sinem Tapki - Aysegul Koc Unlusoy
10:00 – 10:20	**PERCEPTION OF SPACE CHANGING WITH CULTURAL CODES**	**Sinem Tapki** - Elif Ozturk - Aysegul Koc Unlusoy
10:20 – 10:40	**THE EXPERIENCE OF SPACE IN VIRTUAL REALITY AND AUGMENTED REALITY**	**Fatih Us**

10:40 – 11:00	**C O F F E E / T E A B R E AK**

HALL 1 / SESSION C

SESSION CHAIR	**Prof. Dr. Burçin Cem ARABACIOĞLU**	
TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR

11:00 – 11:20	**SHOPPING CENTERS IN THE CONTEXT OF URBAN INTERIORS**	**Didem Erten Bilgic**
11:20 – 11:40	**PREFERENCES AND PLACEMENT ON LIVING ROOM & DINING ROOM FURNITURE: A CASE STUDY AT SAKLI KENT MASS HOUSE FAMAGUSTA, NORTH CYPRUS**	**Ceyhun Uludag - Kamil Guley**
11:40 – 12:00	**BEDROOM AS PUBLIC SPACE: QUESTIONING THE MARKETING STRATEGIES AND THE SOCIAL MEDIA THREATENING THE INDIVIDUAL FREEDOM**	**Naime Esra Akin -** Derya Adiguzel Ozbek
12:00 – 12:20	**CONCEPT DEVELOPMENT IN THE INTERIOR DESIGN STUDIO**	**Begum Ercevik Sonmez**
12:20 – 12:40	**FURNITURE AND INTERIOR STRUCTURES AS SIGNIFIERS OF SPATIAL IDENTITY. CONTEMPORARY INTERPRETATIONS IN STUDENT DESIGN PROJECTS.**	**Anna Efstathiou**

13:00 – 14:00	**LUNCH**

HALL 2 / SESSION D

SESSION CHAIR	**Assoc. Prof. Dr. Fatih US**	
TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR
14:00 – 14:20	**ISTIKLAL AVENUE'S INTANGIBLE DIMENSIONS RELATED TO CULTURAL MEMORY**	**Sedef Sav** - Elif Gelmez
14:20 – 14:40	**THE IMPORTANCE OF REHABILITATION IN BALAT**	**Vehbi Tosun** - Rana Kutlu - Arzu Ercetin
14:40 – 15:00	**INTEGRATION OF BIOMIMICRY DESIGN CRITERIA AND THE GREEN BUILDING CERTIFICATION SYSTEMS: LEED AS A CASE STUDY**	**Aliye Rahsan Karabetca**
15:00 – 15:20	**INTERDISCIPLINARY APPROACHES IN THE FIELD OF ARCHITECTURE: BIOMIMICRY**	**Saadet Aytis -** Aliye Rahsan Karabetca
15:20 – 15:40	**FROM DESIGN TO SPACE ORGANIZATION A PROCESS ASSESSMENT**	Tolga Erdem - **Arzu Erçetin**
15:40 – 16:00	**A MAZE OR A CAMPUS BUILDING: A FIELD STUDY IN A MIX-PROGRAMMED MONOBLOCK UNIVERSITY BUILDING**	**Gokhan Kiyici -** Banu Yavuz Pelvan

16:00 – 16:20	**C O F F E E / T E A B R E AK**

HALL 1 / SESSION E

SESSION CHAIR	**Assoc. Prof. Dr. Didem Erten Bilgic**	
TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR
16:20 – 16:40	**ASSESSMENT AND CONSIDERATIONS IN NEW STADIUM PLANNING**	Arzu Ercetin - **Vehbi Tosun** - Rana Kutlu
16:40 – 17:00	**EVALUATION OF MULTIPLE DESIGN CRITERIA IN INTERIOR DESIGN PROJECTS/ A CASE OF MEKÂN 2017 COMPETITION**	Rana Kutlu - **Arzu Ercetin** - Gulay Usta
17:00 – 17:20	**ENERGY EFFICIENT DESIGN APPROACH IN ARCHITECTURAL DESIGN EDUCATION**	**Munevver Daggulu -** Ibrahim Basak Daggulu
17:20 – 17:40	**FROM TRADITIONAL ARCHITECTURE TO SUSTAINABLE ARCHITECTURE: THE CHANGE IN THE UNDERSTANDING OF RESPECT FOR NATURE OVER TIME**	**Pelin Kaya –** Didem Tuncel
17:40 – 18:00	**ADAPTIVE REUSE AS A DESIGN APPROACH "INDUSTRIAL STRUCTURES"**	**Didem Telli** – Kunter Manisa
18:00 – 18:20	**AKSARAY AZMI MILLI FLOUR FACTORY: A CASE STUDY OF INDUSTRIAL HERITAGE MUSEUMS**	**Elif Tektas** – Esra Nartkaya – Onder Aydin

13 MAY 2018 SUNDAY

08:30 – 17:00 : REGISTRATION

HALL 1 / SESSION F

SESSION CHAIR	**Assoc. Prof. Dr. Fatih US**	
TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR
09:20 – 09:40	**EVALUATION OF VISUAL LANDSCAPE QUALITY IN THE HISTORICAL CITY CENTER OF EDİRNE**	**Rukiye Duygu Cay** - Fatma Asilioglu
09:40 – 10:00	**COMMUNITY GARDENS**	**Fatma Asilioglu** - Rukiye Duygu Cay
10:00 – 10:20	**PATIENT SATISFACTION AS AN INTERIOR QUALITY INDICATOR IN TWO ONCOLOGY**	**Esra Bayir**

	UNITS IN TURKEY	
10:20 – 10:40	**PLEASE "DON'T" TAKE A SEAT OR RECONSIDERATION OF SITTING ERGONOMICS IN DESIGN**	**Can Ozcan** - Mine Ovacik

10:40 – 11:00	**C O F F E E / T E A B R E AK**

HALL 1 / SESSION G

SESSION CHAIR	**Prof. Dr. Burçin Cem ARABACIOĞLU**	
TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR
11:00 – 11:20	**A CRITICAL VIEW OF 20TH CENTURY ARCHITECTURE IN THE CONTEXT OF F. CHOAY'S IDEOLOGY**	**Hulya Coskun**
11:20 – 11:40	**RE-USE AND LIGHTING DESIGN SOLUTIONS OF TRADITIONAL BUILDINGS-KAYSERI SETENONU PUBLIC BATH**	Hale Kozlu **– Ozlem Sumengen –** Seven Gozubuyuk
11:40 – 12:00	**DEPARTMENT OF INTERIOR ARCHITECTURE BASIC DESIGN COURSES FROM WRITTEN TEXT TO SPACE ADAPTATIONS**	Handan Ozsirkinti Kasap - Anday Turkmen

13:00 – 14:00	**LUNCH**

4th International Conference on New Trends in Architecture And Interior Design

INTEGRATION OF BIOMIMICRY DESIGN THINKING AND THE GREEN BUILDING CERTIFICATION SYSTEMS: LEED AS A CASE STUDY

Assist. Prof. Dr. Aliye Rahşan KARABETÇA

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Abstract

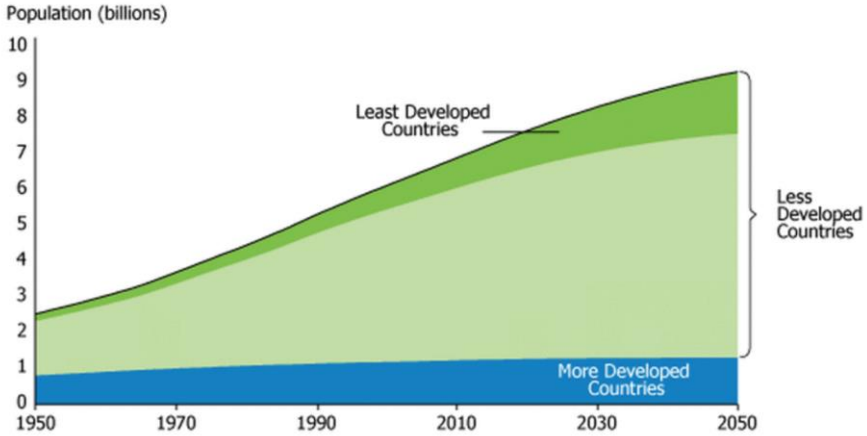
21st century which is called Anthropocene age by scientist, also known as the age of modern man, has dramatically decreased the sustainable living conditions of planet earth. Each country whether developed or not, is struggling with the devastating effects of climate change, environmental pollution, decrease in non-renewable resources, etc. Thus, a demand for sustainable built environment has arose since the beginning of this age and it is growing every day. However, this demand is barely met by some initiatives which are dealing with the green building certification systems, such as Leadership in Energy and Environmental Design (LEED). It was established by united states green building council in 1993. It provides and encourages architects to design buildings that function more efficiently in terms of energy saving and lowering carbon footprint [1]. There are almost hundred thousand buildings all over the world using LEED and more than two million square meters certified every day including neighborhoods, existing buildings and new constructions [2].
Nevertheless, this certification system can be improved by integrating biomimicry design criteria into the requirements list that would develop specially the design stage of projects. This integration can lead designers to create energy efficient buildings which would decrease the impact of climate change on earth. Biomimicry is a new field of science that deals with transferring nature's genius into man-made designs. It leads designers to use principles and strategies of functions of natural designs to solve human challenges. The main goal of both green building certification system and biomimicry is actually the same. Although biomimicry is for all fields, they both are required for better built environments. They aim to save and protect the nature; one is very limited in terms of specific parts of built environment, the other is very wide offering nature's endless solutions to every part of built environment.
This paper aims to study the methods and consequences of integration of biomimicry design thinking and green building certification system to develop a new design stage which would concentrate on logic of use of biology and basic requirements of certification criteria of LEED.

Key Words: biomimicry; green building; Anthropocene; architecture-sustainability

1. Introduction

Since the early times of the Anthropocene age or in other words with the start of industrial revolution in 18th century, built environment has improved concordantly with the development of technology. There are many major challenges which have arose along with these developments. They could have been stopped even prevented to appear. But, rapid rise in world population, needs of that time and the present also increased with these problems which are the most effective contributors of these challenges. New developments are always attractive and charming that increase the demand for inconsiderate expenditure ending up with huge amount of waste. As a result, overpopulation, pollution, climate change, global warming, deforestation, carbon footprint and etc. became most important challenges not only humanity but also the nature is facing today. Considering the rapid rise in the world population, there will be more energy consumption directly proportionate to a demand for clean energy and this will continue to grow if the population in the emerging countries grows (Table 1.) [3]. If any precaution, degradation or prevention is not going to be taken or done urgently, then the devastating results such as drought, scarcity, natural and artificial disasters, etc. will be inevitable.

Table 1. World Population increase according to emerging countries [3].



All problems explained above became the real sources for developing new solutions especially ones that are based on environmental protection and reducing, presumably eliminating the devastating effects and results of them. At this point, one can talk about designing energy saving systems, sustainable materials or ecofriendly buildings, etc. There is a need for mentoring for these types of designs in order to start developing sustainable solutions. This mentorship can be asked from nature. Because nature has the power of unlimited solutions. With regard to innovative designs and solutions, biomimicry and biology can be used.

It has been stated in some important researches that %60 of total energy is being used by construction industry; material production, high rise building designs and HVAC of these buildings are some of major examples. Also, transportation of these materials and goods are other contributors. As a result, demand for designing and producing energy saving buildings and sustainable materials has arose. By means of energy saving and use of sustainable materials, certification systems are very important. Nowadays, green building certification systems are highly popular, and results are efficient but not enough. Apart from these certification systems, there are other methods which can meet the needs stated above. The most important one is biomimicry. Today, biomimicry is used as a new design approach in the field of architecture for designing sustainable and resilient built environments.

1.1. Green Building Design Certification Systems

Green building is stated as "a high-performance property that considers its impact on the environment and human health. It is designed to use less energy and water and to reduce the life cycle environmental impacts of the materials used" in the book The Green Building Revolution written by Jerry Yudelson who is an author and LEED fellow [4]. Green buildings always provide high comfort and healthy indoor environments while saving energy and resources of operation and energy costs to keep them as low as possible.

Green building design is a popular topic in architecture not in terms of designing better built environments but also increasing sustainable energy use. Green building revolution is now an enlarging market in construction industry. It started with Leadership in Energy and Environmental Design (LEED) which was unveiled by United States Green Building Council in 2000 [4].

This enlarging market shows that there is an absolute need for energy saving and sustainable energy use. This market includes institutional, commercial, and residential buildings; public, educational, corporate and nonprofit owners as well [4]. Apart from LEED, there are several green building rating systems developed by different countries to transform their building industry; such as BREAM (Building Research Establishment Environmental Assessment Method) by UK, CASBEE (Comprehensive Assessment for Building Environmental Efficiency) by Japan, the European GB Tool and DGNB (German Green Building Certification System) by Germany, etc. [Fig 2.] [4, 5]. They all have the same aim: sustainability of built and natural environments.

Conception of sustainability, which is attempting to develop qualified living standards, has become one of the most important criteria of architectural design. Sustainable architectural design that includes economic, social and environmental facts, requires efficient energy use. By means of energy conserving buildings, certification criteria have been developed in order to create sustainable environments [1].

Fig 2. Major Green Building Rating Systems Map [5].

Certification criteria concerning energy and environmental design effect the construction systems of buildings in many ways. Green buildings which differ from other buildings, are being certified to make the system work correctly and efficiently. They also transform the building industry. Buildings are designed to save energy, and also effect the construction materials industry; developing materials that are recyclable and use low energy during production, low emitting materials, water efficient sanitary ware and systems that improve indoor air quality, etc. such products and materials are also certified as "green product". In certification systems, green buildings are allowed to use only these green products.

There are some major requirements for green buildings: most of these requirements are similar in different green building rating system, such as:

- Healthy air quality,
- Visual comfort,
- Lighting,
- Environmental control,
- Waste management,
- Recycling
- Sedimentation control,
- Innovation in design,
- Daylighting,
- Monitoring water and energy use,
- Mitigating ecological impact,
- Land use and ecology,
- Materials,
- Etc.

These requirements need a collaboration with other disciplines; mechanical and electrical, environmental engineers with architects and designers. This means, green building rating systems work with a great interdisciplinary collaboration. Biomimicry can be added into this collaboration to increase the potential number of sustainable solutions based on natural organisms or ecosystems that gained those solutions during their evolution.

1.2. Biomimicry Design Thinking

There is always a need for exploring nature and trying to understand and use its bio-integration with the design of buildings and products for sustainable built environments [6]. Biomimicry is one of the most effective disciplines that can provide this usage of bio-integration in nature. Biomimicry is a new approach in building design. It was named as biomimetic design in 1960 by engineer and scientist Jack Steele and in 1996 it was called as biomimicry by Janine Benyus. It is used as a design approach based on nature to improve buildings in terms of their positive effect on environmental sustainability. Moreover, it can be used in any field where there is a need for sustainable innovations and solutions. Life's principles are the main design criteria of biomimicry which were set by Biomimicry Institute by considering nature's emulation for 3.8 billion years. [Fig. 2] [7]. When these principles are studied one can easily link them with the general requirements of green building rating systems.

Fig 2. Life's Principles [7]

Life's Principles as a general, are the basic criteria for biomimicry thinking. Other two parts of Biomimicry Thinking are 'challenge to biology' and 'biology to design' lenses which are used as basic design approaches in many fields like architecture (Fig. 3) [7].

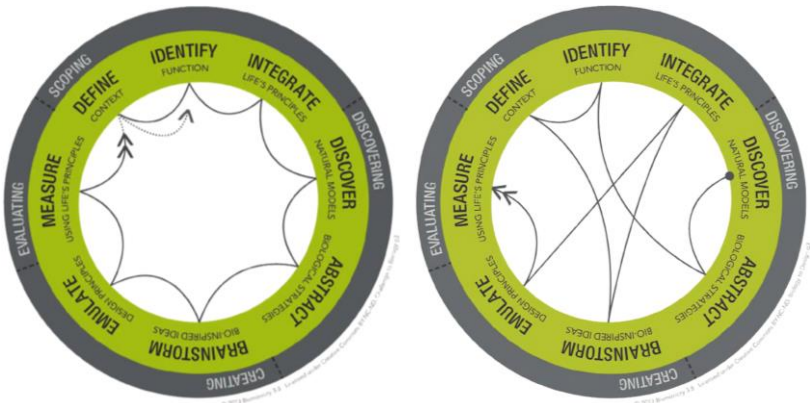


Fig 3. (a) Challenge to Biology and (b) Biology to Design Lenses [7]

These lenses are designed especially for designers to follow during a design stage. Although they look similar, they are quite different than each other. In the first one, designer must set a or a group of challenges and then find a solution(s) in nature by searching a similar organism which functions in same way, while in second, one finds a new organism and creates a new beneficial design mimicking the function of that organism. With these lenses emulation engages in three ways; form, process and ecosystem [7]. This means that designers can emulate either a form, a process of an organism or ecosystem(s), and these emulations can be more than one, integrated in to each other.

As Janine Benyus, author and biologist, list in her book 'Biomimicry, Innovation inspired by Nature', there are nine strategies of nature that uses for its sustainable survival [8].

- Nature runs on sunlight,
- Nature uses only the energy it needs,
- Nature fits form to function,
- Nature recycles everything,
- Nature rewards cooperation,
- Nature banks on diversity,
- Nature demands local expertise,
- Nature curbs excess from within,
- Nature taps the power of limits.

These strategies are the main reasons of applying nature's genius into built environment. They teach the basis of sustainability. They are part of biomimicry thinking. Incorporating biomimicry into built environment has several ways. Some of them are explained above and they are the most practical ones to use. It has the power of enlightening designers' way of look into nature for inspiration and can improve the curiosity, increase the thinking of going beyond form rather than using shape, emulating and enhancing ecosystem services such as designing roads, streets, buildings that perform the same way natural systems do [9]. Using nature as a model, measure and mentor can provide sustainable design skills.

2. Use of Biomimicry Design Thinking in Green Building Design Certification

Due to the problems stated above, there is a growing evidence of a powerful link between nature and cognitive functioning [10]. The integration of biomimicry principles into these rating systems is expected to reduce negative impacts of building construction industry on the natural environment. This kind of integration with green building rating requirements can improve the development of more regionally sensitive and energy efficient buildings and environments. Moreover, this integration would affect and change the production methods of subcomponents of construction industry which can lead to sustainable production methods.

A comparative example can be given to make researchers understand the link between green building design and biomimicry and reason why they should be integrated. For example, 'be resource efficient (materials and energy)' from Life's Principles and 'materials and resources' credit from the LEED scorecard match the similar requirements. However, if subtitles of 'be resource efficient' are followed it can be easily seen that these steps are much more effective and could contribute in developing conditions conducive to sustainable environments during both the design stages and the construction of buildings. In this case, biomimicry principles can be integrated to the credits during the design stage. Because, design is the basis of the construction. If this stage can be organized and developed according to lenses stated above, then the construction stage of the design could be much more efficient in terms of water-energy efficiency, sustainable construction procedure, resource efficiency, sustainable products and materials, safe waste generation and disposal, etc.

The detailed goals of biomimicry lenses can be added into scorecards as new specifications of green building rating systems. Methods and consequences of integration of biomimicry design thinking and green building certification system can develop a new design stage which could concentrate on logic of use of biology and basic requirements of certification criteria. With this integration, scoreboards and classes of green building rating systems can be improved, for example a new class with its own credits based on biomimicry principles can be developed.

3. LEED as a Case Study

The reason why LEED has been selected as a case study is that it has credits and prerequisites in the scorecard that can be improved with the addition of biomimicry design lenses mentioned above [Table 2]. They also have the same aim of reducing extensive direct and indirect impacts of construction industry on natural environment. From the first stage to the final construction stage, constructions generate waste and release harmful gases. These facts have quickened the creation and development of green building standards, such as Leadership in Energy and Environmental Design. This demand has increased in 1990s and continues to increase very rapidly [11]. Since 2000, there are 92.000 participating LEED projects and 2.2 million square feet certified LEED daily across 165 countries [2].

Table 2. LEED V4, New Construction and Major Renovations Scorecard [2].

LEED for New Construction and Major Renovations (v4)

		POSSIBLE: 1
Credit	Integrative process	1

LOCATION & TRANSPORTATION		POSSIBLE: 16
Credit	LEED for Neighborhood Development location	16
Credit	Sensitive land protection	1
Credit	High priority site	2
Credit	Surrounding density and diverse uses	5
Credit	Access to quality transit	5
Credit	Bicycle facilities	1
Credit	Reduced parking footprint	1
Credit	Green vehicles	1

SUSTAINABLE SITES		POSSIBLE: 10
Prereq	Construction activity pollution prevention	REQUIRED
Credit	Site assessment	1
Credit	Site development - protect or restore habitat	2
Credit	Open space	1
Credit	Rainwater management	3
Credit	Heat island reduction	2
Credit	Light pollution reduction	1

WATER EFFICIENCY		POSSIBLE: 11
Prereq	Outdoor water use reduction	REQUIRED
Prereq	Indoor water use reduction	REQUIRED
Prereq	Building-level water metering	REQUIRED
Credit	Outdoor water use reduction	2
Credit	Indoor water use reduction	6
Credit	Cooling tower water use	2
Credit	Water metering	1

ENERGY & ATMOSPHERE		POSSIBLE: 33
Prereq	Fundamental commissioning and verification	REQUIRED
Prereq	Minimum energy performance	REQUIRED
Prereq	Building-level energy metering	REQUIRED
Prereq	Fundamental refrigerant management	REQUIRED
Credit	Enhanced commissioning	6
Credit	Optimize energy performance	18
Credit	Advanced energy metering	1
Credit	Demand response	2
Credit	Renewable energy production	3
Credit	Enhanced refrigerant management	1
Credit	Green power and carbon offsets	2

MATERIAL & RESOURCES		POSSIBLE: 13
Prereq	Storage and collection of recyclables	REQUIRED
Prereq	Construction and demolition waste management planning	REQUIRED
Credit	Building life-cycle impact reduction	5
Credit	Building product disclosure and optimization - environmental product declarations	2
Credit	Building product disclosure and optimization - sourcing of raw materials	2
Credit	Building product disclosure and optimization - material ingredients	2
Credit	Construction and demolition waste management	2

INDOOR ENVIRONMENTAL QUALITY		POSSIBLE: 16
Prereq	Minimum IAQ performance	REQUIRED
Prereq	Environmental tobacco smoke control	REQUIRED
Credit	Enhanced IAQ strategies	2
Credit	Low-emitting materials	3
Credit	Construction IAQ management plan	1
Credit	IAQ assessment	2
Credit	Thermal comfort	1
Credit	Interior lighting	2
Credit	Daylight	3
Credit	Quality views	1
Credit	Acoustic performance	1

INNOVATION		POSSIBLE: 6
Credit	Innovation	5
Credit	LEED Accredited Professional	1

REGIONAL PRIORITY		POSSIBLE: 4
Credit	Regional priority	4

TOTAL	110

40-49 Points	50-59 Points	60-79 Points	80+ Points
CERTIFIED	SILVER	GOLD	PLATINUM

LEED is being used to create environments with minimum carbon footprints and biomimicry is being used to create environments that function like nature, because nature is resilient and knows better. As a result, combination of LEED scorecard requirements and biomimicry design principles can end up with strong and resilient environments. In LEED scorecard, credits are mostly related with energy saving and control of water use and recycle. There are several reasons of this; the first is to protect the natural environments by recycling goods, materials, the second is to minimize the carbon footprint and prevent carbon emission and third is to protect nonrenewable resources like water. Biomimetic credits can be developed and added to LEED scorecard Every stage of the scorecard can be developed within, such as: biomimetic innovation credits, technical integration of natural solutions, stages of life's principles and design thinking lenses could be added as credits to improve design stages of projects and perhaps fewer LEED credits would be necessary. Innovation credit in the scorecard can be improved by adding biomimetic design criteria and biomimetic architect with a biologist as professionals. Biomimicry innovation section can be graded separately, and this grading could be the pioneer of a certification system that would include people actively in and after the process of rating; for example, a system that could link children and nature with green buildings and a special access that could increase the value of accessing nature [12].

4. Conclusion

Consequently, this study emphasizes the importance of developing a new scorecard system based on biomimicry and how it can improve the efficiency and power of green building certification system as a general.

The act of asking nature's advice, valuing nature for its wisdom bridges the distance between humans and nature. As soon as this distance is closed, fewer green building certification systems are needed for built environments. Buildings that function like nature, can protect nature, conserve resources, minimize carbon footprint, increase resiliency of built environments, create conditions conducive to life. This new idea of including biomimicry thinking into rating system can contribute in developing living built environments.

Generally, green building certification systems are mainly responsible for energy efficiency and pollution. With the integration of biomimicry principles, certification system will be responsible for the protection of nature's wisdom; the bridge between humans and nature. As a result, this system will provide a widely developed scoring which will incite designers to create buildings that function like nature. It will also result with an increase in the demand for participating in LEED.

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PROCEEDINGS BOOK

FURNITURE AND INTERIOR STRUCTURES AS SIGNIFIERS OF SPATIAL IDENTITY. CONTEMPORARY INTERPRETATIONS IN STUDENT DESIGN PROJECTS

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Abstract
This paper focuses on a research that was undertaken by the author in relation to a number of design projects of Interior Design students in the University of Nicosia. Students were introduced to a number of contemporary social, economic and cultural issues and were asked to respond to that by designing. Their interpretations in relation to the design of interior spaces present their attempt to align and respond to external factors that affect but are also influenced by design. Through these projects the social engagement of the contemporary designer is explored, as well as the contemporary trends in the design of micro-architecture and spatial organisation.

Flexible, adjustable, interactive and ephemeral interior structures characterise the outcomes of the contemporary student projects in design education and express a general social attitude. This attitude is directed by a fast changing context, where tangible and intangible values, spaces and people have an ephemeral presence. Changing needs, changing economies, nomad users, and an ever advancing domestic technology create the context where young designers are requested to create. As a result a number of easily adjustable environments organised by furniture and light structures appear in the work of most of the design students. Neutral, flexible and malleable buildings gain their spatial identity by specific design elements such as interior structures, furniture, lighting, projections, interactive constructions and installations. A play with the senses and an extensive use of technology become valuable tools in the hands of design students who analyse and interpret external stimuli and synthesize their proposals trying to capture and satisfy the present momentum. Ephemerality, adjustability and interactivity become essential characteristics. Sustainability, reuse and user friendly attitude are often detected as side supporters to this approach.

Residencies, hotels, offices, stores, exhibition spaces, are proposed as "pop-up", adjustable and interactive spaces. Residencies and offices cannot satisfy their users if they do not follow the changes both of their inhabitants' lives and everyday life. A number of student projects explore the desired properties of flexibility and multi-functionality. School children expect from a satisfying school environment to be organised with respect to adjustability. The notion of "elective" is infused also in the educational space and not only in the curriculum structure. Classes, with the help of specifically designed furniture and equipment are becoming "transformable". Exhibition and art spaces face the higher demand for interactivity. Contemporary economy and its effects to society create an increasing number of mobile workers. A transformable working and short-stay living interior is also explored.

As a result an almost scenographic approach of changing backgrounds is achieved to respond to the ever changing scenes of contemporary life styles. In a similar way that one can be surprised by the slower sense of time in a beloved twenty years old film which is watched in the present time, contemporary interiors seem to differentiate from the past ones by being trapped in a hunting of time and change, in a faster rhythm of self-evolution.

Key Words: *interior structures, flexibility, interactivity, ephemerality, engagement*

1. Introduction to the general context

This paper explores the relationship between the characteristics of contemporary society and the material substances that these characteristics take in the form of spatial arrangements. It aims to offer a focus to the significance of light constructions and furnishings to the identity of contemporary spatial design. Having as a background the socio-cultural and politico-economic situation in the south east European region and the technological and environmental global context, students react creatively to the challenges they confront. The whole design production can be seen metaphorically as a creative loom where basic "warp threads" of design principles and practices are interwoven with the ever changing additions of "weft threads" consisting of technological evolutions and sociocultural turbulence.

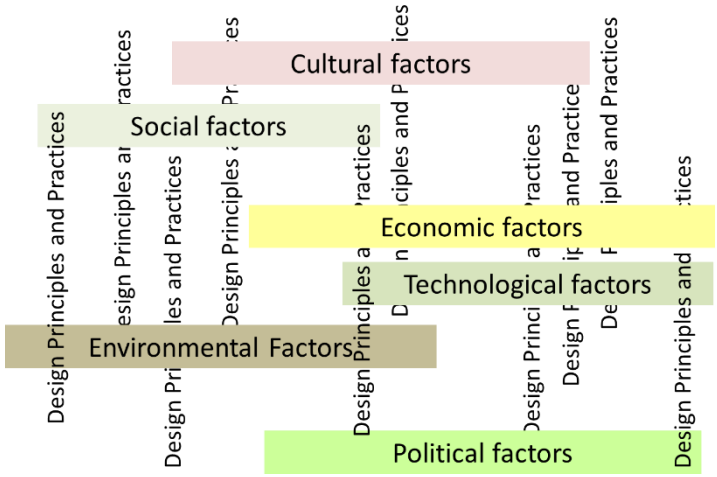

Fig. 1: Design principles and practices are interwoven with the ever changing additions of technological evolutions and sociocultural turbulence to create contemporary interpretations in Design
Source: Efstathiou 2018

Adaptability becomes a major parameter in young designers' decisions. An unstable economic and social context characterized by shortage in states', municipalities' and private clientele's financial support creates the need for multipurpose, cost effective and malleable design proposals. As a result adaptive reuse and focus to the creation of flexible interiors, rather than the construction of new buildings, can be detected.

This tendency serves very effectively another parameter related to contemporary values, which is that of sustainability and green design. Adaptive reuse and sustainability share the same ideological background. Ecological materiality and alternative affordable ways of production, by using recycled and waste materials, characterize educational priorities. At the same time these tendencies are reinforced by a conscious or subconscious turn to the local past and are characterized by cultural heritage sensitivity. People turn back to the basics, rediscover the advantages of a past closer to nature and appreciate the value of vernacular design. They care about wasting and overconsumption not as a result of an imposed ideology, or an avant-garde tendency, but as a reaction to the everyday problems. Students are nowadays in between these necessities and values, but at the same time they are part of a global attractive and challenging network were information and technology are providing innumerous opportunities to innovate. A new tendency is then seen that of a new type of reconciliation between the essential/natural with the technological/smart. A successful rephrasing of Papanek Victor's "Design for the Real World" [1] could be "Technology for the Real world" [2] expressing very clearly the significance to technology and innovation not just for the sake of it, but for a purpose. The above mentioned thoughts are supported by a number of student project works that are following.

Students interpret and answer to social and spatial problems by designing. An attempt to capture the waves of change and momentum is apparent. The main characteristics that occur can be defined by the following key issues:

Adjustable, adaptable, flexible, transformable, movable
Interactive, technologically based
Communicative, Socially engaging
Environmentally sensitive and ecological
Providing "interiority" to public spaces

These issues tend to appear in complex combinations in the students' responses. Some of these combinations are presented in this paper.

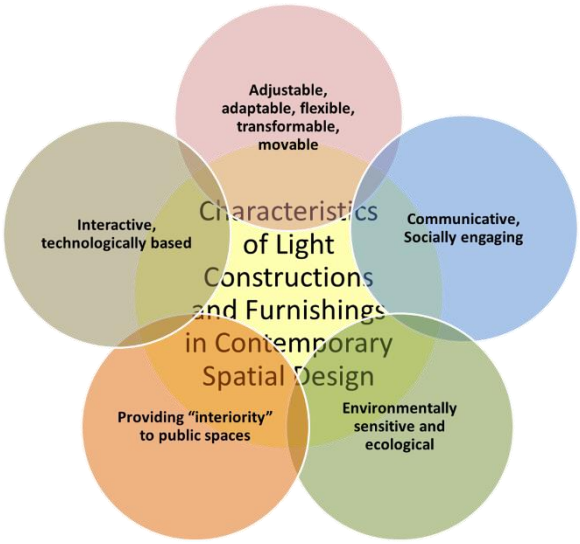

Fig. 2: Contemporary Characteristics of Light Structures and Furnishings that share common ground and are applied in complex combinations
Source: Efstathiou 2018

2.20. Adjustable, adaptable, flexible, transformable, movable furnishings

Flexible Interiors and multipurpose spaces provide the notion of "furoshikibility", a term used in the 90's my Michael Mönninger.[3] The wrapping material called "furoshiki" used traditionally in Japan for any wrapping purpose from becoming a wallet, or a shopping bag, expresses the Japanese approach to multipurpose design. Multipurpose design is often supported by technology and interactivity.

The "mobile workers" that characterize contemporary working norms demand a highly adaptable space for their short but regular visits to other cities, or countries. Together with the demand for technological support and web connection, adaptability is of great significance. The examples that are presented here propose the transformation of a conventional hotel typology to a more flexible one that can host the specific demands.

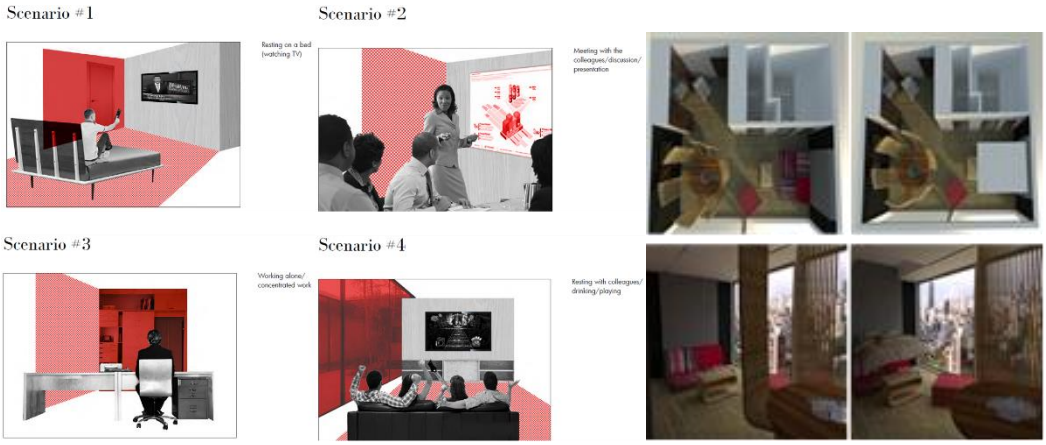

Fig. 3. (a) Activities of mobile workers. UNIC Student name: D. Kochegarova; (b) Transformation of a conventional hotel room to a more flexible temporal one that can host living, sleeping and working. UNIC Student names: A. Goineau, A. Theodoulou, V. Christophi. Supervisor Anna Efstathiou.
Source: Efstathiou 2016

2.21. Adjustable, movable and interactive working boxes

Abandoned former industrial buildings are proposed to be used in order to host young professionals and support so one of the most vulnerable groups in present socioeconomic situation. The building presented here is proposed to host graduates of the wide creative sector, such as graphic designers, interior designers, architects, photographers, film makers, fashion designers and many more. Common spaces related to the professions of the users such as library, printing and copying equipment, conference and meeting rooms, workshops and lab spaces, reception area and pre-constructed building services are provided by the municipality that is proposed to run the project. The specific building is connected to a digital network of abandoned buildings and young professionals

can access and apply for an office there through a mobile application. According to their preferences for proximity to other professionals, or new inputs, the hosted people can easily change their placement in the building. They are provided with a kit of panels that create a movable room/office, a 3x3 cubic DIY box, which can be placed in a number of alternative positions. The necessary furnishings pop out from some additional 3x3 panels and the person to use the space has automatically a furnished environment with the basic equipment. The whole building environment is created by a Tetris-like system of identical pop-up structures that are used both as partitions and as furnishings.

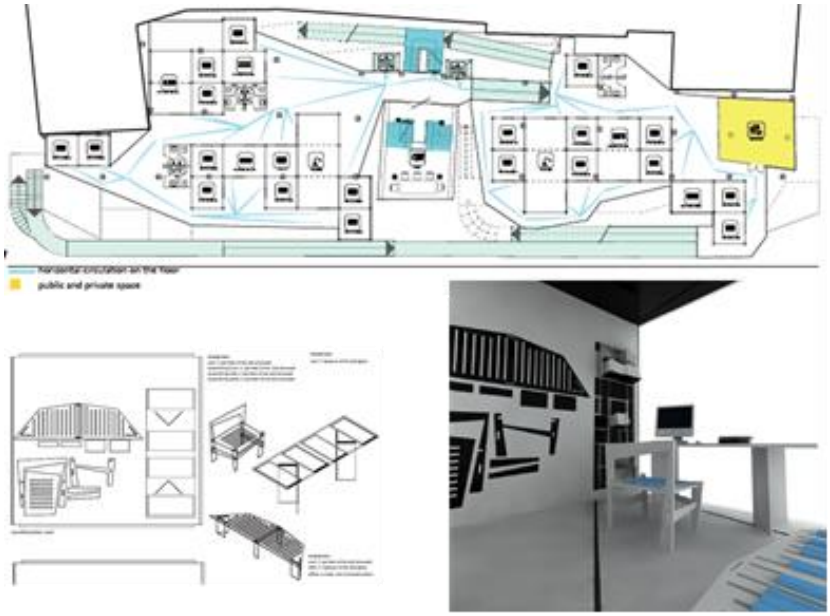

Fig. 4. The "9 m2 para – spread" project is a network of small spaces to be provided to young low income professionals. AAS-UCLAN Student name: George Gkiatas. Supervisor Anna Efstathiou
Source: Efstathiou 2011

2.22. Interactive, engaging, adaptable exhibition space

Interactivity presupposes flexibility and is extensively used by design students, who want to provide a subjective narration to users. Interactivity is closely related to technological advances. Technological innovation in the form of game design (gamification) can make any project attractive and fun to all ages and target groups. The abandoned building of a former printing industry is reused here as a typography museum. The glass cases of the exhibition space are moving up and down through the ceiling, according to the visitor's demand, able to be seeing from both floors. On the one hand they imitate the printing motion and on the other they offer movement and life to the previously frozen and deteriorating space. Visitors interact with the space and with each other and experience through the ever changing space the feeling of the former use of the building with the continuous rhythm of the printing machines. The structures of the exhibition stands become of major importance to the spatial design.

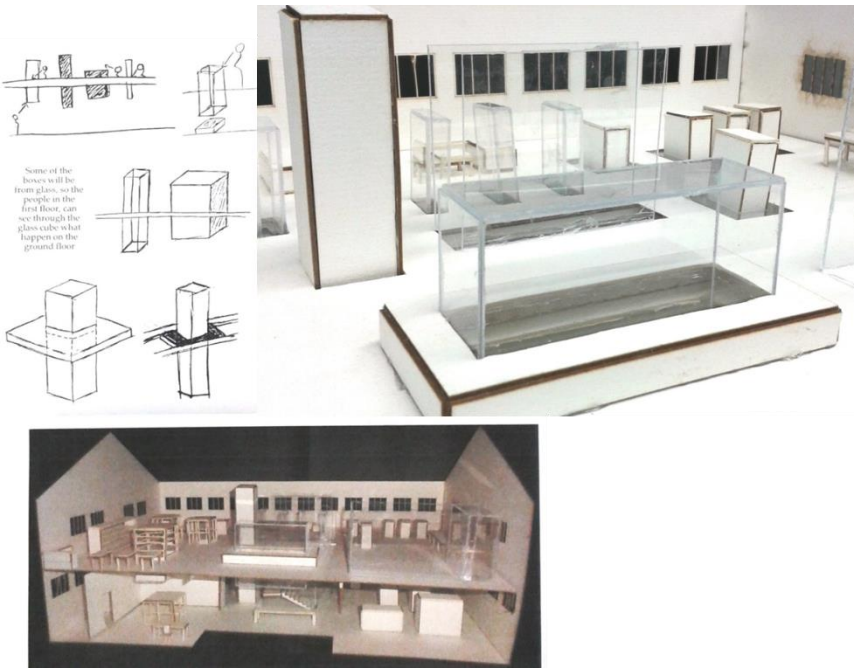

Fig. 5. The glass cases of the exhibition space are moving according to the visitors demand up and down through the ceiling able to be seeing from both floors. UNIC Student name: Athina Hadjinikolaou. Supervisor Anna Efstathiou
Source: Efstathiou 2015

2.23. Technologically based, digitally fabricated, engaging office design

One of the most often studied approaches is this of the parametric design and digital fabrication. Students enjoy the freedom that is given by new technological advances to their imagination and combine desirable signifieds such as connectivity, engagement and motion with specific signifiers, such as flowing organic structures and irregular constructions. The student project presented here aims at the redesign of an interior space of an office. The spatial arrangement of the office environment is fully dictated by the parametric form that encompasses all different functions of the space. This three-dimensional form is the main skeleton of the interior space. It is both a space divider and organizer, but also provides the furniture objects themselves, as it is transformed from a desk to a bench, to a shelving system and to seating devices.

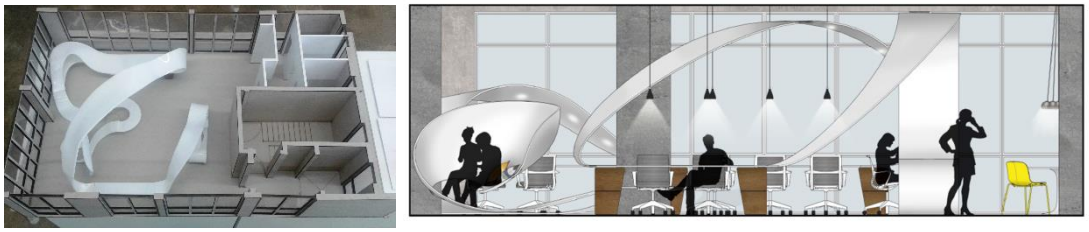

Fig.6. The spatial arrangement of the office environment is fully dictated by the parametric form that encompasses all different functions of the space. (a) Model; (b) Interior elevation. UNIC student name Diana Kochegarova, Supervisor Kika Ioannou.
Source Efstathiou, 2016

2.24. Interiority in public spaces and social engagement

In this case study the student used an existing abandoned warehouse building in the industrial area of Nicosia to host low income people and create a "Co-housing Community". The existing skin provided the grid for a free arrangement of boxed apartments. One of the main objectives was the creation of interior common spaces with direct contact. The proposed design supports and enhances the communication between users and introduces a small scale environment within a bigger shell. One of the main interventions is the three dimensional grid construction that provides a common use area and a meeting place for all ages, users and inhabitants. It reconsiders the given grid of the concrete structure and introduces a second lighter one, which signifies also a second layer of functions, being at the same time furniture and an interior shell. Through this approach a successful, but not limiting coexistence between the old and new is achieved.

Fig. 7. "Co-housing Community" residential project for low income families. (a) a box-in-a-box construction seen from the common space, (b) interior view of the box-in-a-box construction. UNIC Student name: Diana Kochegarova. Supervisor Eleonore Zippelius
Source: Efstathiou 2017

Another example of the same approach is seen in a project that also bases its proposal to the creation of a second light structural form within the building shell. The function of the specific building is a homeless shelter. The radically increasing numbers of homeless and refugees because they are part of most of the south European countries, are strongly introduced to the thematics of design students who see their role affecting and being affected by social issues. The project presented here combines the adaptive reuse of an abandoned building to the use of ecofriendly, reused construction material and sustainable interior design.

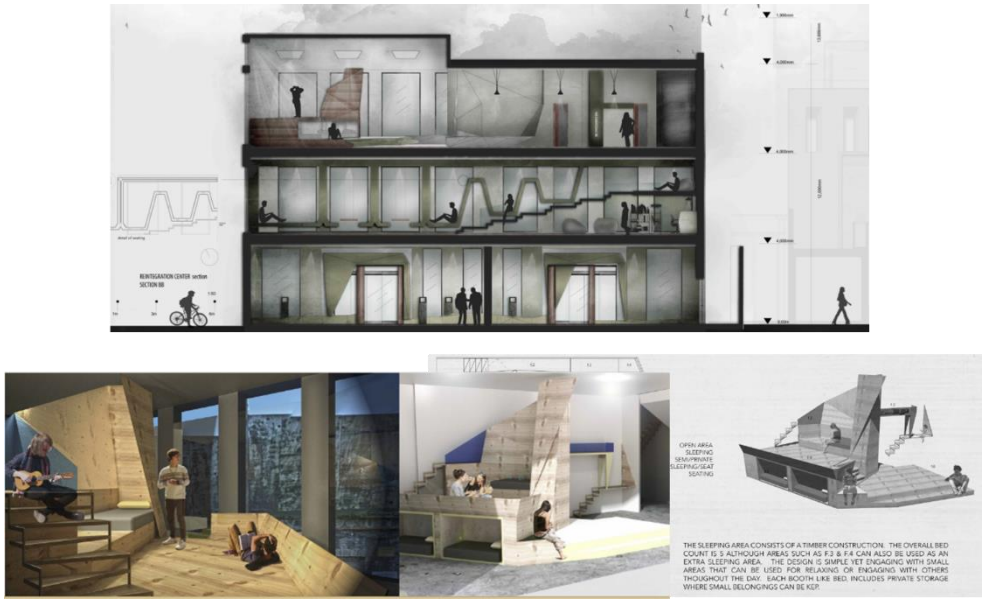

Fig. 8. Homeless Shelter. UNIC Student name: Victoria Todorova. Supervisor Anna Efstathiou
Source: Efstathiou 2017

The use of innovative materials is not only an improvement to cost and sustainability but also to effectiveness. The type of huge "Furnitecture" [4] used here is actually a structural reinterpretation of furniture and is fully imposing to the building, whose initial structure becomes of a secondary value. The interior space becomes of major importance and it provides both the background where different activities can take place, but also the engaging framework that implies specific behavioral norms. The homeless can find here not only a place to sleep and feel safe, but also an environment that encourages them to interact. The variety of interior forms imitates the street scenery and the inhabitants are able to feel as much privacy, or public engagement, as they want.

2.25. Interiority in public spaces, ecological design and social engagement

This urban structure is designed as an eco-friendly shelter, an information kiosk and donating centre, as well as a meeting place. The building materials used are created from waste agricultural produce. The project introduces also a fund raising method for maintenance and further research. Social interaction is directly implied by design. It can be placed in any outdoor or indoor environment. It combines all essential properties to engage people to use it not only for charging their mobiles, or tablets, but for bringing them physically together besides any social media communication.

Fig. 9. "Re-": Utilizing plant residues and by-products of primary agricultural production. This urban structure combines all essential properties to engage people physically as well as in social networks. (a), (b),(c) various views.
AAS-UCLAN Student name: Olympia Theodoridou. Supervisor Anna Efstathiou
Source: Efstathiou 2015

Outdoor structures with obvious relation towards interiority are detected in the case of an open air and free access recreational park, named "Urban Engagement", in the coastal area of Thessaloniki, Greece. The need for public space for activities could be satisfied by a socially engaging plan, with the Municipality or private initiatives to help for further thriving. A variety of target groups could be using the establishment for walking and cycling, athletic activities, but also recreation. The outdoor structures are designed as oversized urban furniture. They take the form of kiosks, open air libraries, urban furniture, shelters, multifunctional structures to be experienced by the public. Their forms permit air and light to penetrate their structure, but offer weather protection to a great extent. This oversized urban furniture can become small landmarks for the regional citizens and can actively bring them together by reintroducing the small scale public environment that is common to most Mediterranean countries. A variety of users can meet there and use it as a reference place: retired people who want an interesting meeting place, parents with young children, or teenagers with their skateboards, rollers or bicycles. Open air film projections and music events can also be hosted. The idea is that the local people should familiarize with it and even bring their own contribution there: books, pots of flowers and many more.

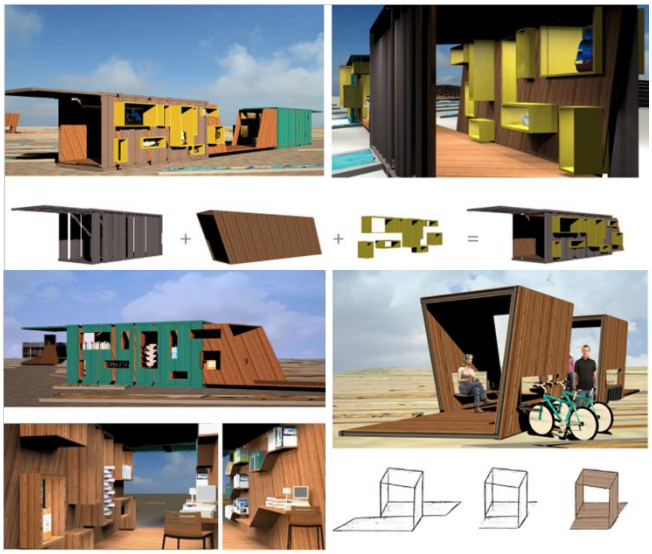

Fig. 10. "Urban Engagement" open air public recreation park. AAS-UCLAN Student name: Christina Ilieva. Supervisor Anna Efstathiou
Source: Efstathiou 2015

2.26. Communicative and engaging interiority of school environment

The purpose of this student project is to create a communicative and engaging school environment. The conventional school interior environment is outdated and very often not challenging at all, since elementary school pupils compare it to the attractive physical, but also virtual environments they experience elsewhere. The school class of the present has to change, to follow not only the trends of the general technological advances, but also the needs for a multidisciplinary, broad and open to stimuli teaching physical environment. Multifunctional classes are proposed where students can work in teams or individually at a variety of tasks. The notion of "elective" is infused also in the educational space and not only in the curriculum structure. The light constructions and the structural furnishings support this concept, since the building shells are difficult to alter. Art, technology, literature can find their place within these multitasking school classes. Structural furnishing create boundaries, or connect spaces, host specific uses, while at the same time they are open to new ones, and are able to convey a variety of hidden infrastructure to support the new technological demands.

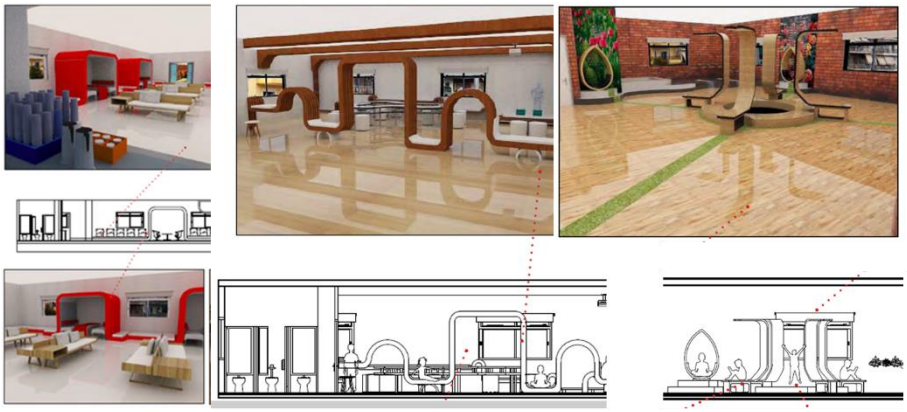

Fig. 11. Proposal for an elementary school interior. Multitasking use, engagement and technological infrastructure are implied. AAS-UCLAN student name: Maria Loutatidou. Supervisor Anna Efstathiou.
Source Efstathiou 2015

3. The Analysis Outcome.

Design is always inseparable to the forces of a given society and its time. Design Education has to prepare future designers to be able to decode the requirements, the meanings and the intangible characteristics of their time and plan for a better future. Their creations will characterize an era, will signify its values and will facilitate people's lives. Design educators have to support Design students to be able to interpret all these external factors.

In our times and in the area of the South East Europe and East Mediterranean, Spatial Design is of major importance. Abandoned buildings tend to be reused and adapted to new uses instead of building new structures. Small scale interior interventions that take the form of structural entities, or structural furniture, both indoors and outdoors seem to gain ground and be the most appropriate solutions for the present momentum. Their fresh and lively structure overpasses the possible aesthetic deterioration of the hosting buildings and becomes an interior element, or skin more important than the redesign of the building itself in the design process. Additionally, in this way architectural heritage is less contradicted by the renovation process. Materiality is also of major importance. Reused, recycled or even upcycled materials, smart materials and innovative technologies become significant parameters in the development of the designed identity. Sustainability is becoming and should be an intrinsic value of any design attempt and not an additive characteristic.

The particular situation requires from young designers to be ready to respond to the continuous changes with adaptability and flexibility, to the increased needs of the already created and upcoming less privileged social groups with inventiveness and openness of mind and to the fragility of the environment with respect and thoughtfulness. Technological innovation is here to support them, to expand their boundaries and connect them in a global network of active contributors.

Acknowledgements

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ASSESSMENT AND SITE CONSIDERATIONS IN NEW STADIUM PLANNING

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Abstract
Although there is no exact evidence about which and where sports activities were first made, it is a fact that these activities have emerged from the necessity to adhere to nature and to cope with the problems they encountered. Thanks to the differences provided by the ability of thought, mankind has hunted with purpose, escaped, struggled, fought to continue its existence and survived after different struggles. In addition to meeting his needs for a shelter, he was able to protect and discover himself, ran with aim, climbed, lifted heavy objects, and dragged these objects to different places, even learned swimming.

These activities over the time, turned into competitions and gave rise to organizations where crowds gathered to watch. The activities that took place due to the need and survival later turned into games among the children which than became a form of entertainment competition among the adults. Archaeological findings reveal that the game played with ball was widespread in ancient China. The findings, do not enlighten whether these games were performed as a sport activity or as a religious activity. However, the historical documents indicate that in ancient Greece and Rome, the games played with the ball were mostly for sporting purposes and spending spare time. Homeros in his Iliada and Odysseia points out that in ancient Greek and Crete, sports competitions were held for both religious and non-religious purposes. The most famous sporting event where religious and sports events are combined is the Olympic Games which was held first in 776 BC. In fact, this event was based on earlier local games which was held in different parts of ancient Greece. Since then, the sporting activities and sports complexes have undergone major changes and still are now being reinterpreted and designed to meet different new needs and expectations. Among the sporting branches, football is the prominent industry with its fans, watching rates and demands in Turkey as in other parts of the world.

As in elsewhere, for national match organizations and to host international organizations new stadiums in UEFA and FIFA standards are opening all over Turkey. Apart from the form and symbolic design characteristics of the new stadiums, it is also necessary to consider the sufficient capacities, the necessary infrastructures, logistic services, transportation, the lively interaction of the stadium with its environment as well as all the other environmental factors together in design decisions. The aim of this paper is to examine the new stadiums in Turkey which was built during the last decade and to discuss the design decisions for stadiums in reference to the new stadiums based on their site qualifications, competencies and problems.

Key Words: Site Considerations; New Stadiums; Football; Assessing Stadiums; Planning Decisions

1.Introduction and history of sports organizations

The first most famous sporting event in history is the Olympic Games which was held in 776 BC. In fact, this event was based on earlier local games which was held in different parts of ancient Greece. The Panathenaic Stadium is the first stadium to host modern Olympics (1896), as well as being the only and oldest stadium in the world, all made by white marble. Built by the Greek politician Lykourgos Krestenitis between 330 and 329 BC, this stadium was used for athletic games in its early years. It is located on the site of an ancient stadium which hosted games for many decades in Athens.

In ancient Greece, sports competitions were held for both religious and non-religious purposes. Such events were also held in the cities of Delphi, Corinth and Nemea. The athletes who succeeded in these events won not only great honor and reputation, but also various financial awards. The Greeks were also closely involved in non-religious sports. The city states without the Gymnasion, would not be considered a complete society. In these gymnasions athletes were trained and competed. In ancient Greece, except for Sparta, where military discipline was very important, women did not participate in sports events and were not involved in the Olympic Games. The only exception to this general practice was the contest held in honor of the goddess Hera.

In ancient Rome, chariot racing was one of the most popular sports event. There was also interest in sports such as athletics, boxing, wrestling, javelin and discus throw. In Rome, battle car races were held in the form of big organizations followed by 250,000 people. This number was about five times that of the gladiators

events in Colosseum. Car races continued long after the gladiatorial fighting ended up in the early 5th century AD due to Christians' reaction and heavy costs.

Car races were pretty modern races. Racers had teams such as the Greens and the Blues, which on the other hand strengthened the loyalties of their supporters, increased involvement and fan engagement. In medieval ages sport events were less organized. In the fairs and season festivities, men made contests to lift heavy stones, grain gunny bags or barrels. The most widespread sport in the countryside was the folk football, which almost had no rule. This rather wild game played by married against singles or one village against another village lasted until the 19th century in England and France.

We can see the concept of sport as an activity that brings together groups with different cultural and social statuses, bringing societies together and causing them to spend time together. This joint activity has led to the formation of a regular and regulated competition rules as well as consumer behavior during the sport organizations. Especially in the Renaissance period, sport has gone completely outside its religious aims, and it is mainly concerned with the nobility and sophisticated behavior of its appearance, a show of aristocracy rather than the struggle between sportsmen.

In Europe, sports began to take its today's shape in the late 17th century. In England, traditional sports such as pole fighting have left their place to more organized games such as cricket. During the 18th and 19th centuries, sport gradually divided into a branch of specializations. First national organizations were established and standard rules were declared. In 1863, the Football Association was established in England to develop a new type of soccer that originated from the popular football of the Middle Ages. Rugby and American football have developed in the US. Modern sports have started to spread from these two countries to the world. Britain modernized sports in other countries of origin, such as tennis which is initially played in Renaissance France, and in the late 19th and early 20th centuries, organizations such as the International Olympic Committee (1894), the International Football Federation (1904) and the International Amateur Athletics Federation were established.

During colonization and western cultural diffusion in Asia and Africa, the western countries spread their own sports and neglected the indigenous sport activities often done in a carnival atmosphere. Among non-Western countries, sumo (Japanese wrestling), a traditional sport, continued as a popular sport among the public in Japan. Japan was one of the few non-western countries that contributed to the modern Olympic Games through a sport like judo.

After the Industrial Revolution, the advances in science and medicine, led to a transition to modern sports. Accompanied by the developments in physical training snd exercises, the physical capacity of the athletes as well as other sportmens and sportwomens reached to their highest level. New sports such as basketball and volleyball also emerged during this period. Capitalist entrepreneurship also played an important role in the modernization of sports as a marketable product. The new collages and universities also contributed to the transformation of traditional games played in leisure time into modern sports branches. All these developments brought need for special spaces as well as new organizations at regional, national and international scales.

As a young man, in 1892, Baron Pierre de Coubertin had the idea of renewing the ancient Olympic Games, which duly took place in Athens in 1896. Whereas his educational aspirations had additionally been confined to France, the success of these first Olympic Games marked, for Coubertin, the internationalization of his educational visions, where his main priority at first was the idea of peace among the nations:

"Wars break out because nations misunderstand each other. We shall no have peace until the prejudices which now separate the different races shall have been outlived. To attain this end, what better means than to bring the youth of all countries periodically together for amicable trials of muscular strength and agility? "

On 23 June 1894, under the leadership of Coubertin, the International Olympic Committee met for the first time with 13 countries and 79 representatives, and it was decided that the Olympic Games should be reorganized and the first Olympics be held in Athens in 1896. Thus, Olympic Stadiums, Villages, Houses have been built to organize Olympic games in different countries every 4 years. The spatial characteristics, locations, capacities and services of these multipurpose complexes are determined and protected by international standards.

2. Football as a sport activity in Turkey

England was the first country where football was developed and codified. The modern global game of football was first codified in 1863 in London. The impetus for this was to unify English public school and university football games. In 1904 The Fédération Internationale de Football Association (FIFA), in 1923 Turkish Football Federation (TFF) and in 1954 Union of European Football Associations (UEFA) was established. TFF joined FIFA in 1923 and UEFA in 1962.

During the Ottoman Empire, the most widespread sport was "wrestling". Hunting, arrow throwing, jereed and matrak were also other common sporting events. The sports activities were organized in a hierarchical structure and were generally established as foundations. The first sports regulations dates back to 1691 which was written by Abdullah Efendi and signed by 42 people [1]. The first sports club in European sense was

founded by Sultan Abdulaziz in 1867. However, this club was chaired by a British Retired Admiral. These developments were followed by "Modern Bodybuilding" practices, gymnastics lessons in schools, water polo matches performed at Robert College in 1904, and a basketball book which was translated by Ahmet Robenson in 1911.

Regarding football, James Lafontaine and Horace Armitage, two British living in Istanbul founded the Kadikoy Football Club in 1901. The players were local Greeks and English. In 1903 as a result of a disagreement, the British on the team left and formed the Moda Club. In 1904, these clubs and Imogen, Elpis and Strugglers established the Istanbul Football Association and they started to meet regularly at the "Union Club-Ittihat Spor" which is exactly on the spot of today's Fenerbahçe Şükrü Saraçoğlu Stadium.

Beşiktaş Gymnastic Club also known simply as Beşiktaş, is one of the earliest Turkish multi-sport club founded in 1903. In August 1911, Ahmet Şerafettin Bey (Şeref Bey), the president and founder of Valideçeşme football team, joined Besiktas Club with his teammates. In this way Football Branch officially started to operate in the Club. He was its first team-captain and manager. In 1905 Galatasaray was established as a High-School Team and in 1907 Fenerbahçe was established.

With the announcement of the Turkish Republic in 1923, the importance given to sports activities and support for sport oriented studies and sportman/sportswomen increased. New departments in universities, institutions for sports opened as well as different branches of sports activities started all over the country.

In Turkey, the first stadiums where football organizations held, were built according to the olympic standards which are different than the new stadiums built in recent years. All of them included athletics track around the pitch. They had roof only at west-grandstand which included also the protocol section. Built by Paolo Vietti-Violi and Ladislas Kovacs in 1936, 19-Mayıs Stadium is the first stadium that meet the international standards of its time. Apart from the stadium, the surrounding area was organized for other sporting activities with green parklands around within the city center. Others stadiums built in Bursa (1950), Eskişehir (1952) etc. all followed the same plannig principles such as having other sport facilities around, vast green parklands around, in close proximity to the center of the city, meeting the international standards of football as well as olympic games.

With no new stadium being opened between the early 1980s and 2002, Turkey had a lot of catching up to do in terms of sports infrastructure. One can call it as a stadium boom all over Turkey. All of the new stadiums were built in accordance with UEFA criteria. The latest technology was used in these stadiums. For example, Trabzonspor's Şenol Güneş Stadium is a first with its brand-new smart roof system, which can clean itself and remove air pollution. The roof of the stadium is 22,000 square meters and can clean the air of an area of 230,000 square meters. Thanks to its half-transparency, the pitch is also brighter during the matches. Turkey's first ecological stadium, the Sivas 4 Eylül Stadium can generate its own energy needs and use rain water. All new stadiums also included e-ticketing and electronic access systems as well as high-tech camera and security systems.

The Super League is growing and is already among the most attended league's in Europe and beyond. Turkey has also become able to host European or World Cup-level tournaments thanks to these new, high-tech stadiums. Yet there has been no research or assessments regarding these facilities. Although one can guess that they provide better quality spaces for the spectators and increase the interest in attendance, there is a need for an intensive research on stadiums in Turkey. This research and paper should be seen as the first pilot study on stadiums in Turkey.

3. Public space quality and assssment

Publicity should be described by openness to all people. Whether a closed space or an open urban space, public space is expressed as "accessible", that is, building groups or urban open spaces that allow general use. Here, "accessibility" is the key concept for publicity.

The concepts of the public sphere and the private sphere have been conceptualized by the thinkers through different approaches with respect to the political and historical periods. Habermas' concepts of public space and private space distinction refers to an area where public opinion can be shaped in public life by means of public spaces. According to Habermas, in the case of private conversations where individuals are gathered as a public body, part of a public space emerges [2], [3]. Habermas looks at people and peoples actions in society. He identifies three main forms of action which are collective, strategic (people's actions towards their goal) and communicative action. While these three forms of actions are not independent of one another, communicative action is considered very important in Habermas's theory.

In terms of stadiums, communicative action begins at the "designing" stage. The design that emerges with the aim of setting a goal, defines a place where the users are different groups. Among public spaces, especially the stadiums are places where large masses have gathered since antiquity. The link established with the venue has a direct effect on the target audience. The groups using these structures are not only in direct communication with the space itself, but also are effected psychologically and behaviorally. There is a great difference in pleasure and excitement between watching a match at a large stadium with audience and watching it on

television. It is important to understand the user's wishes, to establish a strong connection between the person and the place. This can increase involvement and fan engagement as well as decrease vandalism in stadiums.

Complex structures such as the stadium must first be considered in terms of "location within the city", ie the position of the urban network and the services around. In general we can talk about urban and non-urban stadiums. Both solutions have their own advantages and disadvantages. However, whether the location is in or outside of the city, it is necessary first and foremost to have enough outdoor space to ensure that all the navigators, including the emergency service vehicles are routed safely and that all the permanant and temporary facilities, such as accommodations, live-broadcasting vehicles and parking facilities are planned conveniently. It should be noted that stadiums must be well connected to public transportation such as train, metro, tram or bus lines. Good "access" to major roads and motorways should be provided, including those to the nearest airport, where stadiums and facilities should be within two hours' drive away. There must be three main roads around the stadium that go out in different directions. Fan zones should be planned for different team audience and stadium access should be considered accordingly. The intersection of the paths for the opposing fan groups must always be minimized [4].

The built environment is arguably one of the most significant ways that design affects our daily lives. Architecture constantly shapes the way that we behave and feel, and so do public spaces, such as parks or public squares. The urbanist and "people-watcher" William H. Whyte studied human behaviour and presented his findings in his book *The Social Life of Small Urban Spaces* (1980) and the documentary film of the same name. Effective place-making revolves around human scale and walkability and can be applied to both historic and contemporary places.

Architect and urban designer Jan Gehl (2002) is also a strong advocate for human scale. In his 2015 TEDx talk entitled "In Search of Human Scale," Gehl says that cities must be designed at ground level [5]. He states that a modernist city such as Brasília looks impressive from an aerial view, but it is in fact an unpleasant place to live. It is argued that modernist architects designed buildings and areas that were so large that they forgot about the people they were serving. Gehl contrasts this with Copenhagen, saying that while it may not look special when approaching by aeroplane, it has great street life and a design that is focused on the people who live there.

In implementing Whyte's ideas and evaluating thousands of public spaces around the world, PPS, a non-profit organization in New York, has found that to be successful, public spaces generally share the following four qualities: they are **accessible**; people are engaged in **activities** there; the space is **comfortable** and has a **good image**; and finally, it is a **sociable** place: one where people meet each other and take people when they come to visit [6]. PPS developed **The Place Diagram** below as a tool to help people in judging any place, good or bad.

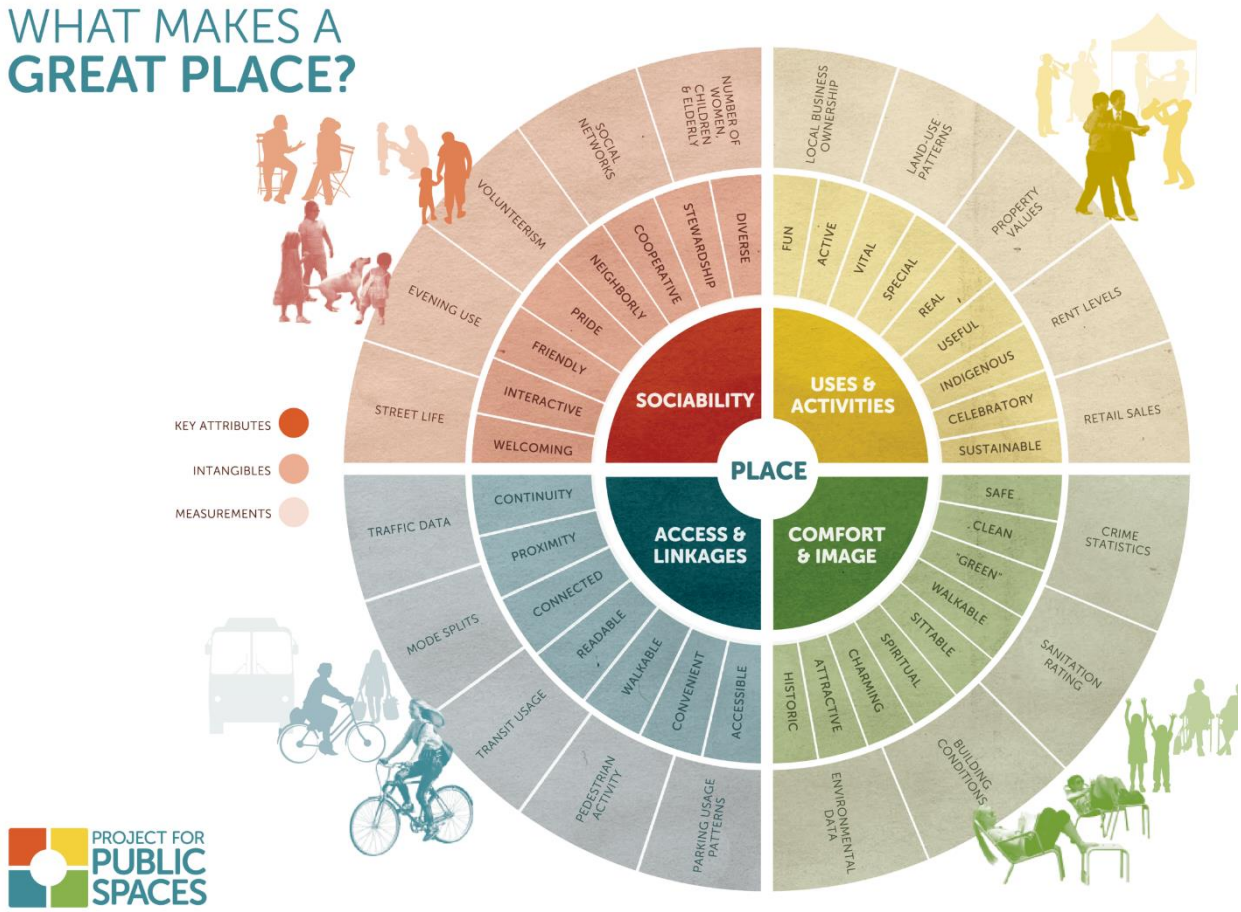

Fig. 1: Place Diagram developed by PPS [5]

When access and connections are well designed people can utilize the public space easily. The organization of the space and the physical elements can increase the perception and cognition of the space. For example, walking along a street with shops will be safer and pleasant than walking in a street with empty walls. More passive interaction will occur in the former and thus will be more communicative and preferable.

The use of space and the activities are essential part of public spaces. Re-use of a public space is closely related to the convenience of the space and the actions taking in that space. When there is not to much to do in a public space it will be empty, senseless and meaningless.

Comfort and image also are also important measures for public spaces. Scale, originality, uniqueness, spaciousness, comfort, cleanness and security are critical factors that have an effect on the preference of using a place. The quality of public spaces is closely related to, how they respond to the tendencies, convenience for use, if they offer alternatives for user actions, how much they attract and invite people, visual attraction, historical-cultural and symbolic meaning.

Finally, sociability is essential for a public place to be considered successful. When people see friends, meet and greet their neighbors, and feel comfortable interacting with strangers, they tend to feel a stronger sense of place or attachment to their community - and to the place that fosters these types of social activities. Sense of belonging to the space is very critical in designing public spaces.

Based on Whyt, Gehl and Madden's earlier studies on public space assessments, a special quality assessment criteria for stadiums was developed (Fig. 2). The study included 24 stadiums where Super League and First Leage matches held in Turkey. As mentioned, most of the stadiums are new and recently opened. The list of the stadiums are shown in Fig. 3.

	QUALITY CRITERIA																										
	FUNCTIONAL ACTIVITY										AESTHETIC QUALITY						ECONOMICAL QUALITY					TECHNICAL QUALITY					
																						Building Engineering					
Name of the Stadium	Public-Private Transportation and Parking Availability	Accessibility (Spectators-Team-Referee entry/exit, grandstands, circulation, disabled)	Field of view and distances	Flexibility	Security (Ergonomic, Public)	Spatial Orientation Signs	Zoning, Socialization, Increasing Fan Engagement	Environmental Comfort Conditions (Wind, Sun, Rain etc.)	Physical Comfort Conditions (Lighting, Noise, Acoustics, Heating and Air Conditioning, Satisfaction with seating items)	Sustainability (Effective use, Operation, Use of natural energy resources)	Visual Quality	Visual Order (Unity and Integrity between components)	Visual Presentational Quality (Space, Furniture and Equipment)	Symbolic and Semiotic Valu	Satisfaction (Scale, Mass, pleasant-harmonious interior / outer design and detailing)	Historical, Cultural and/or Contemporary Value	Investment Costs	Operational Costs	Sustainability	Revenue Generated Over Time (ticket, sponsorship, etc.)	Contribution provided to Public and Private Sector	Fire security	Structural Security	Building Subsystems (Technology Usage, Automation etc.)	Environmental Compliance (Topography, pitch, drainage, Infrastructure etc.)	Sustainability
Beşiktaş Vodafone Park																											
19-Mayıs Stadyumu (Gençlerbirliği)																											
Antalya Stadyumu																											
Şükrü Saraçoğlu Stadyumu (Fenerbahçe)																											

Fig. 2: The Assessment Criteria for the Stadiums.

	Name of the Stadium	ID No	Year	Capacity	League	In City Center
2	Beşiktaş Vodafone Park	1	2016	41188	Super	1
3	19-Mayıs Stadyumu (Gençlerbirliği)	2	1936	21092	Super	1
4	Antalya Stadyumu	3	2015	32537	Super	1
5	Şükrü Saraçoğlu Stadyumu (Fenerbahçe)	4	2006	47834	Super	1
6	Bursa B.B. Stadyumu	5	2015	43361	Super	0
7	B. B. Kayseri Kadir Has Stadyumu	6	2009	32864	Super	1
8	Sivas Yeni 4 Eylül Stadyumu	7	2016	27532	Super	0
9	Galatasaray Ali Sami Yen Türk Telekom	8	2011	52223	Super	0
10	Başakşehir Fatih Terim Stadyumu	9	2014	17300	Super	1
11	Bornova Stadyumu (Göztepe)	10	2016	5683	Super	-1
12	Alanya Bahçeşehir Okulları Stadyumu	11	2011	10130	Super	-1
13	Karabük Dr.Necmettin Şeyhoğlu Stadyumu	12	1974	11350	Super	1
14	Kasımpaşa R. T. Erdoğan Stadyumu	13	2010	14234	Super	1
15	Konya B.B. Stadyumu	14	2014	42000	Super	0
16	Yeni Malatya Stadyumu	15	2017	27044	Super	-1
17	Akhisar Spor Toto Stadyumu	16	2018	12139	Super	0
18	Osmanlı Stadı	17	2008	18029	Super	-1
19	Trabzon Şenol Güneş Stadyumu	18	2016	40775	Super	0
20	Atatürk Olimpiyat Stadyumu	19	2002	76092	None	-1
21	Gaziantep Stadyumu	20	2017	33502	First	-1
22	Yeni Eskişehir Stadyumu	21	2016	34930	First	-1
23	Mersin Stadyumu	22	2013	25497	Second	-1
24	Erzurum Kazım Karabekir Stadyumu	23	2011	23277	First	-1
25	Samsun Yeni 19-Mayıs Stadyumu	24	2017	33919	First	-1

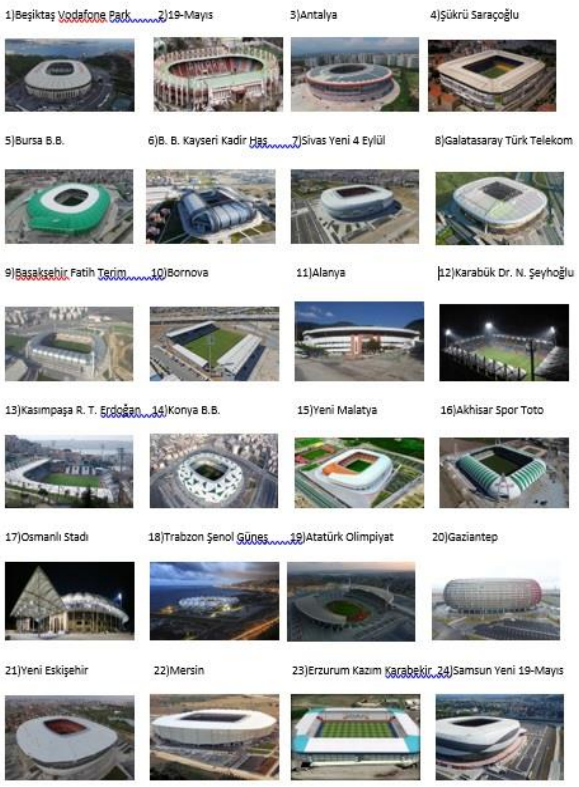

Fig.3: The Stadium List for the survey

4. Evaluation and Conclusion

The assessment of the 24 stadiums was done by 26 quality criteria grouped under functional activity, aesthetic quality, economical quality and technical quality. Functional quality was evaluated by, public-private transportation and parking availability, accessibility within the stadium, field of view and distances from seating areas, flexibility, security in terms of ergonomy and public security, spatial orientation signs, sociability, and fan engagement, environmental comfort (wind,sun rain etc.), physical comfort (Lighting, noise, acoustics, heating, air conditioning, satisfaction with seating etc.), sustainability in terms of effective use,operation, use of natural resources. Aesthetic and image quality was assessed by, visual quality, visual order (unity and integrity between components), visual presentational quality (space, furniture and equipment), symbolic and semiotic value, satisfaction with scale, mass, pleasant-harmonious interior and facades and detailing, historical, cultural and/or contemporary value. Economical quality was evaluated by, investment costs, operational costs, sustainability, revenue generated over time, contribution provided to public and local private sector. Technical quality was assessed by fire security, structural security, building subsystems like technology usage and automation, environmental compliance and sustainability.

The evaluations were made by experts at Turkish Football Federation and experts from e-kent company who run the match operations in Super League and First League stadiums. The assessments were done on a 10 point grading scale. A follow-up study is planned to include local club administrators and members based on the findings of this initial study. The findings can be summarized as follows:

Regarding functional activities, 91.7% of the stadiums received an adequate score for public-private transportation and parking availability. The average score for all stadiums was 6.76. Particularly the stadiums in big cities were located with better transportation possibilities. On accessibility within and around the stadiums, the score was the highest and all were assessed as positive with an average score 7.88. The lovest scores were given to flexibility (5.84) and sustainability (5.38) due to the specific character of stadiums, lack of other events

and effective use. The physical comfort conditions had an average score 6.64 and the sociability had 6.43. Results indicate that the recently opened stadiums increased the average scores by providing better conditions as well as interest in them. This in fact has also increased the number of the attending spectators and the fan engagement. Osmanlı stadium which is very far from the city center and has no facilities around received the lowest score in this research on sociability and fan engagement (3.4). In this group, Besiktaş Vodafone Park was rated the highest (83.8) and Alanya Stadium was rated as the lowest (5.18). The average score for functional activities in all stadiums was 6.695.

The average score for all stadiums on aesthetic quality was 6.09. The visual quality was rated as the highest (7.47) and visual order (unity and integrity between components) as the lowest (5.07) in all stadiums. Visual presentation quality was rated low in 5 older stadiums while symbolic and semiotic value was rated low in 2 old stadiums and 2 new stadiums. In this group while Besiktaş Vodafone Park (7.76) and Trabzon Şenol Güneş (7.36) stadiums get the highest scores, Karabük Stadium was rated as the lowest (4.27). It also get the lowest scores in this research on visual order, unity and integrity between components (3.4) and visual presentational quality (3.6). While visual quality was rated high in new stadiums, most of them did not receive high scores on other aspects of aesthetic quality. Although this may appear as a surprise one has to realize that among the experts there was one architect. The aesthetic evaluation may require experts like designers.

Concerning economical quality, the average score for all stadiums was 6.08. The investment costs were rated as high (%91.7). In 7 stadiums contributution provided to public and local private sector was rated as negative. The average of all stadiums on this criteria was 5.60. Economical sustainability was rated negative for 6 stadiums and the overall score was 5.95. Revenue generated over time was considered negative for 4 stadiums with an average of 6.03 for all stadiums. The results show that the scores on economical quality is high only for the certain clubs. Most of the stadiums including the new will have problems on operational costs, sustainability, revenue generation and will have no contribution to public or local private business.

The average score for all stadiums on technical quality and building engineering was 6.48. Apart from 19-Mayıs and Karabuk stadiums, all were considered on the average score as positive on technical quality and building engineering. The average for all stadiums were as follows: fire security 6.65, structural security 6.48, building subsystems 6,40, environmental compliance 6.24 and sustainability 6.63. The findings reveal that the new stadiums also increased the technical quality of the premises in Turkey. Recent electronic access and ticketing project by the Turkish Football Federation, which included the renewal of certain premises in stadiums, has also increased the technology use and automation in the stadiums as well as accessibility.

The overall score for all stadiums on all criteria was 6.397. Besiktaş Vodafone Park was rated the first on all criteria (8.25). Şükrü Saraçoglu Stadium was the second (7.64), Ali Sami Yen Türk Telekom was the third (7.56), Şenol Güneş Stadium was the forth (7.40) and Bursa Stadium was the fifth (7.19). Karabuk Stadium was rated as the lowest on all criteria with an average 4.69 score.

As stated earlier this study must be seen as an initial pilot study. These findings has to be tested with large group of subjects including different group of spectators as well as designers. The quality criteria for the stadiums need to be further investistigated and developed. Finally a comparative analyses should be done on specific criteria such as new-old, distance from city center, home-team features etc. Football as the most important sport in almost everywhere, necessitate more attention to stadiums.

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CONCEPT DEVELOPMENT IN THE INTERIOR DESIGN STUDIO

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Abstract
The main objective of this paper is to reflect on the effects of approaching a design problem through an abstract concept in the design process in an interior design studio. It is intended to demonstrate the possibility of transforming abstract concepts into concrete results with appropriate representation and application techniques and also the impulsion of the conceptual approach for imagination, creativity and future-oriented thinking. The concept approach is an integral part of the design studio [1]. A design concept is not a physical invention but instead sequences of meanings derived from formulation of a solution produced in response to a design problem [2]. Conceptual exercises are devised to pave the way for discovering, discussing, producing knowledge and developing critical thinking skills. With this intellectual process, the creativity of the students becomes part of the designing activity and also it creates a driving force in respect to how this creativity can be used [3]. This study analyzes the process of concept development in the 4th grade interior design studio and also the spatial reflections of the concept on the interiors through students' studies and interpretations. Students were given the task of designing a multipurpose center for either culture and the arts or science and technology within the scope of Design Studio V. The flour plant of Paşalimanı was selected for the organization of that design problem. This abandoned plant is located on the Anatolian Side of Istanbul and only four façades have survived to the present time. Students were asked to create closed, open or semi-open new spaces in the interior without harming the structural features of the existing historic façades. At the end of the semester, students were interviewed to analyze the concept development phase. The qualitative data obtained from the semi-structured interviews were analyzed by context analysis, presented on the tables together with the frequency values and interpreted. This study has revealed that the same context and the same design problem can be diversified with different intellectual backgrounds and different concept approaches. Thus, this study pointed to the value of original ideas in order to explain why the outstanding designs within the crowded production pile are different and important.
Key Words: *Interior Design Studio; Design Problem; Concept; Creativity; Conceptual Approach.*

1.Introduction: Design studio education

Design education is a model that starts with the presentation of a design problem to students, actualizing knowledge of the base points of that problem and establishing methods for understanding the system of relations [4]. In design-based disciplines, the design studio is at the center of the training program [2-5-6]. In design studios, the productions and experiences of students are at the forefront. Studio education is a process in which the students' vision of the world is considered important; it also aims to convey these visions to production as well as give students the ability to design. It is remarkable for students to be able to understand, construct, and interpret the given design problem, in addition to creating and expressing. Thus, students can add their own values to the process, be flexible, and make new adaptations in a variety of situations. They can begin to interpret what they perceive from their surroundings and to produce new solutions through their interpretations. Design education can evolve to provide different ways of thinking to students and encourage their critical thinking [7].

Spatial design starts with comprehending the dynamics of the context and deciphering the information about it. This information is then transformed into socio-spatial concepts and, lastly, into spatial forms. Scientific information and subjective experiences of the students come together to direct the design process. In that case, the aim of the design studio is to relay information and to provide experiences to the designer candidate. The student learns to think like a designer, make decisions about design problems, visualize the spatial form, and describe it graphically. Isaac Asimov, in his essay on creativity, described a design studio environment by suggesting: small group numbers, trying to put forth creative action, facile rights to speak, and a moderator taking care of the design group [2]. According to Uluoğlu (1990), the basic features of design studios are as follows:

The design studio is the essential part of design education.
Design is learned by designing, regardless of who is instructing.
Face- to face- contacts and criticism are the forms of education in the design studio.
As the instructor teaches how to design, the instructor plays the primary role in the studio education [6].

Should design education aim to train the person demanded by the market? Or is it a designer who aims to make new discoveries on original designs in this developing world? Design education needs an understanding of handling the relationship between meaning and form, and using imagination and future-oriented thinking as a driving force. According to Yürekli (2007), design education is not a learning process; it is a process of creating,

experiencing, and researching. Design education must aim to design and explore the designing process. Therefore, design education should not be expected to train practitioners who will meet the requirements of the market; it should aim to educate designers who are interrogators, can think flexibly, produce alternative solutions when they encounter complex problems, and develop new ideas [8-9].

2.Concept development in the interior design studio

According to Schön (1987), the education in project studios is heuristic. The intellectual foundation of the students, and the way they comprehend the design problems, allow them to reveal their own experiences. Thus, different people and groups who are interested in the same design problem can discover different details; they can approach the design problem from different perspectives, and the outcomes can be varied [7].

Students' experiences are transferred to the design process through concepts and phenomena. The concept that belongs to any object comes from concrete and individual experiences. The human mind observes every phenomenon it experiences as a distilled essence of something more complex, and thus the concept of the object develops. If the detected object is perceived as the same object in different contexts, then it is isolated from the first context it is detected, and the abstraction and concept of that object is obtained. The words that match the phenomena in the physical world are used during the descriptions of the abstract interpretations. The produced images and concepts do not reflect the real situation, but are rather the information of the context, which is transformed from the present into a new effective usage of experience and perception [10].

Students direct the design process by using their knowledge, experience, spatial images, and creativity. In this context, on the one hand, main parameters are examined and construed, parameters such as environmental design, historical process of building and environment, user requirements, and functional analysis; on the other hand, concept development proposals for the design are implemented [6]. According to this understanding, it can be said that design education consists of three main sections: *identification of the context*, *concept development*, and *concretization*. Students involve the design process by first experiencing the context, then conceptualizing, and lastly embodying the concept in a space by using their creativity. Identifying the context involves experiencing it and its values. The context contains many values, such as topography, landscape, culture, and history; architectural elements are also part of the context memory. Historical, geographical, and socio-economic characteristics are also considered during context analysis. After experiencing the site, image- formation and concept- development processes actualize. In the consolidation process, the physical spaces created with the conceptual approaches are examined through examples. Students perceptibly demonstrate their abstract concept ideas through concept sheets. The tough process of transition from concept to physical spaces involves models, which can be touched and can build relations, as well as three- dimensional computer- aided programs, which help in perceiving the design in three dimensions [1]. The working model is a great way to make the students think about their design problems and the design process; it works like a small-scale version of the actual production. It can be used to test an idea or a multidimensional mindset [2].

During the design of a physical space, students benefit from design concepts learned from abstract thinking and expression courses, such as basic design or basic art education. A design product is achieved by blending abstract thinking with concrete expression techniques [5]. A studio practice that predicts students' ability to think and interpret physical spaces and architectural elements through concepts was conducted with second- year students of the Department of Architecture at Middle East Technical University. This conceptual exercise was a critique of the fact that design knowledge was given to students as a prescription that led directly to the result; it was developed to prepare the environment for the students to discover, discuss, produce knowledge, and develop critical thinking skills. In this study, students were directed to conceptualize and convey structural elements such as walls, doors, windows, stairs, and roofs through their related concepts, behavior patterns, and basic forms (such as surface, plane, point, and line). In this sense, a door was mentioned with a concept like "threshold", and a window was mentioned with a concept like "gap" or/and "to frame"; a staircase was mentioned with a concept like "connection". The wall and the floor were referred to as "plane" or "surface", and the ladder was referred to as a "surface" connecting the different levels. With this intellectual process, the creativity of the students became part of the designing activity, and it also created a driving force concerning how this creativity could be used [3]. The concept approach is an integral part of design studios. The fountain-head of concepts is the communal activities of students from different cultures and socio-cultural structures. The potentials that are provided by daily cases and social and cultural events are first conceptualized and then embodied and reflected on the physical spaces. A design concept is not a physical invention, but a sequence of meanings derived from formulating a solution produced in response to a design problem [1-2].

3. The aim and the scope of the research

The main aim of this research is to reflect on the effects of approaching a design problem through a concept in the design process in an interior design studio. It is intended to demonstrate the impulsion of the conceptual approach for imagination, creativity, and future-oriented thinking. The other aims of the research are as follows:

To examine the course (the route) of the concept-development process of students in a design studio in detail and with analysis of the current situation, to make suggestions for students and instructors;
To present the aims and the contributions of designing with a concept to the process and the final product in terms of students' perspectives;
To emphasize the importance of concept in design;
To reveal that the concept has provided identity and meaning to the designed spaces;
To demonstrate the constitution of different concepts even in the same environmental, physical and structural conditions and to analyze the spatial reflections of these concepts.

This study presents a situation analysis of the concept-development process in the fourth-year design studio at the Department of Interior Architecture and Environmental Design; the analysis examines the difficulties or/and limitations experienced in the process, and the approaches that support concept development; it researches concept in detail, as well as presents some suggestions that students and instructors can take advantage of during the first intellectual phases of design.

4. The objectives and the content of Design Studio V

Within the scope of Design Studio V, students were given the task of designing a multipurpose center for either culture and the arts, or science and technology.

At the beginning of the course, students were asked to consider a unique concept idea that would develop identity in their design and to make their volumetric decisions through this concept. Actually, concept idea method is already commonly used in the educational process of Interior Architecture and Environmental Design Department of Istanbul Gedik University. “Concept idea” is introduced to all students in “Basic Design” courses in their first and second semesters and concept development processes are improved by the Design Studio instructors in the subsequent semesters. 9 out of 15 students participating in this study indicated that they primarily experienced the concept idea in their first year of school. 4 of them primarily experienced in their second year and 2 of them before university education while studying art in high school.

The flour plant of Paşalimanı was selected for the organization of the multipurpose center. This abandoned plant which was built in 1858 and is located on the Anatolian Side of Istanbul. Only four façades have survived to the present time, and its roof, floors, and other building elements have disappeared. The façade openings indicate that the building was constructed with five floors.

Students were primarily asked to identify the necessary precautions for the protection and safety of existing historical façades, and then to create a massive, perforated or transparent interior space. It was stated that all spatial editing required by the proposed function would be designed within this new internal volume. Students were required to create closed, open, or semi-open new spaces in the interior without harming the structural features, materials, textures, and openings of the existing historic façades. Massive or perforated partition walls, gallery spaces with different sizes, and different levels of floorings could be devised. A massive or perforated new shell could enclose the historical façade without any harm. Interior functions could over-flow to the outside by taking into consideration the internal and external relations, and the temporary or permanent façade extensions, that could be created. The list of spaces expected to be designed within the scope of the Design Studio V was transferred to the students, and it was stated that new functions could be added or existing functions could be expanded, according to the concept selection.

This course progressed through 9-hour weekly studio works, which required the active participation of students with the control of design studio instructors. In the 2017-2018 Fall Semester, Design Studio V was held with the participation of 47 students, 5 instructors, and 1 research assistant. The studio works, which lasted for 14 weeks, consist of three basic studio stages. During the first four weeks, students were informed about the project, and similar project examples were examined. A site visit was arranged for the students to see the flour plant of Paşalimanı and its surroundings on site, and to conduct necessary environmental analyses. The design concept was improved with sketch and model, and the first editing on concept-form-space relations was made. Before the second studio stage, a concept jury was held to evaluate the design concept and the first sketches. The second studio stage, which lasted for 4 weeks, continued with the drawings and models on a 1/50 scale; it completed with a second interim jury, which discussed the spatial organizations and the decisions of material, color, and lighting related to the concept. In the final studio stage, students developed their designs, and the furniture system details were drawn in the scale of 1/5 or 1/10. The final products were evaluated in a final jury with guest jury members.

5. Analysis of concept development process in Design Studio V

5.1. The participants

This research was conducted at the end of the 2017-2018 Fall Semester, with the participants of 15 students (12 female, 3 male; between the ages of 21-27) from the Interior Architecture and Environmental Design Department of Istanbul Gedik University. The group subjected to this research consisted of students in their 7th

semester who were given the task of designing a multipurpose center for either culture and the arts or science and technology, within the scope of Design Studio V.

Accidental sampling method was used in the selection of the participants. The researcher chose the participants from the list of all students who took Design Studio V, according to the determined sample size with own opinion.

5.2. The methodology

In the study, structured interviews were used as a qualitative data collection technique. All phases of the structured interviews, including questions and possible answers, were planned in advance. Interviews were done face-to-face. The participants were primarily informed about the study and relaxed to provide a chatty mood. The students were asked about the following topics; their research into the concept, the limitations and difficulties encountered, the methods and tools that were used, the contribution of the interim review to the process, how this concept reflected the spatial configuration, and the significance of designing through a concept. The interviews conducted with the students were recorded with a voice recorder and were transcribed.

Content analysis was used to analyze the qualitative data obtained from structured interviews. At first, the data were read carefully, and within all data, the ones with close meanings (words, sentences, or paragraphs) were put together. These were given a common code associated with the meaning, and the frequency values (number of repetitions) were calculated. Codes and frequency values were presented and interpreted in tables.

5.3. Results of the self-assessments of the students

The student was asked about the main function and user profile of the multipurpose center that they designed. The table below shows the main functions and user profiles of the interiors that were designed by the students, together with the frequency values.

Table 1. The functions and user profiles of the interiors designed in Design Studio V

The main functions of interiors designed in Design Studio V	**Frequency Values**	**The user profiles of the interiors designed in Design Studio V**	**Frequency Values**
Culture and the Arts Center	6	Students aged 10-27	8
Nature and Science Center	3	General user	3
Science and Technology Center	3	University students	2
Astrophysics Center	2	Everyone interested in astronomy, astrophysics, and astronomy	1
Fashion Design Center	1	Musicians and everyone who likes music	1

According to the table, it is can be seen that students mostly leaned towards the design of *Culture and the Arts Center*. These are followed by *the Nature and Science Center* and *the Science and Technology Center* answers. When the user profile of the designed interiors is analyzed, the answers indicate "students aged 10-27" as user profile in general. There were also students who did not define any specific profile- -general users- and/or who determine the user profile as university students (Table 1).

After making the first decisions about the user profile and main function of the interiors, students were directed to conduct in-depth research to reach a design concept. Students were asked what kind of research they had done to reach a design concept; the answers are presented in the table below, together with the frequency values.

Table 2. Research to reach understanding

Research to reach understanding	**Frequency Values**
Theoretical and visual research	10
Investigations of art, artists, and works of art	3
Sample space research	2
Investigation of context and environmental data	1
Investigation of workshops related to the subject	1
Research focused on user profile	1

According to the table, most of students *made theoretical and visual research*. This answer is followed by those of *investigations of art, artists, and works of art* and *sample space research*. In addition, investigations of the context and environmental data, workshops related to the subject, and the user profile were used by students (Table 2).

Students were asked whether they had difficulties in design and how they managed to cope with these difficulties, and whether they exchanged ideas with classmates during the process of concept development. The answers are presented, with frequency values, in the following table.

Table 3. Difficulties experienced in design process and precautions taken

Difficulties experienced in design process	**Frequency values**	**Precautions taken against the difficulties in the design process**	**Frequency values**
Cannot transfer the concept into a form or a space Difficulties in embodying the abstract concept	8	Referrals by the studio instructor	8
Selecting a concept and generating new ideas	3	More intensive sketch and research	6
Difficulties arising from the inability to establish the relationship between user profile and space	2	Making models	3
Contradictions of spreading the concept to all the volume Fear of losing the influence of the concept	2	Examination of existing designs	1
Confusion about a perceptible concept in a space	1	Exchange of ideas with classmates New ideas with brainstorming	9
Structural problems in spatial decisions related to the concept	1		
No intervention with the existing building façade	1		
Cannot think three-dimensionally	1		

It can be seen that, in the design process, students mostly had difficulties in making volumetric decisions while reflecting abstract concepts in the space. In addition, it is observed that difficulties also included selecting a concept and generating new ideas. Moreover, it can be seen that some difficulties arose from the inability to establish the relationship between the user profile and the space, and there were some students who were hesitant about spreading the design concept to the space exaggeratedly and losing its expected effect (Table 3).

It is observed that most of the students consulted with their instructors to get rid of the difficulties that were experienced. In addition, sketches and intensification of research, and studying with models were the other main precautions taken against the difficulties in the design process (Table 3).

In the structured interviews conducted with the students, 9 out of 15 students indicated that studio works were positive for exchanging ideas related to the concept. Accordingly, it appeared that the exchange of ideas and the brainstorming in studios influenced the emergence of new ideas (Table 3).

The tools that students used during the design process were explored; 11 out of 15 students participating in structured interviews indicated that they benefited from models during the designing process, while 4 of them did not. It is understood that 11 of the 15 students also benefited from computer-aided three-dimensional design programs, and 4 of them did not. Accordingly, the intended use of the models and computer-aided three-dimensional design programs are presented with the frequency values in the following table.

Table 4. The intended use of the designing tools that are used during the design

The intended use of the model	**Frequency values**	**The intended use of the computer-aided three-dimensional design programs**	**Frequency values**
To take volumetric decisions about the concept	8	To perceive the space in human scale	4
Opinion model for defining the concept	2	To perceive the concept-space relation as a whole	3
To perceive plan configuration in three dimension	2	To take volumetric decisions about the concept	1
To be able to perceive the limits of the given volume	1	During the presentation of the project	1
		To control the plan configuration	1
		To define and constitute the concept	1

It is understood from the table that students mainly used models to take volumetric decisions about the design concept. This answer is followed by others, which include *opinion model for defining the concept* and *to perceive plan configuration in three dimensional*. It can also be seen that a model was used to perceive the limits of given volume before constructing the given design problem. On the other hand, it can be seen that computer-aided three-dimensional design programs were used to perceive the designed spaces in human scale, as well as to perceive the concept and spatial relation as a whole. When the answers are examined, such as using models or computer-aided three-dimensional design programs for taking volumetric decisions about the design concept, a difference between the frequency values emerges (Table 4).

Within the scope of Design Studio V, two interim reviews and one final examination were held during the 14 educational-weeks of the semester. The first interim review was a concept jury in which environmental analysis, research, design concept, and first sketches were evaluated. In the structured interviews, 12 students out of 15 stated that the concept jury facilitated their concept-development process. Accordingly, the contributions of the concept jury to the students in improving their design concept was explored, and the answers are presented with the frequency values in the following table.

Table 5. The contributions of the concept jury

The contributions of the concept jury to the students while improving their design concept	**Frequency values**
Suggestions on executing the concept in spatial configuration	5
Suggestions on the consistency of the concept	3
Suggestions on volumetric decisions	2
To strengthen the design with different ideas and suggestions	2
To encourage students in developing new ideas	1

According to the data, it is can be seen that the best contribution of the concept jury was its suggestions on executing the concept in the spatial configuration. In addition, it is understood that the suggestions about the consistency of the concept also contributed to the concept- development process. These answers are followed by the others, which include *suggestions on volumetric decisions* and *to strengthen the design with different ideas and suggestions* (Table 5). On the other hand, negative evaluations were also provided by students about the concept jury. There were some comments indicating that the concept jury was out of touch because they evaluated the functions, rather than the design concept.

This study also explored the concept idea (which is the main issue of this research), and how this concept idea was shaped for a given design problem in the same environmental and spatial conditions. The concept ideas of the 15 students, and how these design concepts transferred to spatial configurations, are listed in the following table.

Table 6. Design concepts and spatial regulations

	Function	**Design Concept**	**Formal and spatial regulations**
1	Culture and the Arts Center	Anachronism	An interior volume with contemporary structure was designed, which was contradictory to historical façades and created tension and contradiction between past and present.
2	Culture and the Arts Center	Fluctuation	In order to express the fluctuation movement of the Whirling dervishes, pullbacks were created with amorphous forms in different levels overlooking the main gallery space, and they were connected with steel ropes.
3	Culture and the Arts Center	Shadow	The building was divided into two sides: dark and bright. The light filtering from the bright side was created by light installations in the dark. With the sunshades created inside the historical façade, the sunlight was controlled, and light and shadow installations were designed in the interior surfaces.
4	Culture and the Arts Center	Collective	Common unrestricted areas were designed for gathering and for making and listening to music together.
5	Culture and the Arts Center	Dull and mass	New massive masses with specific functions were placed into the historical void volume, to create a feeling of fullness.
6	Culture and the Arts Center	Discovery	With the design of some masses that were stacked at different angles to the inside walls of a new volume, curious spaces were created for discovering.
7	Nature and Science Center	Continuity	An orange ramp around the glass display areas was designed, which started from the ground floor and continued to the top; to ensure continuity of this ramp, on the last level an interior terrace was designed, from which a visitor could see all the exhibitions.
8	Nature and Science Center	Spiral	A wooden spiral ramp that encircled a glass tube volume with tropical plants inside was designed, and it provided access to all the floors.
9	Nature and Science Center	Ratio and proportion	A new ratio was determined according to the current window system of the historic façade, and adumbrated by regulating the fore-back relations and heights of the masses according to this new ratio.
10	Science and Technology Center	Division and connection	Student was inspired by the environment in which the abandoned flour plant was located and by how the Bosporus divides Istanbul into two parts and the bridges connect them; in the same way, the designed volume was divided into two parts, and these parts were joined with the fasteners.
11	Science and Technology C.	Create your own space	It was provided that the users could create their own spaces with the moving surfaces and furniture on rails in the floorings.
12	Science and Technology Center	Orbit	A ramp (an orbit) was designed, starting from the entrance and ending at the same point that lead the users to the functions; functions were designed as spheres (planets) attached to this ramp.
13	Astrophysics Center	Subsumption	A concave glass roof covering the entire space was designed.
14	Astrophysics Center	Concentric	Inside two concentric cylindrical volumes, non-gravity rooms, video rooms, planetarium, and experiment rooms were designed.
15	Fashion Design Center	Continuity	A ramp, starting from the entrance hall and rising till the last floor, was designed and used for circulation and as a podium.

According to the data, different design concepts emerged that offered different volumetric solutions for a single given design problem in the same environmental and spatial conditions. This research clearly reveals the diversification of formal solutions and different identities of the same space that was gained by different design concepts (Table 6).

The students who participated in the structured interviews were asked to evaluate the contributions of designing through a concept to the final products, and the significance of the concept idea for designers and designs. The evaluations are presented with the frequency values in the following table.

Table 7. The contributions and the significance of the concept idea

The contributions of designing through a concept	**Frequency value**	**The significance of the concept idea for designers and designs**	**Frequency value**
Develops identity for the design. Tells a story to the user.	5	Guides and encourages the designer about how the design will result.	6
Reveals the cause-and-effect relationships for every designed object, function, or space.	4	Develops identity of the design.	5
Brings a design in meaning and qualification.	2	Determines the purpose, the reason, and the result of every spatial, volumetric, or functional intervention in design.	4
Provides user function and space integrity.	1	Constitutes the design and designing.	4
Provides spatial integrity in the whole.	1	Limits the infinite propositions, considerations, and alternatives in design.	2
Is the starting point in design.	1		
Leads the selection and construction of details such as material, color, texture.	1		
Accelerates the design and gives desire for designing.	1		
Determines the limits that the designers should apply when constructing the spaces.	1		

According to the frequency values of the contributions of designing through a concept, the most common evaluation is *to develop an identity for the design and to tell a story to the user*. This evaluation is followed by others, which include *to reveal the cause-and-effect relationships for every designed object, function, or space* and *to bring a design in meaning and qualification* (Table 7).

According to the frequency values of the significance of the concept idea for designers and designs, the most common evaluation is *to guide and encourage the designer about how the designs will result*. Other evaluations include *to develop identity of the design*; *to determine the purpose, reason, and result of every spatial, volumetric, functional intervention in design*; and *to constitute the design and designing* (Table 7).

6. Discussions

The significance of the students' research at the beginning of the designing process cannot be denied. This research can be done in different ways, such as examining the sample spaces or investigating the environmental data, the user profile, and the theoretical background of the design problem. The research on the sample spaces and the visuals enables students to have ideas about the formal, structural, and constitutive decisions of designed spaces. By obtaining this information visually, spatial decisions and choices -such as material and color- are recorded in their minds, and this cognitive information is recalled at the right stages of the design process and contributes the progress of the project. Especially in the concept- development process, encyclopedic research is also performed; this includes investigating definitions, dictionary meanings, and historical approaches, as well as mottos of famous philosophers, philosophical explanations, and classifications. This kind of research is beneficial in defining the core, nature, scope, process, and evolution of the design problem. In this way, students have cursory information about the design problem, and they produce a design concept idea that tells a story to the user. For instance, while investigating modern art and artists, a student who designed a Culture and the Arts Center was inspired by Emre Yusufi's art work called Hercules on Ride, and thus chose the concept of anachronism for his design. Another student, who designed a Nature and Science Center, examined the history of botany and learned that in ancient India, botany was divided into parts such as trees and beneficial plants for human beings and creepers; this student determined her concept by abstracting the creepers as a spiral (for formal and spatial regulations, see table 6). It can be seen from these examples that at the beginning of the designing process, research about the essence of the design problem is beneficial to producing an effective concept idea. These descriptive and theoretical investigations should be integrated with sample space research, because in the process of transferring the concept idea to spatial configurations, the cognitive background obtained from these sample space researches is utilized.

Some difficulties exist in the design studios, such as taking spatial decisions for transferring a concept obtained from the descriptive and theoretical investigations to a form. Students mostly experience some contradictions about producing and embodying a perceptible concept in a space. In the design studios, interaction with the studio instructors, active participation with the critics, and utilizing the studio environment properly are significant for improving the design. Herein, it is inevitable that studio instructors are the main consultants for solving these problems, in the way of going from abstract concepts to spatial forms. Instructors should motivate students to investigate and analyze the sample spaces, and more sketches should be done according to these searches. Furthermore, studying with an abstract concept model will be effective in defining the boundaries of the given volume and in perceiving the effects of the first formal regulations in three dimensions. Design studio environment is beneficial for the interactions of students with each other; following the phases of other projects influences and encourages the students. Brainstorming, where students come together to talk, think, and produce about a design problem, creates new ideas or matures existing ones, and exchange of ideas contribute the design process. Instructors should create an environment and the opportunity to exchange ideas and encourage all the students to brainstorm in order to develop the concept process.

Models can be used to organize the first spatial regulations in transforming the design concept, which is produced by research and brainstorming, into a three- dimensional space. With models, students first examine the possibilities and limitations of the given space; then, they control the formal organizations related to the concept in three dimensions, and evaluate the effects of the abstract concept on users. In addition to helping with concept-related presentations, using abstract idea models that describe the design idea is particularly suggested in this research. Although computer-aided three-dimensional design programs are typically thought to be used in the presentation phase, they are also used in the design process for perceiving the designed spatial organizations in human scale. These programs are testing tools for the students; after designing all spatial organizations related to the concept, they are used to perceive and control the concept-space relation as a whole. This result is not unreliable when we consider that are in a computer age and the new student profile is very closely connected to the digital world. However, students should frequently be reminded of the significance of sketches and working models in the intellectual stages of design, and that computer- aided three-dimensional design programs are tools for supporting the presentation phase of design.

Juries are an indispensable part of design education; in juries, students receive criticisms, suggestions, and evaluations in order to develop their designed spaces and their design ability. The evaluation of the first products with a concept jury, after the concept development process, is often one in which students have problems and difficulties; however, it is beneficial in encouraging students for new ideas and in strengthening their designs' with different suggestions. The designing process is improved by the suggestions and complaints in: executing the concept in the spatial configuration; consistency of the concept with the essence of the design problem, user profile, and the main function; formal decisions; and concept-space relations. However, it should be ensured that without going beyond its aims, the concept jury must be interested in the design concepts for the motivation of students and the progress of their designs.

Design is an open-ended process; there are no true formulas for spatial organizations. Even with the same environmental, physical, and structural conditions, the spaces designed with different concepts display different identities. This can be understood from students' self-assessments: an abounded flour plant, whose roofs and other building elements have been destroyed and for which only four façades have survived, had different meanings in each student' interpretations and had gained a soul. It is clear that students made different interpretations from the same design problem based on their different intellectual backgrounds and different design investigations.

Designing through a concept develops an identity through to the final product, and conceptual designs tell stories to the user about the essence of their design problems. Therefore, conceptual designs are also qualified designs. The concepts assign meanings to the volumes produced by bearing, partitioning, and reviving elements. Designers need to produce unique designs in order to be innovative and effective among others. Herein, the concept idea is significant for developing a unique identity in the designed space and in creating difference among the crowded production pile. The concept idea is a roadmap for the designer, significant in leading and encouraging the designer on how the design will result. It emerges in the intellectual stages of design and provides formal cues to the designer throughout the process, reaching to the final product. The concept idea determines the purpose, reasons, and results of every spatial, formal, and functional intervention. It is the answer to all the questions asked while designing. Every object, product, equipment, or function related to the design concept is considered to be an inseparable and integral part of the designed space. The concept idea provides spatial integrity in the result design, and this spatial integrity is taken into consideration when making formal decisions.

7. Conclusions

The focal points of this research, provided in detail in the discussion section, are summarized below, along with some suggestions for students and instructors:

In the first intellectual phases of the designing process, theoretical research about the essence of the design problem is beneficial to producing an effective concept idea. On the other hand, while making decisions about concept, form, and space relations, the cognitive background obtained from sample space research is used.

Progressing interactively with the instructor and utilizing the studio environment properly are the most effective solutions for solving the contradictions about transforming the concept into a spatial form.

Brainstorming -where the students come together to talk, think, and produce about a design problem- is beneficial for concept development.

Models are substantial designing tools for examining the possibilities of the given space, for perceiving the formal organizations related to the concept in three-dimension, and for controlling the effects of the abstract concept on users. Computer-aided three-dimensional design programs are testing and presentation tools for perceiving and controlling the concept and space relation as a whole.

Concept juries are good guides in encouraging students and strengthening different suggestions and design ideas.

This study explained why some designs and designers are outstanding within the crowded production pile: through conceptual approaches that form a unique spatial identity.

Some suggestions for future research based on this study are listed as follows:

Concept ideas can be compared in design studios with students from different years.

Spatial solutions can be analyzed by giving the same design concept to all students.

The same method can be applied to different disciplines, such as architecture, visual communication design, or industrial product design, and then interdisciplinary concept approaches can be compared.

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PLEASE "DON'T" TAKE A SEAT OR RECONSIDERATION OF SITTING ERGONOMICS IN DESIGN

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Abstract
Protagoras of Abderas (c. 490 – c. 420 BCE) has said "Of all things the measure is Man" and though the phrase excludes half of the humans that existed, it touches upon the very principal fact of designing in almost all scales from products to architectural and urban spaces. Human anatomy which has been the constant of ergonomics, which is simply defined as the adaptation of the physical environment and its elements to human beings, has mainly defined human physiology and its relations with the environment. Being one of the most basic knowledge areas of not only industrial product design, but also of especially architecture and interior architecture with respect to human space interaction and furniture design, ergonomics is one of the most important evaluation criteria.

This study will focus on the ergonomics of furniture and the underlying physiology of seating in particular with respect to contradictory interactions of chair design which not only shapes the spaces we use, but also gives the basic active and passive human posture in majority of spatial organizations from sitting to working, from eating to taking a rest. From the hypothesis that the social and cultural history of seating has evolved in contradiction with the biological and physiological foundations of human anatomy, the study aims to open a debate on how the transition of biological evolution to social evolutionary processes transformed seating from a physiological activity to a social behavior which is contrary to the former biological and anatomical foundations. According to Cornell University Ergonomics Web Dea 3250/6510 Class Notes an estimated 50% of people in the industrialized world are to suffer some form of back pain and many of these are related to poor seat design [1]. How we sit and what we sit on affect the health of the spine. The lumbar region is the most frequently damaged. The vertebrae in the lumbar region are the largest in the spine. Yet it might still be much more complex than just blaming the user of sitting poor and the designer of designing bad. Contrary to what is thought of as the sitting action and the design of its elements which are applied today in the entire evolutionary developmental period of mankind. The emergence and present forms of situational action point to social and historical concepts rather than ergonomic foundations. i) anatomical, ii) historical and iii) cultural data, show that seating forms supported by artificial design elements, such as chairs and armchairs, are not the descendants of the anatomy of the human body into an action but consequences of the cultural lifestyles. The chairs and armchairs, which are the most common industrial design elements of social and the historical processes which are related to human physiology and the concepts of work, family, gender, power, economy, social identity and status, with their relationship with the ergonomics of the sitting will constitute the basic data of this work

Key Words: *human factors; seating; public space; interior design; cultural approach*

Introduction

Despite the design process and designed products related to seating are heavily associated with ergonomics, the study of humans in relation to their work and working surroundings including not only spatial factors but also almost everything people come into contact, ergonomics in general or lumbar spinal postural health like medical health factors do not seem to play the dominant role historically in seating design when compared with socio-cultural, economic and even psychological factors. Even the word "work" might be more critical than "health" with respect to ergonomic seating design. Though homo erectus, the human ancestor with an upright spine appeared on earth almost 1,9 million years ago, and the other two-legged hominoids were to appear even before, seating and design for seating seems to have appeared after millions of years and even after the transition from hunter gatherer civilizations to settled societies. It is another interesting fact that recently discovered uncontacted tribal societies existing even today do not seem to have developed chair, armchair, stool or couch like designs for seating as we experience in our daily lives. The history of seating goes no further back than ancient Egypt, where the depictions represent social status considerations rather than ergonomic or anatomical concerns. The earliest representations of designs for seating goes back to 3100 B.C. Egypt and they usually refer either to a social status or a task (like a certain craftsmanship requiring the craftsmen positioned at a specific distance or posture from their work [2].

Seems like seating design emerged at the times of transition from hunter and gatherer nomadic societies to agrarian civilizations when people and their bodies had been forced to stand still for operational work tasks or for social status in hierarchically more structured settled societies. The main arguments studied to be discussed in this research can be stated as below:

1- Seating designs seem to have emerged relatively late when compared to other designs related to human needs.
2- When compared to the anatomical indifference among humans, quantitative and qualitative characteristics of designs for seating is enormous.
3- Place making and social considerations of designs for seating are more significant than their ergonomic or anatomical properties.

1. Seating designs seem to have emerged relatively late when compared to other designs related to human needs.

Strangely first chair or stool like sitting artefacts are not among the first designs by humans when compared with more than 2,600 sharp-edged flakes, flake fragments and cores (cobbles from which flakes have been removed), found in the fine-grained sediments of a dry riverbed in the Afar region of Ethiopia, which had been used to remove animal skins from the flesh and dates back to 2.52 and 2.60 million years ago, or with the first musical instruments of bone flutes which are 42,000 or 43000 years old [3].

As an introduction to the history of seating three types of distinctively different seats seems to have developed by time. These are **i)** (both fixed and foldable) stools, **ii)** benches with their antecedents the chests, and **iii)** chairs and their variants armchairs. Like many types of sophisticated designs from jewelry to boats, the first representations of designs for seating go back also to ancient Egypt (3100 - 475 BC). Tomb, wall, temple, vase paintings show Egyptians using chairs, tables, couches, chests, stools and beds. They also unveil a big difference and variety among the furniture of different ranks of people from peasants to the wealthy rulers.

Different than the most common piece of furniture of ordinary Egyptians which were mostly simple three-legged light low stools, only wealthy noble and royal Egyptians used chairs for seating. The higher the status of the individual, the taller and fancier the chair the person sat on was. The rich had chairs painted to look like the carved and inlaid chairs of the queens and pharaohs, but these were cheaply made replicas in comparison. Chairs were usually made of wood and were much like today's chairs except that often they were much lower to the ground. A very elaborate chair from King Tutankhamun's tomb has a scene carved into the back, a bucket seat, lion legs ending in lion paws, and a gold inlay of eagle's wings. Chairs featuring scenes, inlays, heads, animals, carving, and precious materials such as gold and ivory were common among the ruling families.

According to Geidion, the Egyptians had equipped their houses with great skill. They have developed benches, folding beds, and especially chairs and stools of various kinds. The chairs were adapted to either squatting in the oriental manner- in which case the piece is lower than normal and its seat is deeper- or to sitting with one's legs hanging down in the western manner [4].

While the ancient Egyptian stools being extremely low by today's standards, the chairs were strangely higher when compared with modern furniture. Many representations of ancient Egyptian chairs of different heights, most probably due to the hierarchical rank of the sitter, were to require footstools to be reached, and once seated the footstools were being used to support the sitters' feet. While the stools of the 1st Dynasty were simply surfaced with plain seats with no backrest by 2nd Dynasty a low backrest appears supporting the pelvis and sacrum of noble wealthier Egyptians in a fixed orientation sometimes accompanied with cushions for more comfort. Large seating areas of chairs especially from the 4th Dynasty on for almost 12 dynasties is an evident factor that they were not only being used with legs hanging down, but also with folded legs as well. During this long period until around 1320 B.C chairs have reached their highest forms in terms of refinement and elegance.

Fig. 1. Queen Hetepheres' Chair from Egypt during the Fourth Dynasty of Egypt (c. 2600 BC)
Egyptian Museum, Cairo. Main floor - gallery 32
Source: https://commons.wikimedia.org/wiki/File:Hetepheres_chair.jpg, Accessed on March 11th, 2018

Greeks develop the notion of comfort by adapting higher supports for the backs and arms, and Romans add decoration and ornamentation to what structurally already existed. Gurr, Straker and Moore write that excepting in the Roman Empire, sitting in chairs becomes an almost foreign art, lost for centuries and revived only in the churches, and the halls of the powerful and wealthy. According to them chair is a "Seat of Power" for Romans and the collapse of the Roman Empire signals an end to the furniture developed by Egyptians until these times. It is not until the 17th and 18th centuries that designs resembling the Greek and Roman styles re-appear [5].

These statements bring us to our second argument about the relation between sitting and comfort.

2. When compared to the anatomical indifference among humans, quantitative and qualitative characteristics of designs for seating is enormous.

It looks like there is no direct scientific and/or anatomical relation with the postural comfort and sitting, but strangely the opposite can be stated that there is a relation between uncomfortable body posture and designs for sitting. From the human anatomy standing point, the most comfortable natural position for human body is either standing and walking or lying down. The most ideal position of the body must be while floating, being in the water as load-and-pressure balance is even. The body is free for any movement. Seating position, either sitting on the floor or especially a lifted surface is compelling posture and designing for it, means to find out the most ergonomical and anatomical settlement for variable human bodies is a challenging design issue. Holding the body on a specific level for one who engages in doing something for a period of time is a problematic design task.

Characteristics of seats and sitting postures are not only anatomical issues but also culturally, historically and geographically interrelated subjects. Life style, generated by cultural differences, religious rituals and spirituality, climate, dressing customs, genders' habits have shaped the way people sit, either on floor or on elevated chairs, stools or alike in contemporary life settled urban societies. Compared to nomadic cultures and hunter-gatherer societies have left even no traces of furniture. Seat as a furniture, like chair, armchair, stool, couch etc. is considered as an item of the Western civilization and urbanization, which is a controversial issue for the human body. Similar to nomadic and hunter-gatherer societies, seating furniture disappears in the daily life of today's Eastern and Southern societies. Habit of sitting on floor and postures have become common strongly rooted to traditions.

Gordon W. Hewes, the anthropologist determined almost hundred world-wide common sitting positons in his study. Based on his observation, he declares that "At least a fourth of mankind habitually takes the load off its feet by crouching in a deep squat, both at rest and at work,". Hewes found out that deep squatting is common sitting posture in Southeast Asia, Africa and Latin America as much common as cross-legged sitting. Daily tasks and rituals such as cooking, dinning, crafting or working and relaxing performed in this posture mostly by South Asians. He also identified that in Southwest tribes like Melanesians has customarily posture is sitting on a floor with leg stretched straight [6].

Fig. 2. Squatting Pose by an Asian
Source: https://www.pinterest.co.uk/pin/548805904561133933/ Accessed on March 11th, 2018

According to Witold Rybczynski, the author of the book titled "Now I Sit Me Down", every chair represents a struggle to resolve the conflict between gravity and the human anatomy. He states that sitting up is always a challenge with his words: "We are good at walking and running and we are happy lying down when we sleep. It is the in-between position that is the problem" [7].

Bending the knees either with the legs parallel or with crossing them over each other are the most common ways of taking a seating position on the floor of a human body. One can also sit with the legs unbent, using something solid as support for the back or leaning on one's arms. These basic sitting postures on floor is in various cultures shared common positions, named differently and ranges with little positional differences. For example; in European languages, cross-legged position with a different leg situation traditionally named "tailor-style" and "Alaturca or Turkish style" especially sitting by Turks, Mongols and Non-Han Central Asians, in American

English “Indian style” and in Japanese “Agura” [8]. Traditional tailor-style sitting is considered as comfortable, convenient, efficient and communal pose as it allows the tailor to move fully, sit and collaborate as a group of tailors on a large surface [9].

Fig. 3. Traditional Tailor-style Sitting
Source: (left) https://www.pinterest.co.uk/pin/211950726188138128/ (right) https://seasaltercross.com/2015/03/09/tradition-of-cross-legged-tailors/ Accessed on March 11th, 2018

Added to tailor-style sitting, “seiza” and “kiza” are the traditional Japanese formal sitting poses while performing tea ceremonies and aikido; “lotus position” is the way to sit by resting each foot on the opposite thigh so that the soles of the feet face upwards; “vajrasana (diamond pose)” is a close position to seiza; and “burmese position” which is used Buddhist sculptures in Burma, are some examples of comfortable sitting positions for human body [10].

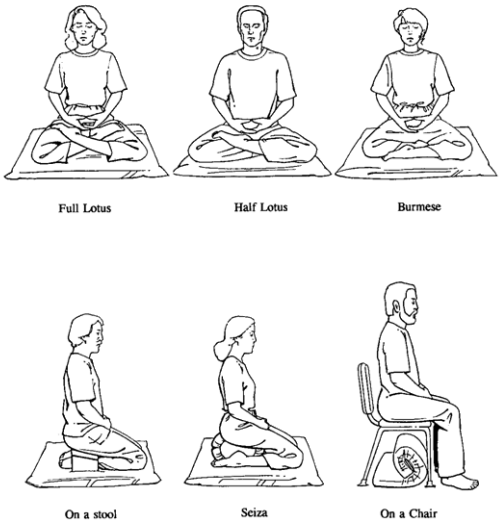

Fig. 4. Lotus, Burmese and Seiza sitting Poses
Source: https://tr.pinterest.com/pin/109071622202229507/ Accessed on March 11th, 2018

All mentioned sitting positions on or above a floor varying from culture to culture have been generated from ancient knowledge found in spiritual and ritual experiences on the floor, are found relaxing and even healing the human body. Basically, the body in all these poses, is sitting on a surface covered with soft mats or carpets for the comfort of the body where the knees, tibias or thighs are lying down on and taking the pressure of the loads. On the other hand, if the person is not accustomed to sit on the floor as a habit since childhood or has some medical problems on parts of the body like knees tibias and thigh, low simple apparatuses like “seiza stool”, soft blocks or cushions are created as minimal supports, while performing daily activities and working.

Fig. 5. Seiza sitting pose during a Japanese tea ceremony
Source: http://www.wiki-zero.com/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvRmlsZTpTZWl6YV93b21hbl90ZWEuanBn /Accessed on March 11th, 2018

Fig. 6. Seiza stool
Source: https://www.pinterest.co.uk/pin/721420434031938721/ Accessed on March 11th, 2018

By being aware of this non ergonomical aspect of chairs, designers like Gerrit Rietveld and Verner Panton might have designed chairs mostly as spectacular or sculptural place-making objects rather than body-oriented utilitarian products for comfort and performance.

Fig. 7. Verner Panton (left) Panton Chair, (mid) Fantasy Landscape Room, (right) Gerrit Rietveld, Zig Zag Chair
Source: (left) http://www.wiki-zero.com/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvVmVybmVyX1BhbnRvbg
(mid) http://blog.wanken.com/9360/verner-panton-visiona/
(right) https://www.smow.com/en/manufacturers/cassina/zig-zag.html /Accessed on March 11th, 2018

3. Place making and social considerations of designs for seating are more significant than their ergonomical or anatomical properties

Whether designing or selecting items for working or living spaces, seating elements play the major role. It does not matter if it is a corner for reading, a table for dining, a stadium with thousands of seats, the seating elements define the quality and qualitative aspects of those spaces. Frank Lloyd Wright and Charles Rennie Mackintosh's iconic dining chairs which were designed for their own living spaces are a good example of this place making aspect of chair design. Their closed space making inside a closed space (either in the form of a prison cell or a warm detachment from outside) is a typical signification of what these chairs are supposed to function in a society beyond their defined utilities (of being a chair for dining). Frank Lloyd Wright believed that it was impossible to detach a building from its furnishings. In an English preface to the Ausgefuhrte Bauten und Entwurfe, published in Germany in 1910, he wrote: "In Organic Architecture…, it is quite impossible to consider the building as one thing, its furnishings another and its setting and environment still another. The Spirit in which these buildings are conceived sees all these together at work as one thing…The
very chairs and tables, cabinets and even musical instruments, where practicable, are of the building itself, never fixtures upon it…" [11].

Fig. 8. Side Chair, about 1902, Frank Lloyd Wright, American, oak with leather - Cleveland Museum of Art
Source: https://commons.wikimedia.org/wiki/File:Side_Chair,_about_1902,_Frank_Lloyd_Wright,_American,_oak_with_leather_-_Cleveland_Museum_of_Art_-_DSC08954.JPG#file/Accessed on March 11th, 2018

Daniel Chandler in his book "The Basics, Semiotics" explains the codes of signification in a society and classifies them into three as follows: i) Social Codes, ii) Textual Codes, and iii) Interpretative Codes. Social codes, by being the verbal language (phonological, syntactical, lexical, prosodic and paralinguistic sub-codes); bodily codes (bodily contact, proximity, physical orientation, appearance, facial expression, gaze, head-nods, gestures and posture); commodity codes (fashions, clothing, cars); and behavioral codes (protocols, rituals, role-playing, games) seem to be the dominant generator of design for seating [12].

Especially commodity codes combined with behavioral codes define the basic characteristics of chair designs with little significance of postural ergonomics related to comfort. Stools and especially chairs with their variations like armchairs have been a reflection of Western society's understanding of hierarchical ranks and tasks needed to keep the society on its foundations. Whether it is a bar stool by the latest star designer or a dining restaurant chair, they do not differ from the other task-based office chairs or even operational medical chairs, which come as a priority for the design of spaces. Eating in a restaurant on a chair is a behavioral code of a specific society rather than a human activity based on anatomical needs. Despite the claims of being comfortable or depending on measurable performance enhancing design parameters, these claims seem to cover the uncompromising contradiction between the social tasks being performed and the anatomical realms of human body.

Though pharaohs of ancient Egypt and certain rulers of today seem to have appeared historically very different and very separated from each other, it is not their anatomical indifference but their similar social ranks and tasks make them perform similar sitting postures on similar types of chairs or in similar types of seating orders. Societies who lived before or differently ordered than the settled Egyptians of the ancient past, like so called primitive hunter gatherers or nomads seem to have developed similar designs for lying down, which is the most comfortable position for the human body to rest, but not similar designs for sitting, which seems like not a necessity of the body, but of the society like today. The Greek architect's approach while designing the seating for the theater for place-making was not that different than that of the Roman architect while designing the seats of the colosseum, where gladiators fought, and it is not that indifferent from today's architect designing football stadiums. The seats of these three historically and culturally different civilizations share a similar pattern of seating design, not because of unchanged human anatomy, but common social orders remain unchanged all these millennia. Though the content of these three different spaces differ in terms of spectacular performance, one a theatrical dramatic representation, one a violent fight, and the latter a sport activity, they share the same type of a social task keeping masses in a similar type of socially passive order.

Fig. 9. The "Big Three": From left to right: Joseph Stalin, Franklin D. Roosevelt, and Winston Churchill on the portico of the Russian Embassy during the Tehran Conference to discuss the European Theatre in 1943
Source: https://upload.wikimedia.org/wikipedia/commons/a/a8/Tehran_Conference_%2C_1943.png /Accessed on March 11th, 2018

Conclusion

While the design and pattern of chairs around a dining table maintain the behavioral codes of tasks and orders in a certain type of society the similar pattern of seating around the football stadium does almost the same. It is the seating position, which is a contradictory bodily condition that maintain the social order and status maybe more than any other type of design in a certain type of society. Driving a car, performing almost all types of tasks under the context of office work, watching television, drinking a cocktail at a bar are all social tasks being performed while anatomically uncomfortable, while sitting. On the other hand, it seems like we have a marvelous discipline of ergonomics trying to make uncomfortable seats comfortable, to make unsuitable tasks suitable.

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PREFERENCES and PLACEMENT ON LIVING ROOM & DINING ROOM FURNITURE: A CASE STUDY AT SAKLI KENT MASS HOUSE FAMAGUSTA, NORTH CYPRUS

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Abstract

Since the existence of humanity, the act of sheltering has been going on until today. Throughout history, living activities have taken place besides sheltering. These are eating, sleeping, resting and working. Today, the living space in mass housing is the living room, the kitchen and the dining room. It is the furniture inside that transforms these areas into a liveable environment. Every space has different needs and expectations. Furniture can give identity towards the needs of the space. Each furniture has different tasks and different placements. As Ching says, furniture is a mediator. It provides the transition between the space and users. While providing aesthetics and usability to the interior space, it provides comfort and healthy environment for the user. In addition, furniture has an active role in defining the space. Users are looking for suitable furniture for their spaces and themselves to meet these needs [1].
The living room and dining room furniture should comply with the space and the user, meet the needs of the user and reflect the user. Users try to choose and place the living room and dining room furniture based on their needs and tastes. The furniture placement may not be suitable for the user, the firms and the interior architect in terms of the user and placement when the mass housing is first designed. At the same time, the furniture preference of the users and interior architects may not be suitable for the user and the space. In order to find answers to the question was main purpose of study. "*What are the differences and/or similarities in furniture preferences and placements by users, by contractor firm and by interior architects in the living spaces of the mass housing in Famagusta, North Cyprus*?"
To achieve the results in the study, two methods have been used; qualitative and quantitative. The first part of field covers observation, photographing, drawings and super positioning. First part aimed to analyze the living room and dining room furniture of detached houses including how furniture placement is done by three actors. The second part of the case study is done by the quantitative method. The second part contains questionnaire technique with different actors that are the users of houses who bought their furniture themselves and by the help of interior architects.
In the result of the study, similarities or differences were determined on the preference and placement of furniture by user, interior architect, and contractor firm in Saklı Kent mass housing of Famagusta, North Cyprus. Factors that effect on furniture placement & preferences tested and observed. There are two main criteria's affect the placement of furniture; Functional Criteria, Visual Criteria. In addition, there are seven effective factors in furniture preferences that have been tested in cases of Saklı Kent mass housing. These are the physical properties of the furniture, the usage place, the user, the service offered by companies, the effect of the brand, the advertisements and interior architects.

Key Words: *mass housing, living space, furniture placement, furniture preference, North Cyprus.*

Introduction

The living spaces are the places, which the families use the most, gather together, share concrete and abstract meanings in the houses. The living room and the dining room are the places that form the living space. Physical activities define the living spaces. Furniture provides these activities, which create living spaces. Throughout the years, furniture took a crucial place in people's life. The use and production of the furniture has continued in every age. Furniture is seen together with the historical changes of the space from the first day until now. During this time, the furniture has improved and developed with user experiences. If the concept of furniture is to be defined, it can be seen in several different ways in relation to each other. Furniture can be a connection element between the space and the user because a house without furniture can be described as an empty box. When this space meets the preferred furniture and activities, it can be transformed into spaces such as kitchen, living room, bedroom, toilet, and bathroom, and it can gain the identity of the place. Furniture is to meet the personal, physical, psychological and cultural needs of the user. Users are asked to be satisfied as furniture preferences and furniture placement.
All people, as a user, try to use the values that they possess in the best way to satisfy the requests. During this effort, users are concerned with the decision-making process, the processes of searching, selecting, purchasing,

using, and disposing of products and services. This process is called user behaviour. There are four important factors, which affect the behaviour of users: Social factors, personal factors, cultural factors and psychological factors. In addition, there are many variable factors in the selection of furniture that can vary from person to person. Every individual gives his own decision about the furniture for his house by evaluating social, psychological, cultural, and physical values because users are asked to be satisfied with the purchase of furniture. When designers design furniture, choose furniture or place furniture in the house for their clients, the influence of the factors on the furniture affecting the users must be known and the designers should orient themselves accordingly [2].

Definition of Problem

House is the place where the best environment can be reflected. Today, the house environment is created and the comfort of the house is sought while designing many public spaces. At this point, furniture is emerged as the most effective element that will provide comfort and healthy environment. Users make a research on the furniture before buying it. The living room and dining room furniture should comply with the space and the user, meet the needs of the user and reflect the user.
The furniture placement may not be suitable for the user, the firms and the interior architect in terms of the user and placement when the mass housing is first designed. At the same time, the furniture preference of the users and interior architects may not be suitable for the user (demographic characteristics) and the space.

Aims and Objectives

The main purpose of the study study is to determine differences and/or similarities of furniture preferences and its placement in mass houses according to different actors (user, interior architect, contractor firm). Another aim of the study is to find how to choose the furniture for living spaces (living room and dining room) in mass houses (apartment buildings and detached houses) and to create an approach model for the furniture of the placement to be used in these places.

Research Methodology

This study is composed of literature review and case study. The literature review includes books, articles, online book sources, master & PhD thesis, journals and internet sources to find out necessary information about mass housing, furniture classifications, furniture preferences, and placements. Furthermore, the research has been analysed based on the case study, which comprises of observation, drawings, photos, and survey. This study follows the qualitative research method in order to analyse furniture placement. In addition, the study follows the quantitative research method to analyse furniture preferences.

Literature Review – House / Furniture Relation
House

The definition of mass housing is where people can find social, cultural, educational, health and recreational activities within certain areas [3].
Keleş defines mass housing as a major initiative. Mass houses can provide economic, social, and technical benefits when built in large sites, not individually [4].
In terms of design, users are known as the main factors. Houses have changed with the change in people's lifestyles. There are a few kinds of household that has lost its original shelter function throughout history. Within time, this type of mass houses became apartments, row houses, semi-detached, and detached houses due to society's cultural, geographical, historical, and economic structures, and needs.

Living Spaces in Mass Houses

According to Oxford Dictionary, living spaces are the places for people to meet and spend their times by focusing on that part of the house or flat [5].
Living spaces are the most used places where people spend their most of the time. Living rooms, dining rooms, and kitchens are considered as living spaces. As the kitchen is out of the scope of study, the description of the living spaces will cover the living room and dining room. People mostly spend their time there when they are back home from work or when they wake up.

Definition of Furniture

In the period when the concept of furniture was not known, people used to take advantage from the nature and produce some tools to make their life easier. These tools are considered as furniture. For example, lopsided wood and flat-plate rock are known to be used as the first furniture element as a bed [6]. According to Jim Postell, the furniture is known as fixed or movable object, which makes people's life easy. Small accessories and equipment are considered as furniture if they are used for specific purposes [7]. In other words, furniture sets the interior design of a house. It makes life easier when used for a specific purpose. As the time passes, furniture can change and develop due to people's economic situation, needs, culture, and choice. "Furniture reflects the character of an interior space and is the cultural symbol that represents the character of age and area" [8]. There are four classifications of furniture. Usage by Location, By Action, Group of Furniture Classification, Classification of General Features on Furniture.

Role of Furniture in Space Organisation

Aristotle describes space as "the union of objects". Space can be handled in two ways as architectural space; living space and geometric space [9]. A space parcel meets the physical, psychological, and social needs of space users. A structural space is considered, described, and understood in a concrete and abstract way [10]. Putting emotional impression on a space is called the living space. Human beings have been in interaction since the establishment of life cycle and this interaction plays an important role in shaping the space. There are elements such as walls, floors, ceilings, openings, light, colour, and furniture that make up the interior space plan and define the interior space.
There are two main criteria affecting furniture organization. These are functional and visual criteria. Functional criteria are clearance, circulation (traffic patterns), pairwise relationship, conservation, and lighting. The visual criteria are balance, alignment, emphasis (focal point) [11].

Functional Criteria

Clearance: Each furniture has its own free space. When the furniture is settled, there must be a gap in the direction of furniture needs. Space should be suitable for the usage of the furniture and should not restrict the usage of the furniture.
Circulation (Traffic Patterns): The spatial organization of furniture is very vital to create circulation within the space [12]. The circulation of the users and the walking axles are two of the most important factors when the furniture is settled. The space, left around each furniture, provides access between the furniture and the space.
Pairwise relationships: There is an influence on the furniture layout of the bonds between furniture. Two furniture have two different functions and there is a direct relationship between each other.
Conversation: Another factor that affects the location of the furniture is conversation. In order to support the users' dialogue with each other with normal tone, it is necessary to find a sufficient distance between the furniture. The average distance is between 120 cm and 240 cm.
Lighting: Another important factor in the placement of furniture is the light. Every space has different lighting needs. There are several different activities in these areas.

Visual Criteria

Balance: Colour, texture, size, shape, and ratio of the design elements as a whole are distributed in the field of design. There are two equilibria; Symmetric and asymmetric balance. Symmetric equilibrium is called repetition of horizontal / vertical or diagonal axes of design elements in the same editing direction. Asymmetric equilibrium is defined as the fact that design elements are not distributed around the same axis.
Alignment: Items accelerate along the edges from one centre to another. It can be done with different elements in the same place where it is seated on a certain axle [13]. Aligning the interior is to create the same accent for each other, with reference to any point on the walls of the room. Aligning while laying furniture layout can increase the visual quality in the place [11].
Emphasis (Focal Point): The principle of visual presentation is effective in the interior and emphasizes the focal point. Emphasis can be made to draw attention and focus. It is aimed to gather the focus on a point in the composition and to minimize the focus of the other elements [14].

User Preferences on Furniture

Factors Affecting User Behaviour

In many sources, can be seen the factors that affect user behaviour in different classifications. In general, the factors, which affect the behaviour of users divided into four groups. These are social factors, psychological factors, personal factors and cultural factors [15].

Furniture Buying Decision Process

The purchase of furniture by the users firstly caused by the need for furniture. In the pre-purchase period of the furniture, a preliminary search carried out to obtain information about the furniture. This research can guide the buying process. User can do more research on furniture that is important to the individual or user can get the furniture straight away, without having a research about furniture with a low importance [16]. Users try to decide among many alternatives to choose their furniture. In this stage of decision, the users evaluate the alternatives by using their experience in furniture, environment, and people. After the purchase, they evaluate whether they are satisfied with the furniture. This is called post-purchase phase. These titles, which categorized by Mucuk, were handled within the scope of the study [17].

Factors That Affect Buying Decision on Furniture

Various sources examined and the factors, which are affecting the purchase of furniture by the users under the new classification determined.
These are; The Physical Properties of The Furniture, Usage Place, User, Service Offered By The Companies, Effect of The Brand, Advertisements, Interior Architects [18] [19] [20] [21].

Case Study: Organization and Preferences on Living Room - Dining Room Furniture at Sakli Kent Mass Housing, Famagusta

In the research, comparison is made on the preferences and placement of living room and dining room's flexible furniture by the contractor firm, interior architect, and owner of houses. The study is discussed within the specified criteria that affect preferences of furniture by user and those chosen by the help of the interior architect. At the same time, the factors that affect furniture placement by contractor firm, user, and interior architect are discussed.
While looking for case areas, the aim was to find out similar plan type houses to determine similarities or differences of furniture placement and preferences of people living under same conditions and area. The selected case area is mass housing site that are located in the Famagusta, Northern Cyprus. The name of the case study area is Saklı Kent. There are 96 detached houses with four plan types where three of them are detached and one of them is semi-detached mass house (type one, type two, type three, type four).

Methodology of Case Study

Two methods have been used in the study; qualitative and quantitative. The first part of case field is qualitative. That part of field covers observation, photographing, drawings and super positioning. First part aimed to analyse the living room and dining room furniture of flat houses and detached houses including how furniture placement is done by the interior architect and the user, and how it is offered by contractor firm. The second part of the case study is done by the quantitative method, the mathematical statistics. The second part contains questionnaire technique with different actors that are the users of houses who bought their furniture themselves and by the help of interior architects.

Analysis of Living Room and Dining Room Furniture Placements on Mass Houses

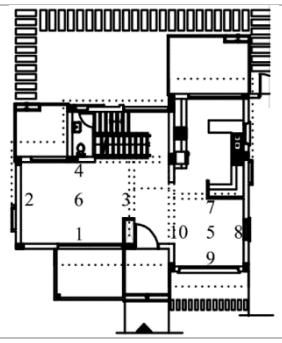
The aim of selected case study is to analyse placement of the living room and dining room furniture by the users of houses, the interior architect and the contractor firm. Firstly, the plans of Saklı Kent detached houses and Alasya Park flats are obtained. Each plan type had numbered plan layouts for marking places of furniture. In the case areas, all houses were selected. When entering the houses, furniture places were sketched on numbered plans. Every house was marked one by one with the same technique. Then, living rooms and dining rooms were photographed. After collecting data, furniture places were drawn on plans in AUTOCAD. Each plan was super positioned by putting them on top of each other and ideal furniture placement plan layout was created.
The qualitative methods are used in order to analyse the placement of living room and dining room furniture reached in twenty-one houses in Saklı Kent.

Six houses were analysed in terms of the placement of furniture by interior architect while fifteen houses were analysed in terms of the placement of furniture by user.

Furniture Placement by Different Actors

As shown in the example in table 1 below, the furniture layouts are numbered in four types of house and each actor analysed separately.

Table 1: Numbers of Furniture Location by User (Saklı Kent Mass House Type 1)

Numbered Plan	Names of Furniture	Numbers
	Dining Table and Chairs	5
	TV Unit	2
	Armchair	3-4
	Coffee Table	6
	Three Seat Sofa	1
	Two Seat Sofa	4
	End Table	4
	Wing Chair	2-4, 1-2
	Dining Buffet	9

In general (Table 2) there are similarities between the furniture choices of interior architects, users and the contractor firm in Saklı Kent mass houses.

Table 2: Furniture Placement by Different Actors in Saklı Kent Mass Houses

Names of Furniture	Numbers By Users	Numbers By Interior Architect	Numbers By Contractor Firm
Dining Table and Chairs	5	5	5
TV Unit	2	2	2
Armchair	3-4	3	1
Coffee Table	6	6	6
Three Seat Sofa	1 & 4	4	3
Two Seat Sofa	1	1	4
End Table	1 & 2	1	
Wing Chair	2-4	1	
Dining Buffet	8 & 9		
L Shape Corner Couch	3-4	5	
Stool		5	

Survey Study on Furniture Preferences

In this part, factors that affect people while choosing furniture and the way they pay attention while choosing furniture in selected area are determined by the questionnaire method. Case study is divided into people who make furniture preferences on their own and those who make furniture preferences with the support of interior architects.

Saklı Kent case is divided into two main parts; people who make furniture preferences on their own and those who make furniture preferences with the support of interior architects. Each part is evaluated with the majority of answers to the questions. It is also evaluated based on age, gender, and culture of people who make furniture preferences themselves.

Evaluation of questionnaires made with people living in Saklı Kent

As a result of the questionnaire survey (Table 48), it is determined that 71.4% of women in Saklı Kent needs furniture and 78.6% of women are more influential when choosing furniture. In Saklı Kent houses, the ratio of ready-made furniture is 78.6% while 21.4% is custom-made. 92.9% of the users made a research before purchasing furniture. The research made by the users has shown that 64.3% visual media rate and 64.3% of internet rate was effective. The printed media rate was 57.1% effective. The social environment was effective at the ratio of 57.1%. While Google is the tool that was effective with 35.7% of the internet, the most effective visual media tool, which is 35.7%, is the series/films. Magazines /brochures became the tool, which were effective in 28.6% of the printed media. The social environment has a pre-purchase effect of 21.4% on relatives and friends. Users bought their furniture from local stores at the rate of 71.4% while the rate for users who bought it abroad is 35.7% and 28.6% for those who have had custom-made furniture. When purchasing furniture, 100% of the users considered the designs of furniture, 100% of the furniture's durability, 92.9% of the furniture's quality, 100% of the furniture's comfort, 85.7% of the furniture's different usage, 100% of the furniture's colour and 92.9% of the furniture's material and texture.
While buying furniture, 37.5% considered the use of furniture at a high and moderate level, 50% the ergonomics of furniture, 85.7% the reliability of the furniture, 28.6% relevance for Cyprus' climate conditions and 28.6% did not consider. When it was analysed according to the colours of the furniture in the dining area, 42.6% were brown and white, 14.2% black and beige, and 7.1% grey. For the living room, 49.7% were brown, 21.3% white, 7.1% beige, burgundy, grey and blue tones. In addition to these, the material preference in the dining room was 42.6% wood, 14.2% glass, 7.1% metal and leather. In the living room, it was 49.7% fabric and wood, and 21.3% leather. In Saklı Kent, when users buy furniture, 85.7% consider the size of the house/room, and at the same time, 42.9% of users think that the furniture is compatible with other furniture in their house at a very high level. 78.6% of users think that the furniture they purchase reflect their age. 100% of them think that it reflects their lifestyle, and 85.7% of them think it reflects their character. 71.4% of them stated that it reflects their culture. 71.4% of users think that the economic status of the family is reflected by furniture. At the same time, 57.1% of users think that furniture does not reflect their profession.
When purchasing furniture, 57.1% of the users prefer having a variety of payment possibilities and it is found that they purchased 64.3% of furniture in cash. Additionally, users say that 50% of quality furniture is expensive and inexpensive. 85.7% of users said that functionality of the furniture shows the quality of the furniture, 71.4% of users said that it is the aesthetical appearance of furniture that shows the quality furniture. It is determined that in the furniture sector, the brand, at a ratio of 71.4%, is the indicator of power and confidence. However, 64.3% of users do not know the brands of furniture they have purchased. It is also stated that for 78.5% of the users, it is important for the furniture to fulfil its function, not the brand. When the users were asked what type of sitting groups they like more in Saklı Kent, it was found that it is 64.7% of set sitting group and 35.7% of mixed sitting group. In the case of dining group, users preferred mixed dining group at at the ratio of 57.1% and set dining group the ratio of 42.9%. When they were asked which furniture they wanted to buy for their houses, they preferred the bed, TV unit and kitchen cabinet at the ratio of 35.7%, and seat, sofa and dressing table at the ratio of 28.6%.

Evaluation of questionnaires made with people living in Saklı Kent houses designed by interior designers

As a result of the surveys conducted in the Saklı Kent, women have 80% of the final decision in the houses designed by the interior architect. The owners of houses received help from the interior designer for their choice of furniture, which is about 60%. Interior architects have shown the style of furniture with 3-D drawings to the users, which is about 40%. Interior architects have shown the location and size of the furniture in the house on 2-D drawings with the ratio of 80%. Interior architects moderately influenced the users at the ratio of 60% on deciding the colour of the furniture and the materials. Interior architects have been an advisor for users during their furniture purchase by the ratio of 60 percent. 60% of ready-made furniture and 60% of custom-made furniture were preferred in the houses in Saklı Kent. 80% of the users did not make a research on the furniture they would buy. While purchasing furniture, internet was effective with 60%, printed media 80%, visual media 100%, but social environment was not effective at the rate of 60%. Saklı Kent users bought 100% of their furniture from local stores by the suggestions of interior architects. While purchasing furniture, 100% of the users considered the designs of furniture, 80% the furniture's durability, 80% the furniture's quality, 80% the furniture's comfort, but they did not consider 85.7% of the furniture's different usage. The users accepted 80%

of the furniture's colour and material/texture suggestion made by the interior architects. While buying furniture, it is considered that 40% of furniture use is at a high and moderate level, 40% is the ergonomics of furniture, and 80% is the reliability of the furniture. When the furniture is analysed according to the colours of the dining room and living room, 60% were white. In addition, the material preference in the dining room is 100% wood. In the living room, it is 60% fabric and wood. While 100% of users think that the furniture they purchase reflects their age, 100% of them think that it reflects their lifestyle and personality. 60% of them stated that it reflects their culture. 100% of users think that the economic status of the family is reflected by furniture. At the same time, 60% of users think that it does not reflect their profession. In addition, users say that 60% of quality furniture is not expensive. 80% of users said that functionality of the furniture does not show the quality of the furniture, and 60% said that it is the aesthetical appearance of furniture that shows the quality furniture. Moreover, it is determined that in the furniture sector, the brand, at a ratio of 60%, is not the indicator of power and confidence. However, 64.3% of users know the brands of furniture they have purchased. It is also stated that for 100% of the users, it is important for the furniture to fulfil its function, not the brand. When the users were asked what type of sitting groups they like more in Saklı Kent, it was found that it is 60% of mixed sitting group and 40% of set sitting group. In the case of dining group, users preferred mixed dining group at at the ratio 60% and set dining group the ratio of 20%. When they were asked which furniture they wanted to buy for their houses, they preferred the bed at the ratio of 60%.

Conclusion

Throughout history, several houses have been build; detached houses, semi-detached houses, row houses, and apartments. Nowadays, these house types shaped as mass housing. Mass housing can be seen in several different types. These can occurs in detached houses, in row houses, in apartment flats or in mixed. Mass houses users are buying and placing furniture to make their homes more liveable and to meet their needs. Furniture is a flexible and fixed object that meets many functions to make people's lives easier. From past to today, people are trying to fit the living room & dining room furniture according to their need and tastes. In this direction, people are purchasing furniture for their houses and deciding on the placement of this furniture. It is necessary to evaluate many data to make the right furniture placement and the right furniture choice. The study aimed to finding answer to this question: "What are the differences and/or similarities in furniture preferences and placements by users, by contractor firm and by interior architects in the living areas (living room and dining room) of the mass housing in Famagusta?" In addition, it aimed to find out how to choose and place the furniture for living spaces (living room and dining room) of mass houses (detached houses). Two methods applied for achieve to the result; survey (furniture preferences) and observation (furniture placements). The survey method prepared and applied by the help of factors that affect furniture preferences. The observation has been developed and tested with super position method for the placement of furniture.

In the result of study, factors that effect on furniture placement & preferences tested and observed. There are two main criteria's affect the placement of furniture; Functional Criteria, Visual Criteria. Functional criteria's are clearance, circulation, pairwise relationship of furniture, conversation of people and lighting. Visual criteria's are balance, alignment, and emphasis. In addition, there are seven effective factors in furniture preferences that have been tested in cases of Saklı and come up with accurate results. These are the physical properties of the furniture (ergonomics, colour, texture, material, form, shape, durability, reliability, functionality, and aesthetics), the usage place, the user (age, gender, nationality, culture, occupation, economy and lifestyle), the service offered by companies, the effect of the brand, the advertisements (print media, internet, visual media and reference groups) and interior architects. It is substantial to know factors that affecting placement and preferences on furniture. In fact, the main task of an interior architect is not to choose or place furniture, but it is to create an atmosphere. In this research, only furniture preferences and placement discussed.

This study is done for to be source interior architects, users, contractor firms, interior architecture, and architecture students to be more sensitive on factors that affect furniture placement & preferences in the Cyprus. The next step of the study will be able to discuss and examine the topography of the region, climate conditions and cultural data.

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SHOPPING CENTERS IN THE CONTEXT OF URBAN INTERIORS

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Abstract
Public spaces, which are environments where different groups living in settled order can get together, are urban interiors and urban interiors accessible by everyone. As social values changed through history, public spaces kept pace with this change. Industrial Revolution is observed as the breaking point in spatial and social development of public spaces, like all else. Crystal Palace, the first symbolic building of Industrial Revolution, is the building housing the first public indoor space in the current sense. New types of buildings and construction materials brought to the society by Industrial Revolution led to new space configurations.
In the 1970's, consumption of product and image became more important than all else under the influence of popular culture, getting ahead of local culture and identity, especially in developing cities. When we reach the present day, decreased areas and increased costs to build homes, especially in large cities, increased number of core families and singles, all carried wining, dining and socialization activities in residential venues to the outside. Noise, visual and air pollution created by widespread vehicle traffic caused outdoor public spaces at the city center to lose their old charm. Increased living pace in return for the obligation to live together with a dense population as well as amenities offered by urban life, reduction of public outdoor spaces that can be used comfortably, increase in living quality with advancing technology were other causes for the tendency for protected indoor spaces. In addition, various restrictions brought on outdoor public spaces at city level due to, domination of globalization and social media over the society all rendered public indoor spaces preferable. Thus, number of venues hosting all activities that cannot be carried out in homes gradually increased, and "public indoor spaces" settled at the center of our lives in this century as the new definition of the relationship between man and the environment. Popular indoor spaces of the modern day are designed together with commercial areas. These venues continue to support the consumption society by comfort and sense of popularity they offer to users.
In this paper, it is aimed to study the urban interior concept, the emergence and development of the concept, and the reasons why it has become an indispensable part of today's urban life in terms of cultural, social and economic aspects and thus, to identify the stage that it has reached in space design. The interiors of shopping centers (SCs), one of the main spaces for the acts of entertainment/consumption used by people for gathering purposes are the spaces that constituted the subject matter of concrete examinations in this paper. As a result of the studies conducted in SCs in different geographies, it has been concluded that there is an inclination towards spatial designs that have become the same and can be observed everywhere, that do not create a meaningful whole or a distinctive identity and that have lost their social, cultural and physical links with their localities, and are merely preferred for becoming popular.

Key Words: *urban interior, popular culture, social media, identity, shopping-center*

1.Introduction

Urbanization that has emerged upon industrial revolution is continuing its spatial development under the influence of the accompanying factors such as the uncontrollable phenomenon of immigration, unplanned population growth, fast development of information and communication technologies, socio-economic growth dynamics, and creation and continuous enhancement of the concept of consumption society. The areas commonly used by the people living in cities are defined as "public space" and constitute a major component of a city design. Norberg-Schulz [1] has defined the city as a place of encounter comprising public areas bringing diverse people together; emphasizing the public space as the "primary element of a city". Although it is tried to make planning in relation to the growth of cities, the issue of living in a city becomes more critical as the activities of living are moved towards the streets as a return of globalization. Today, the reasons why the acts of eating, drinking and socialization in the housing spaces have been moved outside from houses and the life activities have shifted from houses to streets particularly in big cities can be listed as the shrinkage of housing spaces as a result of the increased building plot and construction costs, the changes in the structure of a family constituting the fundamental unit of the society, the encouragement of the formation of a consumption society, direction of society by social media and the people's preference of becoming popular. While new spaces are needed for socialization outside houses, the noise and the visual and air pollution caused by the vehicular traffic becoming widespread in cities have affected the design contents of the public spaces located in city centers. As a result of these developments, it has recently become important to design indoor public spaces and the spaces serving the functions that are diversified by the relationships developing among the people using such indoor public spaces.
At this stage, solutions to be produced by the interior architecture discipline are started to be needed in order to concentrate on people's demands depending on their requirements, activities and cultures. The "urban interior" concept that has emerged with this need not only allows the user to perform the acts that s/he cannot perform due to the shortage of space in his/her house in order to meet his/her needs according to his/her profile; but also meets his/her socialization need by allowing engagement in social activities. Attiwill [2] defines the urban

interior concept as "the transient, experimental and experiential areas hosting different activities such as living, working, playing, selling, exhibiting, etc., i.e. the activities that have been moved from people's living areas towards streets". In other words, urban interior can be defined as a spatial / social composition of indoor and outdoor and a redefinition of the relations between people and their surroundings. The scope of urban interior concept is diverse extending from social-purpose projects to phenomenological researches implemented or conducted in different cities of the world, from provisional phenomena to installation-based arrangements, from performance-based researches to observational studies, and issues and open-ended projects of various sizes towards social communication and usage. Therefore, the urban interior concept is an important issue requiring a multidisciplinary study involving interior architecture, landscape architecture, urban design, architecture, industrial design, etc.

Amongst the rich diversity of the urban interior concept, the issue that was focused on in this paper under the scope of interior design discipline was comprised of the interior spaces generally positioned in commercial areas/shopping centers temporarily hosting the activities that users are unable or unwilling to perform in their houses due to the reasons such as inadequacy of interior spaces in houses, the phenomenon of consumption society, social media, and socio-cultural reasons.

It is necessary to review the emergence of urban interiors and their progress so far in order to identify the stage reached by these spaces that we all use effectively today under the influence of cultural, economic and social factors.

2. Emergence and Development of Urban Interior Concept

Religious spaces are the first areas built as open for public use where people gathered together in the history of Architecture. Göbeklitepe [3] (Urfa-Turkey) dating back to 10000 B.C. or Stonehenge [4] (Amesbury-England) dating back to 3000 B.C. can be given as the best examples. However, the first structures where public activities were organized in interior spaces in real terms were observed in the Ancient Egypt. It is inevitable for the public activities to concentrate mostly indoors in the desert environment where climate conditions are not as convenient as those observed in Europe and Anatolia. The temple buildings that were the most important public structures during the Middle Kingdom period in Egypt had a different meaning from today's places of worship. The prayer and worship section of the temple was open to the priests considered as blessed persons only and there were schools, universities and archives in large temples. Temple was in the center of the state government, education and scientific studies. Societal decisions would be taken and the celebrations would be held in such temples.

In Ancient Greece, although public life was very important, most of the public structures were comprised of open air areas. Temples did not bear a public nature as it was in Egypt; because only priests and selected persons could enter the temples. The "agora" limited with houses and public structures was the heart of public life in the ancient Greece. Commercial and training activities would be conducted in this outdoor area; and the problems that were of interest for the city and people would be discussed here. The public and commercial activities were further enriched with "stoas", i.e. oblong structures housing the craftspeople selling their goods in the 3rd century B.C., at least one sides of which would open to agora with series of columns.

As for the Roman Civilization, they focused on urban life due to the importance attached to the city concept and enclosed structures were built for public use. The Roman culture that left its mark on the history emerged upon the foundation of the city of Rome in 753 B.C. This data proves the importance of urban spaces in the social culture and its development. The higher contribution of the Roman city culture in the history of design resulted in the continuity of urban spaces gaining more importance. Afterwards, the opinion of continuation in the indoor spaces of social activities which were previously held in urban outdoor areas was developed. In the famous Plan of Rome drawn by Giovanni and Battista Nolli in 1748, the interior spaces of the public structures like churches and basilicas were left white together with the urban outdoor areas; and this is one of the most important concrete examples showing the continuity between the indoor and outdoor public spaces [5].

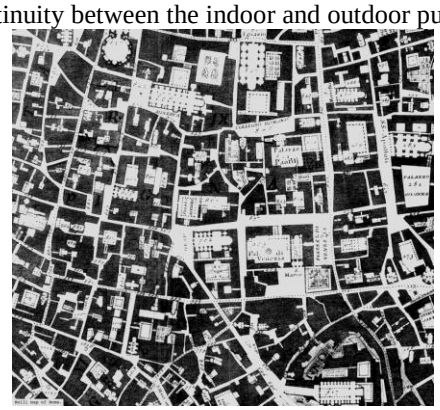


Fig.1 The Plan of Rome drawn by Giovanni- Battista Nolli, 1748 [6]

In addition to spatial continuity, the orientation of social life by certain rules upon the increase in populations living in cities and the designing of different structures that would house diverse social activities gained

importance in the Roman Period. They started to construct basilicas used for non-religious administrative procedures and it became necessary to enclose and direct wide areas.
The structure type with a wide typology that put its stamp on history as the "Roman Bath" in the Roman life supporting social life contained under its structure bathing rooms with different functions where hundreds of people could take a bath at the same time as well as classrooms, reading rooms, physical education courts, shops and green yards. Thus, it was possible to orientate crowded groups of people in such spaces.
When it came to the Byzantine Empire period after the Roman Empire, the usage and spatial development of most of the public spaces including baths were interrupted due to the heavy pressure of religion. The urban interiors mostly remained limited with the religious structures built with Gothic architecture. When we look at the Anatolian lands in the same year, the mosques with wide courtyard spaces used as areas of worship for Muslims and the Turkish baths that were the only space for socialization of especially the women served with their peculiar spatial organizations as the urban interiors of that period.
The onset of Renaissance Period in Europe caused dynamism in every field and started the urban spaces to be revived and diversified. The construction of Crystal Palace by Sir Joseph Faxton for the first World Exhibition in 1851 was a new breaking point in the historical development of the urban interior concept. The structure with a spatial perception of transparency and a wide clearance that was unprecedented in that period and exhibiting the excellent combination of glass and steel was an important milestone in terms of urban interior design [7].

Fig.2. Crystal Place, interior space organization. [7].

Mass production that entered into our lives with the Industrial Revolution, various inventions that facilitated our life and the increase in the quality of living and welfare renewed the society's demand for comfortable spaces on each occasion. The number of urban interior spaces built near or nested within the commercial / shopping spaces starting from the agoras in the Ancient Greece started to increase in the 19th century. Furthermore, the urban interiors were started to be designed and built as the areas supporting shopping in time.

A:  B: 

C:  D: 

Fig. 3: A: Galleria Vittorio Emanuele, year of built:1865, Milan B: GUM shopping-center, year of built:1893, Moscow C: La Fayette, year of built 1912, Paris D: Mercado de San Miguel, year of built:1916, Madrid. In these four examples pertaining to different cultures, the cultural traces of the related geographies can be seen in their spatial designs. These shopping centers that have been in service since the very first year of their construction still maintain their identities in their spatial languages.
(Photos: author's archive)

Considering the development of urban spatial designs throughout the historical process; aggregated spaces were designed sometimes for religious and mostly for commercial and cultural activity-based reasons in the period of

Industrial Revolution and the next period following it. These spaces demonstrate the architectural identity/culture of their contemporary periods with both their architectural designs/spatial organizations and the "spatial language" created in such spaces.

As for today, the production technologies and the materials used in construction of structures are developed under the domination of technology, drifting away from locality and are getting widespread in every geography through the facilitation of communication and transportation. The public structures that have become the same all over the World in terms of structural properties have been started to be grouped under the same structure in terms of their self-identities. According to Ibelings [8], the increased mobility of information and people in the globalizing world has influenced architecture and urban planning and reorganized the relationships between time and space. A new architectural understanding based on its own internal dynamics rather than the characteristics of the relevant time and environment that it belongs to and delineated by the usage of the space has emerged. This understanding manifests itself particularly in the building typologies like shopping centers, themed holiday resorts, hotels, and airports and their close surroundings, the spaces that are influential in the flow of global capital all over the world. These spaces generally appear as "spatial jungles" designed anywhere in the world in any period of time, which are passed through, but not internalized. Since the spatial identity that they create in their inner worlds may constantly vary, it is almost impossible to create a meaningful whole or a distinctive identity in our minds in relation to these spaces. The said spaces can be defined as the spaces that can be seen everywhere and that have lost their social, cultural and physical links with their geographical locations. The interiors of shopping centers selected as the subject field of this study are the spaces where such effects can be frequently observed by everybody.

3. A Critical View on the Interiors of Today's Shopping Centers in terms of Urban Interior Concept

The first precursors of the modern SC phenomenon were the department stores which started to appear in the USA and Europe in 1900s and changed the traditional shopping phenomenon. However, the SCs that have been more frequently constructed in the recent years emerged in 1950s. Zukin reports that the development of SCs changed firstly according to the needs of the residential areas in the suburbs, and then in line with the development and transformation of the consumption society and consumption spaces in the cities. SCs that were used as an element increasing the attractiveness of the housing zones in the suburbs in the middle of the 20th century turned into gainful investments in time. Thus, shopping centers were started to be built in cities as well [9].

With their numbers gradually increasing in today's cities, SCs prove how much attractive public spaces they are with their capability of finding visitors on a constant basis. It is required to examine the factors that make SCs this much attractive as urban interiors or that direct users to these spaces in SCs under the subheadings of cultural, social, and economic factors that have intertwined relationships with each other. In fact, every social stage is shaped based on the economic, social and cultural characteristics revealed by the previous processes.

3.1. Cultural Factors:

Culture that is one of the keystones of the societal structure displays a continuous development and evolution. There are various elements that shape culture in its continuity. While this transformation occurs under various subheadings that can be listed as science, technology, transportation, tourism, education, economic and sociological factors, each of these elements continues to affect one another.

The start of demonstration of an attitude close to advertising and marketing world instead of an idealist point of view in the society in capitalist countries in 1970s has influenced various components triggering the social development including culture, in particular. In this period during which the consumption society has been started to be developed, consumption and image of a product is important more than anything else. The developments predisposing to the formation of this perception are based on acceleration of information transfer, transportation and communications. The use of computers in this period during which anything new easily becomes worn out has accelerated the expansion of information technologies and transfer of information. The foundations of the popular culture concept have been laid in this process during which geographical distances died out in terms of data and cultural communication. Popular culture still continues to influence today's spatial formations, preferences and interior designs.

The increased mobility of information and people in the globalizing world and the more important consumption-focused lifestyle canonizing the tastes of popular culture change the relationships between time, space and context. Through aggregation of parts that are not contextualized with their own environments and functions and that cannot be semantically correlated with each other, an understanding of space based on itself as a reference and redefining the relationships between space and user through generalization has emerged in this process. In this context, today's SCs offer a concentrated and standardized environment competing with the time-wasting facilities in city centers. Orientation of users' tastes and preferences through social media tools and the positions taken by them in the society subject to the dependence on such orientation make the use of such spaces that we have been suffering due to their standardization always active.

3.2. Social Factors:

The factors triggering social change in the society are reviewed under the subheadings of physical environment, science-technology, culture, demography, economy, mass media, globalization, and democratization. Increased level of income, the capability of people to travel more, and the increased number of meetings, conferences, and fairs change the social structure of the society. It is observed that SCs have become much more preferable with the support that they have provided for the shopping tourism in the most recent decade and they do not let their users feel alienated in terms of their spatial perceptions or habits no matter in which country they are [10] and that the spare time, shopping and entertainment activities preferred in SCs have now taken the place of traditional destination activities [11].

Another social factor that can be mentioned is the change in the family unit constituting the fundamental structure of the society. Today, the increased number of people of all ages living alone for different reasons following the transformation from crowded families to nuclear families has given birth to a concept defined as "social loneliness". The socialization need of the people preferring to lead their private life alone or their need to preferably stay alone despite of their presence in social areas can also be met in these spaces. The increased quality of urban life is another subheading that can be considered under this issue. The urban life quality that is an indicator of the societal and economic development level defining the liveable city spaces is also considered as the total of many variables including, inter alia, physical environment and healthcare properties and the mental health of people [12]. Although there are numerous factors like physical, social, economic and personal factors affecting the quality of life and they vary from space to space and from person to person, the existence of some basic factors such as economic buoyancy, sense of place, cultural activities, easy access to services like shopping, socially organized state, the need to create a sustainable environment, security and privacy is suggested as the main themes. When we examine today's SC interiors with these themes, the physical atmosphere tried to be created inside shopping centers that we all use for different reasons individually or with a social group is comprised of the spaces where any and all safety/security and climatic comfort conditions are provided. A urban space has never actually existed as sterile as in these atmospheres constructed as such during any period of the history. The search for escape from the noise and pollution created by the vehicular traffic in cities also directs people to SCs.

While the quality of life has increased, the pace of the life cycle has increased too; and as a result, users' needs have become identical. The stores of the same brand that we see in nearly all SCs shape the SC interior identity and the building's organization chart. It cannot be denied that shopping in real terms by visiting the shops and selecting the items to be purchased on the streets or avenues like Bağdat Avenue and Istiklal Avenue in Istanbul, Maria Hilfer Street (Wien), Haupt Street (Heidelberg) that is said to be one of the longest pedestrian shopping streets in Europe, Champs Elysse (Paris) is now a state of shopping specific to tourists in our era. The requirement to decide amongst the options of the brands offered to us in a limited time despite the speed of the daily life has actually brought forth generalization of the spaces that we use and made our needs and the methods to meet them identical.

3.3. Economic Factors:

It is known that economic reasons shape human behaviours and thoughts. The capitalism of the 19th century stands out with working and saving and stockpiling while the capitalism after the 20th century stands out with the increased consumption treasuring the desire to spend. Unlike the 19th century during which saving was a virtue and people were exploited by the system by working harder in order to ensure production and to derive profits; the exploitation in the 20th century during which consumption is considered as a virtue manifests itself by conditioning the pacified people to consumption [14]. The system that did not previously grant the individual the right to decide whether or not to work, whether or not to make efforts and where and how to produce is now implementing it on consumers. Economic reasons can now guide people by claiming rights even on housing and configuration of housing that constitute the consumers' most fundamental need for survival.

Houses that meet the most fundamental spatial need of our lives are the special spaces reflecting the inner worlds of their users where they can conduct their daily activities, establish social relationships with their families and friends and maintain their lives. It is observed that houses that have reached today by undergoing changes in terms of spatial development throughout the historical process cause their users to have difficulties in relation to the spatial sizes of their houses, especially in our big cities. It is known that the spatial design of houses are reduced to limited areas and figures like 3+1, 2+1, 1+1 and 1+0. The economic reasons underlying this problem are the increased costs of building plots and construction of houses on such lands in big cities. This has gradually narrowed down the housing spaces and become challenging, pushing the users in terms of their spatial use criteria, spatial comfort and psychology. As a result, the period of time spent in houses per day has decreased and it has become impossible to put groups of people together in a house for various reasons. SC spaces have stepped in to meet this spatial need and this preference will continue as long users' satisfaction is maintained.

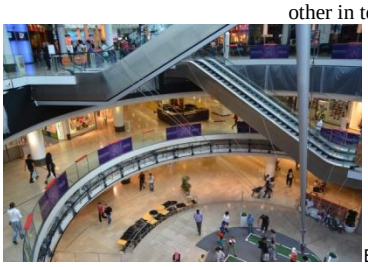
Let's explain the issue by using concrete examples; when we consider the urban interior examples of SCs highly used in modern cities like Frankfurt, Berlin, Paris, Helsinki, Istanbul, Jakarta, and Pennsylvania, each of which was shaped by different cultural, social and economic identities and located in geographically different regions; it is observed that:

- There is no relationship established between the past and the future and no association with the cultural, social and physical conditions peculiar to their geographies;
- It is already predetermined how the space will be used and how consumers will be influenced;
- The casualness in spaces or individuals' identification with themselves is prevented;
- It is already aforethought how much distance will be walked by consumers without losing their concentration for consumption as the important elements of the relationship that the individual will establish with the space;
- It is already aforethought where to position the vertical circulation members in order to increase the usage potential of the space;
- The details like how to establish a spatial identity that will attract the users of the space are already planned meticulously;
- Possibilities for efficient use of social media and all mass communication means are offered and the usage of spaces and the time spent at the SC can be affected through these instruments;
- The spatial comfort, moral environment and security of the spaces where people get socialized, feel themselves safe and peaceful and are capable of benefiting from the spatial comfort possibilities on a free of charge basis are provided at high levels, constituting a complete substitute for houses.

While these reasons direct us to the SCs not only for shopping, but also for having fun, socializing, and even for spending our spare times; they steal our time that we spend in houses and the other urban areas that we daily use. This makes the SCs our hosts entertaining us under any circumstances.

A:  B:  C: 

Fig. 4:A: Sony Center, Berlin and B: Kamppi SC, Helsinki C: Galeria Kaufhof, Frankfurt; the interiors of these examples are similar to each other in terms of design content. (Photos: author's archive)

A:  B:  C: 

D:  E:  F: 

Fig. 5: A: Paris, Les Quatre Temps, B: La Defense- Paris, CNIT shopping-center, C: Cevahir SC, Istanbul, D: Kanyon SC, Istanbul, E: Mall Artha Gading, Jakarta, F: King of Purissia Mall, Pennsylvania; the design contents of the interiors of these examples have also been transformed into consumables. (Photos: author's archive) [15]

CONCLUSION:

The SCs gathering up the individuals that are bored of daily life, every moment of which is rationally planned today, have entered into the life of urban people simply as a sedative due to the quality of the physical conditions that they offer and their high moral environment. These spaces are designed and used in a manner to glorify the activity of consumption that is the most fundamental requirement of the consumption society and changed when they become non-functional or renewed according to the popular tastes of the then-current period. Like all the spaces included in this process, they become the same within the spiral of cultural, social and economic factors. It is not possible to mention about a distinctive and genuine identity for these spaces that are created independently from their own contexts and their historical and relational nature. Therefore, the lack of identity caused by the failure to take its meaning from the social, cultural and geographical conditions or historical life

experiences brings forth a state of having multiple identities that can be reproduced infinitely. This state of having multiple identities shaped by the changing expectations of the consumption society transforms the architectural product into a consumable good that is thrown away after being used and becoming old fashioned. The SCs do not bear a real public nature due to the security and the artificial environment created in them. They leave the impression that they have carried the outdoor public area usage into special interior spaces and thy do not create the sense of urban belonging that develops in a traditional city center.

Finally, it is known that the SCs have taken their place in the urban space as a reality and created changes in terms of the usage and meaning of public areas. In this context, one cannot afford to overlook the fact that the encouragement of SCs articulated in a manner contrary to the semantic integrity created by the existing shopping streets and bazaars within the city will also cause an adverse impact on the vitality and dynamism of the existing public areas. The SCs aiming to make us spend a substantial part of our daily life in them actually target to allow their users to feel at home by directing the times that we spend in our houses towards them thanks to the opportunities that they offer.

These findings and studies are of importance for anticipation of the effects of new spatial processes that may arise from new lifestyles likely to emerge in future.

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ADAPTIVE REUSE AS A DESIGN APPROACH "INDUSTRIAL STRUCTURES"

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Abstract
New economic and industrial developments in the post-Industrial era have caused the construction and mechanical infrastructure of the Industrial Revolution to lose functionality, a trend especially apparent in industrial facilities in major European industrial centers after the 1950s.
Industrial remains, which include conventional structures and spaces that characterize cities, towns and regions as well as buildings, landscapes, industrial zones and precincts, occupy an important section of our built environment and landscape – as apparent from their wide scope. All these industrial legacies which have lost their original purpose and remain inert in cities carry great potential for adaptive reuse.
The purpose of this study is to draw attention to adaptive reuse as part of architectural design and to evaluate modern repurposing applications of industrial constructs in regards to heritage value, the reasons and benefits of transformation and alteration methods in light of the information gathered via literature research with the aim of obtaining data for use in repurposing applications of industrial constructs – an area that is relatively dormant in our country.

Key Words: *Adaptive Reuse; Industrial Structures; Industrial Buildings; Architectural Design; Spatial Design*

1. Introduction

Increasing environmental concerns and soaring fuel and construction material costs in the 1960-1970's made adaptive reuse a part of architectural design doctrine. Since unbearably high material costs and other financial problems made constructing new buildings prohibitively expensive, adaptive reuse became a viable alternative for urban renewal projects over time and became a topic of interest as heritage protection turned into an international agenda item. [1]

As apparent from its historical background, adaptive reuse is also associated with urban and indoor renewal efforts in addition to projects of a structural scale. As the concept lies at the intersection of design, sustainability (both economically and environmentally) and conservation, different aspects of adaptive reuse can also be highlighted based on the approach taken.

1.1Adaptive Reuse as a Concept

According to Clark (2013); "adaptive reuse", is the reuse of a structure, settlement or area for a purpose other than that which it was originally designed and constructed for. In reuse applications with cultural heritage value, the proposed new functions are also required to retain the perception of cultural heritage and the social value of the sample, whether on a structural or urban scale. In short, "adaptive reuse" is the exploration of options that lie in the boundary between demolition and transformation. [2] Table 1

Table 1. Effects of adaptive reuse between demolition and transformation [3]

Life Stages of Buildings	Life Stages of Buildings After Adaptive Reuse
1-Design	1-Design-Construction-Usage/Operation for Original Purpose
2-Construction	2- Abandonment
3-Usage/Operation	3- Temporary Usage
4-Demolition	4- Demolition or Long-Term Usage via Adaptive Reuse

In Cantell's words (2005); "adaptive reuse" is finding a new function for a building. It usually denotes the process of developing a structurally old building to serve new economically viable functions. The reuse of buildings is an effective tool in heritage conservation and was first developed to spare historically significant buildings from demolition. [1]

According to Tan et al. (2012); "adaptive reuse" as a special form of refurbishment is an approach in which a building that has lost its use due to social and economic developments, was abandoned and is possibly marked for demolition is reused by conserving its main structure and original composition rather than being utilized as raw materials after demolition. [4]

Boshcman and Gabriel (2013) claim that; "adaptive reuse" is the process of refurbishing old structures to make them suitable for new purposes. If the assentation that the greenest building is the one already built is taken

at face value, proper restoration of buildings would make adaptive reuse the holy grail of the sustainability movement. [5]

According to Conejos et al. (2016); "adaptive reuse" is a strategy which preserves a building's historical and cultural properties while expanding its physical and social functions. When a building's original function is no longer viable and reinventing its purpose becomes the only way of protecting its heritage value, adaptive reuse becomes necessary. At the core of adaptive reuse lies the renovation of cultural heritage buildings by keeping their benefits to a location or society in mind. [6]

As defined by Yung and Chan (2012); "adaptive reuse" includes all construction efforts and changes that are performed with the intent of correcting, readjusting or increasing the building's present capacity, function or performance to better adapt to new conditions and requirements. In reusing a historical building, care must be taken to ensure that the temporary layers added are those that would cause the least effect on the building's cultural value and increase the building's future value the most. [7]

As Stated by Langston and Chan (2007); "adaptive reuse" is a special type of refurbishment that brings specific challenges for designers. Adaptive reuse can necessitate a change in the building's function class and therefore new legal arrangements and perhaps even new construction permits. Meanwhile, the environmental, economic and social benefits it carries makes "adaptive reuse" a tempting option. [8]

The source-author-year-emphasis relationships encountered during the literature review is as follows Table 2.

Table 2. Analysis of definitions of adaptive reuse

Source	Author(s)	Year	Emphasized Aspects
Adaptive Reuse of Industrial Heritage: Opportunities & Challenges	Clark, J.	2013	conversion, heritage value, reuse
The Adaptive Reuse of Historic Industrial Buildings: Regulation Barriers, Best Practices and Case Studies	Cantell, SF.	2005	economic, new use, recycling, historic preservation
A Fuzzy Approach for Adaptive Reuse Selection of Industrial Buildings in Hong Kong	Tan, Y., Shen, L., Langston, C.	2012	refurbishment, reuse
Urban Sustainability and the LEED Rating System: Case Studies on the Role of Regional Characteristics and Adaptive Reuse in Green Building in Denver and Boulder, Colorado	Boschman, EE., Gabriel, JN.	2013	refurbishment, green building, sustainability
Governance of Heritage Buildings Australian Regulatory Barriers to Adaptive Reuse	Conejos, S., Langston, C., Chan, EHW, Chew, MYL.	2016	historic and cultural significance, heritage value
Implementation Challenges to the adaptive Reuse of Heritage Buildings: Towards the Goals of Sustainable, Low Carbon Cities	Yung, EHK., Chan, EHW.	2012	capacity, function, performance, built heritage
Strategic Assessment of Building Adaptive Reuse Opportunities in Hong Kong	C. Langston, C., Wong, FKW., Hui, ECM., Shen, L.	2007	refurbishment, functional classification, economic, environmental and social benefits

1.2Reasons for Adaptive Reuse of Buildings

Design considerations such as social structures, user requirements and technological advances are ever-changing, forcing architectural spaces, as a reflection of society and technology, to change as well. This situation provides the options of demolition or – in cases where the structural lifetime of the building has not yet expired – repurposing and continued use for buildings that have antiquated in terms of functionality. [9] The 4 basic causes of buildings expiring functionally before their structural lifetimes have ended are as follows:

Losing Original Function: Especially the economic and social developments of late 19th Century have greatly altered lifestyles and needs, rendering many structure types unnecessary. Many building types from the era such as palaces, defensive emplacements, seminaries/madrasas and inns are examples of building types that have completely lost functionality. Industrial buildings have also lost their original functionalities as processes of production, storage and raw material gathering changed in response to new technological developments. [9]

Becoming Obsolete in Functionality: Many building types have encountered changes in their form of service in response to technological developments, despite still preserving their functionality; requiring structural changes. As existing buildings become unable to sustain the developing functionality requirements, these structures also become idle. Hospitals, which are amongst building types affected the most by technological progress, are examples of this category. [9]

Changes in Urban Environments and Construction Laws: This category includes functional decay and changes in structures and their environments as a result of faulty previous decisions, incorrect applications of sound decisions and lack of oversight. Because of being left under road elevations during infrastructural constructions, unusable buildings are specific examples. [9]

Economic Factors: Rapid population growth and increasing economic activity affects urban development, and consequentially land usage. The inability of historical city centers to resist pressure from business, service

and other industries; the transformation of some neighborhoods into business districts due to erroneous decisions and declaration of touristic zones in settlements where historical buildings are commonplace necessitate the reusing of buildings in these areas. [9]

In light of all drawbacks mentioned above, the main justification for applying adaptive reuse to functionally obsolete buildings – which is relatively more tedious and requires more extensive efforts than the alternative of demolition – is its social, economic and environmental benefits. According to Beard (2012), the 4 motivations for utilizing adaptive reuse are functional, economic, ecological and cultural. [10] Table 3

Table 3. Motivations for utilizing adaptive reuse [10]

Motivation	Benefit
Functional Motivations	Utilization of functionally obsolete areas and the ability to use present infrastructure
Economic Motivations	Ability to evaluate the cost of refurbishment, potential future returns on the refurbishment, available labour and the potential market
Ecological Motivations	Encouragement for recycling, energy conservation and pedestrian usage
Cultural Motivations	Local-Urban memory, cultural heritage, conservation, social identity and belonging

1.3 Criteria to be Considered in the Selection of New Function of Structure in Adaptive Reuse Process

Structures are a whole with their architectural styles, plan schemes, spatial features, construction techniques and surroundings. [11] For this reason, we need to pay attention to some criteria both in the structural scale and other than the structural scale in the process of choosing a new function for a building to be reused.
It is possible to divide these criteria into five main headings (if any) as monumental feature, spatial formation, volume dimension, functional relation setup and location of the structure:

Monumental Feature of Structure: One of the factors that determine the proper function selection in reusing of a structure is the monumental value of the structure and in which monumental group it is. [11]

Spatial Formation of Structure: The structure to be refunctioned also by the influence of the construction technique can consist of a single volume, repeated volumes, or it can have a complex plan schemes. The new function to be given should be a function appropriate to the existing spatial formation so that the structure requires minimal intervention. [11]

Volume Dimension of Structure: When a new function is given to a structure, the main space in which the new function is to be placed must be analyzed and the study of the element belonging to that unit must be done. If the space dimensions are not sufficient for the new function, the space must be brought to the dimensions required with the help of dividers. [9]

Functional Relation Setup of Structure: The spaces in the structure to be refunctioned and the circulation of the current function must be compatible with the spaces and circulation areas required for the new function to be provided. [9]

Location of Structure: The location of the structure in the city, its natural, artificial and social environmental inputs and the economic environment in the urban texture should be considered in determining the new function. [11]

1.4 Possible Alterations During the Adaptive Reuse Process

After choosing an appropriate function for the building to be reused, certain physical alterations may be needed during the process of matching the present potential of the building with the envisioned reusing, to provide for spatial necessities which can't be attained due to structural limitations. These alterations can be grouped into 5 basic types: Alterations and Additions to the Spatial Organization, Alterations and Additions to the Structural System, Alterations and Additions to Utilities, Alterations to Main Bodies and Elevations, and Alterations to the Immediate Environment. [9] Details of application methods for each alteration type is presented in Table 4:

Table 4. Alterations and application methods for adaptive reuse [9]

Type of Alteration	Application Methods
Alterations and Additions to the Spatial Organization	Addition of mezzanine floors, linking existing spaces via passageways, addition of partition walls, removal of non-load bearing walls, addition of vertical and horizontal circulation elements, construction of additional buildings
Alterations and Additions to the Structural System	Alterations to elements such as pillars, load-bearing walls, beams and ties, and floor slabs

Alterations and Additions to Utilities	Revision, maintenance and renovation of technical infrastructure and utilities, addition of air circulation and conditioning systems
Alterations to Elevations	Changes in the ratio of occupied and void space in the fronts, partial sound isolation to elevations, heat isolation
Alterations to the Immediate Environment	Revision of environmental amenities such as parking spaces, public transport stops, urban furniture, environmental lighting and green spaces

2.Industrial Heritage

In the 50's, as industrial facilities across major industrial centers in Europe began to lose their functions and turn inactive, initiatives to protect and record monuments dating to the industrial revolution began in the United Kingdom, running in parallel to urban renewal efforts. In 1955, the British philologist Michael Rix first opened the subject of recognizing inactive industrial facilities in heavily-industrialized countries such as the UK, Germany and France as heritage for debate in an article published in the "Amateur Historian" magazine where he described his studies on the Industrial Revolution employing the term "industrial archaeology" for the first time. [12-13-14]

The appearance of the term was characterized more by an attempt to prevent the rapid liquidation and destruction of historically significant industrial facilities and constructs than scientific concerns. [15]

Though the terms "Industrial Heritage" and "Industrial Archaeology" were never clarified for a long while, "Nizhny Tagil Charter for the Industrial Heritage", published in 2003 set the definition for "Industrial Archaeology" as "an interdisciplinary method of studying all the evidence, material and immaterial, of documents, artefacts, stratigraphy and structures, human settlements and natural and urban landscapes, created for or by industrial processes" and "Industrial Heritage" as "(consisting) of the remains of industrial culture which are of historical, technological, social, architectural or scientific value. These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education." [16-17]

Industrial structures uncovered as a result of research, excavation and record-keeping activities encompassed by Industrial Archaeology are considered to be "industrial monuments" whereas in situations where the protected heritage is the sum of a group of facilities and structures in a specific area, rather than a singular structure, the area is regarded in its entirety as an "industrial heritage site". [15]

2.1 The Value of Industrial Heritage

Industrial heritage carries special importance due to its status as evidence for historical events; societal value as a part of the lives of ordinary men and women; its technological and scientific potential in terms of production, engineering and construction history; the aesthetic significance it carries due to its architectural, design and planning attributes, its status as both a tangible and intangible witness for industry's existence in the memories and traditions of people via its texture, components, machinery and landscapes; and the rarity of certain processes, terrain typologies and landscapes it incorporates. [16]

According to Jie (2009), there are 5 main values the industrial heritage contains:

Historical Value: Industrial heritage is the evidence of industrial activities and is a record of certain historical activities. These memorials help people understand the value of industrial civilization, industrial technology, organization, culture etc. They cannot be replaced by any other type of cultural heritage. Therefore, industrial heritage condenses the universal historical value. [18]

Technological Value: Industrial heritage is a reflection of human intelligence, including a great deal of technological inventions and creations, which reveals the order of nature and scientific methods of production and organization. It is beneficial to the progress of science and technology in future. [18]

Economic Value: Economic value is represented at the premise of protecting the authenticity and integrality of the industrial heritage. If the sites are developed and reused with respect to their protection, by developing industrial heritage tourism, rebuilding to exhibitions, museums and so on, their economic value will increase. [18]

Educational Value: For the purpose of education, especially in history and engineering, relics of industrial heritage are live teaching materials which cannot be replaced by others. Many industrial heritage sites are protected as teaching bases in Europe and the United States. It could be a method to combine industrial heritage protection, exhibition and education together. [18]

Psychological Value: The protection of abstract values and their eternal, conceptual preservation is a necessity associated with the feeling of safety. [13] A representation of industrial heritage can be a symbol of a city's history, a multi-leveled spirit of the city and a common experience for all citizens. [18]

2.2 Classification of Industrial Heritage

Industrial heritage is a kind of materialization to human industrial culture. As mentioned above, it is part of cultural heritage. According to Jie (2009); on the basis of the classification of cultural heritage, industrial heritage also can be divided into tangible heritage and intangible heritage.

Tangible heritage includes movable industrial heritage, immovable industrial buildings and industrial sites. Intangible heritage includes craftwork process, traditional craftsmanship and so on. [18]

According to Kıraç (2001); objects, structures and landscapes are all regarded as industrial heritage, despite being very typologically distinct elements. Industrial heritage is thus only divided into two groups: movable and immovable cultural heritage. Objects of industrial heritage are movable, while buildings and landscapes are immovable cultural heritage.

Movable cultural heritage is also divided into two groups, the first one being small objects that have obsoleted due to changes in habits of production and consumption in the second half of the 20th century. The second group includes large objects such as steam engines that may be found inside industrial buildings and form an important part of production processes.

Immovable industrial heritage includes, using its broadest definition, structures and machinery – or factories for short – used to conduct production and structures such as bridges, canals and roads, often regarded as technical heritage. Buildings such as warehouses, exhibition halls, shops, bazaars and market halls which carry active supporting roles before and after the process of production are also immovable cultural heritage.

Bridges, canals, tunnels and railroads which are used to transport raw materials and finished goods are regarded as technical infrastructure, while stations – as transportation buildings – are also included in industrial heritage. Lodgings used by workers are also industrial heritage due to its status as industrial landscape. [13]

When trying to form a classification framework, it becomes apparent that countries harboring different industries also have differing classification schemes for their industrial monuments. [19] Industrial heritage can just as easily be classified into 5 as "manufactories", "transportation infrastructure (railroads and ports, canals, bridges etc.)", "storage facilities", "auction-exhibition buildings, large shops" and "workers' lodgings" as it can be divided by professions such as mining, energy production (windmills etc.), crafts industries (textiles, glass etc. factories), transport elements (roads, bridges, railroads etc.), construction material manufactories (stone quarries, clay pits etc.), support facilities (workers' lodgings, recreational facilities etc.) and infrastructure systems (gas pipelines, water pipelines, communication lines and other public services). [13-19]

3. Examples of Reused Industrial Heritage

This section will handle three modern examples of reused industrial heritage: "The Silo" in Copenhagen, Denmark which was transformed from a silo into housing blocks with additional public functions; "House of Vans" in London, England, where a mixed creative venue was formed from a subway station and 5 accompanying tunnels; and "Lumière Cinema", a cinema complex and restaurant that was repurposed from the electric power station and boiler houses of the Sphinx factory in Maastricht, the Netherlands.

In order to emphasize that the headings of Heritage Value, Reasons for Adaptive Reuse, Motivations for Utilizing Adaptive Reuse, Criteria to be Considered in the Selection of the New Function and Alteration Methods Made During Adaptive Reuse Process that we have covered in the research, may be de facto methods for analyzing the reusing process of industrial heritage, special attention has been paid to the fact that each example belongs to a different category of industrial monuments.

3.1 The Silo, Copenhagen, Denmark

The Silo, has been reused as part of a transformation project in the Nordhavn (North Pier) industrial port of Copenhagen. The 10.000 m^2 Silo, which was the largest industrial building in the district had experienced a period of inactivity after being used to store and process grain for 50 years and was transformed in 2017 to a marvelous apartment building with public services conducted in its top and bottom floors as part of a cooperation between COBE, Balslev, Wessberg and NRE Denmark. Fig 1. The location of the structure in the city center and the economic conditions that have emerged over time have been influential in determining its new function.

Fig. 1. (a) Old Nordhavn; (b) The Silo, before transformation; (c) The Silo, after transformation

The uniqueness of the grain silo lies in its monolithic appearance. Its rational form and inner complex is a direct result of the original use. 38 unique apartments, each different from the others, were designed thanks to the internal diversity of the original building. The single- and multi-floor flats range between 106 m^2 and 401 m^2 and each has differing ceiling heights of up to 7 meters. Fig 2.

The original grain silo included splendid concrete architecture but was designed to be cold and dark in order to facilitate the storing of grain. As these environments were inhospitable to human use, the building was refurbished to accommodate human occupation by adjusting the amount of light and heat it receives.

The designers, wishing to preserve the building's character and monolithic structure, preferred to keep the building's internal concrete appearance as naturally intact as possible and instead opted to ensure the desired climate conditioning via changes to the building's exterior fronts. Fig 2. While the appearance of the curtain wall made of galvanized steel, which was added to the structure later, wrapped on the carcass of the building is attention grabbing, it has damaged the original industrial appearance of the structure. The utiliy system was made suitable for new use.

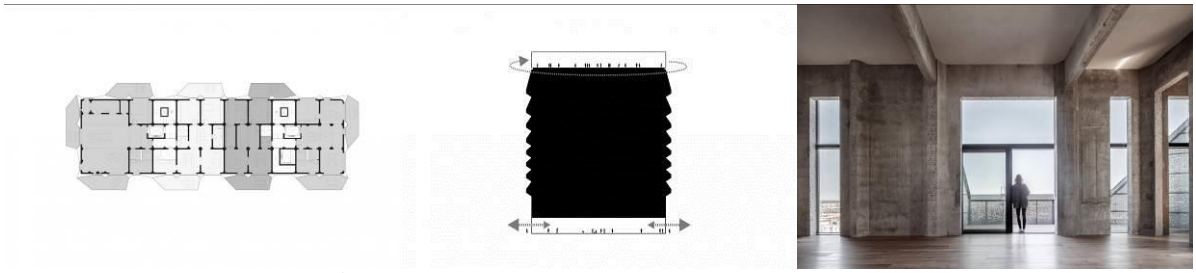

Fig. 2. (a) Sample floor layout; (b) Schematic showing private and public spaces; (c) Internal view

The Silo's public spaces in the uppermost floor includes a mirrored glass box restaurant with a 360^o view of the sea and the cityscape while the lowermost floor includes an activity area that is meant to be a meeting point for the town's residents. [20]

3.2 House of Vans, London, England

House of Vans London is a mixed use creative venue designed by Architect Tim Greatrex for Vans fans and skateboard enthusiasts. The venue, built in 2014, has created an atmosphere where the skateboarding culture that has defined Vans since 1966 meets art, movies and music. The structure, of which original frontage has been protected, contains an art gallery, art-design spaces known as "Vans Labs", an 850-person concert hall, a multimedia hall and a cinema as well as a first-class café, multiple bars and a three-tier indoor concrete skate park.

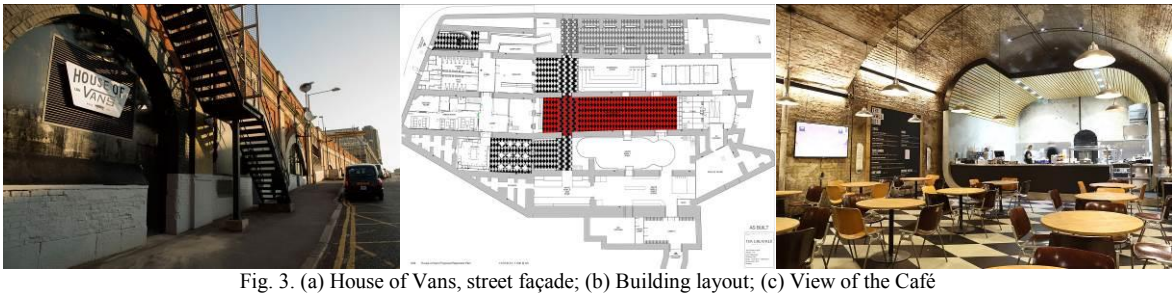

Fig. 3. (a) House of Vans, street façade; (b) Building layout; (c) View of the Café

The House of Vans London sits within the 150-year-old brick arches of the railway lines heading out of Waterloo station and next to London's famous graffiti street, Leake Street. The site was previously used by the

Old Vic Theatre. The area of the site is approximately 2,500 m^2 and contains 5 separate long tunnels which together provide a cultural hub for skateboarding, art, film and music. Utilizing the layout of the tunnels, the site was divided into four main functions explained in the brief so that each was housed within a specific tunnel. The new functions determined are fully compatible with the wide-space setup in the whole structure, and no interventions have been made that cannot be reversed. They were separated into the following: an art tunnel - a gallery with artist's labs to create and display art exhibitions; a film tunnel - a cinema and screening room; a music tunnel - an 850-capacity concert hall; and a skateboarding tunnel - a skate park for all levels of skateboarding ability and love of extreme sports. Fig 3.

The structural system of the building has been completely protected, the utility system has been revised and necessary additions have been made. These re-appropriated forms are influenced as far back from the origins of skateboarding from California which includes the citywide rudimentary forms of concrete banks and transitions, and from the early years of skateboarding within vacant swimming pools and large concrete pipes. This was incorporated into specific design interventions of the site for example the main entrance counter, the transitioning ramp into the space, the skate park areas, the cinema seating and the café kitchen enclosure - all incorporate elements of skateboarding forms.

The five separate tunnels are all covered in rubber which references the original Vans Doren Rubber Company's main product of rubber in addition to being durable and recyclable and the layout on the main corridor is covered in hexagon and diamond-patterned rubber was specifically inspired by the iconic sole of the Vans shoe.

Fig. 4. (a) View of the Concert Hall (b) Main corridor, covered in Rubber (c) Skatepark

Long linear strips of warm light were used throughout the underground tunnels, positioned at the intersection of the brick wall and the beginning of the brick arch, to light the brickwork to create a dramatic cathedral like space; neon lighting appropriate for the subterranean environment was also employed for the entrance, bars and stage. [21]

3.3 Lumière Cinema Maastricht, The Netherlands

After being tasked by Maastricht City Council, architects JHK Architecten and Verlaan & Bouwstra cooperated to design the Lumière Cinema through a comprehensive restoration and renovation of the old power station and boiler houses of the Sphinx Factory in the center of Maastricht. Finished in 2016, the building includes an area of 3750 m^2.

The complex includes 4 buildings; an engine room at the corner of the inland harbor "the Bassin", two boiler houses immediately behind it and a carpentry workshop connecting the engine room to the other buildings inside the culture complex.

Fig. 5. (a) View from the Canal; (b) Building layout; (c) View inside the Café

The beautifully decorated engine room has been transformed into the café/restaurant of the cinema. The entrance floor, where steam engines once resided, is now employed as a stylish industrial restaurant in the

middle of the old installation. Fig 5. In the ground floor lies the restaurant's kitchen and a separate bar area directly connected to the terrace on the Bassin.

In the boiler houses behind are six new cinemas, with a total capacity of 500 seats. The three largest have been installed in a half-submerged basement construction, which has allowed the installation to reach the desired viewer capacity while leaving sufficient space in the halls to continue experiencing the iconic roof structures. This basement has allowed the desired perception to be projected while also readily connecting all elements of the complex. The three largest cinemas have also been designed with a parabolic-elevated seating plan to provide for comfortable viewing.

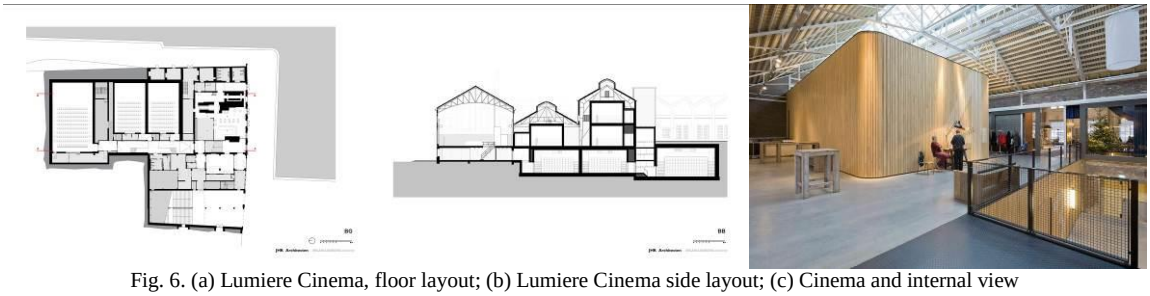

Fig. 6. (a) Lumiere Cinema, floor layout; (b) Lumiere Cinema side layout; (c) Cinema and internal view

Entry to the cinema is possible through the old carpentry workshop near the complex. The old wall of the power station can be seen while moving through the passageway between the workshop and the power station. Outside the entrance, in the ground floor of the carpentry workshop lies a public passage that connects the inner courtyard of the complex to the canal. Offices are situated on top of this passage, along with a multi-purpose area on the side overlooking the courtyard.

The complex which has been expanded and re-built over the years once used to be full of multiple technical areas however the connections formed by the newly-built half-submerged basement have repurposed the entire building stock and made it possible to transform it into an eye-catching and tempting structure for the public. Fig 6.

The removed walls were rebuilt in a more comfortable and durable fashion and insulated. Thanks to this approach, even the thinnest steel constructions of the complex were protected and a basement could be built.

As the complex is made of multiple units – each with a unique style and structural arrangement – unique approaches have been taken during renovation efforts. In order to strengthen the badly-damaged boiler houses, the walls which were in bad shape were removed while the steel construction base was fully retained.

The engine room has been restored and renewed as much as possible and the utility system in the whole structure has been revised and necessary additions have been made. After all efforts, the building was strengthened as much as possible without changing its appearance excessively and the industrial heritage was transformed into a modern complex where cinemas employing cutting-edge technology meet an alluring restaurant within a splendid atmosphere. [22]

4. Conclusion

In the second half of the 20th Century, as industrial facilities across major industrial centers in Europe began to lose functionality and turn inactive, initiatives to protect and record monuments dating to the industrial revolution began in the United Kingdom, running in parallel to urban renewal efforts and culminating in the contemporary concept of industrial heritage.

Industrial heritage, in its most common form, includes all artifacts of the industrial culture with historical, technological, societal, architectural or scientific value. When approached from an architectural design perspective, it provides reuse opportunities that are bound only by the imagination of a designer thanks to the structural richness and magnitude of industrial building which have lost their functionality.

But reusing remains a difficult process beginning from the conundrum of why an extant building should be transformed, rather than a momentary impulse for novel designs, and developing with questions regarding the potential social, economic, cultural or environmental benefits of refurbishment and the alteration methods that need to be used to preserve the historical value and authenticity of the building.

When we evaluate the 3 examples that we have covered in our research in terms of adaptive reuse, the following results are reached:

All three examples belong to different categories of industrial monument. Silo in the example of "the Silo" is included in the industrial heritage as a storage structure supporting industrial production; the metro station and its 5 tunnels in the example of "the House of Vans" as a technical structure used in providing the necessary raw

material for industrial production and in material delivery, and electric power station and boiler rooms in the example of "Lumière Cinema" as they are under the title of the buildings and machines where industrial production takes place.

When we evaluate the values of the examples in terms of heritage, they have historical values as they are records of industrial activities of a period, psychological values as they are symbols of common experiences of urban spirit and city-dwellers, and economical value as they are the structures to develop industrial heritage by using with public function.

When we look at the reasons for the reuse of the examples, all three examples were abandoned, as they became old functionally due to the technological innovations.

In all three cases, there is an economic benefit to be achieved far beyond the conversion cost.

When the new functions of the structures were decided, it has been paid attention to protect their monumental features, spatial formation, volume dimension, functional relation setup, location of the structure has also been taken into consideration. However, in the example of the Silo, the gaps opened in the frontage of the structure to meet the requirements of the users have damaged the original industrial appearance of the structure. In the example of Lumière Cinema, a new circulation schema has been established by adding an English basement, as the current circulation was not sufficient for the new function, but this basement did not adversely affect the external perception of the structure unlike the example of Silo.

Evaluating the interventions in the adaptive reuse process, it is seen that in all three examples, the spaces have been added ideal dimensions for the new functions by using dividers only in case of necessity, which is positive in terms of protecting the originality of the structures. In the examples of the House of Vans and Lumière Cinema, all interventions are reversible. However, the fact that the frontal application of the Silo example is irreversible causes us to question the suitability of the new function.

The structural system has been protected in all examples. However, only in the example of House of Vans no additions have been made to the structural system. In the examples, the installation systems have been revised and made ideal for the users with the necessary additions. In all examples, the conversion has been considered together with the environment of the structures.

The samples used in this article and the data gathered from our literature review have provided us with Table 5, when examined in relation to their heritage value, reasons and motivations for adaptive reuse, the criteria considered in the selection of new function and alterations made during the adaptive reuse process.

Table 5. Analysis of samples on which adaptive reuse was applied

	The Silo	**House of Vans**	**Lumière Cinema**
Construction Date	1950's	1850's	1830's
Location	Copenhagen, Denmark	London, UK	Maastricht, the Netherlands
Original Function	Silo	Railway Station and tunnels	Electric power station and Boiler houses
Current Function	housing and public functions	Mixed use creative venue	Cinema and restaurant
Year Transformed	2017	2014	2016
Heritage Value	historical, economic, psychological	historical, technological, economic, psychological	historical, technological economic, psychological
Reasons for Adaptive Reuse	becoming obsolete in functionality and losing original function, being located in an urban renewal zone, economic factors	antiquated functionality an losing original function, economic factors	becoming obsolete in functionality and losing original function, being located in an urban renewal zone, economic factors
Motivations for Utilizing Adaptive Reuse	functional, economic, ecological, cultural	functional, economic, ecological, cultural	functional, economic, ecological, cultural
Criteria Considered in the Selection of New Function	Monumental feature, spatial formation, volume dimension, functional relation setup, location	Monumental feature, spatial formation, volume dimension, functional relation setup, location	Monumental feature, spatial formation, volume dimension, functional relation setup, location
Alteration Methods Made During Adaptive Reuse Process	Alterations and additions were made to the spatial organization, the structural system was preserved, additions were made to the utility systems, the elevation was completely re-designed, its immediate environment is being transformed as part of the ongoing renewal process in the area	Alterations and reversible additions were made to the spatial organization, the structural system was preserved, additions were made to the utility systems	Alterations and reversible additions were made to the spatial organization, alterations and additions were made to the structural system, additions were made to the utility systems, its immediate environment is being transformed as part of the ongoing renewal process in the area

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MODULARITY AS A TOOL FOR FLEXIBILITY IN DESIGN: ANALYSIS ON A POP-UP OFFICE

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Abstract
Modularity has been a popular concept among users, designers and producers for many years, but it can also be said that the consciousness towards the modularity is a recent approach and gaining an increased importance. Modularity adds an integrator task to the objects/structures within a system. A well-designed modular system not only can produce endless variety due to its flexibility and totality but also can provide environments which are more responsive to various needs and users.
Flexibility in design can be defined in various ways. As Kronenburg (2007) [1] states that flexible design is intended to respond in changing situations and operations. To meet the constantly changing and evolving needs of the users, design solutions are asked to provide flexibility in order to re-evaluate their usage configurations. Through modifications, flexibility also enables future re-usage of a design object which prolongs its usage time in a sustainable way.
This study analyses the benefits of modularity through flexible design approach by examining the interior solutions of "POP-UP Office," which is constructed by Dubbledam demonstrated in Toronto's Interior Design Show, 2013. This project aims to solve new office necessities through mobility, adaptability and flexibility approach. Reclaimed wood pallet boards are used as the major material of the project. Separate modules which created by the wood pallet boards, combine with each other in different ways systematically. By this way, it provides individual or collaborative working spaces. The project intends to address issues related with changing needs and situations by proposing a series of modular small units which can be joined together and reconfigured to design spaces for changing needs. The study concludes that modularity is a solution and a tool which benefits from the principle of consistency, unity and flexibility by adapting itself according to changing user needs by developing a design language.

Key Words: *Modularity, Flexibility, Adaptability, Modification, Reuse.*

1.Introduction

People are generally tending to change their environment due to the changing factors. All necessities of human kind and the living situations are flexible because of changing situations. In parallel to users' changing situations, the environment in which people live can also be shaped. From the flexibility perspective, modularity can provide opportunity to sustain all these changes and it gives the capability to use these environments for a long time. This study intends to examine the flexibility dimension of modularity through a case study.

Within the solved systems, modularity serves three main purposes. The first one is deeply related with flexibility and expansions of the construction both horizontally and vertically. Second, its design language provides an overall consistency even if it displays an expansion due to the increase in spatial needs. Third, when if these structures are not needed anymore, they can be transformed into sustainable structures for further needs. Baldwin's (2002) [2] theory of modular design summarizes the perception of modularity as ability to create options. Creating options systematically provides variations and these variations provide flexibility in different dimensions. Miller (2005) [3] supports the strong relationship between modularity and flexibility. Modularization currently functions as a mean for increasing competitiveness of companies. This is the consequence of the advantages of standardization and rationalization with customization and flexibility.

This study aims to discuss the concept of modularity through the principle of flexibility. It is supported that modular systems provide wide flexible usage vertically and horizontally and alternative interior architectural design solutions. Especially for the interior solutions, without changing the main structure, interior modules may create many different spaces with respect to the needs. To investigate this, 'POP-UP Office' which is constructed by Dubbledam architecture (2013) [4] is analyzed. Because of the changing necessities, with the help of smart modules, 'POP-UP Office' serves with many different combinable modules to create spaces enabling distinct funtions.

1.1. The Concept of Modularity and Flexibility in Design

The term 'module' is defined in the literature as a final part of a series of remote assembly operations. It can be the largest portable unit or a component of a facility of the structure (Azhar et al., 2012) [5]. Modular units are not only combined for a large-scale building but also used to build rooms, walls or can be totally separated

units. These units can be self-supporting and independent structures. The concept of modularity is commemorated the procedure of product design industry. In construction, modules refer to a bundle of redundant project components that are produced as ready for installation. Using modules in products and utilizing the benefits of modular structures as a practical design work, had been developed in the industrial history of the 20 th century (Schilling and Steensma, 2001) [6]. Components of modular systems can easily be organized by the manufacturer in the construction phase.

The existence of synonyms of 'flexibility' such as adaptability and polyvalence used in different fields (e.g. medicine, law) result in confusions in its meaning. (Habraken, 2008) [7]. Due to this confusion, architects tried to develop a related terminology for flexibility according to the architectural concept. In 'Flexible Housing' (Schneider and Till, 2007) [8], they clarify the term 'flexibility' as covering the entire range of possible design decisions that aim to lose the rigid functionality.

The build-up of flexibility in construction and design is important due to certain factors. First, the in-built (design as a part of) opportunity for adaptability is clarified as 'being capable of different social uses'. The second one is the opportunity for flexibility which is identified as 'being capable of different physical arrangements' (Groak, 1992) [9]. Groak (1992) also advocates that identifying these principles for enabling social and physical change in any kind of design concept might cause self-evidently sensible approaches. These approaches can offer several enhancement suggestions in the context of constructing buildings according to innovative understanding, or in the context of making existing ones viable or sustainable.

House builders from worldwide, will benefit from obsolescence in the housing production by the use of inflexible plans. But it does not mean that, it is technically much easier to modify the 'balloon-framed' suburban house in the US or the timber framed one in Japan than building an apartment or a row house in Europe, made up of masonry or reinforced concrete. Not only construction characteristics of buildings, but also their interior design is required to respond the changing needs. Thus, the units for rent may easily be adapted according to the user's wishes since they are technically flexible.

As mentioned before, this approach increased its importance in the 20th century. After mass-production in construction industry started, because of the need for rapid and quick solutions, different production techniques and design principles appeared. During the Bauhaus era (1919-1933), German architect Walter Gropius combined the idea of standardization with functional thinking and industrial production in building construction. As Droste (1990) [10] states 'the module was linked to a building block concept (Baukasten), where building blocks were functional units in buildings (e.g. kitchen, living room, sleeping room). In Bauhaus era, the module gained its original meaning as a standard measurement, allowing combinations of many building blocks, inspired by children's toys. The purpose of the Bauhaus building blocks was to create buildings in a more rational way by standardization and prefabricated materials and to make a more thorough and efficient planning. Another supportive idea for combining flexibility with some innovative and progressive technologies developed by Rohe (1927). He states that the frame construction was the most appropriate form of construction to deal with differing needs of the occupants.

While modularity notion serving some systematical and add-drop facilities to the customer, flexibility concept provides further re-usable and adaptable usage. It is envisaged that flexibility and modularity can be assembled together to get better solutions. It can be adapted to the new requirements and new purposes. Through this way, the scale of the structure can change, it can be enlarged or reduced, and it can totally turn into another facility.

In this context, in order to explain these concepts can work in a harmony, 'POP-UP Office' designs by Dubbledam are analyzed in the following chapters.

2. A Review of Modular and Flexible Design Concept: POP-UP Offices

To begin with, it is important to clarify what is the concept of POP-UP from the architectural point of view. Common definition of POP-UP related with advertising in the web pages. It means viable for web pages' advertisement part as a small window that suddenly appears (www.yourdictionary.com) [11]. Today, the POP-UP notion is occurred as an installation. However, it is also used in three-dimensional book design that generally aims to attract children through three dimensional compositions in a page. Second, it emerges quickly from a recessed or concealed position when modules are activated. For the structural process, the POP-UP Offices take these notions and combine them as a design principle.

Designed by Dubbledam, the 'POP-UP Offices' are designed as a solution to the changing working circulations caused by the staff increase-and-decrease and the need for spatial renewal. It turns into a well-designed space with the well-resolved modules and flexibility. The result presents a workspace that includes continous parts and tailored to every individual in terms of their needs. Mobility, adaptability and flexibility are the main key words for this modern office. Sustainable wood pallet boards and their frames containing separated modules collectively form the modern work place facilitating either individual or collaborative work. It can create a workspace, a collaborative space, a lounge area and a refueling station (https://www.archdaily.com/332050/pop-up-office-installation-dubbeldam-architecture design) [12].

Fig. 1. General views of the rendered project of POP-UP Offices (http://dubbeldam.ca/portfolio/work/pop-up-office). [4]

Different kind of modules are used to create this space. For example, sitting units, working tables, bookshelves, partitions are designed. These modules are creating different planes such as floor, wall and ceiling. Furniture elements can be assembled in different configurations.

Modular shelves can be used as a part of walls. Additionally, these shelves can create adjustable display and storage areas. Combinations of simple wood pallets modules create various lighting elements on the ceiling. It should be kept in mind that these modules are changeable and flexible. Each one of them can create some additional spaces for the user.

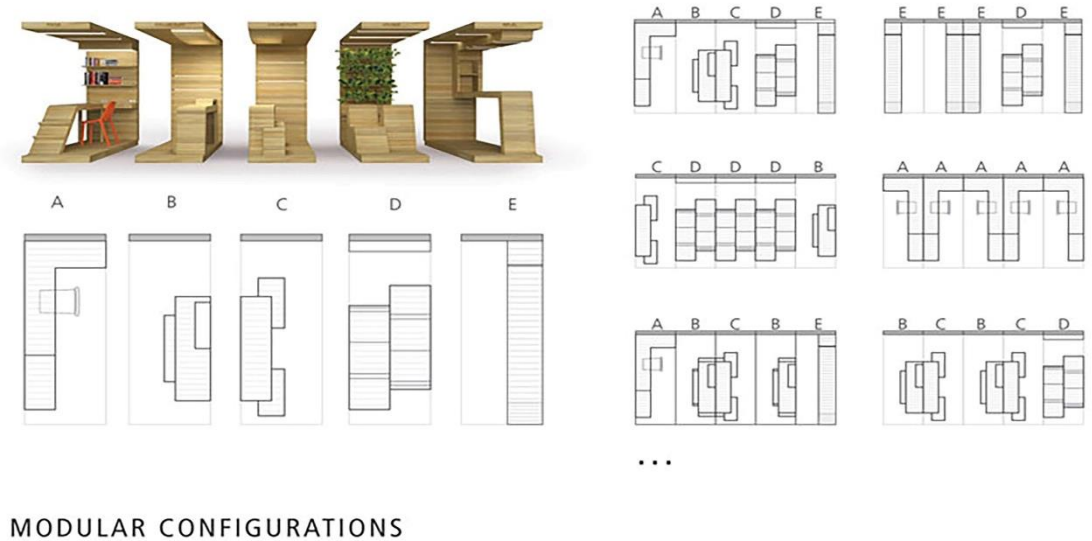

Fig.2. Configurations of modules (https://design-chronicle.com/pop-up-office-by-dubbeldam-architecture-design/). [13]

Every block can be reconfigured and deployed easily. In fact, this project will be beneficial for the shift in usage, it can be used in outdoor festivals or disasters relief situations. With the various types of materials and its shapes, lighting and furniture components will be easily reconfigured to fit individual needs. Basically, the POP-UP Office embodies adaptability according to the spatial needs (http://dubbeldam.ca/portfolio/work/pop-up-office) [4].

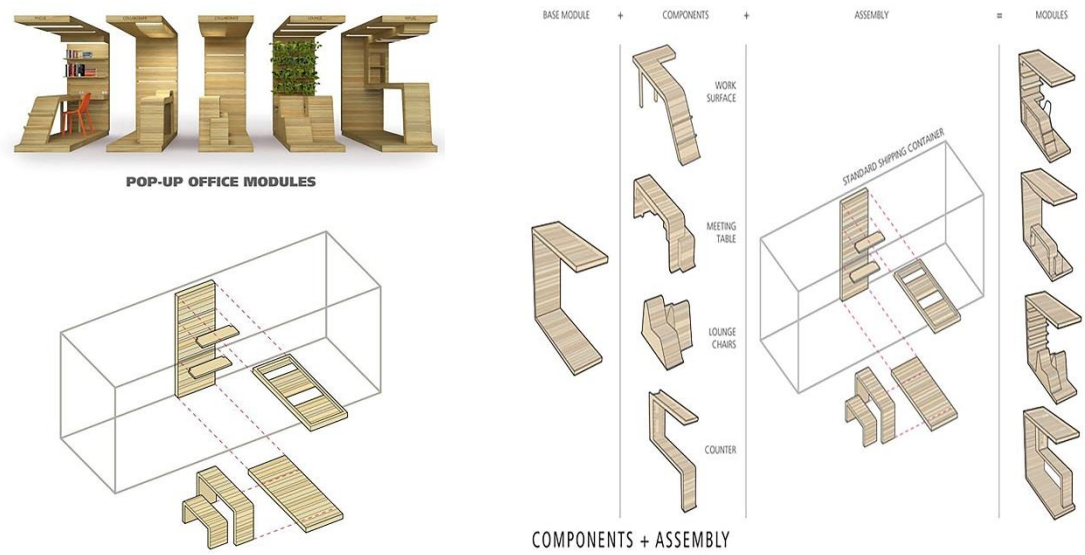

Fig. 3. Component of modules (https://design-chronicle.com/pop-up-office-by-dubbeldam-architecture-design/). [13]

Combinations of discarded wood pallets provides minimal space for transportation. Approximately ten wood pallets create one module at the final installation stage. One standard shipping container can transport fifty wood pallets. Thus, five finished modules can be created from these pallets can be transported in a single shipping container. This procedure minimizes transportation time and needs less fuel consumption.

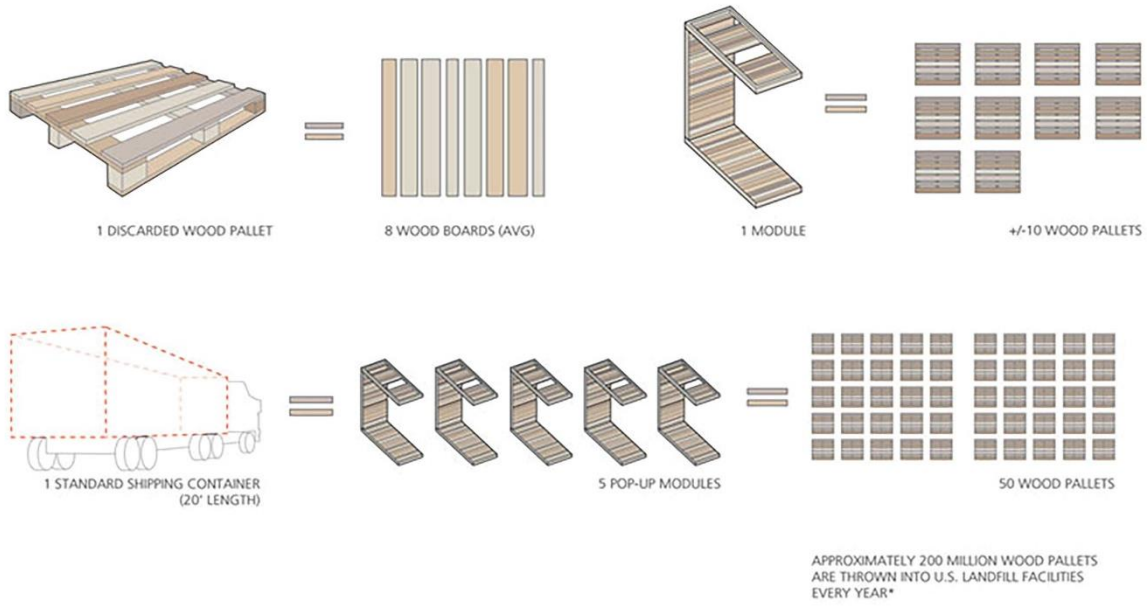

Fig. 4. Material usage concept and sustainability ((https://design-chronicle.com/pop-up-office-by-dubbeldam-architecture-design/). [13]

According to the Dubbledam architect, this project offers lots of opportunities to the user. Because of the design principle and shape of the major covering of the POP-UP Office, these modules can be transportable. A containership may approximately carry 11.000 containers (http://www.worldshipping.org/about-the-industry/liner-ships/container-ship-design). [14] One container can carry 5 modulation systems inside. With a simple calculation, it means that 55.000 POP-UP module can be transport at the same time.

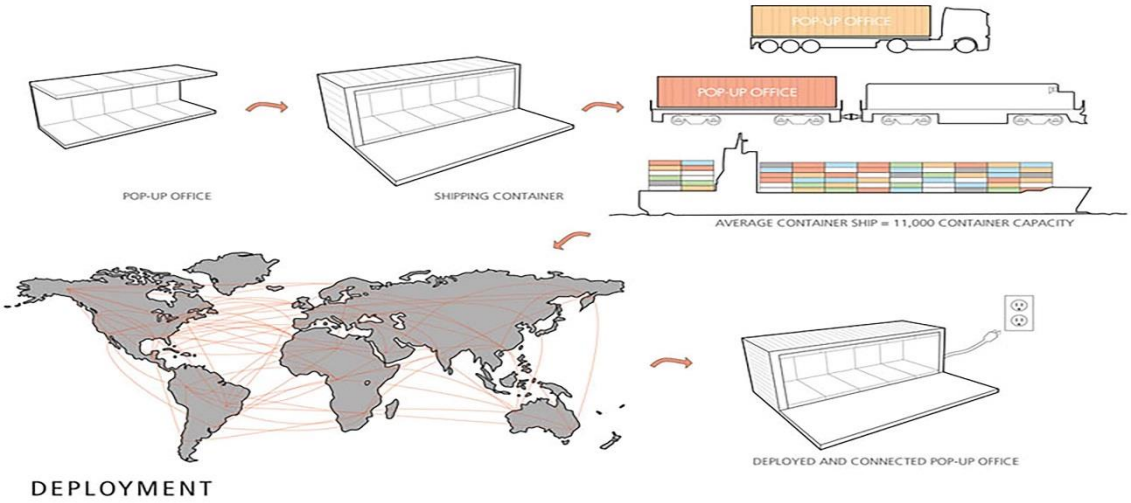

Fig. 5. Shipping and transporting procedure of the main modules. (https://design-chronicle.com/pop-up-office-by-dubbeldam-architecture-design/). [13]

The applied project of POP-UP Office can be shown from the example below. Dubbledam architecture applied the form as a container office. Gathering of five main covering modules and combination of wooden panels creates changeable working, sitting, resting and dining spaces with similar shapes.

Fig. 6. Final view of the structure from Toronto's Interior Design Show, 2013 (http://retaildesignblog.net/2013/02/07/pop-up-office-in-shipping-container-by-dubbeldam-architecture-design-toronto/). [15]

2.1. Expected benefits and barriers of the POP-UP system

If an evaluation is made based on the example mentioned above, the structures created using POP-UP system, can create different perceptions according to the place and purpose of use. As in the example above, in social areas and open office use, the type of materials which used, and the design can give the user a feeling of transparency. The sense of transparency can be perceived as a benefit for the user to feel more comfortable on the floor, or to establish eye contact and to establish internal-external relations in the spaces which used as social spaces.

The flexibility provided by the modular system will allow for the reconstruction of spaces according to the changing needs. Flexibility of the system, whatever the purpose of use, anticipates that these structures can respond to needs for many years. However, if we cannot just construct these systems as office spaces or social

areas, but also add shelter spaces for people according to changing needs, the flexibility offered by the design will provide benefits to meet people's accommodation needs, to protect their personal space, the sense of transparency will not be a good approach for people who use this system as a shelter.

Therefore, in order to be flexible in use and to adapt to changing conditions, different material usages to be made with the contribution of modularity, can make these systems more personal areas.

3. Conclusion

To sum up, POP-UP offices have taken the design principals from POP-UP terminology which is used in different sectors. As a design principle, 'POP-UP Office' design seems to have espoused principles of creating three-dimensional tangible space composition employed in children books. When modules are activated, it quickly emerges from a recessed or hidden position. This approach may be beneficial for designers. The combination of modularity and flexibility tends architects to find new systems and solutions for their environment. It need to be keep in mind that, these all procedures are directly related with design process and creativity. As Habraken (2008) [7] said that building is not only just an empty structure, but also an architectural consideration that provides flexible usage to all environment shared by individually.

From this point of view, as we mentioned before, POP-UP notion refers a few different meanings. It seems that each of these meanings has taken its place in the design of the POP-UP Offices as a key word. The sudden appearance of objects may refer to create working spaces caused by sudden necessities for offices. This is also related with flexibility which allows modification for changing needs. Thus, flexibility can be perceived as a direct part of modularity. Systematical modules create flexible usages. In the POP-UP Office design, the flexibility principle is used to meet needs and modularity is used to provide this flexibility.

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AN ESSAY ON INTERIOR DESIGN FOR THE MONTESSORI PRE-SCHOOL EDUCATION SYSTEM

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Abstract
Education is a phenomenon, a process that has a direct effect on individual and social development and that continues for a lifetime. Education is quite important, due to its effective role in life, in aiding nations to form their visions for the future and to determine their statuses among other countries. The idea that education is a critical factor at the formation stage of social structure causes the scientific researches that are made in this field to increase, and researches that are made reveal that social development may be achieved by giving education to children, who are the building block of society. Thus, pre-school education that is provided in early childhood becomes important, and new education systems are being developed in this field. Among those education systems, Montessori education system is one of the systems that come to the forefront with the positive effects they make on children. The objective of this study is to draw attention to the fact that, Montessori pre-school education system that is discussed within the scope of the study may only find a successful area of application with the existence of education spaces that are appropriate for their intended purposes, and to emphasize the importance of interior design in the process of education. In this context, we examined how this education approach may be included to the process of interior design based on the theoretical bases set forth by Montessori education system on pre-school education, and we prepared a concept project by determining specific design principles in the direction of obtained data. Within the scope of the project, we re-designed the interior design of the building, which is located in İzmit Bağçeşme area and which is currently being used as a kindergarten, based on the design criteria that are determined in the direction of the education philosophy asserted by Montessori. We developed and visualized design suggestions towards interior design and fitting components of interior design in the direction of the factors that may play a determinant role in interior design, such as education setup in particular, ergonomics, colours, textures, materials, lighting and acoustics.

Consequently, in this study, we emphasized that the quality of the spaces where education will be provided and interior designers, who design such spaces, play quite a critical role, as much as the quality of the education setup, which is asserted by education scientists, at the stage of ensuring that required level of success is achieved in pre-school education.
Key Words: *İnterior Design; Pre-School Education; Montessori Pre-School Education System; Learning Space Design; İnterior Design Principles*

Introduction

Children are the most effective actors in forming the vision of any nation for the future. In this context, nations endeavoured to setup their own education systems throughout the history, and scientific researches and studies were made under the leadership of Froebel from late 19th century in particular. Although we may not provide a sole universal definition of the concept of education, which is a social phenomenon, due to cultural and ideological diversity, the issue that all researchers agree is that, education is a process that continues for a lifetime and that makes changes on behaviours [16].

First step of the education process, which is considered as lifetime education in countries where studies are made on education, is the early childhood period. The quality of the pre-school education that will be provided in early childhood period is effective in ensuring that children explore their potentials and become productive individuals in the society. Researches and practices that are made on this issue contributed to occurrence of new models on pre-school education. Although the first revealed models are European-based, it was spread to other regions of the world in time, and ensured that new models are revealed in those regions as well. Waldorf, Montessori and Reggio Emilia approaches, progressive approaches that are revealed in Europe, made an impact on both entire Europe and regions other than Europe. The point shared commonly by all of these three approaches in basic is that they began to become popular in post-war era, and that they put children to the centre of education. In these approaches, children make their development by being involved in the education process actively. Although these approaches are focused on children in general, they are different from each in terms of their philosophies and practices [7]. Montessori method, which is being examined within the scope of this study, belongs to Maria Montessori, an Italian scientist with a medical practitioner background. We may find the reason why Montessori education system and philosophy is applied in different countries and different cultures in the definition of child provided by Dr. Maria Montessori. According to Montessori: 'Children are universal. They existed at any period, and they shall do so till the end of time. There is nothing called pre-history children or middle age children etc. There are actually single children. Children of all periods and races, inheritor of

customs, cultural corner stone, who communicate history from generation to generation and who open the way to peace' [14].

As we examine the underlying reasons for Montessori education system being a system that is preferred commonly in the world and that is preferred in our country particularly in recent years since 1907, opening date of "Case De Bambini", first school to apply Montessori education system, we may come up with below headings;

- Education is programmed and applied specially for every children,
- It is considered that every children receives education individually and in their own pace,
- Children may receive education according to their development levels thanks to mixed age practice,
- Formation of uninterrupted study cycle,
- Every children determines their own study methods,
- Errors that are made are not shown by teachers, and prepared environment that includes designed materials is in a nature that will ensure that children correct their errors by themselves,
- Montessori education offers a quality education program to children,
- Education system is only focused on children,
- It has an organized environment that provides an environment for self guided learning and being independent,
- Importance of education in early ages is the focus point,
- It offers individual education and it involves studies that are directed towards involvement of families to education activities [11].

The contribution of the education system, which is applied in early childhood period, to the development of individuals increases directly proportionate to the quality of education spaces, which constitute the physical environments that the system may activate concretely. In this context, the role assumed by interior design in ensuring that education systems become successful is quite critical.

1.1. Importance of interior design in montessori education system

Pre-school period is a critical process, in which the brain development of children gains pace and thus, in which the interaction of children with the social environment takes places very intensely, and when children are wide open to any effects that may come from their environment. As we examine this issue from this perspective, immediate vicinity, particularly education environment, makes a direct effect on the physical and mental development of children. Children may only sustain their activities in learning and development processes healthily by existence of an environment, which consists of the equipment that are designed in conformity with the philosophy and requirements of envisaged education system, i.e. existence of a designed space. The role of interior designers is quite critical in designing spaces that are functional and qualified for implementation of any activities that are required based on the user requirements determined in the direction of education philosophy.

In recent years, architects and researchers revealed that design of a space makes a vast impact on the behaviours of children. James Banning, Psychology Professor, Colorado University, "We give shape to building, and they shape us", and thus, he revealed how physical environment is important in formation of the behaviours of individuals [8].

According to Montessori education philosophy that is discussed within the scope of the present study, children learn the equipment and materials available independently in the environment prepared for the same by experiencing them in person [11]. As we consider that children must assess the facilities provided by the space in order to reach to information, and that the space and components in it are in status of educators directly, it is observed that education system may provide the required result only by designing an interior design that is setup accurately.

Main factors that affect space organization are the users in interior designs that are made for pre-school education institutions. Student centred education setup and instructor-student relationship of Montessori education system effect space designs directly. Dominant actor of the user profile, which we may define as children and adult users, is children.

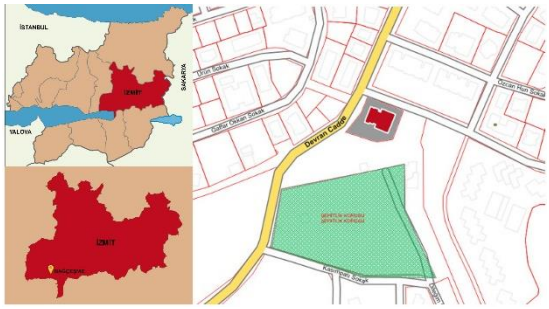
Montessori defines 0 to 6 ages, which are defined as pre-school childhood, as early childhood period. 0 to 3 ages of early childhood period is defined as "absorbent mind" period, in which any type of data received from the environment are stored. The period of 3 to 6 ages is referred to as "conscious absorbent mind", and is a period, in which information received from the environment may be filtered and interpreted [10]. The differences between these consciousness systems and designing education spaces according to the requirements of Montessori education philosophy play a critical role in ensuring that the children, who appear as users, experience a quality education process.

2. Interior Design For Montessori Pre-School Education System

The increase in the number of institutions that provide education on pre-school education, with the recognition of the effect of pre-school education on individual and social development, increases the requirement for qualified education systems, as well as spaces that include the equipment and materials, which will provide

the environment for implementation of such systems. In consideration of these requirements for pre-school education, we made the researches titled "Effects of Pre-School Education Systems on Space Designs" and interior design project studies in the fall and spring semester of 2013-2014 within the scope of the course of Seminar, Department of Interior Design, Social Sciences Institute, Kocaeli University. Within the scope of this study, we determined the interior design criteria for Montessori education system, which is one of the pre-school education systems and importance of which is emphasized in terms of education philosophy and education throughout the article, and we designed a concept project.

As project application area, we suggested the residential area of Bağçeşme in İzmit, central district of Kocaeli province. In recent periods, the number of houses increases in Bağçeşme and habitation develops with the effect of the changes experienced in dwelling house areas in İzmit after 1999 Gölcük earthquake in particular. The requirement for education institutions that will provide service to the children of the area also increases with the effect of increasing population. The increase in the importance attached to pre-school education in recent periods increases the requirement for spaces, which include equipment that may provide service in the direction of specified education system, even more. These factors were quite effective on the selection of the space, which will be suggested as project area (Fig. 1).

Fig. 1. Location of the building  in İzmit

Within the scope of the project, we aimed to design the interior space of a building, which is located at the aforementioned site and which is currently being used as a kindergarten, without damaging the integrity of the structure and in the direction of Montessori education system. We concentrated more on the interior design of classes in particular in consideration of the importance of educator role of education environment in Montessori education system.

In the design process of the project, spaces were examined on the basis of various factors that are considered to give direction to interior design due to their physical or psychological effects on the users, such as education system, ergonomics, colours, texure, materials, lighting and acoustics and design suggestions were developed in the direction of the data asserted by Montessori education system.

2.1. Interaction between education system and space

Children learn by doing and experiencing in an education environment organized according to Montessori education system. Their actual teacher is the environment [5]. Therefore, it is very critical to design physical environments and to use spaces in a way to respond to the physical and mental requirements of children. It is observed that a space, which has a system, an order within itself, which provides children the opportunity to hang around freely and experience education materials, and which is prepared in every aspect, is required.

Montessori classes that are designed according to the education philosophy cover areas that respond to various requirements. Montessori classes mainly include various areas with educational contents, such as practical life area, in which children may gain any skills that are necessary to lead their daily lives (fastening buttons, needling, belt fastening, zipping up, washing dishes, ironing and preparing meal etc.); sensory area, in which children may learn to use their emotions, and to perceive various heights, lengths, clearances, colours, sounds, smells and shapes, and various other areas with educational content, such as mathematics, language, science and geography etc. [9] (Fig. 2).

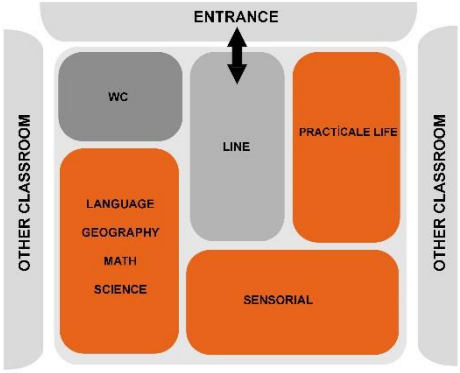


Fig. 2. Function chart of ideal deal montessori class

Montessori education system envisages that children are set free during education. Therefore, spaces, which have forms and functions that may provide freedom of movement to children, must be preferred while setting up the living areas in Montessori classes.

James A. Dyck, who is a certificated Montessori teacher and who is also known as an architect, developed "L" form, which he considered that it provide the quality required from Montessori classes, based on the experiences and observations he obtained from Montessori school projects he implemented. We considered that, out of available forms, the most suitable form for space setup of a Montessori class is "L" form since its asymmetry and diagonal lengths give the opportunity to form defined space sections and corners that are required for various activities. While symmetrical forms are suitable for formation of centre-focused spaces, asymmetric forms are more suitable for formation of spaces that include several centres and corners [6]. When we consider that various living areas that may respond to various requirements must be available in the interior space of a class that is organized according to Montessori education system, "L" form is the most advisable form to satisfy such requirement (Fig. 3).

Fig. 3. L Form and other forms [13]

Numerical data that are determined by International Montessori Institution were considered during realization of space setup of the structure of kindergarten, which is considered within the scope of the project and which is aimed to provide education to the age group of 3 to 6 years old, according to Montessori education system. According to these numerical data, which are determined for an ideal Montessori class in consideration of the requirements of a comfortable and successful education process, approximate number of children must range between 25 to 30 children in a class, and approximately 3,5 – 4 m2 of usage area must be provided to each child [15]. Interior design was organized, in a way to setup 4 classes with the capacity of 20-25 persons, in order to satisfy any requirements in the direction of the current structure and facilities of the kindergarten that has 3 floors, including basement floor. Other areas, except for the classes, were considered as main circulation lines, WC, sleeping room, refectory, kitchen, storage, personnel areas and play (gymnastics, sports and dance) area (Fig. 4).

Fig. 4. General interior space setup and correlations between floors

Interior designs of the classes, which were re-planned in a way to provide education to the age group of 3 to 6 years olds, were organized in a way to support the education philosophy of Montessori education system, in which it is asserted that different age groups must receive education together. Contrary to the conventional approach, in which different age groups are educated in different classes, we aimed to ensure that the new classes include educational living areas that may address different age groups and that may respond to various requirements in the direction of the principles of Montessori (Fig. 5).

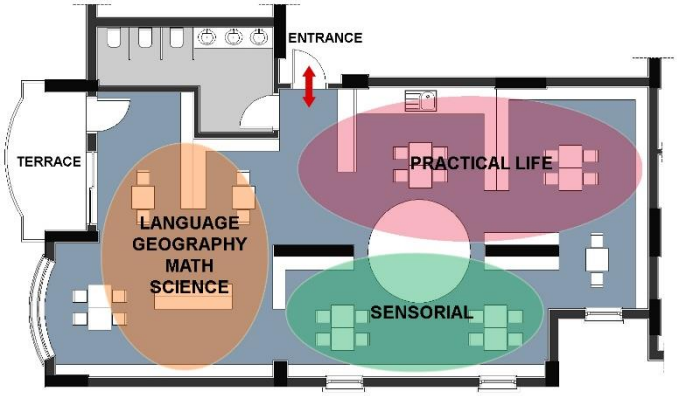


Fig. 5. Interior space organization suggestion for classes

These classes, in which approximately 20-25 children may receive education in average, were designed in a way to facilitate that children may hang around freely and may gain experience in personalized educational areas, which include materials that are directed towards various educational practices. The space is comprised of three areas in general, i.e. living area (daily life), sensory area and area that includes materials from various fields of education, such as mathematics, science, language and geography etc. Toilets and cloakroom area, which is required for their shoes and clothes, were considered in the class by considering that the design of class must satisfy any requirement of children (Fig. 6).

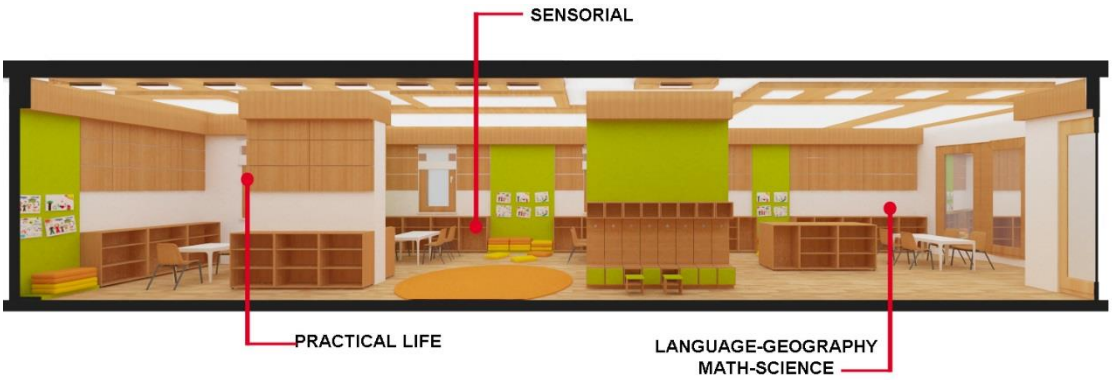


Fig. 6. Educational living areas in the class

Educational areas were not separated from each other by strict lines, and flexibility was provided within the planning of interior space by including modular furniture that may be moved, if required. An open space layout that is established by flexible space separators that function like furniture was suggested in order to provide freedom of movement to children in the class (Fig. 7).

Fig. 7. Modular furniture that include open shelf system that is also used as interior space separator

Furniture and space equipment available in the class were designed in a way to respond to the functions of relative living areas. Furniture, in which educational materials will be stored, are modular and have shelf clearances that may be adjusted according to the sizes of materials. Also, as we were designing furniture, we provided open shelf systems, in line with Montessori philosophy, which defends that children must be independent in the education process, by considering that children may wish to experience materials at any time. Any furniture covers and locks, which constitute barriers between children and materials, were removed.

Sitting units, which are among interior furniture, were designed in a way to satisfy various actions that may be performed during education activities. Sitting actions were defined in three different ways, i.e. chairs, carpets and floor cushions. Thus, several options were presented to children, and thus, we aimed to provide the opportunity to make their own choices.

2.2. Ergonomics and space interaction

Most critical quality of Montessori environment is availability of objects that may allow controlling error made in the environment. All of the objects available in a Montessori School, from furniture to education materials, are denouncers. Furniture reveal rude and defective behaviours of children because furniture are so light that they may be moved and even be knocked over. Therefore, everything available in the environment is a serious tutor. Thus, children would feel that they are always warned in such an environment as if they are before a lifeless teacher [5].

In Montessori education, physical contact that children make with their environment increases even more when space and materials assume as education role. Educational space must be in a scale that may meet the requirements of children and that may support development of the same. As we examine the issue from this perspective, spaces and space equipment, with which children may continue to perform their physical activities healthily, which are suitable for their anthropometric sizes, and which are accessible, are required. Mental development of children would also be affected positively, if children are free in the relative space physically.

According to Montessori, articles that are around children in classes must be suitable for their body structures and powers. Below items must be around the class; easily movable light furniture, cabinets that children may reach out and touch, locks that children may use easily, drawers and doors that may be opened and closed easily, coat racks that children may easily reach out, brushes that children may grasp with their fingers, soaps that may fit into the hands of children, brooms with short-flat handles and clothes that children may put on and take off by themselves. These items would also ensure that children develop themselves and learn about politeness in time. An environment, in which children may move freely, ensures that children make practices by themselves and raise themselves [14].

Children come to the forefront as the users of space based on the student centred education approach exhibited by Montessori pre-school education spaces. Therefore, physical characteristics of children became a determinant factor in designing the interior space equipment for our project. Thus, all of the equipment available in the class were designed in the anthropometric sizes of children and in a way to ensure that children may reach out to the same. All of the furniture available in educational areas with different functions are in sizes that may allow children to pick up educational materials without the assistance of any adult, and to return the same back to its place without the assistance of any adult when education process is completed (Fig. 8).

Fig. 8. Ergonomics in interior space of class and accessibility for children

2.3. Colour-texure-material and space interaction

In Montessori education system, children learn by searching, experiencing and living those around them. Therefore, colours, patterns and materials available in the space, with which children contact in person, become a guideline for development of the perceptual and sensory skills of children, who are in development process, and for formation of their awareness for those around them.

When we examine colour, which is a space component, researches that are made indicate that colours are effective on blood pressure and behaviours. Warm colours increase blood pressure and muscle activities, and cool colours decrease blood pressure. Also, it is concluded that colours of nature, such as blue, green and brown etc., create a peaceful atmosphere [4]. The warm colors tend to create warmth and excitement while the cool colors tend to soothe. Bright colors can be applied to a wall of corridors or playrooms, but the overuse of these colors can result in over-stimulated and agitated behavior in children.

Montessori, who defends that deep concentration is a factor that affects the learning process of children, emphasizes that the components of the space, which surrounds children, and equipment, on which children study, such as tables and carpets etc., must be designed by using light colours and natural texures in order to not to disturb their concentration, and that the tables and chair groups, which are designed consistent with the sizes of children, must be light enough for children to carry in the classroom and must be manufactured from natural materials, particularly wood, are quite important since they may accelerate the process of children to get to know the nature [3].

Light and natural colours that may relax children were used in the interior space of our project in consideration of the effect of colours on human psychology. We aimed to ensure integrity throughout the entire interior space by using natural colour of wood on the surface and equipment available in the space, and by using focus points personalized in green in order to increase the awareness of educational areas, which have different functions. We invigorated the space by using warm colours, such as yellow and orange, which were used on components with soft patterns, such as carpets and cushions etc.

Touching is the most overlooked sensation among the five sensory organs in the design of preschool educational institutions. However, the sense of touch is very important in cognitive development. Increased tactile and somatosensory stimulation proved in scientific research that developed form and spatial perception in children [12]. Different textures allow the child to experience different tactile feelings. Soft tissues can be used in quiet areas to encourage quiet behavior and relaxation in resting and sleeping areas. On the other hand, hard surfaces are suitable for large areas of activity. For this reason, modular open shelf units which are frequently used in classrooms and the use of solid wood materials for their natural appearance in the tables are envisaged. Laminate parquet was used throughout the surface. In order for children to feel safe in the place, and to be able to adapt to the space, space elements made of soft textures such as carpets, mattresses and wall panels as well as hard tissues and materials are used.

In terms of patterns and materials, we considered the positive effects of natural materials on concentration of children, and a warm education environment was created for children by using wooden materials in the space. We used space components that are comprised of textiles with soft patterns, such as carpets, cushions and wall panels etc., in order to ensure that children may feel secure in the space and may be adapted to the space.

2.4. Lighting and space interaction

In education environment, one of the factors that affect the learning activities of children directly is lighting. Type and severity of the lighting used in the space is important since it affects the efficiency of the visual perception and learning activities of children. Daylight is the most critical type of lighting that is required for the space when one considers the performance, physical and mental comfort of children in particular.

The natural light in the areas where children are present is a factor that affects the sense of trust when children are away from home. When the natural light is inadequate, it is necessary to provide the appropriate light for the age range of the children in the developmental process. The minimum level of lighting required to ensure that actions are carried out in a healthy manner. When examining the work done in this area, it was seen that the minimum lighting level of a space given pre-school education should be 300 lux. It is also necessary that the artificial lighting to be generated has the lowest level of UVA and UVB emission [13]. Indoors, which cannot be fully utilized by natural light, must be illuminated artificially, in the form of hidden lighting or indirectly reflected from the wall. The light color used should be daylight color [3]. The fact that the color of the light in the classroom is warm white in the nearest tones of daylight provides a healthy learning environment by keeping the perception of children at the highest level.

Considering the effects of ambient light and color on the performance of children in the classroom, it is foreseen to use LED lighting elements which produce 2700-3300 Kelvin light color internally in the present project work. In the classrooms where daylight can be taken from only two sides in accordance with the position of the current building, regional lighting surfaces are created on different working areas. LED lights are placed behind the transparent surfaces to provide clear and clear light to break the direct effect of the artificial light and to prevent irritating glare during operation.

2.5. Acoustics and space interaction

In education environments, one of the factors that may affect the education process of children physically and psychologically is sound. It becomes even more important to create an accurately planned space acoustics in the

education environment in order to prevent unwanted sounds to transform into a noise that may affect individuals negatively and to maintain indoors any sounds that are made for communication purposes.

Space acoustics is a concept that is related with controlling sound in an enclosed space. In space acoustics works, main objective is to provide quality environmental conditions that are required for obtaining desired sounds. Sound control and aural perception come across as two critical factors in terms of fulfilment of acoustic environment conditions of spaces. Comfortable and clear aural perception facilitate communication in the space, as well as increase effectiveness of studying and learning environment [2].

Recent researches indicate that reflections that source from sound affect the studying performance and behaviours of children negatively in the classrooms, which are used as educational spaces. Sounds that are reflected in an enclosed space create several echoes, and become weaker in time by crashing on surfaces available in the space. Dockrell and Shield assert in their study that reflections may be decreased by increasing acoustic absorption in a space [1].

It is very important for the speaker to reach the listener directly without experiencing the reflection of the sound in order to create a comfortable auditory perception in the space. Increasing the amount of reflected sound at the site causes the problem of noise which may negatively affect the individuals. Acceptable background noise level at training areas according to regulations published on June 4th 2010 in the Official Gazette No. 27601 Turkey is 35 dB while windows are closed and 45 dB while windows are open. For this reason, it is aimed to reduce the noise that can come from the noise sources by decreasing the reflective surface materials which can cause the echo in the room and increasing the absorbing surface materials while designing the classes of the Montessori educational system. It is thought that using the textile materials with sound absorbing properties such as carpets, mattresses, wall panels, curtains inside the classroom will increase the absorption in the classroom and reduce the echoes.

Conclusion

The awareness that is established on the importance of pre-school education on the education lives of individuals and positive effect of such education, which is received in childhood, on the development of societies made people search for effective education systems. Montessori education system, which is developed in the direction of such search, comes to the forefront due to its philosophy and its success in practice, and the number of private education institutions that adapts this education system increases day by day.

When we consider that the physical environment is a determinant factor on the physical and mental developments of children in pre-school period when children interact with the social environment intensely, this study, which is shaped in consideration of the question of "how the spaces, in which Montessori education, one of the most commonly preferred education systems all over the world, must be designed?", aimed to emphasize the role that interior design plays on pre-school education. In this context, we prepared a concept project with the belief that it may make a contribution to the national education program of our country and that it may serve as a model for the interior design of any pre-school education institutions that adapted Montessori education system.

Within the scope of the study, we re-designed the interior design of the building, which is located in İzmit Bağçeşme area and which is currently being used as a kindergarten, based on the design criteria that are determined in the direction of the education philosophy asserted by Montessori. We developed and visualized design suggestions towards interior design and fitting components of interior design in the direction of the factors that may play a determinant role in interior design, such as education setup in particular, ergonomics, colours, texures, materials, lighting and acoustics.

Consequently, in this study, we emphasized that the quality of the spaces where education will be provided and interior designers, who design such spaces, play quite a critical role, as much as the quality of the education setup, which is asserted by education scientists, at the stage of ensuring that required level of success is achieved in pre-school education.

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PRE-SCHOOL DESIGN IN THE INTERACTION OF USERS AND DESIGNERS

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Abstract

Current architectural theories, design approaches and process tend to move forward by focusing the user. The identity and the preferences of the users are paid attention, the perception and the experiences of the users are tried to be understood, the conditions of satisfaction and dissatisfaction of users are evaluated in the process of decision-making and design and the participation of the users are provided. This study will try to explain the opinions and the tangible approaches of users and designers on designed project.

In the context of the study, in 2017-2018 fall semestr within the Sudio 3 class, the task of design of a pre-school in the area where the historical Arsenal building is located in Yozgat. The design principles of pre-school is focused besides the reuse of the significant historical building. To be able to gain maximum benefit, the design principles and usage processes are contemplated. Three successful and unsuccessful projects are selected and asked to a team of designers and a team of users without expressing which project is successful or unsuccessful. The reflection in the real life of the function will be compared with the concept ideas of the designers. The consequences of the intimacy of the academic accumulations and pratic real life will be evaluated.

Key Words: Pre-school; interaction of user and designer; designer; user; user focused design

1. Introduction

It is known and experienced by almost every designer in any design discipline that there is tension between the designed work and its application to the real life. This can be considered as a matter of representation in that none of the real-life situations can be totally reflected in any designed or representational work. In this essence, it can be always questioned that how real the appropriation in a design of work is that is a result of a representation of something in a designer's cognitive processes.

If we look from the perspective of existential idea, we see that every individual is a designer just because of they lead a life, have experiences and adapt themselves in situations in real life. Hence, designers and especially architects seem highly reasonable when they concern about the perceived conditions of their works by the users. Since, perhaps, the perceived conditions of reality of the designer and the mean of perceived conditions of reality of the users may not be intersect at all or have little common, see Fig 1. This intersecting section carries a great deal of importance in the sense of humanitarian world-view in that architects can choose to evaluate themselves through the ratio of this intersecting area, see Fig 2. In this study, it is believed that it will be highly useful to take a brief look at these kinds of endeavors through recent history first. Then, a special case, designing and evaluating a pre-school design, will be evaluated in terms of this issue.

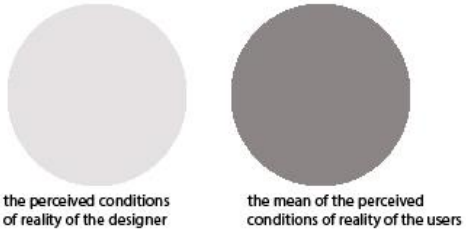


Fig. 1 the first possible relative condition

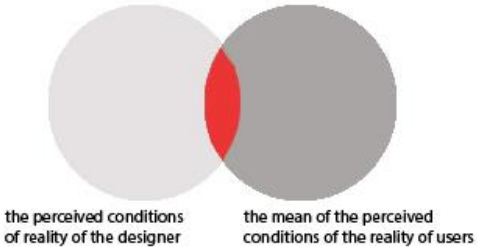


Fig. 2 the second possible relative condition

The background of the user-centered design

Within the frame of social changes in every field, 1960s becomes the initial point of human-focused design and decision making. [1] Starting 1960s, with the questioning of the intellection of the modern space, it can be seen a dense discussion of culture and locality based on users' needs related to meaning and identity. The requirement of contemplation of culture and space relationship brought forward the aspect of the user-focused of design principles. Oliver, Rudofsky, Rapoport drew attention to local environment and the reality of the user factor in organization of dwelling space. [2] Bernard Rudofsky pointed out even the existence of a kind of non-architect territory by emphasizing a space producing with collective culture. Designers have needed to deeply interact with cultural codes of societies, sociology, psychology, behavioral environmental sciences. These endeavors have developed with an increasing interest since 1960s.

While there is a science-based interaction of culture and design, a field-work based investigations for socio-cultural background has come into prominence, see Fig 4. A matter of communication arises in this point. Questionnaires, interviews, observations are frequently applied as tools to set up this communication between designers and users. Hence, the next matter is the evaluation of these information along with the objectives of designers and being able to come to strong compromise, see Fig 3.

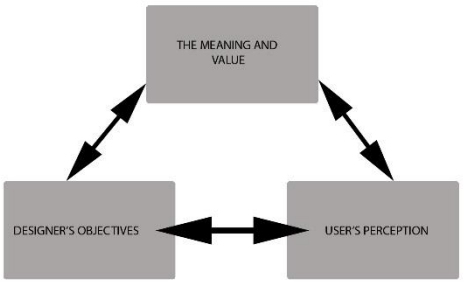


Fig. 3 the possible relationship triangle for user-centered design

The Design Problem: Pre-school design in the area of historical Arsenal

In Bozok University, in 2017-2018 fall semester within the Studio 3 class, the task of design of a pre-school in the area where the historical Arsenal building located in Yozgat were given. The design principles of pre-school, the theories of cognition besides the reuse of the significant historical building are considered. To be able to gain maximum benefit, the design principles and usage processes were asked to be contemplated simultaneously. Some students have adopted this theoretical background prominently as design initiatives, while others have preferred to do field-works, observations and interviews. Participatory design is extremely significant in this point, because this kind of a design enables designers to look at problems from a child's standpoint and, simultaneously, deal with childhood traits such as shyness and immature language skills. [4] Forthy-two projects were completed according to those inputs, which were basically related to designer's intuition about the problem, how a pre-school can be designed in a way that children can benefit most physically, socially and cognitively.

2.1 The Methodology of the study

This study tries to explain the possible opinions and the tangible approaches of both users and designers on a designed project. With this purpose, some pre-school projects designed within the scope of Studio 3 were selected according to the differiantiated design approaches:

- having open plan or setting distinct boundaries between functions
- the rigidity of whole design
- the condition of usage outdoor spaces- indoor spaces

These selected projects were prepared as questionnaire forms, see Fig.3-8. The questionnaire was conducted to two groups: ***Senior architecture college students*** were considered as designers. Correspondingly, ***senior pre-school education college students (pre-school teachers)*** were considered as users with the thought of that they had education and experience to evaluate the needs of pre-school children because of their contact with the children in person. Also they are considered as actual users of the pre-schools besides children. One group consists of ten senior architecture students, the other is constituted of ten senior pre-school education college students. The selected works were shown with its model photos, layout plans, floor plans, sections, and illustrations to the both group. They were asked to evaluate the works according to the criterias of essential principles of a pre-school design below:

- safety of the whole design
- accessibility of both indoor and outdoor spaces
- the quality and the suitability of the indoor spaces
- the quality and the suitability of the outdoor spaces
- the flexibility of whole design
- the appropriateness of the circulation paths
- the indoor and outdoor space relationship
- the level that project enables physical development for children
- the level that project enables sensual development for children
- the level that project enables cognitive and social development for children

The respondents were asked to rate each project according to these criteria. The evaluation was made according to the five variables system, see Table 1. They were also asked to think aloud while they were making their decisions.

Table 1.the evaluation criteria

level	1	2	3	4	5
interpretation	too weak	weak	average	strong	very strong

2.1.1 The Content of the Questionnaire

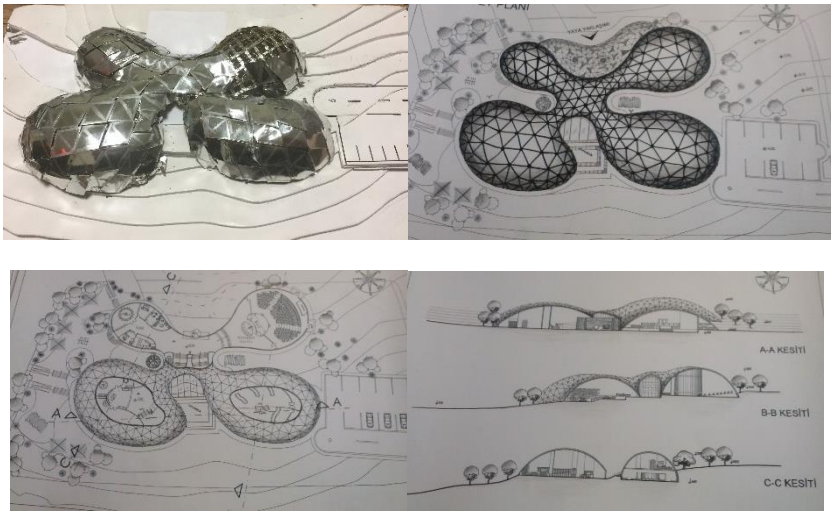


Fig. 3 The questionnaire form I: The model, the layout plan, the interior plans and the sections of Project I

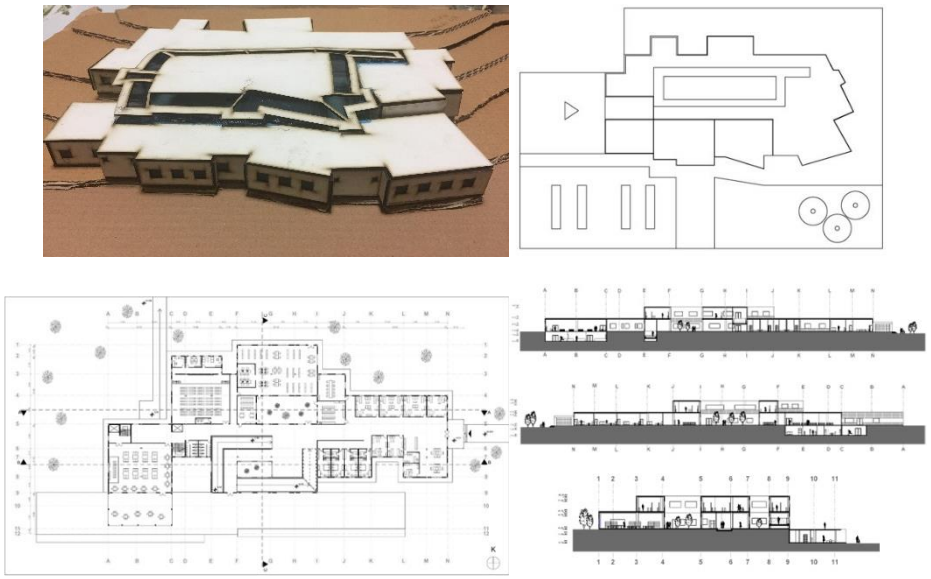


Fig. 4 The questionnaire form II: The model, the layout plan, the interior plans and the sections of Project II

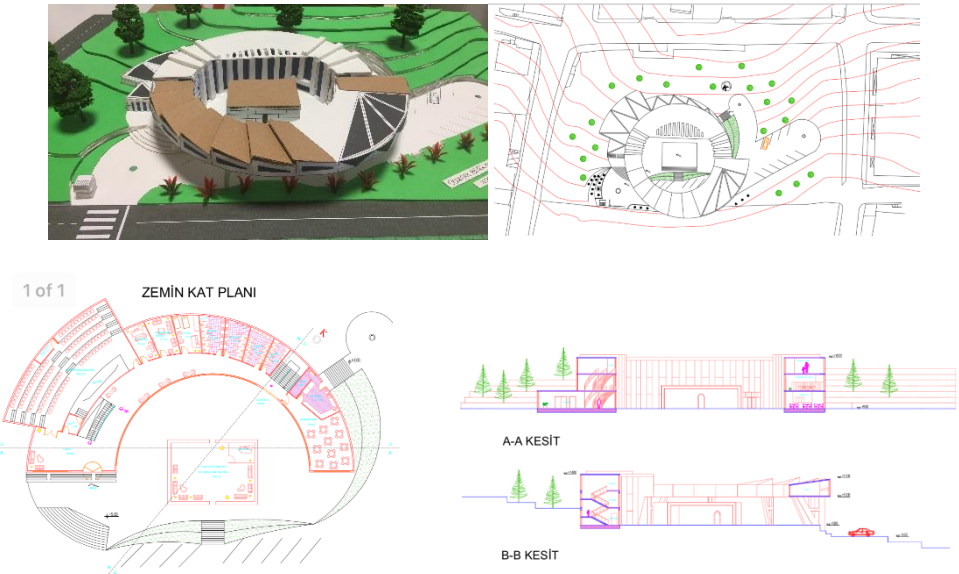
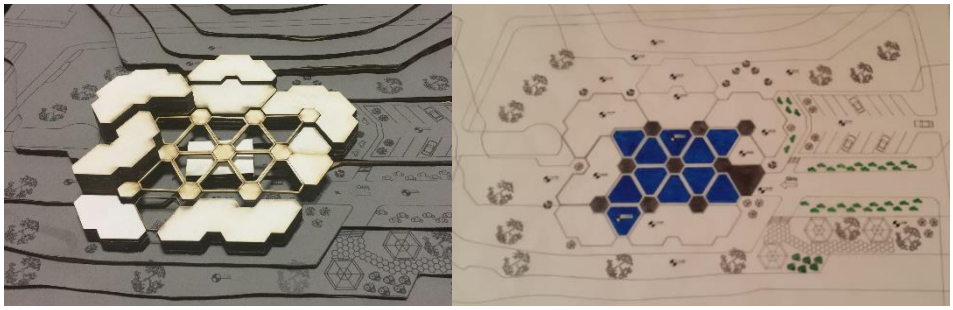


Fig. 5 The questionnaire form III: The model, the layout plan, the interior plans and the sections of Project III



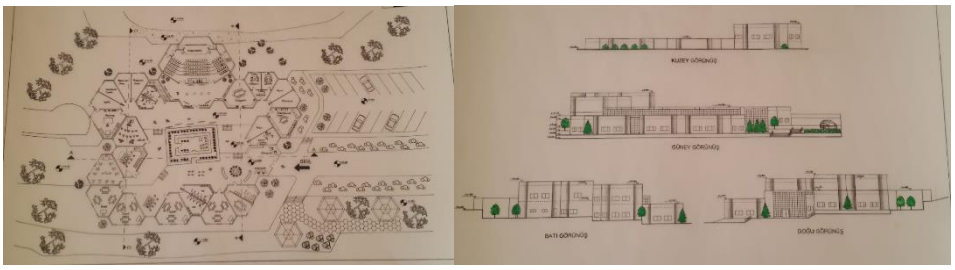


Fig. 6 The questionnaire form IV: The model, the layout plan, the interior plans and the sections of Project IV

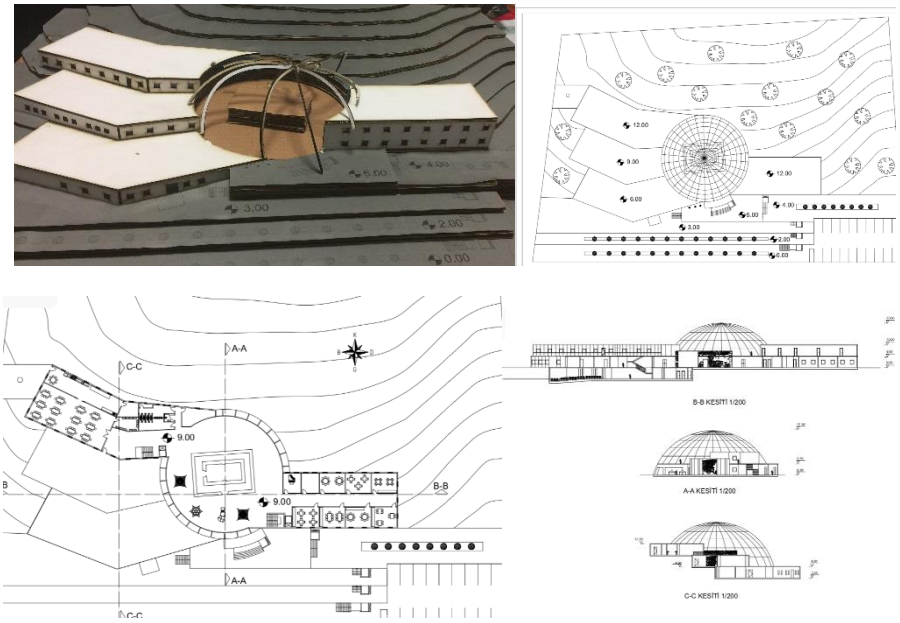


Fig. 7 The questionnaire form V: The model, the layout plan, the interior plans and the sections of Project V

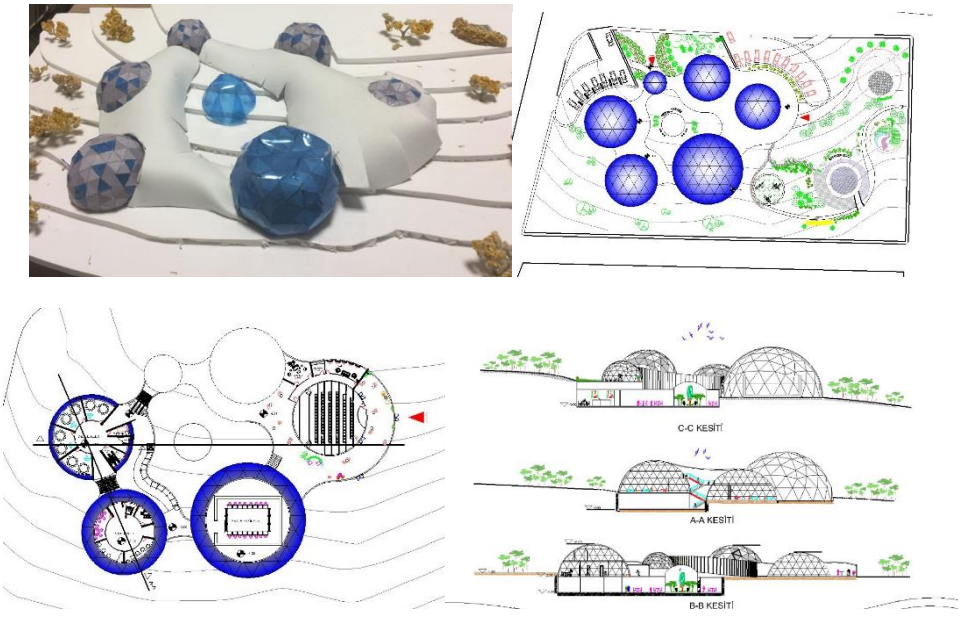
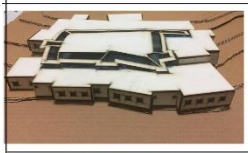
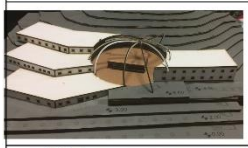
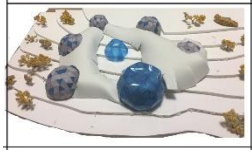


Fig. 8 The questionnaire form VI: The model, the layout plan, the interior plans and the sections of Project VI

2.2 The evaluations of senior architecture college students

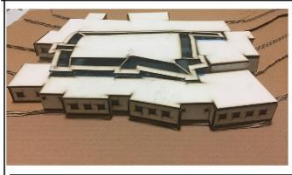
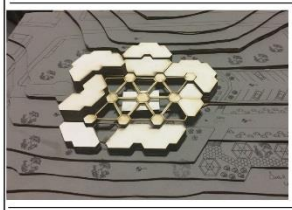
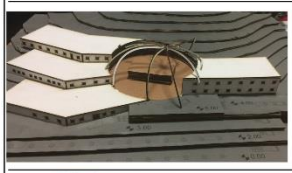
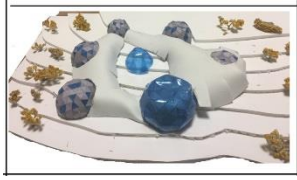
The ten senior architecture college students have rated the six projects in terms of their degree of appropriation of safety, accessibility, indoor and outdoor spaces, flexibility, circulation, and indoor- outdoor relationship criteria. The mean values were calculated for each criterion and shown in Fig 9.

SPATIAL ORGANIZATION	SAFETY	ACCESSIBILTY	INDOOR SPACES	OUTDOOR SPACES	FLEXIBILITY	CIRCULATION	INDOOR- OUTDOOR RELATIONSHIP	TOTAL
	2	4	3	2	3	3	2	19
	3	2	2	2	2	1	2	14
	3	3	2	3	1	1	3	16
	3	2	2	3	1	2	2	15
	2	3	3	1	2	2	1	14
	3	2	3	2	3	2	2	17

level	1	2	3	4	5
interpretation	too weak	weak	average	strong	very strong

Fig. 9 The mean value of evaluation of senior architecture students

They were also asked to rate the appropriation of overall physical, sensual and cognitive development of the six projects. The mean values were calculated for each criterion, see Fig 10.

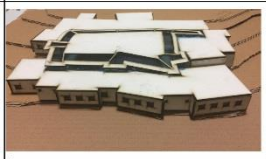
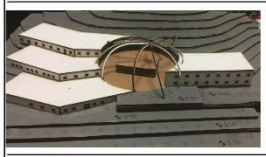
PEDIATRIC DEVELOPMENT	PHYSICAL DEVELOPMENT	SENSUAL DEVELOPMENT	COGNITIVE DEVELOPMENT	SOCIAL DEVELOPMENT	TOTAL
	2	3	4	4	13
	2	2	3	2	9
	3	3	3	2	11
	3	2	3	3	11
	4	3	2	3	12
	2	3	3	3	11

level	1	2	3	4	5
interpretation	too weak	weak	average	strong	very strong

Fig. 10 The mean value of evaluation of senior architecture students

2.3 The evaluations of senior pre-school education college students

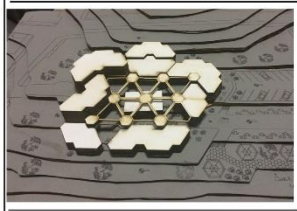
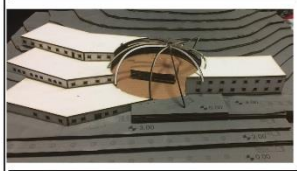
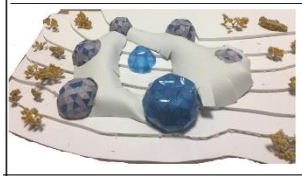
The ten-senior pre-school education college students have rated the six projects in terms of their degree of appropriation of safety, accessibility, indoor and outdoor spaces, flexibility, circulation, and indoor-outdoor relationship criteria. The mean values were calculated for each criterion and shown in Fig 11.

SPATIAL ORGANIZATION	SAFETY	ACCESSIBILTY	INDOOR SPACES	OUTDOOR SPACES	FLEXIBILITY	CIRCULATION	INDOOR- OUTDOOR RELATIONSHIP	TOTAL
	2	4	2	2	4	2	2	18
	4	3	3	3	2	3	3	21
	4	3	2	2	2	2	3	18
	3	3	2	2	3	2	3	18
	3	2	3	3	2	2	2	17
	3	3	4	3	3	2	3	21

level	1	2	3	4	5
interpretation	too weak	weak	average	strong	very strong

Fig. 11 The mean value of evaluation of senior pre-school education students

They were also asked to rate the appropriation of overall physical, sensual and cognitive development of the six projects. The mean values were calculated for each criterion, see Fig 12.

PEDIATRIC DEVELOPMENT	PHYSICAL DEVELOPMENT	SENSUAL DEVELOPMENT	COGNITIVE DEVELOPMENT	SOCIAL DEVELOPMENT	TOTAL
	2	2	3	4	11
	3	3	2	3	11
	3	4	3	2	12
	3	4	3	2	12
	4	4	3	4	15
	2	3	3	3	11

level	1	2	3	4	5
interpretation	too weak	weak	average	strong	very strong

Fig. 12 The mean value of evaluation of senior pre-school education students

THE RESULTS

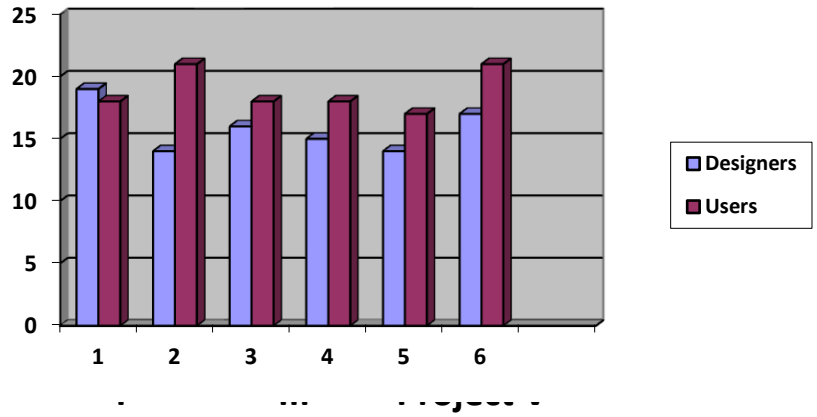


Chart 1.the comparison of mean value of spatial organization

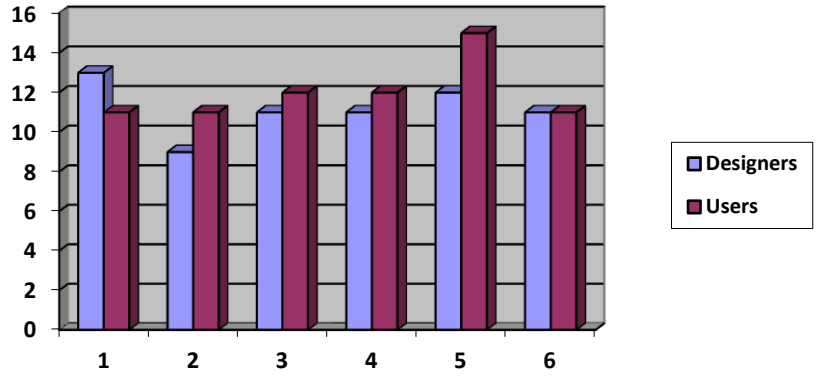


Chart 2. the comparison of mean value of pediatric development

Looking at the comparison table, see Table 2, according to the evaluations of architecture students, while the Project 1 is rated as the highest in terms of spatial organization, the second highest is Project 6. On the other hand, pre-school education students have selected Project 2 and the Project 6 as equally best projects. Both group seem to have a compromise that Project 6 has suitable qualification for a pre-school design from the standpoint of spatial organization. While the architecture students have rated Project 2 as 14 points, the lowest rate, the pre-school education students' mean evaluation has been 21 points, the highest level. The most pre-school students as being users thought the project 2 as highly safe, and moderately accessible, while architecture students thought its highly rigid, problematic in terms of sunlight, and weak with regard to sensual and social development.

Looking at the comparison table, see Table 3, Project 1 has highly suitable environment for children providing cognitive and social development from the view point of designers. From the point of users, it seems that project 5 has high potential of physical, sensual and social development. Project 6 has equal potential for both group.

Considering the think-aloud process, it can be seen that the respondents from both educational background has distinct way of evaluation. We see that the senior architecture students' interpretations are mainly focused on the learned knowledge through ideals acquired from the theories, cognitive models or assumptions, while senior pre-school education students tend to remember their real-life experiences and the operational side of the real life. Both perspectives are equally essential to be reached an optimum solution. Discovering the people experience reveals their perception. It may also lead to image of future environment. Designer can use various methods and tools to access their experience and imagination. Traditional design research approaches were

focused on observational studies, what people say and think [7]. However, only what people actually make can lead the designers towards the reality of everyday life.

Contemplating the outputs, it can be seen that the implementation of essential principles of a project may not match with the real experiences of users. This critical condition leads a user-centered model, in which the possible design alternatives are evaluated by the users during design processes. Standard design process may not be reduced to a single-handed contemplation. The question arises at this point. Can a designer have a capability of completely intersect his perceived condition of reality and the user's way of perception? The answer will be probably negative, but every endeavor the designer shows regarding this matter will definitely be known as a virtuous effort and it results in high design value.

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AKSARAY AZMI MILLI FLOUR MILL: A CASE STUDY OF INDUSTRIAL HERITAGE MUSEUMS

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Abstract

Buildings considered as industrial heritage; reflect the socio-economic background of the countries and become parts of public memory. These buildings are symbols of the modern society and the industrialization, with their construction and the mechanical elements of production. These industrial buildings; lagged behind technological developments and became obsolete, are required that re-used for modern-day purposes because of their symbolic existences. Since these buildings, which are designed to respond to functional needs, have wide and free spaces, they can be converted into various functions.

Selection of new function is very important in the process of converting industrial buildings. These spaces, designed for the manufacturing of the machines, have to be avoided from spatial and structural constraints while being adapted to the use of people. The appropriate function generally can be described as museum. In addition, the museum function is also considered positive in terms of public use.

This work will focus on the buildings; these have been preserved intact as an industrial heritage museum and exhibit their original form and function. Azmi Milli Flour Mill is located in Aksaray in Turkey will be discussed as a subject-specific. Azmi Milli Flour Mill was designed and built in the Early period of Turkey Republic and continued manufacturing until 1990s. Authenticity of mill will be examined in the context of exhibition trends and compared with other similar buildings from Turkey and Worldwide. Azmi Milli Flour Mill one of the unique mill that stayed its originality, also it is possible that the mill manufacture flour now. Another important feature of the mill is that it produces its own electricity.

These industrial heritage buildings have the feature of museum inherent, so they have architectural value; moreover, these buildings are appreciated by exhibiting the mechanical equipment as remembrance in their interior spaces. In this study, it will draw attention to buildings these lost their original functions, interior of these buildings and exhibition styles. It is aimed to illuminate preserving buildings remaining from the industry and how they convert to museum, and to evaluate how the urban blank becomes cultural function.
Key Words: *Industrial Heritage, Authenticity, Museum, Exhibition*

1. Introduction

The Industrial Revolution, which began in the late 18th century, was also influential in production and technological developments, as well as causing changes in the physical and social building of cities. In this process, many industrial buildings in cities and industrial areas covering these buildings were built. As a result of the industrial revolution and the subsequent developments, the number of industrial buildings in many countries, especially in Europe, has increased rapidly. With the development of technology in the following periods, industrial facilities in these regions became ineffective and lost their functions. In the late 20th century, lots of industrial buildings have become unused spaces.

Industrialization has been one of the most important factors influencing the urban space in the modernization process. It became a very important factor in the re-design of the Anatolian cities as in many cities of the world in the 20th century. The emergence of new building types and the perception of these building types as aesthetic objects have resulted in a new architectural understanding in this structuring process, together with modernization.

During the Early Republic Period in Turkey, Azmi Milli Flour Mill, founded by the order of Mustafa Kemal initiatives of Vehbi Bey and the support of the people, has directly affected the spatial development of the urban and social change of Aksaray. Azmi Milli Flour Mill is one of the important building of industry heritage in Turkey. The aim of the study is to evaluate the re-functioning of Azmi Milli Flour Mill, which is located in the old city center in Aksaray, compared to with similar buildings from worlds. In this scope; factories which transformed into museum, Mill City Museum located in America, Castelló d'Empúries Flour Mill and Eco-Museum located in Spain and located Azmi Milli Flour Mill in Aksaray, have been investigated. In the research, literature search and field work were done. Datas of library, archive and web are examined. At the end of the study it was seen that mills transforming to museum were effective to make mills usable, preserving the existence and obtain sustainable.

2. Industrial Heritage and Adaptive-Reusing

The International Committee for the Conservation of the Industrial Heritage (TICCIH) originated Nizhny Tagil Charter in 2003. It was declared that; industrial heritage consists of the remains of industrial culture which are of historical, technological, social, architectural, or scientific value. "These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education [17].''

With the development of technology, production, storage, raw materials and production types have changed. As a result, the need for this building type has decreased. Moreover, with the rapid growth of the cities, these buildings usually become undesirable and unusable spaces in the city due to the damages (such as visual, noise and air pollution) they have caused in the city centers. So, in the context of industrial heritage concept; the spaces designed for the machines have been converted to serve the use of human. These buildings, which usually contain large machines and are made in production, are suitable for reuse because they have large and free spaces.

Adaptive reuse is the process of reusing an old site or building for a purpose other than which it was designed or built for. There is a situation of "function follows form" in the process of reusing instead of "form follows function".

In the process of re-functioning, all architectural, spatial and decorative features of the building must be preserved. Because the building is already a museum. From this point of view, the concept of re-functioning should be considered as to how affect the extent of the spatial characteristics, architectural elements and ornaments. The compatibility of the new function with these details should be seen as a design problem to be solved, especially since the houses and industrial buildings contain many technical and architectural details about their original functions [1].

2.1. Industrial Buildings Re-functioned as Museum

Article 5 of the Venice Charter; it is stressed that the historical buildings which will bring great enforced re-functioning are transformed into "the museum" and the intervention in the building is reduced the most [2]. In this respect, museums or similar functions are approaches that do not damage the spatial organization and integrity of the buildings.

Deindustrialization and globalization have affected worldwide museums. It has become widespread to transform especially important buildings into museums. Ruhr Museum in Germany; the coal mine was transformed to open air museum, Louvre Museum in France; the palace was transformed to museum, İstanbul Modern in Turkey; was transformed to museum. Except these examples, many industrial heritages have been transformed into a museum.

In line with the concept of "factory aesthetics "by Reyner Banham [3], industrial buildings must be preserved together with their surroundings and their mechanical parts inside. It has been seen that the understanding of museology has recently developed in this direction towards "total environment museums" and "ecological museums". The socio-economic activity history and changing production / usage systems must be completely protected [4].

3. Flour Mills Re-functioned as Museum

Reuse of industrial buildings as museums in the direction of technological and industrial developments is quite common. This also provides that these buildings, inherited by the industry, can sustain their life with minimal intervention. In the scope of the study, especially specimens of flour mills reused from the world have been examined.

Mill City Museum was built in Minneapolis, USA, in 1880 with the latest technological machines. In the 1880 and 50 years after, Minneapolis was known as the "Flour Milling Capital of the World" and was called the "mill city". The mill served until 1965 and was seriously damaged during the fire in 1991. At the end of the 90s, it was transform into a museum; when the old photographs are examined, it is seen that it has 7 storey, and nowadays the walls are ruined. In the new situation, an 8-layer glass mass is added inside. On each floor, exhibitions related to agriculture-commerce, water power, flour production, food production development and railways are presented. With a glass elevator, circulation provide contacting with presentation of history of flour milling. The museum organizes educational activities for adults and children [5,6].

Figure 1-2. Mill City Museum [7]

The Castelló d'Empúries Flour Mill and Eco-Museum was built at the end of the 19th century and built on the remains of three medieval mills. The mill is in Castelló d'Empúries in the Catalan region of Spain. The mill was operated by the electricity of the turbine on the river near the city, which also illuminated the city. In 2004, it was transformed into an eco-museum. In the museum the presentation is about, the development process of Catalonia's flour industry during the second half of the 19th century. Like other eco-museums, it connects with the public in the town, provides educational activities for children, and attracts tourists at the same time [8].

Figure 3-4. Castelló d'Empúries Flour Mill and Eco-Museum [8].

St. Petersburg in Russia The Smolninsky Bread Factory was transformed into a modern art gallery (Loft Project ETAGI) in 2007. The interior of the factory is protected by leaving mechanical equipments as part of the design inside the building. There are many exhibitions, events and workshops in 5 floors with numerous galleries and exhibition areas, shops, hostels, bars, cafes and summer terrace. The building, which is also a training center, serves adults and children with lessons on fashion, film and design [9].

Figure 5-6. Loft Project ETAGI [9].

4. Aksaray Azmi Milli Flour Mill as An Industrial Heritage

Azmi Milli Flour Mill is in the city of Aksaray, Central Anatolia region of Turkey. Aksaray, known as a Seljuk city in history, is close to Ankara, Konya, Niğde and Nevşehir cities. Thanks to its geographical position the city has been home to various civilizations for centuries with its long history.

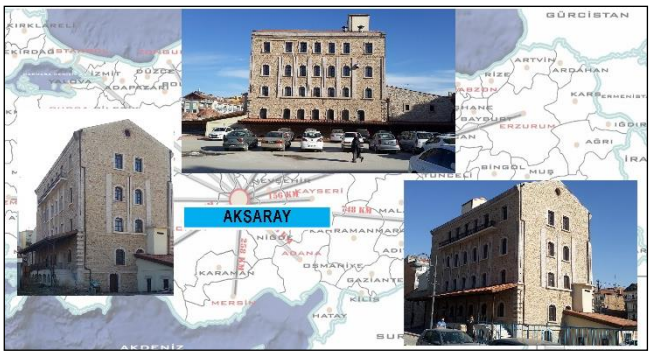


Figure 7. Aksaray Azm-i Milli Museum 2017

Azmi Milli Flour Mill was built as a mill from the Early Republican Period. The flour obtained from the mill has been very popular on all sides. It was exported to many cities such as Ankara, Mersin, Konya, Niğde and Kırşehir. The Flour Mill, which can operates in the today, carries the turkey's historic mill building feature. It was built in the Zinciriye neighborhood in Aksaray. There are the Historical Zinciriye Madrasah, the mansions and The Pasa Hammam in the vicinity the historic flour mill located in the old city center is now used as a museum [10].

4.20. History of Azmi Milli Flour Mill

Aksaray, who is one of the cities that called as a grain warehouse in Turkey, has contributed to commercial activity with has efficiency. Azmi Milli Turkish Anonymous Company was established in Aksaray in the first years of the Republic. People who grained to flour by black mill and brightened by gas lamp met technology thanks to this the flour mill has been built with the best techniques and the city has got the electricity beside the mill. The mill built in 1924 is one of the first mill of the republic period in Turkey. Aksaray Deputy Vehbi Çorakçı Ziraat Bank, Aksaray Municipality, Industry Mining Bank, Aksaray Governorship, Sümerbank and Aksaray people contributed in the establishment of Azmi Milli as an incorporated company. The mill, which has been actively working for 78 years, was given the name Azmi Milli because of the struggle the people of Aksaray gave during the war. Azm-i Milli Flour Mill is one of the architectural landmarks of the city of the republican period in Aksaray [11,12].

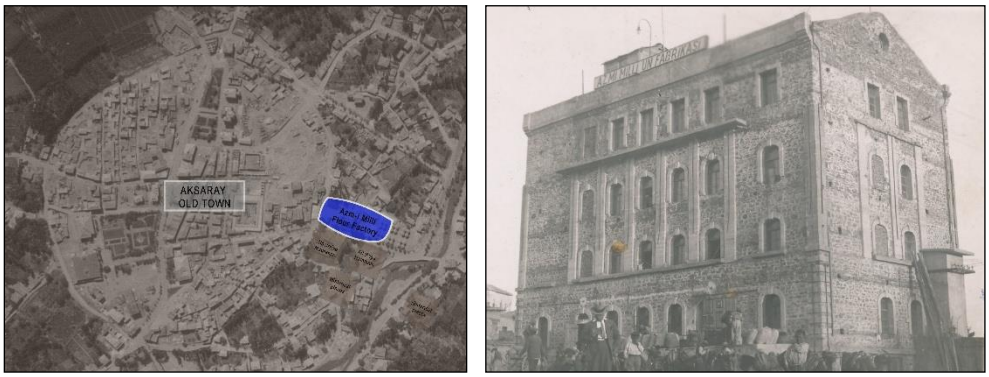


Fig. 8. (a)Aksaray old town 1954 [12]. (b) Azm-i Milli Flour Mill [12].

Mill has been repaired several times since the day it was built. Over a period, exterior walls of the mill were covered with plaster, and in the following years the original appearance of the facade was given again. The flour mill which in 1996 was stopped, after that was transformed into a museum.

4.21. Architectural Characteristics of The Aksaray Azmi Milli Flour Mill

The mill, which is supposed to be built by a German architect, has rectangular shaped plan. It was built with four floors. On the top floor of the mill there is a long, narrow rectangular balcony. The first-floor name is the diffuser, the second is the vals, the third is the sasor, and the fourth is the sieve. These floors are called according to the function order of the flour production. There is a simple form elevator from the first floor to the last floor of the building (Fig. 8. a). All the original machines and parts of Flour Mill are exhibited in the building (Fig. 8. b). The mill has two gates that entry from the front (Fig. 7). There is a small additional building adjoining the mill. This building is used as the library and archives of the mill [13].

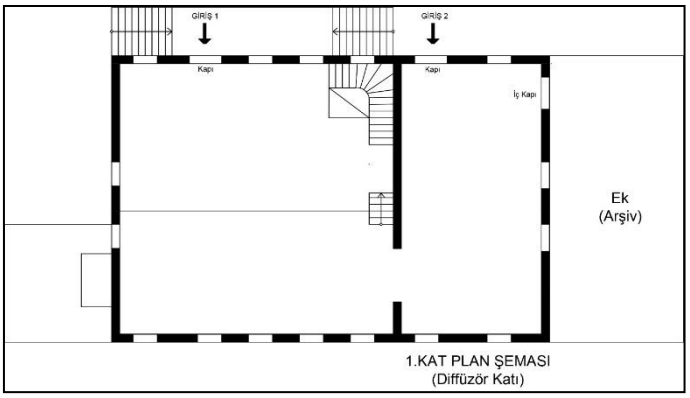


Fig. 9. Plan [13].

The front and back facades of the building are similar. There is a balcony on the top floor. The facades of the building are made of rounded cut stone and bricks. There are arched windows made of wood on the first, second and third floors of the facades. The windows on the last floor are rectangular shaped. Under the roof, the circular windows surrounded by bricks on the side façades add a different appearance to the building. The mill was built with stone and brick. Mill has a cradle roof without eaves covered with tiles. Floor coverings are made of wood.

4.3. Transforming of Aksaray Azmi Milli Flour Mill into The Museum

According to Pekol reference by Weeks, the transforming of buildings is to "provide a function different from the proper function of this building by repair and additions, preserving the features and / or sections that reflect the historical, cultural or architectural values of a building." [14].

Azmi Milli Flour Mill located in historical surroundings, which placed the Historical Zinciriye Madrasah, Pasa Hammam and Historical Aksaray mansions in Aksaray, is a very important location. The mill was transformed into a museum with the project prepared by Selçuk University. The original machines of the mill are exhibited in the building. In this respect, the old industrial system is reflected in the visitors. The machines that create the working set of the mill are kept in their original state. It is perceived as a sign of the value given to the nation's moral values, in which even the straps attached to the machine protect their originality and are still in working condition with carefulness to this day. Floors of Azmi Milli Flour Mill are named according to the processing order of flour production. These floor names remained the same when the mill transformed into museum. In these floors, which are named according to the order of operation as diffusor, vals, sasor and sieve floors, the machines maintain their presence in the same facility. Facades of the mill, structural roof and some structural elements have been repaired. Coverings of floors, balcony, elevators, interior stairs are preserved in their original state.

The architectural features of the mill, its location and its spatial dimensions are very convenient to be transformed into a museum today. Thanks to, the building continues its existence actively without losing its originality both in spatial fiction and interior space.

5. Assessment and Conclusion

New functional needs that are formed by differentiated lifestyles by the time, socio-cultural and economic buildings cause change to spaces. The most general definition of the concept of re-use, its make the building fit the new needs with repairs [15].

It is important for the sustainability of the buildings that constitute the industrial heritage in the city as a whole, the formation of a management plan and the evaluation and protection in that direction, the re-functioning in the direction of necessity. Industrial heritage is regarded as a document in terms of architecture, which is a product of socio-economic and historical development and possesses the stylistic features of period. Transforming buildings as a museum and exhibition space is frequently practiced in the world, for preserve these buildings for next generations [16].

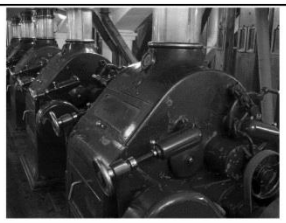
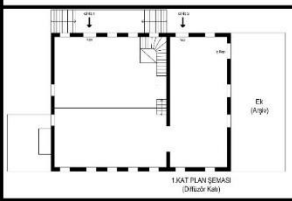
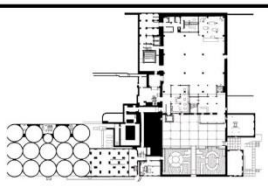
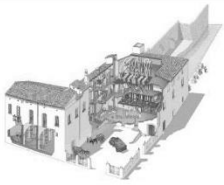
Table 3. Comparison of mills I

	Azmi Milli Un Fabrikası	**Mill City Museum**	**Castelló d'Empúries Flour Mill and Eco-Museum**
Country/City	Türkiye/Aksaray	America/Minneapolis	Spain/Castelló d'Empúries
Building history	was built in 1926	was built in 1880	was built in the late 19th century
Plan-Space characteristic	Rectangle shaped plan	Rectangle shaped plan	L type plan
	has an additional building-semi detached	There are other factory buildings on the environment.	single building
Structure-Technical-Surface	has four storey	has seven storey	has three storey
	worked with electric power	worked with electric power	worked with electric power
	Coursed squared rubble masonry wall	Coursed squared rubble masonry wall	Coursed squared rubble masonry wall
	Gabled roof	Gabled roof	Gabled roof
New function	Museum	Museum	Museum
Old view			
Current view			

In the study, investigated some of historical industry buildings from American, Spain and Turkey which lost their function and transform into a museum. Three samples industry buildings were examined. These buildings were built in the past as flour mills. It can be seen from these examples that Aksaray Azm-i Milli Flour Mill can respond to spatial need for a new architectural fiction. The Mill City Museum consists of a single building. The rubble walls of the building were edited in the form of envelopes, and a glass mass was placed in this envelope. Thanks to this new design, The Mill City Museum offers open and closed spaces for visitors. This application is contrary to the current mill building by giving reference to modern architecture. In this application it has made the perception of the volumetric form of building in its entirety. The Castello d'Empúries Flour Mill is made up of a single building like the other examples. It was transformed into a museum in its original form like the Azmi Milli Flour mill. The Castello d'Empúries Flour Mill and Eco-Museum and Mill City museum exhibit a large number of public-oriented activities and are more effective than the Azm-i Milli in their use of the museum.

In the interior of all three buildings; the original status of machines belonging to the period when they functioned as flour mills are exhibited. In this way, the original characters of the constructions are transferred until today. Visitors experience an authentic experience by seeing these machines in their place the interiors of the museums were designed to reflect the working atmosphere of the mills to the visitors.

Table 4. Comparison of mills II

	Azmi Milli Flour Mill (Aksaray/Turkey)	**Mill City Museum (Minneosota/America)**	**Castelló d'Empúries Flour Mill and Eco-Museum (Castelló d'Empúries/Spain)**
Old Situation			
New Situation			
Drawings			
	Building was converted into a museum with its original state.	Because the building is damaged, original state of the building is exhibited in the new additional building.	Building was converted into a museum with its original state. The original machinery, which is mainly made from wood, and was partially renovated in the middle of the XX century.

Despite they were built in different geographical regions, the mills have similar architectural characteristics. The buildings have cradle roofs and all of them built were built by stone. They work with electricity. Mills have been built in recent periods. This situation is effective in their similar features (Table 1).

It can be said that interiors of mills transformed into museums are in harmony with their original status and so sustainability of the buildings is provided. The architectural identity of the buildings and the mechanical equipment are exhibited as original (Table 2).

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PATIENT SATISFACTION AS AN INTERIOR QUALITY INDICATOR IN TWO ONCOLOGY UNITS IN TURKEY

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Abstract
The Objective: Patient capacities, the regular increase in cancer incidence, the area covered by the oncology unit in the hospital and the developing cancer treatment portfolio are causing a change in the architectural design processes of both health care structures including oncology units and oncology centers. Oncology units need to be well structured in terms of spatial for cancer patient spent the majority of their time in hospitals with different age/gender/disease and cancer stage. This descriptive and cross-sectional study was undertaken to determine the influence level of cancer patients and interior components affecting the spatial satisfaction in the treatment areas. *Background*: On volunteer cancer patients in two comprehensive oncology centers were questioned space experience and interior satisfaction, and also subjective-objective data about the interior components were collected. *Originality:* This study; included 1000 cancer patients, 30 cancer types and all adult age groups, are unique in the field in terms of questioning patient satisfaction about interior design under as many variables as input of interior components for adult outpatient oncology services. *Method:* Design Quality Indicator (DQI) approach which proposes new evaluation criterions to determine and improve the post-use evaluation process for healthcare building, has been used as method. The study was shaped on the basis of a questionnaire survey of patients' satisfaction about interior experiences. *Findings:* It has been found that 95% of the oncology patients use the medical oncology clinic and the patients who receive chemotherapy treatment are more affected by interior than the patients who receive radiotherapy treatment. It has been occured that color, personal space and physical environmental conditions highly were influenced patients. Morever patients think that these internal components are also influential on their treatment process. *Conclusion:* It has been determined that the demographic characteristics related to the cancer disease affect the patients' interior satisfaction. It is thought that improving interior quality will also increase the quality of life of cancer patients. While designing oncology units, it is foresaw that considering the quality of the health services as well as the user evaluations related to interior will contribute to the increase of the space quality and the interior design process.

Key Words: *cancer, oncology units, patient satisfaction, oncology interior satisfaction, design quality indicator*

1.Introduction

Cancer, the most important disease of our age; has become one of the most important health problems in today due to the fact that it is highly probable that it can result in death. According to the data of International Agency of Cancer (IARC) published by the 'Globocan 2012, the rate of cancer spreading in Turkey was 205,5 per 100.000 people; the ratio has risen to 227,2 according to 2016 data. At least 162 thousand people are diagnosed with cancer every year in Turkey. [1] The physical interior conditions of the hospitals have great importance for cancer patients who spend most of their post-diagnosis processes in hospitals. Patient capacity, the constant increase in cancer incidence, the area of oncology units covered by health care facilities and the development of cancer treatments; causes changing the architectural design processes of oncology units and the healthcare buildings. Morever, this situation changes the oncology units 'room layout and hospital configuration and also affects the users' satisfaction with the space. Physical and social adaptation of hospital architectural conditions is of great importance for the treatment and motivation of cancer patients who spend most of their treatment time in the hospital.

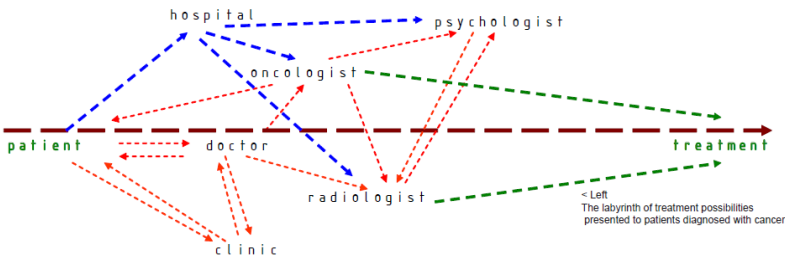

Figure 2. Stages of treatment of a cancer patient [2]

Thus, oncology units need to be well structured in the sense of spatial in order to be able to provide the same quality of service to all patients with different age, gender and cancer types and to provide a quality working environment at the same level for medical personnel. However, it has been determined that studies, related to the physical space conditions which is one of the main factors constituting the sub-structure of health care-quality, and the effects of these conditions on the quality of patients life, are limited. In order to check over the applicability and concretization of these variables, this study has been carried out in two comprehensive oncology centers taking into the use stage of treatment areas. It was aimed to determine the satisfaction level of the cancer patients using the oncology units regarding the physical space conditions on the interior scale.

1.1.Objectives and Hypothesis

Oncology services was investigated with emphasis on interior design and patient satisfaction. The oncology units were scrutinized in terms of space organization, compliance with standards about furniture and physical space conditions, location of service in the hospital, planning within itself and user density from the perspective of patient satisfaction. Depending on this main purpose;

- Construction guidelines for cancer centers usually include physical space requirements for technical and medical equipment. There are no requirements related to interior design and user factors. [3-14] It was identified as the primary problem. Can the "oncology services interior design guide" be created with objective data consisting of current regulations and subjective data based on the spatial experience of the users? while this question composes the research main query;
- Demographic data on the disease of cancer patients; How effective are oncology services on interior satisfaction?
- Which oncology interior elements does cancer patients have more significance for spatial satisfaction? questions have been chosen as the problem.

Within the context of these research problems, hypothesis that "Demographic data of cancer patients have an impact on spatial experience" has been developed.

1.2.Literature

According to researches on architectural design of cancer centers and user-based research, it has been determined that the user factor is dealt with to improve daily living parameters, which are usually psychologically and physically exposed to the cancer patient related to the treatment. [15][16] There has been limited research of the quality of life and the user experience in terms of the interior elements that the cancer patients are exposed to in cancer centers in treatment cycle. In this new life cycle, few studies could be reached studies interrogated the spatial needs of cancer patients for treatment areas.

Tanrıöver, in her 1998 master thesis, investigated preference of patients and doctors about interior wall characteristics of Hacettepe University oncology hospital. One of the most important elements of internalizing the psychological burden and spatial requirements of cancer disease is the question of the effect of the interior walls on the variables, 50 patients and 40 doctors. [17] Eastman made a investigation in 2003; related to the creation of patient centered interior design in cancer centers conducted on the market reported their views on architectural projects. Research, centering the patient's architectural design process, emphasizes the healing effect of cancer center places on patients. [18]

Sherman-Bien and others carried out a study in 2011 on the quantification of the relationship between hospital design, satisfaction and psychosocial functioning in pediatric hematology-oncology inpatient services.

Interior design elements affected the health care of the patients on 149 children in 90 hospitals and the spatial satisfaction of their parents was questioned. [19] In the studies of Ahmadi and his colleagues in 2013, are referred to the issue of spatial accessibility in the cancer centers in Saudi Arabia. Spatial accessibility was examined in order to estimate the possible interior density of patients via an access software. Therefore, the knowledge which are cancer centers in that country, the number of patient, plans and the spatial use frequency of the patients, were used [20] In all these studies, it has been detected that the parameters related to interior design, demographic data related to cancer are limited to reach the interior design data for oncology services.

1.3.Patient satisfaction

Patient satisfaction has begun to attract the attention of different professionals such as healthcare managers, health staff, patients, patient relatives, architects and designers nowadays. Many studies have developed and applied realted patient satisfaction as a quality improvement tool for health care providers. The issue of patient satisfaction, with increasing competition and consumerism in healthcare enterprises, have become an important measure for monitoring health care performance and health plans. This measurement has been developed in conjunction with a new feature: care quality of the patient’s perspective. [21] [22] Traditionally, the design of hospital was more focused on arranging a functional layout for the delivery of service rather than meeting the expectation of the user. Compared with the traditional concepts, the current design is more focused on creating an environment that meets and exceeds patients’ needs for safety, security, support, competence, and physical and psychological comfort. In the healthcare environment, patient experience is an important factor in overall patient satisfaction and care outcomes. All patients get their first impression of the healthcare experience from

the environment. This interaction with the environment can influence a patient's experience and satisfaction level even before they receive any services. Interior design, ambience and signage system are the three environmental components that patients usually perceive when they first enter in the hospital settings. Morever, interior design elements like air conditioning, lighting, materials, finishing, color, artwork and furnitures effect patients' physical comfort and thus, can influence their experience. [23][24] In this literature review, eight important aspects of patient satisfaction came to the fore: view on nature, daylight, materials, noise levels, wayfinding, visibility of patient areas from reception desks, single-patient bedrooms, and ensuring privacy and communication between medical staff and patients. An important question is, how these aspects that are only experienced by patients in the actual buildings can be measured in design assessments based on interior satisfaction. [25]

1.4.The Interior Design Components in Oncology Centers

According to Fountain and Fouts, psychological and physical factors that help to improve oncologic patients all strengthen all those involved in this process (patient relatives, health personnel, business personnel, etc). Psychologically or physically improved patients in the design of the oncology service, in addition to the health benefits, staff recruitment, retention and overall operational efficiency. [26] In order to obtain the clinical and operational results of the oncology service design; is an important success factor at the point of reaching the goal of service planning before the whole process. Before the service is built, many questions need to be answered so that the project success can be achieved effectively.

- What is the goal of building or expanding for future times? ($\approx$ 20-30 years),
- What is the demographic trend?
- What demographic changes and market changes are expected?
- Trends in the incidence of cancer for the future,
- Physical and psycho-social needs,
- The primary and secondary service area dimensions,
- User, service, number of areas. [26]

Cancer is an elderly disease, cancer treatment is given in high public and social structures, cancer incidence increases as the population ages, cancer diagnostic-diagnosis-treatment period is troublesome and long, cancer type is too much, all centers have specialist care as well as the limited availability of staff and areas; all these situations have a direct impact on cancer care, construction and building plans. [26] In this system, identifying new cancer cases and using cancer records is the most useful step.

These data provide the basic criteria for the planning of cancer centers. Also, operating rooms, oncology services, intensive care and sterilization units are the most risky and vulnerable areas for infection in hospitals. [28] Thus, construction-management-life process in healthcare facilities should be planned of with a multidisciplinary team (consisting of architects, interior architects, engineers, specialist health personnel such as oncologist, psychiatrist, radiologist, etc., public authorities, budget and resource responsibilities). [27] (Figure 2) To determine and understand the physical and psychological requirements of all users regarding the service, will contribute greatly to defining and designing the oncology services interior. [26] Espacially, psychological-physical factors, needs and problems encountered by cancer patients about these spaces will play an important role in shaping these morbidity interior requirements, in that cancer patients are the group of patients who use the hospital spaces most intensively compared to other services.

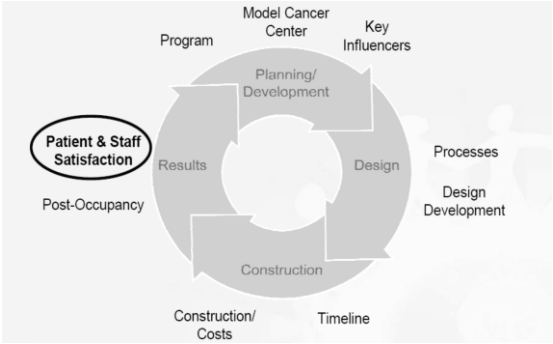

Figure 3. The Role of Patient Satisfaction in Cancer Center Planning Approach [29]

According to Malkin; the psychological conditions faced by the patients in the disease process, the activities for diagnostic-diagnosis-treatment and the spatial problems because of performing these activities, should underline of the cancer centers. [27] Cancer patients have special spatial needs and expectations different from other patient groups due to the physical and psychological effects of the disease and the side effects of the treatments. In order to understand these expectations, it is important to determine possible problems in spaces, identify the psychological state, the places in the oncology center where they are likely to be accessed, and to

interrogate how these problems should be solved. Patients in oncology centers are usually in interaction with a series of interior components and, perceive and accept as a part of treatment. Also, oncology environment are most important in terms of treatment incentive and persistence. [30]

Table 1. Physical / psychological conditions of cancer patients in oncology centers [27]

Psychological factors	Activity	Problems
Pre-emptive sadness	Diagnosis-diagnosis-treatment	Getting directions
Depression	Simulation	Wait
Uncertainty	Wait	Anxiety of new patients
Defense mechanism	Chemotherapy	Wheelchair access
Isolation	Radiotherapy	Fear of radiation
Precision	Examination	Difficulties caused by side effects
Loss of control	Diagnose	Stretcher holding area
Social interaction	Surgical intervention	Staff exhaustion
Privacy	Interaction with other patients	
Personal Area	Visit	

2.Case Study

Survey, observation and space analysis studies were performed in two comprehensive cancer center. Cross-sectional surveys were completed by 1000 volunteer outpatients to determine interior satisfaction in chemotherapy units, radiotherapy units, oncology clinics and inpatient units. After survey were approved by the medical faculty ethics committee, the questionaire was applied to cancer patients. The questionnaire was applied after the approval of Bursa Uludağ University Medical Faculty Ethics Committee of Clinical Studies.

2.1Method

2.1.1Design Quality Indicators (for Healthcare)

Design quality indicators is a planning guide that can be adapted to each project and building type. Although British Standard, ASHRE, ADA standards usually are based on hospital projects, healthcare professionals in the United Kingdom and the United States argue that standards do not adequately respond to user needs. The National Health Service (NHS) sponsored by the UK government and World Health Organization (WHO) use the AEDET- Achieving Excellence Design Evaluation Tool as a mandatory regulation guide for health care. The function, building quality and adaptation were also the focus of this guide. But because of its important aspects such as health, sustainability and patient safety, DQI were updated together all the guidelines and the AEDET and accepted by the NHS as a more comprehensive guide to health care. [31] According to Cook, there was also a need to add an extensive matrix aimed at serving health facilities in addition to the standard DQI matrices for health care. [32][33]

Table 2. DQI Design Matrices for Healthcare Buildings [32]

Matrix1	Matrix 2	Matrix 3	Matrix 4	Matrix 5	Matrix 6	Matrix 7
Architectural design	Service quality (engineering)	User comfort	All life costs	Detail design	User satisfaction	Clinical safety in terms of building
Architectural shell	Integration	Thermal comfort-summer	Construction materials	Shell-front details	Building fiction works well	Clinical expectations of building design
Settlement plan	Mechanical systems design	Thermal comfort-part	Fine structure	Interior details	Building motivating	Building services
Interior design	Electrical systems design	Visual environment	Building facilities capital components	Fitting details	Building use, durable	Furniture, fixtures and fittings
Space organization	Maintenance easiness	Audio-visual pollution	Maintenance and repair of building facilities	Furniture	Is it flexible	Thin structure, fasteners
						Facility support
						Hazardous wastes
						Architectural expectations

DQI to detect ‘user satisfaction’ evaluates under the three processes of function (access, user, space), construction-building quality (performance, engineering, construction) and adaptation (social-urban integration, interior environment, form-material, innovation, characteristic structure).

Data Analyses

The statistical package SPSS (version 21.0) was used for data analysis. Frequency, Percentage, Factor and ANOVA tests were applied. In the first step, satisfaction levels of the patients were questioned under the interior elements with factor analysis. In the second step, the relationship between the demographic variables and the factors were queried by ANOVA. Chemotherapy and radiotherapy units were evaluated as the main treatment areas in the oncology service. Interior parameters based on space organization, physical environment parameters, color, furniture, ergonomics and personal area have been scrutinized.

Table 3. Oncology Service Interior Elements (Esra Bayır)

Space planning	Constructional dimensions	Interior environment	Colour	Furniture	Ergonomy	Personal boundary
Layout plan	Space size	Lighting	Wall	Number	Furniture	Personel zone
	Ceiling height	Air conditioning	Flooring	Design	Treatment units	Storage
	Window size	Temperature	Ceiling			
	Number of windows	Noise level	Furniture			

3.Findings and Results

It has been found that the interior parameters are suitable for factoring as a result of factor analysis to determine the existence of any relationship. Three factors were identified in the 99% confidence interval. ($p<0,05$) Factor ratios and confidence intervals between variables and sub-dimensions are given in Table 4.

Table 4. Factor Analysis

Chemo	Colour	Interior environment/Space	Personel Boundary/window	Colour/Space	Interior environment	Personel Boundary
N	985	985	985	175	175	175
p	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Range	7,42644	6,44735	7,90255	7.32624	8,12970	5,77222
25	-,3926561[a]	-,4886450[a]	-,2770064[a]	-,7363770a	-,6086782a	-,2770064[a]
% 50	-,1654292	,0104906	,1335147	,3022391	-,0856651	,1335147
75	,7741176	,7392972	,9037090	,5189884	,7810126	,9037090

The same questions were factored under different groups in the chemotherapy unit (CU), whereas in the radiotherapy unit (RU), the factors were found to be between different interior parameters. In chemotherapy unit, all color variables related to space and equipments were observed to be grouped by affecting each other. It has been found a meaningful relationship between the answers given to these questions, in direct proportion to the subject titles. It was observed that all physical environmental parameters affected interior satisfaction together; also the personal area and the windows affected CU satisfaction depending on each other. The color factor and the space dimension were found to have an effect on interior satisfaction in the RU. It was observed that all the parameters of the physical environment (except temperature) were influenced by one another. The temperature and personal areas had have a meaningful relation with each other and affect satisfaction together.

Table 5. Rotated Component Matrix[a]

Chemotherapy Unıt	Variables	Component			Radiotherapy Unit	Variables	Component		
	furniture color	,905	,266	,238		furniture color	,924	,268	,135
	color ceiling	,899	,270	,248		color floor	,921	,266	,159
	color floor	,890	,292	,246		color ceiling	,919	,277	,134
	color wall	,805	,348	,224		color wall	,889	,271	,166
	number of furniture	,772	,296	,377	Colour/Space	furniture design	,878	,348	,166
	furniture design	,684	,161	,114		number of furniture	,824	,448	,170
Colour Factor	chemotherapy seat color	,642	,218	,509		noise level	,710	,255	,290
	temperature	,207	,836	,121		Settlement planning	,682	,407	,232
	noise level	,216	,783	,165		space size	,627	,377	,275
	ventilation	,172	,761	,282		number of windows	,332	,862	,102
	chemotherapy seat ergonomics	,239	,728	,119		window widths	,454	,798	
	lighting	,348	,722	,196	Interior Environment	lighting	,323	,777	,209
	settlement planning	,176	,678	,370		ventilation	,146	,666	,470
Interior	space size	,302	,629	,292		ceiling height	,516	,638	,114
Environment	ceiling height	,407	,521	,482	Personal boundary/	personal space	,165		,812
	window widths	,351	,352	,792	temperature	temperature	,228	,226	,758
Window/	number of windows	,354	,376	,767					
Personal boundary	personal area	,203	,173	,730					

In the ANOVA (F) results of the chemotherapy unit CU regarding the satisfaction of the interior with respect to age, it was found that 95% confidence interval; It was seen that CU significantly affected the level of interior satisfaction according to the average of the physical environment / space and window / personal area factors. ($p<0.05$). According to the results of the Tukey Test on age factors which affect age; "20-29" age group has been observed that the CU physical environment conditions, the spatial characteristics of the area, and the satisfaction for the ergonomics of the chemotherapy seat are more affected than the "40" age group and the average of this factor only changes statistically between the "20-29" age group. 30-39 age group was seen that the spatial satisfaction of CU window presence and personal space parameters were more affected than other age groups. According to age, it was seen that the interior satisfaction of the window and personal area factor averages only changed statistically between 30-39 age group. According to age, it was seen that the space satisfaction of the window and personal area factor averages only changed statistically between 30-39 age group. In radiotherapy unit; there was no significant relationship between age and interior satisfaction according to color / space organization, physical environment (excluding temperature), and personal area / temperature factor averages.

(p>0.05). According to the factor-average of the color-space organization, the level of satisfaction is higher than the other age groups of the patients.

As the age-average increases, the level of satisfaction with regard to the color-space organization factor also increases. It was observed that the satisfaction level of the group of patients in the "30-39" age group with respect to the physical environment (except temperature) factor averages was highest in comparison with other age groups. It was observed that the age average increased when the level of satisfaction decreased according to the physical environmental factor averages.

Table 6. Patient interior satisfaction/age - Tukey HSD

Dependent variable	Age (I)	Age (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower	Upper
Physical environment and space factor	20-29	30-39	-,34532892	,14036199	,101	-,7289189	,0382611
		40-49	-,49281194*	,13144757	,002	-,8520401	-,1335838
		50-59	-,42741147*	,12911229	,009	-,7802576	-,0745654
		59<	-,49003392*	,12932821	,002	-,8434701	-,1365977
Window and personal area factor	30-39	20-29	,45023035*	,14072838	,012	,0656391	,8348216
		40-49	,15091842	,10518233	,605	-,1365304	,4383673
		50-59	,12879611	,10223337	,716	-,1505936	,4081859
		59<	,22913539	,10250735	,168	-,0510031	,5092739

*. The mean difference is significant at the 0.05 level.

There is a statistically significant difference between interior satisfaction and gender in the chemotherapy unit. (p<0.05). It was seen that gender influenced satisfaction according to window-individual field factor averages. While the women' space satisfaction is high according to color and physical environment-space factor averages; the satisfaction levels of the areas are higher according to the average of the window-personal area factors of men. While the space satisfaction is low according to the average of the window-personal area factors of women, it was seen that the level of satisfaction was low according to the men's color and physical environment-space factor averages. No statistically significant differences were found between radiotherapy unit' space satisfaction and gender 95% confidence interval. (p>0.05). It was seen that the level of interior satisfaction did not affect gender. According to the color-space organization and physical environment factor averages of women, satisfaction levels are high and satisfaction levels are low according to personal area-temperature factor averages. Men' color-space organization and physical environment factor mean satisfaction levels are low; it was determined that satisfaction levels were higher according to the personal area-temperature factor averages.

Table 7. Patient interior satisfaction/gender - Descriptive Table

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
Colour factor	Woman	531	,0058972	1,08142557	,04692987	-,0862942	,0980886	-3,67557	3,75087
	Man	454	-,0068974	,89656552	,04207790	-,0895895	,0757948	-3,40751	2,08244
	Total	985	,0000000	1,00000000	,03186265	-,0625266	,0625266	-3,67557	3,75087
Physical environment/space	Woman	531	,0330310	,99901009	,04335335	-,0521345	,1181964	-2,81445	2,54798
	Man	454	-,0386331	1,00087361	,04697333	-,1309458	,0536795	-3,89938	2,39136
	Total	985	,0000000	1,00000000	,03186265	-,0625266	,0625266	-3,89938	2,54798
Window/Personal area	Woman	531	-,1085260	1,08591067	,04712451	-,2010998	-,0159523	-5,60963	2,03683
	Man	454	,1269324	,87326506	,04098436	,0463894	,2074755	-3,78246	2,29292
	Total	985	,0000000	1,00000000	,03186265	-,0625266	,0625266	-5,60963	2,29292

There is statistically significant difference in 95% confidence interval between CU interior satisfaction and cancer type (p<0.05). Color-window-type personal space of the disease according to the average factor has been shown to affect the interior satisfaction. Breast, bowel, lung, liver, stomach, uterus, prostate cancer and hematology patients colors and interior window-personal space satisfaction based on factors affect the disease has been found that average. According to the color factor averages, the group of patients with the highest room satisfaction were uterine and hematologic patients; satisfaction level was found to be the lowest in bowel cancer. According to the window-individual field factor averages, patients with high level of room satisfaction were liver, lung and breast cancer; it was determined that the patients with the lowest satisfaction of the room originated from this factor were the patients with bowel cancer and hematology.

It was not found statistically any significant relationship between 95% confidence interval and ANOVA analysis results between indoor satisfaction and cancer type of radiotherapy unit. (p>0.05). According to the factor-average of color-space organization of uterine cancer patients, interior satisfaction level is highest; liver patients were at the lowest level. According to the physical environment factor averages, interior satisfaction is highest in prostate cancer patients; and it was also found to be the lowest in lung cancer patients. While the type of disease in which interior satisfaction is high according to personal area and temperature factor averages is breast cancer, and the type of disease in which the satisfaction of space is lowest is detected as prostate cancer. Patients with liver and brain cancer were less satisfied than all factors; patients with bowel cancer were found to have higher levels of satisfaction than all factors.

Table 8. Patient interior satisfaction/cancer type - Tukey HSD

Factor	Cancer Type	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
Color and space organ. factor	breast	58	-,0213334	,98608560	,12947938	-,2806114	,2379446	-3,08578	1,84123
	lungs	27	,0208765	1,30350068	,25085882	-,4947712	,5365242	-1,50195	4,24047
	liver	7	-,7468875	,95097141	,35943341	-1,6263893	,1326144	-1,50195	,51835
	stomach	6	-,5799885	1,02037600	,41656676	-1,6508074	,4908304	-1,50195	,51835
	brain	7	-,4981096	1,60504904	,60665152	-1,9825324	,9863132	-3,08578	1,66570
	pancreas	4	,3826896	,37260399	,18630199	-,2102065	,9755856	,08188	,84865
	prostate	6	,3199881	,13906486	,05677299	,1740485	,4659278	,16964	,51835
	bladder	4	,2669637	,38665951	,19332976	-,3482979	,8822253	,06955	,84689
	intestinal	17	,3548139	,71231347	,17276139	-,0114239	,7210517	-1,44942	1,84123
	uterus	8	,5200686	,40433570	,14295426	,1820355	,8581017	-,13386	,95483
	lymphoma	7	,2791381	,21106652	,07977565	,0839341	,4743421	,08188	,53718
	total	175	,0000000	1,00000000	,07559289	-,1491970	,1491970	-3,08578	4,24047
Physical Environmental factor	breast	58	,3277123	,78413818	,10296239	,1215337	,5338909	-1,87451	2,65063
	lungs	27	-,5416269	1,59965757	,30785424	-1,1744303	,0911766	-5,47907	1,76151
	liver	7	-,2912544	,59937052	,22654076	-,8455796	,2630709	-,77059	,42837
	stomach	6	-,7080823	1,04652306	,42724125	-1,8063409	,3901763	-2,55193	,33333
	brain	7	-,0444416	1,14752281	,43372285	-1,1057232	1,0168400	-1,87451	1,43725
	pancreas	4	,2138688	,20605132	,10302566	-,1140048	,5417424	-,09306	,33333
	prostate	6	,4683613	,20963205	,08558193	,2483660	,6883567	,18683	,73273
	intestinal	17	,3758742	,91889809	,22286552	-,0965796	,8483280	-2,17481	1,85592
	uterus	8	-,0974408	,74205941	,26235762	-,7178180	,5229364	-1,66931	,57885
	lymphoma	7	-,2652309	,60974137	,23046058	-,8291476	,2986858	-1,04924	,33333
	Total	175	,0000000	1,00000000	,07559289	-,1491970	,1491970	-5,47907	2,65063
Personal area and temperature factor	breast	58	,0289082	1,10018291	,14446109	-,2603701	,3181866	-2,75795	3,01427
	lungs	27	,0249125	,80653551	,15521783	-,2941423	,3439673	-1,38656	2,04877
	liver	7	-,0158733	,54397773	,20560426	-,5189688	,4872222	-,91859	,92077
	stomach	6	,1415529	,75136527	,30674359	-,6469566	,9300624	-,91859	1,10842
	brain	7	-,2474330	1,38584148	,52379885	-1,5291226	1,0342566	-2,24123	1,92864
	pancreas	4	-,0174972	1,08384725	,54192362	-1,7421401	1,7071456	-,99295	,92077
	prostate	6	-,4542762	,59103140	,24128756	-1,0745257	,1659732	-1,28878	,23508
	bladder	4	-,1358996	,70720961	,35360481	-1,2612280	,9894287	-,57641	,92077
	intestinal	17	,0487531	1,01277433	,24563385	-,4719674	,5694736	-1,16429	2,24720
	Total	175	,0000000	1,00000000	,07559289	-,1491970	,1491970	-2,75795	3,01427

*. The mean difference is significant at the 0.05 level.

4.Conclusion and Discussion

In this study; in the diagnosis, diagnosis and treatment of cancer patients; a complex structure and an oncology service area with a user profile were examined from an internal perspective. Oncology services; the relationship between indoor satisfaction and patient experience on functional, visual and physical environment parameters and the demographic data on cancer disease were questioned. Hypotheses have been developed in order to identify the problems related to the space of patients with many illnesses, age range, physical disability and experience.

The main problems related to the interior and the disease that have arisen after the questioning of these hypotheses have been examined and suggestions for improvement in the solution of these problems have been introduced.

Demographic data on the disease; age have affected interior satisfaction in treatment areas. While satisfaction in the chemotherapy unit is observed to have been affected by age, gender and disease types; satisfaction in radiotherapy unit have not been effected by these variables. At the chemotherapy unit, young patients are more likely to be influenced by the interior conditions than the age of forty and over, and the expectation is higher. Having more expectations and hopes for their lifes due to their ages have also affected their satisfaction. However, elderly patients were not able to be influenced by interior because they only experienced spaces with the expectation of getting treatment and moving away from the area. Demographic data on the disease; gender has affected interior satisfaction in treatment areas. Although it has been observed that the gender had an affect on interior satisfaction of chemotherapy unit, it has been revealed that the gender was not affected interior

satisfaction level in radiotherapy unit. While women were more satisfied with color and physical environmental conditions; men were more satisfied with windows and personal area facilities. Women's experience levels and spatial expectation are higher than men. Demographic data on the disease; cancer types has affected interior satisfaction level in treatment areas. Although it has been observed that cancer types had an affect on interior satisfaction of chemotherapy unit, it has been revealed that disease variable was not affected interior satisfaction level in radiotherapy unit. While uterine and breast cancer women and hematology patients was satisfied with the colors; intestinal cancers patients were not satisfied with the colors. While liver, lung, stomach, prostate and breast cancer patients were more satisfied with the window-personal area facilities; it has been seen that patients with intestinal cancers and hematology patients were not satisfied with these variables. Satisfaction levels intestinal cancers patients has been observed lower than other disease types. Hypotheses questioned about disease and interiors have been determined verifying in chemotherapy unit, but the majority of hypotheses regarding interior variable have not been verified in radiotherapy unit.

When oncology services are designed is warm, peaceful with colorful, moving surfaces, ergonomic seat/lying elements, high ceilings, windows with views and wood materials, it is predicted that the patients will feel safe and help to reduce their anxiety levels. Due to the length of the hospital stay and the physical and psychological loads of cancer patients, giving the feeling of home environment is an important consideration in the design of the oncology service. Patients should be able to do their daily routines as if they were at home. When cancer patients can routinely repeat their daily routine in health care facilities; it has been found that the mechanism of coping with the disease reduce the anxiety and stress level and they feel safe. [15][16][27] Therefore; the oncology services and cancer centers should be planned in an interior design approach that will not interfere with these routines of the patients. Also, personal area should be thought for these patients in especially treaetment spaces. The patients will be able to awaken the "control my elimination" feeling and move freely in the spaces that it is distinguished between patient and personnel fields and allowed patients to freely navigate in spaces such as lower waiting areas and treatment rooms in where the changing room is located. Separating these areas will also provide other benefits, such as reducing pathways and access problems. It is seen that the most important places in the oncology service are 95% chemotherapy unit. It constitutes cancer center core. For this reason, in the planning process of oncology services; it is envisaged that the spatial interventions and improvements to be made in accordance with the views and needs of the patients, will greatly increase the level of interior satisfaction to the overall service.

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THE EXPERIENCE OF SPACE IN VIRTUAL REALITY AND AUGMENTED REALITY

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Abstract
Visualization has been a significant area of interest and a field of study not only today, but also all the periods of human history. Greek painter Zeuxis, who lived in the BC 5th century, was in a race with a painter (Parthasius) during his time. The grapes drawn by Zeuxis looked so real in so much that the birds descended and flew around them to eat. This phenomenon appears to be the one of the first examples reflecting the effect of near-realistic visualization. Today, computer technologies bring visualization up to virtual reality by using photo-realistic imagery and offer various possibilities for the physical experience.
The experience of space is important for both the design and representation and also for it's comprehension. Nowadays, virtual reality and augmented reality technologies, which give the chance to be **interactive** to the users while experiencing the space, have taken the space of **visualization and animation technologies, which realize this experience unilaterally in the computer environment.** Virtual reality and augmented reality have **appealed to more senses of people every day** through the opportunities provided by developing technologies.
In this study, in terms of the **architectural experience of space, the utilization possibilities of virtual reality and augmented reality, which offer a realistic and interactive environment, will be investigated and evaluated.** As the concepts of space, virtual and, reality will be defined; the fields where the virtual reality and augmented reality have been used will be defined in addition to the researches of their reflections to the space experience. The research and validation methodology of the subject is; **classification and examination of VR and AR studies done in several corporations' and universities' R&D departments in addition to usage of these technologies** in important architectural and interior architectural offices.
In terms of the experience of space in virtual reality and augmented reality, the possibilities of usage of these on the fields of architecture and interior architecture are divided to five main parts: Existing Space, Reconstruction of Non-Existing Space / Object, Space in Design Process, Remote Accessible / Web based Space and Space's Scientific Analysis. For example; it has been seen that usage of virtual reality and augmented reality technologies to experience non-existing space helps to increase consciousness and awareness. And another important finding is that as augmented reality technology can be used in physical world, it also gives opportunities to be experienced in physical design environments.
Key Words: *space; virtual; reality; virtual reality; augmented reality.*

1.Introduction

The space, which separates human from his environment in a way and where he keeps on to his actions, is created by **the user/person who moves in it**. New Technologies are able to act like these human beings who are in motion. And these technologies also provide new communication ways between human and space. **As virtual reality and augmented reality technologies** are used in several fields in last years, they are also on top of the list of technologies used in architecture / interior architecture areas.

Real is defined as "the thing which is not lie, which is true, truth" [1] and Reality is defined as "all of the thing that are real, truth, factualness, reality, being real". The origin of word **Virtual,** which is defined as "which is designed in mind and which is not existing in real, imaginary, suppositional" [1] is reproduced from the word **"virtualis"** in Middle Age Latin. "Virtus" means **power or strength**. In scholastic philosophy, virtual means not a real being but **that has a potential.** The virtual being is that has tendency to be real without any exactitude [2]. In light of these definitions, however the reality and virtuality words seem like two opposite words, they are very intricated.

Virtual Reality, which is merge of the words "Virtual" and "Reality", defines the case of **being real in effect** by computer technology, however it is not physically real. This technology tries to make the user **believe that he is in another space / situation** [3]. In another word, virtual reality is defined as an experience which has been created in computers with three dimensions; in where the user can wander, and that can be re-shaped by looking from different perspectives [4]. As a result, it's imitation of spaces in real World by computers.

Virtual reality is first founded **in 1960** by American **Ivan Sutherland.** Sutherland suggested an artificial space where lots of elements as graphics, smell, taste and sound would be provided. And then created a device called Head-Mounted Display (HDM) which is weared on to the head of user and which was working with stereo images. In 1990's, as a result of this system's development, new systems emerged as Binocular Omni – Orientation Monitor (BOOM) which has a joystick and monitor and Cave Automatic Virtual Environment

(CAVE) which is a room where the images are reflected to the Wall. In last years there are significant improvements in devices that are used in virtual reality environments: Oculus Rift in 2012, HTC Vive in 2015 and Hololens are the most developed devices in this field.

By virtual reality technology, the user can adapt to another reality by the images reflected to a device. The virtual reality devices wear to the head, wraps the eye area totally. The image reflected to the device, takes user's perspective as a reference and the images created in 3D in virtual World changes simultaneously with user's head, eye and body motions. So a virtual reality perception is created in the user.

Whyte [5], says there are three definitive features of virtual reality in medium:

Interactive; users to be in interaction with models,

Spatial; Representing / presenting models in 3D space,

Real-time; Giving feedbacks of actions without any appreciable stop.

Whyte divides virtual reality into **three** parts as **immersive, partly immersive or non-immersive and augmented reality. As augmented reality is a part of virtual reality technology**, it presents virtual and real world objects together. It can be defined as virtual objects to be added to real world which seem like they are real.

Augmented reality term is first time used **by Boing researched Tom Caudell in 1990's. Ronals Azuma's** study named **"A Survey of Augmented Reality"** had been one of prior sources of this technology. Azuma says augmented reality has three major features: **1. Combines real and virtual 2. Interactive in real time 3. Registered in 3-D** [6]. With these features, AR strengthens user's real world perception.

AR technology needs three different technologies: **Visualization tools, monitoring tools and mobile computing power** [7]. Visualization tools, which creates 2/3 dimensions images and perception of depth, include devices as glasses **weared to the head**, used **within hand** as mobile phones and which can **be reflected** by projectors. **Monitoring tools** can be used to determine user's position within the space relative to the objects. And **Mobile-computing power** is used to create the objects.

2.Usage Areas of Virtual Reality and Augmented Reality Environments and Their Effects

The space, Virtual reality technology, which has been spoken by everyone in recent years but which is experienced by few people, is in focus of several sectors; at first in **game sector and from healthcare to security, education to real estate.**

In **education** field; virtual workshops are set up to make children's learning be more **entertaining and long lasting**, see Fig 1. In these workshops, many subjects such as human anatomy, underwater trips, city tours and profession groups are explained in an entertaining way. As visual learning is more effective than learning by reading; it is expected VR and AR Technologies to be more widespread.

Fig. 1. Virtual workshop in education [8]

AR technology is used as wearable computers in **textile and fashion industries.** Computers are customized as clothes or accessories which can be worn or carried on body.

VR and AR technologies can be used to **increase job security in the construction industry**. "Business Security Training Project with Virtual and Augmented Reality Technologies" which is supported by Anadolu University, TÜBİTAK and some companies can be an example for it. With this project, it was aimed to **minimize the number of job accidents** that occurred in the constructions. To support this, a virtual worksite which was equipped with VR and AR Technologies was created, for managers and workers to try for occupational health and safety applications [9]. Thus, the staff will learn by experimenting without hesitation of failure.

These technologies can especially be used without being in a discipline. Projects that strengthen **social responsibility** and human communication are some of these. **Chris Milk** [10] says that it is **easier for people to empathize** with virtual reality. And he demonstrated that with the movie called 'Clouds Over Sidra' which was created by virtual reality company called VSRE where he was working as a manager and by United Nations and their business partner Gabo Arora. The movie was about the story of Sidra at the age of 12, in the Syrian refugee camp in Jordan. At here, they got records of everywhere with a three dimension camera system, see Fig 2. Thus, the movie is not watched just within a frame but the environment can also be perceived from every direction at 360 degrees. The audience can feel themselves in the same space with that girl. The records makes the audience involve to the space, makes the pain felt almost alive and makes the reality of event be felt more deeply.

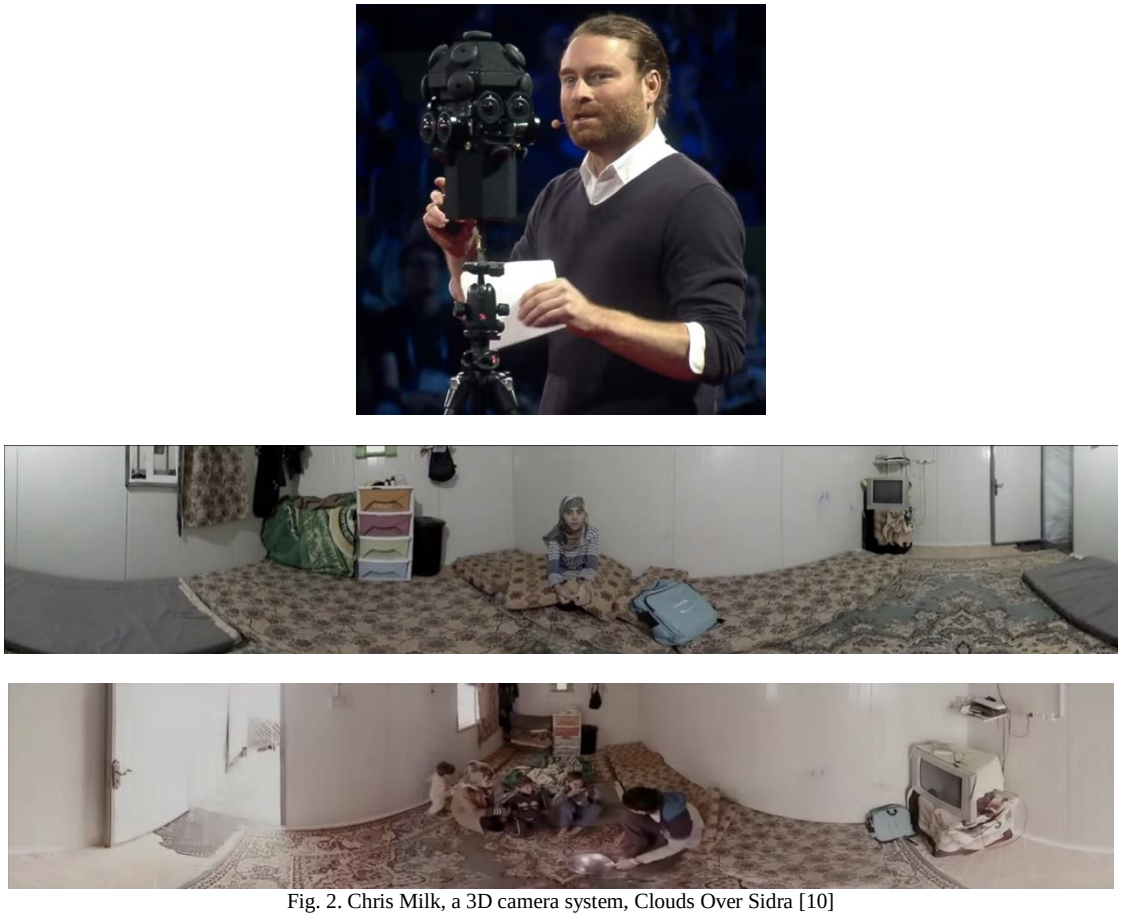

Fig. 2. Chris Milk, a 3D camera system, Clouds Over Sidra [10]

3.Experience of Space in Virtual Reality and Augmented Reality Environments

The space, Computer technology offers many possibilities for the experience of the space. These are animation, panoramic photography, simulation, web applications, virtual reality, augmented reality, mixed reality and hologram. In this study, **virtual reality's and augmented reality's usage possibilities,** which provide a realistic and interactive environment**, in the experience of the space is researched and validated.** In doing so, the studies of VR and AR in universities or research and development units of various institutions and the use of these technologies in important architectural-interior architectural offices will be examined.

The usage possibilities of architecture and interior architecture in terms of virtual reality and augmented reality are divided into five main parts in this study: Existing Space, Reconstruction of Non-Existing Space / Object, Space in Design Process, Remote Accessible / Web based Space and Space's Scientific Analysis.

5.20. Experience of Existing Space

AR stands out as a computer technology integrated into the physical surfaces of the room, such as real furnishings or windows and doors. For example, **Fraunhofer IPSI** in Darmstadt, Germany, has implemented a project called **Roomware** for joint use of virtual and real environments in a workspace, see Fig 3 [11]. In this application, it is foreseen that the circle surrounding people in working environments will be an interface between human and information.

Fig. 3. Roomware donatıları: Dynawall, Commchairs, Interactable ve Connectable [11]

Spuybroek, who considers new medias to be **the material of the space**, has used interacting surfaces inside the Freshwater pavilion. With light, motion and touch sensitive receivers; the construction can interact with the movement of the users and the direction and intensity of the blue lights in the room change. Sound effects and music can be interrupted, accelerated and slowed down, see Fig 4 [12].

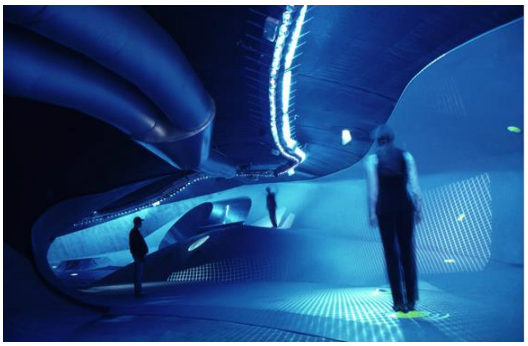

Fig. 4. Freshwater pavilion [12]

AR technology can be used as material in spaces with imaging and interaction systems. As the building materials are damaged over time, this problem will be less in these images that are reflected: as expensive and time consuming physical interventions are needed in construction materials, in AR technology the problem can be solved by renewing necessary medias and softwares. In this method, it is possible to change the space and show it different. Fig 5 shows examples from the research called Smart Projectors made at Bauhaus University Media Laboratory. With **Smart Projector**, any surface can be projected in any desired geometry and colour: **a corner can be shown as a flat surface.** As it is difficult for projection devices to work in daylight, currently there is a big potential for their usage in dark entertainment venues such as nightclubs, restaurants and bars [13]. The use of computer technology as a material makes the disappearance of the designer presence permanent after application.

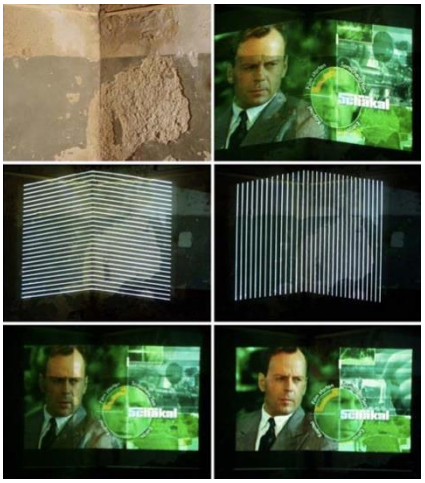

Fig. 5. Smart Projector [13]

For around last 20 years, technological devices have been used to enable **interactive and experiential environments in contemporary museums**. These presentations, which allow visitors to interact and experience, help **a better understanding of cultural assets and a sense of belonging** by allowing them to be part of the presentation. And this system, which consists of AR eyewear and a tactile wearable skeleton, also makes it possible to virtually touch objects forbidden to be touched [14, 15]. Today's technology is used effectively **in the exhibition of many art works**. Zaha Hadid's paintings and sketches from 1970-90 were exhibited at the Serpentine Gallery in the Virtual Reality environment.

5.21. Experience of Non-Existing Spaces / Objects

The experience of non-existing space, in the virtual reality environment, is **nowadays** used especially in the field of **preservation and survival** of cultural heritage. **Demolished or damaged structures** are modelled in the virtual reality environment and presented to the users' experience. Gutierrez's and his working group's study **on Sinhaya's remains discovered in Zaragoza city of Spain,** can be an example. Scientific datas obtained in this study are transferred to virtual environment. Here an **immersive projection system like Cave** is used. In the study, houses, shops and goods used in everyday life which were not possible to reconstruct are recreated in the virtual environment [16]. Thus, the spaces that existed many years ago are now available to experience.

Some of the applications in non-existent spaces allow the **historical remnants to be completed** and experienced on site. And this is done in the form of presenting combination of real and virtual world images together. There are also applications for guidance purposes. Audio-visual information is sent to the user and GPS navigation is provided for the trip. **ArcheoGuide** project can also be given as an example of increased reality-based application in the ancient city of **Olympia in Greece**. For example, visitors who see the Hera Temple with naked eyes see the current remains, while the visitors who use ArcheoGuide see the reconstruction of the Hera Temple along with the current built and natural environment, see Fig 6. With this application, the competition of the virtual athletes of the antiquity in the ancient stadium is also shown [17].

Fig. 6. The Hera Temple [17]

Especially in historical buildings, besides works related to building structure, restoration and reconstruction can be done in virtual environment without any damage on the original work in **applications such as damaged frescoes and frescoes**. The cost can be lower than the physical restoration and the closest views to the original form provide an important database. Frescoes on the Southern Wall of the Santa Maria di Cerrate Church in Lecce, Italy can be given as an example to **virtual restoration applications**.

The project called "Being There" in North Carolina especially aims to **experience interiors with historical value in different locations.** Here, light and inexpensive materials are used to create the space in real scales; reflective surfaces and tracking cameras were used to produce surfaces that acted as electronic displays. The images are changed in real time by following the movement and viewing directions of the users [18].

5.22. Experience of Space in Design Process

By VR technology which makes it possible to **design by experimenting / design by doing**, it is possible to make an **interaction between the designer's body and the design object**. The studies in this area are usually done in the form of experiencing basic interior architectural concepts such as form, scale rather than complex (complicated) interior architectural problems [19].

In the process of using VR and AR environments in the design process, communication opportunities in design studios are expanded, **communication is strengthened** and cooperation with other stakeholders in the studio is increased.

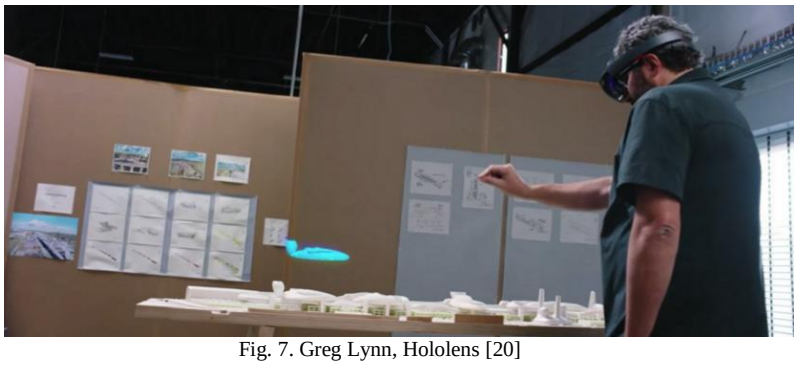

Fig. 7. Greg Lynn, Hololens [20]

Greg Lynn, who uses many computer technologies such as animation in his designs, has also added the **VR and AR applications to his designs**. At 2016 Venice Biennale, he used t Microsoft's Hololens device in his Us Pavilion design, see Fig 7. On this issue, Lynn argues that VR and AR will revolutionize the architecture and building industry [20]. In Design Week 2016, as there was a problem of displaying a large amount of furniture in a limited area, UN Studio applied to VR technology. UN Studio has discovered that using this technology can have many advantages for the design world. UNStudio then decided to explore this technology in depth and started to think about how VR can be used not only as a tool but also an interaction way with the media, family and the business world. UN Studio says that they always work on **expressing their audience and telling their ideas as stories** by improving their presentation techniques. In their collaboration with Prooff, they regard SG technology as a **complementary technique**. They are looking for new ways to use this technology with the VR Room they build in their offices. Here, HTC Vive is used, see Fig 8 [21].

Fig. 8. PROOFF Clerkenwell Design Week 2016, London – Conference attendee using the VR technology; UNStudio Dedicated VR Room – HTC Vive with Brush Experimentation [21]

5.23. Experience of Remotely Accessible / Web Based Space

By VR technology which Web-based applications are used **to serve museums for the usage of masses, to guide the users or to present non-existent objects**. For example, works in the Virtual Museum of Iraq can be accessed remotely in the form of **detailed information, images and videos,** see Fig 9: The works of the virtual museum, which was established in 2006 with the support of the Italian Ministry of Foreign Affairs and the National Research Council of Italy, are exhibited in eight thematic seats in chronological order [22]. Web-based virtual museums have significant advantages such as low cost, convenience for researchers, appealing to large masses and introduction of unknown cultures. The problematic of "how realistic the experience is" is solved by the evolving visualization technologies [14].

Fig. 9. The Virtual Museum of Iraq [22]

Educational video games, have the potential to increase interest of especially children and young people in architectural works. The user can experience spaces and objects, and learn by completing objects with a puzzle style game. **Ancient Olimpiya** is an example of educational games: in the game there are important historical buildings such as Zeus and Hera temples and reconstructions of objects such as sculptures, vases and dishes belonging to that turn.

5.24. Scientific Analysis of Space

An existing or non-existent structure can be modeled in 3D by modeling on a computer environment and **simulating real sound recordings or real daylight**. For example, the European Union-supported CAHRISMA project (Conservation of the Acoustical Heritage by the Revival and Identification of Sinan's Mosque's Acoustics) aims to research **the acoustics of cultural heritages**. Acoustic analysis was performed by simulating real sound recordings in three dimensional modeled mosques. Erato is an EU-funded project that includes reconstructions and acoustic analyzes of amphitheater and odeons in Mediterranean countries, see Fig 10. Virtual reality environments allow for **visual and auditory analysis** of historical structures, as well as **analysis of usage such as ergonomics (Colosseum example)** [14].

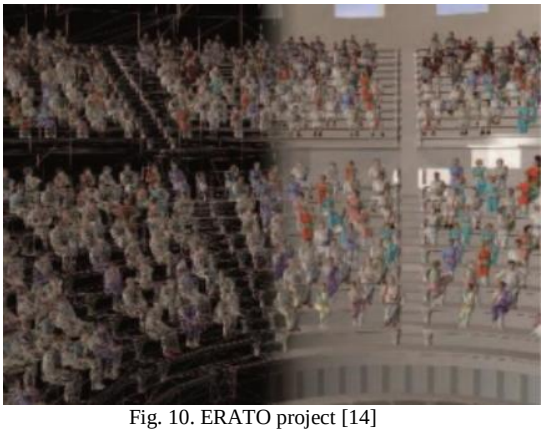

Fig. 10. ERATO project [14]

4. Results and Evaluations

The reasons of increase in usage of virtual reality in recent years are; Developments in imaging and motion detection Technologies, increase in computing power of computers and especially game consoles, reducing hardware costs, and widespread use of mobile devices. Therefore, studies in this field have the opportunity to reach the targeted success in architecture and interior architecture.

The virtual reality in architecture - interior architecture area, provides an experience environment for those who are not experts in the subject, and provides more scientific analysis environment for the experts as well.

At the end of this study, contributions of virtual reality and augmented reality to the experience of space can be listed as follows:

- VR-AR increases **the real world perception and interaction of the user**.
- In visual perception, **connection** is an important term and affects perception. With VR-AR glasses, space or object is **percepted by abstracting from environment and offers the possibility of objective evaluation.**
- With the increase of the usage of **wearable computers**, **the dependence on the space decreases and some spaces can function as portable virtual spaces**.
- It is useful to use VR-AR technology **to protect, maintain and transfer the current texture**. Especially virtual reality provides **consciousness and awareness**.
- **Communication between the user and the designer interacting directly with the venue** is also stronger.
- In the future, **display and monitoring tools are thought to be able to be a part of interior space materials.**
- As **AR** technology can be used in the physical world, **information is easily accessible in physical life.**
- **A virtual restoration or reconstruction** can be done **without harming the works**.
- It has been seen that the use of VR-AR technologies and the experience of **non-existent historical sites** have helped to raise **mindfulness and awareness**.
- Experimenting interiors, with historical values, in different spaces is possible.
- **Access to environment-related information** in the space design is easier and the **designer's space perception and interaction is strong** at the stage of research and information gathering.
- AR technology is available in the physical world and therefore it offers the possibility of being experienced in the physical design environment.

- By remote access spaces; museum-like constructions occurs which really do not exist. **Physical spacelessness.**

- It allows the most realistic assessments of **how the designed building will perform** in the virtual environment, before the **physical construction takes space. Scientific analysis of the space can be done and according to it final decisions can be taken in design.**

As a result, the **virtual environment** creates a new "architecture-interior architecture reality" area while providing us **a new reality category**.

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COMMUNITY GARDENS

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Abstract

Community gardens are a result of the urban residents' longing for nature, their willingness to connect with the environment, their pursuit of reliable food and recreation needs. Community gardens are also referred to as hobby garden, allotment garden and urban garden. They are a means of escape from a modern life, providing people with a personal space outside the home. They also maintain their importance as a place where various events, links and cultural encounters take place in contemporary society. Community gardens can be described as small farming plots that are used by urban residents in their leisure time, usually for the cultivation of vegetables, fruits, ornamental plants and small cattle raising. They are usually planned, designed and managed by local governments. In Turkey and Europe, it is seen as they are established by individuals, universities and associations. The first examples of community gardens were set up in Germany to help meeting the kitchen needs of poor people. In subsequent years, they were established for same purpose in the United States, other European countries and Turkey and spread quickly. Community gardens offer a wide range of opportunities in the context of health, wellbeing, relationship with nature, escape from the built environment, and physical and social activities. They enable people to be informed about ecological systems, food growing, health and wellness. Community gardens improve people's psychology and community experience by removing people from the noisy and choking environment of the city. They also improve city's green area ratio, improve urban climate and ecosystem, limit building, reduce natural destruction, contribute to neighborhood relations and social peace. There are some criteria for the proper planning and design of community gardens. Community gardens should be built in space where there are few green areas with suitable soil characteristics and climatic factors in and around the city. Users prefer locations where access is easy from the city and the rents are low. The plots must have an ideal size, in which a small cottage is also located. The pedestrian way, service road and parking lot should be available. For safety reasons, the area must be enclosed and sufficient lighting must be done. A nursery and waste storage area can be found. In this study, with the examples from the world, benefits for urban and urban residents, planning and design criteria of community gardens which are established in urban and peri-urban areas are reviewed.

Key Words: Community garden; Community garden planning and design; Hobby garden; Allotment garden; Urban garden

1.What is a Community Garden?

Increasing population and urbanization in the cities are increasingly taking people away from nature and exposing them to adverse environmental conditions. According to [1], gardening is one of the most common ways of interacting with nature and green spaces in the urban environment. Community gardens defined as plots of land allocated to individuals to create gardens of their choice in a communal environment, offer people a personal space outside the home and a tool for escaping modern life [1, 2]. They provide a range of opportunities such as enhancing health, wellbeing, contact with nature and away from the built environment [1]. According to the American Community Garden Association (ACGA) a community garden *"can be urban, suburban, or rural. It can grow flowers, vegetables or community. It can be one community plot, or can be many individual plots. It can be at a school, hospital, or in a neighborhood. It can also be a series of plots dedicated to urban agriculture where the produce is grown for a market"* [3]. Community gardens are small agricultural plots used by urban people in their spare time for growing vegetables, fruits and ornamental plants. These areas can be called as urban recreational areas where people have relationships with nature, they are relaxed, they are working on the basis of volunteering, and they spend time together [4-6]. They consist of plots established in and around the city, usually rented by the local authorities for a certain fee [6].

In Turkey, community gardens are called small town gardens, small gardens, public gardens, urban gardens and hobby gardens [5, 7]. These areas are named klein in Germany, guinca garden, allotment garden and hobby garden in England, victory garden, street garden and community garden in the US. Commonly used are the terms community garden and allotment garden. Although they are used in place of each other, there are some differences between them. Community gardens are areas where people living in the city come together to socialize. In the Allotment garden, activities are carried out to grow the product. Historically, in the US poor people used the community gardens temporarily as long as they can improve their social and material situation, while in England the families used the allotment gardens for a lifetime of food production [5]. Community gardens are established and managed by local governments, cities, churchs, foundations, universities, private owners, companies and individuals [5, 8, 9]. Those public agencies are responsible for waste collection, water

costs, provision and insurances [8]. Appropriate land determination, enclose the area, provide urban furniture and the support of users can also be added [5].

According to Pleschberger the forms of community gardens are *"neighbourhood gardens, guerrilla gardening, women's gardens, city farms, tenant's gardens, window gardens, vertical farms, subsistence and horticulture, market gardens, cross-generational gardens, student's gardens and intercultural gardens"* [8]. Rosol classified them as thematic gardens (generally provide intercultural contact and exchange), neighbourhood gardens (activate and involve people into political, social and economical processes) and thematic neighbourhood gardens (serve both purposes) [9]. Some community garden experiences in Europe are shown in Table 1.

Table 1. Community garden experiences in Europe, adapted from [9]

	Peri-urban community gardens	Urban community gardens	Church gardens	Schoolgardens	Intercultural garden	Gardens of the elders
Location	Budapest	Budapest	Budapest	Bologna	Murcia	Murcia
Examples	First Community Garden of Kispest Golden Ladybug Garden Békási Garden	Leonardo Garden Grund	Garden of God	Giardini in Rete	Garden of God	Huertos de Ocio
Target audience	Intergenerational Enrooted in the neighborhood	Intergenerational Enrooted in the neighborhood	Intergenerational Members of the congregation	Students	Intercultural Intergenerational Unemployed people Children	Elderly people Unemployed people Associations
Aims of activity	Gardening Community building Teaching	Gardening Community building Teaching	Gardening Community building Teaching	Recycling of materials Water cycle Plants Soilless systems	Supporting rural culture Organic Gardening Educational purposes	Neighbourhood Socialization Organic gardening Landscape preservation Varieties preservation
Commercial understanding	Voluntary work 100% non-commercial	Voluntary work 100% non-commercial	Voluntary work 100% non-commercial	Voluntary work 100% non-commercial	Voluntary work Coordinator is paid 100% non-commercial	Voluntary work Municipal technician is paid 100% non-commercial
Features	1000 m^2 area 26 beds 4.5-7 m^2 bed size	1400 m^2 area 81 beds + containers 4.3 m^2 bed size	30 beds	1000 m^2 area		40-100 m^2 plot size
Owner	Local government	Local government	Church	School	Church	Municipality
Legal structure	Association	Association or private land	Private		Municipality and association	Municipality Environmental Department
Accessibility	24 hours	from dusk until dawn	24 hours	During opening hours of school	24 hours	24 hours

2.History

Community gardens that emerged in order to help the poor in Germany have spread rapidly to other European countries, especially after the World War II. They have emerged to provide food in the postwar period in the US and have started to serve as a recreational area over time [7]. Community gardens have become popular in the twentieth century by supplementing foodstuffs in western countries. Community gardens have been widespread for worldwide food production, income generation, job creation and the local environment. They also allows city residents to be physically and socially active and to be part of a community [1].

The community gardens that emerged in Germany in the early 1800s to serve poor groups of people, especially after World War I, grew rapidly and spread to all the cities of the country. With the land lease regulation held in 1919, the people started horticulture to provide food for themself. The social decline in Germany at the end of the World War II, has been great and the number of community gardens has also declined considerably. In the country, city governments issued related laws within the scope of search for solutions to food shortage seen at war time [4]. Hobby gardens have become more organized after 1984 with the "Schreber" movement. First, people were allowed to rent space in the city, so that children could be in a healthy and safe

natural environment and play in this environment. Community gardens with variable numbers and size plots were established. Each plot had huts serving storage and shelter. These gardens are usually operated by associations, which may rent land in public and religious institutions. Members pay rent for the plots they use. Today there are community gardens in all major cities of Germany [5]. This number is about 1,027,000 and the total area is 46,640 hectares [4].

In England in the 1750s, Birmingham City was surrounded by community gardens, generally known as "Guinea Gardens", and these areas were opened to urban settlement in the 1830s. In the country, urban garden was originally set up to do charity, in this way support for low income workers was provided. It is still possible to find gardens that are cultivated for more than 200 years. These gardens, which have been up to date, are 0.8-4.0 hectares in size and they are located in different regions, from the central to the outer regions of the cities. Today, there are 77,000 gardens throughout the country. [4].

In the US, community gardens have emerged as a result of people moving away from food sources. In 1893, food safety was an important question. This encouraged the Vacant Lot Cultivation Association in the late 19th century, and these programs were charitable programs targeting women, children, and unskilled workers to gain agricultural skills. At the beginning of the 1900's, the US joined World War I to spread the community gardens initiative in the country. In order to contribute to the economy of the war, the people turned to local food production and found horticulture important. At the end of the war these areas were abandoned or converted into typical urban areas. The great depression of 1929 caused community gardens to become interested again. [10]. During the period of great depression (1929-1939), many garden organizations financed by donors and sponsors were established. But these initiatives have been perceived as threats by farmers and some politicians and have been subject to oppression. In 1935, the number of community gardens decreased as government support ceased. With the participation of the country in World War II, the gardens began to gain attention again. Unlike the previous ones, more focused on strengthening social relations, recreation and moral support. This initiative was very successful and in 1942 the United States Department of Agriculture (USDA) estimated that %44 of fresh vegetables were produced by the community gardens. The withdrawal of state support after the war, increased land values and lack of local leadership led to the abandonment of the community gardens [3]. In the 1950s and 1960s gardening was limited to home gardens and hobby horticulture. In the 1970s, the gardens were vitalized by organizations such as the American Community Garden Association, Philadelphia Green and the Green Guerillas. Between1970-1980 popularity of the community gardens increased with the demand of the people. The CETA (Comprehensive Education and Training Act) in 1975 is a good example of this and many community gardens have been established through this. In the course of time, even if government support has decreased, the resources and support networks for voluntary and profit-oriented organizations such as the ACGA have begun to be established with the increase in demand from the people. From the end of the 1970s until 1992, the USDA provided a government support of millions of dollars in the framework of the Urban Garden Program. The balance between the target and the budget deteriorated, financial troubles started, and the program began looking for other supports [3, 10]. In the early 1990s community gardens became more organized movements involving children, elderly and immigrant populations, and continued to grow in the following years. At the end of the 1990s, the number of ACGA members was more than 700. The developments brought diversity together and the establishment of school gardens was started [3].

In Turkey, community gardens were established by the Bursa Metropolitan Municipality for the first time, in 1986, under the name of "small urban garden". Following this, similar gardens were presented in Ankara Yenimahalle in 1987, Izmir in 1989, Konya in 1994 and Istanbul in 1998. Other community gardens were also opened by Konya Karatay Municipality, Kayseri Metropolitan Municipality in 2002 and by Bakırköy Municipality, Ankara Polatlı Municipality in 2003 [7].

3.Benefits

The US and England are the countries with the highest number of health surveys on community gardens. Membership growth in these countries is linked to job satisfaction, exercise, education, leadership, economic welfare, social relations and fresh food. In Australia, community gardens are seen as a means of subsiding increasing anxiety, rudeness and nervousness in the community. Gardening activities reduce the risk of cardiovascular disease and fear, have positive effects such as love and pleasure, are therapeutic and are an effective means of involving disabled people. Domestic gardens are areas where knowledge, experience and values are shared [1]. Benefits of the community gardens can be gathered under the titles of community (social contact, exchange and communication), experiencing nature (being in and experiencing nature), individual design (the wish or need for designing one's environment actively), food production (safe and healty food), political commitment (desire for experience political hierarchy and rules, follow democratic basic ideas and structures), tradition (keeping culture, link between foreign cultures, childhood memories and feelings of safety and happiness), manual work (enjoying the manual work), time with family (more meaning and useful time with family) [8]. Another researcher notes that according to ACGA lists community gardens;

- Increase the quality of life,

- Serve as a catalyst for the environment and for community development,
- Increase social interaction,
- Encourage self-confidence,
- Beautify the environment,
- Provide the ability to produce healthy foods,
- Contribute to family budget by providing food,
- Protect resources,
- Provide opportunities for recreation, exercise, therapy and education,
- Reduce crime rate,
- Protect the green area,
- Provide income opportunities and provide economic development,
- Opportunity to establish links between generations and cultures [5].

In another study, the benefits are listed as follows [6]:

- Increase community happiness by removing people from the structured, loud and stifling environment in the cities,
- Produced plants increase the green area ratio of the city and contribute positively to ecosystem and urban climate,
- Describes the boundaries of the urbanization and prevents the destruction of the natural environment on this count,
- Contributes to neighborhood relations and social peace by bringing together the people that city life cuts off.

Some research in New York City has shown that community gardens increase property value around the area. They improve the urban environment and increases the quality of land, water and air; improves environmental damage through ecological restoration and stabilization. Like other urban green areas, they save money through stormwater retention and purification. They have potential to reduce pollution, regulate ecosystems and increase biodiversity; strengthen the social relations of individuals; reduce health problems by increasing physical activity. Research has shown that urban green areas alleviate Attention Deficit Disorder, develop self control in young people, support healthy mental development in children, reduce stress and provide continuing health care for the elderly. It is also known that by making communities more secure, they increase public health, reduce crime rates and aggression. Community gardens have also the ability to mitigate urban destruction and ensure that communities maintain their traditions [3]. Researches conducted in different cities in the United States shows that gardeners are fed healthier than people without a garden. Gardeners eat more vegetables and fruits, such as dark-leaved greens, aubergines and tomatoes, less dairy products, citrus fruits, sweet foods and drinks consumed less compared to non-gardeners [11]. In everyday life, exposure of people to unnatural environments and constant information load causes stress increase. Gardening can be used as a tool to deal with it. Expecially exercise and exposure to sunlight can reduce stress by balancing adrenaline, cortisol and melatonin levels. Numerous research claims that even environmental design can be a refreshing factor. The physical environment constantly affects people, and not every environment is restorative. The human body gives fast, strong and natural responses to natural elements, while it does not react in the same way to the artificial elements [12].

4.Design and Planning Principles

Community gardens are established in and around the city today and they are urban recreation areas. Many researchers, related institutions and entrepreneurs, having take into consideration the current use purpose, did studies put forward the planning and design principles from choice of location and components to kind of material. The planning elements and stages of the community gardens in the Allotment Site Design Guide prepared by Scottish Allotments & Gardens Society, are shown in Table 2.

Table 2. Planning and design components of the community gardens , adapted from [13]

INITIAL LAND AND ENVIRONMENTAL SURVEYS	The ideal site
	Drainage
	Orientation and land shape
	Wind breaks
	Slope and direction
	Soil analysis
	Surrounding environment and existing vegetation
GENERAL LAYOUT OF THE SITE	External aspects
	Inside the site
INFRASTRUCTURE	Access area
	Gates
	Paths
	Fences
	Hedges
	Water supply

	Electricity
PLOTS	Plots detail
	Huts
	Greenhouses
	Compost bins
	Raised beds
	Bee-keeping
	Livestock
COMMUNITY AREAS	Communal plots
	Therapeutic and adaptive gardening
	Children's areas
	Toilets
	Community huts
	Other communal areas
	Communal polytunnels
	Security containers
	Noticeboards
	Bonfires
	Communal compost / leaf mould / recycling
	Communal planting and habitats
	Hedges and windbreaks
	Coppicing

Lands where community gardens are located in or around the city should be selected where green areas are insufficient. This, contributes to the homogeneous distribution of urban green areas. It is appropriate to set up near the facilities that will benefit from positive effects such as cleanliness and silence. A community garden should be avoided from areas with adverse environmental conditions such as frequent fog, whirlwind and flood. It should be a central location that can be reached easily and the rent should be low. The plots forming the gardens can be between 150 m^2 and 1000 m^2; should be surrounded by a fence and each plot should have a garden hut. The circulation in the area must be provided by a 2-4 m wide line and this line must be connected to the pedestrian path, vehicle path, parking lot and all common areas. There must be one car park for each plot and also a guest car park. Enclosed spaces such as management hub, exhibition and sales structure, guest houses and storages and open spaces such as recreation and gathering areas, children's playground, sports field, outdoor exhibition and sales places should be available. The garden should be surrounded by wire mesh fence and there should be one or two entrances [4]. The design elements of the community gardens in the Allotment Site Design Guide prepared by Scottish Allotments & Gardens Society, are shown in Fig 1. In Fig 2, plans of the Father Val Power Learning Center Community Garden (Riverhead, CA) and the Lincoln Park Community Garden (Chicaco, US) are given as example.

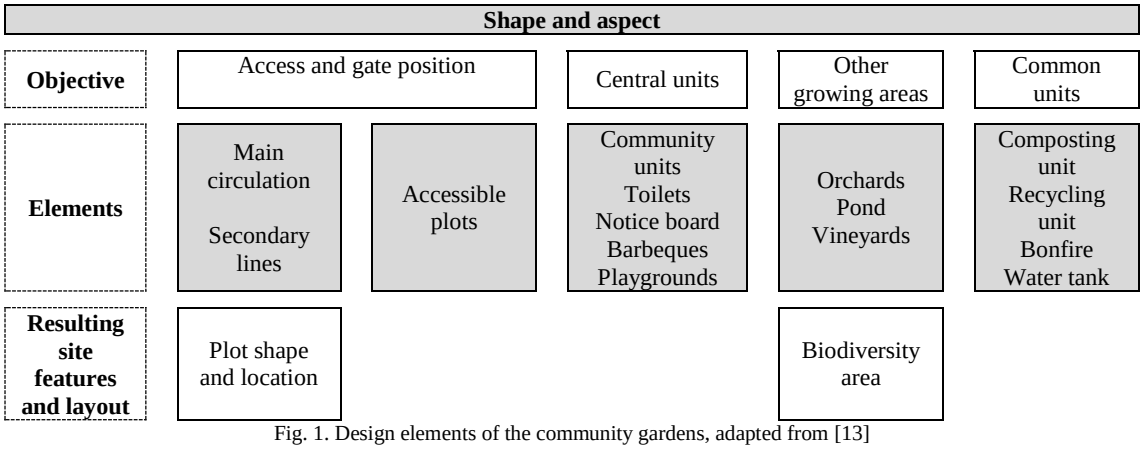

Fig. 1. Design elements of the community gardens, adapted from [13]

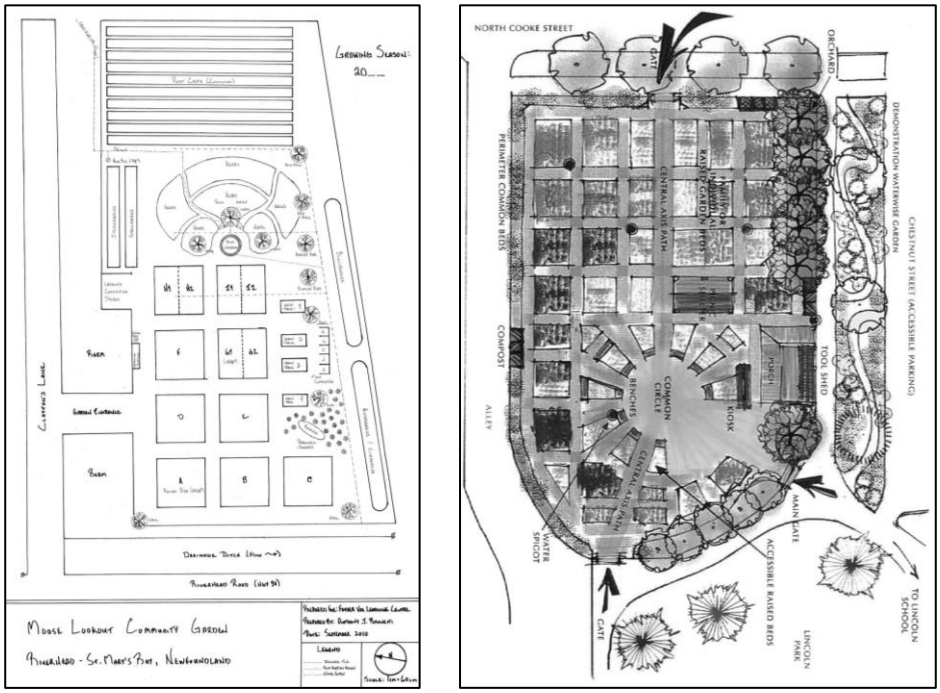

Fig. 2. (a) Plan of the Father Val Power Learning Centre Community Garden (Riverhead, CA) [14]
(b) Plan of the Lincoln Park Community Garden (Chicaco, US) [15]

5.Examples

Hollenback Community Garden (United States)

The Hollenback Community Garden was built in 1979 at the site of a burnt building in Brooklyn, New York. The members of community cleaned the land and they set up a community garden site that is very active today. Gardeners have been working with disabled children for a time, but once the school has ceased to cooperate, they continue to work individually. Their focuses are issues of sustainability, education, local and organic urban food production and improved community access. There are rainwater collector, composting toilet, iron fence, connection to the city water system, welcome gardens with sitting unit and yard sale, bake sale, free barbeque, movie night activities in the garden. The garden is a member of Brooklyn Queens Land Trust (BQLT), a community garden network. It also participates in many events in collaboration with many organizations, and is a source of inspiration and education for others. There are about 45 members and they pay rent. They are responsible for common areas as well as their plots. There is a regulation governing the operation of the garden, and warnings and disciplinary punishments are given to those who do not comply. Funding is provided by membership fees and donations. The garden's land belongs to the TPL (Trust for Public Land), but since 1990 there have been pressures on the sale of land to create new housing [3]. Fig 3 shows the images from the garden.

Fig. 3. Images from Hollenback Community Garden [16], by Kirk Montague

Prinzessinnengarten (Germany)

In 2009 Nomadisch Grün, a non-profit company, rented a plot in Berlin and established the Prinzessinnengarten for the purpose of urban farming. Organic vegetables are grown in the garden without the use of insecticides and artificial fertilizers. The company is promoting the transformation of idle sites such as building site, car parks and roofs into temporary urban farming areas. The garden serves children, neighbors and those interested in sustainable life. The aims of the garden are to be a part of urban green areas, to produce fresh and healthy food, to contribute to biological diversity and composting, to feel people's sense of belonging and to make people have social relations [9]. Fig 4 shows the images from the garden.

Fig. 4. Images from Prinzessinnengarten (a) [17] (b) [18] (c) [19], by Marco Clausen

Martineau Garden (England)

Martineau Garden is a community garden of one hectare, located outside of Birmingham City. There are, a beekeeping area, a field for ants, a pond, a bonfire, a clay oven, a playground, a garden of roses, a wildflower meadow, garden beds, greenhouses, an orchard, a meeting place, a common hut and a birdhouse in the garden. The garden was established in 1960 with the aim of teaching environmental and natural coherences to students. It was planned with accessibility of water and electricity. The garden is an independent, self-responsible organization that has operated since 1977 without public funding or public help. There are 4 employees who are paid by sale of garden products and 40 volunteers help them. The aim of garden is to educate children with difficulties in learning and to help patients with psychological diseases [8]. Fig 5 shows the images from the garden.

Fig. 5. Images from Martineau Garden (a) [20] (b) [21]

Inverleith Allotments (Scotland)

The City of Edinburgh Council has made attempts to farm in idle areas, as a precaution against food emerging after the World War I. These attempts resulted in the division of a part of Inverleith Park into allotments in 1918 [22]. nverleith Allotment is a large-scale community garden. Approximately 163 plots are available and have an efficient structure arranged in a compact manner. There is a communal hut is a converted shipping container which has had windows, insulation, and solar panels for lighting. There are also toilets, communal tools and mowers. All grass roads are maintained by plotholders. The periphery of the garden is surrounded by high panel fences and closed with fence plants. It is safe because enclose with a fence and is located within the settlement. Parking is reserved as a restricted area because it is in a central location. Common areas are maintained by plotholders. All green waste is composted and other materials are recycled. There are a number of plots which include excellent plot-based biodiversity features such as green roofs, ponds, and wood piles [13]. Fig 6 shows the images from the garden.

Fig. 6. Images from Inverleith Allotments [13]

Bursa Community Garden (Turkey)

The project work of the gardens started in 1985 and opened in 1986. The total area is 26,500 m^2. The number of plots has been increased from 24 to 86. Plot size is 200 m^2 on average. 46 plots have a wooden hut. The plots are only rented to the retirees, contractually for two years. Although there was a very low demand during the first year of the establishment, the demand was increased over time. The perennial woody plants and animals are not allowed, seasonal and annual flowers, grass and field crops and various vegetables can be grown [23].

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THE POWER OF PROPAGANDA: NAZI ARCHITECTURE

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Abstract
Hitler's Germany is one of the most devastating and influential propaganda activities in world history both prior to and during World War II. It is the desire of the authority rising to power to leave behind not only physical but also spiritual traces on the lands they rule. The most effective way to achieve this objective is to construct buildings and monuments. Bearing in mind that the new order they formed should be supported with the social dominance provided by architecture, the Nazis created architectural work grounding on Nazi ideology. These works are the most substantial endeavours of the Third Reich administration in the implementation of Nazi ideology. Hitler's ideology was conveyance in the configuration of Nazi architecture that had a style of classicism and an independent national socialism built on European typology and morphology. This study examines the repercussions in the configuration and formation of the cities and buildings designed with the aim of Nazi propaganda. The necessity of approaching the concepts of propaganda and ideology while conducting this research comes into prominence. How the relation of architecture and ideology is approached as a conveyance of propaganda is brought to light by evaluating the types of propaganda implemented during the period of Hitler through these notions.
This study aims at examining how the propaganda activities carried out in Hitler's Germany was "identified with" and "formed by" architecture. In line with this purpose, a historical and conceptual literature review was carried out and the relation between architecture and propaganda in Hitler's Germany was uncovered. Evaluating Hitler's Germany in the context of architecture and propaganda and determining the relation of the resultant style with periods emphasize the significance of this study. As a result of this study, even though it is impossible to categorise the architectural preferences of Hitler under one heading and state that the Third Reich had an official architectural style, it can be articulated that Nazi architecture established on a neoclassical foundation was developed and changed around this framework.

Key Words: Ideology; Nazi Architecture; Propaganda; Monumental Architecture; Hitler's Germany

1. Introduction

Political propaganda has been one of the most significant phenomena since the first half of the 20th century. Propaganda has become the most effective method for politicians wishing to interfere in every part of human life and for totalitarian leaders in particular so as to ensure their own legitimacy on the lands they govern.

As put forth by Bektaş; *"Propaganda is the name given to all systematic efforts toward producing an effect on the beliefs, attitudes or actions of individuals and groups by way of symbols in spreading true, half-true or untrue information in order to influence the public opinion"* [1].

It would not have been possible even to design the rising of fascism without propaganda. Hitler realized all of his desires from his accession to power until 1940 with propaganda. This study aims at questioning how the propaganda activities carried out in Hitler Germany was "identified with" and "formed by" architecture and examining the repercussions in the configuration and formation of the cities and buildings designed with the aim of Nazi propaganda. Evaluating Hitler Germany in the context of architecture and propaganda emphasizes the significance of this study. A historical and conceptual literature review was carried out and the relation between architecture and propaganda in Hitler Germany was uncovered.

2. Propaganda Use In The Period Of Hitler

Hitler, who is the leading ruler that used propaganda systematically, attracts attention with his following statement: "the mission of propaganda is to rally supporters for the organization. Its second mission is to explain the new doctrine and infuse it into the people. The objective of propaganda is not to scientifically inform individuals one by one but to attract the masses" attention to specific incidents, needs and requirements [2].

The reason of the success of Nazi propaganda on the German public is blatantly the superiority of the audible to the sensible. It acquires a more emotional quality as the masses intensify. The opinion and actions of the masses are directed by impressions created on their senses rather than on their absolute thoughts [3].
Hitler's propaganda used classical conditioning discovered by Pavlov with his experiments on dogs. Nazizm established the conditioning of the public on power instinct. The first thing to do is to create conditioned responses which will form the disks of propaganda and to combine the object the mass demands with the party that embraces it as a target. The Nazis combine the greatness of Reich and the happiness of the Germans with the National Socialist Party [4].

Another crucial reason of the success of propaganda in the Nazi system was that all mass media was in control of the Nazis. There was no chance of a second voice. Therefore, the propaganda techniques of the Nazis directed the minds of the public at will [5].

The relation between the government and art in Nazi Germany could be most apparently seen in the works of propaganda. Hitler made the propaganda designed and implemented by the state through three government agencies. These were "the Reich Ministry of Public Enlightenment and Propaganda", "Nazi Party's Propaganda Central Office" and "Reich Culture Chamber" [6].

The Nazis regarded cinema as a powerful mass medium and field of art. Films made in line with Nazi ideology were shown in large movie theatres, and thus an intense propaganda was carried out [7].

Hitler believed that the goal of art is to symbolize a vivacious progress onward not to become distanced by falling behind the public that advances. The objective of Nazizm is the entire adjustment of the German public that was born from one sole above all, is the same everywhere and systematically spread to every field of social life from one center [8].

Hitler, right after having started the Nazi Party, thought that certain symbols were needed to be used to jog the masses' memory and primarily speculated over the party emblem. The symbol of the party came to existence as a result of the studies he was personally preoccupied with. This symbol is comprised of a white circle placed on a red background and a black swastika drawn inside this circle [2]. Thus, the power of Hitler was merged with the swastika.

In the flag with the swastika used by the Nazis, the color red represented blood and war and signified that salvation could come with war for warrior Germans. While the white circle represented hope and victory, the swastika heralded that victory would be the German public's [9].

The profanation of social life and political power has created conditions for the ideology to emerge and spread. The use of architecture as the symbol of power is the mostly encountered mode of political architecture. Until the establishment of industralized cities of the modern world, city walls, towers, bastions, palaces, and squares were thought to be urban elements that could be used to understand the regime of societies and their political past. The comparison between the dimensions of monumental architecture and political power is unilateral and related to the history of architecture [10].

3. Propaganda In Nazi Architecture

Hitler Germany witnessed one of the most influential and destructive propaganda activities in World history prior to and in the course of World War II. The influence of Hitler was possible with the increase of abyss in the German rulership, deterioration of the economy, increase of the tension created in the public and downfall of the political life. Hitler desired to leave a physical and a spiritual mark over the lands he ruled. Being aware of the fact that novel interventions made in the city were the most effective way to reach this desire, the Nazis endeavoured to spread their ideology with the social power of architecture.

The first work undertaken for this belonged to Albert Speer who prepared a Berlin plan that constituted magnificent interlocking axes and proposed colossal buildings. This plan does not only re-organize the urban axis that represent the power of early German administers but also exclude every effort exerted for all known architectural and urban organizations. Speer defines the north-south axis as the *"Champs Elysees of Berlin which is 2.5 times the length of the original"* [11].

Hitler considered "monumental architecture" as one of the basic tools of forming control over the masses and influencing them and was attentive to the construction of stupendous structures. Monument architecture is used by authoritarian ideologies as a means of imposing their way of thinking on the masses. Monumental structures turn into some kind of a symbolic power method practiced by social, political and economical power holders against the mass and the individual. The individual who is inside and in front of these structures representing authority and social hierarchy feels this power deep within. Through these structures, the power of the state is indirectly shown to the individual. Because of these, Hitler endeavoured to construct a plenty of monumental architectural structures. The structures in the Berlin plan were designed monumentally and in a way that would reflect the symbol and pride of German success, and the balance, symmetry and geometrical uniformity in these buildings indicated the power of the government.

In the Berlin plan by Albert Speer made in 1937, the north-south axis divides the already existing east-west axis with a straight angle. Politically significant buildings with gruesome physical dimensions were speculated to be constructed around the 350.000 m^2 square planned in the nortern part of the city. A gigantic domed Volkshalle was located in the north, the new palace and court of Hitler in the west, the headquarters of the German Armed Forces and the pre-Nazi Reichstag Parliamentary Building which felt small among all of these structures were located in the south and part of the east. The square formed by the positioning of these structures taking into account the axes would have the capacity for one million people to gather and create "Germania", the new capital of the world whose only competition could be Rome [12].

Speer defines the north-south axis as the "Champs Elysees" of Berlin which is 2.5 times the length of the original. This axis was designed with a capacity of 150-180 thousand standing audience that would come to listen to Hitler and would end at People's Hall. Speer placed the enormous Palace of Hitler at the corner of one of the squares facing the People's Hall so that the diplomats coming to visit Hitler would need to walk half a mile to reach him. The old Reichstag is located inside this gigantic capitol, opposite to Hitler's Palace. The understanding of basic architecture and city planning has come into existence by developed monumental

approaches [12].

Figure 1. Berlin City Plan [12]

This utopia planned by the head architect of Hitler, Albert Speer, in 1937, which shows the peak point of the complex of being the greatest, aimed at developing the city of Berlin as the capital of the Nazi Empire under the name of "Germania" whose goal was to dominate all Europe and Western Asia. Just as in this project, the fundamental approach in basic architectural understanding is monumentalism. By constructing enormous governmental buildings that signify the state, the individuals are led to feel small and insignificant before these structures and hence the ruling power [12].

Hitler demanded Speer to construct the Grand People's Hall with the strongest structure in the world in order to externalize his power. The People's Hall of 300.000 people that Hitler demanded Speer to construct for his Great Germania Project symbolizes the longing to the former with its monumental structure and dome design that refers to the conventional [13].

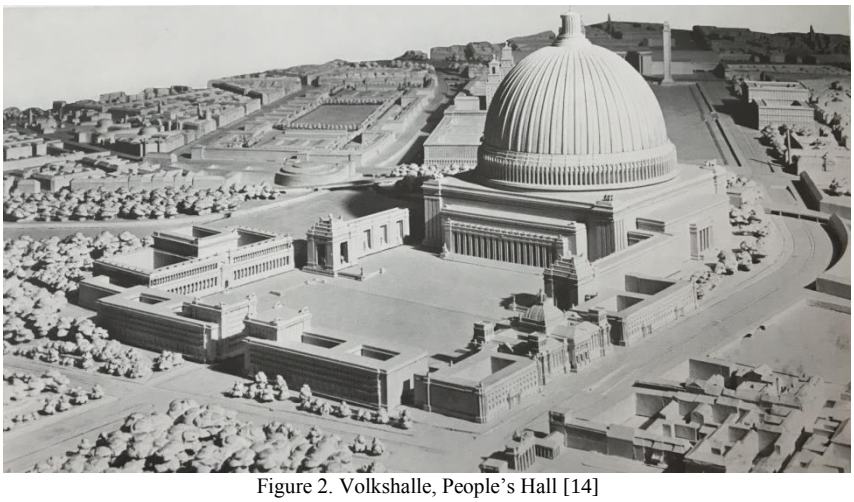

Figure 2. Volkshalle, People's Hall [14]

The dome of the Volkshalle People's Hall rises from a massive granite podium 315 by 315 metres and 74 meters high, and reaches to a total inclusive height of 290 meters. The diameter of the dome is 250 meters [11].

The dome symbolically stands for the empire of Hitler and is strengthened by two monumental statues. By characterising this structure as the symbol of power, Hitler used monumental features in the design of the People's Hall. By constructing enormous governmental buildings that symbolize the state, the individuals are led

to feel small and insignificant before these structures and hence the ruling power.

4. Conclusion

In every period of human existence, different design products have emerged which lead to different factors (political, cultural, economic, social etc.). These designs have affected every aspect of life. Hitler, as a political factor, played a role in the shaping of the architecture of the city. He took advantage of architecture for his own ideology and accomplished it skillfully. He distorted the truth through propaganda and craved for establishing Germany over his own personality. He perfectly demonstrates totalitarianism. Hitler is above everything, Hitler is the law himself. The analysis of these effects of Nazi propaganda should be considered as a multidisciplinary study.

Hitler perceived the architecture of the Republic of Weimar founded after the First World War as a cultural degradation; however, he considered the new buildings to be constructed under his vision and ideology as the symbols of national rebirth. Buildings designed for Berlin had to revive the self-respect of every German citizen and signify the insignificance of individuals when society was taken as a whole. Having no detail in the scale of a human being in the buildings would deliver the message without the need of any kind of civility and suppress the society.

The most important feature of Nazi architecture was that it was the means of a quite authoritarian state governance. Dictator Hitler aimed at creating an architectural system with city planning, axial symmetry and by placing all state buildings hierarchically, and thus intended to support the social and political dominion that the Nazi government desired. The architectural dimension considered in the study may be insufficient in terms of the development of the work to evaluate it by the architectural discipline alone. Art historians, sociologists, environmental designers, etc. a multi-dimensional research approach should be adopted with participation of different disciplines. In this way, different architectural influences may occur that have not yet been noticed or researched.

Although it is impossible to classify Hitler's architectural preferences under a single title and to say that the Third Reich is an official architectural style, it can be said that Nazi architecture built on monumental architecture has been developed and changed around this framework.

As a result, the architectural products produced by a propoganda product create not only a single architecture on a building scale, but also environments that directly affect the life of the city. The multidisciplinary work to be done with this awareness will bring many architectural consequences to the Nazi Propaganda of unknown scale.

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A MAZE OR A CAMPUS BUILDING: A FIELD STUDY IN A MIX-PROGRAMMED MONOBLOCK UNIVERSITY BUILDING

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Abstract
University campuses are important places where students interact academically and socially. For this reason, it should comprise appropriate indoor and outdoor educational and non-educational activity spaces located with spatial cognitive consistency. Furthermore, architecture education requirements are quite different than the other departments for both physical conditions and sensorial qualities. Istanbul AREL University uses a monoblock, u-shaped building with a dispersed indoor layout locating at the edge of the city with a very few of habitual and social facility around for both architecture and other departments.

It is known that the space usage efficiency depends on legibility and cognition level of the users. The aim of this study is to determine how Istanbul AREL University's special structure with its other spatial qualities is cognized by freshman architecture students. A randomly selected sample group are required to draw a cognition map of the university building according to the give space names to see if the spaces designed with lack of spatial cognitive consistency is seen as a maze or a university building. Maze is referred to Tolman's significant studies about how we cognize environment through a cognitive-like map. Different users' cognition perspectives assessed and categorized, the focused points in the perceptions are determined. The collected data were analysed by SPSS. It was seen that students continue their high school behaviour and still concentrated on the daily used spaces like studios and cafeteria. Differentiation related to gender seen only with the drawing type. The cognized space function did not change according to gender.

Key Words: *S*patial cognition; monoblock university building, cognitive map, architecture department, spatial representation.

1.Introduction

The human being tries to give a meaning to the environment, city and physical conditions, select and organized those in his/ her mind. On the other hand, Humans act in space, to act efficiently people need mental representations of space (Göregenli, 2015). Every day we live in different built environment places in different scales. From cityscapes to workspaces we should remember where we are and what we are doing at that moment. In order to find our way how to go to school, work, bus terminal or to our caves, in these days homes, human being use his/her ability to cognize. The aim of this study to collect and interpret data extracted from a group of people's daily routine which those data place itself intersection of architectural education behaviors in a faculty and architectural design approach related with the built environment.
Mental representations of space are constructions based on elements, the things in space, and the spatial relations among them to relative to a reference frame. According to proposal of the study, user of a space gathers too much stimuli which triggers the cognition process and his/ her experiences in a specific space in each period of time determine the way how he/ she cognizes space. If the principles of the human perceptions of the environment are known, it will be easier to understand the environmental behaviors of the human being and it will be possible to design more perceivable, represented and livable spaces. Then every time user experiences the same milieu somehow, he/ she remembers some features of the space and behave like what it he/ she has to be. How do we encode and decode a place's stimuli cognitively? In order to respond this question, research phenomenon of the paper, it is required to discuss cognition through the literature of environment behavior theory and then a field study can be corroborating main proposal of the argument.

2.Spatial Cognition in Environment Behavior Theories

While working on mental representation of environment the terms environment, perception, image and cognition map enter the nest. Most of the theoretical background initiate discussion with the differences between perception and cognition to clarify readers mind in regarding those terminology has a potential of misunderstandings. For the aim of the study cognition is more emphasized.

According to Unlu (1998, p.21) cognitive processes included perception, knowledge and consideration. Hence it can be said that perception is a determinant for cognition. Again, in a summary about mental processes Unlu mentioned that (1998, p.22) perception is more about gathering environmental information and on the other hand cognition contains how information is arranged. Norberg-Schulz (1988, p.31) also defined perception as a

passive reception of impressions which later construct his 'intention' approach in architecture which has a more active character.

Nonetheless cognition has a challenging situation which differs from one person to the another. According to Downs and Stea (1973), environmental cognitions are often inaccurate and incomplete, and they sometimes differ from person to person and from group to group (as cited in Altman&Chemers, 1980, p.46). One of the reasons for the disorientation defined by the authors is cognitions are not exact replicas of actual physical environment and the other reason is cognitions are being selective. Altman&Chemers (1980, p.46) defined the learning process with its usages and phases during experiencing any place: "Information is grouped and organized, compared with experiences with similar or dissimilar environments, and related to other features of environment. Furthermore, information is stored in our minds, and it is remembered. It can be recalled and decoded as we need it; it is used in moving about the environment, in telling others about it, or locating things and places."

In this study, cognition is referring to spatial cognition which has wide literature starting from especially Piaget's theory and to the other researcher's, but here it doesn't need to mention about development of spatial cognition of child because of the scope of the research is freshman group in faculty of architecture. Thus, theory of spatial cognition can be the next terminology in theory review.

Stea (as cited in Downs & Stea, 2011, p.314) specified that cognition occurs in a spatial context when the spaces of interest are so extensive that they cannot be perceived at once. So according to the explanation of Stea, spatial cognition can be seen as a context that when a person interacts with the space that is hard to define and to cope with by its simple features or physical appearances. Thus, how does this complex structure of the environment can be described, stored (encoded) and recalled, represented (decoded) in a more comprehensible way? Jean Piaget's and Kevin Lynch's theory about environmental qualities explain how we easily handle place learning and experience it cognitively.

Hart and Moore (1973, p.249) mentioned about Piaget's study which emphasized that knowledge of the world includes two aspects, first is figurative and the second is operative. Figurative aspects referred to the percepts or images of momentary configurations and the latter transformations of successive states of world into the patterns and schemas. Piaget's distinction is also highlighting the cognitive schemata which organize our perceptual and cognitive processes in background. Based upon Piaget's distinction, Hart & Moore (1973, pp.261-262) defined three major properties of space: topological, projective and Euclidean qualities. According to Unlu and Cakir (2002, p.234) topological spaces related with the Gestalt rules and proximity, isolation, rowing, enclosure and continuity can be used as a topological quality to determine a place. The other two properties of space, projective and Euclidean, are more refer to the geometrical features of a place. Those properties are not visible only on the mental or cognitive realm but also they can be seen on a representation method of a person who asked to draw his/ her route of experience in a space while endorsing his/ her knowledge through drawing.

Lynch's work focuses on city scape gives a brief and persuasive explanation of reduction of a complex environment. According to one of the precious contributions, he mentioned that (1960, p.1) nothing is experienced by itself, but always in relation to its surroundings, sequences of events leading up to it, the memory of the past experiences. This generic approach about the image of the environment was defined in his treatise with five key dimensions which constructs a mental image of a city. Paths, edges, districts, nodes, and landmarks, as imaginative qualities, are five elements which is cognized by human and construct his/ her cognitive schemata in urban scale. Evaluation about those five elements seems similar with Hart and Moore's proposition about properties of space is not surprising when we take into consideration that both of them has a geometrical and representative on the other side. From this point of view perception and cognition reflects us inner side of the process how we live through the space. Although we mentioned about inner side of the process, the output of the process generally has a physical aspect.

Cognitive map is defined by Tolman (1948) as the mental representation of the world around us formed by experience, direct/indirect learning, knowledge integration and processing of all these. By a series of experiments in which a mouse was trained to find food by following a single roundabout pathway, he found that when the opportunity for going directly to the

food is given, the animal takes it and it goes directly to the place where the food was, instead of following the original pathway. According to Tolman's interpretation, the animal gradually develops a "picture" of its environment that later may be used for finding the goal. This picture was called a cognitive map (Tolman, 1948). They are used for expressing and representing in a way hence this internal process can be apparent to a third person's point of view -and sometimes the person who produce the map for him/ herself- to discover how he/ she decode his/ her experience.

Appleyard (1970) categorized maps according to used elements as sequential (roads), and spatial (individual buildings, landmarks, or districts). The accomplished maps used the combinations. As shown in Figure 1, also Appleyard defined four subtypes within these types. The sequential map types are fragmented, chain, branch and

loop and netted ones. The spatial maps which are more difficult to place on a gradient are categorized as scattered, mosaic, linked and patterned (Appleyard, 1970).

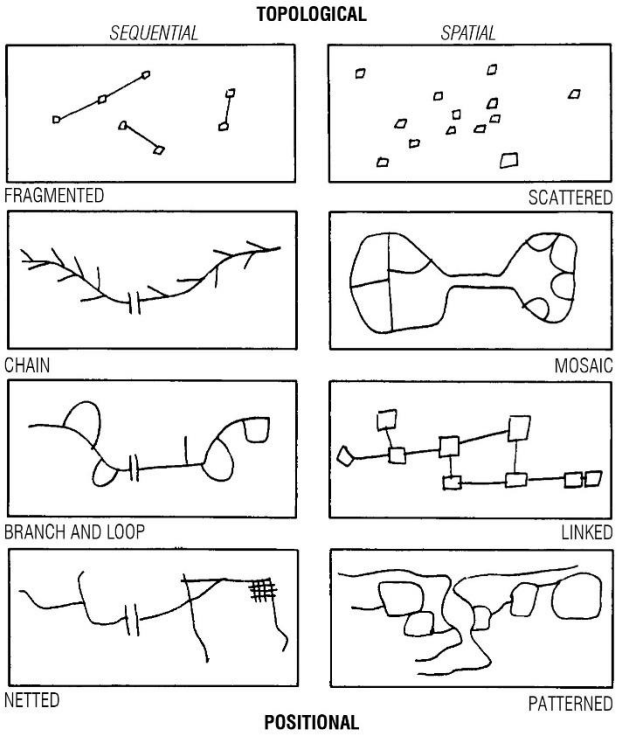


Fig. 1. Appleyard's Derivation of Mapping Categorization from Reprinted from Planning Urban Growth and Regional Development (1969), by Lloyd Rodwin and Associates, p. 437.

According to Hart and Moore (1973, p.274), topographical representation term is used because this method seems as most comprehensive and the least confusing. Authors also mention that this kind of cognitive maps or imaginary maps or mental maps clearly refers to an internalized mental reflection of the physical environment being neither a cartographic form, nor a habitual pattern (schema). Furthermore, cognitive mapping can be seen as a acquisition, amalgamation and storage of individual and mental receives (Downs & Stea, 2011, p.313).

Finally, space as architectural structure is not dissociated from the events that happen in that defined place (Tschumi, 1998, p.139). His treatise emphasizes that events, one of the program's element with the other two spaces and movement, related with the function of space and activities that take place in space. So, it is quite easy to say that, Lynch scenario constructed by imaginative elements take place on a physical realm through Tschumi's programmatic paradigm. Now, after that literature review concerning spatial cognitive treatises in environment behavior theories, next chapter is going to examine a field study with the theoretical background mentioned above.

The common deduction extracted from all the approaches defined above is that cognitive maps are useful and can be used for many objectives. Not only hand-draws but also verbal evaluations can be used to form cognitive maps. On the other hand, this study focused on hand drawing cognitive maps.

3. A Field Study: Istanbul AREL University

Core element of the research conducted at Istanbul AREL University. University campus settled in Tepekent, Buyukcekmece. The building is constructed on a very limited plot in between E-5 and TEM highway. Tepekent district has been established more than a decade ago as a satellite city, having approximately 1800 villas and with its seasonal habitants much more fewer than that number which means this specific area can be seen as a special pattern that provide a internal campus life with the lack of urban facilities (Figure 2).

Fig. 2. General Layout of AREL Tepekent Campus.

This internal realm of university life includes five faculty and three schools' organization, Faculty of Arts and Sciences, Economic and Administrative Sciences, Communication, Fine Arts, Engineering and Architecture and Schools of Health, Applied, Foreign Languages. Although this complex educational structure, built environment is located on a monoblock u-shaped, 7-storey university building. This complex and confusing maze has five student entrance doors which each of them has a faculty name on the courtyard side but does not help the students to orient to the written destination. None of the doors was opening to a specific faculty but on a common corridor (Figure 3).

1.

Fig. 3. Entrance Views from Courtyard to the U-shaped the University Building Main Corridor:
(a) Entrance 1; (b) Entrance 2; (c) Entrance 3; (d) Entrance 4; (e) Entrances' Layout; (f) Entrance 5.

Moreover, from educational to recreational and administrative spaces were dispersed to building's seven floors and three blocks in that u-shape formed base of the problem area. before this field study is conducted with the people, student group in their freshman semester studying architecture (Figure 4).

Intentionally, spaces sorted randomly and in a special order from one to twenty, anticipating that this order will be triggering their cognitive schemata because they were already in the place number one and using the latter most and the all the other places are in a particular alignment on the list (Table 1).

Table 1. Distribution of the Places Selected Based on the Floor Level and the Specific Program.

	Architectural Program		
Floor Level	Educational	Recreational	Administrative
5th Floor	Library [no.07]	-	-
4th Floor	Proj. Arc. Room-I [no.09]	Olympos Café [no.13]	Arch. Dept. Head Off. [no.18]
3rd Floor	Arch. Studio A [no.02] A. Sancar Lect. Hall [no.05]	Exhibition Hall [no.19]	Erasmus Office [no.12]
2nd Floor	-	Mensa/ Refectory [no.17]	Arel In. Center [no.06] Student Affairs [no.20]
Ground Floor	Studio B106 [no.01]* Studio B110 [no.03] Cad Lab V [no.04] St./ Print C. [no.08]	Maestro Café [no.14] T-Club Café [no.15]	-
1st Basement Floor	Proj. Arch. Room-II [no.10]	Prayer Room [no.11] Sport Café [no.16]	-
2nd Basement Floor	-	-	-

**[no.xx] notation refers to schematic layout plan drawings given above.*

20 places in main three blocks and 7 levels are chosen by the researcher (Figure 5). 65 undergraduate architecture students were attended for this study in two sessions in the morning and noon. Before the study applied the first phase was to determine parameters and descriptive borders of the methodological approach clearly, in order to do so, a small group of students from 2nd and 4th semester selected for the cognitive map drawings.

During the main study, students were informed about the aim of the study detailly. Some cognitive map examples were shown to the first semester student for inspiration. Duration is given for the drawings was about 40 minutes for both sessions. Students are required to draw first places primarily remembered with a lead pencil and researcher let them to use colored pencils to show which they don't remember clearly or whether they suggest a location for that places they don't remember or know.

Cognitive map is asked as an experience route including all landmarks, features and point of interests which has a potential to recognize them the secondary details or places. By their novice ability to draw architectural drawings in terms of reflecting their cognitive maps more sensitively they have not been limited in their representative tendency which they already gained in the same semester in technical drawing class.


(a)

(b)

(c)

(d)

(e)

(f)

(g) (h) (i) (j)

Fig. 4. Examples from Selected Places Cognized in Drawings by Their Lynch's Five Imaginative Qualities: (a-b) Library; (c) Olympus Café; (d) Architectural Studio A; (e) Erasmus Office; (f) Exhibition Hall; (g) Architecture Department Head Office; (h) Project Archive Room-I; (i) Project Archive Room-II, (j) Prayer Room.

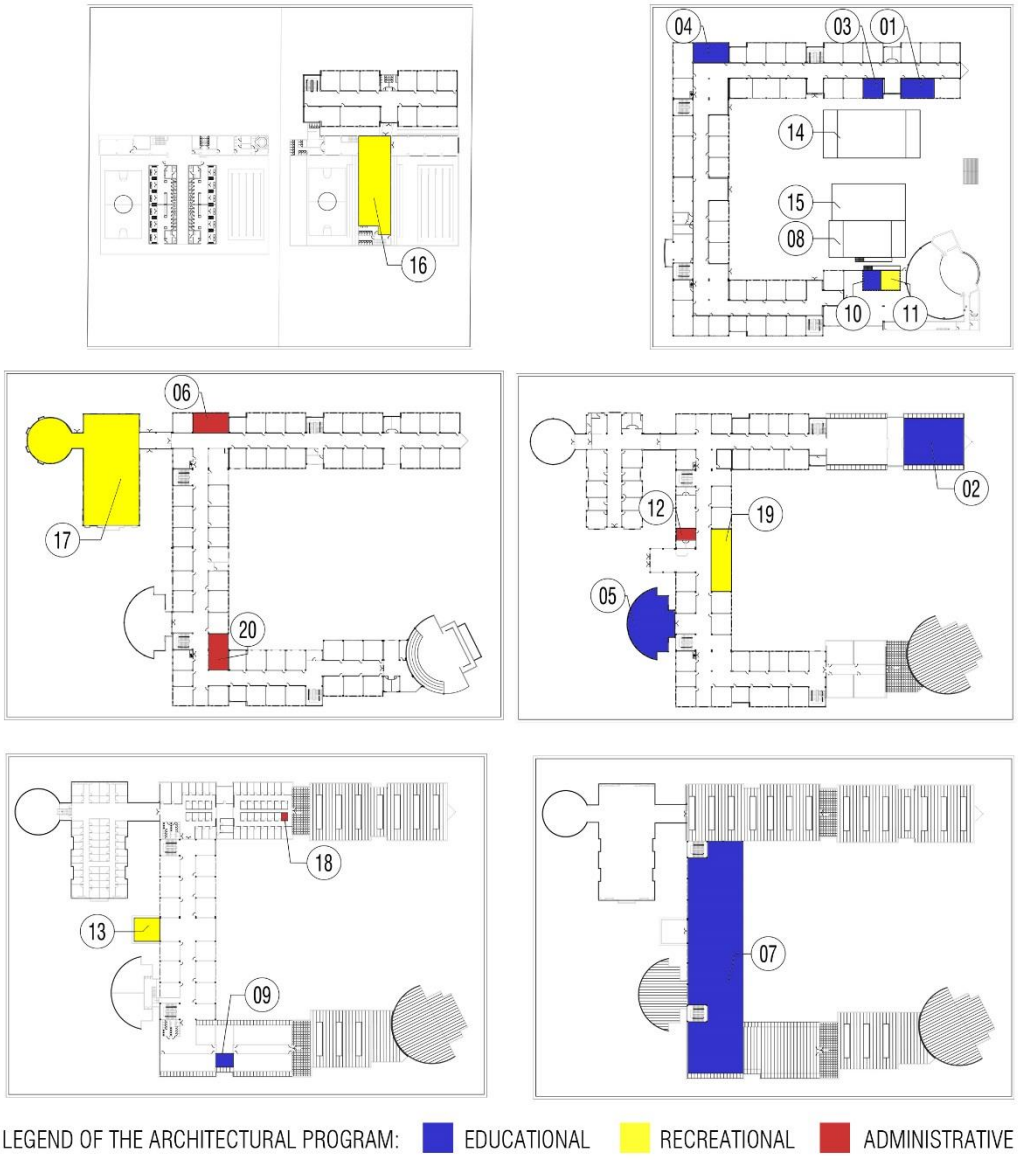


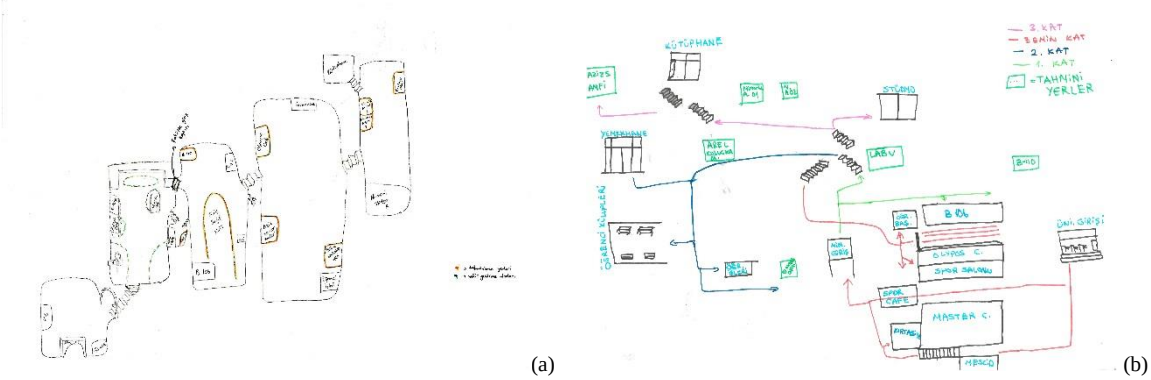
Fig. 4. Layout Plans of AREL Tepekent Campus Monoblock Building:
(a) Basement Floor; (b) Ground Floor and Courtyard; (c) 2nd Floor; (d) 3rd Floor; (e) 4th Floor; (f) 5th Floor Plan.

4.A Maze or A Faculty of Architecture?

Research question of the study is asked 'how university's monoblock, u-shaped and mix-programmed design as a special structure with its other spatial qualities is cognized by the freshman architecture students?' In addition to this main question some secondary questions like, 'is there any variable such as gender, architectural

program and representation method that has a critical effect on cognition of the architectural faculty spaces? Hypothesis of the study supposed that people who has lack of experience in a complex and ambiguously defined mix-programmatic place can remember better only the places which has significant qualities and experience has an effect on cognition mention by the theoreticians. If not, a faculty's places designed with lack of spatial cognitive consistency, can it be seen as a maze or a faculty of architecture? Maze is referred to Tolman's significant studies (1970) about how we cognize environment through a cognitive-like map.

To examine the hypothesis defined above and respond to the research questions, 65 students asked to put their effort to produce cognitive maps. As determined in Appleyard's study (1970, p.103), researchers need to categorize dispersed output data in order to find similarities or contrasts to find significant evaluations. Spatial maps (scattered, mosaic, linked, patterned) and sequential maps (fragmented, chain, branch and loop, netted) are the main two types of maps used for evaluation by Appleyard. The maps drawn by the students grouped along into descent representative method category by three types: flatten, bird-view and verticality oriented. Flatten maps showed mostly spatial features especially 'mosaic' and 'linked' qualities defined in Appleyard's study (Figure 6).



(a) (b)

Fig. 6. Flatten Cognitive Map Examples: (a) Participant no. 10 (Mosaic, Female); (b) Participant no. 60 (Linked, Female).

"Bird-view map" categorization for this study was done for the ones which show the qualities of the building top-view drawing. This type was prevalent among the students in this category students had a tendency to draw 'fragmented' and 'branch and loop' style from sequential maps (Figure 7). On the other hand, "vertically oriented map" refers the drawings have the imagination of the vertical connection of the spaces with constructional elements like stairs, elevators or ramps.

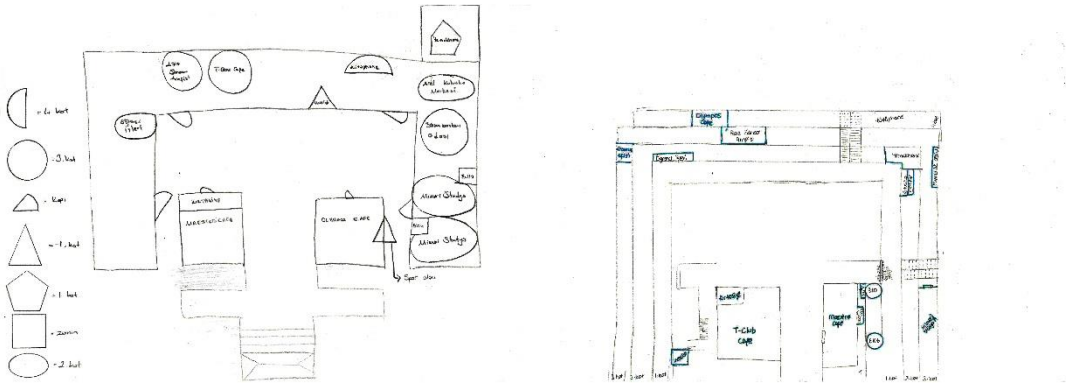


Fig. 7. Bird-View Cognitive Map Examples: (a) Participant no. 44 (Fragmented, Male); (b) Participant no. 50 (Branch and loop, Female).

Female students preferred flattened maps more than male students while male students' frequency for higher in bird-view but has almost the same percentage for flattened maps. The most dramatic evaluation about representative qualities is that none of the male student preferred to draw with verticality concerns (Figure 8). Only 8 drawing was descently showing 3d-formations with a %12,31 of all data (Table 2).

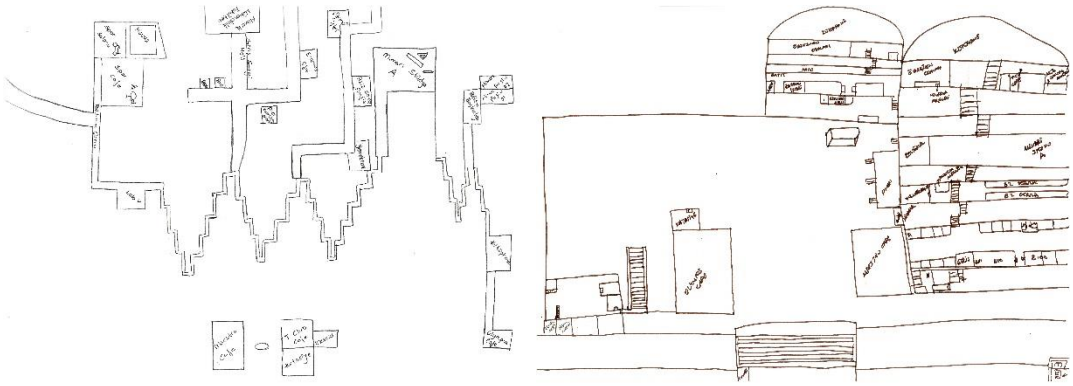


Fig. 8. Verticality Concerned Cognitive Map Examples: (a) Participant no. 02 (Female); (b) Participant no. 37 (Female).

Table 2. Gender and Descent Representative Method.

	Descent Representative Method								
	Flattened (34 drawings)			Bird-View (23 drawings)			Verticality Concerned (8 drawings)		
Grand Total (65 students)	Observed	Frequency Acc. to Gender	Frequency in Gender	Observed	Frequency Acc. to Gender	Frequency in Gender	Observed	Frequency Acc. to Gender	Frequency in Gender
Female (37 stud.)	21	61,76%	56,76%	8	34,78%	21,62%	8	100%	21,62%
Male (28 stud.)	13	38,24%	46,43%	15	65,22%	53,57%	0	0%	0%

After data analyzed with SPSS program according to the Pearson chi-square analyses Table 2 shows that since the p (0.004) <.05 we can regret the Ho hypothesis and mention that there is a significant association between the gender and the representation method (x^2=10,977, df=2, p (,004) <.05).

Table 3. Descent Representative Method and Architectural Program.

	Architectural Program								
	Educational (9 places)			Recreational (7 places)			Administrative* (4 places)		
Grand Total (65 drawings)	Observed	Expected	Freq. in Drawing	Observed	Expected	Freq. in Drawing	Observed	Expected	Freq. in Drawing
Flattened (34 draw.)	175	306	57,19%	136	238	57,14%	40	136	29,41%
Bird-View (23 draw.)	117	207	56,52%	104	161	64,60%	34	92	36,96%
Verticality Concerned (8 draw.)	43	72	59,72%	40	56	71,43%	17	32	53,13%

Table 3 shows that imaginative qualities of the spaces has a significant effect on the cognition of programmatic and experienced spaces (x^2=15,348, df=6, p (,018) <.05). For instance, library (x^2=8,197, df=2, p (,017) <.05) is cognized more between any other educational place who prefer to draw flattened maps if we consider vertical circulation as a path object in drawings.

Table 3. Descent Representative Method and Architectural Program.

	Architectural Program								
	Educational (9 places)			Recreational (7 places)			Administrative (4 places)		
Grand Total (65 students)	Observed	Expected	Freq. in Drawing	Observed	Expected	Freq. in Drawing	Observed	Expected	Freq. in Drawing
Female (37 stud.)	192	333	57,66%	159	259	61,39%	53	148	35,81%

Male (28 stud.)	143	252	56,75%	121	196	61,73%	38	112	33,93%

Analysis of Table 4 shows that there is no concrete association between program and gender. Although educational (x^2=0,690, df=4, p(,953)<.05), recreational (x^2=5,051, df=5, p(,410)<.05), administrative programmed spaces (x^2=2,267, df=3, p(,519)<.05) doesn't show significant relation to gender, the cues in their descent drawing method flattened maps, relation to topologic qualities, female students doesn't cognize Olympus Café (x^2=6,023, df=1, p(,014)<.05) which can be explain by isolation quality.

5.Conclusion

Collected data displays that daily routines, obligations and social preferences construct experiences, events and it is related with the built environment. Variables like educational and recreational program of an architectural faculty describes the main activities more related to rarely administrative experiences. When building has a mix-programmed use, user notice that whether there are other privileged users or not. Academic cafeteria and based on the proximity quality Maestro Café is cognized better related to Olympos and T-Club Café.

Conducted study with the analyses showed that specific representation method is distributed to different gender's cognition capacity. Generic imaginative qualities help people to cognize a space better and it is common to all gender use landmarks in drawings such as ATM, Turkish flag, street furnitures, trees, uncommon shape of a ceiling or a door. Another output showed that derived from notations, cognition recalls memory with sensory and it defines behaviors in a specific place. Important part of the student tried to add some notations on drawings in order to describe their feelings and why they like or dislike or remember a place with its light luminousness, quietness makes them more self-confident or relaxed.

For the further studies, variables can be selected elaborately to extent study's scope to compare with another campus design or faculty of architecture scenario which doesn't show monoblock internal building and mix-programmed use. Besides, people of the research can be varied from different status of faculty such as academicians vs. students or novice student from first semesters vs. expert students from experienced ones.

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RE-USE AND LIGHTING DESIGN SOLUTIONS OF TRADITIONAL BUILDINGS- KAYSERI SETENONU PUBLIC BATH

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Abstract
Architectural conservation in the sense of modern apprehension is an important factor not only presenting the building as a monument but also using it with a suitable function and involving it into the urban pattern and urban life. In the restoration and reuse of traditional buildings; is an important issue to restore the building without giving damage to its spatial and structural original as well as lighting solutions according to new function and user requirements.
The most important points that must be considered during interior and exterior lighting design of buildings are; avoiding material damage and enriching the visual effect of the building by reflecting the spatial and formal features correctly. In this sense; first of all apart from the buildings in which the presentation of objects that will be damaged by natural and artificial lighting is the case; utilization of available daylighting opportunities must be preferred at maximum level. However when the current comfort conditions are regarded; it is seen that the daylight illumination in the interior space is not adequate for new functions throughout the occupation time. Therefore a proper artificial lighting system has to be designed and the integration of daylight with artificial light must be enabled for various spaces. Lighting design must be mentioned together with restoration project and a suitable lighting system must be offered with an interdisciplinary study.
Kayseri which is chosen as the study field; most of the traditional buildings have lasted up to now and some of these buildings have a monumental effect as well as their utilization in the city centre. Some other buildings have lost their importance being excluded from the development direction of the city and were sunk into oblivion. Inclusion of such buildings into urban life is only possible with re-use of these buildings. Indoor lighting design is important for the integration of this new function with the building and outdoor lighting design is also essential for its contribution to urban silhouette visually and interaction to city life and the environment through hours of day.
In this sense Setenönü Public Bath chosen as the subject of study was built in 17th century. Today the building is stuck within high-rise commercial buildings and Kayseri Urban Conservation Area. In this study that is supported by Erciyes University Scientific Research Project (No:6066), it is aimed to functionalize this building socially and culturally according to the common needs of different user profiles and to make optimum lighting solutions. In this sense, first of all the current condition of the building will be analyzed and then a lighting solution will be suggested according to the function determined. Lighting levels and visual comfort conditions will be evaluated according to international standards and will be obtained from architectural points of view.

Key Words: *Conservation, Re-Use, Daylight, Visual Comfort, Setenönü Public Bath,*

1.Introduction

The ability of cultural essence to maintain both its physical and social essence within the urban fabric is dependent on many factors. Since, urban life is rapidly changing; the ability of cultural heritage to be included in urban life in this process of change can be achieved together with physical and social sustainability. One of the subjects in this contexts that need to be elaborated upon with care in preservation and restoration work is making decisions of function and the establishment of the relationship of cultural assets with the city by this means is a process necessary to obtain importantly in terms of architecture and space.

Lighting, which is one of the important infrastructural phases of functionalization, is defined as the fourth dimension of architecture, and has become an interdisciplinary field of study in terms of quality and quantity. Along with the characteristics of lighting design like the formation of spatial perception, emphasis, and conspicuousness, the efficient use of energy has a separate importance in terms of renewable energy resources coming into prominence. Lighting design is accepted as an inseparable part of the design process and is a phase that enables the integration of the spaces of building and aesthetic reflections of the provided function, whose detailed acquisition is necessary in functionalization projects, with energy performance by considering the conditions of visual comfort. In historical functionalization projects, primarily in line with the principles of engaging in minimal intervention with the specific spaces and structural elements of buildings, the diversity of actions appropriate for the recommended functions will become the identifier of the conditions of visual comfort that need to be provided, and the recommended lighting design will respond to these requirements. The purposes in this lighting design, in which psychological conditions of comfort are also taken into consideration, are energy efficiency and the optimization of the quantity of lighting.

The purpose of this study is the development of a method recommendation, within the urban texture that the

building known as the Setenönü Public Bath is found, that might enable the evaluation of the building with ideas that could maintain its spatial essence and with products of resolution, the emphasis over lighting design on the multi-layered characteristics of the re-use projects by developing internal and external lighting designs appropriate for the recommended functions, and the ability to acquire other layers.

2.Setenönü Public Bath re-use studies

2.1. Setenönü Public Bath environmental evaluations

Traditional textures that constitute the historical core in city centers and which are generally in protected areas are the spaces that are most affected by the processes of change that cities experience. The main, definite problems that are experienced in these traditional textures in processes of change can be ranked as the destruction of buildings as a result of economic and physical degradation or human activity; unsuitable housing and health conditions in the environment and building; the use of the building in unsuitable conditions or in unsuitable functions or its abandonment; the surrounding not having developed roads and parking spaces sufficient for transportation; infrastructural deficiencies like roads, water, canalization, telephone, and electricity; and the space becoming areas of social and economic collapse in with low-income groups are housed. [1].

In every period, non-Muslims have held an important place within the population in Kayseri, one of the most crowded cities in Anatolia. The area constantly changes hands by its users and was in a position of an area in which individuals come and live from outside of Kayseri to work temporary jobs. As a result of this process, the buildings in the traditional fabric found in the city center of Kayseri have started to lose their specific qualities with the irregular additions and repairs of the new users [2].

Due to the Setenönü Bath, found in the eastern perimeter of the Urban Protected Area, not being used for a long time and its the physical and social position of the area in which it is found, it has been used until recently by the local public as a depressed area and even a garbage dump. With the restoration and urban design work that started in the region, the Setenönü Bath was acquired, the rights of use of the building were transferred to the Kayseri Metropolitan Municipality by the Güpgüpzade Hacı Ebu Bekir Ağa Foundation, and the building, whose implementation was completed in 2010, began to be used as an exhibition hall. Work continues today to convert the public bath, whose use and operation is being transferred to the hotel in the space, into a bath that has a specific function (Figure 1).

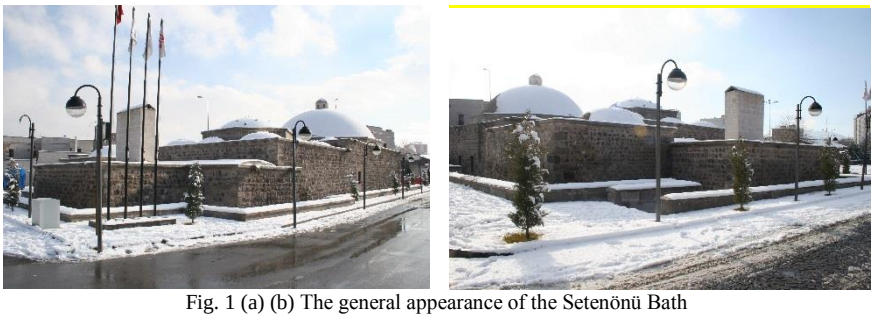

Fig. 1 (a) (b) The general appearance of the Setenönü Bath

Today, the area in which the bath is found is rather socially and culturally developed and changed compared with its state 10 years ago. Its proximity and ease of access to the city center enables the participation in social-cultural activities of the people in the entire region of the city. According to the density analysis that was determined with observations made on site in the scope of the study, differentiations in the nighttime and daytime use of the area are seen. In the daytime, the users in the region are mostly local tourists who visit to tour the historical building and the public who lives in or whose workplaces are in the region. While the daytime intensity of eating-drinking units is low during the week, this use increases in daytime house on the weekends. Nighttime use of the area is quite low in the winter months. Only in eating-drinking units is movement not observed. This situation changes in the summer months. Climate conditions in the summer months being suitable for the use of open spaces and the activities organized by local government and the businesses in the region help the intensive of the region, especially in the evening hours.

2.2. Architecturural features and re-use studies

The Setenönü Bath, among the plan typologies of Turkish bath is a 17th century bath that was constructed based on the "four-domed, four-cornered, private celled heating" plan scheme typology [3]. The building was constructed as a single bath at the eastern perimeter of the urban protected area and is located at the north-south axis. To the west of the newly constructed hotel complex south of the building, there are spaces organized as plazas and historical residences, and to its north are multi-floored concrete structures. The building comprises of dressing space/ frigidarium, tepidarium, caldarium, sudatoriums, water storage, and furnace sections that are spaces in the traditional Turkish baths in Anatolia. The purpose for the construction of the spaces in the northeast corner of water storage is not entirely understood and is to day used as a kitchen and storehouse (Figure 2a)

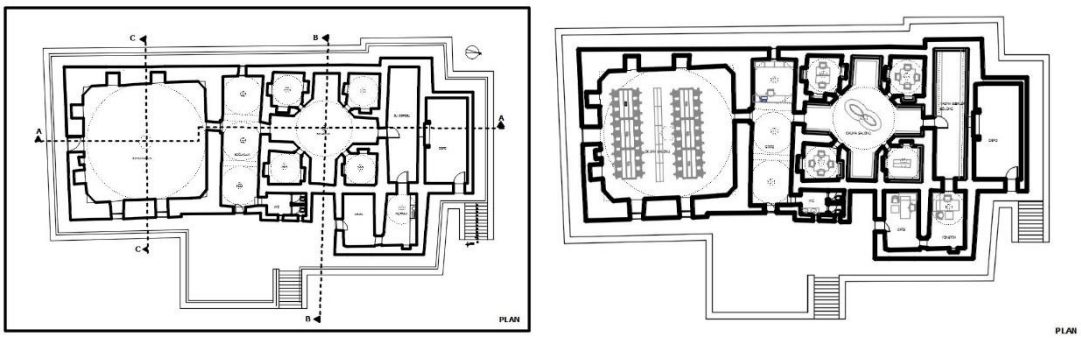

Fig. 2. (a) Plan (b) Re-use Project

Dressing space is accessed by door from the south of the building. The space is illuminated by means of a round lighting lantern on the western side as well as an lighting lantern on the top of the dome. The handiwork found around the dome and on the pendentives was covered during decoration restoration, and the original hand carvings are exhibited only in a small area. The arches that are seen in old photographs and that have brought an aesthetic appearance with colorful stones have been completely plastered over and the visual effect in the internal spaces of the building have largely been lost. A door was opened in the eastern wall to the frigidarium space, which is accessible from dressing and heating in the original, in the process of converting the building into an exhibition hall, and began to be used as an entrance hole. The rectangular frigidarium was covered with 3 domes that are separated by pointed arches. Daylight in space, prevented by the oculies found in the center of the central dome, the round skylights found in the domes on the sides, and the skylights found in the eastern and western walls. Like the other spaces, the walls and domes in frigidarium have been completely plastered. The calderium is passed to from tepidarium with a round, arched door. There are sudatoriums at the intersection points of the four domed spaces of calderium. There are rectangular skylight and oculies in the dome passed by the pendentives. There are, again, oculies on the vaults on the domed spaces. Sudatoriums are illuminated by the windows on the domes. For this reason, the building will undergo construction after the restoration projects, which include converting the building into a mosque, and the completion of the tendered studies.

The building's 3D modelling studies done using the survey drawings of the building as a base and using AutoCAD, DiaLux 4.12 and Sketch Up, and the visuals are provided in Figure 3.

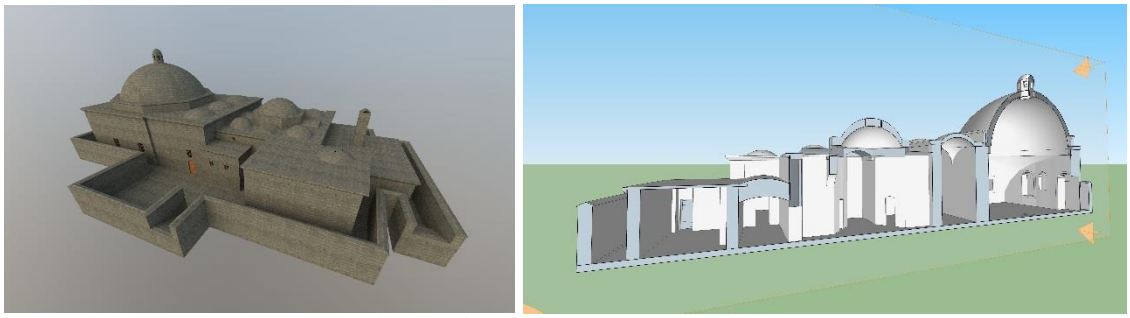

Fig. 3 (a), (b) Setenönü Hamamı 3D Drawings

Re-use of buildings in the name of protecting the unique identities of cities by being correlated with an urban context is important. While providing new functions, the spatial qualities and requirements of the building must be evaluated together with the urban context and the relationship it creates. Although baths are a type of traditional building that continues its function today, it is seen that some baths are being converted with functions other than their original function due to a decrease in the use of baths in the conditions of today. While baths containing wet spaces in their original functions facilitates the adaptation of these spaces into the building, the installation of these spaces limits the functions that that can be provided to the building. When these are, changing functions are examined, it is seen that the Istanbul Tahtakale Bath was converted into a business center and cafeteria, the Beyazid II Bath was converted into a museum, the Gaziantep Keyvanbey Bath was converted into a bath, and the Bursa Ördekli and Safranbolu Gavur Baths were converted into cultural centers [4].

This project plans to develop function of the library for the Setenönü Bath and a lighting design recommendation that is appropriate for this function that is defined with the principles of international preservation, in line with the principles of engaging in minimal intervention with the specific spaces and structural elements of the building in re-use projects. When the spatial and urban contexts are examined for Setenönü Bath in this context, the library function is thought of as a function that brings forth and strengthen these characteristics. When the position of the bath within the city was considered, it was observed that there was a need for libraries, which are one of the most needed public functions of city centers, for the city center of

Kayseri. That the social and cultural activities are a part of the Setenönü neighborhood transformation project necessitates the articulation and cultivation of these functions. Art workshops, accommodation, and eating-drinking spaces have been presented to the use of the city residents, and an installation that works better and is developed as it is used simultaneously with a library may be acquired. When supported with a library function, this space can enable the development of part of the city by locals who come to the area with alternative use recommendations spending a longer period of time. At the same time, long-term vitality and the use of public space can be enabled with nighttime use, which will be considered for the library (Figure 2b)

The development of a re-use project and lighting design project appropriate for these functions by considering that the physical and spatial installation of the bath is in a building that provides possibilities for a diversity of activities like book storage, presentation, reading, exhibition, and working; reaching an interdisciplinary study; and making integrated decisions are projected when spatial decisions are being made. And like this, the spatial decisions necessary for the library function and the measurements that will be taken to be able to make preservation decisions and lighting designs that will enable the study of the building together with its original quality will enable possibilities that studies are done that are integrated with a simultaneous and backfilled working method and specific to the space.

There are 2 main reading halls in the scope of the library function. The frigidarium, which is today an entrance, was designed as the entrance section of the library, and the dressing section/frigidarium, tepidarium, caldarium and sudotariums were used as reading halls. A toilet is accessible from the entrance section. The inclusion of ergonomic and detailed solutions that enable the working styles that developing technology requires for furnishing elements has been primarily acquired.

3.Lighting design criteria for spatial function decisions

Beyond the acquisition of the functionalization project in merely the dimension of the evaluation of the spatial and structural function, the goal is to develop a method for doing the lighting design and including it in the process in all restoration projects by considering the criteria of visual comfort in international standards and the measurement data and general energy preservation with regard to the obtaining illumination in the spaces. Priority has been given to functions in which the compliance of the conditions of visual comfort with international standards can be evaluated clearly. When all environmental and physical data are taken into account, new recommendations and regulations for use that facilitate various possibilities and that are supported with measurements are being focused over the library function by effectively evaluating the daylight in the spatial operation.

3.1. Visual comfort criterias in library spaces

Even if the main task of libraries doesn't change as resource centers for information and thought within history, a quick development and transformation is seen at these institutions in recent years that is expanding their identity and field of activity. Libraries today store digital archives in some situations of periodicals, newspapers, and maps along with CDs, cassettes, information recorded on microfilms. With the influence of technology that affects every aspect of life, libraries today can be used with names that specify that libraries respond to a wider purpose and function, like "multi-media center", "material resource center", and "learning resource center", or names similar to these. [5]. Despite all this change, libraries should be designed as spaces that can be a center of attraction for users as a source of personal education, research resources, and information power resources and that present psychological comfort as a result of visual comfort. Areas that provide opportunities to rest in between work by taking long working hours into account, resting corners, and settings in which daytime can be perceived should also be presented.. The conditions of visual comfort in libraries and lighting system designed accordingly should respond to the certain functions like reading-studying, book storage, lending-reception, resting-free reading, and the protection of special works [6].

3.1.1. International standarts regarding visual comfort criterias in library spaces

İllumination Level, Brightness and Color are the principal factors that constitute the physiological conditions of comfort. By ensuring the conditions of visual comfort with these factors reaching specific values and being held within specific limits, visibility can be obtained at the optimum level. Institutions like CIE (International Commission on İllumination), IESNA (Illuminating Engineering Society Of North America), CIBSE (The Chartered Institution of Building Services Engineers), and EN (European Standarts) have revealed specific values for the conditions of visual comfort with studies that have been done from the past to the present. The reference sources that these institutions published can be obtained as "Code for Lighting: 2009", CIE "Lighting of work places:2011", EN 12464-1 "Light and Lighting -Lighting of work places:2011" ,IESNA"The Lighting Handbook 10'th edition-Reference and Application.

Providing an environment that is suitable for reading and research activities is necessary for both readers and staff at libraries. Employees should be able to carry out visual activities quickly, fluently, and comfortably. Brightness differences and color contrasts are necessary for visual action. The writing in books is seen by the eye due to the brightness differences between white paper and black typeface. Similarly, internal spaces and surfaces can be seen because of their brightness ratio differences. The limits of change of the desired ratios

between the visual task and environment in volumes that have different functions are important. The brightness ratios recommended in horizontal working spaces in libraries and the horizontal working spaces in offices are seen on the same principle. [7]. Recommended brightness ratio in libraries (Fig. 5):

- Brightness ratio between the visual paper surface and the adjacent computer screen 3:1 or 1:3
- Brightness ratio between the visual paper surface and the adjacent dark environment 3:1 or 1:3
  Brigthness ratio between the visual work and distant environment 10:1 or 1:10
- Brigthness ratio every within the visual area 40:1 or 1:40

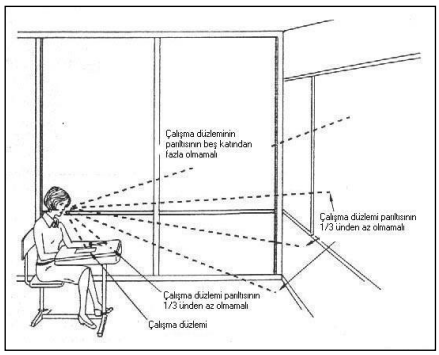

Fig. 5. Recommended b.ratios in working planes [8].

The light reflection coefficients recommended to carry out the provided brightness ratios and for the internal surfaces are as follows [8]. For Schools-Libraries:

- Ceiling 70-90%
- Walls 40-60%
- Flooring 30-50%
- Belongings 35-50%
- On Blackboard 20%

The brightness of ceiling planes in computer-working environments must be held at certain values. Ceiling brightness that can originate from indirect lighting can create discomfort in computer screens. The maximum ceiling brightness not being more than ten times the brightness of the computer screen is recommended in an environment in where standard rates of brightness are ensured [8].

Table 1 gives the visual comfort criteria that changes based on the different activity spaces in the library in the IESNA. [8].

Table 1. Recommended brightness level based on library functions [8].

Functions	Recommended brightness levels (lux)	Glare index limit
Reading rooms	200	19
Reading tables (lending)	400	19
Reading tebles (giving reference)	600	16
Plugs	600	19
Closed book shelves	100	…..
Binding	600	22
Catalogue, sorting, storage rooms	400	22

Table 2 specifies the data related to libraries in the EN 1464-1 standard entitled (European Standarts) Light and lighting - Lighting of work places - Part 1: Indoor work places that covers EU countries [9]., CIE (International Commission on Illumination), “Lighting of work places:2011” that is taken as a reference with the BS -ISO standards [10]. and the Code for lighting CIBSE 2009 standard that was published by CIBSE (The Chartered Institution of Building Services Engineers) [11].

Table 2. Recommended illumination level based on the functions of the library [9-10-11].

Libraries Type of interior, task or activity	E_m lux	UGR_L -	R_a -
Bookshelves	200	19	80
Reading area	500	19	80
Counters	500	19	80

3.1.2. Suggestions for deteriorations and deformations

All paper, parchment, writing and signs can be damaged by the light. Damage does not originate from the UV (ultraviolet) light that white surfaces absorb entirely. The rate of deterioration is dependent on the intensity of the light, the distance of the object, and the duration of the effect. High light intensity and a long period of effect lead to high rates of deterioration. Sensitive materials should not be left for long periods in lighting levels more than 50 lux. Because daylight at this level will be insufficient at a public exhibition, an illumination system should be used that is easily controlled. Handwriting should be covered with materials that can easily be opened by readers wanting to see these. The most effective method that can be implemented to inhibit the deterioration that UV light creates is to put a layer of film that absorbs the UV light between the light source and the object, if the light in question is natural [12]. This glass can be a special glass, or it can be a cheaper, varnished, plated glass. The performance and costs of types of glass should be assessed. While a fluorescent light source found at a height of 3m from an object does not damage the object, direct sunlight is always dangerous. [5]. Table 5 provides the deterioration rates for various light sources as a percentage. [13].

Table 5. Deterioration rates of various light sources as a percentage [13].

Light Source	Color Temperature (K)	Decay rate (%)
Zenith skylight	11.000	100
Cloudy sky	6.400	44
Sunlight , 30° latitude	5.300	27
Fluorescent lights		
Natural white	4.300	34
Hot white	2.900	28
Sunlight	6.500	25
Incandescent lamp	2.850	9

3.2. Current daylight values and measurement results of the Setenönü Bath

Primarily the enabling of the visual comfort conditions, reduction of energy consumption, and realization at the optimal level of the illumination design that will be arranged based on the recommended new function decision is targeted. Within the subject of energy efficiency, primarily the distribution in volume of the daylight found as a parameter becomes important. For this reason, the daylight measurements that contain each month in accordance with the methods specified in the scope of the project should be carried out. Figure 5 shows the grid point planes specified in accordance with the measurements in the volumes that take in daylight of the project spaces. The grid layout is in a 2x2 axis, and it has been arranged in accordance with the output of the measurement points of the Dialux 4.12 program in which the simulation will be done. The measurements were carried out in the working plane (h:80), and their continuation to encompass 12 months is planned. The measurements were taken with the "Assence Lighting Passport" Spectrum Genius device, taken within the scope of the project. Table 6 shows the lighting level values acquired with regard to the month of June from the specified measurement points in the volumes that receive sunlight in the project space

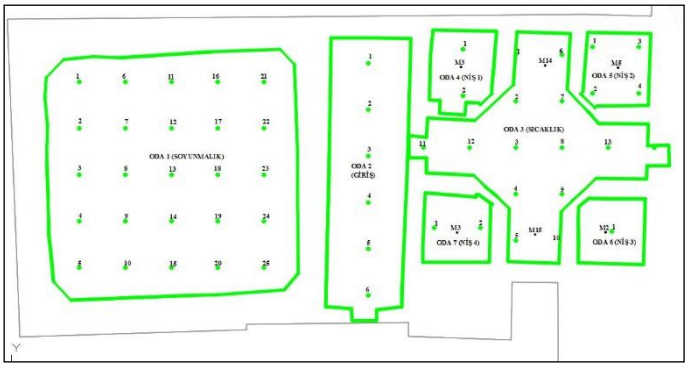

Fig. 5. The measurement points specified in the volumes that receive daylight of the Setenönü Bath

Table 6. The lighting level values specified in the measurement points in the volumes that receive daylight

POINTS	ROOM 1/A	ROOM 2/B	ROOM 3/C	ROOM 4/D	ROOM 5/E	ROOM 6/F	ROOM 7/G
1	18	53	4	78	*	81	12
2	17	86	5	28	*	81	12
3	6	52	15	117	*		88
4	14	45	3		75		
5	14	208	2		75		
6	14	181	5				
7	14		6				
8	16		12				
9	28		5				
10	114		4				
11	14		8				
12	8		23				
13	13		3				
14	15		76				
15	17		36				
16	14						
17	14						
18	13						
19	34						
20	71						
21	15						
22	14						
23	15						
24	16						
25	16						
E ort (lux)	22	104	14	74	7	81	37

Figure 6 shows the wave lengths spectrum and CCT color temperature data acquired from the measurement points specified for the “Dressing” section defined as Room-1. Figure 7 shows the wave lengths spectrum and CCT color temperature data acquired from the measurement points specified for the “Entrance” section defined as Room-2. (Figure 8, Table 7)

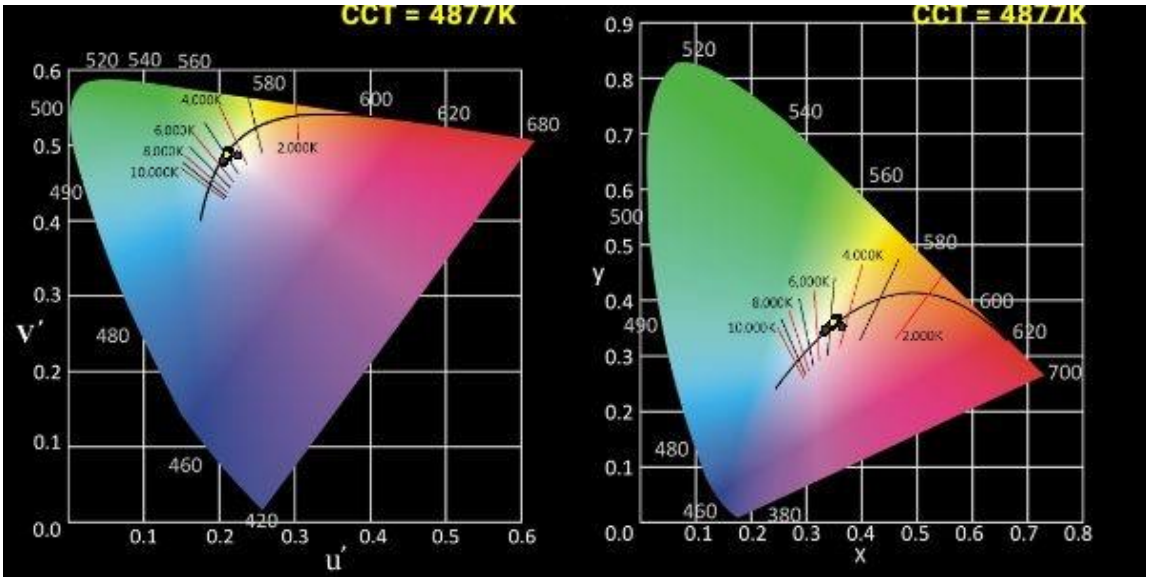

Fig. 6. Lightwave dimensions and CCT (Color Temperature) measured for Room-1

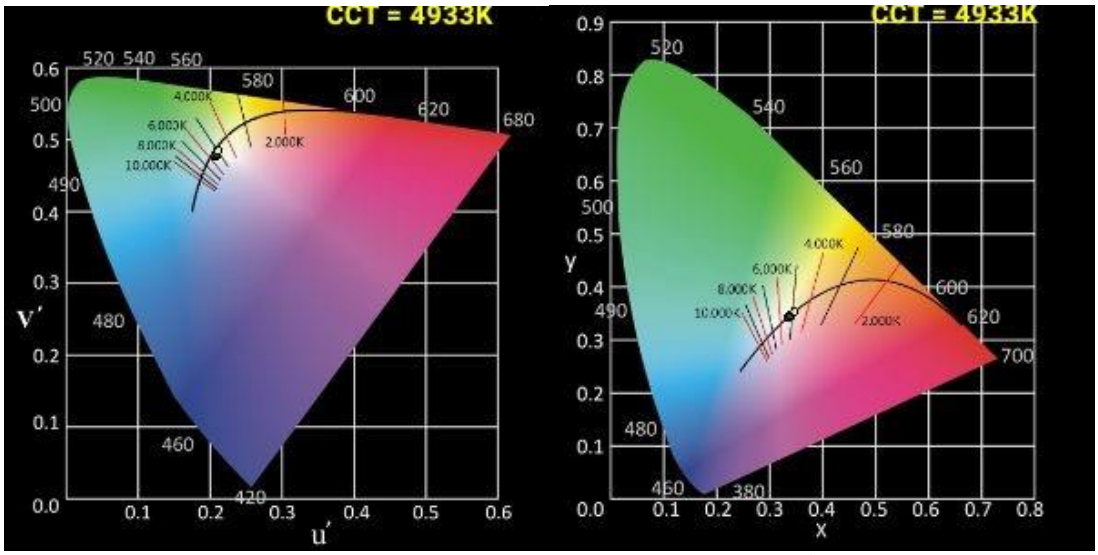

Fig. 7. Lightwave dimensions and CCT (Color Temperature) measured for Room-2

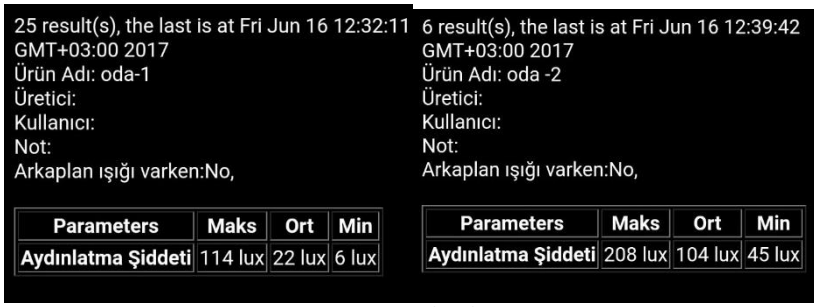

Fig.8.. Lihgting level values specified for Room-1 and Room-2

Table 7. Average lighting level values specified in relation to month in the volumes that take in daylight (*Measurements are from the 15th day of the specified months, the working plane has been taken as h:80

Space name	February E. avg	March E. avg	April E. avg	May E. avg
Roon 1- Dressin	9	12	15	19
Room 2-Entarnce Hall	43	55	73	92
Room 3-Heat	6	8	10	12
Room 4-Niche-1	31	40	51	65
Room 5-Niche-2	7	9	12	15
Room 6-Niche 3	33	43	57	71
Room 7-Niche 4	15	20	26	33

4.Results and evaluations

In the specified function decisions, the visual comfort conditions that need to be ensured with relation to the specified actions have been acquired in the previous sections with the studies of institutions like CIE (International Commission on Illumination), IESNA (Illuminating Engineering Society Of North America), CIBSE (The Chartered Institution of Building Services Engineers), and EN (European Standarts). We see that the references sources that these institutions published and the visual comfort criteria necessary in the library functions evaluated in the CIBSE "Code for Lighting: 2009", CIE "Lighting of work places:2011", EN 12464-1 "Light and Lighting -Lighting of work places:2011", IESNA"The Lighting Handbook 10'th edition-Reference and Application publications are compatible with each other on an international level. Based on these results, it is seen that the illumination level value necessary in the reading and working halls must not fall below 500 lux and that the illumination level needs to be a minimum of 200 lux for the bookshelves and storage areas. There needs to be an illumination level between 100-200 lux for the areas like the entrance-lobby and resting space.

When the measurement values specified until now in the volumes that receive sunlight are examined, it is seen that the acquired max. illumination level value is 208 lux and the average lighting level value is 104 lux. When these values and standard requirements are compared, it is seen that the library function, in which the current situation is thought to be active 24/7, is insufficient.

In the designed lighting system, an arrangement should be made, taking the daylight level into account and minimizing the working planes and the glares on the bookshelves where the shadow effect has been minimized, in order to ensure an average lighting level of 500 lux. Although the automation systems dependent on daylight

are rather effective today, when the daylight values in this space are taken into account, the use of the daylight automation systems are not found to be efficient on the subject of both finances and process management, because a sufficient level is not obtained. Instead of this system, the energy activity factor, whose light level can be adjusted (dimmed), and the choice of high-light resources should be preferred.

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DEPARTMENT OF INTERIOR ARCHITECTURE BASIC DESIGN COURSES FROM WRITTEN TEXT TO SPACE ADAPTATIONS

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Abstract

Faculty of Fine Arts and Architecture aims to analyze technical, functional and aesthetic data in design problems. In this respect, the Basic Design course, which is usually given in the first two semesters of the departments related to the design faculties, is a course providing the formation of the eight-semester design skill in the education curriculum. In this lesson, along with that it is thought that a single point of view, theory, model or curriculum can not be used; it is aimed to develop the artistic skills of the students, to gain the visual consciousness and to increase the courage to create the fictional mind by removing it from the molds.With this point of view, especially the design studios trying to meet the requirements of the self-renewal time; it is aimed to strengthen individual design motivations with the possibilities offered by flexibility creating a flexible content that supports most of the other lessons of department and out of the usual basic design concepts of design education students.

In the first semester of Basic Design courses; dot, line, stain, shape, surface, form, volume, space etc. are transferred by being restricted to design principles; In the second semester, in addition to concepts such as light, color and texture, the ability to edit spatial volume according to design elements, tools and principles is gained. In the light of this information, Italo Calvino's "Invisible Cities" book has been chosen as the text adaptations of the last work in the course of "Basic Design". Italo Calvino, depicted as the fairytale teller of the modern world, describes Marco Polo's journey on the Kublai Khan horseman, in his book "Invisible Cities". Thus, as the last project project within the scope of Basic Design course, students have chosen one of their suitable cities by reading Calvino's stories and assimilating them. 55 cities were proposed to provide students with strong data in terms of design. Like Marco Polo's journey, students have set from a story of their own choice to a journey where they were fed with basic design principles. They have created spatial finctions of the cities which they read and dreamt about by reducing abstract geometric form for five weeks by reading the story numerous times, enter into the story with the help of drawings and passing through the paths that Marco Polo passed through. This study aims to develop students' experience of design process of a written text in the process of intellectual design by combining two different disciplines and to improve interdisciplinary adequacy of first grade students in design frame.

In the continuation of the work, the spatial volume fictions produced by the student studies were produced as models and the models, the selection of the cities, the methods of handling the cities, the reasons for choosing the key words referring to the work were questioned and all approaches related to color, material, form, texture and spatial organization have been analized with the text that constitutes the universe of the study.

Key Words: *Interior Architecture, Basic Design, Education, Invisible Cities, Design methods.*

1.Introduction

Faculty of Fine Arts and Architecture aims to analyze technical, functional and aesthetic data in design problems. In this respect, the Basic Design course, which is usually given in the first two semesters of the departments related to the design faculties, is a course providing the formation of the eight-semester design skill in the education curriculum. In this lesson, along with that it is thought that a single point of view, theory, model or curriculum can not be used; it is aimed to develop the artistic skills of the students, to gain the visual consciousness and to increase the courage to create the fictional mind by removing it from the molds.With this point of view, especially the design studios trying to meet the requirements of the self-renewal time; it is aimed to strengthen individual design motivations with the possibilities offered by flexibility creating a flexible content that supports most of the other lessons of department and out of the usual basic design concepts of design education students.

In the first semester of Basic Design courses; dot, line, stain, shape, surface, form, volume, space etc. are transferred by being restricted to design principles; In the second semester, in addition to concepts such as light, color and texture, the ability to edit spatial volume according to design elements, tools and principles is gained. Accordingly, in the design lesson that is defined as act of problem solving, it is aimed for students to analyze the

truth within the design principles and the problem that is given about this truth, therefore giving the direction of adopting the analytical thinking system. In the oncoming stages of the course it can impart the concrete things by supporting them with abstract ideas or practices of reducing the abstract thing to concrete.

2.The aim and the scope of the research

Short texts that are in the Calvino's book "Invisible cities", by separating Venice to 55 cities, he imparts the forms that he chose for himself to pronounce the fragmentary sense of time and the dizziness that is given by the eternal emptiness, describes the cities that Marco Polo visited in relation with desires, indicators, swaps, eyes, names, the dead and the sky. As part of the basic design study that is based on the subject work, it is expected from students to interpret, to make an inference and by explaining the meaning, to show the path in detail which they followed in this process for the cities that they chose, with the semiotic and linguistic approaches that are in the source text; acquired data, as a result of the situation analysis, is aimed to present directive suggestions for both students and executives. This aims students to live the experience of a written text's design process and discussing two different disciplines together in an ideational design process by creating the spatial fiction by reducing them to abstract geometric shapes, by reading the Story they choose, by entering the story for 5 weeks with the help of sketches and models, by walking the roads Marco Polo walked, the cities they read about and visualized [1].

3.Analysis of project development process in basic design course

3.1.The participants

55 cities that can be appropriate to the design is presented to the participants. The participants focused on 20 cities out of 55. The information about maximum 4 participants can choose each city has been provided. Thus, 5 of the cities has been chosen which can give the best data while comparing.

This study was conducted at the end of the 2016-2017 Spring Semester with participants of 20 students (female and male; between the ages of 19-28) from Interior Architecture and Environmental Design Department of Istanbul Gedik University. The group subject to this study consisted of students from 2. Semester who were given task of designing a space design from Italo Calvino's "Invisible Cities" book.

3.2.The methodology

In the research, structured interviews were used as a qualitative data collection technique. All phases of the structured interviews including questions and possible answers were planned in advance. Interviews were personal and done face-to-face. Primarily the participants were informed about the study.

Content analysis has been used in the assessment of the qualitative data received from the interviews. In the first stage all data has been carefully examined and the ones determined close as meaning (it can be a word, a sentence or a paragraph) has been gathered. Gathered data has been edited associatively with the meaning, frequency rate (repetition count) has been calculated and presented in the table 1. Names of the students who are assessed in the scope of research are not mentioned with the thought that they won't benefit the process of the study.

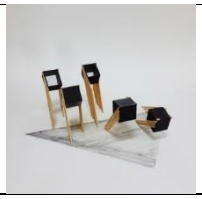
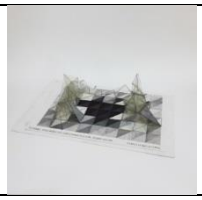
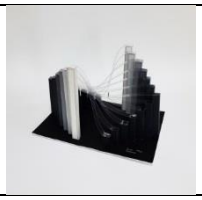
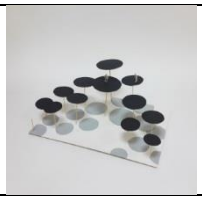
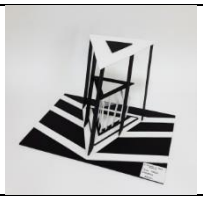
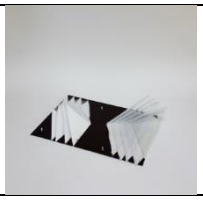
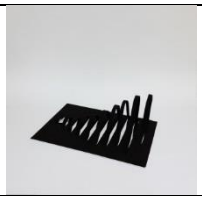
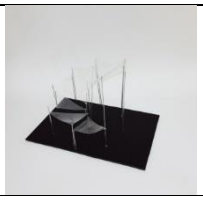
3.3.Results of the self-assessments of the students

In the study which the images created by the words that are obtained from the physical opportunities of the city have become defined with the basic design principles, it is seen that the students mostly chose "Thin cities 2: Zenobia", "Thin cities 5: Ottavia", "Cities and eyes 3: Bauci", "Cities and the dead 3: Eusapia" and "Cities and the sky 3: Tecla" cities. Other chosen cities are like, "Thin cities 1: Isaura", "Thin cities 3: Armilla" and "Thin cities 4: Sofronia" etc. Frequency rates related to city selection has been quoted in the Table 1.

Table 1. Cities selected from Italo Calvino's Invisible Cities book

Cities	Frequency	Cities	Frequency
Thin cities 2: Zenobia	4	Cities and signs 1: Tamara	2
Thin cities 5: Ottavia	4	Cities and desire 1: Dorotea	2
Cities and eyes 3: Bauci	4	Cities and desire 4: Fedora	2
Cities and the dead 3: Eusapia	4	Trading cities 5: Smeraldina	2
Cities and the sky 3: Tecla	4	Cities and eyes 2: Zemrude	2
Thin cities 1: Isaura	3	Cities and desire 2: Anastasia	2
Thin cities 3: Armilla	3	Cities and signs 5: Olivia	1
Thin cities 4: Sofronia	3	Cities and the dead 5: Laudomia	1
Trading cities 3: Eutropia	3	Continuous cities 1: Leonia	1
Cities and eyes 1: Valdrada	3	Cities and the sky 5: Andria	1
Cities and memory 4: Zora	3	Hidden cities 2: Raissa	1

Table 2. Cities selected from Italo Calvino's Invisible Cities book

Thin cities 2: Zenobia			
			
Thin cities 5: Ottavia			
			
Cities and eyes 3: Bauci			
			
Cities and the dead 3: Eusapia			
			
Cities and the sky 3: Tecla			
			

3.3.1 Thin cities 2: Zenobia

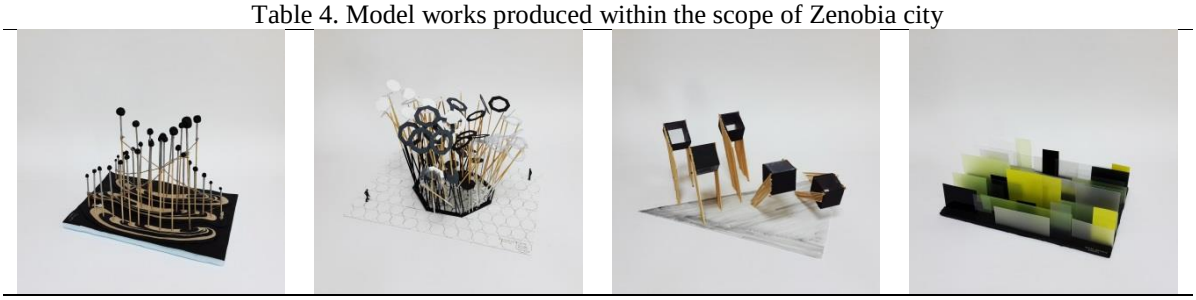
Calvino, talks about houses that have couple bamboo and zinc terraces, existence of long stakes on the dry ground with different heights and connections with portable ladders in the city of Zenobia. Zenobia, consist of layers that cover one another in a way that is impossible to understand [2].

Table 3. Decisions made for zenobia city

Selected keywords	**Frequency**	**Selected colors**	**Frequency**
Bamboo	2	Black	2
Hexagon	1	Grey	2
Cloud	1	White	2
Layer	1	Yellow	1
Stake	1	Brown	1
Ladder	1	--	-
Wind rose	1	--	-
Source design principles	**Frequency**	**Selected spatial organization**	**Frequency**
Rhythm	2	Linear	3
Balance	2	Clustered	1
Continuity	1	Radiational	1
Hierarchy	1	--	-
Used materials	**Frequency**	**Selected geometric forms**	**Frequency**
Model Cardboard	4	Circle	2
Wood lath	3	Cone	1
Rope	2	Hexagon	1
Acetate	2	Square	1
Spray paint	1	Other	1
Marker	1	--	-
Potty putty	1	--	-

It is seen that students mostly choose the word “Bamboo” for the Zenobia city. Other selected keywords are like hexagon, cloud, layer, stake etc. Based on the keywords that feed the fiction of the study, it is seen that circle form is the most chosen one; forms like cone, hexagon, square as to, observed as the other forms for the physical fiction of the city. According to the table that shows the frequency rates of the selected colors, it is observed that they choose achromatic harmonies mostly like black, grey and white and for other colors they use yellow and brown to reflect the dry ground look in the city. Within the source design principles, it is seen that they use rhythm and balance principles. As for other design principles, it is seen that they use symmetry, continuity and hierarchy. It is designated that as the type of selected spatial organization, linear arrangement is the most chosen one, clustered and radiational organizations are among the other options. (Table 4).

Table 4. Model works produced within the scope of Zenobia city



3.3.2 Thin cities 5: Ottavia

Spider web city Ottavia stands in between two steep mountains and connects from one peak to another peak with ropes, chains and wood bridges, offers its inhabitants a life that is hanged to the space with its rope ladders that are hanging towards the barely seen end of the cliff, with freight lifts, hammocks, sack houses, checkrooms, water bottles, gas lamps and with terraces look like small boats [2].

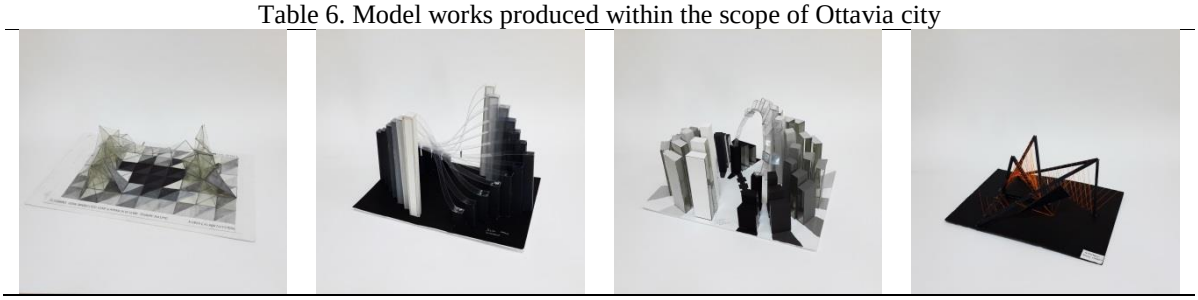
Table 5. Decisions made for Ottavia city

Selected keywords	**Frequency**	**Selected colors**	**Frequency**
Spider web	4	White	4
Cliff	4	Grey	4
Mountain	1	Black	4
Bridge	1	Orange	1
Hanging city	1	--	-
Steep	1	--	-
Source design principles	**Frequency**	**Selected spatial organization**	**Frequency**

Symmetric Balance	2	Linear	3
Conformity/Harmony	2	Radiational	1
Asymmetric Balance	1	Central	1
Used materials	**Frequency**	**Selected geometric forms**	**Frequency**
Model cardboard	4	Rectangle	2
Acetate	3	Square	2
Marker	1	Triangle	2
Wood lath	1	Circle	1
Fish line	1	--	-

It is seen that students mostly preferred "Spider web" and "Cliff" words for Ottavia city. Other selected keywords are like mountain and bridge generates the parts of descriptive expressions that Calvino uses while detailing the city. Based on the keywords that feed the fiction of the study, it is seen that rectangle, square and triangle forms are preferred; circle form as to, used as another form that expresses the physical fiction of the city. In line with the forms that create the stylistic definitions of the acquired cognitive data, it is seen that mostly white, grey and black colors are used, orange as to; shows itself as another color choice that benefits the city fiction. The physical environment that the city symbolizes became defined with the symmetric balance and concord/harmony principles. In this frame for the purpose of making a reference to the keywords like spider web and bridge, it is seen that linear approaches preferred, radiational and central planning methods as to, preferred to express the city images such as hanging city and cliff. Within the study that ended up with the model production, in the transfer of solid definitions such as mountain, bridge and rock face, it is seen that goods like model cardboard for the transfer of definitions, acetate, spider web for the expression of cliff, wood lath and fish line for the portrayal of the bridge is preferred. Within the study which ended up with model production, it is seen that in the transfer of solid definitions like mountain, bridge and rock face; model cardboard, for the expression of cliff; acetate, in the description of spider web and bridge; wood lath and fish line materials are preferred (Table 6).

Table 6. Model works produced within the scope of Ottavia city



3.3.3 Cities and eyes 3: Bauci

Far away from each other, in the city of Bauci, nothing of the city touches the earth except those long flamingo legs on which it rests and, when the days are sunny, a pierced, angular shadow that falls on the foliage. There are hypotheses about the inhabitants of Baucis: that they hate the earth; that they respect it so much they avoid all contact; that they love it as it was before they existed and with spyglasses and telescopes aimed downward they never tire of examining it, leaf by leaf, stone by stone, ant by ant, contemplating with fascination their own absence [1].

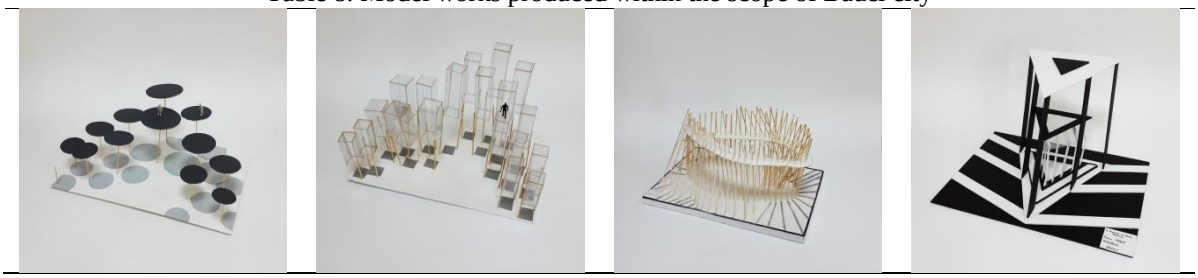
Table 7. Decisions made for Bauci city

Selected keywords	**Frequency**	**Selected colors**	**Frequency**
Flamingo leg	4	White	4
Hate	1	Grey	3
Surface-Sky	1	Black	2
Ladder	1	--	-
Shadow	1	--	-
Elegance	1	--	-
Contrast	1	--	-
Source design principles	**Frequency**	**Selected spatial organization**	**Frequency**
Rhythm	3	Clustered	2
Harmony	2	Central	1
Balance	1	Linear	1
Continuity	1	--	-
Hierarchy	1	--	-
Used materials	**Frequency**	**Selected geometric forms**	**Frequency**
Model cardboard	4	Circle	2
Wood lath	3	Triangle	1

Acetate	1	Square	1

The students who discussed the city of Bauci within the Basic Design course, it is seen that they mostly preferred the word "flamingo leg" since the city described as standing on flamingo legs. As for other preferred key words, they choose "hate" which again mentioned about the city, surface-sky due to the location of the city and ladder, elegance etc. Based on the keyword, the chosen forms are primarily circle, then triangle and square. When we discuss the colors that are chosen after the form selection according to their frequency values, it is seen that white is the most preferred one. Second most preferred color is grey and lastly, they chose black. It is seen that chromatic colors about the concept of the city are not preferred. It is observed that in the model working, model cardboard is the most used material and then the wood lath. Also, an acetate using student took place in the work. Within the source design principles rhythm, as of the topic, is seen as a dominant design principle. Harmony principle takes place as the secondary mostly used design principle. It is seen that balance, continuity and hierarchy principles are also used within the design principle. It is determined that clustered arrangement is the most preferred spatial organization type, central and linear organizations are also among the other choices. (Table 8).

Table 8. Model works produced within the scope of Bauci city



3.3.4 Cities and the dead 3: Eusapia

To make the leap from life to death less abrupt, the inhabitants have constructed an identical copy of their city, underground. All corpses, dried in such a way that the skeleton remains sheathed in yellow skin, are carried down there by the hooded brothers, to continue their former activities. No one else has access to the Eusapia of the dead and year by year this makes the city unrecognizable [2].

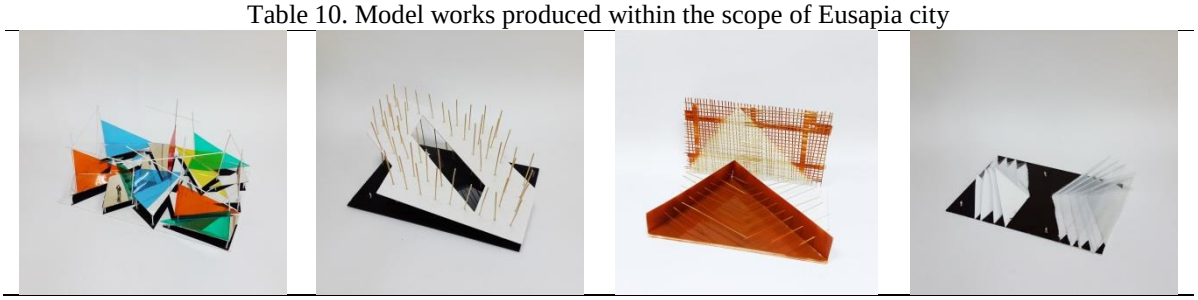
Table 9. Decisions made for Eusapia city

Selected keywords	**Frequency**	**Selected colors**	**Frequency**
Death	3	White	4
Living	3	Black	3
Reflection	2	Orange	2
Underground	1	Yellow	1
Copy	1	Blue	1
Life	1	--	-
Source design principles	**Frequency**	**Selected spatial organization**	**Frequency**
Harmony	4	Central	2
Asymmetric balance	3	Radiational	1
Hierarchy	2	Clustered	1
Symmetric balance	1	--	-
Used materials	**Frequency**	**Selected geometric forms**	**Frequency**
Model cardboard	4	Triangle	3
Wood stick	2	Rectangle	2
Acetate	1	Irregular polygon	1
Plastic stick	1	--	-

It is seen that students preferred "Death" and "Living" words the most. Other preferred keywords consist of city details like "reflection", "underground" and "copy". Based on the keywords that feed the fiction of the work, it is seen that mostly triangle and rectangle forms preferred; as to irregular polygon, it is observed that it is transferred as another form that expresses the physical fiction of the city. In line with the obtained cognitive data and the data which creates the figural definitions of death/living narration, it is seen that mostly white and black colors are used; as to orange, yellow and blue colors are other preferences which avail to the city fiction. Physical environment that defines the city, fictionalized with harmony and asymmetric balance principles. As to hierarchy and symmetric balance, show up as other chosen design principles. In this frame, it is seen that as a spatial organization type the central schemas are preferred; as to radiational and clustered planning techniques, it is observed that they are preferred to express city images like reflection, underground and copy. Within the working which ended up with model production, it is seen that model cardboard material is the most preferred

one in the transfer of abstract concepts like death, living and life. As to wood stick, acetate, plastic stick, they are observed as other materials that are chosen for the city fiction. (Table 10).

Table 10. Model works produced within the scope of Eusapia city



3.3.5 Cities and the sky 3: Tecla

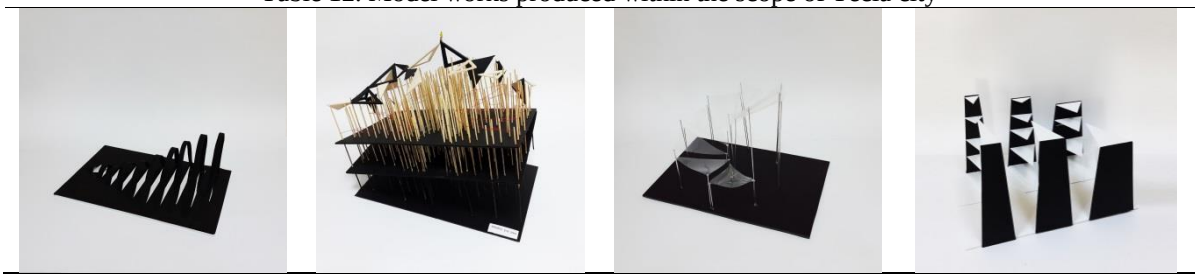
Beyond the plank fences, the sackcloth screens, the scaffoldings, the metal armatures, the wooden catwalks hanging from ropes or supported by sawhorses, the ladders, the trestles, inhabitants of the quite invisible city Tecla were continuing the construction of the city because they fear that once the scaffoldings are removed, the city may begin to crumble and fall to pieces. Beyond plank fences, cranes pulling up other cranes, scaffoldings that embrace other scaffoldings, beams that prop up other beams can be seen [2].

Table 11. Decisions made for Tecla city

Selected keywords	**Frequency**	**Selected colors**	**Frequency**
Scaffold	2	Black	2
Construction	2	Grey	2
Ladder	2	White	1
Imperfective	2	Brown	1
Continuity	1	--	-
Bridge	1	--	-
Source design principles	**Frequency**	**Selected spatial organization**	**Frequency**
Rhythm	1	Linear	2
Continuity	1	Central	2
Symmetric	1	--	-
Hierarchy	1	--	-
Used materials	**Frequency**	**Selected geometric forms**	**Frequency**
Model cardboard	3	Triangle	3
Acetate	3	Circle	1
String	2	--	-
Wood stick	1	--	-
Thread	1	--	-
Sponge sheet	1	--	-
Metal stick	1	--	-

In between the students who discussed the Tecla city, it is seen that in between the keywords, as a reference, scaffold, construction, ladder and imperfective keywords are the most preferred ones due to the narration of lasting construction. Other preferred words are again about the construction in the city, they are words like continuity and bridge. When we look at the keyword that they chose within the basic design course and the forms that they chose favorably to this, it is seen that primarily the triangle form is preferred. According to the created references, circular forms from forms of choice are following the triangle. Due to the Tecla city's key items such as imperfective, construction etc., it is observed that students tend to avoid using vivid colors and primarily preferred black and white. In the color preferences, white and brown are seen according to the frequency values. Achromatic colors are seen related to the concept of the city. In the model working, it is observed that model cardboard and acetate are the most used and then the string material. Also, a wood stick and thread using student took place in the work. Within the source design principles, it is also seen that they used rhythm, continuity, symmetry and hierarchy design principle sorts. As the type of selected spatial organization, it is observed that linear and central arrangements are preferred (Table 12).

Table 12. Model works produced within the scope of Tecla city



4.Conclusions

The focal points of this research, provided in detail in the discussion section, are summarized below, along with some suggestions for students and instructors:

- Volumetric studies developed through written texts are formed by defining the concepts obtained from the physical possibilities of the city which is the subject of the story with the basic design principles.
- The form, color and texture of the concepts that students choose is substantial in terms of the management of the design process.
- The association of preferred objects with the design principles plays an active role in defining the data obtained from urban images.
- The definition of concept, volume and environment allows the spatial organization approaches to be included in the process.
- Within the given volume possibilities or limitations, concepts acquired from the written text and other selected fiction elements dedicated to these concepts set forth as three-dimensional product with factors like material, texture etc., allows students to experience design approaches at every level.

This work which is conducted within the Calvino's book Invisible Cities explains the process that first grade internal architecture and environmental design students to acquire data related to design process, to produce concepts subject to this data, to make design decisions related to produced concepts and the process related to setting these decisions forth as the outcome, over the decisions that the student made throughout the work. It is predicted that the assessment outcomes obtained at the end of the work will help student's in their other design focused lessons at a conceptual and theoretical level.

References

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A CRITICAL VIEW OF 20TH CENTURY ARCHITECTURE IN THE CONTEXT OF F. CHOAY'S IDEOLOGY

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Abstract

In the mid of the 20th century, Françoise Choay's book of L'Urbanisme Utopies et Réalitiés brought a new critical perspective to the architecture and urbanism. F. Choay's criticism mostly focused on CIAM's new architectural legislations which leading new problems in architecture. The book was published in 1933, by CIAM's prominent architect Le Corbusier, and it actually meant death of the cities [1]. According to F. Choay, Le Corbusier, defended "traces réguliers" (regular traces) in his new city plannings, signified death of the old cities not be "geometric" [4]. In the 1960's, CIAM approved new legislations to solve problems of increasing population and transportation of the cities planned with a regular, geometric system and standardization [4]. Though urban planning which was arranged with geometry meant hygiene [4] but, it also meant an intervention in the ancient city matrix. Even though, Le Corbusier defended that he was respectful to the historical cities [10] but, there had not been a conciliation between historical city and standart industrial planning in reality [12]. In the mid of the 20th century Le Corbusier first wanted to invade Paris city's streets with his repetetive buildings which planned with geometric order, but later his standart typologies would be circulate to all over the world by himself via multiplying. So that, Le Corbusier's Cité-radieuse (Radiant city) as a "unité d'habitation" (habitation unit) first planned for Marseille city later would be applicated in the other cities like : Nantes, Briey and Berlin [4]. Thus, F. Choay defined Le Corbusier's plannings as bulldozer architecture due to his repetetive planning method also could be destructive for old cities urban fabric [4]. According to F. Choay : he even adopted the same plan scheme replicated for each city in France, Japan, United States and North Africa [4] .

But, these prototype planning methods resembling each other which begun with individual architects like Le Corbusier in the mid of the 20th century have became increasingly common first with CIAM's standardization and later globalization towards the end of the century. In addition, similar and prototype architectural plans were began to circulate from Europe to United States later would be spread all over the world. Today, in the age of globalization, it's possible to see lots of similar architectural plannings in the world leading also identity problem of cities as a proof of F. Choay's criticism.

Key Words : F. Choay, The 20th century architecture, CIAM, Le Corbusier, standardization, globalization, urban identity.

1.Introduction

F. Choay's criticisms were opposed to CIAM due to its planning rules that brought architecture more monotonous and standart, repetitive methods which current cities confronted the problem of identity ignorant the history spreading all over the world. But in the mid of the 20th century also another phenomenon had influenced architecture and architectural planning this was the new globalization age in the 1950's. Thus, after the 1950's, due to new economical order, similar architectural plan schemes and "prototype" plannings would be spread all over the world.

1.1 Françoise Choay And Definition Of Her Ideology.

Françoise Choay's criticism was mostly based on planning methods in the 19-20th centuries such as ; Citte, Cerda, Le Corbusier, etc. towards the century. Thus, F. Choay's critics and proposals would be later influence some of planners via her new "model" which was developed as a new planning solutions in the early of the 20th century. F. Choay, defined her "model " :

"In my teaching, I start from texts that my students and I read, and then begin the long, perilous and stimulating work of interpretation and "criticism". For this anthology, it was to provide the reader with the demonstrative elements of my introduction. This one wanted to explain the theoretical foundations, the realizations and the errors of the town planning, and consequently could not do without an attempt to define, to classify, to interpret the various projects of city, the various

theological theories..... [14].

F. Choay defined a new matrix focusing her teories on urbanism [9]. This matrix was explained by F. Choay's book called l'Urbanisme Utopies Et Réalitiés (Urbanism, Utopia and Realism) based to two main models : the first model was "progressist" model and the second model was "culturalist" (historicists) model [9]. All these planning models of F. Choay, in fact, including a spatial indicator of the future of the cities which was almost used as a "constitution" in the 19th century architecture and urbanism developed for new arrangements of cities [9]. F. Choay explained these models :

"For pedagogical reasons, I have built three types of "models" - three families of thought, if you prefer - .... These categories are instrumental, they work "by and large", but they should not be systematize. And if the first two, the "culturalist" and the "progressive" are still relevant, the third, the "naturalist", who at the time included the approach of American architects and urban planners like Frank Lloyd Wright, does not correspond to what is usually understood by "naturalist", in art as in literature. You see why you have to" [14].

F. Choay's ideology based on mostly pragmatic planning solutions and ideas which were also defined with her book as "natural planning" [4]. F. Choay's planning method was explained by "realistic" architecture purpose of the ideological propositions in her book L'Urbanisme Utopies et Réalitiés [9]. This ideology was including a pragmatic reconciliation between old and new city matrix being respectful to existing, historical city. In the early 20th century, aside from the others, F. Choay's ideology underlined the idea of "realism" within a historical perspective "rule" and "model" [9]. On the second model in architecture and urbanism that preceded the "progressists of cities" was based on a model : the rules and practices developed by Thomas More and Alberti [9]. F. Choay described this method of planning using "progressist's" elementary geometry in a provocative and aggressive manner, according to the new values of the 20th century architecture : the mechanism, standardization, endurance and geometry [4]. But, even if she was against the standard architecture of the "progressist's" she stated that : the "rule" might not change any circumstances but, the "model" as a conclusion of the spatial arrangements was changable. This "model" explaining by F. Choay :

"The "model" is as a spatial arrangement that can be considered "ideal" and reproducible. The "typology" of housing, for example, comes under this concept. The rule, on the contrary, can not be repeated, it deals with each situation and finds appropriate solutions, not reproducible. I have the impression that the architect today becomes a kind of designer responsible for highlighting a brand, giving an image" [15].

Even though, F. Choay's "rule" refered to the conditions where the "buildings" replaced, the concept of "place" here was not considered the same meaning as Le Corbusier's architecture. In this case, the term "place" refers to where the buildings were located, but it could not be said that Le Corbusier had taken it very seriously. Nevertheless, Le Corbusier did not hesitate to apply the similar "typology" even resembling his previous plan schemes applicated same way in the different geography, and in different cities signifying F. Choay's "place". Even so, Le Corbusier applicated the same plan scheme almost everywhere in the world regardless of historical and geographical differences of "place".

2.1 CIAM And Le Corbusier's Architectural Plannings.

The analysis of F. Choay's books generally offers us a wide perspective on urbanism and architecture focused on the 20th century's CIAM and Le Corbusier. CIAM, was seen as a new movement in Europe and was mostly known for its innovative legislations and plannings of the prominent French architect Le Corbusier [4]. CIAM's innovative approach have also caused new problems in architecture with some drawbacks. Though, CIAM's new legislations wanted to solve problems in the cities F. Choay described in her book that Le Corbusier's modern architectural plannings let many problems for cities ranging from the city scale to the architectural scale in reality. As long as it fulfills its fonctions it was effective for planners would be adopt the same city plan [4].

However, towards the mid of the 20th century, cities focused problem of "transportation" and "traffic" instead of "human" in architectural planning during to nearly a century-long period. Thus, the "human" figure which had started to be the leading factor for 19th century's social utopians plannings lost its importance the beginning of the 20th century and so, cities became more "vehicle-oriented" rather than "human-oriented". This new planning tendency made cities more modern with new and broad vehicle roads designed with geometric system as a reflection to the 20th century's city and housing planning.

According to F. Choay : in the 1960's, CIAM approved another legislation due to the problem of increasing population and transportation of the cities which had to be solved a regular, geometric system and multi-storey planning [4]. In accordance to these new legislations, Le Corbusier defined his planning ideology with these words : "Le ville actuelle se meurt d'etre non geometrique" (The current city is dying for not being geometric)

[4]. Before the 20th century much more than the regularizing planners the pre-urbanists awere prepared to make a clean sweep of the past, and fort hem geometry meant truth as well as beauty ; the problem of circulation was simplified by general classification of other functions [6]. Thus, geometrically planned modern cities of 20th century focused on modern vehicle means using more geometry and standardization in plannings. As a leading architect of the 20th century CIAM, Le Corbusier's architectural planning was based on basic "geometry". Although, geometric and standard planning provided more facilities for the architecture, but it was also bringing some destructive problems especially to historical cities due to modern city requirements ; broad roads, squares and green areas. This uniform "geometry", which was used to plan multi-storey buildings in the historical city centers caused uneven and spontaneous excessive intervention in the historical cities which were formed over the years [4].

F. Choay's analysis on the works of Le Corbusier considered briefly with the title of original realism and uncertainty ; this conception of uncertainty could also explaine by the fact that the problematic between "urbanism" and "architecture" [5]. Le Corbusier who admittedly learned a great deal from the example of T. Garnier's projects saw in it "an attemp to establish order, combined utilitarian and plastic solutions the selections of essential volumes and spaces (designed) in accordance with practical neccessity and the demands of that poetic sense which was peliculiar to the architect" [6]. Moreover, Le Corbusier : considered man, his needs, tastes, and active inclinations in order to determine the conditions for the system of construction best adapted to his nature [6]. But all this planning system was still unable to abstract Le Corbusier's plans from the geometry of transportation in its main absence of "human" focus. Although this was thought contributive to cities to become more liveable, the fact that they were not human-centered, was seen as the main problem for new plannings in the modest-scale medieval cities of the past.

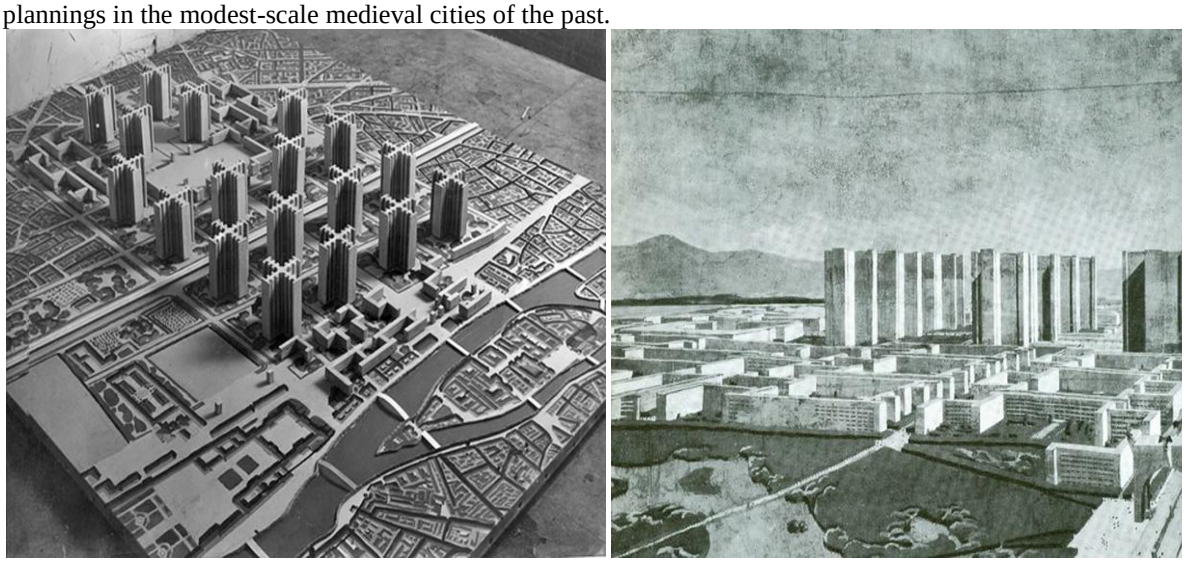

Fig. 1. (a) Plan Voisin, Paris, Le Corbusier. (b) La Cité-Radieuse, (Radiant city), Le Corbusier.

Thus, in general, Le Corbusier's works are known as a weakest link between urbanism and architecture effecting the old, historical parts of cities which had never been taken into consideration in the context of his "urbanism" [5]. According to F. Choay : this was the main problem of the design of Le Corbusier [5]. Also, Le Corbusier's identical planings for historical Paris city's 19th century urban fabric would only be a "reaménagement" (reorganization) but his repetetive method defended by "traces réguliers" (regular traces) was also emphasizing the end of the old city not be "geometric" [4]. A unitary rule distributed by Le Corbusier in all neighborhoods of the Paris city was the essential volumes and spaces according to pratical needs and puts them injuctions of a poetic sense peculiar to the art [4]. Thought, he was using Paris's old neighborhoods and quarters : Invalides, Notre Dame where connecting the old city to new one within the urban context but, actually he ignored Paris city's historical buildings as civil architecture and only used them as "picturesque" background decor of his new buildings [4].

2.2 The 20th Century Standardization And Le Corbusier's Planning Method In His Housing Plannings : Plan Voisin, La Cité- Radieuse, (Radiant city,) etc.

According to L. Benevolo, in the early the 20th century, modern urban design was launching the new implementetions and new paradigms through typically repeatable designs solutions [3]. All new developments in the mid of the 20th century which was started by CIAM beginning to express of "urbanism" as a new dialect

of functionalism. These basic elements of various functions were taken and the city has a typical and repruducible then were built upon legislations of CIAM [3]. According to F. Choay, similarity and identity problem of cities which had seen problematic due to repetitive architecture, but it was not a problem solely cause by the CIAM. In addition, some of the new developements in 20th century in architecture was thought actually originated from the 19th century .

In fact, as a underlined in F. Choay's book there were such planning method which had been attempted by the 19th century utopians before the CIAM. For example, based to hygiene principally : Le Corbusier's new projects were very similar to the 19th century "hygienist's" city "l'hygèia" having same urban typology [12]. In the 19th century, "hygienists" known mostly as "utopian" that influenced urban projects such as "l'Hygeia"; with its rational "rigidity". As a one of these utopians Etienne Cabet's pseudnymous Voyage en Icarie whose seriousness of intend, sufficiently attested by the author's repeated attemps to phy of the patial model 7].

Fig. 2. (a) Habitation Unit, Berlin, Le Corbusier. (b) Habitation Unit, Marseille, Le Corbusier.

There was no need to recall in detail how the mode, the metropolis of Icaria by whose replication Cabet hoped to transform and redeem society, combines features of Napoleonic Paris with a radical standardization of neighborhoods (differentiated only by their color), dwellings,and even furniture [7].

Le Courbusier's plannings were based on modern planning ideas used as natural phenomena such as the sun, bring to sunshine of green areas and parking spaces "as a compromise with nature" in Le Corbusier's projects [12]. Actually, Cité-radieuse (Radiant-city) for a global vision of society by the same token, the spatial model absorbs the social model elaborated in detail it bears – like More's *Amaurotum*- a proper name, Cité-radieuse (Radiant-city) [7]. It is given the same immediacy as More's city : "We have allotted the entire ground surface of the city to pedestrian……No pedestrian will ever meet an vehicle ever…..Sporting activities will take place directly outside houses……The city in entirely green. No one inhabitant occupies a room without sunlight….." [7]. Cité-radieuse (Radiant-city), immediately takes on more reality than Paris, of which it is the inverse image [7]. Although the plannings of Le Corbusier were inspired by the 19th century utopians, as a one of the repetition of them , it was also based on the 20th century CIAM's new legislations, especially geometry.

In fact, in the 19th century, hygiene was derived from basic needs of architectural order in utopians plannings. Also, 20th century CIAM's legislations and Le Corbusier's geometrical planning methods partly inherited from previous utopians methods. Actually, Le Corbusier's arranged architectural plannings such as in his "*Plan Voisin*" (neighbourhood planning) in Paris it was also planned with urban "hygiene" similar to utopians. Furthermore, Le Corbusier's well-planned geometrical plots and geometrical road networks based to CIAM's legislations were well proper to hygienic conditions. Eventhough , Le Corbusier's "plan voisin" (neighborhood plan) planned as a "rational city" proper to hygiene but, actually it brings an extreme intervention in the old urban fabric due to implementetions of its strict geometry. Likewise the Le Corbusier's another proposal to Paris Municipality was a new high rise buildings as a reconstruction of Paris city by new housing plannings [4]. But, Le Corbusier's this new proposal not approved by the Municipality of Paris City. Le Corbusier's this new housing model which was called "gratte-ciel" (skyscraper) also, found an intervention to the historical city centers like Paris considered to be threatening the old urban matrix due to its adaptation problems.

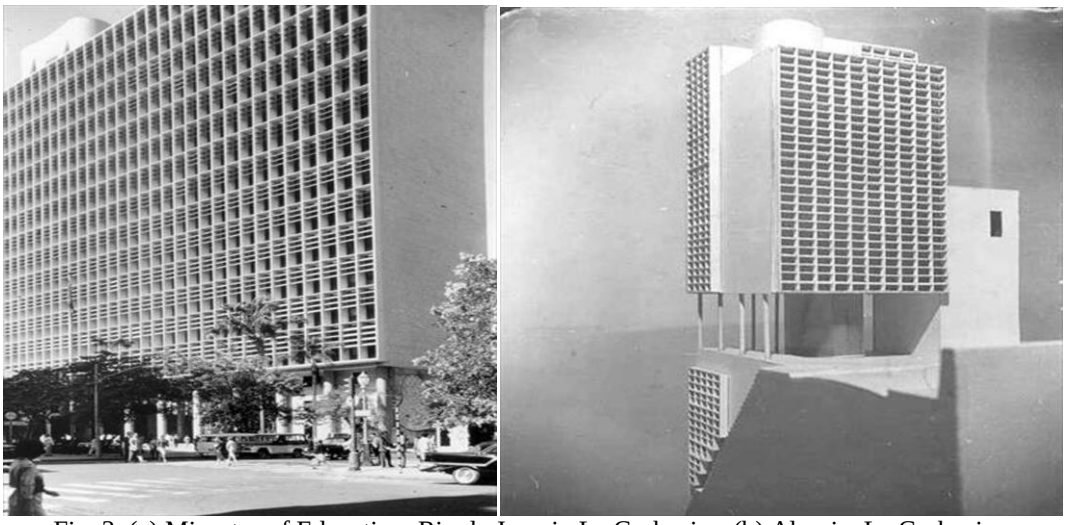

Fig. 3. (a) Minestry of Education, Rio de Janerio,Le Corbusier. (b) Algeria, Le Corbusier.

Thus, Le Corbusier's high blocks that would be applicate in the city center of Paris city was not found suitable. Le Corbusier wanted to realize his plannings first invading Paris city streets and than multiplying his buildings to all around the world having same typology. Likewise the his other plannings, Le Corbusier's "C*ité-Radieuse*" (Radiant City) had planned first in Marseille, city than replicated other European cities : Nantes, Briey, Berlin [4], accordance to CIAM's new legislation of standardization.

Due to Le Corbusier's remarkable plannings in the 20th century, F. Choay criticized him for his repetetive architectural plan schemes multiplying all the world. So that, going further ; F. Choay critics were about Le Corbusier against to his ideas with a different discour defined his plannings as "bulldozer" architecture [4] in her book L'Urbanisme Utopies et Réalitiés. F. Choay's expression of "bulldozer" referred to Le Courbusier's similar plannings almost all the world which were also let destructive appearance in the historical cities. According to F. Choay : city planners applicated same plan scheme for each city for France, Japan and even US, North Africa [4]. Especially, Le Corbusier who used same planning methods in architecture for all cities : same architectural plan scheme in Rio de Janerio, (Brazil) and also similar for Algeria [4]. Although defined as "modern" but this new approach of architecture which had begun mid of the 20th centuries later would be let city's identity problem after the 1950's. According to F. Choay

"My criticism of Le Corbusier has been affirmed over the years, as I analyzed his texts and visited his creations. In fact, he is a somewhat frustrated and naive, intellectually, but with a real pen talent. These texts are all manifestos, lively, carried away, provocative, with excesses, formulas that make "tilt", we read them without indifference. This is certain. But the content, at bottom, is quite primary, mired in the air of time. Le Corbusier fires all the woods, he loots without citing his sources, intermingling lyricism with the most exacerbated rationalism. But his message is hardly original. As for its architecture, it depends on its agency heads: there is a period Pierre Jeanneret, another Iannis Xenakis, etc., which again poses the status of work and that of author in architecture. The real Le Corbusier is certainly buried in this jumble, but we can not accept the anthropological presuppositions of his approach. The theory of needs to which he implicitly refers is questionable, as is his understanding of the technical issue. It is extraordinary that someone who thought about the avant-garde did not perceive what was happening in the heart of the cities. The Radiant City, which he imagines in 1935, is already behind the expectations of the towns people and the development of the economy and technological innovations. Let's not forget that he was fascinated by the technique, but he had trouble understanding it. Prouvé told me how pathetic it was to see him unraveling with calculations, with new construction methods ... Giovannoni, an engineer, criticized Le Corbusier as "anachronistic". You see how much we have to balance things! Le Corbusier is scientist but without a solid technical culture, he is in "his time" without succeeding in clearing its potentialities. This is why the Tourette is so little "functional", so little "rational", and that beside that he imagines precisely The Radiant City" [14].

3.1 After The 1950's Globalization Age and Architectural Examples and Applications Today.

In the mid of the 20th century, discipline of architecture and urbanism were seen as a reflection of the ideological and intellectual debates in the background of physical city and urban development, as a center of "human" and "housing" problems . This was perhaps a reaction having a critical view likewise the F. Choay to the progressions in the 20th century architecture and urbanism as a legislation of the CIAM and its doctrines brought to modern architecture which actually caused more problem in the cities focusing on "vehicle" instead of "human". In fact, the modern planning doctrines of the 20th century were creating more chaos kept cities from being more liveable places.

From the beginning of the 20th century, new developments of traffic and transportation made cities more accessible. Thus, from the beginning of the 20th century train stations, tamways, shopping malls, museums, theaters, zoos as replaced similarly to the different cities [13] so, London, Vienna and Berlin became similar cities. Also, later, in the mid of the 20th century, prototype planning which had been emerged as a necessity for CIAM's standardization circulated throughout the world due to new legislations. CIAM's standartization also made architectural plans more producible and more accessible which had been realized as a unique plan for unique cities before circulated all over the world. Architectural planning tradition has become more common in the globalization age taking inspiration from the past. Even though, Le Corbusier applied similar plan typologies inspired by the 19th century utopians, but the problem of the application of similar plan typologies actually had begun with Versailles Palace plan scheme had been dated to very early times. So, the problem of multiplying similar plan typologies increased with standardization in the mid of the 20th century and later have became more common with the today globalization.

After the 1945-50's, liberal policies rapidly had gained importance which have been affected to urban planning and architectural studies spread all over the world [11]. Moreover, after the 1960s, there was a new problem for architecture and urbanism that have threatened especially the historical cities. This was the globalization age from 1960's and now has became a problem of via spreading repetetive planning in architecture all the world. Also this situation have caused another problem known as cities identity have begun to be questioned again gradually.

Thus, the globalization age as a part of the liberal economies that had spread in the world first emerged as a necessity of the financial world and began to affect disciplines such as urbanism and architecture under the domination of the liberal approach of construction activities whole world. Moreover, at the same time, liberalism would be supported by a sense of flexibility and individuality in the business world [2].

Even though, from the 19th century to the 20th century some European countries such as France still continued to follow same social ideas in the 1950's having had long time tradition of social planning policies. But countries such as Turkey, have confronted a breaking point due to changing political conditions from social policies to liberal policies with new liberal economy [8]. As a result of new liberal policies architectural construction market was heavily affected this situation and have changed with political conditions increasing in private enterprises in which the liberal economy was active in the construction market, and later construction companies -also related to architecture- completely would let to private sector [8]. But, in this case uncontrolled architectural and construction works would be realize by mostly individual enterprises in the countries such as Turkey.

20th century's liberal economies would be affected the planning policies in Turkey, especially of Istanbul city. But, years of the 1930- 1950's are mostly known as a period which changed political system from social policies to more liberal way. Also, a French architect H. Prost who was in Turkey in the years between 1935-1950's had to realize some residential plannings due to changing political conditions under the liberal policies [9]. hought coming from the traditional French social planning H. Prost did not follow CIAM's legislations, showing more closer approach to F. Choay's ideology. Although H. Prost who had adopted social policies before coming to Turkey he had to preferred planning with liberal policies even, using some of the Le Corbusier's planning methods instead of social French housing planning where the social policies were dominant [9]. In this case, new housing plan typologies in Turkey would be adopted from European cities ; London, Paris, Berlin where the originallly imported.

Furthermore, from the 1950's to the present day, the effects of globalization age have increased in Europe [2] . Thus, with the globalization age in the financial market, had been combined with the advancement of information technology which also has caused unprecedented capital mobility in the world. Thus, today, with the advancement in information technology, the trend of standardization that had begun in the 1950's has started with prototype planning in architecture with an unprecedented manner. So, architectural plan schemes were possibly easily to implement elsewhere in the world with the problem of repetetive planning caused to cities identity which had first emerged with industrialization in European cities and later have spread all over the world.

However, first industrialization in the 19th century and later CIAM's standardization in the mid of the 20th century in architecture have confronted problem of anology in production of architectural plan schemes via multiplying. European architecture which had been affected the nearly entire world before mid of the 20th century and later 1960's the new cities have gained importancy in the world would be new production centers

of the new architectural plannings. CIAM's typical applications of standardization and prototype planning spread all over the world pioneering of the innovative architects like Le Corbusier, but, after the 1960's it would be also more common attitude all over the world. However, in the early periods in this process some architects had tried to produce original plannings reflecting original features and historical characteristics of their own countries but, later this plannings quality has became increasingly decrease.

Thus, in the mid of the 20th century, European cities such as Paris, London where applicated repetetive architectural planning methods and became resembling to each other but, after the 1950's toward the end of the century, New York, Barcelona, London, Rio de Jenario, Istanbul and Dubai have become similar cities with inevitable analogy of epidemic plannings in architecture. So, since, European and American cities ; London, Paris, had been models for new modern cities until the mid 20th century but, later towards the end of the 20th century, cities like Dubai, Singapore, Shanghay have become new centers of for new architectural model.

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THE IMPACTS OF THE BUILDING AND STREET INTERFACE RELATIONSHIP ON URBAN SPACE QUALITY

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Abstract
From past to present, architecture has emerged in every era not only as an isolated building but also as an element which belongs to the city. Architectural buildings, together with the street interfaces within which they are located, have been one of the most important factors that both creates the city and gives it its identity. Urban spaces loose their identities due to several reasons such as the inadequacy of architectural buildings in terms of their designs, their inappropriateness to the existing identity and character of the city etc. This, in turn, reduces the urban quality and influences the urban life quality.
Therefore, the concepts such as architectural design and urban space design, environment-human interaction, the formal structuring of the city and urban space quality are often come across both in contemporary architecture literature and in every aspect of our daily lives. Also, the recent improvement efforts of urban space quality becomes more and more important.
The aim of this study is to determine the constitutive role which the deficient and/or complementary aspects of architectural buildings play in street interface formation, then to define the building-street interface relationship in terms this role and to reveal the impacts of this relationship on the formation of urban space quality.
Street interface; it is the space defined by the interface which occures between the building and the urban space demarcated by that building. The street interface which is volumetric as well as being planary plays an important role in the relationships which are both between the building and the city and between the building and urbanites. The architectural design elements in street interface have an influence on both the pedestrians's perception of space and their experiencing the city by enriching the pedestrian space and its surroundings visually through their form and facade arrangements. These elements also allow the urbanites to establish a relationship with their urban space and its surroundings.
A well-designed interface is directly connected to architectural building design. The purpose of street interface design is to construct urban spaces which are both of "good quality" and compatible with the authenticity and diversity of space. Thus, both the physical quality of urban spaces increases and the urbanites are provided a high quality of life. The perception of space in urban scale is provided as well as in building scale.
As it is understood, the architectural design applications manifest themselves as an element not only belongs to a single, isolated building, but also to the city itself. Hence, all the related problems, solutions and suggestions should be considered in a holistic manner.
Finally, within this study, the holistic relationship between the architectural building, street interface and urban space will be emphasized, also it is attempted to offer some suggestions which reinforce this relationship and increase its impacts positively on urban space quality.

Key Words: Architectural building design; Street interface; Urban spaces; Urban space quality; Building-street interface relationship

1.Introduction

As globalization intensifies, its problems become apparent foremost in urban spaces. Functional and aesthetic defects in the physical structures of cities lead to the degradation of urban integrity, identity and quality. In this process urban design approaches change rapidly and new approaches to the recreation and reproduction of the existing urban fabric has emerged. Concordantly, efforts to improve the quality of urban interfaces, where relationship between architecture and the city is directly observed, and of urban spaces have gained importance.

Harmony between design elements that make up urban spaces is the most important component of the design process. Decisions that apply to the buildings in a certain urban area must include rules and limitations on both the surrounding buildings and the city as a whole. The formation of architecture in terms of size and scale determines the character of the street interface. The problem of ensuring spatial unity with the city can be solved with interface designs that are created with a holistic approach to the planning-design relationship. The result, then, is livable and high quality urban-public spaces.

In order to talk about the quality of urban space, it is necessary to understand the concept of urban interface, which reveals the identity of the city, and the concept of street interface, which is the main subject of this study. Additionally, it is important to be aware of the primary role of the integral relationship between architectural structure, street interface and urban space in the formation of urban identity and quality.

2.Urban Interfaces-Street Interfaces

There are interfaces between nature and city, masses and voids, spaces and meaning, activities and form [1]. Interfaces are the transition zones between architectural forms that determine the way we read the urban fabric, and urban public spaces that provide a visual and functional inside-outside connections between public open spaces and private closed spaces [2]. Urban interfaces are semi-public and/or semi-private spaces, in the context of the transition between the two [3].

As the outer surfaces of urban spaces and the perimeters of the built environment that reflects from the inside to the outside at the same time, urban interfaces provide the visual and functional connections between nature and city, private and public, inside and outside, positive (mass) and negative (void), urbanism and architecture [4]. The urban interface play a determining role for the entire design.

It is necessary to mention street interfaces as part of the concept of urban interface. Street interfaces are spaces that are defined by the surfaces between buildings and the urban spaces that they define. They are associated with urban interfaces in terms of their formation and impact on the city.

The architectural and aesthetic elements of urban/street interfaces visually enrich the pedestrian spaces that they define with the various forms and facade arrangements they contain, and thus affect the spatial perceptions and urban experiences of the pedestrians, making urban spaces more attractive and allowing citizens to establish strong bonds with the street and surroundings they are in [5].

Interfaces contain vertical and horizontal elements. Horizontal elements include the ground plane that determines the relative locations of buildings, the compositions of building blocks and the borders, and outdoor spaces that contain the volume between buildings. Vertical elements on the other hand include the series of architectural facades and the views that are in the vertical cross section of the building [4]. Many factors, such as the impact or the formation of the interface within the city, result from the vertical and horizontal elements of the interface.

3.The Relationship Between the Building and the Street Interface

Theorists and scholars of architecture and urbanism agree that modern cities fail to achieve the aesthetic quality of older ones [6].

Identity characteristics of a city, including aesthetics, is legible through all urban spaces, especially on streets. Primary elements that form the urban fabric, streets are relatively narrow linear spaces that are defined by buildings and are used for vehicle and pedestrian circulation as well as other activities [7].Making cities appreciable and playing an important role in defining the character of a city, streets reflect the architectural aesthetic character of the city and play an active role in the formation of urban image [8].Streets gain identity and form with the coexistence, characteristics and functions of architectural structures within their urban locations.

In “Townscape”, Gordon Cullen [9][4] mentions that, although a single building can be experienced as an architectural product, a group of buildings together constitute a separate art form that can achieve something that architecture alone cannot. This art form designs the network that provides masses, voids and communications between them within the urban structure.

Urban design efforts usually focus on masses. Masses are formed by groups of architectural structures. Streets are given interfaces as a result of the assembly of the masses and the voids between the buildings.

The features that establish the building-street interface relationships are “usage features” and “formal features.” Gehl [10], emphasizes that the diversity of uses in the interface has a positive impact on the use of the space it defines, and states that the variety of uses the interface contains attract people to that space, influencing the vital activities in the pedestrian space.

4.Quality of Urban Space

In a globalizing and rapidly changing world, quality is the primary issue to be addressed in any discipline that affects people.

Regardless of the discipline, quality is related to the capacity of a product to solve problems and provide physical, social, etc. needs. Urban quality, then, depends on the provision of vital needs and comfort in urban spaces. Since the concept of quality is multidimensional, in the context of urban quality it is not merely related to the functionality of urban space and it needs to include definitive characteristics [11].

Urban space is where relationships are established between buildings and other urban elements. It is a city’s means of integrating with its users.

Madanipour [12] defines urban space as “a place that is physical and accessible by everyone.”

According to Lefebvre [13], space is both a product of society and a mechanism that constantly transforms it. Lefebvre's trilogy of "perceived/physical space," "conceived space" and "lived space" can be utilized to explain different layers of a place [14].

Providing urban quality requires that all of the socio-economic, cultural, physical etc. components that cities and urban spaces necessitate, meet the highest urban, spatial, visual and vital quality standards. Any intervention that considers all dimensions of urban space will be a means to create livable and high-quality spaces.

5.Quality of Urban Space and Street Interface

Changing necessities of our times lead to changes in urban spaces as well as in the lives of citizens, and therefore in urban/street interfaces. The building-size-design mentality is changing. Areas where changes in architectural structures and facades can be observed by an individual are the outer surfaces of urban spaces, which are the street interfaces that constitute the border of architecture.

Outer surfaces as a means of aesthetic expression are influential on the individual who establishes a direct visual relationship with them.

Individuals who are in interrelations with the environments that they live in consider themselves as part of that environment and wish to integrate with it. The complexity of the built environment makes this integration difficult. It imposes various pressures on individuals and has negative impact on social life. This complexity manifests itself in the built environment in the form of negative facade relations. Facades affect the society with the symbolic characteristics they carry [1]. Today it is difficult to talk about an architectural language in facades. As a result, we come across building-facade combinations in the street interface that have not developed a shared language.

As the outer surfaces of architectural structures, facades are concretized with their spatial expressions. Architectural symbols are influential on the entire society through facades. As a physical component of the urban structure, interfaces are born within the framework of a series of factors as well as social values in different time frames, and they have continuity due to the repetition of architectural units. Happiness of individuals in a built environment depends on the unity of the physical elements around them, offering diversity without creating chaos [1].

Urban quality can be achieved through appropriate urban design. Increasing, creating or maintaining the quality of spaces, where people live and which are shaped by their lives, affects all layers of urban life. The more perceivable, legible and integrative an urban space is, the more satisfying it is in terms of quality of life and space [11].

Lynch [15] underlined five main environmental criteria for ensuring quality of space and obtaining a good urban structure: Vitality (healthy environment), Sense (of space or identity), Fit (adaptability of a place), Access (to people, actions, resources, spaces, information), and Control (responsible control over the environment).

These criteria also apply to the formation of healthy, high-quality interfaces that can be found within the urban whole.

Horizontally and vertically, visual and physical accessibility is essential for street interfaces. The visual and functional quality of the ground floor facades, which are the location of the pedestrians first visual contact with a building, will improve the quality of urban space since the uses created by the space constitute the quality of urban space that the interface affects.

Street Interface Design in the Context of Urban Quality

Areas where changes in architectural structures and facades can be observed by an individual are the outer surfaces of urban spaces, which are street interfaces that constitute the border of architecture. Therefore, the basic elements that determine the quality of street interfaces are the mass compositions of buildings in the horizontal plane and the facade features in the vertical plane.

- For spatial quality in street interfaces, the design should not be limited to a single building and address groups of structures such as building blocks or streets, and be integrated with the surroundings.
- Harmonious relations much be established between architectural elements within a street structure (material, color, size, etc.).
- Closure level must be appropriate in order for the interface to create a sense of safety for the individuals. The height of the elements, their positioning and closed corners would reinforce closure and determine soft and hard spaces [16].
- Spatial continuity must be provided in a high-quality interface. The series of spaces perceived during movement should be offered to the observer in continuity and a hierarchical order [17].
- The facades that constitute the border between buildings and outdoor spaces are the vertical components of "interfaces" in the space between buildings [2]. As the borders of interfaces, facades are considered to be surfaces where architectural space and urban space encounter [18]. This is why facade analysis must be included in the design process.

- For a high-quality interface, architectural details that will reduce the scale to the pedestrian scale must be utilized, such as divisions, indentations and protrusions, and changes in the height of walls [6].
- In terms of the horizontal components of interfaces, qualitative characteristics of architectural structures must be identified and interfaces should be designed accordingly. Scales, proportions and heights of buildings and distances between them must be determined.
- Design approaches should reinforce the interface socially. Solutions to vitalize urban interfaces should be suggested, such as placing shops, restaurants and recreational activities at the ground level. Shop windows should be sufficiently lit outside of working hours. This will encourage window shopping and strolling on the streets, preventing interfaces from becoming desolate after working hours [19]

6. Conclusion and Comments

Degradation of the visual value of urban environments is a serious problem in our times. In order to appropriately create an interface system, the priority is to accurately identify the interface characteristics that develop according to the existing building data. It is found to be necessary to analyze architectural typologies in arranging interfaces.

The position of the building in the interface, the meaning it adds to the identity of the interface, gains meaning directly in the aesthetic and vital area of the user. Considered in the context of urban quality, this affects spatial quality and the quality of urban life directly. For street interfaces with high urban space quality, typological definitions that identify interface characteristics is important in the design process. The right definitions lead to the right spaces.

Development plans, which are the primary regulators of development and urban settlement, physically and spatially define cities and determine interfaces. This then creates environments that are homogenous. This is why design efforts must consider impacts on urban space rather than focusing merely on a single plot.

Interface arrangements must have well defined targets. These targets can include sustainability, socialization, identity, image and legibility, accessibility, visual effect-aesthetics, sense of belonging, safety and comfort, functionality, etc. To achieve these targets it is necessary to create defined spaces, providing unity within diversity, creating visual interest and balancing function and form. To achieve all these requires analyzing interfaces within a system.

The purpose of street interface design is to create “high-quality” urban spaces that are harmonious with the urban identity and provide spatial freedom and diversity. This means high physical quality in urban spaces and a high quality of life for the citizens.

In conclusion, the main purpose of increasing the quality of urban space should be “creating street interfaces that have well defined targets, that offer human-scale living spaces, that have continuity with qualitatively and quantitatively satisfying architectural designs and that provide high-quality spaces to the users.” Upper-lower scale relations must be appropriately established and an interdisciplinary working environment must be established to achieve this. Multidimensional analyses must be conducted for each design element that will be added to the interface or changed, and the process should be continued according to the results.

Visual quality of urban spaces is directly proportional with the livability of the space. As it is understood, the qualitative and quantitative characteristics of architectural structures, which are one of the main elements of the visual environment in urban spaces, are reflected to the street interfaces and the effects of this reflection plays a role in the formation of urban quality. Therefore, interfaces must be appropriately created and must serve livable urban spaces.

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ENERGY EFFICIENT DESIGN APPROACH IN ARCHITECTURAL DESIGN EDUCATION

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Abstract

Much of the electricity generated by fossil fuels and by processes that seriously harm the ecological system, is consumed by the construction industry. Today, the amount of electric energy needed to extract and process raw materials used in building construction, the production of building components in factories, the transportation of building materials, the assembly of these components, the use of the building to fulfill various services throughout its lifetime and the completion of its life, is approaching to the 40% of the energy generated from fossil fuels. Nowadays, architects are increasingly becoming aware that their decisions have a vital impact on ecological systems and human beings. It is very clear that planning and design approaches need to be revised so that the building production processes can be sustainable. However, it is not wrong to say that the architects today are being influenced by the experiences they get when they are introduced into their professional lives rather than during their education processes. It can be said that the most current problem of contemporary architectural education processes is to give architectural students a perspective on sustainable architecture and energy efficient building design principles in the architectural design process and give them the ability to design using these principles. For this reason, when we look at the curriculums of the architecture schools of the developed countries on the world, we see that many instructors have started to include in various related contents to their courses for this purpose. In terms of sustainability, today's most significant and most important architectural design education trend is the adaptation of environmentally oriented design, and energy efficient building concepts to the architectural school curricula. Naturally, architecture schools of industrial and economically developed countries are leading this area, and architecture schools in less developed countries, following their trends, are trying to more and more include similar courses to their curricula. This study aims to focus on sustainable architectural design, energy efficient building design and environmentally oriented architectural design teachings in curriculums of some of the world's leading architectural schools and to make a proposal for how this trend can reach to the curricula of architectural schools that have not yet deepened in this field.

Keywords: Architectural design education, sustainable architectural design, energy efficient building, environmentally oriented architectural design

1. Introductıon.

As the world is heading towards a major energy crisis, our energy needs are increasing by about 5% each year. (1) In the near future, with the fact that vehicles will also be using electric motors increasingly, the need for electric energy is likely to increase as a result. Fossil fuels that meet four fifths of today's energy requirements have destroyed the ecosphere in a way that is irreversible and initiated a process of environmental disasters that caused climate change, perhaps no longer possible to reverse. It is evident that especially in developed countries, architects and some other occupational groups that guide the building industry are likely to play an important role in the efforts to reduce energy requirements of buildings which cause nearly half of the energy consumption.

One of the most important elements determining the development levels of societies is the success of the mutual relationship they have established with the natural environment system and the sustainability of this relationship. People of today have exhausted their own, and have come to the verge of depleting the resources of future generations, and the biological systems that will spawn those resources, either by over-consumption or by destroying them completely. One of the most pressing elements that triggers this distorted process is the ever-increasing energy demand. It is clear that what a significant meaning this problem and its solution bear or should bear for architects as professionals who have designed and built buildings which are one of the factors that

indirectly cause the problem to arise. The fact that nearly half of the energy generated in developed countries is consumed by buildings, forces architects to take an active role in solving this problem as well. In this case, the vital role the architects undertake encumbers them a responsibility far beyond the consciousness, sensitivity and attitude that an ordinary world citizen should possess.

In the past decade, the irreversible damage on the ecological system, the natural environmental disasters that have never been seen before in our world, the regional thinning of the ozone layer, and the melting of the sea and land glaciers caused by the constant increase in average temperatures due to the release of greenhouse gases have forced the humanity to develop extraordinary behaviors. However, efforts to produce electricity from fossil fuels are responsible from the vast majority of greenhouse gases.

In the United States, which has a gigantic industry and a massive production capacity, not the industry but the electricity production processes are responsible for about 39% of total carbon dioxide emissions released to the ecosphere. (2) Conversion of existing production systems instantaneously is not economically feasible, but the whole world is more and more trying to supply increasingly larger share of the energy it consumes from renewable sources. Now, for an architect, it is inevitable to mention the existence of new criteria, apart from the known planning, designing and evaluation criteria, which are based on millennia ago. One of these criteria is the reduction of the damage to the environmental system caused by the by-products of the production processes of electrical energy, which is obtained from almost completely from non-renewable sources, that is required for the existence and service of the building, to the lowest possible level, and to design with the universal aim to reduce the amount of energy required by a building from the day it was built until its demolition and its transformation.

In order to be able to realize this, the building must use as little energy as possible from non-renewable energy sources, that is obtained from fossil fuels and radioactive elements, instead it has to reduce its energy requirement to the lowest possible levels by resorting to natural routes, or if it is possible, even to produce some or all of the energy it consumes from renewable sources. One of the most important elements that will make this approach widely accepted is the fact that the amount of energy we are using per person is constantly increasing and energy is becoming more and more expensive. Despite the fact that in our world more and more renewable energy-generating plants are built increasingly and especially the developed countries are aiming to meet a significant amount of their energy needs, such as 20% -30% of electricity from wind in the past two decades, the fact that the increase in energy costs is inevitable even with new systems, demonstrates that the ability to produce some or all of their own energy will give buildings great material advantages. The energy plans of the United States foresee that by 2030, 20% of the total energy to be generated will be from wind. (3) The world-wide goal on the other hand, is to achieve 30-35% of energy production through the use of renewable resources. (4) In other respects, the European Community also intends to produce a significant portion of its energy needs from renewable sources. The European Commission, according to a decision it has taken, aims to increase the amount of energy generated from renewable sources to reach 34% of the total production by 2020. (5) By 2020, the Union aims to obtain 180 GW of electricity in Europe solely from wind, which will prevent the release of 328 million tons of carbon dioxide to the ecosphere, that is equivalent to about 76% of emissions of vehicles emitting large quantities of carbon dioxide operating by using fossil fuels. (6)

However, another problem is that energy from renewable sources is 50% more expensive. The electrical energy requirements of buildings are rapidly increasing in parallel with their growing dimensions. More and more buildings are being built vertically. In the past decade, the field of architecture discipline has been the scene of unprecedented experiences. The idea at the root of these experiences is to be able to design and construct structures that can produce a portion of the energy they use, or with the help of various natural methods, that can reduce the amount of energy they need to the lowest, or even have these two qualities together. Additionally, another tendency is that the search for how a settlement, or a building, can be carried out, which will exist in harmony with nature and exist without damage to the environmental system, becomes more important and widespread. The production of housing structures is responsible from the consumption of 1/6 of the world's fresh water supplies, 1/4 of trees that are cut down, and 2/5 of the fossil fuels and equipment produced. (7) These extraordinary numbers, which are inevitable not to affect the life balance of a planet as a whole, are in fact helping us to understand what a vital contribution our profession may offer in terms of protecting the equilibrium state of the ecological system of our planet.

2. Sustainable building thinking and mistakes made

The work of the pioneers carried out at the dawn of this thinking conduced to the emergence of entirely benevolent and humane examples. The first examples are for residential purposes, often using natural materials that are easily accessible to them, or disused, unused materials reserved for recycling as building materials. Making attributions to the traditional buildings, and exploiting already known solutions, are among the common phenomena. However, the problem arises when a highly humane and supreme idea, such as sustainability, is applied to the higher buildings in the big city centers of developed countries. Today, we can come across a number of building examples claiming to be built with sustainable architectural design in the world, and that they inflict less damage to the environmental system compared to the common architectural examples, or even

that they produce some of their own water and electricity from renewable sources. Some of these buildings even go further and have the equipment to clean the air they receive from the place where they are located and give it to back the space outside.

With their billions of dollars in costs, are these buildings, which utilize the latest blessings of technology and which use the most advanced industrial building materials, engineering products, are these models introduced to us architects, architecture students, and end-users as examples of sustainable construction efforts of human beings really successful? If we erect buildings taking these buildings, which generously consume the resources of our world, as examples, will this be considered a sustainable building production activity? It is easy to divert the thoughts of end-users in this regard. What they care about is the comfort and security that the building offers to them, as well as the economic success of the investment they made. To understand realities, it is necessary to determine how much of this electricity that these buildings are using is derived from fossil fuels. A significant portion of processed or semi-processed materials to be used in the construction of these buildings are extracted from mines. In this process, serious amounts of fossil fuels are used directly, or electricity generated from fossil fuels is consumed. Moving this raw material to the factory to be processed causes additional energy consumption. In factories, converting raw materials into building components or building materials also requires energy. Moving all these materials and components to the building site area and bringing them together requires a great deal of more energy. The same is true for the mechanical, electrical and electronic equipment to be used in the building. Many systems of the building that will serve for a lifetime, such as high-speed elevators, very powerful pumps that pump plaster hundreds of meters high using extraordinary pressure, heating-cooling, filtering, ventilation, fire extinguishing, lighting and waste discharging systems, all need enormous amounts of energy compared to low-rise buildings. Even indoor lighting requirements cause very serious electricity consumption. Besides, regular maintenance of these expensive systems in the building is also required. When the building's life is over, its demolition and recycling of its building components also require a significant amount of energy consumption. It is clearly evident that this form of construction is not at all sustainable when considering the amount of electrical energy processes that produce energy for the building to be used in all stages of its life, which is produced by using fossil fuels and which results in great damage to the environmental system.

3. Global mistakes

The problem of the planet is urbanization and industrialization. Efforts to meet the cheap labor required by the industry from the population living in rural areas forced the rural inhabitants to migrate to the city, especially in the underdeveloped and developing countries, who lived in villages where small-scale agricultural production is made in the rural, and who inhabited in traditional dwellings where the building materials used for construction were obtained from natural materials present in the vicinity. These people (many of whom can be expressed in hundreds of millions around the world) who obtained many of their needs such as heating, cooling, ventilation, daytime lighting in traditional houses with using lowest electric energy possible, are forced to live in poor quality shelters at the peripheries of urban areas which demanded consuming much more energy than before and which were constructed with building materials that are produced in the processes in which electricity is used. The irremediable increase of the urban population, these people who were agricultural producers in the past being consumers now, and the increase in food prices depending on many influences is a big problem for the world. As a result, these people are somehow included in the economy of that city, and cause the overgrowth of city centers and the excessive increase of the value of the land and buildings in the city.

Today, human civilization is doing exactly the opposite of what it has to do in order to be able to sustain itself. At the HABITAT II conference held in Istanbul in 1996, this issue was seriously addressed. The earth must be used much more carefully by human communities, the size of settlements must be reduced where their numbers are increased, people must be living in these settlements where they are in touch with the nature and they rehabilitate the nature and where the develop a true sustainable life, production and accommodation formations. Only the efforts of architects are not enough for real sustainable settlement. For this, population growth should be prevented, and the gathering of the world population in cities should be ended. In a world of ten billion people, if the population of the city is about nine billion, it is impossible to talk about a sustainable settlement.

4. Architectural education and sustainability

It is an inevitable necessity that the concept of sustainability in the real sense be included in architecture education. The fact that the solutions offered by the industry in response to the concept of sustainability and energy efficient building are not so convincing today has resulted in curriculum planners and trainers being distant from these solutions, especially in underdeveloped and developing countries. However, when the architectural traditions of these so-called underdeveloped and developing countries are scrutinized, it is already observed that all of them are very successful, especially in terms of sustainability and energy efficient building design approaches with their traditional building designs. On the other hand, we see that developed countries using these new concepts for creating an industry for themselves, and to grow their own economies, have broken

away from their traditional solutions much earlier. In this case, the most critical decision for architectural education institutions in developed countries is the necessity to determine if the teachings they would include in their curriculum should be shaped by national and global market realities, or if the teachings that would be included in their curriculum would address how architectural design can be made so that they are realized without actually harming the ecosystem or even being part of rehabilitation of the ecosystem in the singular building scale. But this is never a problem that can only circumvented by the architectural profession. The process required to solve this problem should function as follows:

- Right planning decisions to be made at the world scale (coming to an agreement is very difficult)
- Right planning decisions to be made at country scale (easier to implement)
- Right models of settlements produced by urban planners (updating in the education model)
- Right building projects produced by architects (right updating in the education model)

Common characteristics of leading educational institutions are the speedy implementation to their curriculum and their course content to match current needs. However, this does not always mean that the right thing is being done. In the underdeveloped and developing countries, it can be observed that while the trends of professional global architectural environment are imitated at a certain rate and while the market update is a fact, architectural education institutions are not adapting at the same pace to these phenomena. In these countries, concerns about the design of sustainability and energy-efficient architecture are embedded in the architecture education with the efforts of the teaching staff, rather than being an institutional decision. In developed countries, from the middle of the last century, the definition of architectural profession has now begun to be based on technology and a new, global approaches that is almost entirely independent of local elements. A bigger problem than the disappearance of local identity is the disappearance of local passive energy-efficient architectural solutions.

5. Examination of curriculums of architectural schools in developed countries

Today, some institutions take traditional trends such as Bauhaus, the Ecole des Beaux Arts as a base to their educational systems, and they create their programs by interpreting them according to current conditions. The main principle in leading architectural education institutions is to make training programs dynamic and flexible to meet the needs of the day, and to prepare their graduates for professional life, equipped with the requirements of the current architectural environment. In this context, the group of classes that takes up subjects that are directly connected to the technology and current developments, and topics that constitute the technical substructure of architecture as well as the studio lessons, where all the information obtained in the training process are put together are of great importance. Teachings are consisted of the following main components:

- Architectural design studios
- Construction technologies courses
- History and theory of architecture courses
- Building and environmental control courses
- Urban design and development law courses
- Construction management and vocational practice courses
- Graphic communication and presentation techniques courses
- Conservation and restoration courses

An examination of the curricula of architecture schools in developed countries and the content of the courses in these curricula was made on the information contained in the official websites of these schools. In this context, the following numerical values have been reached using schools which supplied sufficient information about course contents in their official sites. Undoubtedly, these numerical values are not claimed to be absolutely correct. However, the contents of the curricula of sufficient number of schools have been reached in order to be able to make a judgment. When the contents of these courses are examined, it can be seen that subjects in which the theme of sustainability and energy efficient design do not take place at all are 56-59% of the curriculum. The contribution to the sustainability and energy efficient design of history and theory of architecture courses is about 3-5%, construction technologies courses 5-7%, building and environmental control courses 3-10%, construction management and vocational practice courses 1-2%, urban design and development law courses 1-3%, department elective courses 1-6%, and design courses is about 18-24%. However, when the example projects are examined, we see that a significant proportion of them use expensive, and irreversible materials not to be underestimated, and buildings that are often expensive to produce as energy-efficient buildings and that require active systems to be built into buildings where they result in large quantities of energy waste. When underdeveloped and developing countries are examined, it is seen that classes that do not involve the theme of sustainability and energy-efficient design constitute 80-95% of the curriculum. When it comes to architectural

design lessons in terms of sustainability and energy-efficient design, this ratio is between 5 and 10%, and in other courses it is also lower than the average of developed countries; it can be seen that these themes in some schools' programs can fall to even 1% or not exist at all.

6. Conclusion

In the field of sustainability and energy-efficient building production, the country-wide planning decisions have the highest level of determinism. Planners have to make decisions that stop migration from rural to urban areas and that rehabilitate existing settlements. Planning decisions are needed to establish small-sized, a multitude number of settlements, and to reverse immigration to the cities. The task of urban planners is to design sustainable and energy-efficient new settlements with accurate planning decisions and mitigate the burdens of mega-cities. The responsibilities of the architects arise in the individual building scale. Considering the numerical values, we see that in developing and underdeveloped countries, classes in areas of sustainability and energy-efficient design-focused doctrines in the curricula of architectural schools are either inadequate or these classes are not included at all. What needs to be done is to introduce passive systems, which can be realized with very little energy and resources and which can provide the necessary comfort for the end-users, to the architectural students by putting them into the contents of all the vocational courses in the curriculum. In order to be able to do this, the teaching staff who take part in the architectural design studios must also be trained in this area. Architectural design studios should be platforms where the theoretical and practical knowledge given in other courses are tested and evaluated by the student as a design criterion for architectural design effectiveness. A global acceptance system should be established on sustainable urbanization, sustainable building production, and energy-efficient building design. Schools of architecture in every country should take these acceptances into account, but must also build on this cumulation by producing teachings that include solutions specific to their particular context. Underdeveloped and developing countries do not have to evolve by repeating the mistakes made by the developed countries.

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BEDROOM AS PUBLIC SPACE: QUESTIONING THE MARKETING STRATEGIES AND THE SOCIAL MEDIA THREATENING THE INDIVIDUAL FREEDOM

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Abstract
An interior space can be considered as a tool for the individuals to express their worldviews, emotions, thoughts, etc. In case of appropriation -from M. Heidegger's point of view- of the surrounding with the self, an individual can become a free being by expressing the self. Not only the object/furniture, but also the process of possession can set a connection in-between an individual's identity and the identity of the space in the context of experiencing the whole process of the spatial production.

In other words, the being appropriates/realizes his/her existence by reflecting his/her identity at the space, which is produced via appropriation of the self with the surrounding. Appropriation is visible at any kind of surroundings like schools, workspaces, streets, etc. in various scales. As long as individual's control over the external impulses is very strong, the house can be considered as the best surrounding to be observed as a space of appropriation. The "house" becomes the "home" slowly during the appropriation process.

Today, individual's control over the external impulses is not very strong any more. Information technologies intervened our everyday life relentlessly so that the furniture turned into a commercial tool establishing the identity of the being, instead of being a tool of self-expression. Even the bedroom became a public place not only because its pictures are published in the virtual forums on the internet, but, because the process of the furniture selection is dominated by the exchange value set by the consumer culture.

This article questions the consumer choices and the mass production furniture design from the phenomenological point of view depending on the data collected over a research on the marketing strategies and the power of social media. The result is supposed to help to envision the effect of marketing strategies on consumer reaction for establishing a consciousness on interior design in the context of profession through ethics and design.
Key Words: *Existence; furniture; consumer culture; social media; interior design*

1.Introduction

Furniture is our third space after our body and our clothes. We adjust ourselves within the environment by using some equipment, which enable us to move, to live and to realize our skills in the way that is supposed to be. From phenomenological point of view, furniture is a spatial possibility for the individual to become a Being-in-the-world. Feeling in-side and familiar-with, the individual starts to use the furniture as an equipment unconsciously (as Heidegger says), as an extension of his/her own body. This is the unique moment of becoming an existence and/or Being-in-the-world (Desein).

Technological developments and globalization triggering the consumer culture, the "entity" (equipment) turned into the "property". Majority could not escape from the effects of the tools of consumerism and were caught by the pressure of shopping not to use, but to show. Individual freedom/existence was destroyed by being alienated with the self, who could not realize himself/herself by using the furniture in his/her own way.

The main aim of this article is to question what the motivation for the individual is, to buy the bedroom furniture, which is completely private in almost all cultures.

Firstly, the existential aspect of the furniture will be discussed. Then the effects of consumer culture over furniture towards creating an image of existence, in place of existence itself. The results of confrontation in-between the individual and the furniture experienced in the everyday life, were shared over the observation of the social media. We aimed to underline the destructive effect of the marketing strategies and the social media as the agents of the consumer culture.

Furniture as an equipment ready-to-hand

According to Heidegger, we reveal ourselves by encountering entities as equipment. We cook, make make-up, or rest, in other words, we achieve our closest relationship with equipment not by thinking about it, but rather by using. That kind of equipment are called ready-to-hand.

"The less we just stare at the hammer-thing, and the more we seize hold of it and use it, the more primordial does our relationship to it become, and the more unveiledly is it encountered as that which it is—as equipment. The hammering itself uncovers the specific 'manipulability' of the hammer. The kind of Being which equipment possesses—in which it manifests itself in its own right—we call 'readiness-to-hand"[1].

If we consider the furniture as an equipment ready-to-hand, it reveals our existence by being manipulated without thinking about it. It is so close and familiar to us that, we become a Being-in-the-world as an existence. The furniture enables us to exist on earth by making us feel belonging to this familiar activity.

Being-in-the-world is a free existence/entity who thinks and does through he/she individual skills. There is no control over him/her.

2.Consumer Culture

Globalization process started to influence Turkey, particularly Istanbul in 1980s as in other countries. While Turkey opened to abroad with globalization, rapid entrance of foreign capital into Turkey brought and has been bringing about economic, social and cultural changes. As borders disappear and there is a trend from local culture towards a universal culture with globalization, radical transformations occur in the social and cultural structure. Within the capitalist system, globalization and universality is featured while sense of belonging is positioned on consumption patterns. It is not only the product but also the body of systems which cover the product what is consumed. Consumption is now turning into an instrument which is desired and does reflect one's identity beyond meeting the necessities. Jean Baudrillard defines it in his book "The Consumer Society" [2] as "an efficient way of relationship (not only with objects but also collectivity and world) and a way of systemic activity and global answer on which our whole cultural system is built on."

Consumption now affects sensitivities about who people are, who they want to be and methods which help them keep those sensitivities. It intertwines with phenomena surrounding the development of the sense of identity. Therefore, consumption will go on being a phenomenon which is social, psychological and cultural as well as economic [3].

For the differences in the consumption patterns depending on the economic structure which changes in the capitalist order, it is rendered obligatory and continuous to provide diversity in production. This process can be interpreted phenomena of fashion and trend, the destructive effect of capitalist economy on space and consequent abstraction of temporariness in the modern world. Moreover, developments of information and communication technologies reinforce this process to orientate consumption. Baudrillard states that showcase, advertisement, marketing style, and brand image form an inseparable body which facilitates accessing the consumer along with economic concerns in the orientation of consumption. "Consumption is a word of contemporary society about itself, a way of speaking to itself" [2]. Printed and visual media, primarily the television, keep people in constant communication through social communication channels, forums and blogs and take advertisements and marketing strategies which orientate the consumption at its core.

In line with these processes, there are changes in production and marketing of furniture. Furniture industry have been continuing its development in accordance with standards, practices and technologies in the transition from the industrial society to the information society. MOSDER (Association of Furniture Industrialists) and OMBSİAD (Association of Office Furniture Industrialists and Businessmen). Product diversity and modular designs are featured [4]. Completing its industrial production and reinforced as a sector by the support of associations, furniture production has brought about furniture consumption.

Besides the abovementioned changes, considering the domestic lifestyles, individuality is featured and and individuals are offered houses and furniture that fits their personal choices. Furniture that fits all individuals refers to meeting the needs stemming from the capitalist consumption system. In the global capitalist system, production constantly increases while it is anticipated that consumption increases at the same rate. Yet, fixed, unchanging and solid furniture keep consumption fixed far from increasing it. Enabling individual freedoms through trends that change each year, furniture is exactly the objects ready to consume.

As a product, meanings attributed to furniture are changing conceptually even though furniture itself is not, and it is objectified. Activity "decoration" is in the forefront while interest in "adorning" the domestic spaces increases as housing is now regarded as a product of consumption out of the concepts of sheltering and house. It is worthy of questioning this semantic change in furniture at this point. In this scope, the field research of the study investigated how furniture accesses to user via communication technologies and transform in interaction with its user [5].

3.Furniture as an Image of Existence

Essentially a precaution set for the community brings manipulation and observation of the human behavior; this is a social control. The social control might be executed "by putting people in a position that they are prevented from acting in a not required manner; or, by putting people in a position that they are encouraged for

acting in a required manner" [6]. A guarantee for peace, comfort and happiness is given. Here peace and comfort mean order, stability and foreseeing; there is nothing to hope, but nothing to be afraid of also.

By that way, the conscious of the people becomes weaker day by day. It turns into a need for the controller to organize their life for them. In that panopticonized, system the purpose is to prepare the perfect conditions for an effective use of the power and the weakness of the people trapped in the system.

Jeremy Bentham's Panopticon (beginning of the 19th century) depends essentially on the central position of the prison-warder who can observe the prisoners without being observed. In other words, it is an asymmetry of information; while the prison-warder knows everything about the prisoners, the prisoners do not know anything about the prison-warder. Actually, there is no need for the prison-warder to observe the prisoners. The thought of being under control is deterrent enough for the prisoners not to act in a not required manner.

We can consider the panopticon as TV and/or PC which controls us by sending images which are massively accepted or appreciated.

The logic of the social system is determined for the development of the vision and image technologies, which depends on the observation of the crowds without being observed-just like the previous design logic of Bentham. We live in a techno-culture where escape is considered as a potential for the new techno-images. "We welcome the pleasures of the interface (between the reality and the virtuality) and the probabilities of the techno-sociality. Everyday realities and experiences seem extinguished among the dreams of the virtual life and the cyber-culture" [7]. The images create osmosis between our conscious and unconscious connected to basic cares and fears. "The new image technologies become valuable more by ensuring sources for a visional confinement, manipulation and control of the world more.

Via commercials and Internet, a pressure is created for individuals to repurchase constantly. Indeed, even bedroom which is not social is published on Internet and turned into an image through which individuals try to adapt to the general appreciation and win status.

Fashionable furniture style, that is, loveable furniture and trends, were specified through Internet forums in an effort [8, 9, 10, 11 and 12). The current furniture trend among users is more simplified and modern style of white, classical furniture which is called "Avantgarde" and modern (minimal) brown furniture which is called "Modern" and involves less details. Among companies' products, the most preferred products sold under these two styles were designated. Accordingly, the products are:

- Istikbal Mobilya Avantgarde: Brillance Bedroom Suite
- Istikbal Mobilya Modern: Valensia Bedroom Suite
- Bellona Mobilya Avantgarde: Victoria Bedroom Suite
- Bellona Mobilya Modern: Casalis Bedroom Suite

The companies Istikbal and Bellona were used as examples in the study constructed within the abovementioned scope and limitations. In this stage of the research, the instruments used to access user for achieving the furniture purchase are analyzed. To that end, commercial videos of the specified companies in the past two years and Internet images of the selected bedroom suites are analyzed.

Established in 1957, Istikbal Mobilya shot an advertisement film in 2012 which emphasized the city life (Figure 1). In the commercial video, which started with the phrase "I love city life" [13], visual equivalents of definitions regarding the city in the domestic life were provided. It was highlighted that a different city was the user of the house itself. An image of an elite domestic life arranged in contrast with the chaos of metropolis was provided.

It can be inferred that the film means "your city is your home". In this commercial video which is aired in parts or as a whole on television, the image of the domestic life is mentioned without giving any information about Istikbal Mobilya. At the end of the commercial, the statement "I live the city life in my home was made. Istikbal's new collection: Citylife" [13] is provided. The last scene of the commercial ends with the words "The most beautiful moments of the city is in its most beautiful furniture. At the same time, all over the world." With the phrase "At the same time, all over the world", home is opened to the whole world and turns into universality in the commercial video which features individuality defined through city in a personal process. Not only individuality is brought to the forefront but also they make you think how privilege an individual is if he or she increases the rate of consumption.

Fig. 1. İstikbal's Citylife Commercial Film in 2012 [13]

The commercial video shot in 2011 utilized the memorability of songs (Figure 2). They tried to inspire interest through loved songs and singers. The fact that celebrities are using these pieces of furniture enables users to put themselves on the same point with an elite group of people. In parallel with this case, the name of the furniture collection is "Starlight" [14]. The singer and the song were put in the forefront and the products were presented in the background within the images of fluxing life. Image, lyrics and songs were used to motivate the consumption.

Fig. 2. İstikbal's Citylife Commercial Film in 2012 [14]

Established in 1997, the company Bellona shot a commercial video named "Precious of My Home" for the new Bolivya series (Figure 3). The commercial video was about the mother-daughter relationship which is deemed important in the Turkish culture. The daughter and mother were played by celebrities Şevval Sam and her mother Leman Sam. The commercial showed the mother-daughter relationship. It started with daughter's inviting her mother to drink coffee and depicts the mother walking around the house carefully to examine the furniture while her daughter makes coffee [15]. At the end of the commercial, the mother's mimics and speech while drinking coffee approved her daughter's choice of furniture. Moreover, lyrics suitable for the commercial video were written for the music of the songs sung by both actresses who were also singers.

To increase the consumption, a life construct which is attached importance to in the Turkish culture, memorability of the songs, situations enabling the user to see himself/herself in the same position with celebrities were created in the commercial. The fact that a story that might happen to anyone is told with celebrities keeps product promotion in the background and allows users to associate with the commercial video. Consequently, furniture transforms into objects to be consumed as inseparable pieces of life even though they are in the background.

Fig. 3. Bellona's "Precious of My Home" Commercial Video in 2012 [15]

Şevval Sam played in the commercial video shot for Bellona in 2011 and memorability of the songs had been utilized (Figure 4). The singer who was sitting in an armchair with a cat on her lap sang her song while she was looking at her cat. She prays God for not giving her furniture to anyone else before herself. She invokes God for touching and using Bellona first, wishing not to see it with anyone else. However, she went on praying God for giving it to everyone, and the lives of others were shown next to "Bellona". The commercial ends with the scene where a neighborhood was shown, all women hear from each other and get to the window, and the voice said, "Bellona is my right." The consumption of furniture was rendered universal both through individuality and by saying that it is everyone's right and everyone can use it. Contrast of what is traditional and universal, and memorability of lyrics and the constructed images keep the "products" in the background.

Fig. 4. Bellona's Commercial Video in 2011 [16]

Following the analysis of the commercial videos, Internet images of the most preferred products among the Avantgarde and Modern product groups which are the most preferred styles of two companies were examined. İstikbal's Avantgarde model Brillance Bedroom Suite and İstikbal's Modern model Valensia Bedroom Suite are shown in Figure 5; Bellona's Avantgarde model Victoria Bedroom Suite and Bellona's Modern model Casalis Bedroom Suite is shown in Figure 6.

Fig. 5. İstikbal Brillance Bedroom Suite and İstikbal Valensia Bedroom Suite [17 and 18]

Fig. 6. İstikbal Victoria Bedroom Suite and Bellona Casalis Bedroom Suite [19 and 20]

The pictures above are the images of the furniture examples, which suit the styles by the specified companies and are communicated to users via Internet. Users can access all kinds of information including images of products from different angles, prices, payment options, installment rates, product diversity under the bedroom furniture combination, and sizes on companies' websites. As a part of the models of these four bedroom suites, sliding/door wardrobes, bedsteads, bed rails, nightstands, chiffonniers, vanities, vanity mirrors, and chairs/poufs. Companies that promise individuality and privilege in commercials offer users standard solutions in terms of product diversity. Users consume within the standards created despite of changing and differentiating personal attributes. This coincides with the mentality of serial, standardized and industrialized production through which globalization is aimed. Yet, consumption must be increased as the production is extensive, and number of product groups is high. Hence, feelings of interest and pleasure are aroused among users within the constructed structure television commercial videos and Internet images that are used by people the most.

It can be also observed that suits of different companies and styles share the same qualities basically. The most distinct characteristic of these images is that the products are introduced within spatial constructs which are spacious, comfortable and receive daylight and give the impression that there are no walls/boundaries at all. In the images, product groups are depicted in a completely sterile way in a clear space without anything on or around them. Even though Internet images try to inspire the impression of different spaces as in the commercial

videos constructed on the individual-universal contrasts, the same products are presented in spaces with the same characteristics. In this case, products lose their quality of furniture, evolving into abstract objects.

4.Shopping to exist or destruction of existence

This part of the study investigates what furniture images that are communicated to users via television and Internet are evolved into within user's identity and the domestic scope. For this investigation, groups and forums on the social media were e-mailed, and users who have been married or replaced their bedroom furniture in the past 3 years were asked to take photos of their bedroom layout from different angles. The users (women) were also asked to mention about their personal attributes and characteristics of their homes to the extent that they want to share. In the light of the feedbacks, it is observed that selected furniture of the two companies and users' choices of furniture coincided with each other.

User DA (Figure 7)
Date of Marriage: 10.09.2011
Place of Residence: İstanbul
Educational Level: High School, Occupation: Stylist
Home: 2+1 apartment on the 3rd floor
She defines her home's style as classical-modern and uses furniture and accessories that are modern but with classical remarks.

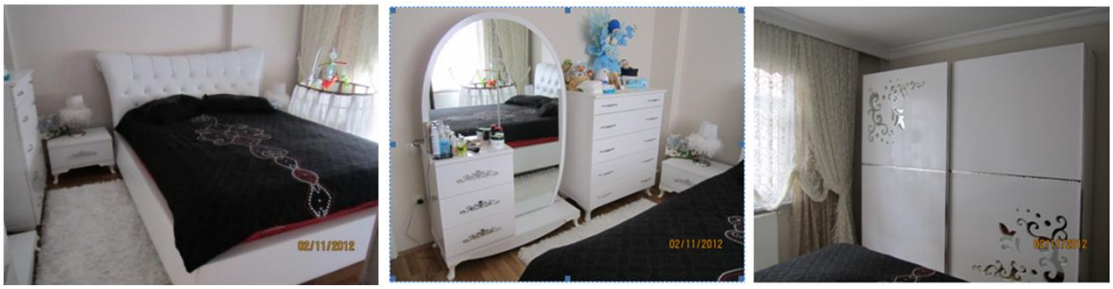

Fig. 7. User DA's Bedroom

User AF (Figure 8)
Date of Marriage: 14.09.2012
Place of Residence: İzmir
Educational Level: Bachelor's Degree, Occupation: Teacher
Home: Duplex penthouse with bedroom on the second floor.
She defines her home's style as avantgarde and uses white-powder colors and accessories.

Fig. 8. User AF's Bedroom

User HE (Figure 9)
Date of Marriage: 02.09.2012
Place of Residence: İstanbul
Educational Level: High School, Occupation: Stylist
Home: 2+1 apartment
She does not define any style for her home and says that she combines furniture and accessories she like.

Fig. 9. User HE's Bedroom

User SH (Figure 10)
Date of Marriage: 08.09.2012
Place of Residence: İzmir
Educational Level: Bachelor's Degree, Occupation: Nurse
Home: 2+1 apartment
She likes using soft colors at her home.

Fig. 10. User SE's Bedroom

Users as different individuals bought the same "bedroom suite" and make up their bedrooms which are their most personal spaces. In other words, although they do not use, these different individuals have sliding wardrobes, bedsteads, bed rails, nightstands, chiffonniers, vanities, vanity mirrors, and chairs/poufs. Their individuality, personality and choices identify with the most fashionable bedroom suite. In this process, "bedroom suite" turns into "something else" in bedroom which is private. This "something else" becomes an object of the capitalist consumer culture, and individuals make themselves exist in this objective world of consumption.

However, in their daily lives, individuals go beyond the depiction given in commercials. Space between ceiling and wardrobe is utilized for storing extra beds, quilts and pillows. When covering the bed with the bedspread at hand, it does not look like in the commercial anymore. The image of the bedroom turns into "something else" with the personal objects added around the suite. Small rooms compared to the furniture suite, low-capacity furniture compared to used/collected objects cause bedroom suite not to look like what they are exhibited in the commercial. Once individuals notice the difference between, they start to complain about the furniture, tend toward other models on Internet and search for the furniture image which can express themselves in the exact way. The thing which is ironical is that furniture is produced in a way they have the same shape to create a common liking no matter what the image/slogan is and even if it is produced by different brands. Actually, shape represents a given image/lifestyle. It is sold to the life dreamt for the customer within a construct/scenario. Users do not own the furniture but a construct of life.

Conclusion

As the instrument of existence, furniture has transformed into the object of an image which orientate masses towards shopping with the panopticon influence of mass media in the process of placing the consumer culture.

Today furniture is presented to you in whatever way you want to see your home with one "click" via commercials, Internet and forums. In the commercial spaces, furniture is lost in small rooms and among available piles of things at home and turns into something different than in the commercial. While everyone's home, personality and needs are different, they buy all product groups produced for the standard user under the title of "bedroom suite". Even if furniture turns into something different in the order of homes, users have received the visual image, satisfied themselves and caught up with the latest trend. That exactly coincides with the images, scenarios and constructed lifestyles to increase consumption which the capitalist order wishes.

Individuals transform into consumers and lose their existence, and furniture becomes a tool of status, taking individuals under control.

Based on fashion and rapid wear through some kind of incentive mechanism, consumption policies cause individuals not to fulfill their own existence but to become a property which fulfill their function of purchasing produced by the system. The matter here is that capital is invested in vain, world's resources and time is wasted, individuals move away from their own existence, which amounts to a great loss.

Therefore, designers have an important task to do: resisting the pressure of producers and sellers decisively, designing not only furniture that creates an image but also entities ready-to-hand with spatial qualities that encourage individuals for creativity.

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FROM TRADITIONAL ARCHITECTURE TO SUSTAINABLE ARCHITECTURE: THE CHANGE IN THE UNDERSTANDING OF RESPECT FOR NATURE OVER TIME

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Abstract
It is a fact that development of technology makes human life easier. It will not be right to assess this development and the benefits it provides without concerning the environment where the person lives, since human and its surroundings are in constant interaction. Development of technology led to a greater variety in the needs of mankind and caused faster production and consumption cycles. Some practical solutions were adopted to meet these increasing needs, however the fact that practical solutions might cause severe problems in the long term was overlooked. As a result of unconscious consumption of natural resources, irregular urbanization and transformation into a consumer society; major problems such as pollution, excessive energy consumption and climate change are at the agenda of the 21st century. Every individual in the world has a responsibility to be a part of the solution to these problems and leaving a healthy, livable environment for future generations.
The design philosophy of preserving ecological balance, protecting the habitats of other living creatures living with us, and protecting natural resources should be adopted. The solution of this problem, which will be addressed within the framework of the basic field of architecture, is to disseminate the understanding of architecture respectful to nature.
Respect-for-nature understanding aims to keep the harmful effects of the human in the ecological balance at a minimum level and it is known by different names such as ecological architecture, green architecture and sustainable architecture. All these concepts which are named according to the conditions of their period will be investigated under the title of "understanding of respect for nature". In this study, the understanding of respect for nature was examined in two chapters under the title of "traditional architecture" in which the foundations of this thought were laid and "sustainable architecture after the 1970s" in which a significant development period took place. With this study, the change in the understanding of respect for nature over time is revealed and it is anticipated that this study will contribute to the future studies in architectural discipline which adopts the same understanding.
Key Words: *traditional architecture; ecological design; green buildings; sustainable architecture; understanding of architecture respectful to nature.*

1. Introduction

Since the time when human beings started to exist in the world, they created or built up living spaces for themselves as a result of requirement for residence. While building up these spaces, they took the climatic and geographical data of the locations where they were taking part in and used local techniques and materials. For instance, the houses, religious and public buildings having taken place in the Greek antique city Priene that was established in the 4th century B.C., were situated on the southern view in accordance with the land. The people benefited from the sun on maximum basis in this way.

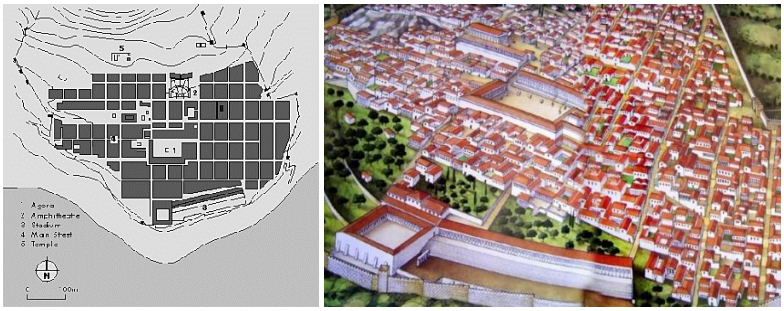

Fig. 1.1 (a) Priene Antique City Layout Plan [ULR 1]; (b) View of the Southeast Side of the Antique City, Priene, Reconstruction of the Year 1986 [ULR 2].

Traditional structure models that are formed up in accordance with the cultural, geographical and climatic conditions of the society where they exist in, continue to be used at our current period. The tents, made in the nomadic life culture has been continued to be in use even if a sedentary life was adopted at time. These tents,

made of goat hair, provide an environment, protected from heat in summer, and rain and wind in winter.

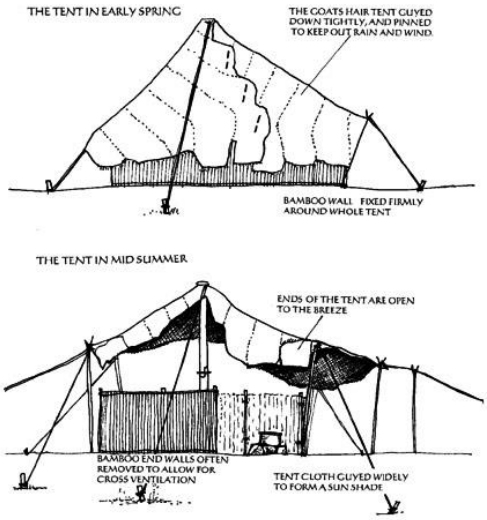

Fig. 1.2 The Use of the Tent, Made of Goat Hair, Changing According to Seasons (Roaf 2001 is taken as reference).

The snow houses, named as "igloo", of the Eskimos living at polar zone, are the structures ensuring heating at cold climatic conditions. The sections, passed through each other and positioned after the entry, opened up in opposite direction to the wind, hinder sudden temperature changes and ensure the main location much warmer. This and its similar examples are the solutions that convert environmental effects into their own favours in a smart manner and not exhaust natural sources while doing the foregoing and not leave any waste, which cannot be recycled and are respectful to the nature and ecological balance.

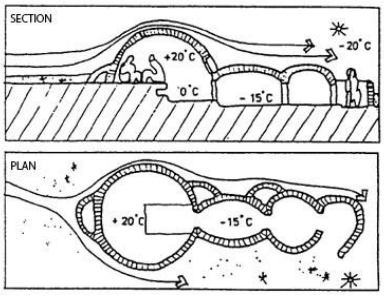

Fig. 1.3 The Cross Sections of an Igloo Showing the Changing Temperature Layers at the Entry and Living Spaces (Roaf 2001 is taken as reference).

The environment-friendly building opinion in the traditional architecture has been a part of our daily life. The traditional buildings are healthy and anthropocentric buildings. The Turkish houses in our country are a good example for the sustainable architecture understanding as well. The houses where the local and natural materials are applied and natural acclimatization methods are used, are situated in accordance with the natural structure of land. None of the houses deprives any neighbouring house from being exposed to sunlight and the houses are planned within the scope of a relationship of privacy. The courtyard being surrounded by walls gets limited amount of sunlight in summer and the stony grounds taking place in front of the houses within the courtyards are washed up in summer times and cool down its surrounding locations. Again, the green space taking place at the courtyard provides shading on the one hand and becomes an oxygen source on the other.

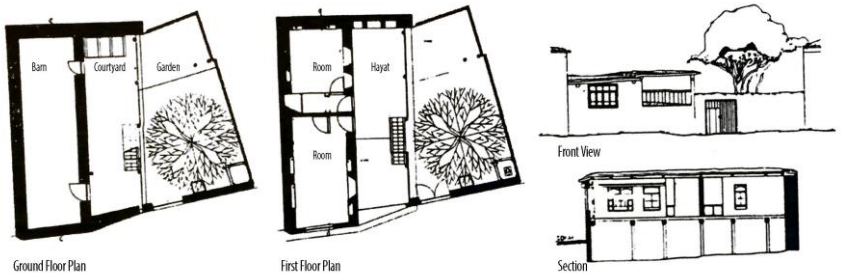

Fig. 1.4 Turkish House Plan with an External Courtyard, Akşehir Houses (Bektaş 2013 is taken as reference).

The nature and ecological balance-friendly architecture is an approach available for a long period of time. New

materials, building techniques, new forms have entered in the building sector through technological developments having begun with the industrial revolution. While this development brings good result on the one hand, it has also caused an increase in the volume of energy, consumed as a consequence of unconscious design selection and unnecessary exhaustion of natural sources on the other. Bringing the ecological designs to agenda especially in 1970s resulted from the petrol crisis, experienced in 1973 and the reality that the natural resources may be exhausted as was indicated by the said crisis. As a result of exhaustion of fossil-based energy sources within the time and damages that they keep causing on environment, the measures towards the protection of ecological environment gained momentum. Furthermore, it was agreed upon at the United Nations Conference on the Human Environment, held in Stockholm in 1972 that the provision of a balanced environment from ecological point of view where all living creatures and human beings would sustain their existence were adopted as a problem of entire human kind. The environmental problems that were available at national level in advance of 1970 turned into the problems that have been tried to be tackled at international level after the 1970s.

1.1. Essentials of Sustainable Architecture Understanding

The opinion of nature-friendly building structure taking place in the foundation of traditional architecture occurred with the "vernacular architecture" concept in 1970s. According to Paköz (2016), the vernacular architecture is the language of architectural formation of a location specific to it. Therefore, it is possible to call the vernacular architecture with the names such as civil architecture, local architecture, regional architectural and so on. [1]. These structures that are respectful to nature, made with local materials and designed according to local climate; may be seen as traditional architecture –or a continuation of it- that has found the right solutions in time by trial and error method.

The Egyptian Architect Hassan Fathy has denied the architecture that is disrespectful to the culture of the region by saying "Transformation is not good all the time and tradition is not stagnation all the time" [2]. When the house that is designed by Hassan Fathy for himself is examined, it will be seen that he has formed a structure in consideration of the climatic and topographic natures of the region. He built up the structure by using local materials and construction techniques. He provides thermal comfort conditions together with the location components such as courtyard, dome, vault and so on. Hassan Fathy designs environment-friendly buildings taking the construction, utilization and demolition stages into consideration as a whole within a sustainable cycle.

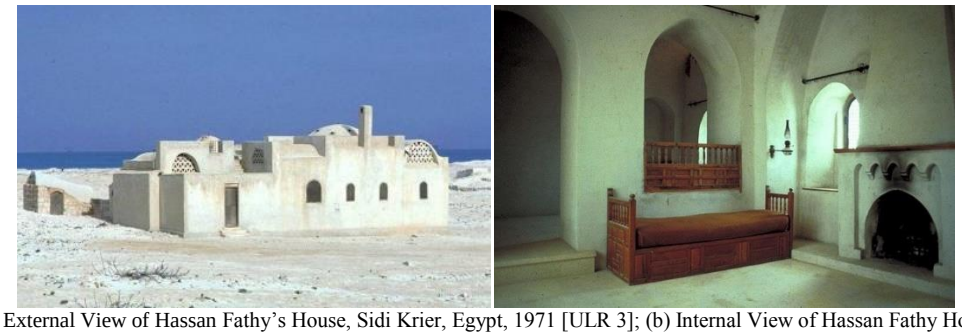

Fig. 1.1.1 (a) External View of Hassan Fathy's House, Sidi Krier, Egypt, 1971 [ULR 3]; (b) Internal View of Hassan Fathy House [ULR 4].

The Dune House, designed by William Morgan Architecture in Florida is an example to another vernacular architecture. The acclimatization expenses of the house, built under the ground, refer to almost half of the costs of the houses built on the ground, by means of the fact that its wall thicknesses are a minimum of 56 cm [3]. This building, designed under the ground benefits from the thermal energy, stored by sun within the soil, ensures the acclimatization of the inner space in a balanced manner. Light, colour, material selections and wide window openings can provide the interior location with sufficient level of lighting. The principal for the design of these buildings under the ground is similar to the design opinion of the igloos that Eskimos have designed in order to balance sudden temperature changes.

Fig. 1.1.2 (a) External View of the Dune House, William Morgan Architecture, Florida, 1974 [ULR 5]; (b) Outer Appearance of the Dune

House [ULR 5]; (c) Internal view of the Dune House [ULR 5].

Vernacular architecture-types of buildings may be the traditional buildings that have been created as a result of an experience having developed for years within a kind of master-apprentice relationship or buildings that are designed by well-educated architects and engineers, who have all sorts of technological opportunities. The circumstances such as increasing population, rising number of structures subject to rapid urbanization that could not be built up within a vernacular process, trend of modernity, decrease of loyalty to tradition, disappearance of mutual assistance and respecting to the rights of others and so on, have affected the vernacular architecture either directly or indirectly [4]. As a consequence of the matters, indicated heretofore, the interest in the vernacular architecture showed a decrease.

One of the main themes of 1970s has been the opinion for the assessment of ecological wastes [3]. In this way, various materials such as waste paper, scrap, string, rope and so on were used in space designs and furniture and as a consequence, the use of recyclable and harmful materials on environment have been prevalent. The volume of wastes coming out of the industry for forestry products especially constituting a great proportion of the furniture sector is not at an ignorable level. The forestry products are the types of products that may be reused and generally recyclable in this respect. The recycling process at the furniture design may be made in a manner such as re-handling of existing furniture and design of furniture from various waste materials. The spaces may be designable from the recyclable materials the same as furniture designs.

Fig. 1.1.3 (a) Wiggle Chair, Made of Cardboard Material, Frank Gehry, 1972 [ULR 6]; (b) Sample Store, Made of Waste Packaging Cardboards, Elina Drossou, 2007 [ULR 7].

Along with the space design, the spaces themselves may be made of recyclable materials as well. The architect, Shigeru Ban designed disaster shelters for the people, who lost their homes at the Kobe earthquake, that are at low cost and may be assembled and disassembled in a short period of time through the use of recyclable waste materials such as paper tubes, (tent) canvas and so on.

Fig. 1.1.4 (a) Disaster Shelters (Houses), Made of Paper Tubes, Shigeru Ban, Kobe, Japan, 1995 [ULR 8]; (b) Interior Space of Disaster Shelters**,** Made of Paper Tubes [ULR 8].

1.2. Development of Sustainable Architecture Conception: Relationship between Green Architecture, Ecological Architecture and Sustainable Architecture

Notwithstanding that the concept of sustainability has turned out to be a new concept, it is possible to say that its foundations are based on the understanding of traditional architecture. However, the petrol and energy crisis, experienced in 1970s, brought at international agenda have indicated that natural resources could be exhausted. The sustainability concept was brought on the United Nations Conference on the Human Environment, organized in the same years, and development policies were prepared in that respect.

The nature-friendly architecture was put into words following these years, with the concepts such as environmental design, green architecture, ecological architecture, sustainable architecture and so on. Together with these concepts, some types of different concepts such as nature-friendly architecture, smart architecture, energy-efficient architecture, energy-conscious architecture, climatic architecture have been added to the literature. All these concepts point out the complexity of the concept and extension of the subject matter thereof

[5]. It is possible to observe that these concepts that contain the understanding of being friendly to the nature in essence are used instead of each other and when the structural applications are examined, the said concepts are taken into consideration separately from time to time.

According to Tont (2007), the spread of the ecology concept into the public conscious has been materialized in 1960s with the rise of environmental awareness, encouraged by the studies on the harmful effects, caused by ecology-based environmental pollution on human being, animals and flora [6]. According to İmamoğlu (2007), green architecture movement can be seen a form of radicalization of ecological sensitivity beginning in 1960s. This movement, spreading over in 1980s, has shown itself at political dimensions with a resistant characteristic mostly on industrial pollution and protection of nature [7]. According to Arsan (2008), the ecological architecture, however, has shown development in an understanding that has been nature-friendly and trying to use passive energy systems and regarding the human being as a part of ecosystem and the building, however, as a sound and biological organism from the mid-1980s onward.

The transformation at the terminology points out architectural theory and application fields expanding on the subject matter herein. Until the mid-1990s, it has been possible to mention about the "environment-friendly" applications in general meaning, of which subject has been the "building" and anxiety, however, "setting up a balanced connection with nature". Together with the United Nations Conference on Environment and Development, organized in Rio De Janeiro in 1992, the sustainable architecture was taken into consideration as a complementary, strategic and planned structure form, supported as a solution to the global environmental problems and development problems, and as a main heading comprising previous architectural approaches. Thus, an environment-friendly architectural understanding is envisaged with its contribution to the social, cultural and economic substructure as much as physical characteristics of the environment [5].

It is observed that these concepts being used from time to time in place of each other played a complementary role for, contradicted or competed with each other within the periods. Tönük (2001) takes the ecological architecture into consideration as a form that has to position the building as a sound cycle within the integrity of nature-human being/society. The analysis of physical criteria such as building design system, building form, space organization, selection of materials, sanitary fittings, appropriate green vegetation cover and so on, are on the agenda starting with positioning of a building in consideration of climatic characteristics at the ecological design [8]. According to Sev (2009), the sustainable architecture differently from the green architecture and solar architecture, is not a design understanding towards the decrease of natural sources and fossil fuel consumption by taking advantage of only solar energy and geographic data. The sustainable architecture comprises the decrease of effects on ecological systems, effective utilization of energy, material and water resources, lifecycle design, recycling of wastes, protection of physical and mental health of people and their comfort [9]. While it is observed that the ecological architecture is taken into consideration as an architectural practise comprising all other nature-friendly architectural understandings, when the ecology concept is defined as a natural science, the sustainable architecture concept has still been expressed as a concept comprising other environment-friendly understandings from 1990s onward together with Brundtland Report, published in 1987.

2. Sustainable Architecture

The World Commission on Environment and Development published the Brundtland Report in 1987. It is dwelled upon especially on sustainability and sustainable development concepts at this report. The Brundtland Report has defined the sustainable development as a type of development meeting the actual requirements of future generations without giving in from their competence to satisfy their own needs [10]. The United Nations Conference on Environment and Development, organized in 1992 in Rio de Janeiro constitutes a threshold to the sustainable architecture. While a "problem-based" approach was developed on the pollution and consumption of non-renewable resources in Stockholm during previous period, an integrated and global approach targeting the development of human resources and sustainable economic development, based on natural sources, was adopted in Rio [9].

According to Sev (2009), the sustainable architecture is the entire activities bringing forth buildings that give priority to the use of renewable sources of energy, are nature-friendly, use the energy, water, materials and area where they are available, in an effective manner, protect the health and comfort of people by taking the future generation into consideration under any conditions and every period of their existence. In other words, it is an art of satisfying the user's spatial needs, without endangering the availability and future of natural systems. According to Tönük (2007), the sustainable architecture is a contemporary architecture understanding that is environment systems-friendly and takes the conscious and economic utilization of energy and scarce resources as a basis and is materialized through the integrity of an interdisciplinary working system and technical intelligence [11].

In the 21st century high rise buildings draw our attention within the examples of contemporary architecture. The high buildings are the types of structures consuming more energy in comparison with other structures in respect to their acclimatization, lighting and mechanical systems ranging from their contraction stage up to occupancy. The state of sustainability of these buildings are discussed as a result of causes such as the accuracy of the

land(s) where they are situated, excavations that are taken out in the construction stage, volume of wastes during their occupancy, diversion of wind direction and so on. However, the high buildings have office, residence, hotel and similar functions at our current period in parallel to the user requirements rising population and lack of lands.

According to Sev (2007), traditional architectural techniques remain insufficient in the structures having a complex function of our current period. It is highly possible to experience high amounts of energy from the construction to the occupancy process that have been occurring as a result of rapid urbanization that has never been experienced in the past. The way of preventing such loss is to benefit from the products, created by the technology of our current period. Benefiting from renewable natural resources in an active and passive manner is one of the tendencies arising for this objective [12].

The 60-storey Commerzbank Office Building, located in Frankfurt, is known as the first ecological skyscraper of the world. There are 9 greenhouses (winter garden) available within the building where the environmental image of 1990s has been exhibited. There is an atrium extending from the centre of the building up to its roof in order to provide natural light and ventilation to the offices looking at interior spaces. The offices can take advantage of both natural ventilation and natural light in a controlled manner by means of double-skin façade systems on the external surfaces. Consequently, energy saving is provided by natural ventilation and lighting, used at the building.

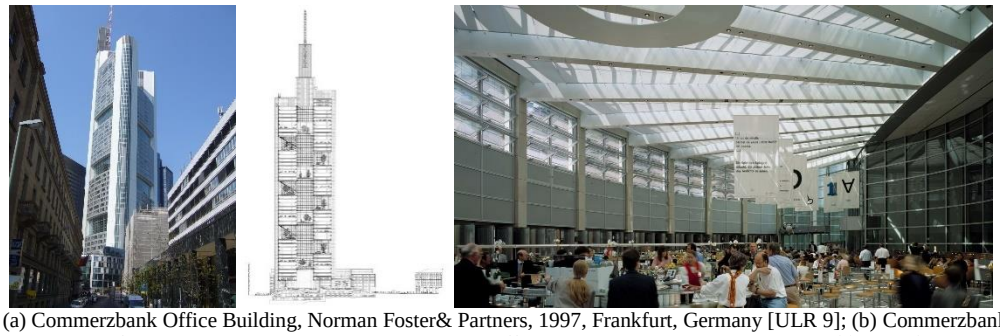

Fig. 2.1 (a) Commerzbank Office Building, Norman Foster& Partners, 1997, Frankfurt, Germany [ULR 9]; (b) Commerzbank Office Building Cross Sections of Greenhouses [ULR 9]; (c) Commerzbank Office Building Interior Space Double-Skin Façade System View [ULR 9].

A sustainable design model that comprises the exhibition, training, preservation and research functions has been aimed bearing the opinion of protecting the nature and natural environments at the California Science Museum, designed by Renzo Piano in San Francisco [13]. Piano talked about the structure as follows: "In my opinion, it was necessary for the building to be green in order to become in conformity with the world and its function of scientific researches. This location is, at the same time, an extraordinary place and situated on one of the most attractive parks of the world. I had conviction that the building had to be transparent since the fact that we never had any chance of this kind at any time in the past; all within the building had to be seen. All museums are opaque and closed like a kingdom of darkness and you are trapped within them. However, this structure had to set up communication with the nature; as a consequence, almost the entire building was considered as transparent" [14]. The use of any recycled materials, natural ventilation and lighting provides saving on the energy, consumed for acclimatization expenses. While its green roof provides a living space for a number of living creatures, the water efficiency is provided by the assessment of rainwater. The energy requirement of the building is met by the photovoltaic system existing on the roof. The building was built up on the position and direction of the museum, established in 1853. It is taken into consideration as a sustainable building in respect of its reutilization of the Steinhart Aquarium as well as African and North American Halls that have been three historical elements of the old museum and constituting as an example.

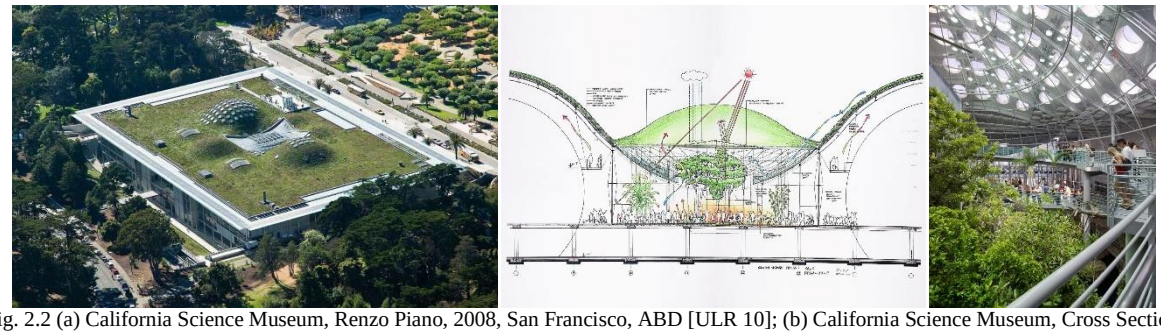

Fig. 2.2 (a) California Science Museum, Renzo Piano, 2008, San Francisco, ABD [ULR 10]; (b) California Science Museum, Cross Section Going Through the Piazza (square) (Projeler Yapılar 3 Eğitim Yapıları, 2011); (c) California Science Museum, View of Piazza (square) (Projeler Yapılar 3 Eğitim Yapıları, 2011).

The conversion of the buildings into the structures in future period that consume "zero energy" and generate almost all of the energy, required by them, takes place on the agenda of the world. This is no longer a difficult target through the energy systems and saving methods in the technology of the 21st century. Various standards have been developed by various public, private institutions and non-governmental organizations in a number of countries to bring forth the sustainable buildings. Relevant certificates are awarded in consideration of the level of provision of achieving these standards, issued for such structures. This circumstance has caused the title of certified architecture in the literature. One of these systems is the LEED (Leadership in Energy and Environmental Design) green building certificate, prepared by the American Green Buildings Council. LEED pointing system is made to be consisted of various categories ensuring the determination of the building performance in a detailed manner. This system aims the energy saving and provision of human health and comfort. The objective at this point is the construction of the structure in a manner to cause minimum loss/damage to the surrounding area within the building, utilization and pulling down process. Bahriye Üçok Nursery School like California Science Museum was awarded with a Platinum certificate after a successful scoring of the highest point from the LEED criteria.

Fig. 2.3 (a) Bahriye Üçok Nursery School South-Western Façade, Dilekci Architecture, 2016, Istanbul, Turkey; (b) Passive Solar System Utilization by Means of Roof Lights of Bahriye Üçok Nursery School (c) Bahriye Üçok Nursery School Learning Area

Project designing, construction, utilization (occupancy) and pulling down stages and sources such as land, energy, water, materials and so on for the protection of ecological balance has been used consciously and effectively in the design of the nursery school. While the comfort requirements of the users are satisfied, it is aimed for the building to cause the minimum damage possible on the nature (environment). Apart from the other buildings surrounding the nursery school, it offers the kids integrity with nature, and environment where they will feel comfortable and free at their own scale. The diagonal lines, used in the building design, natural lights coming through the roof and windows encourages the development of creativeness of the kids with design concept having integrity with nature.

3. Conclusion

Although the environmental pollution occurred after the rising production wastes following the periods when the human being started to transform into an industrial society; this subject matter took its place on global agenda in 1970s. The oil crisis of the 70's and global warming issue that came up in the 80's resulted in a return to the correct applications of traditional methods that existed long ago. The reality indicating that the natural resources are not endless has caused the people to take their all activities into consideration. These problems, seen at local scale, have reached a global level as a result of increasing consumption of natural resources, environmental pollution and so on. While solutions are sought to those problems, related concepts such as green architecture, ecological architecture, sustainable architecture have arisen in this context.

It is observed that these concepts are sometimes used instead of one another, contradicted or competed with each other from time to time. Although this circumstance brings out a conceptual complexity, these concepts contain the opinion of being friendly to nature in essence. Such changes at the terminology show variations with regard to the current policy of the period, social and economic circumstances. There is a return to traditional and vernacular architecture because of the exhaustion of natural resources coming to agenda in the 70's. Also the utilization of materials not returning to the nature as a waste and making renewable furniture and buildings has been prevalent in the same years. The green consumption opinion, brought forward with this understanding, has arisen with a resistant characteristic on the protection of the nature in the years of 1980. At the end of 1980s, the green concept has been replaced by the ecological concept. During 1990s, however, the sustainability concept came into prominence together with the expression of a "sustainable development" taking place in the Brundtland Report. Some sources limit the ecological architecture as an architectural understanding covering the period between 1990-2000, some other sources, however, describes it as an understanding covering all of these kinds of approaches as an environment-friendly architectural concept.

The sustainable architecture targets the conscious utilization of energy resources, bringing the amount of waste discharged (into the nature) to minimum level, selection of materials that may be harmless to environment and recyclable and protection of green spaces. It is necessary to be directed to utilization of renewable and clean energy resources instead of the resources which will be exhausted and cause environmental pollution. The social and economic sustainability concepts are assessed within the architectural circles along with physical requirements such as transfer of earning coming from the utilization of resources into future generations. When it is looked from this point of view, various numbers of different sustainable design aspect applications can be observed. The point how a structure making contribution to the economy and attracting tourists to the related city is nature-friendly goes unnoticed, and it can be said that it makes contribution to a sustainable development. While there are applications on the one hand that overlap with the aesthetic requirements of the 21st century, made with extremely environment-friendly local materials and methods generally in application in rural areas, on the other hand, however, there may be modern structure applications, built up with the technological materials of the information and technology era.

Notwithstanding that the high buildings are some kinds of buildings sustainable within the framework of some criteria, their position as a sustainable building is discussed for the reasons such as high energy, material, labour consumption and so on. With this view, it is possible to say in this respect that the design approaches, constructed at economical dimension through local methods and materials in rural areas are more ecological. However, it is necessary not to forget the fact that the architecture contradicts with the opinion of protection since it creates a superficial environment as a matter of fact. It is necessary to reduce energy consumption of high buildings arising within the direction of various requirements whether correct or erroneous and pay attention to taking advantage of renewable energy resources actively or passively in such buildings.

A sustainable architecture understanding is aimed in all countries as a result of various problems concerning the world as a whole such as global warming, climate change and so on. The green, ecological or sustainable, environment-friendly architecture are not the subjects brought forth only at current period. The traditional architecture contains ecological methods that have arisen, in fact, as environment-friendly and a part of daily life and developed within the period of time elapsed. These methods are the solutions that convert the environmental effects in favour in a smart manner, do not exhaust natural resources and not leave any non-renewable wastes in the environment. This concept is taken into consideration at our current period under the title of a "sustainable architecture". Whatever the title of the architecture being friendly to the nature may be in future, these traditional methods and point of view will continue to constitute a basis for it. However, it is necessary not to forget the following: the political, social, economic, technological conditions of the 21st century apart differently from previous periods and as a consequence, the requirements of the people have changed as well. These requirements not having existed in the past will be met by the technological substructure of current period. Therefore, the building designs should be put into practice through the current technology and structure methods by the discovery of consciousness of causes of the vernacular architecture.

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PROCEEDINGS BOOK

EVALUATION OF MULTIPLE DESIGN CRITERIA IN INTERIOR DESIGN PROJECTS/ THE CASE OF MEKAN 2017 COMPETITION

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Abstract

Visual communication is established between people and space through architecture, which provides a conceptual environment to ensure harmony between people and environmental factors. Communication is derived through the coincidental concepts and their representations of cultural structure, environment and nature. The message to be given through architecture is mostly formal and based on the concept of design. It is delivered through the design by architectonic codes such as color, pattern, form and material constituting the whole. For the architectural identity, which is constantly communicating and interacting with the environment, it is important to synthesize and interpret this data accurately.
Nourishing the structural integrity of the design with interdisciplinary communication and cooperation within the framework of architecture, from urban to interior space; and embracing the structural environment at different scales is seen as an important approach. Considering the data set coming from the upper scale, that is from the architecture itself; the work of integrating architecture and interior architecture, which is revealed with the holistic approaches that determine the character of the space, increases the value of the architectural product. In this context, the interior space should be assessed as a part of the structural environment, based on its potential to connect with the surroundings in terms of its constituent components.
This study aims to evaluate the design approaches of all Architecture / Interior Architecture and Environmental Design Departments throughout the country through the students' diploma projects in the context of "Mekan 2017" competition. "Mekan" is a national competition of diploma projects for Interior Architecture students with a substantial participation nationwide and was held firstly in 2012; the fourth was held in 2017. All the projects participating in the competition are in a sense capable of demonstrating the approaches of different educational institutions in regards to the discipline of Interior Architecture and present different topics, problem areas, scales and solutions.
"Mekan 2017" competition, which allows for various architectural education approaches to be revealed through the diploma projects, that is the final product of the architectural education process, also provides the basis for the evaluation of design approaches in other educational institutions and design approaches of candidates who will step into the profession. Within this context, in addition to the basic necessities of human being such as accommodation and security; project subjects that are addressed in different scales, with a variety of functions to meet the volume, comfort and aesthetic requirements for their activities; its specifity to the space, to its environmental and physical context, and socio-cultural situation; the design decisions regarding user requirements, technical/material related limitations will be evaluated in subjective and objective manners.

Key Words:*Interior Design and Education, Design Criteria, Jury Evaluation, Design Competition, Student Competition*

1.Introduction

Today, education debates in the architecture and interior architecture schools are going on intensively. The practical dimension of these disciplines make it necessary to find solutions to practical problems in architecture and interior architecture education. For this reason, in design schools, issues related to the solution of spatial problems in living environments are addressed in project courses as problem areas. Recently, it seems that many architectural and interior architecture schools have accelerated their efforts to identify and solve educational problems. Of course, it is not a question of talking about an "ideal" solution for those who believe that certain solutions do not exist.

The aim of design education is to train creative designers who develop novel solutions to abstract and concrete problems. In addition, researchers are expected to develop their critical thinking skills. In this context, design schools play an important role in creativity-education relationship. Because, the phenomenon "creativity" has an important role in the issues of critical thinking, reaching new syntheses in the context of cause-effect relationships, and developing alternative solutions to problems. Schön[3] stated that design education courses are the most important courses in the architectural education program, so the environments where the creativity of the students are revealed are seen as design lessons and activities that support these lessons. In the project courses where the design education is experienced in the design studio, alternatives are presented to different design problems and it is aimed to gain problem solving skills.

In addition, the student characteristics in which the limited number of presentation techniques in architecture-interior architecture education is taught today is changing, and the new student characterisitcs who are expected to find way into how they will express themselves are taking the place of it. In such a climate of change, all says are in the position of supporting comprehensive research on design studios that have always been considered focal points in the context of design education.

As it is known, in the project courses of the design education schools, where the different subjects are studied in almost every semester, the students develop project proposals for given design problems. Each school sets out the processes and approaches of design studios in line with their mission and vision. In fact, the projects that designed in design studios from different schools are important in terms of demonstrating their approach to design education and project production.

As well as studio courses that are programmed in architecture-interior architecture schools where design education is given, the final semester, in which generally semester term project courses are important steps as formal education is finished. In fact, the graduation project is different from the design studio in many schools, usually the students work individually and present their project to the juries during the term and are evaluated by the jury. With this system, measuring the knowledge level of the students, the design process that is programmed without the studio tutor and directed by the student has a privileged place in terms of starting the profession as well as providing the opportunity for the student to show their own ideas and approaches directly. Graduation projects, which are considered as the last step of architecture-interior architecture education, also put forward the approach of schools to design education and professional practice.

Within the scope of this study, different schools' approaches to graduation projects, which have an important place in interior architecture education, are being discussed. An investigation will be carried out on the subjects given as problem areas within the scope of the project in terms of the approach of schools to interior architecture education and practice. The fact that the archives of the graduation projects of schools providing interior design education in Turkey in mind, the projects from different schools and compete Mekan2017 / Interior Architecture students are made quantitative assessments on projects participating in the national graduation project competition.

2.Interior Architecture Education in Turkey

Visual communication is established between people and space through architecture, which provides a conceptual environment to ensure harmony between people and environmental factors. Communication; provides the coincidental concepts such as cultural structure, environment and nature, and their representations [1]. The message to be given through architectural shapes and forms based on the concept of design. This message is communicated through the design by architectonic codes such as color, pattern, form and material of the whole. It is important for the product identity to synthesize and interpret this data for the architectural product that is constantly communicating and interacting with the environment.

According to The Council for Interior Design Qualification (CIDQ); interior design is a multi-faceted profession in which creative and technical solutions are applied within a structure to achieve a built interior environment. These solutions are functional, enhance the quality of life and culture of the occupants and are aesthetically attractive. Designs are created in response to and coordinated with the building shell and acknowledge the physical location and social context of the project. The interior design process follows a systematic and coordinated methodology, including research, analysis and integration of knowledge into the creative process, whereby the needs and resources of the client are satisfied to produce an interior space that fulfills the project goals. Interior design includes a scope of services performed by a professional design practitioner, qualified by means of education, experience and examination, to protect and enhance the health, life safety and welfare of the public [Url-1].

CIDQ defines interior design as the art and science of understanding people's behavior to create functional spaces within a building. Decoration is the furnishing or adorning of a space with fashionable or beautiful things. In short, interior designers may decorate, but decorators do not design. Interior designers apply creative and technical solutions within a structure that are functional, attractive and beneficial to the occupants' quality of life and culture" [Url-2].

Looking at the development of the discipline of interior architecture in the historical process, although it was a new profession born in the early 20th century, the beginning of education and the training of professionals were achieved in the 1970s. As a result of the organizing of education with organizational process which started after the second half of the century, interior designers who are professionally conscious began to grow in the 1980s. Monitoring of the design processes that are developed under the leadership of these organizations and evaluating the effects of interior architecture are ensured to keep your profession in contemporary structure.

The development of interior design education in Turkey, showing a closer date than the global development process, began with the Sanayi-I Nefise Mektebi, present name in 1925, Mimar Sinan Fine Arts University. It seems that the school followed the Beaux-Arts model, which was the dominant education model that era. According to this, the interior architecture-training program of Sanayi-iNefise-iMektebiis based on architectural education as well as workshop-studio work. From the first half of the 20th century, it is observed that the approaches adopted by the French school with the influence of the Bauhaus ecology which is developed in parallel with the international developments are observed. In this context, interior architecture education, which started in Marmara University Interior Architecture Department, which was established in 1957, points to a unique undergraduate education that is independent of the architecture discipline and away from its dominance and determination [4]. In Turkey, after the Mimar Sinan Fine Arts University and Marmara University,the interior architecture department was founded at Hacettepe University, Bilkent University, Anadolu University, Karadeniz Technical University and Cukurova University in order. With the establishment of the Department of Interior Architecture at Bilkent University, the Bauhaus school has been replaced by the American model. interior design education in Turkey, as determined by the Board of Higher Education is carried out with 4 year training period. Today, it is a discipline growing in popularity has increased the number of schools providing education in interior design and according to the data of 2017, Turkey and Northern Cyprus are still offering the interior architecture graduate education in nearly 60 universities in the Turkish Republic [2].

In relation to the the Lisbon Strategy targets published by the European Union (EU) in 2000 and the Bologna Process, in which our country joint in 2001,it is stated in the higher education systems of the member countries of Bologna Process will be able to know about the person who accoplished to finish a higer education degree, what he/she can know, what he/she can do and what he/she will be able to accomplish in any higher education system in order to increase transparency, recognition, and mobility.According to this; The National Qualifications Framework describes qualifications at a national level and their relevance to each other. The National Qualifications Framework is a system in which competences recognized and associated with national and international stakeholders are structured in a specific order. Through this system, all qualifications and other learning achievements in higher education can be explained and correlated with each other in a consistent way (http://tyyc.yok.gov.tr/).In this respect, in 2010 in Turkey in all education-related disciplines at universities revised plans to create a common framework, and tried to capture the standard level of education. Through this study, it has been attempted to give the level of analytical output of the program outputs in terms of academically field competences through the diploma projects which are the outputs of the education plans.

3.Mekan 2017 Interior Design Students National Project Competition In Turkey

Particularly in the field of architecture, competitions are one of the most important elements in the national and universal sense. Competition environments provide the most authentic, creative examples while creating communication and sharing environments. It is one of the most important methods in the field of architecture in the West. A portion of the building production in recent years in Turkey consists of the projects derived from the architectural competitions. The intensity of architectural competitions in the field of architecture and the participation of students at the professional level has led to the formation of competition culture and tradition in architecture. From the point of view of the discipline of interior architecture, it is seen that the competition culture is not formed sufficiently and there is no effect of it in designing spaces. However, the competition environment should be seen as a practical way to encouraging experienced, inexperienced creative individuals and to obtain original, creative solutions.

Competitions in the field of interior architecture, sharing of ideas, projects, establishing communication environments are also important for the development of education and discipline. In this sense, the formation of the competition culture should start from the first years of education. Because, it seems that the competitions have an important place in the careers of many famous architects and designers.

From this point of view, a competition of the Interior Design Students National Graduation Projects Competitionhas been organized in Istanbul Kultur University Interior Architecture and Environmental Design Department since 2012. The aim here is; creating a constructive competitive environment and bringing interior architecture diploma students to a common platform. It is regarded that, this competition which the students of Interior Architecture/Interior Architecture and Environmental Design Department in Turkey and Northern Cyprus join with their graduationprojects, each year regularly held, will create an awareness of thinking and expressing design-oriented among the students, communication and interaction environment, and contribute to

the formation of new ideas on the students in Interior Architecture / Interior Architecture and Environmental Design department . Interior architecture students from schools in Turkey and Northern Cyprus are involved in the competition held regularly every year with their graduation projects. It is thought that the projects participating in the competition reflect different schools' approaches on interior architecture education and professional practice. It is also important in terms of the representation of graduation projects in interior architecture education. In this context, the projects participated in Mekan 2017 Interior Design Students National Graduation Projects Competition, which was held in 2017 (Figure 1), were examined by quantitative research method. Güzelci et al.[5] has conducted a quantitative research with comparing the numerical datas of different features of projects participated in Mekan2015, Mekan 2016 and Mekan 2017 competitions. The features examined can be listed as number of participant number, project theme, building scale, project size (m2) and floor number.

Figure 1.Photos from jury evaluation meeting

Observations on Mekan 2017 Interior Design Students National Projects Competition

64 projects from different universities in Turkey and Northern Cyprus have joined to the Mekan 2017 Interior Design Students National Graduation Projects Competition. 64 projects were analyzed in the following titles. Accordingly, the Turkish National Qualifications Framework (TNQF), which is a system in which the qualifications recognized and related to national and international stakeholders are structured in a specific order in the provision of quality standard in education, is dealt with the academic weighted qualification types required to be earned (Table 1).

Table 1. Turkish National Qualifications Framework [Url-3]

KNOWLEDGE	**SKILLS**	**COMPETENCIES**			
Theoretical-Empirical	**Cognitive-Applied**	**Independent Operation and Taking Responsibility**	**Learning Competence**	**Communication and Social Competence**	**Field Specific Competence**

*The multi-dimensional knowledge in the context of local, regional, national and global scales, covering, discursive, theoretical, factual knowledge and professional service sensitivities, for architectural design/ planning/ design activities and research *knowledge and understanding on architecturaldesign/planning/design /research methods that are human and communityoriented, environmentally (naturalandbuilt) sensitive *Multidimensional knowledge, understanding of disasters related to economic,environmental,social sustainability principles and standards in the relevant field *Information on principles, laws, regulations, standards related to the field *Knowledge, understanding of the place/importance of the related field in its historical, geographical, social,cultural context	*Concept development skill in architectural design / planning / design areas *Ability to provided is course, theory and practice (integrity) for architectural design / planning / designactivitiesandresearch *Gets the Skills in issues of interdisciplinary interactive architectural design/planning/design. Developing the alternative architectural design/planning/design decisions/projects / solutions that demonstrate mastery and innovation in the definition of problems, in the interpretation of the data on the knowledge, understanding, and ability to connect	*Runs an architectural design / planning / designprojectindependently, plans and conducts research projects for these processes and produces new syntheses *Carries out individual studies on the field independently and takes individual and collective responsibility in multidisciplinary, interdisciplinary and overdisciplinary studies	*Evaluates knowledge and skills in the field with a critical and dialectical (critical, counter-thesis and synthesis) approach	*It informs the related persons and institutions about the issues related to their field and transfer ssuggestions of solutions to problems and problems in writing, verbally,visually,supports the students with quantitative and qualitative data and shares them with experts and non-experts *With a sense of social responsibility, they organize projects,collaborations and events for the social environment they live in and apply them *Uses at least the European Computer Use License Advanced level of knowledge (information and communication) technology required by its field in conjunction with computers of tware interactively	*In the field of profession,in Professional Practice,professional research, he acts with the consciousness of ethical and behavioral rules, behavioral habits and social responsibility. *Collects, evaluates and comments on data that will be necessary to make decisions in architectural design /planning / design processes considering possible social, environmental and ethical consequences *Has the knowledge and awareness about local, regional, national and global general and Professional problems in the historical period in which he lives

The basic and related variables to be investigated in the problem definition in the study were tried to be determined by using the theoretical framework and the TNQF matrix. For this purpose, each project is covered in the main headings of socio-cultural context, environmental-physical context, intervention level (Table 2). The issue of whether concepts derived from Table 1 are handled in diploma projects participating in the competition from different universities has been evaluated quantitatively.

Table 2. Design Evaluation Criteria

Problem Area\ Project	**Socio-CulturalContext**			**Environmental-Physical Context**				**Intervention Level**		
	Cultural	Commercial	Social Responsibility	Old formation	New formation	Re-Function	Temporary Permanent	Interior	Exterior	Mass Level
Σ										

It is considered important to pay attention to the elements that will maintain this integrity, which will provide the language integrity of the design, through the interdisciplinary communication and cooperation of the structural circle, which is addressed in various scales ranging from the urban scale to the interior space within the framework of architecture. Considering the data coming from the Top-scale architecture, it increases the value of integrating the architecture and interior architecture which is revealed as a result of holistic approaches that determine the character of the space. In this context, interior space should be assessed as a part of the structural space, depending on its potential to connect with the surroundings in terms of its constituent components.

4.Evaluations About Mekan 2017 Interior Design Students National Projects Competition

With this study, the design approaches of all Interior Architecture / Interior and Environmental Design Departments participating in the competition throughout the country in the context of "Mekan 2017 Interior Design Students National Graduation Projects Competition" held firstly in 2012 and organized in 2017 for the fourth time were tried to be evaluated through diploma projects. All the projects participating in the Mekan 2017 Interior Architecture Students Completion Projects Competition are in a sense capable of demonstrating their approaches to the discipline of interior architecture of different educational institutions and show different topics, problem areas, scales and solutions (Table 3).

Table 3. Design Evaluation Outputs

Problem Area	**Socio-Cultural Context**			**Environmental-Physical Context**				**Level of Intervention**		
	Cultural	Commercial	Social Responsiblity	Old Formation	New Formation	Re-Function	Temporary Permanent	Interior Space	Exterior Space	Mass Level
1.			x	x		x	p	x		
2.			x	x		x	p	x		

3.	x			x		x	p	x		
4.	x			x		x	p	x		
5.			x	x		x	p	x	x	
6.	x			x		x	p	x		
7.		x			x	x	p	x	x	
8.	x			x		x	p	x	x	
9.		x			x	x	p	x		x
10.			x	x		x	p	x	x	
11.		x		x		x	p	x		x
12.		x			x	x	p	x		x
13.	x			x		x	p	x		x
14.	x			x		x	p	x		x
15.			x		x		t		x	x
16.	x			x		x	p	x		
17.	x			x		x	p	x		
18.	x				x	x	p	x		x
19.	x			x		x	p	x	x	
20.	x				x	x	p	x		x
21.		x			x		p	x		x
22.	x			x		x	p	x		
23.		x			x	x	p	x	x	x
24.		x			x	x	p	x	x	x
25.		x			x		p	x	x	x
26.	x			x		x	p	x	x	
27.	x				x	x	p	x		x
28.		x			x	x	p	x	x	x
29.		x			x	x	p	x	x	x
30.		x			x	x	p	x		
31.			x		x		t	x	x	x
32.		x			x	x	p	x	x	x
33.		x			x	x	p	x		
34.		x			x	x	p	x		
35.	x			x		x	p	x	x	x
36.		x		x		x	p	x		
37.	x			x		x	p	x		
38.		x			x	x	p	x	x	
39.		x			x	x	p	x		
40.		x			x	x	p	x		
41.		x			x	x	p	x		
42.		x			x	x	p	x	x	
43.		x			x	x	p	x		
44.		x		x		x	p	x	x	x
45.	x			x		x	p	x	x	
46.	x			x		x	p	x	x	
47.	x			x		x	p	x		
48.	x			x		x	p	x		
49.	x			x		x	p	x		
50.		x			x		p	x	x	x
51.	x				x	x	p	x		
52.	x				x	x	p	x	x	x
53.	x				x	x	p	x		
54.		x			x	x	p	x		
55.		x			x	x	p	x		
56.		x			x	x	p	x	x	x
57.	x			x		x	p	x		
58.	x				x	x	p	x	x	
59.		x			x		p	x		x
60.		x			x	x	p	x	x	x
61.		x			x	x	p	x	x	x
62.	x			x		x	p	x		
63.	x			x		x	p	x		x
64.		x			x	x	p	x	x	x
∑	**28**	**30**	**6**	**28**	**36**	**58**	**p:62 t:2**	**63**	**27**	**27**

64 projects participating in the Mekan 2017 competition were examined in the context of Socio-Cultural, Environmental-Physical and Intervention. It is seen that 28 (43,7%) cultural (library, museum, academy, cultural center, etc.), 30 (46,8%) commercial (hotel, clinic, restaurant etc.) are considered as the problem of design in the socio-cultural context. And 6 of them (9,3%) have social responsibility (Figure 2a).

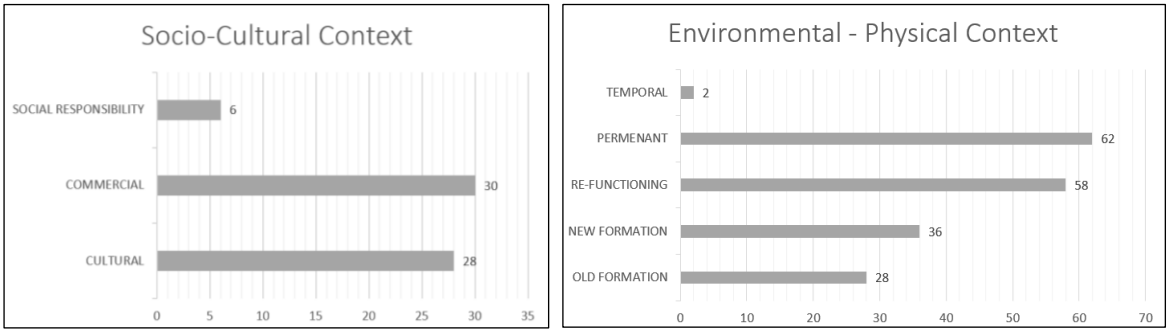

Fig. 2. (a) Number of projects according to Socio-Cultural Context ; (b)Number of projects according toEnvironmental-Physical Context

When the environmental and physical contexts of the projects participating in the competition are examined, it is seen that 28 of the designs (43,7%) are realized by re-functioning of historical structures and 36 (56%) are made by re-functioning of new (unqualified) structures. Two of the new constructions (5.5%) were deemed to have been designed within the void defined by the project, which was not re-functional. When the projects are analyzed in terms of temporary and permanence, it is seen that 2 (3,12%) of the mentioned project are only temporary and the remaining 62 (96,8%) of the project have permanent solutions (Figure 2b).

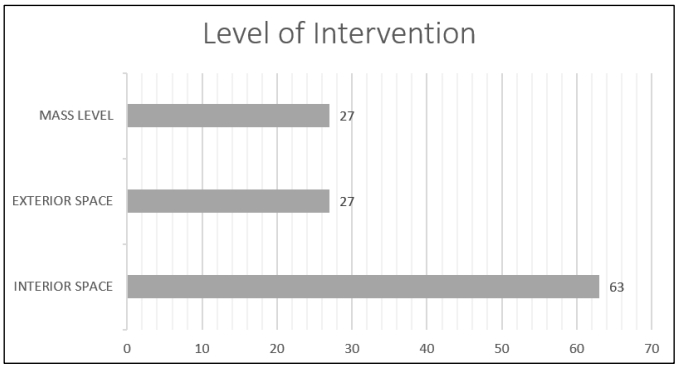

Fig. 3.Number of projects according to Level of Intervention

On looking at the projects at the level of intervention, it was observed that 63 (98.4%) of 64 projects were working on the interior scale and 1 project was only working on the outer space scale. At the exterior and mass level, 27 (42.1%) of the projects were found to have interventions at the exterior and mass level in addition to the interior (Figure 3).

To evaluate in general, it can be said that different schools are largely cultural and commercial design problems and social responsibility problems are not widely used at diploma level. When the spatial features of the designs at the graduation level are examined, it is seen that the designation of a very large area has been realized by re-functioning. Existing and described places seem to be proportionally close to each other. It has also been observed that some education approaches suggest a new structure. At the level of intervention it has been found that the majority of the projects are working on the interior scale of the projects, and accordingly, the interventions are in the semi-exteior space scale and the mass scale.

5.Results

The "Mekan 2017 Interior Design Students National Graduation Projects Competition", which allows different approaches to be read through diploma projects, which is the final product in the education process, also provides the basis for evaluating the design approaches and the approaches of candidates who will step into the profession. In this sense, in addition to the basic needs of people such as accommodation and security, the project subjects that are dealt with in different sizes with the variety of functions to meet the volume, comfort and aesthetic needs for their activities; specific to the space; are taken into evaluation objectively in the terms of environmental-physical context, socio-cultural context, level of intervention.

It is seen that, interior architecture departments located in different universities have determined that while they are determining diploma subjects in the socio-cultural context, they have an approach that adopts social-cultural objectives as a principle and not a space for consumption. It is seen that the project subjects are chosen for refunctioning the buildings because of the interior architecture discipline, although it appears to be predominantly selected in terms of environmental-physical contexts for any non-characteristic buildings,

buildings with historical characteristics are preferred by many departments as project site. Nevertheless, when we evaluate the level of competence expected from students who graduated from the Department of Interior Architecture, it is seen that the participating universities consider the design as a whole, and that the projects are shaped together according to the internal and external interventions. This can be considered as a notion that should be given in design education in order to establish an interdisciplinary relationship in design and to integrate expertise, although this is not possible in real life when it is put into a professional life. Within the scope of this study, schools which provide interior architecture education can approach to the interior architecture problem area differently according to their mission and visions. In this sense, it is seen through the competition that projects can be produced to solve spatial problems in different areas.

The "Mekan Interior Design Students National Graduation Projects Competition" organized annually at the national level that helps to create an archive for interior architecture education. Moreover, it provides the opportunity to make evaluations of the vocational education national-wide.

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EVALUATION OF VISUAL LANDSCAPE QUALITY IN THE HISTORICAL CITY CENTER OF EDİRNE

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Abstract
Nowadays, preserving cultural assets and ensuring sustainable development is an important issue. Edirne city is one of the important cultural values of our country with its thousands of years old historical features and many cultural assets. Selimiye Mosque, Macedonian Tower and Kaleiçi region are examples of the cultural assets. In this context, the preservation and sustainability of cultural landscaping is one of the main objectives of urban development. This study was carried out to reveal the visual quality of the historic city center.
Visuality can be defined as the whole of the emotional and logical expressions that the images perceived by the people's sense of sight reveal. Also visual landscaping is an aesthetic product that is perceptually related to the natural and cultural landscape in human mind, depending on the psychology. At this point, aesthetic concept of user perception is emerging as a manifestation of mental and spiritual structures [1]. Visual landscape quality is identified as measurement of specific landscape characteristics interacting with perceptual and psychological processes of individual's opinions and to evaluate the appropriateness of landscape by idealizing the visual information of users. In other words, visual landscape quality assessment is the inquiry of a landscape as a set of aesthetic criteria and components. In this sense, visual landscape is the interaction of a number of natural, visual and cultural components [2, 3].
There are three main types of models used in evaluating visual landscape quality. These models are; physical, psychological and psychophysical approaches. Psychophysical approach model was used in this study. With this method, the relationship between the physical characteristics of the landscape and perceptual judgments of the observers has been tried to be determined mathematically [1, 4]. In this respect photographs taken in various regions of the city have been evaluated by experts and users according to various parameters. As a result of this evaluation; naturalness, historical features, aesthetic value, management values of the areas have been revealed. By examining the visual landscape quality in these areas in the historical city center, factors affecting quality in the negative direction were determined and measures need to be taken have been expressed. In addition to this, the necessary steps to be taken have been specified in order to ensure sustainability of the areas with high visual quality.
Key Words: *Visual landscape quality, cultural landscape, sustainability, Edirne*

1.Introduction

The creation of spaces suitable for people's wishes is realized through creation of the most suitable outdoor spaces in terms of aesthetic and function, selection of the most suitable elements for design purpose and conscious use [5, 6].

People have been a part of the landscape for thousands of years and have been a great force in its transformation [7]. Today, along with urbanization and industrialization, increasing density of buildings in urban areas, other unplanned developments and wrong location choices cause the detachment of cities from rural areas and the depletion of the current open and green spaces in the city [8, 9].

The rapid increase in population and the increase in the number of people living in cities have brought with it significant problems. Beginning with the destruction of nature, the formation of unconscious and unplanned settlement areas continued in the form of cities being made into concrete piles; which has caused many problems today as people are separated from the nature, physically and spiritually deprived, and continue their lives in adverse environmental conditions [5, 6].

By considering visual aspects, it is allowed for the development of quality of life with the enrichment of the environment every day. These enriched environments provide a positive aesthetic experience, as well as provide restorative and inspirational environments, and thus, it contributes positively to the mental and physical health. In the aesthetic experience, which includes touch, smell and voices, the visual component is important and often oppressive [9, 10]. Today, due to environmental problems and diminishing green areas, the importance of nature and its resources are better understood, and landscapes need to be considered and assessed aesthetically as well as economically. The changing visual structure of the environment constantly affects user perception and the development of this visual quality gains importance in terms of meeting the aesthetic needs and expectations of people. For this, it is necessary to recognize the landscape and its visual value as a variable in the land use decisions [6, 11].

Landscape is a form of ecological, socio-economic and aesthetic values of natural and cultural beings that enter into a field of view [12]. According to [13], landscape is the aesthetic experience that encompasses, depicts, or retains its visual position [2]. Also in the European Landscape Convention, which was signed by

Turkey; landscape is defined as " as perceived by people, whose character is the result of the action and interaction of natural and/or human factors " [14].

"Landscape quality" is a term that involves a wide range of environmental / ecological, socio-cultural and psychological factors and describes the comparison of the landscape that is idealized in mind and the landscape in sight of one's eyes. "Visual quality" is synonymous with beauty, but it carries objectivity [6, 15].

The perception of the environment takes place with the help of several senses (vision, hearing, hearing and touch). The most important of these is the sight. More than 80% of the human sensory input is provided by the sense of sight [16]. For this reason, environmental perception appears visually to a large extent. In many study, landscape preferences are used as criteria in determination of visual landscape perception. A preference is an idea related to someone's "liking" based experience. The common aim of studies on preferences is to determine the aesthetic value or quality of a particular environment. That the researcher performs in line with the responses received from individuals who are not experts on this issue [4, 17].

Visual perception is effective in appreciation and recreational preferences, and is used as a variable in many studies such as space usage planning, resource management decision-making, strategy development and management phases ([11, 18-21]). Visual analysis of the area is the most appropriate method for the preservation of visual sources during the planning phase[2, 22].

The visual impact of an area, has a direct effect on the perception of the environment is good or bad and users receive pleasure from this area. For this reason, determining the visual quality of a project in the decision-making phase is the most accurate method for preserving visual resources. This will ensure that, besides the preservation of the visual and ecological structure of the environment, the costs incurred both during and after work will be minimized [22, 23].

Esthetically important landscapes are not merely beneficial to the living individual. They provide an important contribution to the attractiveness of the area, so they can be associated with the region's economic benefits. Because the visual character influences the overall quality of a touristic/recreational experience [19].

Visual quality assessment is the idealization of visual information of the landscape by an observer and measurement of the appropriateness to the landscape. The method that is followed in quality measurement and evaluation forms associating and classifying the qualities of the source, analyzing the area, and depending on this, determining the landscape value, taking the area usage decisions and bringing forward proposals [11]. The method to be used for visual evaluation depends on the landscape elements and qualities to be considered [23].

The reasons for performing visual quality analysis can be summarized as follows [24];

Assisting the determination and listing of priority areas of protection in regions that need to be protected as part of our cultural heritage,

Producing a method of comparing research areas and regions from the aesthetic point of view,

Determining the follow-up of adverse changes in the quality of landscapes in special areas through periodic evaluation methods,

Providing a method of establishing procedures before and after the work to determine changes in landscape and the effects of certain types of human activities,

Identifying and describing the perceivable factors and physical landscape components that are very important for environmental preferences, and writing in detail the reasons why a given landscape is attractive to the aesthetic side,

Collecting data to determine landscaping preferences from different cultures and various subgroups (male / female, young / old, visitor / native, etc.) in order to better understand the technical theory, the functioning of our competence of perception, differences between the various social groups, and their educational differences [6].

Visual landscape quality is a common product of certain visual features interacting with psychological (perceptual, cognitive / cognitive, emotional) processes depending on human observation [25]. The systematic evaluation of visual landscape quality was introduced and developed in the last half of the 20th century. It has played an important role in environmental management and politics and has become a recognized scientific research area with substantial literature base.

The measurement of landscape aesthetics, in other words the determination of visual quality value, has been one of the indispensable subjects of environmental disciplines for many years. However, studies have shown that it is insufficient to assess landscape in terms of design elements and principles, and it is necessary to base sustainability of landscape in ecological sense[2].

There are three main types of models used in evaluating visual landscape quality. These models are; physical, psychological and psychophysical approaches. In the psychophysical model the mathematical relationship between the physical characteristics of the landscape and perceptual reflections of the observers is determined ([26, 27]). The purpose of the model is to measure community preferences by excluding them from personal preferences [2, 28].

The selection and evaluation of a landscape play a decisive role in the character of the area and the surrounding landscape. The frame of this decisive role is drawn by the impact on the observer of the visual design elements, variables and their location [6, 29].

2.Material and Method

For the visual landscape assessment, Edirne historical city center was selected as the case in this study. Edirne city is one of the important cultural values of our country with its thousands of years old historical features and many cultural assets. Selimiye Mosque, Macedonian Tower and Kaleiçi region are examples of the cultural assets. In this context, the preservation and sustainability of cultural landscaping is one of the main objectives of urban development. This study was carried out to reveal the visual quality of the historic city center.

In this study, 144 photographs taken to determine the environmental preferences of the users in Selimiye Mosque Square, Saraçlar Street and Kaleiçi regions in Edirne historical city center. Of the 144 photographs, 20 were selected, taking into account the historical texture, structural and natural characteristics (Figure 1). A survey involving these photographs was applied to 65 users. In the questionnaire, the preference criterias that should be scored according to the 5-point likert system are given for each photograph. These criterias are landscape aesthetics, items distorting texture, color harmony, focus image presence, degree of naturalness, maintenance of area.

The SPSS program was used for the evaluation of the survey results and statistical analyzes. At this stage, statistical comparison of arithmetic means, minimum and maximum values and standard deviations were made. As a result, the best and worst areas have been identified in terms of visual quality.

3.Results

According to the survey results applied to the users, the highest and lowest rated images were determined (Table 1). The highest score of landscape aesthetic and historical texture criteria is the image G1 (m=4,22), and the lowest one is G9 (m=1,65). The highest score belongs to G12 in accordance with item deface the historical monuments (m=3,90), and the G19 image has the lowest score (m=2,98). The highest score in terms of presence of focus area is the image G1 (m=3,78), and the lowest score has the image G8 (m=1,78). Also, the most well-maintained area among all images are the fields in G15 and G19 (m=3,47).

Likewise, the most successful image in terms of color harmony was G19 (m=3,30), and the worst color harmony was found in the G9 (m=2,02). The image with the highest score in terms of naturalness degree is G19 (m=3,27) and the lowest score is 9 (m=1,70).

Fig. 1. Images from research area

Table 1. Evaluation results for images

Image Nmbr		Preference Criterias					
		Landscape Aes.& Historical Texture	**Deface Historical Monuments**	**Color harmony**	**Presence of Focus Area**	**Naturalness Degree**	**Maintenance**
G1	*Mean*	4,22	3,48	2,67	3,78	2,72	2,87
	N	60	60	60	60	60	60
	Sd	,846	1,186	,896	,904	,976	1,200
G2	*Mean*	2,20	3,80	2,37	2,33	2,08	2,27
	N	60	60	60	60	60	60
	Sd	,755	1,038	,882	1,084	,889	,918
G3	*Mean*	2,25	3,82	2,17	1,83	2,00	2,48
	N	60	60	60	60	60	60
	Sd	1,019	1,033	1,011	,867	,957	,911
G4	*Mean*	2,12	3,83	2,23	1,95	1,97	2,47
	N	60	60	60	60	60	60
	Sd	1,010	1,011	,890	,928	,938	,911
G5	*Mean*	2,88	3,55	2,58	3,02	2,43	2,72
	N	60	60	60	60	60	60
	Sd	,993	,928	,850	1,049	1,015	,865
G6	*Mean*	2,83	3,52	2,88	2,67	2,77	3,27
	N	60	60	60	60	60	60
	Sd	,960	1,017	,865	,896	,998	,778
G7	*Mean*	3,13	3,83	2,90	3,75	2,57	3,28
	N	60	60	60	60	60	60
	Sd	1,049	,960	,915	,985	1,031	,940
G8	*Mean*	1,90	3,77	2,23	1,78	2,13	2,15
	N	60	60	60	60	60	60
	Sd	1,037	1,140	1,125	,904	1,186	,988
G9	*Mean*	1,65	3,60	2,02	1,85	1,70	2,45
	N	60	60	60	60	60	60
	Sd	,732	1,182	,911	1,022	,809	,872
G10	*Mean*	2,70	3,75	2,23	2,42	2,22	2,17
	N	60	60	60	60	60	60
	Sd	1,225	,968	,981	1,183	1,075	,827
G11	*Mean*	2,92	3,53	2,83	2,78	2,53	2,45
	N	60	60	60	60	60	60
	Sd	1,046	,999	1,137	1,091	1,157	,982
G12	*Mean*	2,33	3,90	2,17	2,08	2,18	2,18
	N	60	60	60	60	60	60
	Sd	1,052	,915	,942	,944	,948	,792

Image Nmbr		Preference Criterias					
		Landscape Aes.& Historical Texture	**Deface Historical Monuments**	**Color harmony**	**Presence of Focus Area**	**Naturalness Degree**	**Maintenance**
G13	*Mean*	3,23	3,57	2,90	2,75	2,63	2,57
	N	60	60	60	60	60	60
	Sd	3,23	3,57	2,90	2,75	2,63	2,57
G14	*Mean*	3,63	3,72	2,77	3,67	2,80	2,72
	N	60	60	60	60	60	60
	Sd	,802	,993	,963	1,036	1,005	,940
G15	*Mean*	2,82	3,43	2,88	2,57	2,88	3,47

	N	60	60	60	60	60	60
	Sd	,930	,998	,783	,890	,825	,833
G16	*Mean*	2,48	3,82	2,35	2,75	2,50	2,92
	N	60	60	60	60	60	60
	Sd	,965	,792	,954	1,216	1,000	,944
G17	*Mean*	3,90	3,37	2,97	4,03	3,10	2,67
	N	60	60	60	60	60	60
	Sd	,933	1,057	,991	,956	1,053	1,003
G18	*Mean*	3,47	3,52	2,77	3,58	2,70	3,35
	N	60	60	60	60	60	60
	Sd	1,033	,911	,851	1,078	,889	,820
G19	*Mean*	4,18	2,98	3,30	4,02	3,27	3,47
	N	60	60	60	60	60	60
	Sd	,748	,892	,944	,854	,989	,873
G20	*Mean*	4,22	3,60	2,63	4,28	2,98	3,02
	N	60	60	60	60	60	60
	Sd	,904	,995	,901	,904	1,033	,948
TOTAL	*Mean*	2,95	3,62	2,59	2,90	2,51	2,75
	N	1200	1200	1200	1200	1200	1200
	Sd	1,227	1,012	,994	1,270	1,065	1,002

The visual preference criterias that stand out in the research area are shown in Table 2. Accordingly, the aesthetic value of the area and the historical texture have the greatest effect on the visual quality (m=2,95). This is followed by presence of focus area (m=2,90) and maintenance of the area (m=2,75) respectively.

Table 2. Evaluation of visual preference criterias

	Landscape Aes.& Historical Texture	**Deface Historical Monuments**	**Color harmony**	**Presence of Focus Area**	**Naturalness Degree**	**Maintenance**
Mean	2,95	2,38	2,59	2,90	2,51	2,75

In the same way, the visual quality evaluation of all images of the research according to all preference criteria is given in Table 3. The G19 image showing the Old Mosque and Selimiye Mosque Square was chosen as the image with the highest visual quality by the users (m=3,54). The image with the lowest visual quality is the G9 image taken in the Kaleici district (m=2,01).

Table 3. Evaluation of taken images according to visual landscape quality

Image	**Visual Landscape Quality**
G1	3,13
G2	2,24
G3	2,15
G4	2,15
G5	2,68
G6	2,82
G7	2,97
G8	2,07
G9	2,01
G10	2,33
G11	2,67
G12	2,18
G13	2,75
G14	2,98
G15	2,86
G16	2,53
G17	3,22

G18	3,06
G18	3,54
G20	3,26

4.Conclusion

With the modernization of cities, historical environment affects negatively in terms of quality and quantity. Especially material and color incompatibility in new and old structures, is the factor that one of the most influence visual quality.

Edirne is a city that has come to the forefront with its historical importance since centuries. However, some mistakes made during the growth and renovation of the city today are damaging to the historical texture and at the same time the visual landscape quality is also affecting negatively.

It is seen that in the evaluations of users, preservation of natural history in harmony with its surroundings is one of the most important factors increasing the visual quality. In the same way, it is noteworthy that in the Kaleiçi region, which has the lowest score on evaluation, a distorted formation occurs after the destruction of the old Edirne houses. Another factor that reduces visual quality is that the amount of green space in this area is very low. However, the fact that high-rise buildings are not allowed to be built in the historical center of the city, is affecting the visual landscape positively.

There is a strong relationship between tourism and environment, and each of the environmental, natural and cultural features is an attractive value for tourism. Edirne is a city that has high tourism potential in our country and develops in the field of tourism every year. In line with sustainable development principles, primarily protecting the historic environment, increasing the amount of green space and regular maintenance in the city center will increase the visual quality and as a result tourism will have a positive effect in this respect.

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INTERDISCIPLINARY APPROACHES IN THE FIELD OF ARCHITECTURE: BIOMIMICRY

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Abstract

It is not possible for professions and occupations to exist without supports of other disciplines. Being abstracted from interdisciplinary conceptions inhibits professions to continue their existence. These professions are also influenced by circumstances of modern world that are impossible to detach from interaction and communication.

Increasing needs, developing technology, newly emerged criteria and many more reasons are pushing professions to penetrate; this general movement can be seen and/or required less in some professions and more in others. Professions that are at a very critical point about self-updating and modernizing, are also in a direct relation to human life and they get more affected by positive and negative conditions of the modern world. It is no longer possible for professionals to continue their professions without collaborating with other disciplines or benefit from their backgrounds. This type of collaboration always provides an interaction between disciplines. As a requirement of the information age, ways of accessing to information have increased and it became very easy to obtain information; these stimulate the interaction. Thus, professions become aware of and affect each other.
In every part of life, everywhere that human life is in question, this situation becomes more specialized for architecture/interior architecture; it comes into prominence more than others. It is well known that every activity in life and professions which these activities are related create a common base in architecture.
Development of an architectural project depends on projects, reports and technical data from different disciplines. Moreover, in some very special projects, it may become a must to get support from sociologists, psychologists, environmentalists, economists, etc. In this case, it becomes impossible to isolate contemporary architecture from other disciplines by evaluating it in an absolute formal way; this makes it impracticable to consider architecture in its own shell.
Architecture/interior architecture that is fed by many other disciplines, also collaborate with biology substantially which helps architecture to gain biomimetic designs features. Biomimicry an interdisciplinary approach in many fields is fed by biology. This makes it possible to transfer biological designs into every discipline with a scientific approach where sustainable and resilient solutions are required. Biomimicry plays a very big role in bringing two unconnected terms together; technology and nature. Considering this role as an interdisciplinary approach in architecture puts a substantial contribution to the creation of sustainable designs.

In this paper, biomimicry and collaboration of biology with architecture will be scrutinized in an interdisciplinary perspective.

Key Words: *Architecture;biomimicry;interdisciplinary;biology;resiliency*

1. Introduction

Information communication era, while provides the practical utilization of information in every field thus presents opportunities facilitating communication, it also takes on important roles for the professions to impact each other positively. Today professions and occupations cannot exist without feeding off other fields. Isolation from interdisciplinary approaches prevent professions from sustaining themselves, the conditions of the modern world that cannot be separated from communication and interaction affect all the professions, increasing needs, developing technology, emerging new criteria and many more reasons pushes the professions to penetrate each other and the increase in the common elements of the sets is observed. In light of these facts, it is possible to understand the impact and importance of the interdisciplinary approaches in the formation of identity of the professions. This communication and circulation among the professions is a mandatory necessity not of the slipping of the professionals into each other's fields but of their goal to produce the contemporary product, supporting and serving each other. All the interdisciplinary actions establish an interaction and sharing platform between the professions, with the reflection of this on the vocational educations a medium of multi-vocality,

multi-directionality and depth are created in education. The power of this medium in vocational education spreads over the sectorial activities and brings forth also the satisfaction and success in terms of profession.

The professions on the sensitive points regarding self-updating and catching up with the era are in direct relationship with the human life and are affected more by the positive-negative conditions of the modern world. It is no longer possible for a professional to function without receiving support from other professions or benefiting from their infrastructure, and there is a continuous interaction between the professions.

As a requirement of the information age, as the ways to reach the information are multiplied and facilitated, individuals acquiring any information when they desire increases this interaction and the professions are affecting, benefiting and informing each other.

2. Important Role of Interdisciplinary Approaches in Vocational Educations

In education, especially vocational education, all the positive and negative conditions of the modern world take on roles as important actors and it becomes inevitable that the vocational interactions reflect on to and shape the education. And the way to reach maximum benefit from this situation and to prevent the negativities is through structuring the education in light of these factors.

When structuring the education, it should be noted that the ways to reach the maximum information in terms of a profession should be given however it does not mean that all the information should be injected into the heads. In vocational education, all kinds of information, all different variations, all kinds of alternatives and solution paths related to the profession are not possible to be addressed and sampled one by one. Such an education system is only possible in memorization based and narrow-minded systems. However, in the modern world grand changes are experienced in short periods of time, technology innovates and modifies itself every day this, in turn, is reflected in all the professions, production and sectors. As a necessity of the professions, if the general principles of a profession is given on a solid ground in the vocational education, the one that has the basic principles shall know how to self-structure according to the developing and changing conditions, on the contrary, the educations based memorization shall lead the person to stumble in terms of profession against the changing conditions. Perhaps a hundred years ago, while each profession had limited amount of information and alternatives within their scope, an education method with samples from all the alternatives via a memorization based system was valid. However changing time, developing technology, other conditions of the globalized world mobilized the professions into each other and somewhat diminished their freedom. Now no profession can exist in its closed box. Both a grand interaction and defining and serving each other have emerged automatically in the contemporary conditions. The professions are diversified, detailed, sectorial diversity is formed and the hardship of finding a job and being continuous in that job in a big competition environment have started to affect all the professionals. Today people who do not self-update, stay with the knowledge of their education life and cannot produce solutions as they do not think resiliently, cannot succeed in their occupations and fail in the competition environment. And that is where the interdisciplinary approach understanding and vocational information equipment mastering the fundamental principles that have resilient thought power and can produce solutions gain importance.

An interdisciplinary approach is an approach that respects the relationship of a profession with others, does not underestimate other professions and accepts and supports the mutual interaction, thus knows how to benefit from the light of the other professions. The importance of the approach should be emphasized enough in education; moreover, a structuring interacting with different disciplines should be started and flexible thinking and solution production method should be highlighted seriously.

In the vocational education understanding based on fundamental principles, a system is present towards giving besides all interdisciplinary approaches, the basic principles of that occupation. A person who acquires these basic principles shall know what to research in every different condition and produce proper solutions and succeed in his/her professional life. This method, in short, can be stated as teaching how to research, teaching how to learn. People who receive such an education, when faced with situations other than the ones memorized in the parrot fashion, do not experience the same distress and failures, and can research in every situation and find a proper solution. In preparing this base, triggering the curiosity to research, granting the skills to ask a question and finding the answer are necessary; it is very important to instill that the best answer can change in time and one should not be resilient against such a change. Architecture, interior architecture and design fields are very important and right platforms for applying these principles.

All these factors create the basic principles of multi-vocality, multi-directionality and depth, and prevail in educating professionals that know how to fit in the era, can utilize all the technological developments and intersections with other professions on their own occupation, self-update and produce solutions.

2.1. Professions of Architecture /Interior Architecture and Their Multidisciplinary Features

For the profession of architecture which exists in every field of life, at every location where human life is present, this condition is more specialized and several steps ahead of others. It is known that all the activities within life and every profession these are related with establishing a common denominator with architecture.

Architecture, with the aspect that it is a discipline creating living space and establishing this under specific rules, with the effect and contribution of many factors, can be interpreted as within life and even physically as life itself and maintains within effects, knowledge and sharing from many fields.

Architecture is a profession that creates living spaces, provides living comfort and exits in every section of live with its aspects of affecting every field of life, touching every person, embodying in every life in one way, being able to carry every culture and speak to every sensation, answering physical needs, being able to feed the sensual side, making happy, making unhappy, being the indicator, language and statement of many phenomenon like culture, ignorance, wisdom, politeness-impoliteness, richness-poorness, hunger-fullness, satisfaction, depth-shallowness and many more.

As all the professions, architecture also needs a proper education process and subsequently a properly structured sectorial order to use it accurately and to give accurate decisions in this multi-vocality, multi-directionality and depth. Architecture which is fed with life view since birth, shaped with manners, animated with technical data, gains meaning with creativity, should know how to feed properly from other professions, needs a lifelong education and updating.

2.2. Fields Interacting with Architectural Formation

The headliner of the professions based on the foundation of architecture and shares the common denominator is the interior architecture. In the interior architecture programs which aim to train professionals that are well equipped, can produce solutions, think analytically, the architectural formation has a substantially important place.

Interior architecture as an occupational activity is a discipline that provides proper contributions to living spaces and functions, and improves functional roles of the spaces, replaces their functions, and adds esthetical values, creates spaces speaking to people, institutions, senses, pleasures. This discipline while creating its products, benefits from and collaborates with many disciplines. Material science (maintains unlimited factors for interior architecture), engineering (electric, electronics, mechanical, civil), restoration, landscaping, textile, furniture, color science, fashion, aesthetics, plastic arts, psychology, sociology, biology are the top list among these disciplines.

The reinforcing effect of the interdisciplinary approaches in the identity formation of the professions creates the result that professions and occupations cannot exist without feeding on other fields. It should be noted that without confusing this relationship with the sliding of the professionals into the fields of each other, as much a professional is well equipped related to the other field benefiting his/her own field, he/she will be that much qualified in the way to perform his/her job. It is a fact that as the programs of the vocational education institutions strengthen in this manner they reach more success.

Resolving the structural systems relying on the architectural infrastructure carries civil engineering to the top of the list of vocational educations that should receive architectural formation. The civil engineer that focuses only on the structural systems, should be able to see through an architectural view, be informed of the space design principles and know to retain, by virtue of this formation, from structural solutions that will contradict with the architectural language of the space. This can also be stated as the civil engineer understanding the language of the architect. Of course, the architect should know the structural system rules and approximate solutions so that the design is not carried away by the civil engineer.

When, in the professional activities of the mechanical engineering, producing proper mechanical solutions for the design of the space, living spaces not being affected negatively; in electrical engineering applications, creating proper hardware and lighting for the language and the function of the space; in electronics engineering, proper application and design of the electronic hardware for the smart building for proper function of the space are in direct correlation with the loading of the architectural formation to these professions.

When a space is created, it is expected that the disciplines that support aesthetically should also learn and/or know –even if it is project based only - to be respectful against the space as appropriate to the function of the job to be done. And sure, in every field where architecture is present and associated with, professionals knowing their manners carry a great importance. Architecture gains value in the rate of the personal manners besides the occupational structuring; there is the importance of this manner condition also in the other professions where the architectural formation is present.

As the important role of the architectural formation in many vocational educations and as the importance of its effect in successfully performing these occupations, them being equipped with, being crowned with, also in the profession of architecture there are the effects and contributions of many disciplines. Many fields mentioned above support architecture and the occupational sets are so overlapping that even the farthest fields are not possible to distinguish with sharp lines. On this point, biological science that cannot be distinguished by sharp

lines, is thought to be unrelated to all of these at first but where the nature known as the mentor of all the professions is worked on in scientific scope, also makes significant contributions, in this regard, to the architecture / interior architecture / design fields.

This science branch examining all the living things creating an important working field for the architecture that is present in all fields and moments of life, creating inspiration and providing technical support for it carry a substantial importance in interdisciplinary approaches. When biology and architecture/interior architecture interact a set of principles, the working field called biomimicry, emerges [1]. Biomimicry is a scientific branch that researches scientifically the organisms and ecosystems in nature and shows ways for finding sustainable solutions for the problems created by human beings; in its base there is biology, meaning nature.

3. Interdisciplinary Approaches in Architecture/Interior Architecture Based on Biomimicry

There are creative and adaptable skills in the function and form of the natural system and built environment. There is an architectural system present in all these formations, from simple single cells to complex multicellular organisms even to the ecological societies; from termite mounds to the Eastgate building, from tree trunks to Gaudi's La Sagrada Familia cathedral, all these structures present architectural simulations. While the most magnificent definitions are used to express the wonders of nature, the effort of humanity to force the nature to accept the homes it built, is the evidence for how weak it is against nature. Instead of collaborating with the nature, trying to dominate it is the longstanding deficiency. Eliminating this deficiency, utilizing the genius of the nature for the most beneficial designs will also be the resolution of the ecological problems of our century.

Solution for vexed problems that are not only in architecture but also in countless science branches in the world are hidden in biomimicry. The most important way to obtain these solutions is, no doubt, being knowledgeable in biology. Thus, in an interdisciplinary work, biologists and architects/interior architects must act together [1]. To reach the base of the functions in nature, to understand the working principle and life cycle there should be an interdisciplinary approach. This approach, primarily, starts between biology and biomimicry. This kind of interdisciplinary approach generally brings together two or more distant disciplines, such as nature and technology, life and design or biology and architecture. Looking at nature during the design process has not yet been widespread however the designers somehow linked to nature are tending to natural solutions. While doing this even if a general approach is not developed, the number of designers to develop such an approach is increasing. While it is known that architecture and engineering interpret mostly using theory, biomimicry is the opposite and every time there is a need to design a new technical system, to test different biological systems as potential prototypes [2].

To adopt the lives in other forms developing in the living space of the humans and what these lives are, how they act or what their skills are, to learn them is possible via biology. Biology is a set of observation, motivation and knowledge [3]. In order to benefit from this observation, motivation and knowledge it is necessary to use the biomimicry principles and collaborate with architecture. The approach towards biomimicry is the most important principle in this regard because biology is the base for biomimicry. As high the level of biological knowledge and the continuity of the interdisciplinary work with biologists, the success rate of the biomimetic designs and the sustainable future will be that much realistic and attainable. For such an approach and interdisciplinary work to show maximum success, integrating it into the education for architecture/interior architecture will be a conformable regulation. During the interior architecture education, continuing the interdisciplinary work shall widen the vision and creativity of the designers and provide the deepening of their research skills and intellectual approaches on the design with a wider literature and scientific research support.

3.1. Importance of Collaboration with Biology

Using biology is an inevitable interdisciplinary collaboration in this stage because without biology architects/interior architects or any designer cannot determine alone the living ways, properties of the organism in nature and what kind of benefits they possess. This, when the designers get on an act to inspire from nature, the first discipline they should apply to must be biology and then biomimicry.

The skill to understand the mutual relationship of the systems is important for all the professionals in all disciplines and this skill can only be developed in an interdisciplinary education. To see that everything is connected to each other is a gift to be acquired in time [4]. Consolidation and longevity of this gift is possible via the love of nature of the designer. In short, not only with biology but in fact with nature, the real genius of the design, a collaboration should be established. Architecture has a place on the front rows of biomimetic design for long years however this placement could only progress as form. Biology should be used in this regard to establish recommendations for developing much more functions [5].

Abstracting the biological systems and structures can be established as the result of an ordered and careful interdisciplinary work. Because the application process requires solid adaptations to be created using the

architectural knowledge and design criteria in the joint application process in order to guarantee acquiring successful results [6].

3.2. Projects designed with biological examples

Biomimicry is a physiological approach that leads to establishing innovative solutions where there are many potential advantages [7]. Nature presents unlimited resources for the designers. At this point, innovative usage of the presented resource can be developed by biomimicry, the only fundamental way to follow. During the design process, handling the approach to the biomimicry cannot be achieved only by mimicking the living properties of the handled organism. This approach is the basic path to be followed for transferring the process and perception of acquiring the functional and sustainable designs using these properties. Mentioning about the examples of the designers achieving important improvements in their designs using this path and the method of transferring the discovered solutions to the design shall provide the importance of the interdisciplinary work in the biology-architecture filed to be understood better. Using biomimicry as the design strategy in architecture is classified in two categories; first is the "challenge to biology" that is defined as defining the human need and looking for a solution regarding this need in the nature; and the second is "biology to design" that is defined as developing a new design via looking for function in an organism [8][9]. The first one of the selected examples is the Eastgate building in Harare, capital of Zimbabwe, developed and constructed as the result of an interdisciplinary work with biology, supported by biomimicry; second is the Biomimetic Office building that is now yet been built but of which the design is complete as the result of a profound interdisciplinary work.

3.2.1. Eastgate Building

Eastgate Office Building is the first building of the 21st century designed with a biomimetic thinking. The inspiration of this building designed and built by Architect Mick Pearce in Harare, Zimbabwe is the mounds and the ventilation system within built by one of the termite species M. Michaelseninin (white ant - termite) in order to live.

It is considered that the designer taking on the first principle mentioned above "challenge to biology" has first of all determined the climate indoor comfort problem experienced in Harare. Harare's climate is generally dry and warm but in a short period of the year there is a humidity increase and the temperature rises, and it is cool at nights. Thus the buildings in Harare collect heat all day long and lose heat via radiation-convection at nights [1][10]. Mick Pearce has worked with biologists for the discovery of organisms able to coop with this problem and as a result, determined that ventilation-heating-cooling systems can be solved in natural ways. In this finding reached in collaboration with the biologists, it is determined that the living styles of the termites, the chimneys opening to various directions within the mounds they build and the placement of the structure according to geographical directions (north-south) is dependent on the interior space heating method of the termite mound. The air at the ground level of the mound enters at the tunnels at that level and warms the stationary air at this level. This cycle happens when needed. The temperature of this area, the bottom of the mound called the queen cell where the eggs are laid should be 30°C regardless of the air temperature outside.

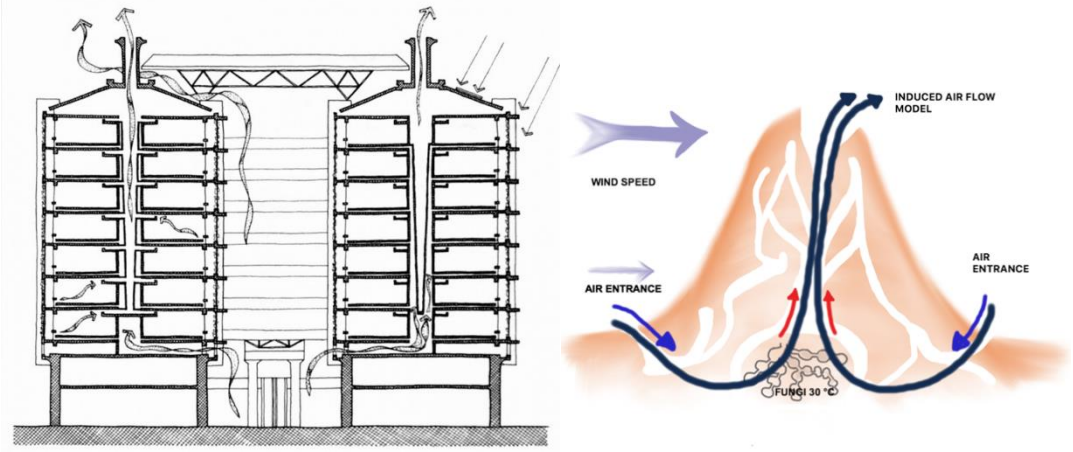

Fig. 1. Eastgate Office building and a section of termite mound [1]

This smart and sustainable structure is working exactly same with the termite mound and provides stable environmental conditions throughout the year without application of any artificial systems (Fig.1). The temperature in Harare varies all the time. Especially there is a significant temperature change between night and day and this change provides the air pulled to the first and second floors by the fans from the pressure cells of the building to be cooled down and thus the building to be cooled. Following this, it is provided that the cooled air is sucked into the big gaps placed between the floors and hit to the concrete surfaces and transferred to other

locales. The warmed air at the bottom levels is transferred to the 48 stone chimneys. In normal and steady days the wind speed at the top of these chimneys is higher than the wind speed at the ground floor; the reason for this is to create a sufficient air circulation. Thus, while the air outside is between 5 °C to 33 °C, the air inside is kept always at 21 °C [9], [11]. So Eastgate, compared to the buildings around it, uses only 10% of the total energy.

During the design of this building defining the problem beforehand and turning into biology for the solution is an important example of the interdisciplinary work. As seen, all the information indicated above, and the design process is a process that cannot be realized only by architecture. The architect realized a work in this process collaborating primarily with nature and biology and then various disciplines (civil-electric-mechanical-meteorology engineering, sociology etc.) and as a result created a building using local materials, with minimum carbon footprint and providing 90% energy saving.

3.2.2. Biomimetic Office Building

Biomimetic Office Building is an office building which is designed by the architect Michael Pawlyn with completely biomimetic solutions. The building designed in the frame of a sustainable program is not yet constructed. However, when it is built this structure is aimed to be the first building designed and built completely with biomimetic approaches in the world (Fig.2) [9].

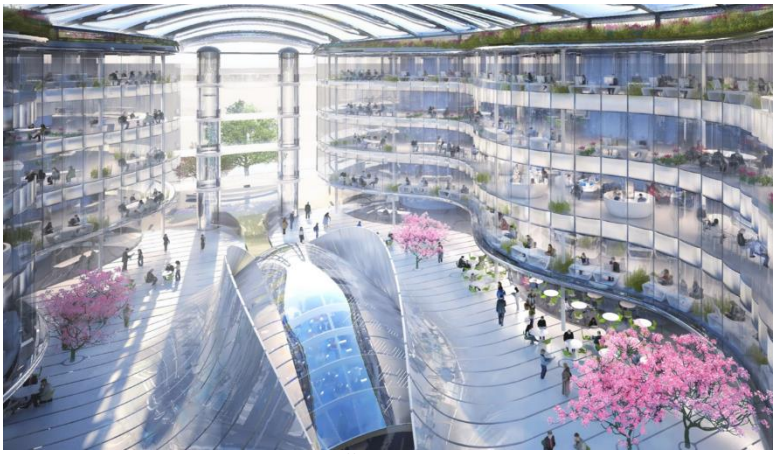

Fig 2. Biomimetic Office building, main courtyard [12].

During the design of this building, English scientist Julian Francis Vincent, a biologist and a researcher, has guided architect Michael Pawlyn throughout the project. Even if the project is not yet built, the path followed in the design phase is considered to be the second design category of biomimicry “biology to design”; because firstly organisms are determined then they are used to design the targets with specified functions. These targets include benefiting from sunlight in maximum, structural performance to plan a maximum rentable space, creating maximum area on external wall for photovoltaics, providing 20% efficiency increase in indoor space quality with maximum sun light [1].

In order to reach the targets mentioned above, as the result of the biological research, for maximum sunlight, inspiring the design of the sunshades, the mimosa leaf and for transforming the surface light into electricity the wing structure of a beetle, for heat insulation penguin feather and polar bear skin, termite mounds for decreasing the energy consumption and natural ventilation. For increasing the structural strength and acquiring wide spans the structure of a bird skull and for the double layered rigid structural elements the bone structure of the squid are used. To obtain 20% efficiency increase in spaces with maximum sunlight the eye structure of the Barreleye fish is inspired from [1]. This fish has a barrel like transparent layer over its eyes to see easily its prey in deep and dark waters. This layer reflects the light even the human eye cannot see, to the eyes of the fish and provide it to see its prey. The architect used this feature and designed a reflector in the building (Fig.3).

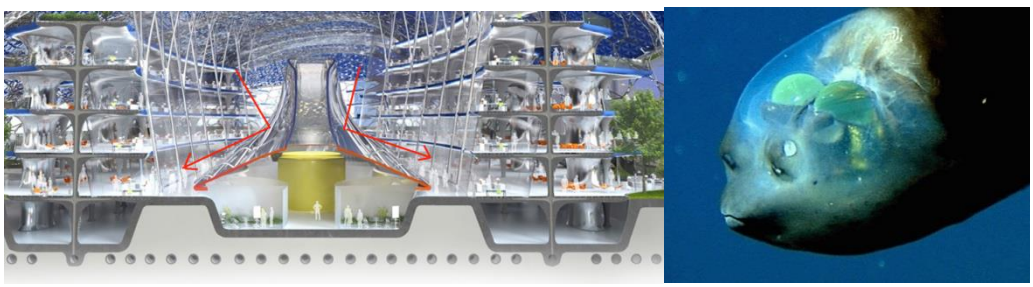

Fig 3. Biomimetic Office building courtyard reflector and Barreleye fish [12].

This reflector works just like the eyes of the Barreleye fish and reflects the sunlight to the lowest spaces of the building and increases the efficiency [1].

During the design process the architect used functions of the organisms stipulated by biologist Julien Vincent as the result of his research. In addition to these studies, the structural system of the building both being designed and inspired by different organisms and addition of structural engineering knowledge to this structure is the result of a strong interdisciplinary work and collaboration.

4. Conclusion

As a result, the importance of an interdisciplinary work in the fields of architecture and interior architecture is enormous for the sustainability of the built environment, the protection of the natural environment and revealing healthy designs. Whatever the type, scale, function and other properties of the project are, an interdisciplinary collaboration is absolutely necessary. Moreover, every collaborated discipline shall interact with other disciplines and ensure the work to be more powerful and integrative. On one hand, while this collaboration is executed, on the other hand inclusion of the interdisciplinary work into the vocational educations shall contribute greatly in developing the design aspects, researching and inquiring skills of the new generation of designers ever stronger.

In this study, the main point to emphasize is that it is possible to acquire the search for nature-inspired solutions for the basic problems faced in the architecture / interior architecture fields via interdisciplinary studies conducted especially with biology and biomimicry. Developing and integrating the above-mentioned studies into vocational educations shall greatly contribute in the multiplication of examples reached as the result of the works done in these fields and in designers' aspiration for such collaborations.

While the importance of the knowledge and collaboration from more than one discipline in design are known, the fact that the biomimetic approaches created by the science of biology contribute enormously to designs sometimes as formal and mostly as functional solutions and prepare structured grounds towards the ecological, sustainable and energy efficient designs, should be cared for sufficiently.

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ISTIKLAL AVENUE'S INTANGIBLE DIMENSIONS RELATED TO CULTURAL MEMORY

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Abstract
Urban landscapes include social and cultural practices and values and the intangible dimensions of heritage as related to diversity and identity. According to UNESCO, all these practices, representations, expressions, knowledge, skills as well as the instruments, objects, artefacts and cultural spaces, that communities, groups, and in some cases, individuals recognize as part of their cultural heritage. Through these cultural system elements that base the society's origins, the society links with the past and its previous generations. The intangible heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and human creativity.
Istiklal Avenue in other words *"Cadde-i Kebir/ Grande Rue de Pera"*, located in the historic Pera region, is among the significant areas with both tangible and intangible features regard to cultural heritage in Istanbul. Beyoğlu has hosted great civilizations throughout the history such as Roman Empire, Ottoman Empire. During the Ottoman Period, because of increase in Istanbul population and embassies were not asked to stay in Bab-ı Ali area most of the embassies resided in Beyoğlu in the 15th century. In the 16th century, French Embassy moved to Beyoğlu. Due to the French Embassy located in the area and other embassies moved Beyoğlu too such as English, Holland, and the minority population in Beyoğlu has increased significantly in the 17th century. Beyoğlu was the center of the trade so its development accelerated in the 19th century.
Istiklal Avenue encircled by buildings mostly from late 19th and early 20th centuries that were designed with different architectural styles. The avenue begins with the Galata Tower, a medieval Genoese structure, and reach out to the Taksim Square. It retains its popularity and host crowds for years. During the Ottoman period, it was one of the most popular spot among Ottomans, Europeans and local Levantines. The cosmopolitan avenue is surrounded by significant buildings and spaces in terms of political, historical and social aspects such as Deveaux Apartments, Cercle d'Orient, Narmanlı Han, Taksim Maksemi and Metro Han. Social structure and its changes have been influential in the production of cultural heritage. Between Galatasaray and Taksim has filled with entertainment places, casinos, hotels, theaters. Among these important structures there were also temporary spaces that produced for social functions such as entertainment. Entertainment areas were in the forefront of these temporary spaces with their miraculous objects and talented entertainers.
This study seeks to explore the intangible dimensions of Istiklal Avenue related to cultural memory/heritage and focus on underline them in terms of sustaining social identity. To examine this, study reveals personal and governmental archives, news from old newspapers and reminiscence of society. Also, it observes and analyses the current situation of the avenue and its future scenarios.
Key Words: *Intangible Dimension, Heritage, Istiklal Avenue, Architectural Design, Cultural Memory.*

1.Introduction

Istiklal Avenue in other words *"Cadde-i Kebir/ Grande Rue de Pera"*, located in the historic Pera region, is among the significant areas with both tangible and intangible features regard to cultural heritage in Istanbul. Beyoğlu has hosted great civilizations throughout the history such as Roman Empire and Ottoman Empire. It retains its popularity and hosts crowds such as Ottomans, Europeans and local Levantines for years. The Avenue encircled by the buildings mostly from late 19th and early 20th centuries that were designed with different architectural styles. These significant buildings such as Deveaux Apartments, Cercle d'Orient, Narmanlı Han, Taksim Maksemi and Metro Han are important in terms of political, historical and social aspects. In this study, the change of cultural memory related to Istiklal Avenue observed and analyzed from the alteration of these significant buildings (Fig 1). For that purpose, a deep prospecting related to these buildings history has been conducted.

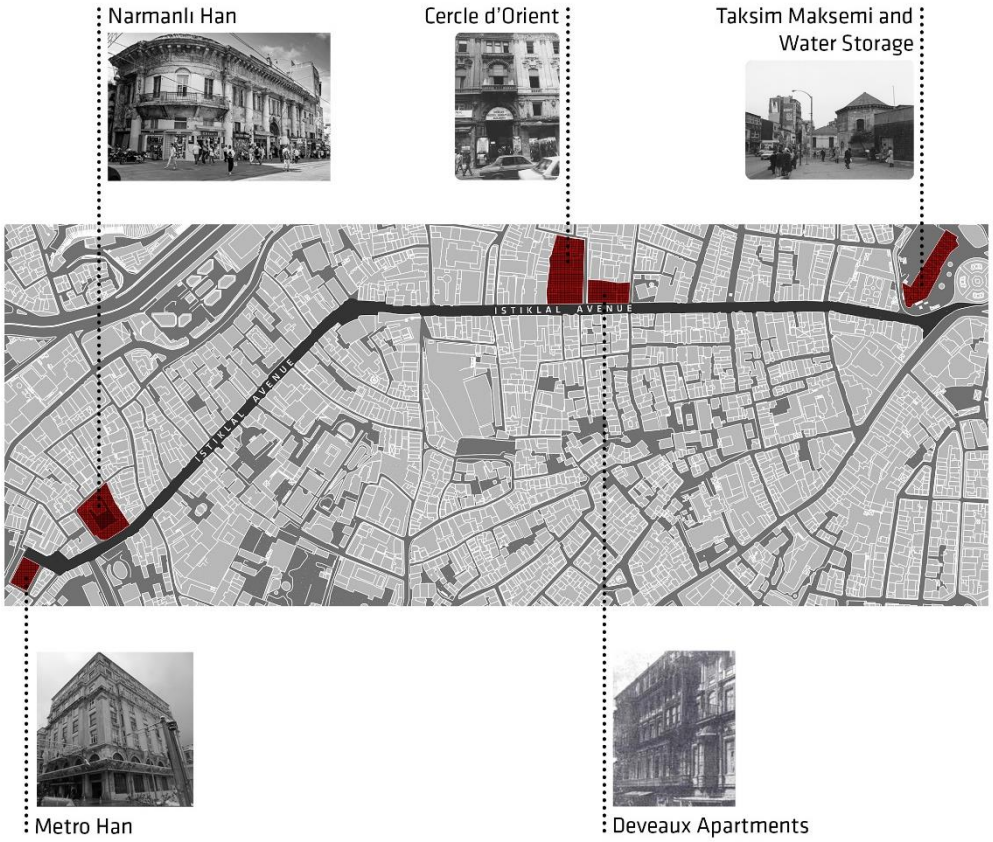

Fig. 1. The key map of the chosen significant buildings located in Istiklal Avenue.

Additionally, a theoretical research about conservation, tangible and intangible dimensions of a historic building, cultural memory and identity has been conducted. According to theoretical background, texts and regulations such as FARO Convention, Recommendation on the Historic Urban Landscape, the Burra Charter and the Charter of Krakow were analyzed to underline both tangible and intangible dimensions of the cultural heritages. In consideration of the observations and research, study aims to clarify the intangible dimensions of the Istiklal Avenue.

2.Theoretical Background

Humanity has a tendency to conserve the things regarded as valuable or miraculous objects, the buildings or surrounding areas considered to have historical or cultural values. Conservation is the care and intervention approaches that are made to prevent the building or environment from its deterioration, neglect or misuse [1]. Also by conserving of a historical building, the structure is made useful to society by providing functional content and the people of the region can benefit from it [2]. In this study, texts and regulations such as FARO Convention, Recommendation on the Historic Urban Landscape, the Burra Charter and the Charter of Krakow were analyzed to underline both tangible and intangible dimensions of the cultural heritages.

Council of Europe Framework Convention on the Value of Cultural Heritage for Society, FARO Convention, defines cultural heritage as a group of resources inherited from the past which people identify, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. It includes all aspects of the environment resulting from the interaction between people and places through time (Council of Europe, 2005).

Recommendation on the Historic Urban Landscape defines the historic urban landscape as an urban area as a historic layering of cultural and natural values and attributes, extending beyond the notion of "historic center" or "ensemble" to include the broader urban context and its geographical setting. In this context, it includes the site's topography, geomorphology, hydrology and natural features, its built environment, both historic and contemporary, its infrastructures above and below ground, its open spaces and gardens, its land use patterns and spatial organization, perceptions and visual relationships, as well as all other elements of the urban structure. It also includes social and cultural practices and values, economic processes and the intangible dimensions of heritage as related to diversity and identity [3].

UNESCO, defines intangible heritage as below:

The practices, representations, expressions, knowledge, skills- as well as the instruments, objects, artefacts and cultural spaces associated therewith- that communities, groups, and in some cases, individuals recognize as part of their

cultural heritage. This intangible heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and human creativity [4].

According to the Burra Charter, conservation is fictionalized on the existing fabric, use, associations and meanings. It requires an approach of changing as much as necessary but also as little as possible. Burra Charter defines cultural significance with sub-definitions such as aesthetic, historic, scientific, social or spiritual values for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Meanings generally relate to intangible dimensions such as symbolic qualities and memories and they denote what a place signifies, indicates, evokes or expresses to people [5]. The charter of Krakow also underlines the importance of intangible dimensions of heritages and social responsibility of the public. According to Krakow, each community, by means of its collective memory and consciousness of its past, is responsible for the identification as well as the management of its heritage. Individual elements of this heritage are bearers of many values, which may change in time. The various specific values in the elements characterize the specificity of each heritage. From this process of change, each community develops an awareness and consciousness of a need to look after their own common heritage values [6].

On the basis of the above remarks, conservation of a cultural heritage is associated with the collective/ social memory and the identity of the community. Preserving a historical heritage with social significance is important to ensure sustainability of social memory, identity and both tangible and intangible dimensions of the heritage. Heritage simply is about a sense of place that helps people to position themselves as a nation, community or individual. Conserving heritage provides not only a physical anchor or geographical sense of belonging, it also allows people to negotiate a sense of social place or identity and a cultural place or sense of belonging [4].

3.History of Istiklal Avenue

Istiklal Avenue, in other words Cadde-i Kebir, Büyük Cadde, Grand Rue de Pera, is in Beyoğlu district Istanbul. The avenue lie between the Taksim Square and the Tunnel Square, the axis named as Pera. Pera consists of a hill and the surrounding plains and slopes where the highest point is Taksim Square. The region can be reached by steep slope to the hill from Kasımpaşa, Sişhane, Karaköy, Yüksek Kaldırım, Tophane, Fındıklı and Dolmabahçe. The longest and the largest road between Tunnel and Taksim squares was called Cadde-i Kebir by the Ottomans and Grand Rue de Pera by the Levantines. The region was named as Istiklal Avenue in the Republican Period [7].

Galata, contains Pera region, have been encircled by a wall in the Byzantine Period. Almost all the population of Istanbul has lived in this walled city. Galata district was Genoese colony. There were some churches and monasteries in Pera [7]. Bosporus in the east, Golden Horn in the west was in sight on the highest point of the wall of Galata. Also, there were vineyards, cemeteries and hunting areas. The steep slope in the north of the wall of Galata, which taken to the south of the hill, is called Tunnel Square today [8].

Commercial activity of Galata region in Byzantine Period continued after Istanbul have been passed to Ottomans. The avenue took its shape for the first time after Byzantine period. Latin population in the walled city located out of the wall. Within the commercial importance of Galata and Pera increases Venezia colony, Pisa colony and Amalfi colonies have migrated to the region where the gardens are located. Citizens of Italy, France and Holland also started to settle in the region. Embassy of France in the walls of Galata has been moved to Pera region so it led up to some other embassies also located there. The relocation of the embassies and the immigration constituted the identity of the city [8]. In 1491, Beyazid II Period, the first Islamic building Galata Mevlevihanesi was build. Likewise, masjid was build named as Dörtyol (Stravrodromion) in 1491, as a consequence Muslim citizens settled on the Avenue and the population of Muslim increased in Pera. Migrations continued to Avenue from Europe in the 15th century. Along with the foreign population increased due to migrations, the stores on the avenue were increased too. With the increase of artisans, the avenue became a shopping center. In the 16th century, during the Suleiman the Magnificent Period, embassies located in Pera, outside of Istanbul. This tradition continued until the 17th and the 18th centuries and Dutch Embassy, Venice Embassy, British Embassy, Swedish Embassy have been founded. Both sides of Avenue filled with buildings in the end of the 18th century. However, dense housing decreased near by the today's Taksim Square. At that time Pera was still a suburb of Istanbul [7-8].

In the first half of the 19th century, the interest of western travelers and writers to Pera region increased after the Crimean War and Islahat Fermanı, Royal Edict of Reform. [7]. The opening of the Ottoman people to the West with the reforms that came with the Tanzimat led many young people to "*alafranga*" life. Alafranga life combined with lifestyle of Levantines and Europeans so Grand Rue de Pera became a center of luxurious, stylish buildings, places of entertainment and recreation [8]. Temporary structures were established for the circus and theater performances in the region. Taksim garden was one of the areas where these structures were established

[9]. Developments accelerated during the Abdülaziz period. The Avenue was illuminated and sewage was conducted. Tunnel construction was also started. These services were more visible on the road between Tunnel and Taksim Squares. At the beginning of the 20th century, during the years of wars, the avenue also affected. However, after the declaration of the Republic, the avenue, took the name of Istiklal Avenue, experienced the golden age of its time within the increase of the number of theatres, cinemas, restaurants, and cafes [8].

To inquire about the development of Pera Region quite difficult for the first half of 19th century. One of the most important reasons for missing information is the Great Fire of Pera in 1870. Therefore, most buildings constructed in this period haven't existed today. The Great Fire of Pera was a turning point for Pera Region. The reconstruction started in 1870 continued until the World War I, 1914. There were many significant buildings of Pera, some of them still exist, constructed and designed by Levantine or Armenian architects.

During the 19th and the 20th centuries, Istiklal Avenue was a cosmopolitan region where many languages were spoken, and where people of different ethnic backgrounds entertained and traded. After the declaration of the Republic, the number of Levantines living in the region decreased day by day because of the Turkification policy. Foreign population has decreased. New artisans did not come to replace empty shops and Istiklal Avenue couldn't gain a new identity, also the old one was vanished. Istanbul was one the most affected city by the migration to big cities in Turkey in the 1950s [8].

4.Significant Buildings of Istiklal Avenue

The cosmopolitan avenue is surrounded by significant buildings such as Deveaux Apartments, Cercle d'Orient, Narmanlı Han, Taksim Maksemi and Metro Han. In this study, to understand avenue's development process and its cultural background better, these buildings selected according to their political, historical and social features. The change of cultural memory related to Istiklal Avenue observed and analyzed from the alteration of these significant buildings.

Cercle d'Orient and the apartments nearby it in the same field are one of the most important historical buildings should be spoken of. Along with the evaluation of the unused land at the back of the Cercle d'Orient building, the street between Cercle d'Orient and Deveaux Apartment become a social value for Turkey. Within the theater and cinema halls constructions, which will take the name of İpek, Rüya and Emek Cinemas and the construction of Melek Apartment in 1924, the field gets its previous form before it demolished. At the beginning of the 20th century, the Cercle d'Orient and its surrounding cinemas was the center of the cinema industry [10]. Yeşilçam Street, between Cercle d'Orient and Deveaux Apartment, gain recognition as a cultural heritage due to its importance as a memorial of Turkey's recent history and the history of cinema.

The field refunctioned as a shopping mall complex, Grand Pera Shopping Mall, since 2016 in despite of the protests against demolishment (Fig 2). The public and some of the non-governmental organizations were against this renewal and reuse project by reason of the fact that "Ipek Cinema", "Rüya Cinema", "Emek Cinema" and "Melek Apartment" will be demolished. For all that, the project has been built as the way it was designed. The replica of the Emek Cinema hall was constructed and the facade and interior elements removed from the original hall were installed.

Fig. 2. (a) Entrance of Cercle d'Orient, 1987. (b) The deconstruction field.

One of the most controversial example of a renewal project on İstiklal Avenue is the Demirören Shopping Mall. After demolishing Deveaux Apartment, built in 1892, a huge shopping center now stood there on the same site as an imitation of it. Demirören Shopping Mall has been criticized based upon its exceeding proportions different from original façade (Fig. 3).

Fig. 3. (a) Deveaux Apartment, 1890. (b) Demirören Shopping Mall, 2016.

Narmanlı Han is another significant building like the examples argued above. It was originally built for the purpose of Russian Embassy sometime after 1831. According to the Treaty of Constantinople in 1700, it was decided to establish a Russian embassy in Pera, where most of the foreign diplomats locate their official quarters in Istanbul. The embassy building, as a group of four or five buildings all surrounded by an outer enclosure wall, had burned down according to an Ottoman document dated 1812 [11]. After the Russian Embassy had been rebuilt, it again burned down, because of a devastating fire in Pera in 1831. The building was designed and built around 1831-1833 by Italian architect Gaspare Fossati as regards most secondary sources. Its embassy function lasted until 1845, after a new one opened on the Grand Rue de Pera.

The businessmen Avni and Sıtkı Narmanlı bought the building in 1933 to settle their offices. They also rent the rest of the building to artists, writers, publishing houses and this attitude turned this place into a bohemian art and culture center. With all these settlers, the building started to be named as "Narmanlı Yurdu". There are too many settlers should be spoken of when it is thought that the building has had nearly 60 rooms. Writer Ahmet Hamdi Tanpınar, Gravure artist and painter Aliye Berger and Bedri Rahmi Eyüboğlu are one of the settlers that turned this place into a culture center (Fig. 4). They all lived, produced their works and also held exhibitions in there. Apart from that, the office of Jamanak, an Armenian newspaper, moved to Narmanlı Han in mid 1960s and continue its existence there around thirty years [12]. In the late 1980s, a new generation started to discover

Narmanlı Han owing to Deniz Bookstore. Until the bookstore has been shut down around 2000s, used books and vinyl records has been sold there [13]. Ever since, Narmanlı Han has been idle and in silence.

Fig. 4. (a) Ahmet Hamdi Tanpınar. (b) Aliye Berger with Ayla Erduran in her studio in Narmanlı Han. (c) Bedri Rahmi Eyüboğlu. (d) Ara Koçunyan in his office in Narmanlı Han.

After some proposal renewal projects, the property of Narmanlı Han sold to businessmen Tekin Esen and Mehmet Erkul in 2013. Speculations about Narmanlı Han's future also started due to other renovation projects in Beyoğlu that turned into private ownership from public use and welfare. The restoration project, approved by the conservation committee in 2015, has been protested many times by the nongovernmental organizations. However, restoration works in the historical building started last year and some sections inside Narmanlı Han were demolished (Fig. 5).

Fig. 5. (a) Narmanlı Han before demolishment. (b) During the process of the renewal project construction.

Taksim Maksemi and Taksim Water Storage, a historical water reservoir, is located in the corner of Istiklal Avenue and the Taksim Square. In Ahmed III Period (1703-1704), development works have been started to solve the water problem in Istanbul. At that time, Taksim Water Storage, which cannot be completed, was opened in the period of I. Mahmut in 1731 [14-15]. The water of Bahçeköy Stream, Balaban Stream, and Eskibağlar Stream were reached to water storage in Taksim. The water was transported to the water depots in Taksim via Bahçeköy aqueduct and I. Mahmut aqueduct from Hacı Osman Bayır, Ayazağa, Levent, Mecidiyeköy, Şişli and Harbiye. As a result, the water was distributed to the various regions by Taksim Maksemi [15].

The building of Taksim Maksemi was built in 1732. The facade of the building, ascend above on an octagonal plan, has been made of limestone. With an arched entrance door, marble coverings, windows, and birdhouses, it has a unique identity. On the side of the Taksim Square, it has also a marble fountain (Fig. 6) [15]. Taksim Maksemi is a rare protected structure on the Istiklal Avenue. During the Ottoman Period and the first years of the Republic of Turkey, there were Taksim Water Storage and garage next to Taksim Maksemi. Today, Taksim Maksemi and Taksim Water Storage is used as Taksim Republic Art Gallery.

Fig. 6. Taksim Maksemi and Taksim Water Storage.

The tunnel is a public transport system built between 1871 and 1876 to connect Karaköy and Pera. It's the world's oldest third underground community system. The square got its name from this tunnel [16]. The square is used to be a cemetery. Due to the tunnel construction, a subway station was built in the Tunnel Square. Then the subway station was demolished and replaced by the Metro Han, which was located in the Beyoğlu station of Tunnel. According to some sources, there was a fountain in the square. It has demolished during the construction of Metro Han [8].

Metro Han is four storey building according to Eugene Henry Gavand's drawings published in Paris, 1876. Onto the 5th floor, which is a rectangular shape terrace, a two-storey tower structure was built. According to the drawing, the lower floor functioned as a station and the other floors used as a hotel. However only the ground floor was built. The present state of Metro Han was determined by the projects dated 1912-1913. The structure is designed as six floors. In 1930, 7th floor was added (Fig. 7). The building has not undergone a major restoration. Only some stairs have been removed, some rooms have been enlarged. Today the building is used by administrative units belonging to İETT [17]

Fig. 7. Metro Han.

5. Conclusion

Grand Rue de Pera was a special region where many ethnic group lived together. In the region, many foreign languages were spoken in end of the 19th century and the first half of 20th century. The majority of the Avenue's population was consisted of Levantine and foreign citizen. The people living in the region engaged in trade for living. Thus many stores such as hat store, clothing store, shoes store, cafes, fishmonger, restaurant, and hotel have been opened in the region day by day. There was a profession that is identified with every single ethnic groups. For example, while Greek's professions were fishmongers, Albanian's profession was greengrocer. Shoes also have been produced by Greeks. Levantine and Greeks managed hotels. So Istiklal Avenue became a trade center in time [7-8].

Although the World War I began in 1914, avenue continued to protect its magnificence. However, the people living in Avenue felt the effect of war in the upcoming years. It was difficult for them to be a citizen of a state that fought against their own countries. When mobilization was declared some of the Levantines returned, some of them were called to war. Some buildings, such as Zapyon Greek High School, were appropriated by soldier for used as a military hospital. The war ended with the Mondros Armistice Agreement and occupation forces were in Avenue until 6th October 1923, the day of the liberation of Istanbul. During the war, some Levantine citizens left the country and the middle and lower income people continued their lives in Pera. Due to the nationalism and dominant opinion of the national economy policy, foreign citizens had difficult days ahead [7].

Firstly, Avenue's name, Grand Rue de Pera, was changed as Istiklal Avenue because of the Turkification policy (Fig. 8). Beyoğlu name was used instead of Pera in all correspondences. On October 28, 1927, the first general census of the population of Republic of Turkey was carried out. It turned out that most of the people could not speak Turkish. So the state made an effort to become widespread of the Turkish language. All street's name was changed and new names were given in Turkish. Minority schools were taken under state control and imposed an obligation that some courses in Turkish. The obligation to become a Turkish citizen to trade imposed. For these reasons, Levantine and foreign citizen left Istiklal Avenue day by day [7].

After the foreign population has decreased, local people migrated to that region. Because of Beyoğlu buildings built according to Western culture, they did not fit the East culture. Between 1970 and 1980 restaurant, theatre, cinema, casino and the other entertainment places were closed because of the economic crisis and some political reasons [7].

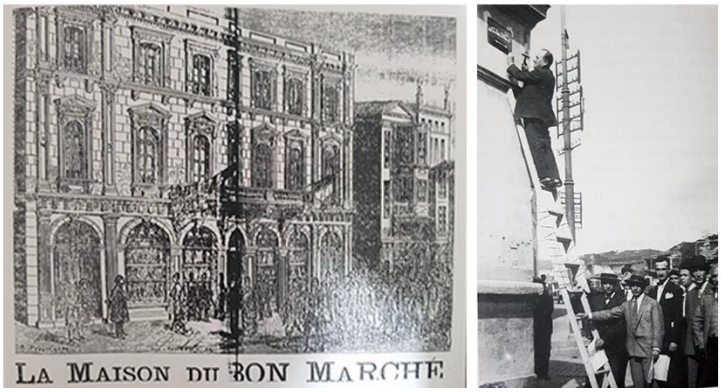

Fig. 8. (a) Avenue's name, Grand Rue de Pera, was changed as Istiklal Avenue in 1927 [7] (b) Famous clothes store, Bon Marche in Pera. Today Oda Kule substitute it [7].

Taksim Maksemi is one of the rare structures that has not changed since 1731, the date it was built. Based on the observations from mappings, the building has maintained its octagonal plan and its place on the street (Fig. 9). The idea of demolishing Maksem and replacing it with mosques has been debated for a long time. At last Council of State 6th district legally rejected with decision 07.02.1983 dated and 1983/556 numbered. This demand is turned down by the old decision taken on every occasion [18].

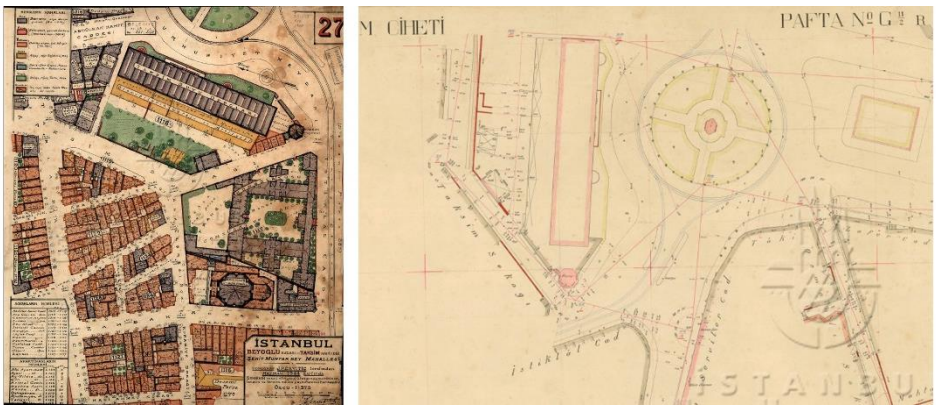

Fig. 9. Maps for different years showing Taksim Maksemi, Taksim Water Storage and the square [19].

In the Taksim Mosque debate, which started in 1968, the Council of State did not allow the construction of a mosque in 1983. Today, Istanbul Regional Council for the Protection of Cultural Heritage decided to construct a mosque behind the Maksem on the meeting on January 19, 2017. According to the project, 975 people can worship at the same time when the planned project on the 875 square meters area is completed (Fig. 10). Afterward, the mosque will be the dominant structure in the square. Taksim Maksemi and Taksim Water Storage will evade of destruction but it will almost disappear when the Mosque Project is completed.

Fig. 10. (a) The construction process of Taksim Mosque (Sav, S., 2018) (b) Taksim Maksemi and Taksim Water Storage will look like when the project is completed [20].

In recent years, considering conservation of historical buildings in Beyoğlu, many controversial construction projects have been produced. Correspondingly, the public has been got into action several times. Act 5366, "Law on the Protection of Deteriorated Historic and Cultural Heritage through Renewal and Re-use," empowered local municipal authorities to declare the Tarlabaşı neighborhood as a "regeneration" area [11]. Later on, hundreds of historical buildings that cannot be even nailed declared to be demolished except some of their facades with regard to approving of conservation committees of the Ministry of Culture and Tourism [21]. Main reasons behind these renewal projects are administrators turn values of the city into economic value and the stakeholders gain unearned income from such projects. All these renewal projects, imitates original ones, have come into being as opposed to all the meanings of the restoration. Although the renovation projects claim to have preserved the past, they basically imitate an insensible reflection of the originals. Generally, the visitor of the Istiklal Avenue does not come to that area for shopping, they prefer to visit that area for socialization, cultural interaction and to correlate with the history and the urban identity. A Renewal project claims that it can always revive idle spaces. As a matter of fact, perhaps it could even regenerate it better than before. On the other hand, restoration always maintain a bound between past and present by preserving original space and its features. Moreover, it keeps us connected to the lives of earlier generations.

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AN OVERLOOKED ISSUE, USER: "INTEGRATED HEALTH CAMPUSES/CITY HOSPITALS" OF PUBLIC PRIVATE PARTNERSHIP

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Abstract
Healthcare services and hospitals are subjects of heated debates in Turkey for the last decade. Health Transformation Programme was introduced by the government in 2003 to enhance the accessibility, efficiency, and quality of healthcare facilities in Turkey. However, Integrated Health Campuses (IHC)/City Hospitals (CH) of Public Private Partnership (PPP), that are assumed to increase the quality of services and ensure public to access healthcare services in their hometowns are being criticised by many authorities, on a number of grounds. This paper aims to approach to the subject matter from a user-centered perspective, which yet more frequently approached and attached importance from organizational, operational and financial points of view. Scientific studies presenting correlations between the design of the built environment and health/well being, especially in healthcare environments are noteworthy and effectively being set forth and put into practice in Europe and US in the last three decades. Particular studies have shown that, meeting safety, security and privacy needs of stressed patients and relatives by emphasizing human scale; providing easy access to healthcare services and easy way finding; giving patient control over the environment; access to social support and nature produce apparent positive impact on patient healing and medical outcomes. Similar positive impact has also been reported for the work performance and psychology of medical staff, which all in all increases the quality of healthcare services. Consequently, governments' Health Services Transformation Programme that come into being with IHC/CH projects were examined in terms of the characteristics of supportive healthcare environments mentioned briefly above. Criteria for the assessment of theses campuses/hospitals were developed by referring to the existing literature in the field, focusing especially on the user - healthcare environment relationship. Concluding remarks present the potential psychological, physiological and physical impacts of these grand scale healthcare environments on various user groups; healing processes of patients, work performances of medical staff; and all in all quality of health services. This study will continue subsequent to the completion of Ankara Bilkent IHC, by including user groups to the assessment of the project, in order to comprehend the reliability of the foreseen impacts of design on users.

Key Words: city hospitals; healthcare design; human scale; accessibility; public health; stress

1.Introduction

The late 20th century has witnessed a major shift in the scientific and medical community, which altered the perception of disease and health from a narrow pathogenic conception towards an expanded understanding that puts emphasis on health-promoting experiences and processes. Several studies have shown that, quality of the healthcare facility design can affect patient medical outcomes and the quality of care. The former emphasis on functional efficiency, together with the pathogenic conception of disease and health, has produced institutional, stressful, cold, thus detrimental healthcare environments that impede medical outcomes and staff performance. Even though major stress caused by the illness and hospitalization experiences of patients and relatives have been recognized, creating healthcare environments that can calm all user groups and support their psychological, social and physiological being in the healthcare environments are recently being emphasised and became a notable issue in healthcare facility design [1] [4].

Ulrich et al., [2] and McCullough [3] found out that over 600 studies reported that humanising the cold and sleek medical look and creating natural and supportive healthcare environments by, meeting safety, security and privacy needs of stressed patients and relatives; providing easy access to healthcare services and easy way finding; giving patient control over the environment; providing access to social support and nature; and eliminating all negative issues, stressors from the environment produce apparent positive impact on patient healing processes and medical outcomes [1] [2] [3].

Currently, healthcare services and hospitals in Turkey are going through an extensive renewal process which after completion, will have an impact on large numbers of patients, relatives and medical staff. Contracts have been signed and the government, for 18 hospitals, which in total will provide 30.000 beds, has already initiated construction processes. However, apart from the globally recognized correlation between the design of the healthcare environments and health/well being, this initiative have been considered important and became the subject of heated debates by means of their organizational, operational and financial characteristics and future

projections, in the last decade.

Therefore this paper aims to approach the subject matter from a user centered perspective, by referring to scientific studies presenting correlations between the design of the healthcare environment and health/well being which especially found noteworthy and effectively put into practice in the design of healthcare environments in Europe and US in the last three decades [2]. This subject matter was investigated through newspapers, social media and the healthcare services reports of opposing parties in the parliament, since architectural projects are not shared with public due to confidentiality contracts between the government, contractor and the subcontractor companies.

Nomenclature	
PPP	Public Private Partnership
IHC	Integrated Health Campuses
CH	City Hospitals
EDB	Evidence Based Design

2. Theory of Supportive Healthcare Environment Design

Two universal principles of medicine and healthcare services are; firstly, protecting public's health and well being; and secondly, carrying out accessible, qualitative, effective, economic health services and healing procedures when needed. As mentioned in the former section, recent global approach in health services no longer only incorporates medical interventions, but also the design of the healthcare environments as an effective instrument in providing health and well being.

In order to discuss the subject matter within the scope of supportive healthcare environments, scientific studies that shed light on the quality of the design of healthcare environments that can reduce patient and staff stress and improve patient medical outcomes and the quality of care will be discussed in this section.

Briefly, theory of supportive design focuses on the concept of stress and the ways of coping with stress, in order to influence wellness by using environmental features Illness and hospitalization processes for the patients and relatives; and carrying out serious medical procedures, long hours of work and responsibility of peoples' lives for the staff, are the major stressors in a hospital environment [1] [3].

Design of healthcare facilities, above and beyond being satisfactory in terms of functional efficiency, marketing, cost and codes, can (and should) promote wellness by creating psychologically supportive environments [5] [6]. Supportive healthcare design can be complementary to medical procedures such as medical treatments and operations, medical technology, and foster the process of recovery.

In considering diverse needs of different user groups, healthcare environment design should,

- not raise obstacles to coping with stress, and not contain features that are stressors, and thereby add to the burden of illness and hospitalization
- provide access to physical and social features or situations that have the potential of reducing stress, such as;
    - a sense of control with respect to physical-social surroundings,
    - access to social support,
    - access to positive distractions in physical surrounding (nature, music, animals, art).

Key points mentioned above in coping with stress and promoting wellness, should be applicable and effective for all user groups. [1] [4]

Sense of control: Sick and hospitalized patients confront two major challenges. First, losing control of their body, such as experiencing medical treatments and operations on their body, uncontrollable pain, reduced physical capabilities and restrictive diets; and second is losing control over the physical surrounding such as, invasion of privacy, not being able to be with family/spouse and socialize, confusion in way finding, not being able to prevent noise, not being able to control lighting or temperature in the room. In addition to patients, staff experience stress due to their work characterized by high responsibility but low control [1] [4]

Access to social support: Especially hospitalized patient significantly benefit from frequent and prolonged contact with family and friends who are supportive. Studies have shown that even in non-health situations people with high social support experience less stress than the ones with low social support. [1] [4]

Access to positive distractions: Human well-being is usually fostered when physical surroundings provide a moderate degree of positive stimulation. However, when stimulation is high, may cause stress; and when low, monotony and depression [7] [8]. Lack of external stimulation may divert patients' focus to their own worries and pain. Nature, arts and animals are known as the positive distractions that influence well-being. Especially being evolved as a part of nature, human beings have the tendency to acquire restorative, stress reducing messages from exposure to nature and natural scenes [9].

3. Health Transformation Programme & PPP Projects in Turkey

Due to rapidly increasing demand for healthcare services, out of date health infrastructure that no longer supports modern medical technologies and even carrying earthquake risk in hospitals, Health Transformation Programme was introduced by the government in 2003 to enhance the accessibility, efficiency, and quality of healthcare facilities in Turkey. In order to cope up with present and future problems, in addition to the limited availability of public resources to fund these new investments in healthcare, the government has decided to procure them by using a build-lease-transfer model via public-private partnership (PPP) [10].

According to the Ministry of Health of Turkey, 95,000 new hospital beds are required by 2023**.** In order to provide the required number of hospital beds and space and to update the infrastructure, Turkey initiated its Integrated Health Campuses Programme in 2007, by focusing private sector support mainly in specialized healthcare services such as woman and child health, oncology, cardiology, and rehabilitation [10].

The Health Transformation Programme and IHC/CH of PPP are the subjects of heated debates in Turkey for the last decade. The Programme and IHC/CH are being criticised by many authorities, especially Turkish Medical Association and Chamber of Architects of Turkey. Both parties are concerned with the key issues such as, the ambiguous role of Ministry of Health of Turkey in PPP System and in its management; outnumbered collaborators taking part in tenders and contracts; high costs of hospital campuses and foreign indebtment of collaborators; 70 percent patient guarantee to start breaking even; failure of gradual patient referral chain to level 1, 2 and 3 health services; and finally grand scale of hospital campuses, issues related to the means of transport to and accessibility within these campuses (Alagoz, 2016; Imrek, 2017). [11] [12]

Despite the serious doubts and criticism, Ministry of Health of Turkey has identified 29 regions to build huge self-efficient health complexes with 1,000 to 3,500 beds, by taking health requirements, geographical structure, patient flow, accessibility and the socio-economic structure of the region into consideration (Fig.1). These facilities will include high technology medical centers, social living areas, institute of medical sciences, and broad recreation sites are all together, to be completed by the end of 2018. [10] Currently, initiated tenders for 18 city hospital campuses in different regions and cities of Turkey have been authorized and constructions are in progress; and additional 14 projects are in line (Table.1).

Figure 1: Planned Locations PPP Hospital Projects in Turkey [10]

Table 1. Profiles of Contract-Signed [10]

Project Name	Number of Beds	Construction Area (sqm)	Investment Value (mill. USD)
Kayseri IHC	1583	446.012	403,9
Ankara Etlik IHC	3566	1.071.885	1105
Ankara Bilkent IHC	3662	1.129.300	1086
Istanbul İkitelli IHC	2.682	817.377	1232
Yozgat CH	475	128.119	155,5
Konya Karatay IHC	838	225.125	255
Manisa CH	558	150.692	182,7
Elazig IHC	950	207.000	308,7
Gaziantep IHC	1867	552.0554	840,1
Mersin IHC	1253	328.236	339,9
Adana IHC	1550	436.749	680,4
Bursa IHC	1355	366.045	315,9
Izmir Bayrakli IHC	2060	575.030	758,3
Isparta CH	728	178.143	263,9

Kocaeli IHC	1180	335.648	504,7

3. Expected Results of PPP in Turkish Healthcare Services and Environments

The government's PPP initiative in health services is being discussed in this section by referring to the literature survey in the former sections; compilation of public's and specialists' comments on media; and reports of opposing parties in parliament. This investigation on PPP venture in the transformation of Turkish Health Services is based on eight key aspects derived from these sources. The aspects explained below have potential for generating problems for all user groups and as a result, possibly continue to be subjects of further discussions following the completion of each IHC/CH projects. Although this study focuses on aspects 6,7 and 8 - environmental issues that unquestionably cause or elevate stress levels of diverse user groups-, major issues such as the scope of the transformation; contradictions between PPP and the nature of healthcare services; and reflections on the quality of services, medical staff performance and satisfaction are briefly mentioned below.

The issues below were being put forward to remind the fact that expectations of users from these facilities will never be parallel to their expectations from a five-star hotel. Renewed buildings, wide spaces, huge volumes, new technologies are never enough to guarantee the quality of health services and the quality of spaces that are assumed to support the healing processes of patients and relatives, and work performance and satisfaction of staff [13].

3.1.The Scope

Transformation of health services programme in the country covers, increasing accessibility of health services; escalation of bed capacity for the growing population and greying generations; modernization of the infrastructure for new medical technologies; accentuation of some speciality areas such as oncology, cardiology, gynaecology and child services, and geriatrics. In order these developments to be carried out all around the country, especially in cities where healthcare services are rather inaccessible and insufficient, credible, enormous financial support is required. This initiative has a very broad program and aiming the completion of 42.000-bed capacity, and entailing 15 billion US dollars investment. Although sharing the risk and the financial burden of such scale transformation may be reasonable, the ambiguous role of Ministry of Health of Turkey in PPP and its management; outnumbered collaborators taking part in tenders and contracts; and high costs of hospital campuses and foreign indebtment of collaborators; are subjects of heated debates and lawsuits by Turkish Medical Association and Chamber of Architects of Turkey, as mentioned in the former section. Moreover, making predictions concerning the future of PPP in health services is impossible in view of the fact that the system has never been experienced in Turkey before. Inaugurations of almost all facilities are planned for very nearby dates to each other, which leave no possibility for testing the system in a controlled small-scale example [14].

3.2. PPP and Health Services

Turkish Medical Association persistently mentions the inconvenience of the nature of health services and medical processes for the PPP approach given that, acknowledging illness and sick as revenue generating business is contradicting with medical ethics. PPP depending on 70 percent patient guarantee to start breaking even, in other words targeting an increase in the hospital bed occupancy rates is contradicting with the major principle of health services and the discipline of medicine. Additionally, this attitude is expected to prepare grounds for the failure of gradual patient referral chain, levels 1, 2 and 3 health services [11] [12].

British Medical Association with an extensive experience in the practice of PPP in health services in UK as well, strongly recommends PPP projects to be avoided especially in healthcare services, because health services is an inappropriate area for polycentric management in which the Ministry of Health become disempowered; and health services should not be targeting profit over public benefit [13].

3.3.Services

PPP proposes to share the financial and managerial burden of services by the public and private bodies. According to the architectural media and daily newspapers, in IHC/CH medical services are to be managed by Ministry of Health and the support services by the private sector. The financial support for the renewal and development of various specialties, new medical technology and equipment, five-star hotel quality inpatient facilities with single and two-bed patient rooms is likely to be provided by the private sector. Support services such as five-star accommodation facilities for relatives (hotels and guesthouses), nursing homes for the aged, restaurants, cafes, retail stores, underground parking lots, transportation services within the campuses are to be run by the private sector. Management of techno parks and research centers in IHC/CH, are not mentioned by the media and other authorities yet. Although many of the services undertaken by the private sector are very crucial to provide support for the healing processes of patients -such as accommodation for relatives; restaurants, cafes, socialization opportunities-, media severely criticises private sector's role as trade and profit oriented, rather

health services [15].

3.4.Staff, workload, job satisfaction

Relocating users of old and out of date hospitals in the city centers is being mentioned as a problem not only for the patients and relatives, but also for the staff. Public transportation services that are reported to be insufficient for IHC/CH located at the outskirts of the cities are expected to complicate daily life for the staff who, can be recognized as full time users of these facilities. Due to their large scale, arrival to and circulation within these campuses require additional transportation. Due to the increased floor area circulation inside the building blocks, likely to be tiring and frustrating for medical staff, who usually race against time. In addition to the potential problems related to size and scale, policies of Ministry of Health in managing medical and support services staff is being criticized as well. Scarcity of medical and support services staff against increased capacity, thus increased workload is likely to decrease the quality of care and cause staff burnouts. Such working conditions, and load were also criticised to limit the possibility and length of doctor-patient appointments, medical discussions between staff and staff breaks [12].

3.5.Hospital Bed Capacity

Although government targets to increase the bed capacity of health services in the country by 2023 with IHC/CH initiative, by closing down existing hospitals in the city center, is unlikely to succeed at the expected quantitative development. This decision gives the impression of a deliberate attempt to guarantee IHC/CH patient numbers for breaking even in PPP, rather than renovating the old, out of date buildings. Furthermore, focusing on increasing bed capacity in 'third level' health services almost certainly leads 'first level' medical services, namely family practice to disappear and likely to decrease the quality of care and increase staff burnouts due to over loading medical and support services staff in IHC/CH [12].

3.6. Accessibility & Transportation

In the delivery of health services, location of the facilities is an important concern given that, timing, fast and easy access to medical help save lives. Apart from such extreme cases, easy access to hospitals for all sick, elderly and impaired is a necessity, especially for the ones without a companion. The Universal Design and recent global standards in healthcare environment design principles points out the significance of accessibility of healthcare facilities [3].

IHC/CH projects in Turkey are planned at the outskirts, due to the densely urbanized city centers. The attitude of closing down major facilities in the city centers and transferring all medical staff and patients to the new facilities are most likely to create chaos in public transformation and complicate the situation for the sick. The scarcity of public transport services to these areas are already being criticised by the public and authorities [15] [16]. Government officials are promising additional public transportation services, however single-center position of these complexes are likely to create traffic congestions around the hospital campuses if visited by many users. Another side of the story is conspiracy theories about the remaining plots of relocated hospitals in the city centers, which may be serviced to some parties' benefit as an unearned income [17] [18].

3.7. Size, Circulation, Wayfinding

The huge sizes of these complexes are another concern for the sick, elderly impaired and staff since, even circulation in the campuses require additional transport of some sort (Table1). Massive building blocks disregarding human scale, besides concerns about accessibility and wayfinding, is likely to impede the psychological well being of the users, sick or healthy. Potential problems of large scale has also been recognized by the contractors and planners therefore, moving walkways to overcome increased distances within each block; escalators replacing staircases; and mini electric cars replacing stretchers for patient transfer are proposed in the project programs. However, these proposals have been promoted as a necessity of modern, high quality and high-tech health services [15]

Due to the sizes and complexity of these campuses and building blocks, circulation and way finding issues have the potential of creating problems and possibly end up causing stress for all user groups. Difficulty in wayfinding is likely to impede with the feelings of safety and security, which causes stress to increase [1] [4]. Patients and relatives already experiencing stress decreased bodily capabilities due to the illness or medical procedure; and medical staff rushing in between departments and patients are likely to experience stress, fatigue and frustration.

3. 8.Patient comfort, privacy, safety, security

Global literature on healthcare environment design strongly advocates the positive impacts of single-bed patient rooms in healthcare environment design, by referring to the scientific data obtained by evidence-based design (EDB) approach in healthcare design research [3]. Single-bed patient rooms were proven to reduce the length of stay, reduces hospital- induced nosocomial infections, improve patient confidentiality and privacy,

improve sleep outcomes, improve patient's control over the physical conditions of the room, facilitate social support by families, improve staff communication to patients and increase patients' overall satisfaction [1] [2] [3] [4] [16].

IHC/CH initiative proposes to increase the number of single-bed and two-bed patient rooms all over the country. However, the declaration of this initiative as "providing five-star luxury, single and double-bed patient rooms with high quality finishes and furnishing including own WC and bathrooms" appear to be an effort of making an impression, rather than serving the purpose of healthcare services in this age [15] [16] [19].

4.Concluding Remarks

The PPP projects are expected to improve patient access to high quality public health services and support the Government of Turkey's efforts to transform its health sector, however the scope of the program is so broad that contractors and many authorities mentions the danger of not testing it via a small scale example before putting it into practice all around the country. PPP targeting profit; and healthcare services ideally targeting public service are inappropriate to work together due to different natures. Medical services, similar to all other services undertaken by the private sector, will be transferred to public after the first 25 years. Until then public will remain as the leaseholder of the private sector, therefore Ministry of Health is likely to be disempowered. Private sector targeting profit is planning to open up many trade and retail facilities within the hospitals campuses, which raises questions and criticisms regarding the approach to IHC/CH projects of both the government and private sector.

When the initiative is viewed from the users perspective, both patients and relatives, and staff are seemed to be of secondary importance. Huge scale, way finding and circulation problems; and comfort, safety, security, privacy needs of all user groups that seems to be overlooked as mentioned in the former sections. Issues related to staff workload, satisfaction, physical and psychological working conditions are raising questions and criticisms. Targeting the largest scale healthcare facility for the sake of competing with other countries in size; high technology medical interventions with high technology equipment, luxurious inpatient areas and services; increasing bed capacity makes a great display rather than a user oriented facility, or a user oriented initiative as a whole.

In 70's and 80's hotel-like hospitals, huge scale healthcare complexes became very popular, in US. Institutionalized atmosphere with cold sleek, hygienic look which highlights solely medical technology and function rather than human have been left aside by the end of 20th century as the result of studies proving supportive healthcare environment design can improve healing processes and work performances. British Medical Association with an extensive experience in PPP in health services in UK, strongly recommends PPP projects to be avoided especially in healthcare services, since health services is an inappropriate area for polycentric management; and health services should not be targeting profit over public benefit. Targeted transformation in health services should be also be focusing on the needs of the users, rather than the profit or making a great display.

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PERCEPTIONS ABOUT THE PROFESSION OF INTERIOR ARCHITECTURE BEFORE AND AFTER EDUCATION: A STUDY IN ANTALYA, TURKEY

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Abstract

Serious need for profession of interior architecture is continually increasing, however the status of this profession is still a dilemma. Un-clarity about the definition of interior architecture starts within the discipline as a result of various discussions on differentiating interior architecture from interior design. The discipline in some regions is initially named as interior design while in some other regions it is named as interior architecture.
Conflicts between interior design and interior architecture has influenced the educational programs too. Name of the bachelor programs varies as interior architecture, interior architecture and design, interior architecture and environmental design or interior design. The scope of each of these programs' curriculum at some points share similarities while at some points vary. This variety claims of a battle of defining the discipline of interior architecture within the framework of education. At this point that the discipline is evolving day by day, it is necessary to learn the similarity and differences of interior architects' perception about their profession. It is also important to learn the level of differences in their perception before and after their education.
Current study has focused on Antalya, a city in Turkey and has investigated interior architecture senior students' perception about content of their profession and compare their perception with the perception of professionals who have graduated from the interior architecture program. The main objective was to learn the level of similarity between the keywords that participants had used in order to define the profession of interior architecture.
Comparison of answers from both groups showed that terminologies and keywords that has been used for defining the content of interior architecture was very different among and in-between both groups of participants (students and professionals). This variety confirms the un-clarity about the content of profession within the community of interior architects. In addition to the differences in professional perceptions, most of the interior architects has complained that during their education in university they did not get any sufficient information about the reality of their profession and therefore their perception about their profession has been changed after their graduation.

Key Words: *Interior Architecture, Professional Dilemma, Perception Diversity, Education, Practice*

Introduction

According to 'ASID Interior Design 2016-2017 Outlook and State of the Industry', "number of interior designers has grown by 11.9% to 68,067, and the number of interior design firms has grown by nearly 6% to 12,642 (URL 1"). In another statistical research that is posted on 2nd of November 2017, WISWGUYSREPORT has declared about an optimistic growth of interior design profession during the past four years. In this report it is stated "Interior Design market size to maintain the average annual growth rate of 6.75% from 76670 million $ in 2013 to 93277 million $ in 2016, the analysts believe that in the next few years, Interior Design market size will be further expanded and we expect that by 2021, the market size of the Interior Design will reach 121054 million $ (URL 2)".
This statistical growth shows that over the past few decades, profession of interior design has started to reflect what it covers as a profession more accurately. Profession owe this to interior designer/architects' years of effort for identifying the scope of their profession and prove how they can be involved with the designing of the buildings.
Interior architecture is introduced to society in a reaction for improving the content of interior design profession and separate interior design from interior decoration. However, this movement started to create new era of problems. 'Interior architecture' caused of ongoing discussions over differentiating interior architects and interior designers and therefore societies still are confused in understanding the content of each profession. At the moment still there are countries that refuse to use the term interior architecture (Attiwill, 2013). Consistent with mentioned issues, regardless of the growth of the profession of interior design, still many interior architects are stuck somewhere in between workplace, the legal arena, and the public's opinion (White, 2009).
In turkey it has been more than 50 years that education programs are offering interior architecture education with the status of 'interior architecture' or 'interior architecture and environmental design'.it is also around 40 years that chamber of interior architecture is established in Ankara, capital of Turkey (Şumnu, 2014). Turkey's history of the profession and increase in the number of universities that offer interior architecture education shows that

the components of the profession are at its place and the discipline is growing, however feeling of security and clarity about the content of the professional among community of interior architects needs to be studied to see if the profession is really at its place.
Birdsong (2001) has addressed that "the profession as a whole must be committed to the development and maintenanece of the components of the profession", therefore to development and maintain the profession it is necessary to identify the components of the profession. In this aspect, this research aims to study the perception of senior students and professional interior architects about the profession of interior architecture and shape a preliminary view about the common components of interior architecture based on participants' perceptions. Current study has focused on Antalya, and the main objective was to learn the level of similarity between the components that participants will use in order to define the content of interior architecture.

Literature Review

Emergence of interior architecture had go through an extensive path. Division of interior and exterior is referred to late fifteen centuries while in early 1800's publications related with interior started to be emerged and designing interior spaces has slowly introduced mainly within the domestic functions (Rice, 2007). Finally, in 1970's the term 'interior architecture' has been emerged as a term that "employs architectural theory in creating interior space (Coles & House, 2007, p. 9)".
According to many historians Elsie de Wolfe is the first person who started to deal with interior decoration as a career separate from architects and in 20th century she established the career of 'interior decoration' in New York (Sparke & Owens, 2005). Success of interior decoration result the growth of this profession and in 1940, many designers who were dealing with built-environment started to call themselves as interior designers and it was at that time that design started to be preferred over decoration. In 1975 'American Society of Interior Designers (ASID)' was merged (Pile, 2000).
Distinction between 'interior decoration' and 'interior design' did not resolve the recognition of these two profession and due to this problem some of the interior designers started to use 'interior architecture' instead of 'interior design'. However, using 'interior architecture' also did not help the recognition of the profession and confusion continues (Attiwill, 2013). In 2009 at the IDEC International Conference in St. Louis, four futures have positioned for both professions. One of these future has discussed the split in the profession, with interior designers focus on residential design, while interior architects can extend their focus to health, safety and welfare (White, 2009), but not all the interior designers and interior architects preferred or permitted by the law to follow this distinction.
Purposed distinction in IDEC may seem unreal while today in most of the countries, 'Interior architect' is not legal status to use, unless the person is a qualified architect (Attiwill, 2013). Of course in some countries interior architecture is verified, but in some of these countries registration of the title is under the branch of architecture. Germany is one of the countries that title of interior architecture can be registered if required admissions are fulfilled, but after the registration interior architects are becoming the members of chamber of architecture (Leydecker, 2013). And with all the discussions above, a triangular relationship between 'interior design', 'interior architecture' and 'architecture' is continuing.
Educational programs that offer interior design or interior architecture just like the profession itself are offered with variety of names. The educational program first started as interior arrangement and decoration in the middle of 20th century. Later industrialization and Bauhaus introduce interior design and interior architecture as educational programs (Lees-Maffei, 2008). First bachelor program of interior architecture is established in Parson's School of Design in 1896 (May, 2008) and later with emphasis of interior architecture in Bauhaus number of institutes and universities that offer interior design or interior architecture program started to increase (Piotrowski, 2014).
In turkey interior architecture education was established within the academy of applied art in Marmara University in 1957. Parallel with the global progress of interior architecture, the number of universities that offer interior architecture education started to increase around 1985 (Cordan, Görgül, Numan, Çinçik, 2014). At the Beginning of 2000's, there has been a serious rise in the number of the interior architecture undergraduate programs in Turkey (Ertürk and Aslan, 2005). Also Name of the bachelor program that offer education in interior architecture varies between 'department of interior architecture' and 'department of interior architecture and environmental design' (Şumnu, 2014). According to the list of the programs in universities for the academic year 2017-18, there are 12 universities that offer interior architecture education and 24 universities that offer program of interior architecture and environment design. There has been little research about the components of the profession in the eye of professionals and society.

Methodology

Two open-ended questionnaires were constructed. One questionnaire was constructed for senior interior architecture students and this group were only asked to define the profession of interior architecture. Second questionnaire included two part and was constructed for interior architects who were active in the field for at least 3 years. In this questionnaire participants in addition to defining the content of their profession were also asked to mention if their perception about their profession has been changed after their graduation. Participants who would had answered the second question as yes were asked that if they are complaining about the change they have experience, and if yes are they blaming the university education or perception of society for this change. If they would blame another subject they would fill the choice 'others'.
First group (senior students) include 40 participants, mainly 4th grade students and second group include 20 interior architects who were graduated from the program of interior architecture. Answers for the first question of both groups has been evaluated by using 'Textalyser' program. By using this program keyword that have been used with the most density were analysed and identified as top keywords.
In the first stage of analysis, answers of students has been analysed separately from the professionals. The keywords that had been used with the highest frequency by interior architects were analysed first. The amount of frequency of top keywords were also recorded. In second step, students' answers were analysed and frequent keywords that they had used for defining the content of the profession has been analysed with the same method. Later the level of agreement between the professional interior architects has been established. Finally, in the third stage of analysis answers of both groups were analysed together and main components of profession of interior architecture were established according to the keywords with the top frequency. Later the frequency of these components has shaped an overview about participants' perception of their profession.
In the last stage of research, second question of second group of participants were evaluated in order to learn how many of the participants have been changed their perception about their profession and the reasons of this change were analysed based on participants' answers.

Findings

Analysis of answers by professional interior architects showed they had defined the content of the profession with a very diverse words and terminologies. Result of analysing the participants' definition by 'Textsnalysis' established 5 main keywords. The results are showed in Table 1.

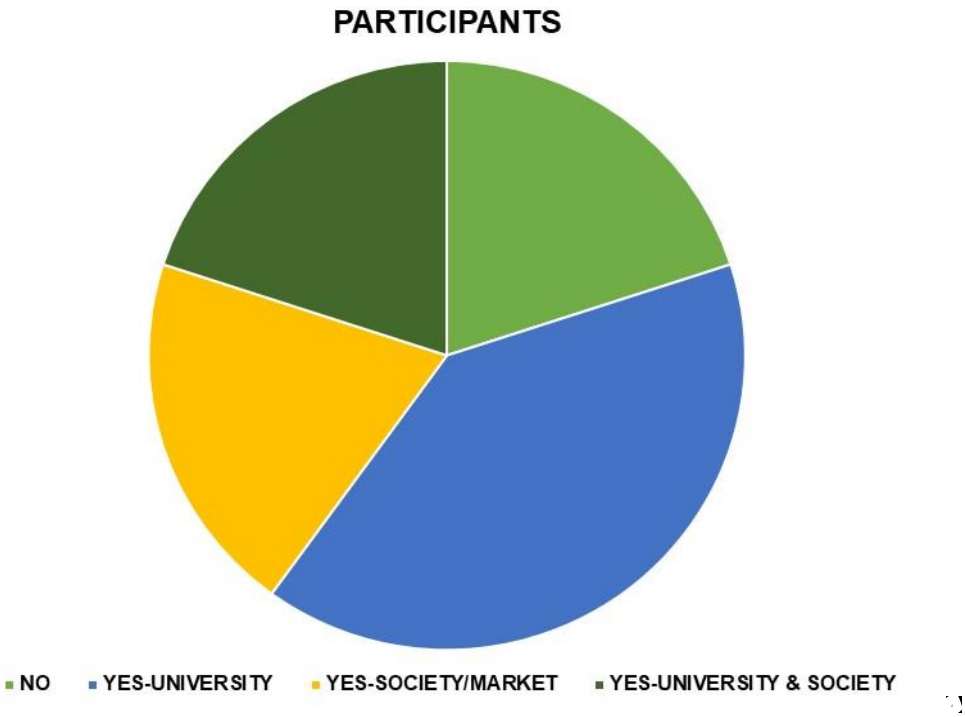
Table 1- Top common keywords used by interior architects in defining the profession of interior architecture

Key word	Frequency of use	Percentage
Space	13	65%
People	10	50%
Aesthetic	6	30%
Human life	4	20%
Ergonomic	4	20%

Findings (Table 1) showed that using common keywords for defining the profession was very low and in addition to this, elements such as context, environment, light, material, structure, texture and colour which are defined as elements of interior architecture (Coles & House, 2007, Brooker & Stone, 2007, Brooker & Stone, 2008) were missing in most of the definitions. Moreover, content analysis of the definitions showed that rather than defining the content of the profession, most of the definitions include explanations that intend to defend interior architects' skills and knowledge. 70% of the participants had mentioned what should not be considered as interior architect's profession while defining the content of the profession.
In second part of the questionnaire participants were asked to respond to this question: 'did your perception about your profession changed after your graduation? If yes, which one do you blame: deficiency of university education, lack of Market/Society's knowledge about your profession or other indicators'. According to the answers of this part of questionnaire, 80% of participants' perception about their profession has been changed after their graduation. 40% of participants blame the university education for not giving sufficient information about the reality of the profession, 30% of participants had blamed market/society's lack of knowledge about the content of their profession and 10% has blamed both society and market as a reason that have changed their professional perception (Chart 1). Complains of group who blamed university education can mainly classified into 2 groups:

- Lack of getting enough education about the real challenges in the field
- Lack of getting enough education about managing the cost and financial issues

Chart 1- Participants' respond for the reason behind the perception change about their profession



During content analysis of students' definitions 10 participants' definition were eliminated since they did not define the profession and instead they had written a sentence related with difficulties of the major or how their profession is not identified in turkey. Due to this elimination, common words frequency and percentages has been calculated out of 30 participants.

'Textanalysis' of senior students' definition of interior architecture has identified space, users' need, human life, function and imagination as 5 common keywords with highest frequency of use (table 2). Same as professional interior architects, space had the highest percentage of use and in addition to space, human life also was another common keyword between 2 groups of participants. In compare to interior architects, percentage of use for students' common keywords were not that different than interior architects and senior students had also defined their profession with various keywords and terminologies.

Table 2- Top common keywords used by interior architecture senior students in defining the profession of interior architecture

Key word	Frequency of use	Percentage
Space	20	66.6%
Users' need	16	53.3%
Human life	11	36.6%
Function	9	30%
Imagination	5	16.6%

During the content analysis of students' definition, it was noticed that in contrast to interior architects, 90% of the students have defined the content of profession did not defend or mention duty or responsibility of interior architects. Another interesting finding was that 12 students out of 40 has claimed about profession's lack of identity in Turkey. 5 of these students were from the eliminated group who have not addressed any definition for the profession.

Conclusion

Based on the findings in this study, it is apparent that both group of participants had used variety of terms and components in order to define the content of interior architecture. This result claims that there is a lack of a common perception about the components of the profession even among the community of interior architects.
Results of analysis also showed that space and human were the common keywords with highest density in defining the content of interior architecture. According to this result it can be concluded that common perception between participants has been shaped around space and people's need. Also lack of referring or relating the profession to architecture claimed that participants did not see their profession under the branch of architecture.
30% of students and 50% of interior architects were complaining about their lack of professional identity in society, which shows that regardless of long history and growth of the profession in Turkey, the status of the profession has not gain sufficient level of approval. It results also open a discussion that interior architects are not feeling secure about their professional status since they felt the need to describe and defend the skills and capacities that are included in their profession instead of defining the content of the profession.

Further Study

This study has shape a preliminary research about the similarity and differences of profession of interior architecture among professionals and students. Results of study has showed that it is necessary to do more researches about the gaps and dilemma of the profession within the community of interior architects. Since insecurity and un-clarity within this community will prevent society to approve interior architect's status, this community need to be the target of researches in order to identify their uncertainties and insecurities. Further research on bigger group of interior architects will shape a comprehensive overview about their similarities and differences in professional perception and as a result identify strength and gaps within community of interior architects.

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PERCEPTION OF SPACE CHANGING WITH CULTURAL CODES

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Abstract

Space is perceived distinctly by every individual according to the experience that is acquired. It is commonly argued that the reason behind that is the effect of personal qualifications besides cultural background. While the reason of that the individuals who share the same cultural values evaluate the same space differently is their personal qualifications, the individuals from different cultural background evaluate the same space in various manner because of their cultural variations.

This study will question whether the Bozok University academic and administrative staff's perception and value on the constructed environment changing over time, the factors that effects the perception, the role of their cultural codes on their perception of space and whether the education they received has any effect. In the context of the study, these questions are asked to receive responses:

-Which image elements are primarily used to express the perception of space which develop in university staff's visual memory?

-Can the education they received have any effect on the perception of space?

-Can the environmental perception differentiate over time and via experience?

How the cultural background effect on space reading is starting point of this study. The problem of the study is the question of what the differences of perception of space in university staff who grew up in rural and urban areas are.

The purpose of the study is questioning the perceptional space reading of individuals in architectural spaces which constitute with personal experiences. Since perception is the experiences that are established in the memory of every individuals. Experience involves both the cultural, economic and social data of the society and personal accumulation. Space reading is experience that depends on perception. The contribution of the study on space perception is examining the specific levels of physical elements (focus points, district and roads) that are put emphasis on cognitive mapping studies with personal factors and experience together.

Key Words: Perception; space; space reading; cultural codes.

1.Introduction

Cities maintain their existence as a visual image element in the minds of individuals. These visual characteristics, living experiences are the components that make up the city's image in the minds of the individual. Mind maps give information about the readability of individual places.

Kevin Lynch called the elements of urban image elements that helped to define cities in his 1960 work, The Image of the City, that underlies urban perceptions and mind maps. The image items describe the areas in which the city has different characteristics, the boundary / edge elements that define the boundaries of these regions, the ways of the channel spaces, the focal points of the gathering and scattering places, and the symbol / marker elements which are remarkable structural elements. According to Lynch (2016), while cognitive maps of individuals with less spatial experience about the city are expected to contain spatial elements predominantly, sequential qualitative items can be primarily described in the cognitive drafts of individuals with increasing experience with space.[6]

As a research area, Yozgat province was selected and the image items belonging to the city were determined on

the subjects.

2.Yozgat

The city, Yozgat, is located on Bozok plateau above 1300 metres from the sea level in the region which is close to the center of Anatolia peninsula. The city consists of %54.4 plateau, %33.7 hills, %10.9 lowlands. (Figure 1) It has Bogazliyan, Sarikaya and Yerkoy districts, however most of the people reside in the city center. [2]

Fig. 1. General view of the city

There are natural thresholds that prevent Yozgat develop physically. These thresholds are; areas with above thirty percent slope, forests, the forbidden regions for agricultural activities, flood and irrigation areas. The city tends to develop in east-west direction within the valley bordered with high hills in the north and south. (Figure 2)

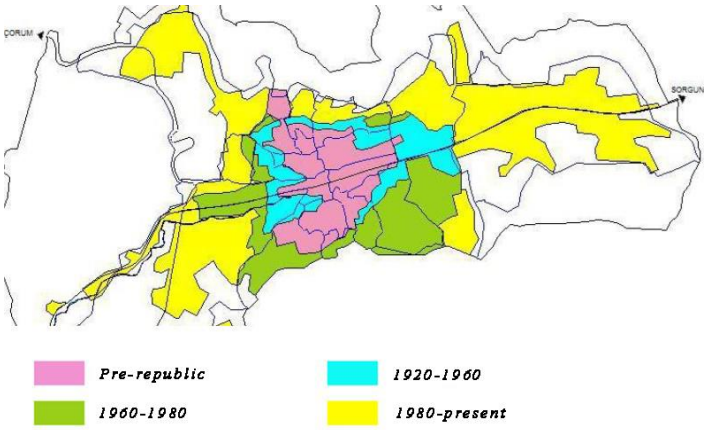


Fig. 2 The Spatial Development of the City Center of Yozgat during historical process

The city, Yozgat, is one of the oldest settlements in Anatolia. After Hitit civilization on the province during B.C 2000-1500, Frid, Lidya, Kimmers, Persian, Macedonia, Pontus, Rome and Byzantine civilizations reigned in order. As a state of Ottoman Empire, Yozgat was set up in the begining of sixteenth century. The most fostering years of city occured in Capanoglu period in the beginning of nineteeth century. Capanogullari built a number of mosque, public house, office blocks, fountains in the city. In this period, around 1780, the city has had a huge mosque, eighty stores block and a public house. Since these structure are quite well known all around the city, they points out focus points in the perception of residents. In early republic period, Yozgat got the city status and the development of the city procedures.[1]

The city has 90 registered historical buildings and 17 hectare protected area in the city center in the districts of Aşağı Nohutlu, Medrese, Köseoğlu, İstanbulluoğlu by The council of Kayseri Cultural and Natural Assets in July 31 2007. These protected areas exist in pieces more than twenty.(Figure 3)

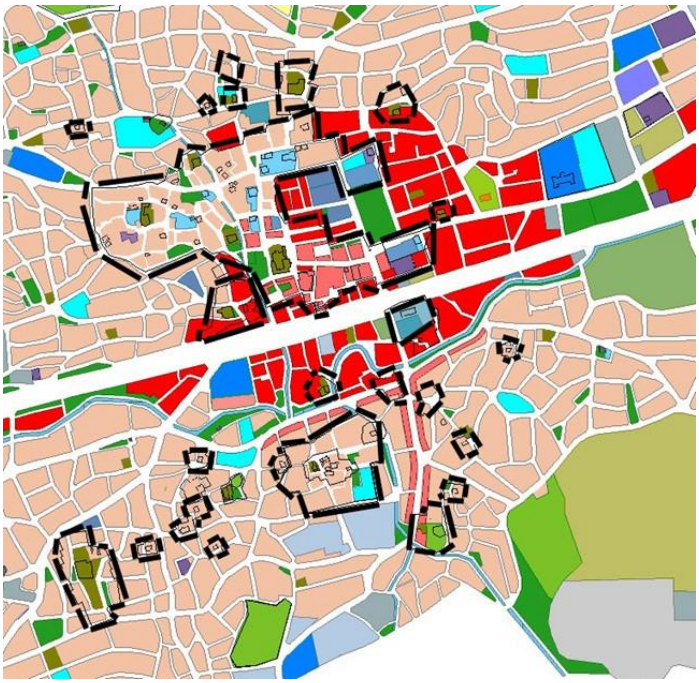


Fig. 3 The protected areas in the city center of the city

3.Method

Observation, questionnaire and questionnaire analysis methods are the three main methods used in the study. Maps and photographs were used to visualize the data obtained through the survey, in order to understand the city that was experienced.

Before starting to work, a literature search was conducted on the research topic. In the study, such as spatial perception, environmental psychology, urban perception, psychology

disciplines were searched. As a result of the resource survey, the questionnaire process starts with determining how the questionnaire and questionnaire data will be measured and how the urban perception in the minds of the people will be measured.(Figure 4)

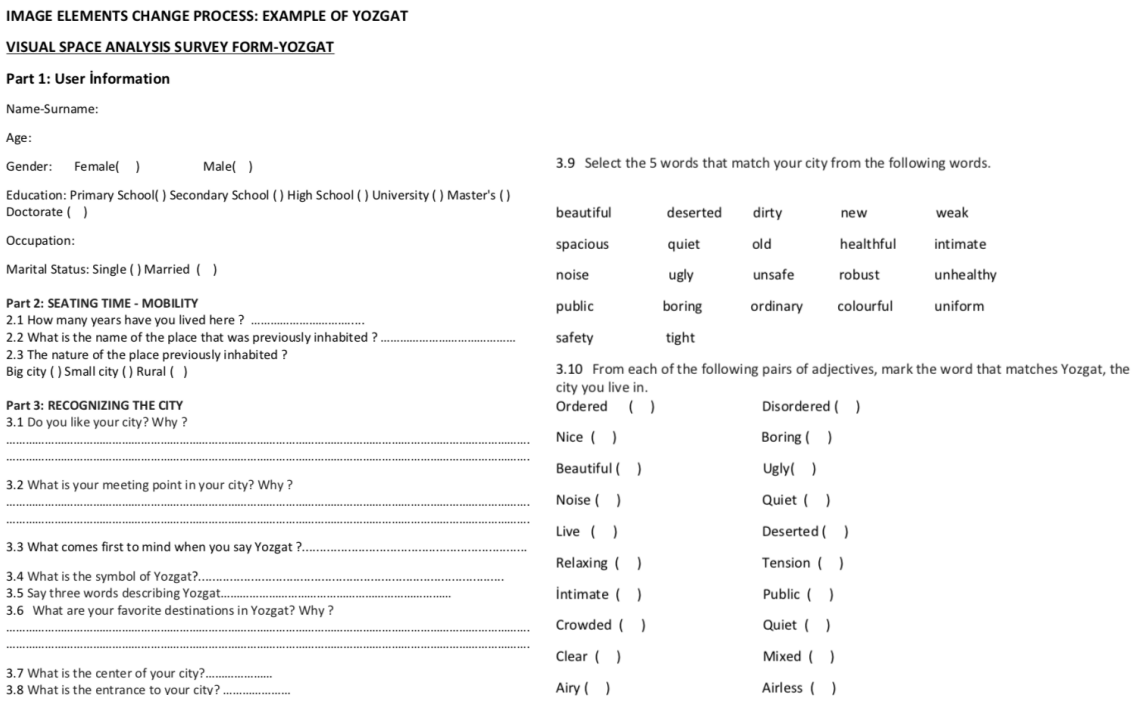


IMAGE ELEMENTS CHANGE PROCESS: EXAMPLE OF YOZGAT

VISUAL SPACE ANALYSIS SURVEY FORM-YOZGAT

Part 1: User İnformation

Name-Surname:

Age:

Gender: Female( ) Male( )

Education: Primary School( ) Secondary School ( ) High School ( ) University ( ) Master's ( ) Doctorate ( )

Occupation:

Marital Status: Single ( ) Married ( )

Part 2: SEATING TIME - MOBILITY

2.1 How many years have you lived here ? .....

2.2 What is the name of the place that was previously inhabited ? .....

2.3 The nature of the place previously inhabited ?

Big city ( ) Small city ( ) Rural ( )

Part 3: RECOGNIZING THE CITY

3.1 Do you like your city? Why ?

.....

.....

3.2 What is your meeting point in your city? Why ?

.....

.....

3.3 What comes first to mind when you say Yozgat ?.....

3.4 What is the symbol of Yozgat?.....

3.5 Say three words describing Yozgat.....

3.6 What are your favorite destinations in Yozgat? Why ?

.....

.....

3.7 What is the center of your city?.....

3.8 What is the entrance to your city? .....

3.9 Select the 5 words that match your city from the following words.

beautiful	deserted	dirty	new	weak
spacious	quiet	old	healthful	intimate
noise	ugly	unsafe	robust	unhealthy
public	boring	ordinary	colourful	uniform
safety	tight			

3.10 From each of the following pairs of adjectives, mark the word that matches Yozgat, the city you live in.

Ordered ( )	Disordered ( )
Nice ( )	Boring ( )
Beautiful ( )	Ugly( )
Noise ( )	Quiet ( )
Live ( )	Deserted ( )
Relaxing ( )	Tension ( )
İntimate ( )	Public ( )
Crowded ( )	Quiet ( )
Clear ( )	Mixed ( )
Airy ( )	Airless ( )

Fig.4 Survey

A questionnaire was applied to the personnel of Bozok University within the scope of visual space analysis. With this analysis study applied;

a) At the end of the survey questionnaire, Yozgat city which was chosen as the research area was asked to draw sketch.
b) It has been investigated which image items are used primarily by expressing the sense of space formed in the visual memories of university personnel. In addition, it was questioned whether the education they had received had an effect on the perception of the space and whether the environmental perturbation developed and differentiated with time and experience
c) In the survey study; social structure, environmental psychology, answers used in questioning behavior-place relationship, and personal authenticity in expressions are also important. Therefore, the definitions of the people related to the places have been taken into account in considering the keywords given by the subjects in the answers.

In the preparation of the questionnaires, it was aimed to take the correct information from the subjects by giving the open-ended questions and the optional questions in the guidance of the previous examples. In order to avoid any orientation or restriction on the subject, the open-ended questions were followed by optional questions first in the questionnaire. It is the mind maps which are the questioned questioning methods used in the study to investigate how the city is perceived in the minds of the subjects. How the images of Yozgat city are perceived is applied to the academic and administrative staff of Bozok University.

The total number of questionnaires related to the subject 50 at Bozok University. A survey was conducted with academic and administrative staff. 20 academic staffs, 30 administrative staffs were surveyed. In this study, it was questioned whether or not the subjects who had previously come to Yozgat for business and who have not experienced the urban environment differ from the people who have experienced the city in their perceptions.

These surveys start with the question of the personal characteristics of the subjects, the feelings and thoughts about Yozgat, the question of whether they feel they belong to the city of Yozgat, and the questions about the questions about the tiles that they live in. From these questions and the drawn mind maps, it is aimed to determine the structures that stand out in the subjects in the city space and to gather the information that will provide interpretation of the image items. In addition to these, it is also aimed to investigate the differences between mind maps and the perception of urban space, such as education and time spent in the city.

The method used in determining the image items of Yozgat city; the questionnaire is based on Kevin Lynch's theory of urban perception and the analysis of the image of the city of Yozgat from an expert point of view. The results of the analysis were tested with the opinions and comments of the subjects via questionnaires.

4.Results

In this part of the study, the data obtained in the context of the subjects' perceptions of the subjects were evaluated. Firstly, the necessary information about the subjects is given and then the data obtained from the questionnaires made by Bozok University academic and administrative staff are presented in this section.

All the questionnaires applied are investigating how Yozgat is perceived and accordingly urban items. The questions in the questionnaire consist of five parts. In the first section named user information (age, gender, education status etc.), in the second section the residence-mobility, the duration of life in the city. If Yozgat comes from another settlement, the quality of the previous settlement (big city, city, country) is questioned. Here the individual is investigating the ken tile experience. The third part is about recognizing the city. In this section, whether the city is loved or not, whether the sense of belonging to the city is felt or not, the focal point of the city, the city center is being asked. In these episodes, the subjects were not directed but put forward their own thoughts. In the fourth section, there are elective questions. The answers to the questions are presented on the tables. Tablature showing gender of participants, respondent staff type and educational status .

(Table 1,Table 2, Table 3)

Table 1. Gender of Participants

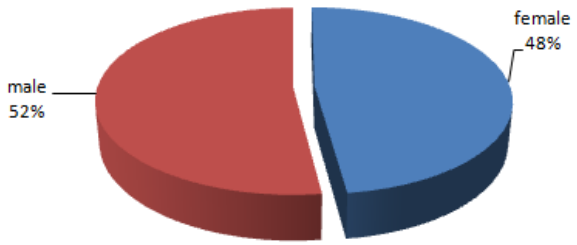


Table 2.Respondent's Staff Type

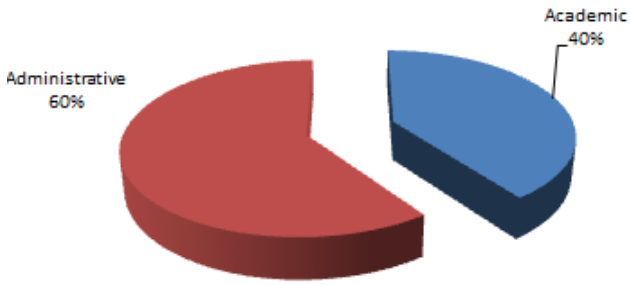
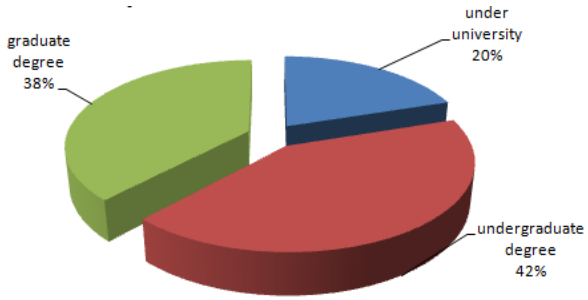


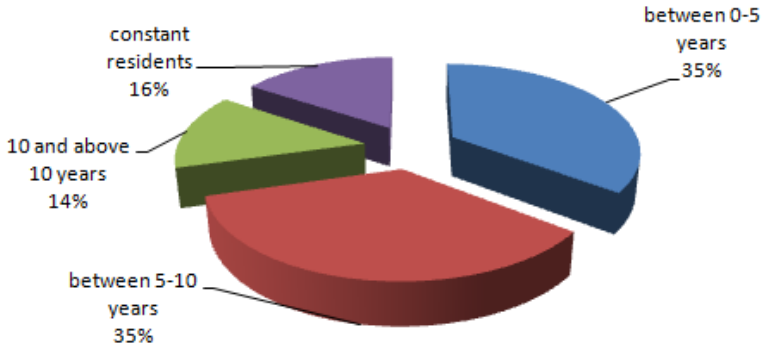
Table 3. Respondent's education level



The duration of life in Yozgat has been questioned, arguing that the city has long experienced and directly influenced the image of the city in its minds.

% 35 of the subjects are in Yozgat 0-5 years, %35 5-10 years,% 14 more than 10 years, % 16 people living in this city constantly. (Table 4)

Table 4. Respondent's duration of living in Yozgat



5.Conclusion

In this study, Yozgat City image items examined in the framework of Kevin Lynch's theory of urban perception are presented. The cognitive maps of academic and administrative personnel at Bozok University have observed and demonstrated the shortcomings and differences of urban image elements.
The results of the image elements of the city are considered as textures-regions, paths, edges-boundaries, focal points and pointing elements.

5.1 Texture and Regions
First, in the city 10 the existence of a different tissue and division is revealed. When the cognitive maps of Bozok University staff were evaluated Old City Center, Pine Grove, University Area, Esentepe, Kentpark, Nohutlu, Industrial Area, Council Housing, Old Hospital Area, Courthouse Area the existence of the regions was seen.
5.2 Roads
The most important transportation axe of the settlement is Ankara-Sivas Road emerging as a result of image analysis are the results of the roads obtained in the cognitive maps of Yozgat province.
In cognitive maps %24 Ankara-Sivas.% 18 Lise Avenue, % 15 Sarraflar Avenue, % 13 Governor's Office Road, %9 Old Hospital Road, % 6 Hattuşaş Road and % 2 Other Arterial Roads the road is drawn. In this context, the main vertebrae of the city are the roads Ankara-Sivas Road the rate of mind maps that the main vertebrae of the city show. Apart from these main axes, the percentage of the maps on which intermediate roads are drawn is %38. These results show that Yozgat province also has intermediate axes in the perception of the place besides the main axes.
5.3 Edges-Limits
In the opinion of the expert, it was decided that the most important element restricting the settlement of the city was topography. This view was identified by naming the word % 46 in the cognitive maps and not by naming it % 54. These results show that subjects are aware of topography by limiting urban space. It was determined that the entrance points to the city were questioned Muslubelen, Sarıhacılı and answers were given.
5.4 Focus Points
In the analyzes made in Yozgat 5 pieces of focal point were determined. As a result of cognitive maps, the most important focal point of the city is Clock Tower. The focal points that are reflected in other cognitive maps are % 21 Dörtyol, % 19 University junction, % 14 Republic Square, % 12 Çapanoğlu Mosque. The most important focal point Clock Tower is its position, it is easily perceivable.
5.5 Signs
Based on the results of the cognitive maps Clock Tower is % 22 perception. Then Novada Avm is %12 of the drawn in the map Apart from these, % 1 The prison, Abide Office Block, The Old Military Branch, Yozgat High School, Yılmaz Hotel, Big Cinema sign points that are not mentioned in the rate or that are not included in any mappings. It is thought that these are the reason why they are not in the same place or not. (Figure 5)

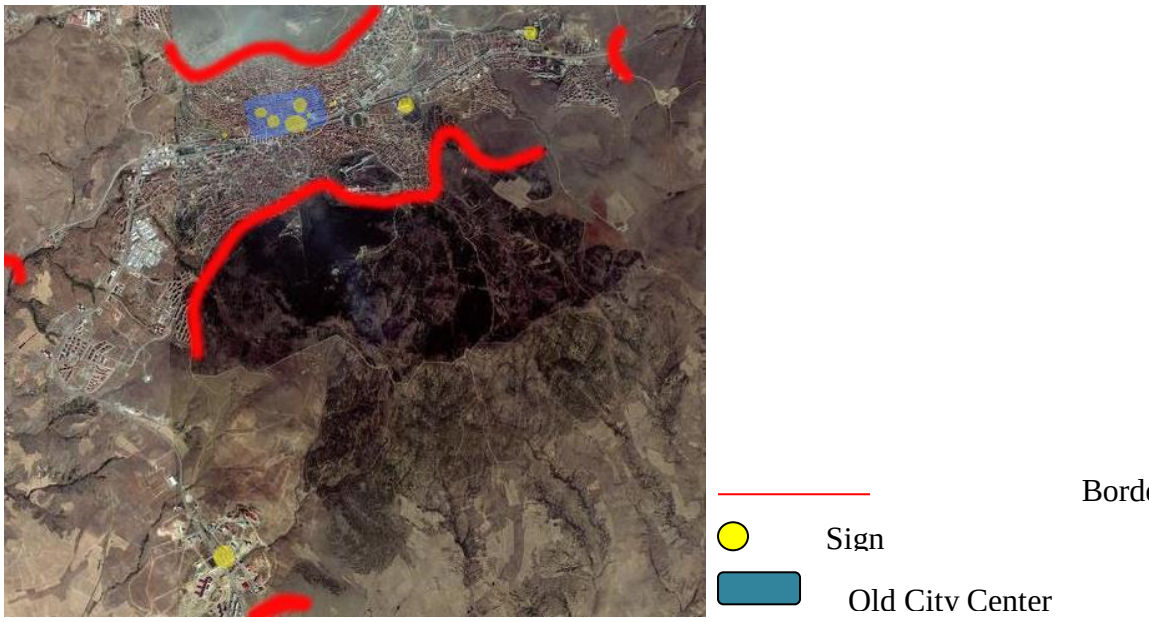


Fig.5 Yozgat Perception Map

When the level of development of the maps drawn by the subjects is compared, the most repetitive image item determines the level of developed development. For advanced maps 15 and more items are set for average level maps 10 the item is specified for poor maps 5 and fewer items. When cognitive maps are evaluated, it has been seen that the cognitive maps of the personnel of those who have experienced Yozgat for a long time are more developed. The reason why the level of development of the cognitive maps of Yozgat province is less than those of the ones who have experienced less, their staff should not spend much time in other settlements and in the city of Yozgat. Kevin Lynch's experience with the place has not been conveyed to the drawing despite the fact that he perceives the image elements as a contrary to the argument that increasing numbers of individuals are depicted in the cognitive sketches of the consecutive items. This is not to say that there is not enough information on the person's mind map; it is thought to depend on the state of the drawing.

Looking at the directions of the maps, the map orientation is drawn % 10 right. Although the map orientation is given in the question of drawing in the questionnaire, it can be explained that the reason of mis-drawing is that urban data are not known or not drawn.

Finally; The perception of urban space depends on the characteristics of the individual living in the space as well as on the characteristics of the space itself. For this reason, this study is a study in which the opinions of the inhabitants of the city and those who experience it are taken into consideration. Those born and raised in the city and those who migrate later to the city perceive urban image elements in the direction of their own characteristics and accumulation. the perceptibility of the city is assessed not on the perception differences of the individuals but on the common points of the individuals perceiving the city (Lynch, 1968). For this reason, in order to improve the image of a particular city, it must be ensured that it is perceived by the majority to be shown in that city. It is necessary to pay attention to this issue in urban design works. Items desired or undesired to be shown in the city should be positioned in this direction depending on the perception by the majority.

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FROM DESIGN TO SPACE ORGANIZATION A PROCESS ASSESSMENT

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Abstract

The goal of this study is to address the studies realized in the equipment design and interior architecture project courses given in the 2015-2017 academic years. In this regard, the interaction of two courses together with the education methods used in the courses in the basis of the course outputs are examined.

One of the most distinct characteristics of the design education that make is special and different from other similar disciplines is to give attention to the selection of form, tissue, material selection and to test the product created with the help of prototypes produced before the stage of application starts. When designing the equipment, besides the goal to meet all the needs of the user, the conformity of the equipment to the space and that it effects the space organization positively also carry importance. During the undergraduate education the basic goal is to develop the potentials, creative thinking and behavior of the individual and have the designer candidate to gain vision and to provide them to be able to produce practical solutions for minimizing the problems that can be faced in the upcoming stages. In this regard, in the study the document analysis method is used and in the regard of the some of the students taking the equipment design and interior architecture project courses given in the 2015-2016 / 2016-2017 academic years, how they shape their project, how much ad in what way they reflected on their projects the information transfer and their design over the portfolios they submitted at the term-end.

Also, in the designs created from equipment to space in the 2 year education process examined, the analytical and experimental examinations by the designer candidates of the scale differences occurring due to the sizes of the designed thing and the solutions tried to be produced for these differences are documented with photographs.

Keywords: Design, Equipment design, Interior design project, Scale, Space organization

1.What is Design? Creativity in Design

If defined in technical respect, Design defines the mental process towards creating a system, a product or production method; in clearer terms, the act of creating something in the mind, creating a form for something in the mind and then representing it in a plan, drawing, calculation. It is possible to define the word design with similar statements for different disciplines.

Design is not just a creation formed of imaginations, but also a multi aspect discipline that can benefit from engineering disciplines, perception psychology, anthropology, social psychology, anthropometry, history – especially art and technology history- fine arts, ergonomics etc. It has three main objects, in other words it is active in three fields. First, it designs environment-space. Second, it designs things, products, objects and last, designs processes that can be gathered under the name service. Having such a vast activity field requires design to receive support, data and method from mathematics and life sciences, social and esthetics/humanity science fields. When this scope is considered, as with many fields, it can be said that it is in close connection with engineering and in case this connection is severed engineering will be stuck in the processes and works based only on calculations.

The level of the power of the design is dependent on the designer being in intense information exchange with all science fields – sub frames and applications. Every development-innovation in science fields increases the creativity capacity of the design. Being informed of this, adapting these to one's own field of interest open new horizons for the designer. For example, the engineers of the Middle Ages used perspective drawing method and created their inventions and designs by hand, while in Renaissance period Brunelleschi brought rules to the perspective and put it in order thus provided new design opportunities to many engineers-architect artists like

Leonardo da Vinci. Computer aided drawing and presentation reinforced these opportunities much more. In 2000s, the fuzzy logic that is also proper for the thought system of the global world has surpassed the borders of the mathematics and become forcing nearly every engineering field to tend towards new horizons and application field. No doubt, design itself faced a specific historical evolution as a scientific field and there were times it lost its importance and times it regained it.

It is possible to find its evolution and the changes it faced in the design researches and the efforts to make the design a science field. It has experienced paradigm changes interacting with other factors within these studies and related applications, and more importantly from the end of 1800s when it surfaced as a scientific activity until 2000s there were important developments in its methods. Most of the research studies on design are generally conducted by fashion, architecture and industrial product design field. There are significantly limited studies in the engineering field. However, when the creativity skill and capacity the design grants and the skills of invention and innovation, technology and procedure/process development are considered, working on the methods of design and science of design and trying to improve them can be seen in the scope of a joint responsibility for all engineering fields.

Fundamentally it is more accurate to say that there is the interaction between two fields directing each other to development. Many innovation and change emphasizing that it is not possible to realize the design taking only the designer's talent at the core, technological developments in design, increase in scientific knowledge and new requirements in production process mandate the development of new design methods. Primary design methods are systematic designing methods and are shaped based on system theory. This is followed by critical trajectory and pattern language approaches, subsequently it is stated that the design as the science of artificial is related to everything made by humans, "Artificial Intelligence". The following approaches are also in the direction of emphasizing that the design process should be participating and the user should participate in the design process and decisions.

Creation concept is used as make something out of nothing, making, establishing, giving birth to, and leading to the existence of the beautiful thing. Creativity, whereas, is defined as the ability to create, to bring into existence. It is also used in the meaning of creativity concept in English. It is seen that the word "to create" is used in the same meaning in Latin "creare", as to succeed in ancient Greek "krainein" [1]

In psychology the creativity is defined as conjectural predisposition that is assumed to exist in every person and leads every person to invent, to create physical, spiritual, sensual etc. innovations. The creativity concept is generally used for forming an artwork, but it also plays a role in producing a solution for a problem, in creation of a new method or a new tool. The psychological researches on humans determined that there is a relationship between the environmental conditions of a person and the motivation and learning the person shows to change these conditions [2]. Also it is used in various meanings like creation, innovation, originality, to be new for oneself, skill of invention, freeing of models, to be open to experiments, unexpected novelty, production, making, handiwork, product performance success, final product, imaginative power, invention, formation, exceeding the previous experience, being new respect to a source [3].

Guilford (1959) defines genuineness as property specific for creative thought and according to him the genuineness is the skill to produce unusual ideas and solution proposals. Creativity defined as "being into existence of something without a form and no faces before" by Read (1960), can be creation form nothing but more likely and generally the re-adaptation of usage of the existing material in a new form.

Genuineness, according to the researches in creativity, is a creativity skill forms in idea then behavior and then in product and this skill, also, is an important property of the product realized in this way and of the main idea the creative thought produced (Şatır, 1998). According to Şatır [4] genuineness comes up both in artistic products, also in science and technology products and in natural assets. In art based products the limitations are removed in a greater extent, the sensual significance increases. Whereas, in science and technic based products reasonability and veridicality are important. In contrast, the natural assets are the reality itself. However, they are too many, too variable and so limitless within the borders that they contain both the reasonability of the science and technic and the sensual significance of art [5].

In short, creativity is a solution to a problem, developing a method or idea. In order for an idea, a product to be qualified as design it should be genuine. Genuineness is possible with creativity. In theory and practice, creativity is a deed that is promotive, earnable and improvable with the experienced methods and many education models.

2.Design Education and Its Importance

The learning in design studios supports the cooperative process. The teacher relates the subject field with the lives of the students, acts as a facilitator and guide for the student to form their knowledge. Technology is an important part of this process. In constructivist education design technology provides that the information is formed by the students with the cooperative processes in problem solving, the teacher is at related and meaningful respects and students relate learning to their own experiences. Technology itself is a product of

creativity. However, it is important to use these products in a way to support the development of the effective and creative thinking.

Alkan et. al [6] define the usage styles of technology as "empty and full" technologies. "Full technologies" term emphasizes its function in traditional education design. Here the technology is an aid for the teacher, takes on the function to provide information to the students. "Empty" technology", whereas, determines the usage goal in the constructivist education design. Here the function of the technology is not to limit the students as in objectivist design but to be used to support them. Laney, states that in the constructivist approach the usage of the technology is "effective in developing the high level thinking skills containing defining problems, structuring information, solving problems and producing proper solutions." However, this usage requires that technology is not in the style that focuses to knowledge transfer in traditional way, lighten the role of the teacher and teaching but in the style that supports the thinking processes of the students.

Torrance [7] indicates that when the opportunity for children to manipulate the objects or, if this is not possible, the ideas, this significantly affects the elasticity and number of reactions from the creative subcategories. Rıza [8] mentions this as a technique in developing creativity. Technologies can contribute in this with both propagation presented by learners and multidirectional perspectives. According to Jonassen [9] in the constructivist education design technology "is formed of duplicable and applicable techniques that engage the learners to cognitive learning strategies, critical thinking skills. Thus, it is more than equipment. Learning technology is an definable set of any activities or an environment providing the engagement of learners to produce meaning and knowledge."

Providing information from the primary resource to the learners supports the constructivism in usages like social and individual studies, giving multidirectional perspectives, relating the problems with the real life situations. It encourage student to create their own studies. Technologies providing high level visual formats provide the learners to build cognitive models towards the solution of a problem. It provides task and scenarios supporting their high level thinking skills [10]. In constructivist design the role of the technology supports the active learning of the students and development of their problem solving skills. Provides support to the learners in being aware of the problems and developing solution proposals for them, seeing that there is more than one solution of a problem and thus creates and flexible structure out of the limitations of the traditional environments. It provides the learning requirements of learners in various education styles.

3.Design from Concept to Equipment, from Equipment to Space

Even if the action of designing is defined with a simple statement as providing solution proposals to meet the needs in basic terms, providing right solutions to the needs covers a complete process of an accurate research and creation of the designed thing. In the education process, while being educated, the designer – interior architect creates subtexts in the courses from drawing to meaning, from problem to solution in order for all the details are produced accurately.

Sensitivity of the scale and measurement knowledge reveals itself at this point and when any errors are made it is observed that the result is catastrophic. In the four years education process the course contents are formed with respect for the concept issue to be formed in the mind correctly with the design and creativity headings with the basic design lessons. This process is qualified as challenging at the beginning, but as the design principles, basic theories and three dimensional thinking power are improved the problem is understood more clearly and the solution proposals are produced more accurately.

Figure 1: Project course and equipment design course development process result photographs

In the page given to the students at the first lesson in the course process, headings in the subjects of

- Choosing an object or event
- Preparation of presentations on the subject
- Making sketches over the chosen object or event
- Taking point details
- Making sketch works over the taken point detail
- 3 dimensional modelling of the examined sketches
- Preparation of the mock-up of the study and making the presentations into a presentation board.
- Submitting 50x70cm presentation board containing the technical drawing, perspective and design process of the conducted design

are prepared, and the process is monitored. In the project course the equipment designed depending on the space setup in what the students have prepared are improved by the revisions given in the process.

4.Conclusion

Some of the methods supporting the design idea fundamentally aim to improve the creative thoughts of the designer candidates but others aim to improve the 3 dimensional thinking and form creation skills of the students. In this regard, the design lessons given to the students in four year education process aim for them to be able to face with ease and create solutions for the problems that they can face frequently in their daily lives. However, in the courses supported by subheadings (ergonomics, anthropometry, computer aided design etc. courses support the design courses) that are with similar content, generally it is seen that when the student presenting solutions with respect to scale they make errors and in the examination, preview, finding the problem that is the first stage of the problem they performed research lasting for weeks. Moreover, within the findings nearly 8-10% of the students taking both courses have failed the courses and 3-5% of them have withdrawn the course at the fourth weeks of the course. Also, some designer candidates apply for courses or upper term courses to learn other computer aided programs besides the student supportive other lessons and support their developments.

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THE IMPORTANCE OF REHABILITATION IN BALAT

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Abstract

When built environment does not respond to the changing needs of the current society, failing to respond to necessary social changes, they are often abandoned and neglected and end up in decaying depressed areas. This is often the case in many cities; when certain industrial activities move out of the city or people move to new more prestigious residential areas resulting in abandonment of the buildings and neighborhoods, changes in inhabitant's profile, demographic structure, social and cultural life change over time.

These decaying areas, mostly in close proximity to the historic city centers, often reflect a certain period in terms of architecture and social-cultural aspects and are very important in terms of their historical features and architectural elements. The rehabilitation of the old, neglected historic areas and re-integration of them into the current city life is necessary in terms of urban identity and cultural sustainability.

Washington Regulation (ICOMOS, 1987) remarks that the authenticity of a historic district can be maintained by preservation of urban patterns as defined by lots and streets, relationships between the buildings and open spaces, the formal appearance including façade features, massing arrangements of structures as well as interior characteristics, the relationship between the historic area and its surrounding natural and built environment and the functional continuity and transformations in the area through various functions that the area has acquired over time

Istanbul is experiencing a very rapid change process and since 1980s many rehabilitation projects were carried out by private, governmental and non-governmental organizations in the historical residential areas where people with limited economic opportunities lived. This study was conducted in the north-east of the historical peninsula, surrounded by the remains of the city walls dating from the 5th century BC. Balat-Fener neighborhoods is one of the unique multicultural areas in Istanbul where many monumental buildings from the 13th century coexist with wood and stone civic architecture and has been home to various civilizations and communities. Rehabilitation and renovation studies in Fener-Balat neighborhoods, two neighboring districts of the World Heritage List (UNESCO), will be evaluated with reference to collective memory, changes in social meaning, identity and built environment. Project proposals by students with new uses will be shared for future planning considerations.
Key Words: Balat, Fener, Rehabilitation, Built Environment, Identity.

1.Introductıon

The Fener-Balat districts are in the north-east of the historical peninsula, surrounded by the Golden Horn on north and the remains of the city walls built in the 6th century. Both districts contain traditional and civic architecture examples of both wood and stone and the monumental buildings dating from the 18th century, which have been home to different civilizations and communities for centuries [1]. Eremya Çelebi, who lived in the 17th century as Evliya Çelebi, recorded that the orthodox Greeks lived in Fener whereas Jews lived in Balat district intensively. Fener and Balat were greatly affected by the earthquakes like the other quarters of Istanbul which necessitated in making structural adaptations in buildings as well as changes in urban form and history.

Today, the existing urban texture and building stock at Fener Balat districts, are predominantly shaped in the 19th century and have a grilled texture. These areas were rebuilt after the 19th century fire and includes both large-scale urban prestige projects as well as small-scale buildings at neighborhood scale [2]. Most of the buildings in Fener Balat districts are constructed with wooden carcass or stone masonry systems (Figure 1). However one can find many reinforced concrete or wooden carcass structures along the Golden Horn coast.

Figure 1. Views from Fener-Balat Districts [3]

Towards the end of the 19th century, environmental conditions in the district began to deteriorate, and infrastructure needs became unable to meet the needs of the residents of the region. The designation of the Golden Horn vicinity as an industrial area in 1936-1937 Istanbul Plan prepared by the French planner Henri Prost in the early 20th century led to the destruction of the coastal line of Fener-Balat [4], [5]. Industrialization of the area has increased the environmental pollution, making the living conditions worse. In the 1950s the physical conditions of the region as well as its demographic structure changed rapidly. The transformation of the area into an industrial zone has been a decline in the quality of life and a preference for the low-income population migrating to the city. In the 1980s, the living conditions of the region's population were at a level that would create a life-threatening situation.

In the Pervititic Maps prepared between 1922 and 1945, Sveti Stefan Bulgarian Church, Or-Ahayim Jewish Hospital, Greek Church were among the monumental buildings of the region; Sureyya Pasha Weaving Factory, Deirdmenjian Weaving Factory, Tobacco Depot, Cold Water Depot, İş Bank Depot, Ottoman Bank Deposu, Yapı Kredi Bank Depot, various small factories and ateliers were among the industrial buildings; and finally boatyards, taverns, and houses that make up the texture of small neighborhoods were the quarters that formed the two districts.

Figure 2. Aerial Photograph Taken From Balat and Fener Districts Rehabilitation Report, 1998

Within the scope of the works of the Golden Horn Coastal Rearrangement Project of 1982, 62 of 393 buildings detailed in Pervititich Maps were demolished; 240 have been rebuilt and 4 have remained. With the Golden Horn Coastal Arrangement Project, most of the buildings were removed particularly along the Golden Horn and the coastline was turned into a large green band which was separated from Fener-Balat by the coastal road. This led to an end of two districts historical integration with the sea (Figure 2).

The Golden Horn project with extensive expropriations, was aimed at reviving and modernizing the region with shops, restaurants, cafes and hiking trails, but the fact that the people of the region and non-governmental organizations were not consulted in this process led to a complete change of social fabric. During the Habitat II: United Nations Conference on Human Settlements, with the themes "Convenient for All" and "Sustainable Human Settlements in the Urbanized World" which was held in Istanbul in June 1996, it was decided to improve the living conditions of the settlements in historical environments and to realize a model project for a healthier environment [6]. As a sample project place, Fener-Balat districts in Istanbul was selected. The project was financed by the European Union with the support of Fatih Municipality and UNESCO. In feasibility reports; problems with the area were:

A Housing problems
B Inadequate health care services
C Lack of educational infrastructure and vocational training and unemployment
D Low public space quality

To solve these prolems necessay steps are:

- Rehabilitation of existing housing
- Improvement of urban texture
- Development of vocational training activities
- The improvement of public services and urban infrastructure, and the rehabilitation of the urban environment, the revitalization of trade and craft.

The project was not realized immediately due to changes in local government and the changes in the EU financial support transfer. It was rescheduled again in 2003 with certain new features. It was imposed that restored buildings can not change hands for 5 years and some precautions were taken in terms of lease arrangements. This rule was imposed so that the social fabric will not change but the inhabitants will get funding for a better living conditions in their own neighborhoods. Although various efforts were made to promote the project the participation of the people was not at expected rate. Yet the urban form and the fabric was protected to a degree with individual parcel based restorations and inhabitance.

Fener-Balat districts, where the first planned renewal, change and transformation projects realized in Istanbul, have preliminaries in terms of urban form and texture, authenticity and integrity.

Historical Urban Texture: The importance of preserving historical urban fabric is emphasized by the Washington Constitution (ICOMOS 1987). The effective parameters in supporting the historical urban form and fabric are:

- Preservation of urban patterns as defined by lots and streets,
- Relationships between the buildings and open/green spaces,
- The formal appearance of buildings, including facade features, massing arrangements of structures as well as interior characteristics,
- The relationship between the historic area and its surrounding natural and built environment
- The functional continuity and transformations in the area through various functions that the area has acquired over time.

Authenticity: The Venice Regulation signed in 1964 made it necessary to preserve the original features of historical buildings and their surroundings. Authenticity has been defined for heritage sites at UNESCO 2015 and regularly updated on how to manage authenticity in historical sites by published operational guidelines.

Integrity: In 1975, the Amsterdam Declaration stated that the social structure was as an integral part of the historical sites. A holistic approach to urban protection and the prominence of projects that perceive social and physical texture as a whole were put forward. Recommendations on historical urban landscape areas and social texture have been described as one of the basic elements that make up the urban heritage.

2. Urban Transformation and Reconstructing Built Environment

Today, the reproduction of the space in urban areas and urban transformation processes are based on re-functioning remaining empty lands or abondened decaying districts which are often close to the old city centers, due to the neoliberal policies.

Sassen (1991) points out that, cities are major nodes in the interconnected systems of information and money, and the wealth that they capture is intimately related to the specialized businesses that facilitate those flows -- financial institutions, consulting firms, accounting firms, law firms, and media organizations [7]. These flows are no longer tightly bound to national boundaries and systems of regulation; so the dynamics of the global city are dramatically different than those of the great cities of the nineteenth century. According to Sassen three

outcomes follow this fact. One is a concentration of wealth in the hands of owners, partners, and professionals associated with the high-end firms in this system. Second is a growing disconnection between the city and its region. And third is the growth of a large marginalized population that has a very hard time earning a living in the marketplace defined by these high-end activities, which also result in inequality between cities and inside cities. So whole series of conflicts and contradictions can be expected. Besides, many studies on the problems of global processes, such as poverty, inequality and unemployment, have revealed that the competitions of the cities at international scale, results in geographical disintegration of the people living in that region and migration [8], [9].

Rapid modernization and development in the 20th century, accompanied by neoliberal urbanization process, involves different interventions, such as gentrification and urban renewal of old urban or dysfunctional urban fabric. When we examine the urban transformations in Istanbul after the 19th century, we can point out the modernization process that started with the new national state, the rapid social-economic changes after II. World War, the neoliberal politics after 1980 and the period after the 1999 eartquake. What is common to all these periods is the restructuring strategy, creating a new and modern identity and gentrification that changed the original urban fabric. As a result of moving industrial buildings outside city centers, sub-urbanization and intensive migration the historical districts turned into decaying depressed areas which than became the focus of urban renewal projects after 1960s. Several individual restoration attempts gave rise to more organized and public rehabilitation and urban revival projects in the 1980s.

Urban transformation and renewal projects are currently in progress in Fener-Balat districts of Istanbul as of today. Yet in many cases, the projects made by the real-estate developers are based on rant economy ignoring the socio-economic situation of the residents that may cause the residents in the region to move out of the neighborhood soon.

Targeted employment stratification in the Istanbul Environment Organizational Plan (ÇDP), which is approved in 2009 aims that the percentage of the employment will break down as 70% service, 25% industry, 5% agriculture. This sectoral transformation will further affect the spatial use. Today only few small ateliers or industrial activities left in Fener and Balat districts. While this can be interpreted as positive for these areas in terms of pollution and environmental quality, one has to realize that this also results in economic problems for the inhabitants when the service industry is not set forth. Nevertheless, scarce of land accompanied by high land values necessitate the conversion of industrial areas in city centers *(ÇDP, 2009; 626).*

Although there is no clear definition within the Environmental Organizational Plan (ÇDP), the spatial characteristics and the data affecting it must be evaluated in detail particularly for Fener-Balat, urban rehabilitation and transformation projects. A very different turn has been made since the year 2000 in the process of planning the historical urban housing areas of Istanbul. Refurbishment studies, which were settled on a legal basis with the law enacted in 2005, are still far from wholistic planning; Most of the projects are prepared independent of social and economic aspects of the transformations as well as with limited local participation.

To reveal the change process of the historical urban housing areas in Istanbul, this study examines the Balat Culture House student projects in Fener-Balat as an example of renewal and re-functioning project.

3. A Case Study At Fener-Balat District

Interior architecture is a discipline affecting society with its physical, psychological, aesthetic and functional dimensions as well as strengthening social responsibility. The quality of an interior must be judged by the relationship it has established with society, both spatial and sociologically, far beyond considerations for "luxury". This quality should not be limited to the places where a certain social class will benefit. An interior architect must consider serving to the whole society and must have the social responsibility in practicing his/her profession.

"As an Ottoman capital, Istanbul has developed into a morphology that conforms to natural elements and topography, rather than a rigid geometric order, in a loyal and respectful manner to the texture that it inherited from Byzantium. Thus, the urban districts (neighborhoods) put in a humiliating manner, with the words "crooked" and "marginal" were in essence humanistic sized, beautiful living spaces. Neighborhood relations (the greatest contribution of "horizontal" life!) were natural and inevitably very intense. This, on the one hand, represented a state of positive and solidarity, such as "the spirit of neighborhoodness", on the other hand, including the negativity of neighbors to interfere with each other's affairs. However, in the final analysis, there is no doubt a more positive social structure than today's sterile, ever-present neighborhood understanding" [10].

During 2015-2016 Spring Semester, "Neighborhood House" at Fener-Balat district was given as a project to diploma students at Interior Architecture and Environmental Design Department. The project aimed on the sensibilities that it will provide to the social groups that existed in the neighborhood and they were expected to present original interior designs by developing concepts that will solve their needs. In this context, the main expectation was that the students develop a design approach that incorporates concepts such as "neighborhood, neighbors, neighborliness, solidarity, collectiveness etc.".

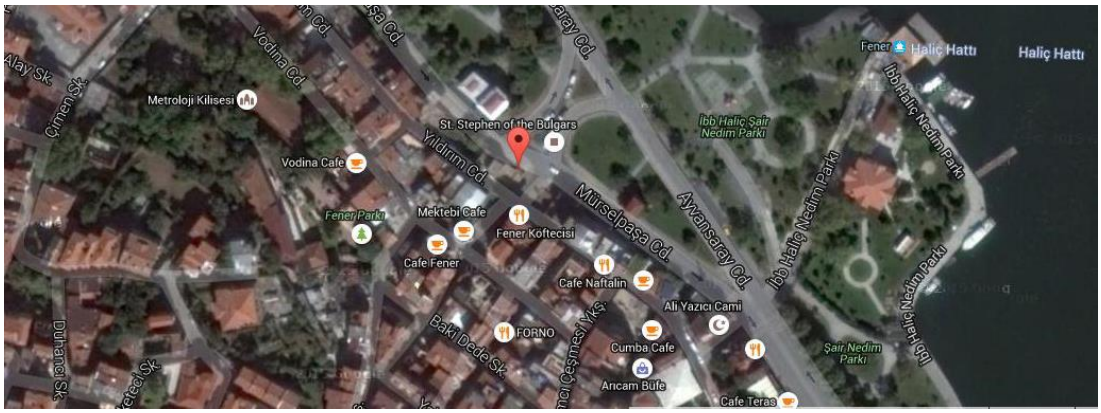

Figure 3. Balat Culture/Neighborhood House Project Site At Historic Fener-Balat District

The project area is located in Balat (Figure 3), which is one of the oldest districts in Istanbul where many cultures with different languages and religions lived together. The twin buildings with 17-18 gate numbers on Vodina Street (running parallel to the Golden Horn) were restored by Istanbul Governorship and Fatih Municipality in 2006. Finishing works and interior arrangements were made by the contributions and donations of Soroptimist clubs in Turkey and abroad. Built as Soroptimists' social entrepreneurship project, the buildings serves as "Balat Culture House" since 2010 (Figure 4).

Figure 4 Balat Culture House - Before and After Restoration

In this context the "Neighborhood House" was supposed to:

- Redefining the boundaries of neighborhood and neighborliness concepts,
- Protecting and strengthening neighborhood identity,
- To revitalize the local networks that make up the neighborhood,
- To develop behavior such as volunteering, solidarity, sharing, social responsibility,
- To reveal the city and neighborhood consciousness and to ensure its sustainability,
- To express oneself with a participatory approach and create a reconciliation zone,

To create an environment for giving information, discussion, and reporting about the implementation, to the public/society/neighborhood people:

- Tradesmen/Artisan Organizations
- Public Meetings
- Social responsibility projects
- Educational Programs
- Workshops
- Activities that will generate employment

were included as in a holistic approach. When we examine the sample projects:

Figure 5. Projects Designed by Fulya Çobanoğlu, Tuğçe Çoşkun

These projects are designed with the aim improving social life in Fener-Balat district. The center will enable career planning and train inhabitants for obtaining jobs. While increasing the possibility of job oppurtunities the center will also act as a catalyzer for integrating the various groups that live in the area. It will be open to all age groups and will have different programs including various production areas according to different groups need (Figure 5).

Figure 6. Sample Project Designed by Dilara Çakır

The aim in this project was to create an environment for the inhabitants so that they can spend their free time with social, cultural and artistic activities. The programs in the Neighborhood House was planned to improve knowledge and skills of the individuals, and introduce new concepts like, planning, programming, managing, supervising, auditing, evaluation, to raise awareness in the society (Figure 6).

Figure 7. Sample Project Designed by Mert Altun

In this project historical and touristic characteristics of the district are taken into account. The Domestic and foreign tourists while enjoying time in the proposed project they will also taste the homemade foods and products produced by the residents of the neighborhood. The income will be used in new social responsibility

projects for the community. Especially by developing a concept of sales and presentation, it is aimed to create a miniature organic market place and a place to attract the attention of young people (Figure 7).

Conclusion

Historical residential areas are a cultural heritage having the traces of the past and reflecting the lifestyles of the past. Cultural sustainability is important for people living in these areas as well as other citizens. For this reason, preservation, survival, recovery, integration of cultural heritage is very important for cultural sustainability and can also provide a fair answer to the expectations and needs of the people living in these areas. In this sense, the renovation projects should not be considered at purely physical and economic structuring, but should be viewed as studies that will improve social structure and integrate the inhabitants to the current society. It is also critical that these areas, transformed into livable spaces by the requirements of the day, must have an active use.

It was aimed that the renewal of Balat Culture House in Fener-Balat district will have a positive effect on the socioeconomic structure of the region. It will enable bringing people back to the city life socially by different functions, and design concepts, as well as economically by offering career development thus providing the re-integration. The building located in the historical residential area is a social and spatial restructuring and rehabilitation project, taking the social welfare and social fabric into consideration. New projects with similar goals will further develop the area and upgrade the social status while preserving the cultural heritage and identity.

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