PROCEEDINGS BOOK

ICNTAD E-CONFERENCE

INTERNATIONAL CONFERENCE ON NEW TRENDS IN ARCHITECTURE & INTERIOR DESIGN

6th International E-Conference on New Trends in Architecture and Interior Design

ICNTAD E-CONFERENCE

INTERNATIONAL CONFERENCE ON NEW TRENDS IN ARCHITECTURE & INTERIOR DESIGN

October 16-18, 2020

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6th ICNTAD 2020

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SCIENTIFIC COMMITTEE

ORGANIZATION COMMITTEE

Dear Colleagues,

I am honored to invite and send you this call for papers on behalf of Congress Organization Board of "6th International Conference on New Trends in Architecture and Interior Design", to be held as based on Online Presentations dates between October 16-18, 2020

The conference was originally planned for May 2020 but due to the global spread of COVID-19 (The Corona Virus) and The Council of Higher Education's declaration on "Measures to be Taken in Higher Education Institutions about COVID-19" (Dated March 6, 2020), the conference is postponed and to this current date and will be organized based on online presentations.

The Conference will focus on a broad range of topics related to new trends in architecture and design. The Conference organizers invite papers and presentation proposals relevant to conference themes. Considering the theme of the conference, A paper with any of the following or related subjects would be appropriate for presentation:

- Criticism of sustainability/unsustainability
- The architecture of philosophy/architecture without philosophy
- Professional settlement of interior architecture
- Human contact to space with furniture
- Intangible skin of space: lighting design
- Tangible skin of space: material
- Ideology in architecture or architecture of ideology
- Spaces without space: 3D design
- The artistic value of space
- Architecture without architect
- Cultural codes / architecture
- Post-COVID Architecture & Interior Design
- Post-COVID Design Education Models
- Spatial Reflections of Pandemics/Epidemics in History

The 6th International Conference on New Trends in Architecture and Interior Design Conference (6th ICNTAD 2020), aims to bring together experts from several institutions such as universities, administrative organizations, architects, engineers and designers, at the framework of conference topics of building, architecture, interior design, product, material, etc. High-level academicians, professionals and design students from around the world will explore the intersection of design, architecture and best practices with leaders from the design professionals. The participation of early-career scholars and postgraduate researchers is also positively encouraged.

We kindly wait for your attendance to our congress to be held on October 16-18, 2020, with a hope to realize a satisfactory congress with its scientific ones and leaving a trace on your memories.

Regards

Prof. Dr. Burçin Cem ARABACIOĞLU
Mimar Sinan Fine Arts University – Turkey
Conference Chair

17 OCTOBER 2020 SATURDAY

09:50 – 10:00 **OPENING CEREMONY**
Welcome Speech **: Prof. Dr. Burçin Cem Arabacıoğlu / Mimar Sinan Fine Arts University**
Online access ***: with given username and password.***

10:00 – 10:40
KEYNOTE SPEAKER **: DR. Alireza TAGHABONI (IR)**
Online access ***: with given username and password***

10:40 – 11:00	**B R E AK**

SESSION A

SESSION CHAIR	**Assoc. Prof. Dr. Damla ALTUNCU**	***Online access with given username and password***
TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR
11:00 – 11:20	HOUSING ALTERNATIVE FOR TURKISH SENIOR CITIZENS: CO-HOUSING	**Mustafa Erman TERCAN (TR)**
11:20 – 11:40	HOUSING COOPERATIVE SETTLEMENTS: AS AGENTS OF SUSTAINABLE/UNSUSTAINABLE URBAN TRANSFORMATION IN ZURICH NORTH, SWITZERLAND	**Maryam KHATIBI**
11:40 – 12:00	RESHAPING THE FUTURE THROUGH PUBLIC SPACE: SKATEPARK DEFINING A NEW URBAN SPACE IN MARIBOR, SLOVENIA	**Mateja KATRAŠNIK (SI)**
12:00 – 12:20	INVESTIGATING CREATIVITY AND SUSTAINABILITY IN THE LATEST CONSERVATION INTERNATIONAL REPORTS	**Nessma AL-HAMMADI** - Kokan GRCHEV
12:20 – 12:40	POST-COVID ARCHITECTURAL HERITAGE ROUTES: MEDIEVAL FORTIFIED DWELLINGS IN CROATIA	Ivana KRMPOTIĆ - **Marina ŠIMUNIĆ BURŠIĆ**

12:40 – 13:40	**LUNCH BREAK**

SESSION B

SESSION CHAIR	**Asst. Prof. Dr. Didem TUNCEL**	***Online access with given username and password***
TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR
13:40 – 14:00	INTERPRETING FUTURISTIC BUILT ENVIRONMENT IMAGES IN SCIENCE FICTION MOVIES	**Cilga GUNAYDIN** - Rafooneh Mokhtar Shahi SANI
14:00 – 14:20	REPRESENTED SPACES THROUGH CINEMA: IDENTITY, PLACE AND OTHER SPACES, HETEROTOPIA	**Fatemeh MONZAVI** - Ahenk Yilgin DAMAGACI
14:20 – 14:40	THE PHILOSOPHICAL LINKS BETWEEN "THE ARCHITECTURE OF THE SCHRODAR HOUSE" AND "MODERN ART -DE STIJL"	**Sonia CHAUDHARY**
14:40 – 15:00	CONTEMPORARY ARCHITECTURE IN THE LIGHT OF THE IDEOLOGY OF CONSUMPTION	**Fatemeh Ghafari TAVASOLI**
15:00 – 15:20	HIGH-RISE BUILDINGS IN CULTURAL CODE OF ISTANBUL: BÜYÜKDERE AVENUE EXAMPLE	**Burcu OLGEN** - Serpil OZKER

18 OCTOBER 2020 SUNDAY

10:00 – 10:40
KEYNOTE SPEAKER : Prof. Dr. Maya ÖZTÜRK
Online access : with given username and password

10:40 – 11:00	**B R E AK**

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SESSION CHAIR	**Assoc. Prof. Dr. Damla ALTUNCU**	***Online access with given username and password***
TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR
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12:00 – 12:20	HAPTICWALK: A TACTILE EXPERIMENT FOR CONSTRUCTING SPATIAL KNOWLEDGE IN THE LACK OF VISION	Gizem ALATAS TEMEL - **Duygu CANKURTARAN**

12:20 – 13:20	**LUNCH BREAK**

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TIME	**PAPER TITLE**	**PRESENTER** / CO AUTHOR
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14:20 – 14:40	BIOPHOBIA EFFECT OF BIOPHILIC FURNITURE DESIGN, A CRITICAL APPROACH FOR FURNITURE DESIGN	**Seyma INCESAKAL** - Mehmet Murat ULUG
14:40 – 15:00	ARCHITECTURE CONCEPTUALIZATION EFFECT ON THE DESIGN PROCESS OF BUILDING REFURBISHMENT	**Dalia HAFIZ**
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HOUSING ALTERNATIVE FOR TURKISH SENIOR CITIZENS: CO-HOUSING

Mustafa Erman TERCAN

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1. Abstract

There are growing interests in the senior cohousing subject among seniors who are seeking for new elderly housing options lately. This paper aims to find out the different preferences of common spaces in a senior cohousing community in Turkey: especially in Istanbul and other cities (Kocaeli, Ankara). The social survey was conducted in a small group, and the respondents are the 50s only since they are the generation who will face to elderly housing subject within 10 years in turbulent Turkish society. Collected data on a simple random sample of n = 20 people, were analyzed by the SPSS program using frequency, percentage, and Chi-square test.

In summary, respondents would like to move to senior cohousing on circumstance when they remain alone without a big difference between cities. Loneliness and housekeeping are considered as the most difficult things for the elderly to manage by themselves. Of common spaces, the guest room is the most preferred followed by the exercise room sauna-Turkish bath, caregiver place, and garden terrace in total. And those spaces are more preferred in Istanbul than in other cities except the garden terrace. On the other hand, the meeting room is the least preferred common space followed by the library and communal kitchen. And those spaces are less preferred in large families than in small families. Regarding shared activities, residents' meetings, common meals are less preferred activities contrary to foreign examples.

In conclusion, I would like to propose that a big common living room is better to be designed flexibly for a meeting room, dining room to give a chance to know each other among residents. And since common spaces show different preferences by cities, those are to be designed and planned reflecting cities' different circumstances.

Key Words: *housing, seniors, architecture, cohousing, social isolation*

1. Introduction

Modern cities face increasing challenges in resource allocation affected by social isolation, population growth, housing shortages, and climate change . (Bourne, 2010) Managing growth, reducing traffic, creating sustainable development, and sharing resources and opportunities are the challenges we face today. Within these difficulties, the importance of the individual making change comes from the individual's need to regain control over their lifestyle.

Many people are currently looking for new ways to regain control over their lives. Strengthening communities are tools that enable individuals to act collectively to understand their conditions and take control of their lives in this process. ”(Meltzer 2005) In this study, the co-housing model, which includes basic features such as planning, community building, and participation in management, is discussed. An answer is sought for the question of whether there can be an alternative lifestyle for the senior
population between 60 and 70 years old living in Istanbul. Other questions on the subject; the senior population in cities today Can they create their daily life the way they want? Can they choose their neighborhood, their home, their neighbors? It is listed as. For this purpose, the co-housing model is first defined in the study, the examples in the world are examined through the literature, and its positive and negative aspects are discussed. Afterward, interviews are held with professionals between the ages of 60-70 in Istanbul, and their opinions on this issue are asked, and it is investigated whether the model is suitable for Istanbul conditions.

There are growing interests in the senior cohousing subject among seniors who are seeking for new elderly housing options lately. Senior cohousing is an attractive housing alternative for the aged 55+ who expect to spend their later lives sharing common activities with neighbors.

Researches on Scandinavian senior cohousing communities have been reported in Denmark and Sweden since the 1980s (Ambrose, 1993; Vestbro, 1997; 2000; Choi, 2003; 2004; Choi & Paulsson, 2003; Paulsson & Choi, 2004). However, studies on the cohousing subject (including senior cohousing) are just gathering interests recently by only some forerunners (Yılmaz, 2010; 2004; Han, 2005; Boyle, 2012) in Turkey, because it has been never developed in Turkey yet. Nonetheless, this study is necessary for Turkey because future-user oriented investigation on senior housing can give people a chance to prepare in advance before they face the

actual situation. Though there were some publications on attitudes or perceptions of elderly housing by the Turkish middle-aged last a few years (Boylu, 2004, 2005: Yılmaz, 2010; 2004; Han, 2005; Canpolat, 2012), those did not deal with common spaces in a senior cohousing community.

This paper deals with the Turkish 50s' perception and preference of senior cohousing, mainly of common spaces. Common spaces are considered as the most important characteristics of a cohousing community, which are different from conventional housing. If there were no common spaces to promote inhabitants' social lives, it would be hardly called a "cohousing community"

This paper aims to find out differences in the preference of common spaces in Turkey: Istanbul and other cities. The result of this paper could offer us the basic information for the development of diverse common space design that meets residents' needs, as well as planning shared activity programs. A small group survey was conducted in Turkey, and about 20 responses from Istanbul and other cities were collected. The respondents are the 50s only since they are the generation who will face to elderly housing subject within 10 years in turbulent Turkish society.

1.1.Definition And History

About 2400 years ago, the Greek philosopher Plato described a community in his work ' Republic ' where everything was organized collectively. In 1506, British Thomas Moore defined the ideal community in his book ' Utopia ' as the place where people living in places with a dining hall and various common entertainment areas are grouped.

The concept of co-housing is not a new approach, it has its roots in utopian, feminist, pre-industrial western societies. In this movement, small communities continue their lives by sharing resources, properties, and social life. (Lietaert, 2009) The foundations of the co-housing movement were first laid in Denmark in the 1960s. It has simultaneously become an established housing model in the Netherlands and Sweden. The term co-housing, derived from the Danish word ' bofaellskaber ', which means' to live together ', was first introduced in 1988 by Danish architects Kathryn McCamant and Charles Durret defined in the book.

In the shared housing model, users own their own houses (rented models are also available) but also share in the ownership of common areas or shared houses where community activities take place. Although users are encouraged to participate in all stages of this movement (planning, management, etc.), the participation rate is completely optional. The separate source of income for users allows household autonomy and protection of the 'private' within the community. European examples point to the many benefits of living in shared housing - such as security, friendship, task sharing, and a good environment for children (Fromm, Dorit, 1991).

The term Co-Housing is an abbreviation for the term ' collaborative housing '. It is also an umbrella term that includes communities defined as an eco-village, Community Land Guarantees (CLT), Communes, and Urban cooperatives. Mazo (1990) defines communities united for various purposes as an environment where doors do not need to be locked, relations with neighbors form a norm, different age groups live, everyone has a duty, and people strive to do more than their interests. Deliberate/conscious communities refer to a group of people who are deliberately / consciously organized aiming to create, build, and live in a community.

The attributes attributed to the shared dwelling as defined by McCamant and Durret (McCamant, Kathryn & Durrett, 1997) are listed as a participatory process, deliberate neighborhood design, shared facilities, promotion of human interaction. These principles are not specific to common dwellings and can be seen in all communities that come together deliberately / consciously. Three basic features distinguish common dwelling from other intentional/deliberate conglomerates: non-hierarchical structure, ownership of common resources, and separate household incomes. The following six basic principles are used to distinguish common dwellings from traditional residential settlements. (URL-7)

1. Participatory Process
2. Neighborhood Design
3. Common Facilities
4. Built-in Management
5. Non-hierarchical structure and decision making
6. No shared community economy.

1.2 Co-Housing Design Criteria

UCL Bartlett from Dr. Williams studied five behaviors: social interaction, participation, community support, unity, and safety in co-housing, and found that design features (distribution of space, densities, circulation systems, and shared facilities) particularly affect social interaction and security. Empirical studies on shared housing in the USA by Torres-Antonini (2001) show that shared housing design in a cooperative helps to increase social behavior (Williams, Jo, 2005). Williams suggests that the design of partner communities in the US is particularly effective in promoting greater socialization in collaborative work, stronger social networks, and greater cohesion with social and personal factors (Williams, Jo, 2005).

Social communication design principles are used to encourage more casual social encounters and increase opportunities for informal socialization in communities. The principles include:

- Gradual transitions between public and private spaces,
- Providing semi-private open spaces close to private units for socializing,
- Providing indoor and outdoor common facilities,
- Good visibility to all common areas,
- Placing common facilities and access points on walkways,
- Non-community vehicle parks or non-vehicle communities.
-

1.3. Co-housing Types

According to the US Cohousing Association (Coho / US, 2008), shared dwellings can have an average of 7 to 67 separate units. A single community can host multiple households, including singles. Couples without children, parents with young children, and retirees are included in this group. Common types of housing are generally:

1.3.1.Urban Shared Housing :

The structuring can be in the form of an apartment or townhouse. Some urban communities are locating car parking spaces underground for users to share and leave more open space on the surface. When starting this type of design, designers often build a building close to public transport lines so that residents can get transport without driving (Figure 1).

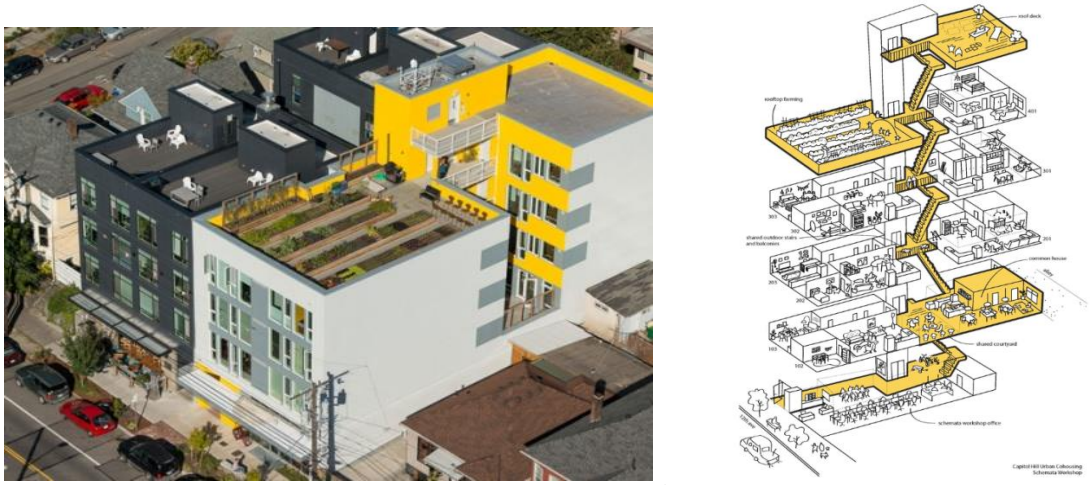


Figure 2 ..Capitol Hill Urban Cohousing & Roof Top Farm (URL -1)

1.3.2. Suburban and Rural Common Housing:

This type of structuring provides little more room for the expansion of co-housing communities. It can accommodate types such as a detached house, apartment, multi-family building. Located in Bainbridge Island, Washington, Winslow Cohousing is located on about six acres, comprising 30 types of homes ranging from studio apartments to four-bedroom homes. In rural communities, houses are positioned close together to leave more space for the field, recreation, or wildlife (Figure 2).

Figure 2. Pleasant Hill cohousing (URL 2)

1.3.3. Mixed-Use Co-Housing :

Some cohousing communities share their lands with private businesses and public spaces. For example, the Market Cohousing structure of Swan, located in an old covered market building in Oakland, California, includes shared housing units, as well as affordable rental flats, shops, restaurants, offices, and these spaces combine with public courtyards (Figure 3).

Figure 3. Swans Market Cohousing (URL-3)

1.3.4. Shared Housing for Seniors:

Although shared housing communities accommodate people of all ages, some common communities focus on providing housing for individuals after retirement. Cooperation seen at a high level in the settlements gives individuals the chance to live independently as they get older, while at the same time supporting them physically, emotionally, and socially, there are friends and neighbor groups in the settlement (Figure 4).

Figure 4.High Barnett CoHousing London -OWCH (URL 4)

1.4. *Advantages and Disadvantages of Cohousing*

Co-housings all users not appropriate in individual housing for rent or on ownership na may offer several advantages. Shared housing can be an alternative to living in a detached house or apartment. In addition to all the positive points of disadvantages as a convenience. As a result, deciding whether the Common dwelling suits your lifestyle and needs depends entirely on the demands of the user. (URL-8)

Advantages;

- Accessibility
  In cohousing, buyers buy shares of a building owned cooperatively. This can be much more convenient than buying a house or renting an apartment.
- Less maintenance
  Co-housing is a great option for people who want to say how their property is run but don't want the high maintenance required to own a home. Users are responsible for maintaining and maintaining their units but do not have to do any gardening, repair, or other maintenance for the building.
- Community Awareness
  Traditionally, most of the renters do not live in their buildings for a long time. But people who gather consciously tend to live in shared housing for long periods. This means that your neighbors can also become lifelong friends.

Disadvantages

- Ongoing / Continuous fees

Co-homeowners must not only pay for their shares but also recurring maintenance fees. Overall this may still be cheaper than rental or homeownership, but some people find it excessive.

- Restrictions

Cohousing may impose restrictions on its residents. Some communities have strict regulations regarding what their residents can and cannot do with their units. The cooperative's board of directors has a significant influence on decision making.

- Less equity

Because of these constraints, there are fewer people initially interested in communities. This means that a unit maintains equity, but its value does not rise as much as it does for a private house.

2. Perceptions of Senior Cohousing

Refer to <Tab. 2>. There are not so many people who are aware of senior cohousing in total (15.0%) and it is less in other cities(12.5%) than in Istanbul (16.6%), and it is statistically significant (p.<001). About the willingness to live in senior cohousing, there is a similarity between cities, showing that positive group and negative group are not very similar. Respondents prefer cohousing inhabitants group composed of 55+ only (55.0%) slightly more to the age-integrated or others without any difference between regions Statistically significant differences are not found in perceptions of senior cohousing between cities except awareness of senior cohousing and willingness to live in (p<.001).

[1] *85m2 is the most common housing area, which is considered as an adequate housing area by the Turkish Housing Development Administration of Turkey (TOKİ) for a household with 4 family members.*

Contents		Total	Istanbul	Other cities	Chi-square
Awareness of Senior Cohousing	Don't know	**17(85.0)**	**10(83.4)**	**7(87.5)**	P<.001
	Know	**3(15.0)**	**2(16.6)**	**1(12.5)**	
	Total	*20(100.0)*	*12(100.0)*	*8(100.0)*	

Willingness to live in Senior Cohousing	Very positive	**3(15.0)**	**1(8.33)**	**2(25.0)**	P<.001
	Positive	**12(45.0)**	**8(66.6)**	**4(50.0)**	
	Negative	**5 (35.0)**	**3(25.0)**	**2(25.0)**	
	Total	*20(100.0)*	*12(100.0)*	*8(100.0)*	
Preference of age group of inhabitants	55+ only	**11(55.0)**	**6(50.0)**	**5(62.5)**	NS
	Age-integrated	**8(40.0)**	**5(41.6)**	**3(37.5)**	
	Others	**1(5.0)**	**1(8.33)**	**0(0)**	
	Total	*20(100.0)*	*12(100.0)*	*8(100.0)*	

<Tab. 2> Perceptions of Senior Cohousing.
f (%)

(NS) not significant.

3. Preference of Common Space in Senior CoHousing

Regarding common spaces, respondents were asked about how many extra rooms and what kinds of common space they wanted to facilitate in the cohousing community among the eight most favorite facilities of foreign examples. After analysis of collected data, common spaces were grouped into two parts as "number of extra rooms requested " and "preferred spaces". In this context, a connection between the number of households and the request for an additional room number was investigated, and whether the hypotheses were correct for the next process was tested.

<Tab. 3> Analysis of extra room requirements

			HOUSEHOLDNUMBER				Total
			2	3	4	5	
EXTRAROOM	1	**Count**	**2**	**3**	**0**	**0**	**5**
		Expected Count	0,8	1,8	1,3	1,3	5
		%	40,00%	60,00%	0,00%	0,00%	100,00%
	2	**Count**	**1**	**3**	**0**	**0**	**4**
		Expected Count	0,6	1,4	1	1	4
		%	25,00%	75,00%	0,00%	0,00%	100,00%
	3	**Count**	**0**	**1**	**0**	**0**	**1**
		Expected Count	0,2	0,4	0,3	0,3	1
		%	0,00%	100,00%	0,00%	0,00%	100,00%
	4	**Count**	**0**	**0**	**3**	**2**	**5**
		Expected Count	0,8	1,8	1,3	1,3	5
		%	0,00%	0,00%	60,00%	40,00%	100,00%
	5	**Count**	**0**	**0**	**1**	**2**	**3**
		Expected Count	0,5	1,1	0,8	0,8	3
		%	0,00%	0,00%	33,30%	66,70%	100,00%
	6	**Count**	**0**	**0**	**1**	**1**	**2**
		Expected Count	0,3	0,7	0,5	0,5	2
		%	0,00%	0,00%	50,00%	50,00%	100,00%
Total		**Count**	**3**	**7**	**5**	**5**	**20**
		Expected Count	3	7	5	5	20
		%	15,00%	35,00%	25,00%	25,00%	100,00%

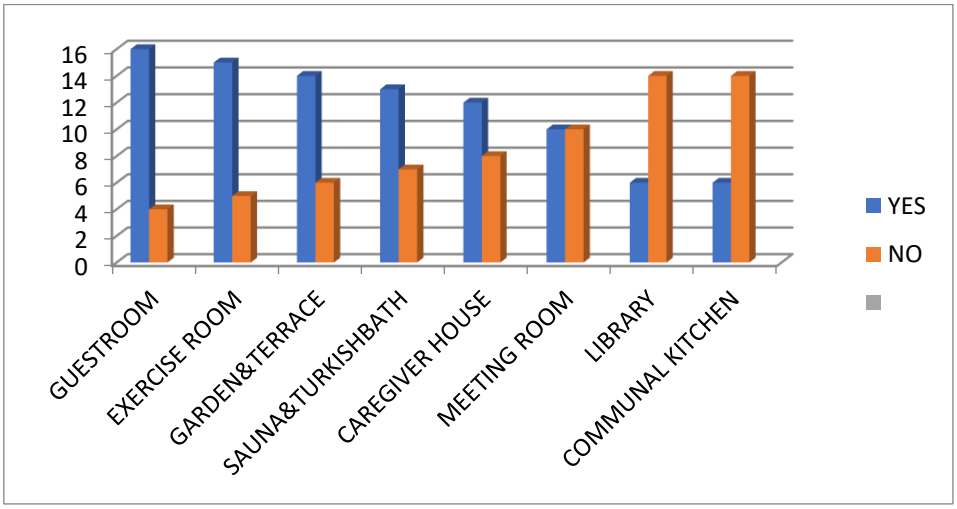
<Tab. 4> Basic summary of Chi-square test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	22,495[a]	15	0,095
Likelihood Ratio	**29,256**	**15**	**0,015**
Linear-by-Linear Association	13,302	1	0
N of Valid Cases	20		

As will be examined in <Tab. 3> and <Tab. 4>, the number of households living together increased as a result of the interviews with the participants, an increased ratio was observed in the number of extra rooms for the needs of the users. **As a result of these chi-square tests with the SPSS system, the p-value was found to be 0.015. In the interpretation of this value, it was accepted as the reference range (0.01<=p<0.05). In the interpretation, a statistical significance was found between the number of households and the need for common space.**

In this way, with the households, it is said that the need is related among the common areas that are the basis of the cohousing approach, and future studies have continued in the light of these calculations.

<Fig.1 > Most preferred common spaces



Refer to <Fig. 1>. With the basic presentation in total, the guest room is regarded as the most preferred space followed by the exercise room (75.0%), garden terrace (65.0%), sauna Turkish bath (60.0%), caregiver house (55.0%), and meeting room (%50.0).

<Tab. 5> Preferences of Common Spaces

			HOUSEHOLDNUMBER				Total	Chi-square
			2	3	4	5		
GUESTROOM	YES	Count	1	7	3	5	16	**0.024**
		%	6,30%	43,80%	18,80%	31,30%	100,00%	0.01<=p<0.05
	NO	Count	2	0	2	0	4	Stat istical significance
		%	50,00%	0,00%	50,00%	0,00%	100,00%	
Total		Count	3	7	5	5	20	
		%	15,00%	35,00%	25,00%	25,00%	100,00%	
EXERCISE ROOM	YES	Count	3	5	5	2	15	**0.061**
		%	20,00%	33,30%	33,30%	13,30%	100,00%	0.05<=p<0.10
	NO	Count	0	2	0	3	5	Significance tendency (significance at the border)
		%	0,00%	40,00%	0,00%	60,00%	100,00%	
Total		Count	3	7	5	5	20	
		%	15,00%	35,00%	25,00%	25,00%	100,00%	
GARDEN TERRACE	YES	Count	0	6	3	5	14	**0.08**
		%	0,00%	42,90%	21,40%	35,70%	100,00%	0.05<=p<0.10
	NO	Count	3	1	2	0	6	Significance tendency (significance at the border)
		%	50,00%	16,70%	33,30%	0,00%	100,00%	
Total		Count	3	7	5	5	20	
		%	15,00%	35,00%	25,00%	25,00%	100,00%	
SAUNA TURKISHBATH	YES	Count	1	6	4	2	13	)**0.006**
		%	7,70%	46,20%	30,80%	15,40%	100,00%	0.001<=p<0.01
	NO	Count	2	1	1	3	7	Stat istical significance
		%	28,60%	14,30%	14,30%	42,90%	100,00%	
Total		Count	3	7	5	5	20	
		%	15,00%	35,00%	25,00%	25,00%	100,00%	

			HOUSEHOLDNUMBER				Total	Chi-square
			2	3	4	5		
CAREGIVER HOUSE	YES	Count	0	6	3	3	12	**0.052**
		%	0,00%	50,00%	25,00%	25,00%	100,00%	0.01<=p<0.05
	NO	Count	3	1	2	2	8	Stat istical significance
		%	37,50%	12,50%	25,00%	25,00%	100,00%	
Total		Count	3	7	5	5	20	
		%	15,00%	35,00%	25,00%	25,00%	100,00%	
MEETING ROOM	YES	Count	0	2	5	3	10	**0.203**
		%	0,00%	20,00%	50,00%	30,00%	100,00%	p>0.10
	NO	Count	3	5	0	2	10	
		%	30,00%	50,00%	0,00%	20,00%	100,00%	(NS)
Total		Count	3	7	5	5	20	
		%	15,00%	35,00%	25,00%	25,00%	100,00%	
LIBRARY	YES	Count	0	4	1	1	6	**0.182**
		%	0,00%	66,70%	16,70%	16,70%	100,00%	p>0.10
	NO	Count	3	3	4	4	14	
		%	21,40%	21,40%	28,60%	28,60%	100,00%	(NS)
Total		Count	3	7	5	5	20	
		%	15,00%	35,00%	25,00%	25,00%	100,00%	
COMMUNAL KITCHEN	YES	Count	1	1	2	2	6	**0.702**
		%	16,70%	16,70%	33,30%	33,30%	100,00%	p>0.10
	NO	Count	2	6	3	3	14	
		%	14,30%	42,90%	21,40%	21,40%	100,00%	(NS)
Total		Count	3	7	5	5	20	
		%	15,00%	35,00%	25,00%	25,00%	100,00%	

Refer to <Tab. 5>. The guest room, exercise room, and caregiver room, which are common areas introduced to the participants, are statistically prominent as the need in large families. It could be explained that people in large families prefer more extra spaces than ones in small families. Among spaces, those are more preferred in large families like sauna & Turkish bath show a notable difference in small families compared to the meeting room and a communal kitchen.

Nothing this result, it could be a better idea to facilitate a living room and meeting room than an independent meeting room in a senior cohousing community. It could give more chances to get together among the inhabitants. About the kitchen, even though there are not so many respondents who prefer the common kitchen to be facilitated in a senior cohousing community, it is recommended to facilitate it, as the common meal is a very important activity to promote mutual supports through preparing meals and to form a sense of community among inhabitants. Nevertheless, if you bear in mind that only 1/3 of respondents prefer the kitchen to be facilitated, it could be modified as a large multi-purpose space, which can accommodate meeting, rest, and gathering as well as cooking and eating. Space can be used more flexibly according to the occasion by occasion.

4. Situation In Turkey:

Turkey as a model for public housing in dormitories, housing, and old-Nursing Homes shown. In these types of residences, besides the individual spaces such as bedrooms, common living room, living room, study-study room, meeting room, game, and TV room, etc. places with kitchens, bathrooms, laundry rooms found in wet areas such as m is max. These structures can be public or private. In addition to the examples seen in the world are to be found in Turkey. However, these economically advantageous structures also allow individuals to socialize and meet new people.

5. Field Study:

To determine the preferences and results regarding shared housing for Istanbul, the interviews were selected from among those working or retired between the ages of 60-70. The group that will be defined as the senior population is the segment that is economically more suitable for having a housing that has just ended their career. The demographic characteristics of the participants were determined (place of birth, year, marital status, occupation, place of residence, education status, profession, and monthly income) and the co-housing definitions, together with their visuals, were introduced to 10 participants with their advantages and disadvantages.

Discussions and evaluations regarding the fieldwork are ongoing, and the first findings on the subject show that the participants demand home-office use and that there is a well- designed kitchen and dining area in the common areas. The design planning process, including that, has left a positive impact on the target audience in line.

6. Evaluation and Conclusion:

As a conclusion, as the number of households increases, the number of extra rooms requested in addition to their existing homes increases and is observed to be interdependent. After these interviews and surveys conducted in the first quarter of 2020, it is seen that the participants demand the areas that they can use as an add-on to their existing houses rather than "common" areas. On the other hand, after the disease and pandemic periods weakened and adapted to the 'new' normal processes, it is thought that the real common space usage will also differ by resembling important examples abroad. I would like to propose that the common living room is to be designed for meetings, dining rooms so that as many inhabitants can gather in the same space to know each other more easily. It would be effective to use limited space as well. Regarding shared activities, it is evident that most Turkish citizens are not accustomed to participate in shared activities yet. Furthermore, they prefer sports activity to a common meal, which promotes a more intimate relationship with neighbors. It might be the reason Turkish people consider meals are so private that they don't want to be disturbed by anyone but family members.

Co-housing to live in shared housing; In addition to living in a traditional residence of the same size, it does not give up privacy and comfort and offers areas where you can have a larger and consciously designed common area share in the same budget. However, users of all processes involved, starting from the smallest share of the city's user that allows the city to participate in decision provides. The current economic and sociological instability creates demands for a new housing model. The new habits and problems of the target group that

cannot find an answer in the current housing market are some of the important sources of this situation. As demonstrated in the interviews, traditional houses do not meet the demands and demands of the target group. Symbiosis, which has been inherent in humanity since its past, can be presented as an alternative residence and lifestyle for the specified target audience if different types of living have been successful in European examples.

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Housing Cooperative Settlements:

as Agents of Sustainable/unsustainable Urban Transformation in Zurich North, Switzerland

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Abstract_ This essay adapts the potential of the sustainable urban housing, as a critical element for reconceptualizing spatial and territorial strategies, which can contribute into inclusive urban renewal. In light of United Nations' (UN) Agenda 2030 and Sustainable Development Goal (SDG) 11, this study investigates the transformation that urban periphery of northern Zurich has undergone over previous decades from a fragmented urban structure towards a denser urban fabric by exploring two case studies of housing developments. Two new settlements of the housing cooperatives as the catalyst of urban innovation in Zurich North are the main research lab of this study. The theoretical framework of the study is based on the examination of urban housing as a purposeful integration of new models of housing processes that are not only socio-economically and environmentally sustainable but also lead to decisive aspects of the sustainable transformation of both urban territory and community. The primary aim of this essay is to critically explore the novel settlements of the housing cooperatives in Zurich North in the context of wider practice of sustainable development and to understand how this discourse has actually functioned in a local context. The main question of this study is: How the novel residential concepts of Zurich North have caused the urban communities become either more or even less sustainable? This article's conclusions are based on the interconnection of three dimensions of sustainability (environmental, economic, and social aspects), which has been the original intention of the Brundtland Commission. The results show that the projects of non-profit housing cooperatives have contributed to the sustainable dynamics of urbanization of Zurich North as a new urban configuration, have had territorial impacts as local acupunctures, have resisted the inner-city's gentrification and segregation, while have triggered the unsustainable gradual displacement of low-income groups and consequently the process have been framed as a relatively middle-class phenomenon.

Key Words: Housing cooperative settlements, Sustainable/unsustainable urban housing, SDG11, Territory and community transformation, Urban periphery.

Introduction

Since the beginning of the twenty-first century, urban housing has confronted various environmental, economic, and social complex situations, most of them coming under the broad practice of sustainability. In recent decades, climate change concerns and the resulting adaptations in order to develop energy-efficient housing, coupled with urban gentrification caused by rising rents and excluding low-income tenants, and even much more recently the role of housing in times of crisis such as a pandemic, have put greater emphasis on the need for search for innovation in creative integrated urban dwelling types. As Henri Lefebvre hypothesized in 1970 that the world has become urban [1], cities and urban areas today, have been considered as the focal points in addressing the sustainability challenges. Accordingly, in 2015, the UN adopted the 2030 Agenda for sustainable development, centering around 17 SDGs, with SDG 11 as "sustainable cities and communities", which includes environmental, economic, and social sub-goals such as "adequate, affordable housing" and reduction of "environmental impacts of the cities" [2].

However, sustainable housing as it applies to urban environment is a vast area and this essay is focused on one aspect, which is investigating the two projects of housing cooperatives in north of Zurich, Switzerland that are compatible with the principles of sustainable development. The objective of this article is thus, exploratory in that it seeks to examine whether or not the case studies of non-profit housing cooperatives, realized in Zurich North have contributed to the qualitative change and sustainability aspects and cohesion of the urban environment in Zurich, Switzerland. In this manner, the present essay aims to contribute into understanding of how housing cooperative settlements and their activities related to housing, as a component of the urban built environment, have responded to the contemporary challenges of the urbanization process through residential concepts in Zurich North. How their housing projects have caused the urban communities become either more or even less sustainable? Although, the investigated case studies are located in Switzerland, the nature of the study indicates that it is pertinent beyond this country, as the importance of urban periphery is a distinctive issue in

Europe and worldwide. As the literature highlights, a few number of studies have especially investigated the housing/built environment relationship [3, 4, 5]. Likewise, the literature on the built environment points out that the connections of the housing to the other elements of the built environment determines if the housing is developing sustainably [5]. Moreover, a prominent aspect of housing development has shifted towards the contribution of housing to urban sustainability [6]. Therefore, this study emphasizes the (un)sustainable contribution of the studied case studies in connection to their urbanized territory and communities. In order to lay foundation for the discussions of this essay, a brief overview of the origins of sustainable development and housing sustainability is presented.

A Discourse on Sustainable Development and Sustainable Urban Housing

The publications that are credited with initiating and guiding the modern environmental movement can be referred as Silent Spring [7], The Population Bomb [8], soon followed by Limits to Growth [9], which was published by Club of Rome. The report of Limits to Growth raised awareness towards the potential global environmental crisis and the consequences of the rapid increase in world population and limited resource supply. Later, the report of Brundtland Commission; the World Commission on Environment and Development (WCED) [10], established the concept of sustainable development by emphasizing finding the strategies to promote social and economic development in a way that avoids environmental pollution. However, the original intentions of the Brundtland Commission, based on three dimensions of sustainability as environmental, economic, and social, have increasingly been separated by programs that are "designed to address one or at least two dimensions" [11, p. 6].

Accordingly, housing as a basic need of human being is interdependence on environment, society, and economy and the objective of the sustainable urban housing is to establish the housing concept, which is aligned with all principles of sustainable development. It should be noted that the origins of the sustainable urban housing movement have been the socio-economic considerations in the beginning of the twentieth century. As industrial cities of the nineteenth and early twentieth century provided extremely unhealthy housing conditions [12], the activists of the early twentieth century in Europe and North America started to deal with the socio-economic concerns of urban housing such as adequacy, accessibility, affordability, and sanitation [13]. However, the energy crisis of the 1970s, contributed to the awareness of environmental sustainability in building sector, bringing the energy efficiency concepts and fossil fuel dependency concerns into the housing debates [14, 5]. Therefore, the emergence of firstly, socio-economic concerns, and then environmental ones pushed the efforts and solution-based endeavors in sustainable housing. Housing as a complex urban development challenge cannot be considered as "a stand-alone topic […] narrowly defined by the walls and roofs that form a single-family home. [Yet,] it is a complex entity with diverse and manifold relationships to other fields" [5, p.16]. This article, accordingly, views sustainable housing as a critical element of shaping new urban planning strategies, which in turn influences novel urban configurations. In order to find investigative value in the concept of sustainable urban housing, an analytical framework as conceptualizing sustainable urban housing is developed, which will be the foundation for its evaluation.

Conceptualizing Sustainable Urban Housing

The way sustainable housing is conceptualized, influences the indicators that are developed in order to evaluate it. The most regularly cited definition of sustainable communities is the Bristol Accord:

> Places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life. They are safe and inclusive, well planned, built and run, and offer quality of opportunity and good services for all [15, pp. 6-7].

The affordability of the accommodation and the quality of its neighborhood is considered as the economic and social aspects of sustainability [16]. According to Winston [17], sustainable housing research is generally analyzes the housing's location, the construction or design, and its operation's phase. A crucial concern is the ecological limits such as land and non-renewable construction materials and the emissions of the residential sector [18]. Sustainable land use planning, which resists scattered settlement is further required, while access to good-quality public transport, linking the housing ensemble to essential services is needed [19, 20]. For instance, it is debated that sustainable housing needs to provide access to facilities such as required community centers within walking distances [21], which in turn emphasizes the importance of arrangement of space for social interaction and community development.

Indicators of Sustainable Urban Housing

As argued in the previous section, conceptualizing sustainable urban housing helps to develop indicators to evaluate it, however, endeavors on development of these indicators is still limited [16]. The housing indicators, which are developed and refined in this article are applied as a measurement tool for sustainable and adequate urban housing. Accordingly, housing built form, sustainable design strategies, housing affordability, the quality of housing and its neighborhood, sustainable energy issues, social inclusion, place attachment, and sustainable transportation have been highlighted.

Pertinent to the objective of this essay, the statistical agency of the EU, Eurostat, provides data that can be used as indicators for elements of sustainable housing. Table 1. presents some of these data for Switzerland, which provide some relevant statistical background to discussions in this study and the country's progress in some dimensions related to sustainable housing. The table also presents the score of Switzerland on Environmental Performance Index (EPI), provided by a collaborative project between Yale and Columbia universities.

Table 1. Indicators of sustainable housing for Switzerland[1]

	Dwelling Type (%)							
	Detached	Semi-Detached	Flat	Housing quality	Overcrowding Rate (%)	Collective passenger transport (train, bus) (%)	Poor Dwelling Conditions (%) (2018)	Environmental Protection Index score (2018)
Switzerland	23.7	13.1	59.7	81	6.2	25.5	9.8	87.42
EU28	34.1	24	41.3	79.5	15.5	16.7	13.9	72.33

Switzerland, however, deals with problems such as the renovation of the old housing stock and rising demand for housing due to the economic growth, immigration, and attraction of the urban living. To face the challenge, some local policies have provided the context for sustainable housing projects by non-profit housing cooperatives, which aim at not creating merely sustainable islands but are oriented towards sustainable urban development as a whole [24, 25].

Housing Cooperatives in Zurich

Zurich is becoming as a point of reference in social housing, particularly due to the housing cooperatives as social institutional actors. Thanks to the cooperatives' housing stock, nonetheless, no one considers social housing as synonymous to "ghettoization, social squalor, deterioration and criminality" in Zurich [26, p.31]. Considering the fact that over ninety percent of dwellings in Zurich are rental apartments, housing cooperatives own twenty percent of this amount, which counts for 40,000 flats on the whole. Most of the housing complexes of the housing cooperatives are located on the periphery of the city of Zurich.

At the turn of the nineteenth into the twentieth century, the expansion of the industry triggered the cooperatives to offer laborers access to adequate and stable housing. In this manner, the first cooperatives were founded in the early twentieth century and developed between the two world wars and then after the second World War [27]. In 1907, a law required the city to insure social housing and by placing the cooperatives at the lead of housing policy, Zurich cooperatives were born. Meantime, the city of Zurich realized that assisting the cooperatives by facilitating their organization can be more efficient than investing directly in the construction of social housing. This realization have fostered the specific relation between the city and cooperatives up to the current time [26]. However, after the 1970s, cooperatives built almost nothing for twenty years, since it was marked as a time of renovation rather than construction, which in turn provoked the housing crisis of the late 1990s in Zurich [28]. Deindustrialization made a high percentage of the urban population to move to the outskirts of the urban area. Meanwhile, abandoned industrial districts became the focus of concern about the future of the city. The question of what had to replace the large terrains left behind the industry, needed to be addressed.

This complex condition engaged the participation of the leading rebellious youth who had called for free space and alternative urban projects in the previous decade. They began to consider the housing cooperatives as an instrument to achieve their utopian vision [29]. For some of them, who were engaged in the analysis of the

[1] Housing quality is the percentage of population with not poor dwelling conditions; Overcrowding rate is the percentage of population living in an overcrowded household; EPI consists of two overarching objectives: environmental health and ecosystem vitality. Higher scores indicate better performance [16, 22, 23].

modern society, the cooperatives concept turned out to become a solution to the post-industrial society. Taking into account that between 1962 and 1990, the population of Zurich dropped from 440,000 to 360,000 inhabitants, in the late 1990s, a new center-left majority initiated a ten-year program of 10'000 flats with the goal of bringing back the families to the city [28]. This sent the message that construction work was again possible in Zurich, resulting in revival of cooperatives for competitions for land they owned. This condition of social drive, communal support, and strong demand conditioned the new developments. Yet, the flats, which were constructed by the cooperatives after the first and second World Wars were too small with poor infrastructure. Therefore, cooperatives started to pursue more demolition/reconstruction activities in order to advance a sustainable construction era to meet new environmental and technical needs. To achieve this goal, sustainable urban housing has been tackled in a more encompassing context of sustainable urban development and neighborhoods, which emphasizes not only affordable flats but environmentally sustainable qualified housing [24].

Housing Cooperative Settlements: Two Case Studies in Zurich North

While cooperatives occupy a significant part of the built-up area in Zurich, for more than past fifteen years they have been a laboratory for urban transformation. Due to the multiplication of the projects, every new project has been an opportunity to analyze a new principle, trying to respond to the complex challenges of the society by different residential concepts. On the other hand, the inner-city of Zurich has encountered an extreme shortage of affordable housing for low- and middle-income people in the past decade, due to its extreme gentrification and commodification [30, p.686]. Likewise, the existing housing stock of the inner-city of Zurich, which could not satisfy the rising demand for the urban living, motivated the urbanization of Zurich North [31]. As the inner-city of Zurich transformed into a privileged zone of consumption, the leading urban strategy in Zurich North, which is consisted of four independent municipalities of Kloten (the location of the airport), Opfikon, Wallisellen, and Dübendorf, shifted towards generating new urban spaces (See Fig. 1).

The housing cooperative Kraftwerk1, in 2016 constructed a mixed project for housing, working, and service, on the site of the former Zwicky spinning plant on the boundaries between Zurich, Wallisellen, and Dübendorf. Kraftwerk1 as a leftwing that shares social and ecological oriented agenda with roots in the urban revolt of the early 1980s has developed living accommodation opportunities prioritizing people who need assisted living and also those who want to combine living and working spaces together. In Zwicky Süd project (see Table 2), the interaction among the various squares, passages, and paths has resulted in a livable urban area on the Zurich periphery by combining privacy and communality.

In such an urban context, the social principle of the cooperative functions as the generator of the urbanity of the district. Privately owned cars are strongly discouraged for the project Zwicky Süd, since the site is well linked by public transport. However, the high levels of noise pollution, resulting from the a motorway slip road and the railway viaduct, which have sandwiched the project, have determined the positioning of the building structures [32, see Fig. 2]. It should be noted that neither the city nor the cooperatives have intended to construct just outstanding buildings. The city wants to launch and implement coherent territorial planning, which restricts urban sprawl and foster urban densification [31]. As the result, the city of Zurich is willing to provide the successful integration of new buildings to the urban context, at the same time that the cooperatives aim at achieving dwellings that correspond to their social approaches.

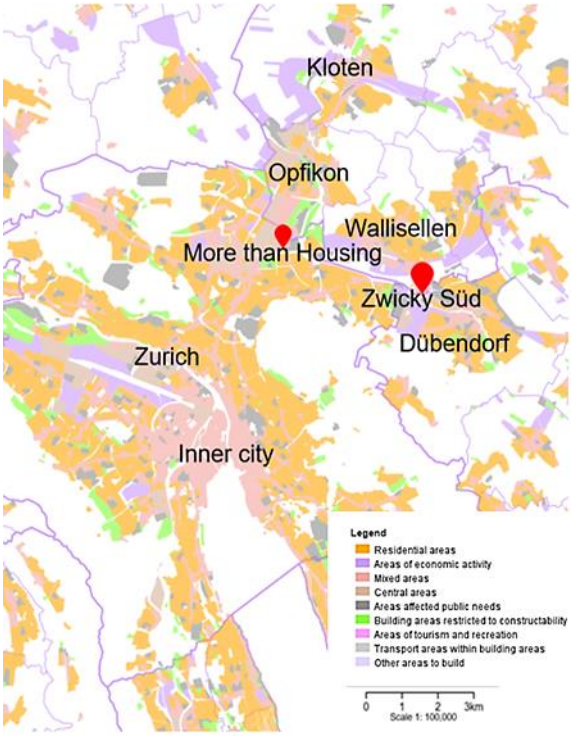

Fig. 1. Zurich North and two cooperative housing settlements in relation to the Inner-city, map drawn and modified by Author based on municipal boundaries and building zones Switzerland [33]

Table 2. Zwicky Süd ensemble on Zurich North periphery [32, p.044]

Year of completion:	2016
Site area:	21,179 m^2
Floor area:	49,867 m^2
Accommodation:	33,700 m^2 of flexibly useable dwelling, studio, and commercial spaces
Other useable area:	5,900 m^2 of commercial space and public uses of the ground floor
Uses:	280 flats (partly residential studios), commercial spaces
Construction period:	3 years

Fig. 2. Site plan of Zwicky Süd, Scale: 1: 2,500, 1. Former Zwicky works site, 2. New Zwicky Süd housing district, 3. Railway line 4. River Glatt, 5. Motorway slip road, map drawn and modified by Author [33]

Although the traditional domain of activity has been housing for cooperatives, they endeavor to take further steps. In this manner, their purpose is to create “urban pieces”, which involve “the diversity and social

complexity" of the urban environment [28, p. 14]. To achieve this objective residential flats, offices, shops, services, and cultural spaces are integrated into the urban context of the projects in a way that contribute in transformation and creation of the urban environment. These *urban pieces* that are designed against the gentrification of the urban areas can be ranged from residential built-areas, which are constructed on the periphery of Zurich such as the Zwicky-Süd project, to Mehr als Wohnen project that gave cooperatives the opportunity to be not only housing planners but also urban planners.

The largest cooperative housing complex, Mehr als Wohnen (More than Housing) was constructed from 2007 to 2015 in Zurich North, with first inhabitants arrived in fall 2014 (see Table 3). Here, the objective of the more than fifty Zurich non-profit housing cooperatives has been to create a mixed-use urban ensemble for 1,400 occupants by forming a system of paths and open areas between closely spaced thirteen free standing buildings, bringing an urban character to the quarter. More than Housing has provided a total of 370 rental flats with 160 diverse floor plans by which the residents are given access to housing and also to the city, preventing the trend towards urban segregation. For example, in Building A of the project, communal character of a shared flat with the possibility to return to small flats is developed, while in building G , the commercial and common spaces are positioned on the ground floor (see Fig. 3). The exterior space of the housing project was designed by landscape architects and in a participatory process with the residents after occupation [28]. Equally, housing options have been provided for immigrant families and people with disabilities. Per capita floor space as a reduction in living area per resident has been considered in planning the project, in order to be an endeavor to reach the goal of the 2000-watt society in Switzerland. Car ownership of the inhabitants are also restricted. Such a cooperative form of living and working develops "social and ecological sustainability" that are argued to be a protype for future urban housing settlements [32, p. 036]. Being an influential development, Mehr als Wohnen in Zurich North is not just a dwelling area, but an *urban piece*, which has promoted the urban density and social mix of an urban environment.

Table 3. Mehr als Wohnen (More than Housing) ensemble in Zurich North
[34, p. 66 and 96, 32, p. 036]

Year of completion:	2015	
Site area:	40,200 m^2	
	Building A	Building G
Floor area:	6,883 m^2	7,519 m^2
Housing area:	3,937 m^2	3,870 m^2
Other usable area:	415 m^2	742 m^2
Accommodation:	11 clustered flats (10.5 or 12.5 rooms) sheltered workshop, gallery	30 flats (4.5 to 12 rooms, 112 to 318 m^2, 3 additionally rentable rooms), roof terrace and roof pavilion with a sauna for all residents of the plot. Commercial and common spaces on the ground floor (3 studios, mobility station, common rooms, exhibition space Mehr als Wohnen, sound studio, violin-making studio, book-publishing house)
Construction period:	4 years	3 years

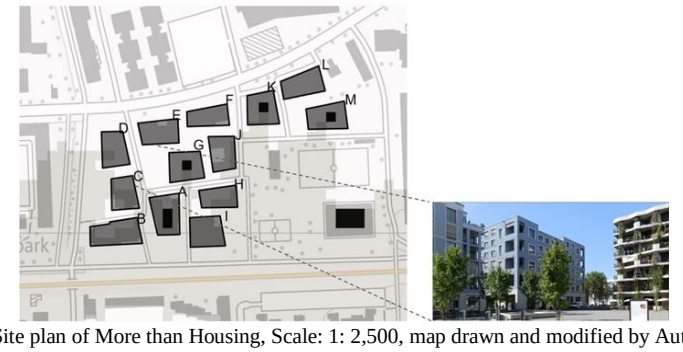

Fig. 3. Site plan of More than Housing, Scale: 1: 2,500, map drawn and modified by Author [33]

4. Discussion and Conclusion: Bringing the Concepts together

New forms of cooperation, triggered by housing cooperatives is considered as one of the decisive aspects of the transformation of the Zurich former urban periphery into a spatial configuration with sustainable urban characteristics. The renewed role of housing cooperatives in Zurich that is a city with a rental culture has been to develop sustainable neighborhoods, which are not only sustainably oriented inward but affect the sustainable development of the surroundings by innovative residential concepts. In 2018, Switzerland ranked highest for the EPI among European countries with a score of 87.42, compared to EU28 average of 72.33 (see Table 1). The positive ranking is partly the result of national and local policies such as the vision of a 2,000-watt society,

which targets reducing the current 6,000 watt per capita energy consumption in Switzerland by two-thirds by 2050 [24]. As related to housing, such a vision involves the energy efficiency in the requirements for sustainable buildings, future mobility (for example mobility concepts that reduce the use of private cars) (see Table 1), and increasing public awareness and involvement as indicated by conceptualizing and refining sustainable urban housing indicators.

As the result, the case studies in this essay reflect that the current tendencies in sustainable housing need to touch upon the integral overall coherency of the urban development. While, Zwicky Süd project with flexible structures that accommodate both housing and working spaces has been adapted to a wide range of uses beyond just housing, Mehr als Wohnen project with diverse forms of residences and uses such as flat-shares and communal spaces is designed like a city district with a distinctly urban character. In Zurich North, Zwicky Süd and Mehr als Wohnen projects with high density as models for sustainable land use and energy efficiency, highlight the fact that housing and urban planning need to be inextricably linked.

On the other hand, Schmid [31] argues that the classic notion of the city as an urban core, which is surrounded by less dense "(sub)urban areas followed by […] rural hinterland has lost much of its empirical evidence" and, therefore, has to be entirely "re-conceptualized" (p. 90). Schmid [31] proposes the concept of "planetary urbanization" that can be observed in Zurich (p. 95):

> Planetary urbanization means a fundamental change in perspective: we should no longer focus on the development of a single "unit", a city or an urban region, but on the urbanized territory. Instead of drawing new boundaries and trying to define new types of urban units, it should be much more appropriate to try to understand different types of urbanized (and urbanizing) territories and to draw a much more nuanced picture of the differences that are produced in an urbanized world.

During the past decades, Zurich North with a strong industrial background has evolved from a "complex multilayered patchwork of variegated urban elements" into a much more connected urban fabric, identified as "urban intensification", by constructing decent urban spaces for working and living and public transportation (ibid, pp. 108-110). However, this urban intensification has created another change in the social combination of the area as "exclusion": while, housing prices of Zurich North are lower than the inner-city areas that make them appropriate for middle-class housing, they stay high for low-income groups, who are displaced gradually in more peripheral places [30, p. 697]. In this respect, although, Zurich North is developing a different urban experience, which has contributed into sustainable transformation of the territory, it has also adopted the inner-city's developmental elements in regard to (un)sustainable development of communities. Thörn et al. [11, p. 210], elsewhere, debates on struggles and difficulties for making such aforementioned types of housing inclusive in the European context of current sustainable urban development discourse, where the practice "can even contribute to processes of gentrification, as groups that are relatively strong in economic and cultural capital displace weaker groups".

Despite possible preconceived notions regarding sustainability of the case studies, this essay has endeavored to shed light on these two contemporary housing cooperative's settlements and their related housing and urban planning activities in Zurich North and how their housing developments have helped to reverse the inner-city's gentrification and segregation, while, have contributed in unsustainable gradual displacement of low-income groups. How the sustainable urban housing can progress beyond the "middle-class phenomenon" [11, p. 212] and contribute to the low-impact and low-income community, remains as a challenge to be further tackled. The new *urban pieces* of the Zurich-North housing cooperatives, proclaim a dual focus of an adequate social housing and a blueprint of the sustainable urban planning, however, the achievement of the SDG 11 of the Global Agenda 2030, which aims at making cities and human settlements inclusive and sustainable is still conditional to the provision of urban housing at a more inclusive scale and diversity.

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RESHAPING THE FUTURE THROUGH PUBLIC SPACE

Skatepark defining a new urban space in Maribor, Slovenia

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Abstract

Public spaces are an important factor of our cities. They are cities' living room with providing people many opportunities to come together and engage with the community. If public spaces are successful they are inclusive of the diversity of groups present in our cities and create a social space for everyone in the society to participate in. The life of the city is shown in images of new urban spaces. Good urban design is the key factor that contributes to the overall quality of life in an urban area. On an example of new skatepark in Maribor, Slovenia, that is placed in a deprived area we show how the quality of built environment changes by adding a new content.

Key Words: (public space; skatepark; generator of new content; urban design; deprived area improvement)

Introduction

One of the greatest challenge today is designing and building of healthy, functional, productive and friendly cities. There are multiple solutions and none of them is easy to achieve. The essence and the binding thread lies at the heart of the world's urban areas: its public spaces.

Public spaces are an important factor of our cities. They are cities' living room with providing people many opportunities to come together and engage with the community. If public spaces are successful they are inclusive of the diversity of groups present in our cities and create a social space for everyone in the society to participate in. The life of the city is shown in images of new urban spaces.

There are many factors that contribute to a successful public space. First of all it shall allow better interaction between people and between people and their environment. In this manner good urban design also contributes to the overall quality of life in an urban area.

Rethinking the public space

"A good city is like a good party—people stay longer than really necessary, because they are enjoying themselves". A quotation of a Danish architect Jan Gehl, whose career has focused on improving the quality of urban life by re-orienting city design towards the pedestrian and cyclist, leads us towards the deeper meaning of understanding how public space shall function.

If we start with considering some questions on contemplating the essence of public space:

- What is the "recipe" for effective public spaces?
- How do public spaces evolve?
- What new uses do they serve?
- What are city-dwellers' expectations with respect to public spaces and how can public authorities address them?
- What governance structures must we implement?
- Why and how do cities invest in public spaces (addressing issues such as image, attractiveness, quality of life, security)?
- What innovations and good practices can inspire us?

In this manner designing and planning for public spaces and urban environment demands a contextual approach and an awareness of overlapping systems.

Urban design as an interdisciplinary intersection

As a distinct discipline, urban design dates to the middle of the twentieth century. It is an intersection of architecture, landscape architecture, urban planning and public art. It is impossible to define its boundaries due to its subjects that are constantly changing. For sure it is a creative and collaborative process that involves not only shaping the forms, but also improving the function as an environment for human life.

New urban space defining a commuter neighbourhood

The relationship between people and spaces within the context of an active urban setting is what we tried to create by making and designing a new skatepark in the deprived area of the of Maribor.

Deprived urban space in commuter neighbourhood gets new social and cultural programms and becomes new communication point and generator of happenings adding new life to the public space.

Brief history of skateboarding

Skateboarding is an art of sports that is performed by using a skateboard. The movement involves riding and performing tricks using a skateboard, it can be seen as well as a recreational activity, as a form of art, or assets of transportation. It is a form of recreation and sport, very popular among youths nowadays. A person rides standing balanced on a small board mounted on wheels.

As a professional sport there is a wide range of competitions with various events according to the vertical and street- style events. Vertical skating includes acrobatic elements performed aerial in half and quarter-pipes. They originate from the use of empty swimming pools. Street style performing features tricks in a real or simulated urban environment with different types of urban furniture and street elements such as: stairs, ledges, rails. Skateboarding allows huge creativity and individuality.

In 2016, it was announced that skateboarding will be represented at the 2020 Summer Olympics in Tokyo as an Olympic sport.

Spontanious birth of a new sport

Skateboarding first showed up in California in the 1950s, when surfers tried to surf the streets. The first skateboarders started with wooden boxes or boards with roller skate wheels slapped on the bottom. The boxes turned into planks, and eventually companies started producing decks of pressed layers of wood—similar to the skateboard decks of today.

The first commercial skateboards appeared in 1959, but crude homemade versions of skateboards, often consisting of nothing more than old roller-skate wheels attached to a board, were first built after the turn of the 20th century. In the early 1960s, skateboard manufacturers such as Makaha and Hobie attempted to capitalize on the rising popularity of surfing by promoting skateboarding, then known as "sidewalk surfing," as an alternative diversion when no rideable waves were available. In 1963 Makaha formed the first professional skateboard team, and that same year the first skateboard competition was held in Hermosa, California. It included events in freestyle and downhill slalom skateboarding. The initial popularity of skateboarding waned over the next couple of years because of the limitations of the skateboard's maneuverability and because of warnings from safety professionals that the activity was dangerous. [1]

Skateboards were revived in the mid-1970s as followed by the introduction of kicktail and the development of faster polyurethane wheels. With kicktail the raised back end of the board made possible kickturns.

New type of sport facility

The first skate park was built in Florida in 1976, and many others began to appear throughout North and South America, Europe, and Asia, all providing a variety of slopes and banked surfaces for sudden turns and stunts. It was at this time that riders started skating in empty pools and exploring the "vertical" potential of the sport. From the empty pools soon became half-pipes, U-shaped riding surfaces that were used to perform aerial stunts.

In the 1980s skateboarding enjoyed an underground following. Skateboarders built their own ramps and half-pipes and began skating the urban environments, creating what became known as street style. Increased board size and improved truck constructions helped the new style thrive. The daring and individualistic nature of street and vert skateboarding was spread through straight-to-video documentary films that found a large youth audience.

Mainstream exposure was given in 1995 by the cable television network ESPN with XX large competitions like X-games in Rhode Island and alternative sports festivals.

Skateboarding has established itself as a professional sport while still maintaining its independence from traditional team sports. Snowboarding and in-line roller-skating have been heavily influenced by skateboarding techniques and culture.

One benefit of skateboarding is that it is a very individual activity. There is no right or wrong way to skate. Skateboarding still hasn't stopped evolving, and skaters are coming up with new tricks all the time. Boards are also continuing to evolve as companies try to make them lighter and stronger or improve their performance. [2]

Designing of skateparks

Different to other sport arts skateboarding does not have particular standard form, so that gives the designer an opportunity to have more freeedom by designing it, but at the same time it standardised rules have to be

followed regarding distances between the elements for skating. In this manner design of each skatepark is as individual as it is the activity of skateboarding itself.

Types of movement

The design itself follows 2 types of movement:

• **Street**

This competition is held on a straight 'street-like' course featuring stairs, handrails, curbs, benches, walls and slopes. Each skateboarder performs individually and uses each section to demonstrate a range of skills, or 'tricks'. Judging takes into account factors such as the degree of difficulty of the tricks, height, speed, originality, execution and the composition of moves, in order to award an overall mark. [3]

• **Park**

Park competitions take place on a hollowed-out course featuring a series of complicated curves — some resembling large dishes and dome-shaped bowls. From the bottom of the cavity, the curved surfaces rise steeply, with the upper part of the incline either vertical or almost vertical. Among the attractions of park competitions are the immense heights achieved by climbing the curves at speed and performing amazing mid-air tricks. [4]

Different categories of skatepark facilities

According to the use of facility there are 3 categories of designing a skatepark: BOWL, STREET PLAZA and FLOW.

- **Bowl** imitates moving in the abandoned swimming pools. The skaters can move around without stepping down of the board. Bowl has mostly depth between 90 and 360 cm. (elements such as: halfpipe, quarterpipe)
- **Street** is a disciplin, where skaters imitate moving on the streets, in the urban sourroundings. They make ‚tricks' at the various elements and they have to step down to push themselves to gain speed.
- **Flow park** joins the elements of both models together. In well designed flow park a skater can make as well ‚tricks' and is also able to skateboard on the rounded walls like quarterpipes without putting his foot down.

Skatepark Maribor

About the city of Maribor

Maribor is the second largest city in Slovenia, its municipal, cultural, technological and commercial centre**.** Small country of Slovenia, located between Austria, Italy, Hungary and Croatia, has been through turbulent times which brought enormous changes for the last 25 years. It changed the political system and diverged from Yugoslavia in 1991, declared itself an independent state and joined European Union in 2004. Such changes in a society have left their reflection also in architecture and urban development.

The city of Maribor is the meeting point of the Alpine and Pannonian lands, next to the strategically important crossing ofthe river Drava. It's unique geographical location has 3 site specific dominants that determine from ages not only the position, but also the historical, cultural and economical development.

The history of the city begins in 1164 when it was first mentioned in the written sources. The city was heavily damaged during allied bombing raids in 1944 and 1945 in World War 2.

Due to the pressure to quickly rebuild a destroyed city, Maribor became the first city in Slovenia to begin purposely regulate its urban development. That means that it had a special approach to planning and to space design. The narrow city centre was rebuilt as it was before, and due to the coming of the new inhabitants there were designed new urban neighbourhoods. Ljubo Humek's regulation plan for Maribor of 1949 sets the groundwork for urban design.

Our experience of the socialism within the former Yugoslavian state was to create a new society on every level of human existance. The role of architecture in this process was defined as very important in the building of a new country, a new way of life called for new towns, new dwellings, new houses.

In the 1970s, Slovenia was the European oasis of experimentation on the western brink of the greyness of the East and it can be said that it retain edits role of an experimental testing ground even after the independence.
Economical conditions, technology of accomplishment and different ways of uses of materials are giving the seal to the new built opus and are whitnesses of an era in which each country founds itself.
The independence of Slovenia in 1991 brings about an irrevocable change and political conditions, which is quickly reflected in architecture and urban development. This was something very new, the free open market, the new possibilities, but also the lack of social security and the possibilities to compete.
Circumstances have changed also in a positive way, it is easier to travel abroad, to study abroad, to take part in international workshops and to import foreign building technologies and materials.

Informations of all kind are widely available, therefore it is very important to listen to the call of the authors with a vision of catching up.

Location of new skatepark

The environment, in which the new skate park is incorporated, is in the wider sense part of the walking path along Pekrski Potok – Creek on the southern end of the city of Maribor. Along the creek there is a wider green open space in the future planed as a recreational area, the green spine of the city.

Fig. 1. Location of the wider area

Existant area

The existing location was characterised by an older existant skatepark (yellow dot on figure nr. 2) and new children's playgorund area (orange dot on figure nr. 2). In between there were some existant walking paths. The area is sourrounded by a commuter neighbourhood built in late 1970's and 1980's. The site is categorized as »deprived urban space« and got funded by European funds for deprived areas.

Fig. 2. Area before the intervention

The existing skate park had an ellipse floor plan and was located in the northern part of the planned construction area. On the north side, it was bounded against a schoolyard by a stand of leafy trees. Existing elements were prefabricated, worn out and dangerous to use. They stood on flat terrain with no relief features. Existing vegetation is, except for the species of deciduous trees, along the northern edge of the area, a grassy area that descends towards Pekrski creek.

Structure of the open space

The concept divides the planned area into three zones, where the central zone with the clubhouse appears as a connecting element between the other 2 segments. In the WESTERN part of the area a new skatepark is placed – near the site of the old existing skatepark. The designed sports facility is foreseen with all necessary contents according to EU-regulations of designing a skatepark. It is located on the outern most border to the neighbouring residental area to protect it against the possible noise.

In the southeastern part of the area we preserve the existing playground, which corresponds to the vicinity of the existing housing blocks with the possibility of direct use.

Access to the skate park is from the northern side from connecting road with a parking lot.

Fig. 3. (a) Dividing of planned area into 3 zones; (b) Clubhouse as a link between various functions

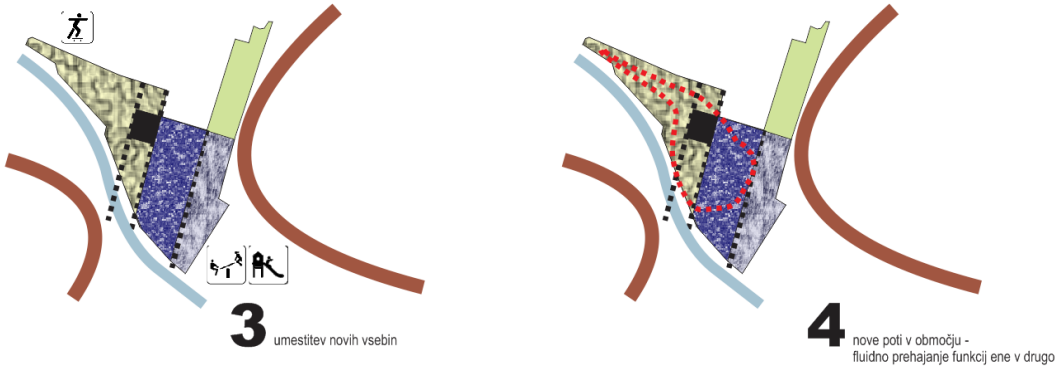

Fig. 4. (a) Creating of new content (b) New walking path in the area – fluid flow of one function into another

Basic design concept

The basic design concept is the skate park in the park, in the green area. After the new scandinavian model we tried to connect the new programs in a meaningful way and treat them as a complete unit, which is integrated into the green belt - the green backbone of the southern part of the city of Maribor.

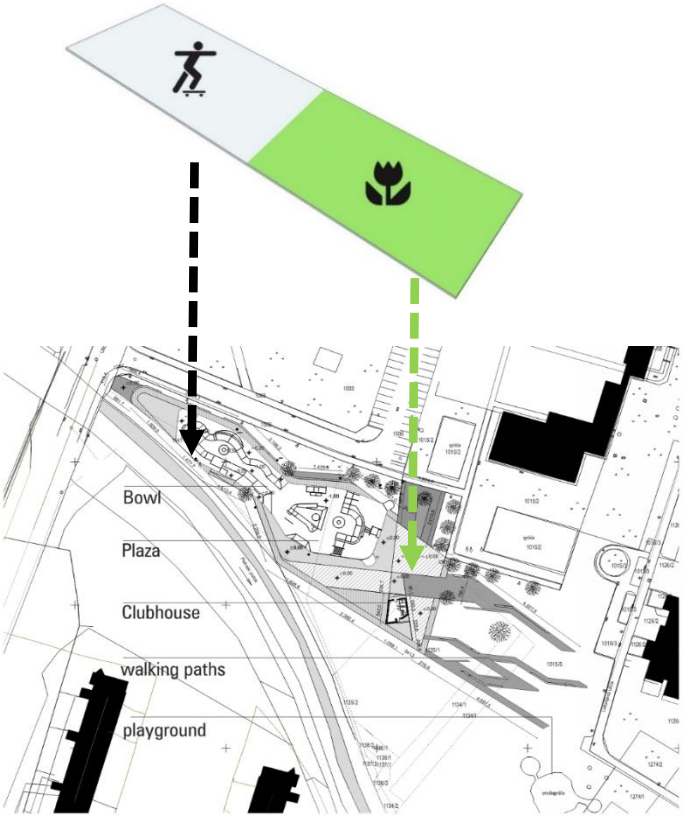

Fig. 5. Design concept: Skate + park

Skatepark design

The design is based on the relief and natural features of the existing green area.

The shape of the sport facility is designed according to the existing tree-fund and therefore the whole polygone is divided into 2 units –the wider part **'the Street section – Plaza'** on the eastern part and the narrower **'Snake run section – Bowl'** on the western part of the park. The whole skatepark area is 1321,57 m2.

Construction: Skatepark is designed as "IN SITU" casting of concrete on the spot. During the construction manufacture the 'SHOTCRETE' technique of injection of molded concrete is used with a thickness of 15 cm. It is the first such construction in Slovenia. According to regulations new public lighting is made and it enables international skating competitions.

The elements are made of concrete of concrete quality C40 / 50, XC4 -XF3, the top surface is smoothed by hand and reinforced by the S500 quality armature. The reinforced concrete elements in the polygon and the reinforced conrete slab are built on an 80 Mpa solidified bed. The edges of the elements are constructed with a protective hot-dip galvanized profile, and all fences in polygon are embedded while making the elements. The reinforced metal edges are welded between the elements. The 'COPING' pipes on the objects are accurate installed with minimum deviation of 0.3cm max to 1cm. The 'coping' tube is of 8cm diameter in size. All pipe ends are closed. The top surface of the reinforced concrete surface is smoothened. After the slab is made it was necessary to make cut dilations according to the project of max size 0,8cm. The smoothness of the surface is made that no trace of surface machining could be seen.

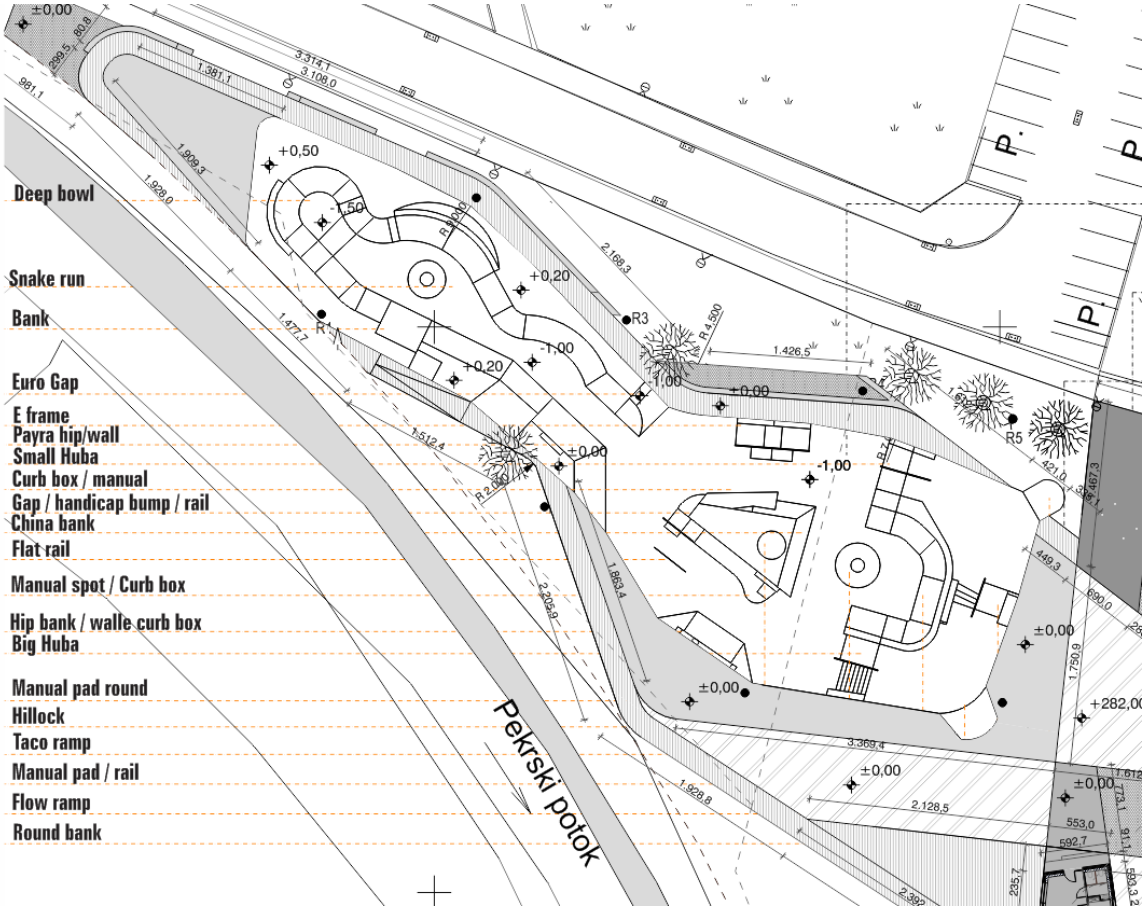

Fig. 6. Floor plan of skatepark

The elements that are used in designing of a sport facility are Deep flow, Bank, Snake Run, Euro Gap, E frame, Pyra Hipp / Wall, Small Huba, Curb box / manual, Gap / handicap Bump / rail, China bank, Flat rail, Manual spot / Curb box, Hip bank / Walle curb box, Big Huba, Manual pad round, Hillock, Taco ramp, Manual pad / rail, Flow ramp / Round bank. The elevation angles of the terrain in the skatepark itself are lowered from the terrain angle of the green beyond -0.50, -1.00 to the lowest angle -1.50 m. In the northwestern area, the elevation angle is +0.40.

Landscape design and the clubhouse

Landscape design follows the basic idea of placing a skatepark as a park in green. The materials-to-be-used are: polished concrete, washed concrete and asphalt, which are combined with grass-concrete pavers, as the key element of landscape design, enabling the soft transition from the concrete surface into the grassy area. In this manner we try to blur the boundaries between the green landscape and the new urban landscape, which we artificially create. We tried to preserve as much of existing trees that is possible.

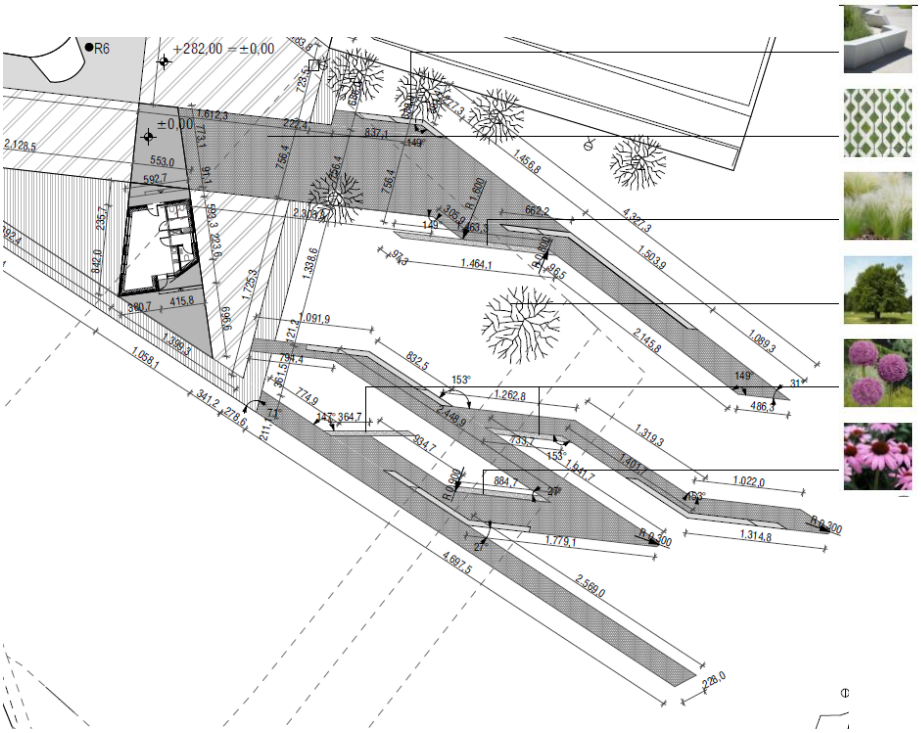

Fig. 7. Landscape design

Landscape design and the clubhouse are both following the idea of an urban park. We created the cultivated urban landscape. Because of the spatial regulations it was only allowed the object until 50 m2 area. So it contents group space and service area. One side of the object is placed diagonal to the skatepark. The metal sheet-facade clading allows a holistic solution of uniformed monolithic structure.

Skatepark Maribor in use

The beginning of construction was in january 2019 and the opening with the first national championship in skateboarding was in october 2019. The project received a diploma for excellent realization from the InternationalAssociation of Unions of Architects (IAUA) which is a part of UIA (International Union of Architects). It can be seen as a sport/recreation facility, but only as a work of art, as a 'forma viva', as a concrete poetry.Architects). It can be seen as a sport/recreation facility, but only as a work of art, as a 'forma viva', as a concrete poetry.

Fig. 8. (a) View from the western side to Bowl/ Flow part (b) View from the east to the Bowl/ Flow part

Fig. 9. (a) Clubhouse as the link between skatepark and landscape design (b) View of the clubhouse from 'Street section'

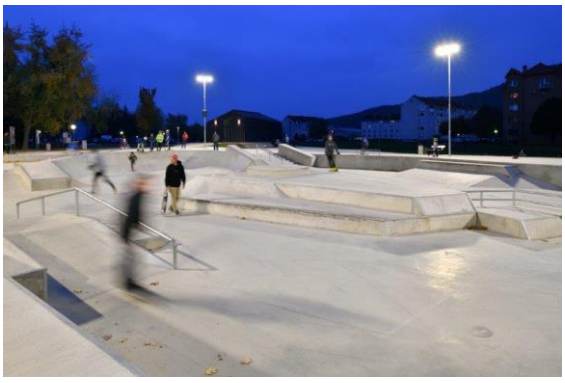

Fig. 10. (a) View from the north to 'Street section' (b) View of the 'Street section' from the west

Ergo

With the new and quality object in a growing skating community the whole public space in a green area gets the new meaning. The project is increasing the quality of life in the neighbourhood and it is a starting point for the regulation of the new recration zone along the green belt. Skatepark is very much in use, with new public lighting it is enabled to function also in the evening. The whole neighbourhood that was formerly deprived and marked with social lower class of living got a new postive accent that changes the whole spirit of the space. Architecture of urban space and culture of architectural creation are always main indicators of reflection of state of mind and spirit in a certain environment, of situation in which society is to be found in a certain period of time and its progress through the prism of architecture.

Public space – it is not only about built environement –it is mostly about relations between human race and the built environement and how it effects on our lives.

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Investigating Creativity and Sustainability in the Latest Conservation International Reports

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Abstract
Creativity has been widely discussed by the latest international organization, which highlighted its role in improving conservation projects for both tangible and intangible heritage. Nevertheless, the international reports and documents within the last decade discussed creativity in context of sustainability regarding the main sectors; social, cultural, economic, and environmental but in a non-clear manner, which highlighted the need for further exploration. Accordingly, this article aims to investigate the international documents from 2010 until 2020 that discussed creativity in heritage conservation to reinterpret the relation between creativity and the mentioned main four sectors. After reviewing these related reports, it can be argued that creativity is the process that combines these sectors to reach sustainable development.
Keywords: *Creativity, sustainable, social, economic, social, environmental.*

1. Introduction

Creativity has attracted the attention of the 21st-century studies relating it with different aspects [1]. Generally, the term is usually refers to the ability to generate original and unusual thoughts (Cambridge Dictionary). The term was firstly suggested by McCarthy and others in (1955) relating and linking the term with "innovation" [2]. Rollo May in (1994) added that creativity is the process of shifting a new intellectual idea into a perceptual one which requires passion and commitment [3]. In this sense, creativity might be defined by the ability of perceiving the world in new ways to relate seemingly unrelated and unconnected phenomena [4]. Although some people might assume that creativity is a non-common quality for all people, Carter and McCarthy (2004; p.83) argued that "it is not a capacity of special people but a special capacity among people" [5]. Boden (2009) also emphasized that creativity is an aspect of the ordinary human intelligence to generate novel and valuable ideas, theories, stories and interpretations [6]. This description of creativity is what have been noticed in several international reports which highlighted the crucial role of creativity in improving conservation project of cultural heritage (tangible and intangible). Nevertheless, these reports have related the term "creativity" differently regarding social, economic, cultural, and environmental sectors, which highlights the need* for further elaboration to understand it more within the contemporary conservation field. For sustainability, it is a fashionable term within the last 20 years which according to Gatto (1995) has main three definitions. Firstly, the sustained resources' yield derived from ecosystem and population consumption [7]. Secondly, the sustained richness and genotypic variation of ecosystem species. Finally, the constant economic development with maintaining the existing resources for further generations which corresponds to the nature of the current study.

During the last decade, several reports and documents discussed the possible methods and approaches to improve conservation through creativity. These documents were launched by International organizations of heritage conservation, like UNESCO, UNDP, UN, and other well-known organizations, to discuss creativity and sustainable development based on case studies and statistical data, which make their suggestions more reliable and closer to the real application. In this sense, exploring these documents could highlight the current comprehending of creativity in contemporary conservation; therefore, the present text is investigating "creativity" understanding and usage in the international reports within the last decade (2010-2020).

2. Literature Review (Creativity in the last decade international report)

2.1. Creative Economy Report, UN (2010) [8]*:*

The report presented the United Nation's perspective of the "innovative topic" underlining that creative economy has become in this decade a contemporary issue of the international economic and improvement plan. In general, the Creative Economy Report considered creativity as fuel for culture to infuse human-centered development and an approach to increase job creation, enhance social engagement, create cultural diversity, and reach environmental sustainability. The term was further discussed in the report explaining its complexity and numerous dimensions on the model of Creativity in today's economy (Figure (1)). While artistic creativity requires imagination and the ability to generate original thoughts and novel approaches in interpreting the world, scientific creativity involves the willingness and curiosity for experimenting. Additionally, economic creativity

considers a dynamic process that leads to innovation in several areas, including technology and business practices. All the mentioned creativity dimensions interrelate with technological creativity to different levels. The last dimension of the model relates creativity to the culture process (cultural creativity), which would eventually contribute to economic growth. The report added that it is crucial to consider not only the economic creativity outcomes but also the cycle of creativity through social, cultural, human, and structural capitals, i.e., creative capital.

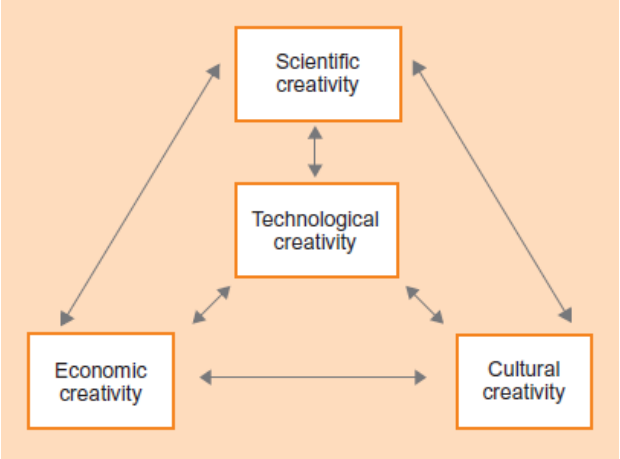

Figure (1): Creativity in today's economy model. Source: (UN, 2010)

2.2. Convention Concerning the Protection of the World Cultural and Natural Heritage: Item 12 of the Provisional Agenda: Reflection on the Future of the World Heritage Convention, UNESCO (2012) [9]*:*

This report is based on the World Heritage Committee framework that aims to improve the process of nominating world heritage list properties. In 2011, the committee noticed the selection of 10 pilot projects for exploring creative methods and new guidance that could be provided to the related parties of the nominated projects before preparation. Thus, the document focused on the progress made in each project of the 10th nominated ones. Creativity in this document was used in the meaning of the novel and new approaches in improving the nominated projects regarding financial and technical support.

2.3. Core strategies for a successful resource policy and the instruments proposed for their effective implementation: executive summary of the policy recommendations of the MaRess project, MaRess edited by Kristof and Hennicke (2012) [10]*:*

A report by Material Efficiency and Resources Conservation (MaRess) aimed to provide a successful source policy where policymakers can use six core strategies proposed by MaRess projects. One of these core strategies is about giving innovation a direction for providing a more effective solution for a sustainable future market. Innovation in this document refers to creative ideas for solving problems that require bringing together technical and social innovations to be able to protect conserving resources. According to the report, this core strategy is based on four tools: efficient, innovative resources, financial aid for innovation agents, and institutionalizing innovation laboratories for reaching resource efficiency solutions. Within these tools, the main goal of the strategy is to stimulate the development of new resource-efficient technologies, services, tools, materials, and systems besides giving incentives for resource efficiency-oriented approaches and products.

2.4. The 2012 United Nations conference on sustainable development and the future of international environmental protection, UN edited by Anton (2012) [11]*:*

The report addressed the concerns regarding the suitability of the consistent use of sustainable development for organizing international environmental protection. It was based on the 2012 vision of the UN conference on Sustainable Development, which highlights the need to understand that people are at the heart of Sustainable Development. Thus, the document strives for an equitable world through collaborative efforts and creative individuals/groups for promoting constant and comprehensive economic growth, social improvement, and environmental protection. In other words, creativity through the novel efforts of individual and groups lead to sustainable development.

2.5. Rio+ 20: The United Nations Conference on Sustainable Development, UN edited by Leggett and Carter (2012) [12]*:*

The report acknowledged the crucial role of culture and cultural variations for sustainable development. These new paths need enabling environments that value and respect human rights and culture to be constructed, resulting in inclusive social, economic, and environmental aspects, peace and safety. Through the report argument about the crucial role of investing in identity, innovation, and creativity were proposed to guide local

communities and countries towards new development paths. It is noteworthy that creativity is playing a guiding role in reaching sustainability in social, economic, and environmental sectors.

2.6. Creative Economy Report: Widening Local Development Pathways. UNESCO (2013) [13]:

The UNESCO launched this document to mainly discuss creativity and exploring the diversity of development pathways through culture, creative industries, and their enhancement methods to reach an inclusive social and economic improvement. This report edition pointed out for the first time to the local economies of developing countries on the need to demonstrate the creative economic diversity that consists of independent yet interconnected layers. Additionally, it reveals that initiatives of economic creativity are not the only sustainable growing sector but also transformative one that considers cultural and creative areas as engines for sustainable development. The report discussed that culture is a developing driver guided generally by the growing creative economy and particularly by cultural industries. These industries are recognized to be their economic value and their ability to produce new original thoughts, technologies, and social benefits. Through UNESCO's work overtime, the document highlighted the resulted demonstration that engaging the creative sector in the growth strategy, which would enhance the national economy revitalization where economic and cultural interactions are hybrid, and creativity is nurtured. Additionally, investing in the cultural sector itself, along with the social one, can also contribute to communities' wellbeing, individuals' self-esteem, and social quality of life.

Moreover, the report combined the economic, social, and cultural sectors, arguing that decision-makers of the local communities shape their own pathways of creative economy development where many intellectual and creative resources are being invested in cultural-based industries. Thus, the document emphasized that human creativity and innovation (at the individual or the group level) have become the fundamental drivers of industries and ultimately the essence of nations' wealth in the 21st century. This has unlocked the potentials of creative economy that would enhance the local image, identity, and their image of the future. In this sense, it can be understood that creative economy benefits go beyond the commercial realm engaging social and cultural dimensions, as mentioned earlier, which would lead to the sustainable development; "new development pathways that encourage creativity and innovation in the pursuit of inclusive, equitable and sustainable growth and development" (p.154). The report then sees the creative economy more in a humanistic manner where creativity becomes an embodied quality advising a wide range of industries and actions considering a city a sort of a creative field. This integration between the economy and the humanistic realm represents the economy world as an opportunity for cultural creation, construction, dissemination, and consumption, producing products and services that combine creativity and traditional knowledge as well as social and cultural meanings. In doing so, the creative industries can play a crucial role in strengthening traditional skills and forms expression.

The report also explained the cultural creativity as the platform that combines cultural diversities in landscape, epistemology, and worldviews; nevertheless, there is a risk in combining creative with culture on how to protect cultural meanings from industrial and economic policymaking. This risk underlines the critical role of education in raising awareness in understanding the socio-cultural meanings, learning traditional cultural skills and expressions, and increasing community engagement. Hence, both private and public sectors are responsible for supporting and participating in cultural activity, social capital, societies' institutions, education system capacities for delivering culture benefits, and media infrastructure of cultural production and consumption.

The end of the document explained the creativity indicators among the four sectors; social, cultural, economic, and environmental. For cultural indicators, active local participation in cultural production and consumption can advance the community well-being and develop the creative economy. Similarly, social indicators use creative economy to enhance social cohesion and contribution through improving the intercultural dialogue, concentrating on cultural identity, consolidating social capital, and safeguarding human rights. For environmental indicators, they underline the crucial connections between culture and environment within sustainable development through raising the communities' awareness and utilize cultural and traditional knowledge in managing the natural resources. Finally, the economic outcomes of the local economy by cultural industries are reflected through several indicators as regional productivity, occupation, business investments, skills improvement, and tourism growth.

2.7. Handbook for creative cultural heritage cooperation projects, CreativeCH edited by Geser, Prähauser, and Strasser (2014) [14]*:*

The handbook refers to the Creative Cooperation in Cultural Heritage (CreativeCH) project that aims to assist the European regions and countries in taking advantage of their cultural heritage assets. The document argues that the cooperation between culture and creative industry (sciences, business, and technology) can create new forms of creativity and innovation including scientific and technological tools, cultural and creative areas, and actively engage the citizens. It explained that creative cultural heritage explores the innovative approaches in promoting cultural heritage through the collaboration of several parties; decision-makers, citizens, researchers, technical experts, and industrial developers. In this sense, the handbook emphasizes that creativity is required for

combining knowledge and skills of different domains to valorize cultural heritage with novel solutions that increase the local participation.

2.8. Cultural Heritage Counts for Europe Report, CHCfE Consortium (2015) [15]*:*

The report documented the project of CHCfE Consortium with the support of the European Union, which identified a numerous amount of significant cultural heritage studies and categorized them into three groups: macro, meso, and micro. At the macro level, the report reviewed 140 studies to understand heritage impact form a global perspective; meanwhile, the meso level analyzed 221 studies for cultural heritage impact on the European level (local, regional and national). Finally, the micro level that analyzed local case studies has provided evidence for the heritage influence on the economic, social, cultural, and environmental domains.

The report concluded that cultural heritage is a significant creator for employment across Europe, which covered different types of jobs and skills, usually within the creative industry domain. In this sense, the document emphasized the crucial role of cultural heritage regarding creativity and innovation since it helps generating new thoughts, original solutions, and innovative services to reinterpret historic environments and buildings and ultimately make them more accessible for local and international visitors. In other words, creativity and innovative methods and ideas are related and outlined by the cultural domain (Figure (2)). Nevertheless, the report highlighted the need for further exploration regarding cultural heritage impact on the creative sector.

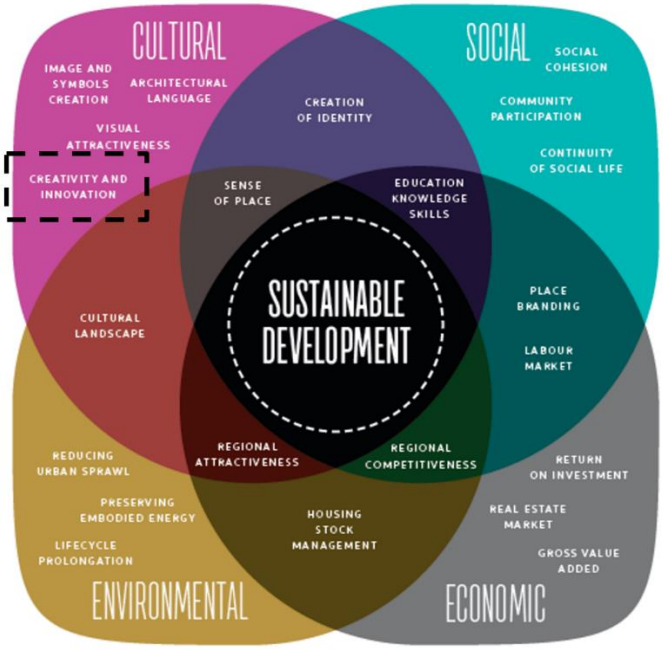

Figure (2): The report results from the related literature review on cultural heritage areas and impacts. Source: [15]

2.9. Creating the Environment for Growth Strategic Environmental and Economic Investment Plan for Oxfordshire, OxLEP (2015) [16]*:*

The document is an investment plan for Oxfordshire; the place where "creativity, culture, heritage and tourism (CCHT) come together" (p.8), which suggested a novel growth plan up to 2031 to increase the capacities of the country key sectors and build a broader knowledge for an intensive economy. Similar to the mentioned documents, the plan highlighted the crucial role of cultural and heritage assets through creative industries and tourism in generating job opportunities and enhancing creativity and innovation in the economy. These benefits would be the results of investing in the cultural assets to improve the place quality, the physical appearance, ensuring sustainable growth, and maintaining the locals' sense of place. Accordingly, the document suggested the 'The Virtuous Circle of growth, quality and sustainability' (Figure 3) that represents culture, heritage, creative industries and tourism sectors collaborate with each other to deliver economic growth, innovation and competitiveness.

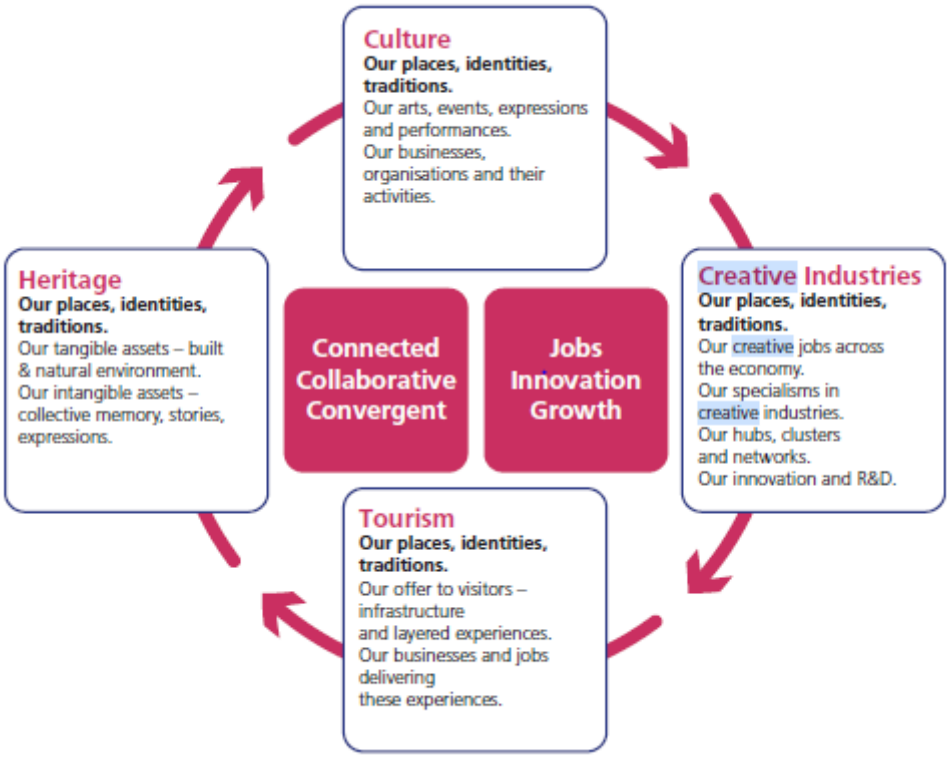

Figure (3): The Virtuous Circle for this CCHTIP (Cultural, Creative, Heritage, and Tourism investment plan). Source: [16]

2.10. Convention Concerning the Protection of the World Cultural and Natural Heritage, UNESCO (2016) [17]*:*

This document is one of UNESCO's frameworks that aimed to explore further options for improving and strengthening the current nomination procedure of the ten selected pilot projects in 2011. Therefore, it investigated the creative methods and original forms of better guidance to the State Parties. The text highlighted the importance of creativity and innovation methods for providing funds and covering the financial costs of 'Upstream Processes' in developing countries that cannot afford these costs and in need of such support.

2.11. The Heritage Alliance: Inspiring Creativity, Heritage & The Creative Industries. Heritage Alliance (2017) [18]*:*

The report contains three sections: an overview of the heritage-creative industry crucial relationship, case studies' illustrations of successful heritage methods in the creative industry, and a discussion of the success, limitations, and the related recommendations of heritage projects. Creativity in the document is mainly discussed as an economic asset through creative industries where historic sites become creative community areas and workshops utilizing the traditional skills and innovative ideas to protect the past for further generations. These creative industries have unlimited alternatives, even gaming and movie making can be one of these industries and can use the local cultural heritage (intangible and tangible) settings and designs. In this sense, heritage projects become creative spaces allowing novel interpretation and using art, technology, and exhibition to create creative heritage projects that provide social happiness and well-being. These benefits will be resulted due to creative heritage project's role in developing knowledge and skills as well as providing financial aids to the local community.

2.12. Convention Concerning the Protection of the World Cultural and Natural Heritage, UNESCO (2019a, 2019b, and 2019c) [19] [20] [21]*:*

These documents provided analytical overviews on different sessions for conservation information of the endangered listed projects in the World Heritage. While UNESCO (2019a) started by monitoring the World Heritage requested mission, UNESCO (2019b) considered new methods, tools, and approaches for sustainable management of the sites' tourism [19] [20]. After that, UNESCO (2019c) recognized the need to utilize the innovative, creative, and transformative solutions for integrating World Heritage and Sustainable Development, taking into account the contextual environment, complexity, and particularity of each site [21]. In this sense, creativity in these documents is directly related to the ability to generate novel solutions and ideas for the sustainable development of conservation sites.

2.13. Creativity and Innovation: A call for people to explore these qualities, UNESCO (2020) [22]*:*

The report confirmed that the creative economy had become one of the most rapidly growing domains and considers a value-generating source for achieving people-oriented sustainable development. The current pandemic situation was discussed in the document mentioning its role to reveal the importance of creativity and innovation on our daily lives in order to reach different solutions for the appeared socio-economic problems. Therefore, new formulas and ideas are needed to enable the societies recovery from this crisis with minimum losses and maximum resiliency.

3. Discussion

Despite the consensus among the documents in understanding creativity as part of the human intelligence that enable him/her to interpret a problem or a situation differently and generate novel ideas and solutions, there is a noticeable overlapping between innovation and creativity where some documents considered them as synonyms; [10], while other combined them together [15] [22]. This confusion has been highlighted by Sternberg (2006), who mentioned that when studies focus more on the product than the process or the person, using the term 'innovative' is more appropriate [23]. Bledow, et al. (2009) emphasized that the concept of innovation can be defined as product development or practicing new ideas to benefit society [24]. Thus, combining both terms (creativity and innovation) in the other studies is in addressing both products and procedures of reaching novel ideas and solutions.

Additionally, due to the multi-dimensional nature of creativity, understanding it requires in-depth exploration for both social and cultural elements that interact with each other according to the individual creative way of thinking in order to be expressed differently [23]. Grohman, et al. (2006) added that the problem-solving process of any field comprises different phases of generating ideas based on creative thinking to create novel suggestions [25]. The novelty aspect examines the contribution originality of a product, a solution, or a concept [26]. In this sense, it can be recognized that the majority of the international reports share the same understanding of creativity where they defined it with the process of generating novel ideas and new solutions (see Table (1)). Another consensus is noticeable among the mentioned reports regarding their consideration of cultural and heritage as fuel [8] or assets [15] for creativity to enhance human and economic development. In addition, these documents shared the perspective that the four main sectors (social, cultural, economic, and environmental) are combined by creativity [13] in a cycle pattern [8] which required their full collaboration [14] to reach the expected results.

Furthermore, there is a noticeable evolution among the documents regarding the decision-making hierarchy where they adopted more the bottom-top approach for reaching creative and innovative ideas through sectors collaboration in general, and local participation in specific [11] [13] [15]. In this sense, sustainable development has become more as people-oriented rather than experts-oriented [16]. The direct link between creativity and economy is another central common aspect where all the reports considered economic growth is the final result and the primary outcome of creative activities. The reports added that creativity also has social, cultural, and environmental consequences in an overlapped manner. For instance, creative industries promote cultural diversity, improve people's cultural skills and knowledge in order to enhance social inclusion and cohesion, their intercultural dialogue, protecting their human rights, and strengthen social capital, which will ultimately reflect on the surrounding natural resources and the sustainable development. In other words, creativity is the process where cultural assets are the primary fuel for the economic activities that are driven by social motives going through environmental aspects towards sustainable development (Figure (4)).

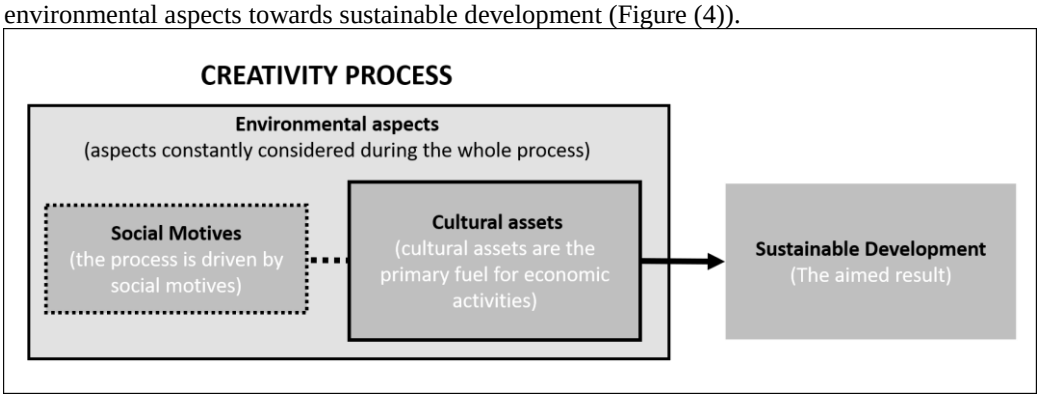

Figure (4): The resulted relation between creativity and the main sectors (social, economic, cultural and environmental). Source: the author

Table (1): The international reports summary

Report	Source	Year	Main ideas
Creative Economy Report	UN	2010	- Creativity as fuel for culture to infuse human-centered development. - Creativity cycle is through social, cultural, human, and structural capitals.
Convention Concerning the	UNESCO	2012	Creativity refers to novel and new approaches

Protection of the World Cultural and Natural Heritage			
Core strategies for a successful resource policy and the instruments proposed for their effective implementation	MaRess	2012	Creativity is the innovative approaches and methods for providing new problem solving and efficient resources.
The 2012 United Nations conference on sustainable development and the future of international environmental protection	UN	2012	Creativity through the novel efforts of individual and groups lead to sustainable development.
Rio+ 20: The United Nations Conference on Sustainable Development	UN	2012	Creativity is playing the guiding role to reach sustainability in social, economic, and environmental sectors.
Creative Economy Report	UNESCO	2013	- Creative sector enhances the national economy revitalization (creative industries). - Creative economy combines economic, social and cultural realms. - Creativity as an embodied quality advising a wide range of industries and actions. - Cultural creativity required the proper education to protect cultural ideologies and meanings while raising the economic outcomes. - Creative economy leads to social participation (cultural creativity), social cohesion and contribution (social indicator), and sustainable development (environmental indicators).
Handbook for creative cultural heritage cooperation projects	CreativeCH	2014	Creativity of cultural heritage is a collaborative approach of different disciplines to generate novel solutions for valorizing cultural heritage
Cultural Heritage Counts for Europe Report	CHCfE	2015	Creativity and innovative methods and ideas are related and outlined by the cultural domain.
Creating the Environment for Growth Strategic Environmental and Economic Investment Plan for Oxfordshire	OxLEP	2015	Creative industries using cultural and heritage assets to improve the country's economy and tourism sectors.
Convention Concerning the Protection of the World Cultural and Natural Heritage	UNESCO	2016	Creativity is in generating novel and innovative ideas for financial support.
The Heritage Alliance: Inspiring Creativity, Heritage & The Creative Industries	Heritage Alliance	2017	Creative industries are based on heritage assets to create creative heritage projects and assist the locals to develop their skills and knowledge.
Convention Concerning the Protection of the World Cultural and Natural Heritage	UNESCO	2019a, 2019b, and 2019c	Creativity is the ability to generate novel solutions and ideas for sustainable development of conservation sites.
Creativity and Innovation: A call for people to explore these qualities	UNESCO	2020	Creativity and innovation are the required approaches for generating new formulas and ideas to increase the societies' resiliency regarding any crisis

CONCLUSION

The launched documents and reports from the International organizations, within the last decade (2010-2020), have discussed creativity and sustainability in conserving tangible and intangible heritage. Despite the differences in discussing both terms among the mentioned reports, a consensus is noticeable in defining creativity as part of the human intelligence that enables him/her to interpret a problem or a situation differently and generate novel ideas and solutions. In this sense, it could be argued that the differences in discussing creativity among the international reports were not in understanding the term itself but in interpreting its relations and connections to the main sectors; social, cultural, economic, and environmental which will eventually lead to sustainable development. In other words, the interrelationship within the creative process is planned due to social needs (motives) using cultural assets (fuel) through economic activities and going through the environmental realm in order to reach sustainable development.

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Post-COVID architectural heritage routes: medieval fortified dwellings in Croatia

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Abstract

The pandemic caused by the novel coronavirus, against which the humanity does not have vaccination nor immunity, made the world helpless. By now, our only defense method is social distancing and isolation. This reminds us on the past, especially on the Middle Ages, when feudal lords constructed their fortified dwellings on isolated, remote places. The location of a castle was always carefully chosen, according to its defensive function, usually more important than its dwelling function. Therefore, the castles were often built high in the mountains, on the dominant locations, in order to control possible enemies approaching. Nowadays their ruins still offer stunning views on beautiful landscapes.

Medieval castle-ruins in continental Croatia, dispersed in the nature, are "open air architecture" - in the sense that they have lost their roofs, so when inside them a visitor is still "outdoors". This makes them an ideal touristic attraction in the post-COVID time.

Considering the great potential of medieval castle-ruins in north-western Croatia for cultural tourism, especially in the post-COVID period, we proposed to form cultural-natural routes which would connect architectural heritage – medieval castles within the region - and natural landmarks. One of the cultural routes would connect the castles constructed along the valley and gorges of the river Sutla – once the border of the Kingdom of Hungary and the Holy Roman Empire.

Among many castle-ruins in the region, we analyzed the architectural structures of three castles: Medvedgrad, Cesargrad and Kostel-grad. They have similar concept: they were built on steep hills; they had two rings of defense walls and mighty towers; their inner cores with residential quarters *(palas)*, enclosed with inner ring of walls, are the oldest, but best preserved parts of the castles. The plans of the precincts differ because they are adapted to the topography. All the analyzed castles were built on the strategically important positions.

The exact time of construction cannot be asserted based on preserved historical sources. Most Croatian art-historians believe that these castles were constructed at the mid-13th century, in the period of dynastic wars that the Hungarian king Béla IV waged against the Holy Roman Empire; some of them believe that they were built for guarding the border. This is a relatively new hypothesis: before it was believed that these castles were constructed in the king Béla's campaign of castle building immediately after the Mongols' invasion.

The castles on the border seem to have been built in the same period, for the same reason; they have similar architectural characteristics, but they have also different stories. By connecting the castles with cultural-natural routes, complementing the visit with the narrative supported by virtual reality and augmented reality, we can make the "minor" cultural properties more attractive.

This is especially important in the post-COVID-19 period, when crowds have to be avoided: visiting remote and isolated cultural properties and walking in nature is a sustainable way of tourism in our "New Normal" period in which social distancing and isolation are desirable.

***Key Words**: Post-COVID cultural routes; architectural heritage; outdoor education; isolated dwelling; Croatian medieval castles*

Introduction: COVID-19 request for isolation – a parallel to medieval isolated dwelling

The outbreak of COVID-19, which began in 2019 and went pandemic in 2020, has changed our lives more than we have expected – and certainly more than we have wanted. Being isolated, avoiding physical proximity of other people - this is not immanent to human beings. The success of humanity in the variety of its societies, cultures and civilizations, and, ultimately, its global success as a species among many various and successful animal species, has always been lying in community, togetherness. The human being is *zoon politikon - per definitionem*.

In the period after the lockdown people will be eager to enjoy their new/old freedom. Freedom of getting out, of travelling, will be most appreciated. However, in the first period after the lockdown, which, according to experts, will last at least two years, the "New Normal" situation will impose new rules.

Visiting famous architectural monuments, which used to attract big number of tourists, will not be allowed in the way that it was before the COVID-19 pandemic. As visits to the major architectural sites will probably be organized in a restricted, epidemiologically sustainable way, with limited number of visitors, it can be expected that "minor" heritage will come to the fore. Especially natural sites will be attractive in the "New Normal" period, because in the vast natural space people can be dispersed at large distance – and social distancing is by now the most efficient way of preventing the spread of infection. National parks, with their strictly defined narrow paths, will have restricted access; therefore, the combination of "minor" architectural sites and "minor" natural sites will be the winning combination in our near future.

We have investigated several medieval castles in continental Croatia: their location and history, their lords and builders, their typology, characteristics and specificities. All the castles that we analyzed were built on mountains or hills hard to approach. At the time of construction, this was important for the defense, which was the main reason for building a castle, a fortified, safe residence of a nobleman. Nowadays, the isolated ruins on top of mountains, which dominate the surrounding hills and plains. are attractive as cultural heritage and as places giving breathtaking views.

This combination of cultural heritage, history and nature calls for visitors longing for rest and relaxation.

For completing the experience of tourists in the "New Normal", we have proposed new cultural-natural routes which link these minor cultural sites connected with the same history, or with the same lords, or with other specific features in common, which will give the insight into the specific theme. The narrative that connects the cultural sites (perhaps not as interesting as the major cultural attractions) will give a new value to the cultural experience: the educational value, and specifically: education *in situ*. This is precious in the time of on-line learning, which prevails in our lockdown period.

Medieval castle – my home is my fortress

A castle was a new form of defensive structure that appeared in the Middle Ages: it was a private fortified residence of a feudal lord. A medieval castle differs essentially from the previous forms of fortification. The pre-historical mounds, the fortresses of the ancient civilizations of the Middle East, Greece and Rome - all these ancient fortification types were built for the defense of a community. On the contrary, in the Middle Ages, the central power of a state was not strong enough to defend their subjects; therefore, every member of the new class of warriors – knights – had to build a shelter for himself, his family and his fortune. This meant also to build a shelter for his subjects (peasants) in case of danger. Thus, a medieval castle was a fortified dwelling of a knight, or magnate (count, prince) or a king. It had also other functions: the storage of a harvest, a refuge, a training ground for fencing, archery… and of course knights' tournament. With time, castles were also the centers of a chivalry culture: poetry, music, dance.

Castles were fortified dwellings; their defensive function was usually more important than their residential function [1]. Therefore, the position and location of medieval castles was always carefully selected: either on mountains, on secluded but dominant spots on mountains, or, when in plains, on a marshy ground, where castles were protected by water surrounding them (*Wasserburg* - German term) [2].

In a way, striving of people during the insecure "Dark Ages" for constructing their fortified homes in remote, secluded, hidden places has similarities to our tendency to find a shelter far from a crowd which could unwittingly threaten our health – and this tendency is not imminent to human beings, but imposed by the pandemic.

The castles in mountainous regions, situated on high, inaccessible places, difficult to conquer, were very demanding for constructing. These "eagle's nests" on steep cliffs testify to the high achievements of the medieval art of constructing.

Mongols' invasion and medieval castle building in the Kingdom of Hungary

After the fall of the Roman Empire, during "Dark Ages", life in Croatia (and in whole Europe) was insecure. New peoples who during the Migration Period came to the territory of what is now continental Croatia and Hungary, built for their protection earthen mounds, usually enclosed with wooden palisade and ditch. From historical documents and archeological founds scientists have concluded that by the beginning of the 13th century even magnates did not build many stone fortresses and castles [3].

The invasion of Mongols (1241-1242) was the decisive moment for extensive castle building in the Hungarian kingdom, including Croatia, which was a part of the Hungarian state from the beginning of the 12th century [4]. King Béla IV, fleeing from the enemy, from Hungary over continental Croatia to the Adriatic Sea, found shelter in several Croatian towns; he gave these towns royal privileges. These included not only privileges,

but also the duty to fortify the settlement. That is why Zagreb, which got its privileges as a "free royal city" in 1242, began building its stone city walls [5].

The invasion of Mongols uncovered the weakness of defensive capacity of the Hungarian kingdom; it became evident that only stone castles could resist the Mongols; and there had been only few castles in the Kingdom before the fierce intrusion. After the retreat of Mongols, king Béla IV started building several mighty strongholds and urged his vassals to construct stone castles. He encouraged his subjects to build their strongholds by giving them royal privileges or even by giving them a land for constructing a castle [3].

By giving a land and a castle building site or a permit to build a castle, the king defined where the castle would be constructed; he decided it based on strategic needs of the whole country. That is why many castles had strategically very important position and function: they controlled routes and paths, mountain passes and bridges.

Medieval castles in continental Croatia near the border to the Holy Roman Empire

The Mongols' invasion was decisive for intensive castle building in the Kingdom of Hungary; however, the concentration of the castles in the north-western part of Croatia, which is the most distant region from the expected point of the Mongols' new intrusion, shows that here another enemy was feared of. And it was again the enemy of the Kingdom; the series of castles built on important strategic positions was obviously not built only for private needs of their lords [6].

Indeed, here, on the present border between the countries of Croatia and Slovenia, for centuries was the border of the Kingdom of Hungary and the Holy Roman Empire. This region in the past saw many struggles and battles during dynastic wars between the Holy Roman emperors and Hungarian kings, until, in 1527, the Hungarian lands, including Croatia, became a part of the Holy Roman Empire [4].

The series of castle-ruins in the picturesque region with steep mountains, forested hills and limpid streams, stretching along the valley and gorges of the river Sutla, has a great potential for heritage tourism, especially in the Post-COVID times.

Medvedgrad

Medvedgrad, a castle constructed near Zagreb, on Mt. Medvednica, was built after the Mongol invasion, in king Béla's castle construction campaign. There is a document from 1252 from which it can be concluded that Medvedgrad belonged to the bishops of Zagreb [1-2]; however, N. Klaić hypothesized that it was in fact constructed with the king's funding and that king's brother prince Kálmán (Colomanus), duke of Slavonia, was the first lord who held it [7].

The dominant position of the castle might corroborate the thesis on Medvedgrad as a royal castle, constructed by king's brother, prince Kálmán. By royal castle we do not mean a permanent seat of a king; in the Middle Ages kings travelled from one of their castles to another; and from the castle of one of their subjects to another. On these journeys they were accompanied by their families and entire courts. In this sense, kings and royal families can be considered medieval tourists; they travelled to control their kingdoms and probably also for leisure, for enjoying hunting in beautiful landscapes.

Medvedgrad has a stunning position, looking over the city of Zagreb, the river Sava, and further, over the Turopolje plain and the surrounding chains of mountains (which are all lower than Mt. Medvednica and Medvedgrad). Medvedgrad was in function as a castle – fortified stronghold and residence of various noble families – until 1590, when it was badly damaged by an earthquake and deserted. It was partly restored, following all conservators' rules, at the end of the 20th century by the Restoration Institute team led by D. Miletić and Valjato-Fabris [8].

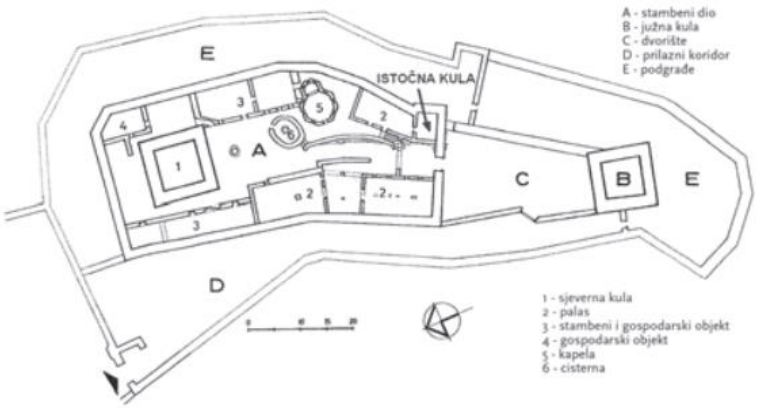

Fig. 1. Medvedgrad, plan (source: Miletić & Valjato-Fabris, 1987)

The Medvedgrad complex was enclosed by two rings of city walls. Within the inner ring there was a lord's dwelling, a chapel, a tower and a well. The outer wall encloses another tower and the outer yard. The residential part of the castle is in the core of the complex, enclosed by two rings of defense walls. To reach the very seat of a landlord, an intruder would have had to pass through a long defensive passageway between the outer and the inner wall, exposed to arrows, spears and stones of the defenders, and to pass three well defended doorways.

The residential quarters of the castle consist of several buildings, which enclose an inner courtyard and lean onto the inner defense wall. Croatian art-historians use the term *palas* for the residence of a nobleman within his castle. The term *palas* is originally used for a building of large German castles that contained a great hall - a large multifunctional room, used for receiving guests and for gathering of a lord's family and attendants, e.g. for dining or dancing. In a sense, it was a salon, a living room, a dining room, a ball-room – a room for all types of social life activities within a castle.

Croatian castles are much smaller than castles of the Holy Roman Empire magnates; in Croatia the term palas denotes a residential part of a castle, which often comprised two-storeyed buildings, with a relatively large hall within the main building. Medvedgrad's palas is damaged; only several decorative Gothic elements testify to the time of construction [8].

The best-preserved building of the complex is the octagonal chapel with protruding polygonal apse – a beautiful Gothic work, vaulted with rib-vaults and with finely carved capitals and other stone details. In the research of the Croatian Restoration Institute in 1980s many original elements of the chapel were found, so that the experts were able to restore the small but elaborate building, mostly with original pieces [8].

The rear part of the inner bailey originally had only a strong square-planned tower, offset from all the defense walls of the inner bailey. Was it a keep which had also a dwelling function: was it originally a *donjon* - a defensive dwelling tower? There is no evidence for it: it has been severely damaged, and by the technique of building (rubble masonry), without preserved architectural details, it was not possible to prove this hypothesis. The forecourt was defended by another strong tower, square in plan. The whole structure was enclosed by the outer ring of defensive walls and a moat.

Because of its location high on the slope of Mt. Medvednica, dominating the river Sava valley, the Turopolje plain and mountain chains that once divided Hungarian kingdom from the Holy Roman Empire, Nada Klaić and hypothesized that it was built precisely on this prominent strategic position as a border fort, as one of the series of castles on the border of the kingdom, obviously by a stately decision of the central royal power [7].

Further northwest, along the valley of the river Sutla, which, with its canyons and narrow gorges, was the frontier to the Holy Roman Empire for centuries, a series of castles was constructed.

Cesargrad

Cesargrad was constructed on the dominant position above the gorge Zelenjak that the river Sutla carved out between two mountains. On the other side of the gorge, on the Slovenian bank of the river, the castle Königsberg was erected in the second halt of the 12th century [9].

Fig. 2. Cesargrad and Königsberg (G.M. Vischer, *Topographia ducatus Stiriae*. 1681)

This testifies to the strategic importance of the position of Cesargrad on the border.

The castle of Cesargrad occupies the highest parts of the two hills of the mountain and on the saddle between them. Measuring 225m, it is one of the largest castles in the continental Croatia. The whole complex was surrounded by a defensive wall, about ninety centimeters thick. The wall was fortified with towers in the most prominent points and defended also with a moat.

The oldest part of Cesargrad is its inner fortified core located on the summit of the western hill, which is some 10 m lower than the eastern hill. This is unusual in castle building [10].

The inner core is the best preserved part of the complex. It was fortified with inner defensive wall, which forms an irregular, nearly semicircular plan which follows the characteristics of topography. The entrance was defended by a high entrance defensive tower, rectangular in plan, leaning against the wall at its outer side. To enter the inner core the enemy had to approach from the west, near the wall, so that the intruder would be exposed to the attacks of the defenders.

The inner core itself was organized around an inner courtyard which gives entrance to the buildings of the lords of the castle – the *palas*, the chapel, inserted into a very thick defensive wall, and probably the storage rooms. The buildings are damaged; it is not easy to recognize their function nor the time of construction.

In the preserved historical documents the castle of Cesargrad was first mentioned in the document of 1399, when the Hungarian-Croatian king Sigismund of Luxemburg donated to Hermann II, count of Cilli (Celje), the whole region of Zagorje [9-10].

The castle was constructed at the strategically very important position and prominent location, upon the gorge which was the border between the Holy Roman Empire and the Kingdom of Hungary. On the other bank of the river Sutla the castle of Königsberg was built as early as in the 12th century. This allows the hypothesis that Cesargrad was also built long before 1399. According to the local legend, the two castles were built at the same time: "their constructors even passed their tools and material from one hill to the other" [10]. Some researchers believe that Cesargrad was built by *Templar* Knights [11]. As the Templar Order was abolished in 1312, this would mean that Cesargrad was built before this year.

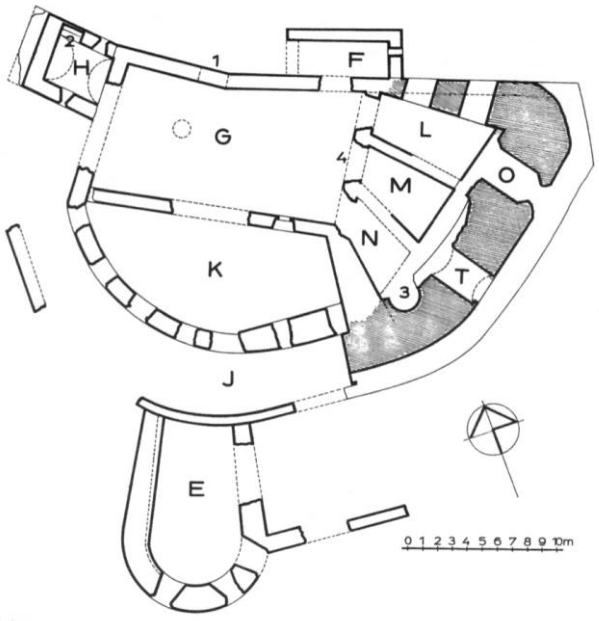

Fig. 3. Cesargrad inner core, plan (source: Miletić, 2000)

Most Croatian art-historians agree that the inner core of Cesargrad was built in the second half of the 13th century or at the beginning of the 14th century. This datation would coincide with the period of military campaigns between the Hungarian King Béla IV and Frederick II, Duke of Austria, and later Otokar II, King of

Bohemia. The strategic position and the datation speak for Cesargrad being built as one in the series of castles on the border between the Holy Roman Empire and the Kingdom of Hungary.

Kostel

Kostel-grad, or Kostel, was also built on the border of the Kingdom of Hungary and the Holy Roman Empire. It was first mentioned in the document from 1330, by which Peter Güssing obtained the castles "… *Korpona, Koztol et Wzturch in confinio Teutonie in Zagaria".* It is worth mentioning that in the 14th century the king considered important to stress that these castles were "*in confinio Teutonie" i.e.* at the border to the German territory - the Holy Roman Empire. Obviously, the castle Koztol (i.e. Kostel) had been already constructed and fortified by 1330 [12].

The exact period of construction of Kostel cannot be dated precisely based on written sources. In a document from 1247, in order to fortify the border to Teutonia, the king Béla IV conceded to the nobleman Farkaš to construct a castle that he already had started to build. Although it is not clear from this document whether the permit applies to Kostel or perhaps to the castel of Oštrc, Fügedi that considers that it applies to Kostel [3].

In the period from 1267 to 1271 Kostel belonged to Ottokar II, king of Bohemia, who was also the Duke of Austria (from 1251) and Duke of Styria (from 1260), and who made dynastic wars against Béla IV, king of Hungary [12].

The Kostel castle is constructed on a strategically important point, with very steep slopes on three sides (north, south and east); the only access to the castle was from the west, where a deep moat was dug.

Kostel consists of an inner fortified core, and an outer ring of defensive walls and towers, including a later, 17th century battery tower. The oldest part of the castle is the inner core, enclosed by the inner ring of defensive walls. The core has an irregular pentagonal plan. The *palas*, inside the inner ring of the walls, consists of two-storey buildings, organized around the inner courtyard. The *palas* buildings lean onto the inner defensive walls; they open toward the courtyard [12].

Fig. 4. Kostel, castle-ruin, 2019 (photo: M. Šimunić Buršić)

Unfortunately, the structures of Kostel-grad deteriorate rapidly; the destruction of the parts of the castle is visible if one compares the photographs from some decades ago with the present situation.

This testifies to the well-known problem of the preservation of architectural heritage which is not in function; in the case of the medieval castles the problem is even greater because they are deserted, on isolated places, not under control and therefore more exposed to vandalisation and damage. Once the structure is "wounded", even a little, it decays rapidly.

Conclusion and proposal

The disadvantage of being remote, isolated, which makes medieval castle-ruins vulnerable, exposed to a rapid decay, proves to be an advantage in our "New Normal" period in which social distancing and isolation are desirable.

The castles described are situated in a beautiful landscape; they give breathtaking views. Once the controlling posts for catching sight of the enemies when they appear on a distant horizon, today they provide a view on intact nature, filling visitors with calm.

These castles – and other castles built on the border with the Holy Roman Empire – Samobor, Susedgrad, Vrbovec, Vinica, Okić - are connected with a common history and common characteristics. Each castle has also its own architectural specificities and its own stories and legends: e.g. the legend of the evil Black Queen is associated with Medvedgrad. Maybe the legend is based on the stories about the historical figure, Barbara of Cilli, Holy Roman Empress and Queen of Hungary and Bohemia, the wife of the Holy Roman Emperor Sigismund.

Creating cultural routes by connecting architectural heritage of minor importance would add a new value and attractiveness to the endangered historical buildings. Indeed, these castles have much in common: not only a history and architectural properties but also the narrative, rich intangible cultural heritage and beautiful landscape and lush vegetation. When also trekking through the nature is considered, this creates a healthy excursion in a cultural-natural site. As there would be several points of attraction, visitors would be stimulated to walk more and learn more about the history, culture and nature of the region.

The proposed cultural-natural routes would be healthy also from COVID-19 pandemic point of view: visitors would always be outdoors: the castles analyzed, though being architecture, i.e. closed spaces, are all ruins; they have lost their vaults and roofs long ago. Visitors would be dispersed in large space in nature, social distancing would be easy and natural. Walking is healthy; spending time in nature is healthy; both activities strengthen resistance and immunity. There would be no gatherings, no events with a big number of visitors: the castles are experienced at the best without much noise, in order to imagine the past glory and to feel the magic of the times of chivalry.

The sightseeing of a series of castles can be complemented with the narrative supported by well-known and new audio-visual technologies: *son et lumière*, virtual reality, augmented reality.

The attractive and non-invasive technologies and interesting narrative can make the ruins talk and give a picturesque image of the life in the deserted castle-ruins, once vivid and glorious dwelling of noblemen - heroes and tyrants.

Excursions of this type enable outdoor education – from preschool age to the third age. *In situ* learning is considered much more interesting – and therefore more efficient - than learning from media (from books to internet). To experience the location, the changing views, the smell of the trees and flowers: the synaesthesia of senses creates a complete experience which our brain memorizes easier. It is priceless in education. Our children are used to learn a multitude of facts; learning by *in situ* experience, imagining how people lived in Middle Ages in their castles, or being seized with delight by discovering first spring flowers – this is much more fun and easier to understand and learn. And of course: in the post-COVID time outdoor education is safer and more appropriate than education in classes: children and adults alike would feel greater freedom, because outdoors the transmission of COVID-19 is harder; so, our life is easier outdoors and the education is less complicated to organize.

In the Middle Ages life in the castles was solitary and isolated, full of dangers: invasions, dynastic wars, armed robbers, natural disasters, epidemics. Medieval castles, remote and isolated, reminds us a little on our present situation. They also give us the opportunity to make interesting excursions in COVID-safe way. And after the pandemic, we should continue practicing healthy excursions to the interesting “minor” sites that we develop during isolation period.

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INTERPRETING FUTURISTIC BUILT ENVIRONMENT IMAGES IN SCIENCE FICTION MOVIES

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ABSTRACT

The future is the best enigma for all times. Everyone has different expectancies of the future. Various mediums are using this curiosity for capturing and manipulating a collective perspective. The technological era that we live in has a considerable capacity to show everything before it happens. Fiction and especially Science Fiction is one way to explain it because it has the capability to show positive sides and negative sides together. Science fiction can create a ground for evaluating all truths of the post-truth era.

Cinematography has a significant impact on society. A cinematic image transfers the idea of itself in a very rapid way. Even the images demonstrate unfamiliar things/objects/events. It creates a perception of reality. Thus these images have the ability to lead people in how to act/live/consume. Architecture is one of the affected fields. The perception of the ideal architecture depends on collective vision, and that vision is open to manipulation.

This paper aims to examine future –urban possibilities, which are in the science fiction movies, and to evaluate the meaning and ideas behind these urban areas. Critical thinking techniques are used in this research, and the study intends to identify the popular cultural images and interpret shared meanings of urbanism.

***KEYWORDS**: future cities, high rise architecture, science fiction, meaning*

1.1 INTRODUCTION

Mankind, because of their communicating nature, infers meaning from all that actions in day to day life. ‘As people express their spatial needs in physical settings, they also communicate spatially for it is a truism that architecture communicates by directing the knowledge and ideas that works behind its genesis’. (George, 2005) People develop an understanding from signified abstractions from complex realities through symbolism and symbols provide lucid and powerful means of identifying what one want to communicate. So comprehension of symbols is an important factor for all designers while creating meaningful environment, also interpreting symbols is essential for architectural education. Architects and architectural theoreticians are working on subject of meaning and meaning of the built environment.

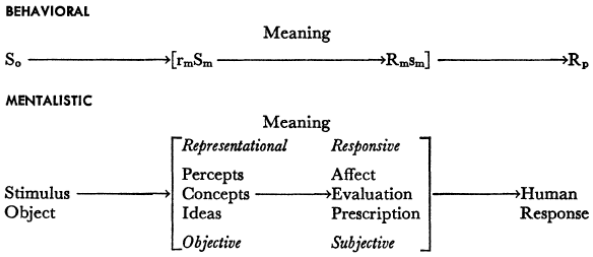

Table 1: Hershberger’s meaning diagram

Robert G. Hershberger tries to explain with this model that the stimulus object create a response with a representational (it might be percepts, concepts and ideas) or responsive way (as affect, evaluation, prescription) This mechanism is working when we use our senses such as seeing a building, hear a song which makes us recognize something, feeling hot under the sun… Representation creates a response but we don’t directly internalize objects or events (they refer as signs).Only representations of the events and objects being internalized. The representations turn into mediated response in forms of feelings, thoughts, ideas …mediated response is subjective and in nature it could be affective, evaluative and prescriptive. (Hershberger,1970)

Symbolic interaction theory deals with this way of communication. Even though psychologist William James (1890) and sociologist Charles Horton Cooley (1902) make definitions about subject of the self in early

times, George Herbert Mead (1934) especially works on the discussions of self and the relationship with physical environment. Mead explains this influence of the self with these words; "Any thing—any object or set of objects, whether animate or inanimate, human or animal, or merely physical—toward which he acts, or to which he responds, socially, is an element in what for him is the generalized other; by taking the attitudes of which toward himself he becomes conscious of himself as an object or individual, and thus develops a self or personality" Doyle McCarty(1984) extended the Mead's ideas and infers into 4 propositions ;
1.Physical objects play a central role in constituting and maintaining the self;
2.Physical objects provide the self with a stable and familiar environment;
3.The acts of touching and grasping physical objects play a central role in our reality construction and maintenance;
4.The self's relationship with the physical world is a social relationship.(Smith et al)

People react to environments in terms of the meanings the environments have for them. (Rapoport1977) like Eco, Rapoport argues that meaning cannot be evaluated apart from function. Physical environment such as buildings, gardens, streets, furnishing, clothes…and so on- constitute identity and provide an opportunity present of self. (Rapoport 1981) Rapoport also arguing that personalization is important factor that establish and express meaning. According to him; there is a difference between the designers' meaning and users' meanings. He is underlining the importance of decorative elements as space organization such as furniture's and its arrangements, colors, plants, materials etc. Erving Goffman (1951) as an early symbolic interactionist, focused on meaning of designed physical objects. According to him; a designed object ,or building and places can be "status symbols" which can demonstrate prestigious life style and high social standing . This expression can be used to exclude others and show a kind of hierarchy. For instance; Designed large houses, executive suites, expensive decorative objects, architectural artifacts … which trigger other places and times.

Darryl Hattenhauer(1984) wrote in his essay; "Communication and rhetoric are inherent aspects of architecture. Architecture uses signs to communicate its function and meaning. This communication is rhetorical when it induces its perceiver to use or to understand the architecture-from a hot dog stand to a monument. Movement in architecture, promote certain values and beliefs and can be studied as rhetorical movements .Like linguistic communication, architectural codes, meanings, semantic shifts and syntactic units" Hattenhauer influenced by Barthes, Saussure, Peirce who build up the foundations of the semiotics and semiology. Hattenhauer's also mentions that 'to understand a meaning, what a signifier signifies, receiver has to know the codes' and this perspective is close to Eco's point of view. Hattenhauer underlines the notion that past connotations gives shape to present understanding; over time words change meanings, built environment can change as well.

Nelson Goodman (1985) did some researches about how buildings mean, how we determine what they mean, how they work and why it matters. He categorizes meaning to 4 headings: denotation, exemplification, expression and mediated reference. As an example; if a church represents sailboats, sailboats exemplify freedom from earth, and freedom from earth in turn exemplifies spirituality ,then the church refers to spirituality via three-link chain. (Goodman1985) Goodman also handles meaning in another manner; he says that when a building does mean, sometimes it isn't affiliated with its architecture. A building can stand for some of it causes or effects or historical event may occur on the site of the building so meaning is not function as architectural work. (Goodman 1985) for instance; inside the area of world trade center , memorial is planned to installed. The designers Norman Lee and Michael Lewis tried to reflect a collective sense of loos and absence, to honor those who lost their lives and provide a sense of hope and rebirth. Instead of identifying and expression of self, some may define the building as a capitalist object. (Smith et al,2006)

1.1.1 Science Fiction as a Criticism System

The future is the best enigma for all times. Everyone has different expectancies of the future. Various mediums are using this curiosity for capturing and manipulating a collective perspective. Fiction and especially Science Fiction is one way to explain it because it has the capability to show positive sides and negative sides together. Science fiction can create a ground for evaluating all truths of the post-truth era. Fiction has a significant impact on the aspects of architectural theory .Fiction gives us an option to test our imagination and thoughts. As Rob Kitchin and James Kneale (2005) has argued, "there is a reciprocity to the relationship with contemporary urbanism shaping science fiction, which in turn works in complex ways to affect the imagination, experience, and construction of contemporary urbanism." (Hewitt, Graham 2015)

According to Carl Abbott(2007) science fiction is a format which reflect past and present. The Sf practitioners hold up mirrors to their individual experiences and evaluate the social surroundings and the outcome may be obscure some aspects of reality but highlight others.

Eric s. Rabkin discusses how science fiction can be a judicial system in his essay named "Science Fiction and the Future of Criticism." He is saying that to be a system, something must be connected, associated, or independent but act in unity. Science fiction reflects these circumstances, so science fiction creates a natural,

cultural system that provokes all types of senses. Rabkin adds with these words, "As we become ever more connected, the cultural system that is science fiction will produce a criticism that is ever more collaborative, crossing the boundaries of individual contributors just as it crosses productive domains from a household appliance to political debate. As the number of contributors increases, and as the body of shareable knowledge increases, criticism will inevitably add quantitative methods to its ever-more-capacious qualitative methods."

Various disciplines endorse architecture &built environment, such as psychology, sociology, and environmental design. These multidisciplinary structures offer a better understanding to analyze and make solutions for built environment. Visual arts are one of the most essential disciplines because it provides quick connections and communications. Cinema has the ability to carry meanings, both abstract and spaces, in the real world alongside signs and symbols. Critical analysis of the cinematical approach creates a deeper understanding of various aspects of community and daily life in cities.

In this research, it is tried to examine future- built environment possibilities which are in science fiction movies and to evaluate the meaning and the ideas behind these areas. Critical thinking techniques are used in this research, and the study intends to identify the popular cultural images and interpret shared meanings of built environment.

2.1 Research problem

The built environment which surround us affects our lives but also as a user , the architectural built environment images on media ,cinema and other mediums affect us as well. Cinema is a medium which can reach to audiences with absolute velocity and get response very easily. There is a big contradiction between the architectural images in science fiction movies which is depicting the future and normal expectancies of future's architecture. Nowadays; Young designers/architects/urban designers (also students of these areas) take an education underlining positive reinforcement such as sustainability, biodegradable materials, modest and respectful designs… On the other hand, the image which is going to be given to all audiences about the future, it is totally in contrast what are being taught in architectural school. These dystopic images affect teenagers alongside future's designers. By using these futuristic images(distorted reality which is built with high technology and materials like metals, aluminiums…) media manipulates or somehow brainwashes audience's minds.so collective perception is created by using these images. This study researches;

How do science fiction movies address our existing architectural problems?

What is the semiotic meaning of building images presented in science fiction movies?

2.2 Aim & Objectives:

The main aim of this research is to examine future-built environment examples shown in the science fiction movies and evaluate the meaning and ideas behind these urban areas. The study intends to identify the futuristic images and interpret shared meanings of architecture in this study. This study intends to expand the understanding of futuristic building images and how people affect and be affected by the buildings in science fiction movies. Analyzing the problems of future's architecture which is in science fiction movies and compare with each other. This study tries to seek a consistent link between each movie whether they point out same problems.

Another objective is that how today's architecture evolve to future architecture? What features are triggering our understanding of ideal urbanization and ideal architecture?

2.3 Limitations

Selecting the movie: Selection is very important aspect because science fiction is very wide genre. But main focus of this study is finding a futuristic representation in them. Only movies which carry futuristic architectural theme are selected.

Evaluation system: Movies are not analyzed as whole. With the help of the 'Mise en Scene' method, futuristic images are cut out of movie. The images are becoming individual case studies that adequate to evaluate.

Type of interpretation: All images are criticized by architectural point of view. Meaning of built environment is appraised by semiotic approach.

3 METHODOLOGY

Firstly, the research problem is identified. This research's topic is highly subjective; it will lead this research to have "Relativist Ontology". The Aspect of the bounded relativism deals with mental constructions of reality which are equal in space & time within boundaries. Aspect of relativism explains realities exist as multiple, intangible mental constructions; no reality beyond the subjects. (Moon, K., and Blackman, D. 2014)

How does this research create knowledge? This research carries 'Subjectivist Epistemology' which has an argue about meaning is only exist within the subject and subject imposes meaning on an object. (Moon, K.,

and Blackman, D. 2014)Theoretical perspective shows philosophical orientation of the researcher. 'Interpretivism' deals with natural science methods which cannot apply to social science: interpretations of reality are culturally derived and historically situated. (Moon, K., and Blackman, D. (2014)

Hermeneutical analysis methods are used mainly along with semiotic analysis. Hermeneutics allow us (in this research) various approaches, which are mainly based on interpretations. Hermeneutic analysis enables you to elicit an in-depth understanding of meanings of, for example, social practices, culture, works of art, and texts. Understanding produced through systematic interpretation processes. These processes are known as a hermeneutic circle Interpretation of details affects the interpretation of the entire phenomenon; reviews of these interpretations produce a deepening understanding of the phenomenon. It can be combined hermeneutic analysis with other methods of analysis that aim to interpret and understand meanings. (https://koppa.jyu.fi/avoimet/hum/menetelmapolkuja/en/methodmap/data-analysis/hermeneutic-analysis)

Symbolic interactionism puts the researcher in a position of those researched (interaction) by sharing language &other tools. (Moon, K., and Blackman, D. (2014) for detailed information and literature review of symbolic interactionism, please look at introduction part.

4 ANALYSIS METHODS

There are some different analysis methods used in this research. Semiotic analysis is the primary focus in this research. Semiotics is dealing with signs, symbols, and primarily how meaning is formed. Meaning, interaction, and communication of signs are the main aims of the semiotic analysis; instead, it is a single sign or collective sign system.

The narrative analysis is used because the story behind the researched phenomenon is revealing culture and society. Narrative analysis is used mainly in films, pictures, or music that have a structure of a story. Narrative theory is giving us the ability to categorize things based on structure, concepts, themes, and points of view.

This research is examining the images on films; therefore, some discipline-specific methods have been used. There are some approaches to film analysis, such as Auteur Approach, Sociological /Historical Approach, Mythic Approach, Formalist Approach, Movement/Genre Approach, Mise en Scene Approach. In his study, the 'Mise-en-scène' method is mainly used. This is a film analysis approach used by people who are dealing with cinema. Mise-en-scène "placing on stage" is a definition used to depict the design perspective of a theatre or movie production, which initially signifies "visual theme" or "narrating a story"—two of them are visually resourceful aspects with storyboarding, cinematography and stage design. It is used to demonstrate single scenes within the movie to symbolize the film.[1] In other words, it refers to what we see onscreen in a film. It is the film's visuals; all of the elements that appear on camera and their arrangement. [2] It gave first, the story, and narratives for making it more understandable, and some key aspects have to follow through.

Set design: An essential element of "putting in the scene" is set design—the setting of a scene and the objects (props) visible in a scene. Set design can amplify character emotion or the dominant mood, which has physical, social, psychological, emotional, economic and cultural significance in film.[3] In this research, architecturally, the scene shows the place and the "place," which is my most significant intention to examine. Cinematographically, setting the scene reveals the character's/actors' mentality. What this study intends to reveal is the meaning behind the built environment/architecture. The meaning of "colors" examined as a sub-title of set design in this essay.

Lighting: Light (and shade) can emphasize texture, shape, distance, mood, time of day or night, season, glamour; it affects the way colors rendered, both in terms of hue and depth, and can focus attention on particular elements of the composition. [4] Two types of lighting scheme used:

1.high-key lighting: This generates pictures that are often very bright and that characteristic few shadows on the principal subjects. [5]

2.low-key lighting: A lighting scheme that employs very little fill light, creating sharp contrasts between the brightest and darkest parts of an image and often creating sharp shadows that obscure parts of the main subjects. [6]

Space: The rendition of space effects the reading of a movie. Proximity, depth, size, and proportions of the places and objects in a movie can be directed through camera placement and lenses, lighting, set design, conclusive mood, or affinity between elements in the story world. [7] Architecturally, this space can be referred to as "ambiancé." Cinematographically, "space" is more camera placement related, so in this study it is interpreted as; the camera can be the eye of the audience/viewer, so the scene- point of view- is more limited. Therefore interior space can be examined in this crucial aspect.

Composition: The alignment of objects, actors, and space in the frame. The most significant concept with the take into account the composition of a movie is keeping an equilibrium of symmetry. These intents to having an equal division of light, color, and objects or figures in a frame. The asymmetric composition can be utilized to highlight the specific elements of a film that the film director wants to be given appropriate attention. [8] The

composition is also a well-known key aspect of architecture. In this part, this paper examines scenes based on the terms such as; balance, symmetry, order, proximity, continuity.
Filmstock: The option of black & white or color.
All these critical aspects are considered in architectural way. There are some key aspects such as costume, make-up and hairstyles, acting, aspect ratio are not examined in this research.

5 APPROACH

This study will examine selected Mise en Scene's by giving the exact time taken from the movie and explain the meaning of environment & architecture. Firstly, some literature reviews of these movies are given, and the movie's narratives and the stories are explained. After that, some key aspects are explored in the set design part; such as "Which feelings do the writer and director want to transfer to audiences?", "Which deeper meanings and symbolisms are intended to conveyed without verbal communication?", "Which various aspects are aimed for the composition of the mise en scene?" "What is the meaning of colors used for this Mise en Scene? Is it an expression of the feelings of a lead actor?" At the end, there is a table which shows the collected data from these Mise en Scenes based on the aspects that are mentioned in the methodology (set design, lighting, space, composition, film stock)
In this research, the main text includes six movies & one tv series, it shown under;

- Metropolis 1927, Director: Fritz Lang
- Blade Runner,1982, Director: Ridley Scoot
- Total Recall,1990, Director: Paul Verhoeven
- Total Recall,2012, Director: Len Wiseman
- Fifth Element,1997, Director: Luc Besson
- Incorporated,2016,Syfy Channel, CBS Television Distribution
- Mortal Engines,2018, Director: Cristian Rivers

For the "6th International Conference on New Trends in Architecture and Interior Design", two movies are selected for examination in this short essay. The first movie is **"Metropolis,"** which was accepted as the first science fiction feature-length film. The second movie is **"Blade Runner,"** which was accepted as the milestone for the film industry.

5.1 METROPOLIS

Film description and Narrative
Figure 1. Metropolis movie scene at 00:03:10

Fritz Lang's silent classic "Metropolis" is the first full-length science fiction film. The film is set in the year 2026. The movie aims to direct attention to the topic of 'social justice' and class distinction. In a futuristic city sharply divided between the working class and the city planners, the son of the city's mastermind falls in love with a working-class prophet who predicts the coming of a savior to mediate their differences. [9]

"Lang's futuristic, imaginary city, Metropolis, made the social division between the idle 'aristocracy' and dehumanized laborers quite literal. The city of the worker lay deep within the earth while the industrialists occupied a sunlit landscape of towering skyscrapers. Literally caught up in the machine age in Modern Times," said Nancy Green Leigh and Judith Kenny in their essay named "*The City of Cinema: Interpreting Urban Images on Film*."

Set design


Figure 2. 'Metropolis' 00:18:26


Figure 3. 'Metropolis' 00:18:34


Figure 4. 'Metropolis' 00:18:45


Figure 5. 'Metropolis' 00:24:31

Lang's city of the future has two worlds together. One is the above the ground, which belongs to the upper class, elite, and wealthy people. The other is under the ground, which belongs to lower class workers.

The city has many skyscrapers which extend up to the clouds. In that sunny town, some highways are settled at around the level of the 30th -40th floor. Both trains and cars use those highways. Intricately technical high structures dominate the city. (Figure2- 3-4-5)

Figure 6. 'Metropolis' 00:07:09

Figure 7. 'Metropolis' 00:07:50

Figure 8. 'Metropolis' 00:05:48

Figure 9. 'Metropolis' 00:06:35

"As deep as lay the workers' below, the earth so high above it towered the complex known as 'club of the sons' with its lecture halls and libraries, theatres and stadiums" [10] this sentence writes at the opening of the film. The stadium and' *club of the sons' are shown* in figure 6. *Idle elite amuses themselves with pleasant diversions and trivial pursuits"* (Quoted from movie) in that club. There are forests named 'Eternal Gardens' (fig.7) Beautiful girls wait for to be the amusement of a rich son in that eternal gardens.

Meanwhile, in subterranean factories far below, a mass of workers toil like human robots, struggling at every instant to operate the great machines that maintain the great Metropolis above. It is the virtual embodiment of what Plato described as the corrupt and disorganized state where "you have one half of the world triumphing, and the other half plunged in grief." (Quoted from movie)

Masses of soulless workers unwillingly go to work as slaves in a subterranean world. (Fig8-9)This world is very chaotic. With indirect illuminations, there are shadows everywhere. Freder –who is the son of the owner of the factory, chases a girl who is a teacher and comes down to the subterranean world. These workers are doing their job like a machine rather than human beings. (Fig 10)

Figure 10. 'Metropolis' 00:14:10

Figure 11. 'Metropolis' 00:15:56

Figure 12. 'Metropolis' 00:19:10

Figure 13. 'Metropolis' 00:19:27

Freder starts to hallucinate and imagines this machine is turning into a monster which eats the workers like they are slaves in ancient time. (fig. 10-11) Many film critics think Lang's extraordinary visual imagery in these scenes belong to German Expressionist cinema. Probably, Lang's sharp but poetic vision was an impact on the Existentialist philosopher Martin Heidegger, whose work centered on the dangerous technology exposure in its capacity to distort human nature.

In figure 12 and 13, the office of Master of the Metropolis, who is the father of Freder, is shown. This office is decorated with minimalistic /futuristic furniture. The ceiling is high, and this makes the area very spacious. The office has a great view which sees the whole city from the above through a huge window. Also, this view underlines the upper-class situations. In this mise en scéne, Freder talks with his father and says, *"Father, you have made the machines the gods of this city and made the people slaves to your god-machines"* Fathers answers that the workers belong in depths. In the movie, they show the city images, which can see from the office's window, after that conversation.(fig 14-15-16)

Figure 14-15-16. 'Metropolis' scenes at 00:24:15 , 00:24:22 , 00:24:31

5.2 BLADE RUNNER

Film description and Narrative

"Blade Runner" became a pioneer movie of neo-noir cinema and is regarded as the best science fiction movie. It has a huge effect on science fiction films, tv- series, anime, and video games. The movie also took the attention of architects and academicians in addition to film critics.

"The film portrays an in-human and un-natural landscape of ruination. This landscape is the direct consequence of our faith in the technology of architecture's ability to erect human society successfully and in architecture's capacity to replicate the function of an ideal nature through die technological satisfaction of a human need. […]In Blade Runner this notion is critiqued by hyperbolically depicting architecture as the gravity-defying super-skyscraper striving to distance itself from the earth." says Scott Collman in his essay named "Drawing The Line Between Technology And Nature In Architectural Theory."

"Like many sci-fi filmmakers, though, Scott was not simply interested in projecting a putatively futuristic cityscape. Through classic postmodern techniques, he toyed with the very idea of linear and modernist notions of the historical, the present, and the future.[…] *Big architects have copied Blade Runner', Ridley Scott said in 2015. What he described as 'the biggest architect' in the world— hinting that it was Richard Rodgers— said to him recently '"I run Blade Runner once a week in my office for the staff."' Blade Runner is an influence on much of contemporary architecture."* says Stephen Graham (2016) in his essay named "Vertical Noir." He mentions that the Blade Runner movie is an inspirational movie for the architects.

The story is; In 2019, Los Angeles, the big company called Tyrell Industries, produces bioengineered androids known as "replicants," and one series of replicants "Nexus-6" start a riot and kill some humans. Rick Deckard (Harrison Ford) is a police officer whose job is to find and retire –to kill- these rebel replicants. These police officers are called "Blade Runners."

Set design

Figure 17. Blade Runner movie (1982) 00:03:53

Figure 18. Blade Runner movie (1982) scene at 00:03:58

In the movie, the dark atmosphere possesses the whole film. In 2019, there is no sun, and this affects the whole mood of the movie. The urban landscape consists of high rise structures. The most remarkable one is the Tyrell industries headquarter building. As is shown in the image above, the building's headquarter dominates the whole city, and the form is an abstraction of Ziggurat, which were the ancient temples of the Mesopotamian empires.

Figure 19. Blade Runner, 00:16:20

Figure 20. Blade Runner, 00:16:44

The building is an example of an "inside-out" structure - like Paris's Pompidou Center, whose architect is Renzo Piano. All circulation elements, mechanical – structural systems exposed outside of the façade.

Figure 21. Blade Runner, 00:16:44

Figure 22. Blade Runner, 00:17:14

These interior scenes show the office of Tyrell Inc.'s owner. The image shows the absolute symmetry, which is underlining the hierarchy and power. The columns are in order. Just like Metropolis's owner's office, this office also sees the whole city from above. As decoration, there are some Mesopotamian objects used for expressing the elegant lifestyle as 'status symbol.' They act as social standing, and these objects can be used for excluding others.

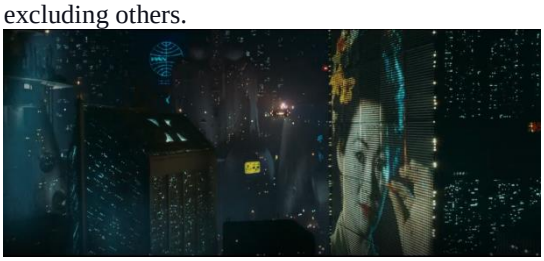

Figure 23. Blade Runner movie (1982) 00:07:26

Figure 24. Blade Runner movie (1982) scene at 00:24:33

The use of technology is employed to create a perception. The projected commercial on the façade of high rise building is shown in image; these interactive commercials become ornamentation of buildings. We see neon lighting on the shop windows, signboards, as symbol and logo of the place. This increases the future perception. Blade runner's Los Angeles is full of neon ornamentations.

Figure 25. Blade Runner ,scene at 00:23:20

Figure 26. Blade Runner, scene at 00:37:14

Wide columns are often used in the film; they emphasize the entrances to buildings.The reason may be that these massive columns are vital to carry those giant structures.

Figure 27. Blade Runner, scene at 00:10:42

Figure 28. Blade Runner, scene at 00:11:06

The left picture(fig 27) is showing the form of the Los Angeles Police Department building. The building has a circular form. Therefore, this police headquarters distinguished by rectangular formed buildings. The right picture (fig 28) is showing the interior space of the Los Angeles Police Department building. High ceilings, tall windows, arch-shaped openings/gates used to create a spacious area.

Figure 29. Blade Runner,scene at 00:34:33

Figure 30. Blade Runner, scene at 00:32:18

These two images show the apartment of the officer Rick Deckard. All the furniture and decorative objects are in darker-neutral colors. There is no order in these pieces of furniture; the whole apartment is messy, filled with unnecessary things. This messy situation shows our officer's mental confusion. Repetitive tiles surround the whole apartment. In figure 29, we can see a compact kitchen design. Nowadays, some furniture brands like Ikea produce minimalist and compact solutions for the house.

6 CONCLUSION

When portraying a dystopic future in science fiction movies, it is not enough only showing (set design) something. Other technical details such as lightning, space, composition.. constitutes a foundation for human perception. Just like Hersberger's diagram; representational things (even if they are objective) such as percepts, concepts and ideas directly affect evaluation. All of these triggers human response. These 6 main features that can be seen at table 2, cannot be separated because they function together and they create a way of understanding.

When futuristic images are examined, 2 contrast depictions can be clearly seen. One is good situation, the other one is bad situation. Alongside the set design, lighting is very effective way to transfer sensations; high key lighting shows positive mood or sensations, low key lighting shows negative sensations. As well as the lighting, color palettes are highly effective for interior design of the scenes. Nonverbal communications of colors are undeniable for architects and interior designers. Darker colors depicts more depressive future image, lighter colors portrays promising future.

Wide shots of urban fabric are generally used for showing the architecture of future. As this paper examined, technological high rise architecture is used dominantly for underlining the idea of future. Science fiction can be mirror and reflects the current situation of world. Amply usage of high rise architecture in science fiction movies indicates population problem we are having as society. Irregular urbanization is another problem which is seen in science fiction movies. Undeveloped countries are facing irregular urbanization problem for years. Urban population is expected rapidly grow therefore cities has to take some measurements before it happens.

Another inference from science fiction movies are the high usage of industrial design. Quite minimalistic designs are dominated all the scenes. This indicates another problem that society uses too much unnecessary items nowadays. Decorative items are not used at all. Often, simple and minimalistic designs are used as 'space' for underlining the futuristic design idea. Embellishments are fully avoided unless they show classical perception (which we can see in the "Mortal Engines" movie. Classical style reinforces royalty understanding.) Compact designs especially used in small apartment buildings. Nowadays high populated countries prefer to live in small, compact and ergonomic spaces but in future cities it will be a must.

Tendency of using industrial design concept creates a very narrow range of materials such as steel, metal, aluminum…Recently specialist tries to raise awareness about sustainable designs and eco-friendly materials. Unlike these attempts to change construction materials, the prediction of future on science fiction movies doesn't show the same mentality.

In this paper, it is shown that science fiction can be criticism system. After the examinations of science fiction movies, the problems which society are facing, can be detected. Are created impression of architecture of future on science fiction movies true? This paper is examining the predictions of architecture of future and the study intends to expand the understanding of futuristic building images and how people affect and be affected by the buildings in science fiction movies. This study tries to seek a consistent link between each movie whether they point out same problems. Analyzing the problems of future's architecture which is in science fiction movies and compare with each other show a way to determine the problems so we(as a society) can build a more flawless future and architecture of future.

Name of movie	FIGURE NUMBER	SET DESIGN	LIGHTING	outdoor	indoor	SPACE	COMPOSITION	FILM STOCK
METROPOLIS	figure 4	Whole city	high-key lighting	X		high rise, technologic buildings	balanced	black&white
	figure 10	Subterranean world, Machines	low-key lighting	X		technologic	symmetry	black&white
	figure 13	Office of the owner	high-key lighting		X	simple,minimalistic	symmetry	black&white
BLADE RUNNER	figure 17	Whole city	low-key lighting	X		high rise, technologic buildings	chaos	colored
	figure 18	Tyrell Inc. Headquarter building	low-key lighting	X		high rise,temple-like,futuristic	symmetry	colored
	figure 21	Office of the owner	low-key lighting		X	simple,minimalistic	balanced,symmetry,order	colored
	figure 29	Apartment of lead actor	low-key lighting		X	compact	chaos	colored
TOTAL RECALL 1990	figure 32	Rekall Inc. Headquarter	high-key lighting			simple,minimalistic	balanced	colored
	figure 34	subway	high-key lighting		X	simple	symmetry	colored
TOTAL RECALL 1912	figure 36	Whole city	low-key lighting	X		high rise	chaos	colored
	figure 38	Whole city	low-key lighting	X		high rise,modular blocks	chaos	colored
	figure 42	Apartment of lead actor	high-key lighting		X	simple,minimalistic	balanced	colored
	figure 43	Rekall Inc. Headquarter	low-key lighting		X	technologic,futuristic	symmetry,balance	colored
FIFTH ELEMENT	figure 44	Whole city	high-key lighting	X		high rise	chaos	colored
INCORPORATED	figure 47	Whole city (green zone-red zone)	high-key lighting	X		high rise and low rise together	contrast	colored
	figure 50	residential buildings	high-key lighting	X		low rise buildings,same style	repetition	colored
	figure 51	restaurant	high-key lighting		X	decorated	symmetry,balance	colored
	figure 52	red zone	low-key lighting	X		technologic,futuristic	chaos	colored
MORTAL ENGINES	figure 55	residential buildings	high-key lighting	X		different styled buildings juxtaposed	chaos	colored
	figure 58	residential buildings	high-key lighting	X		contemporary buildings	chaos	colored
	figure 59	palace/ residential building for mayor	high-key lighting	X		decorated,classical style	symmetry,balance	colored
	figure 60	residential buildings, clock tower	high-key lighting	X		different styled buildings juxtaposed	contrast	colored
	figure 61	residential buildings	high-key lighting	X		different styled buildings juxtaposed	contrast	colored
	figure 65	Apartment of mayor	high-key lighting		X	victorian style interior,elegant	harmonious	colored

Table 2: Examination of science fiction movies &tv series based on the method of 'Mise en Scene"

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Represented Spaces Through Cinema: Identity, Place and Other Spaces, Heterotopia

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Abstract

This article aims to identify and increased understanding on the space perception of interior architecture through cinema and films. Increasing the concern about the importance of the feeling about space, form, design elements and relationship between interior architectural design, human senses and cinema. Regularly film spaces can express narrative perceptions to audiences just as strongly as those communicated by characters. This paper examined the relations between identity, place, space, heterotopia and cinema. Michel Foucault's argued that cinema is heterotopic by its very nature: it produces worlds that are different from the 'real world' but that contribute to that world in various and contradictory ways. The landscapes and people depicted in the film are affectively charged in ways that alter the bond between the viewers. With analyzing two important movies in relation with heterotopia anyone could glimpse the feeling of being there without actually visiting these locations by watching these spaces on screen. Interior design relation of heterotopia spaces effect on people's perception and emotional senses in movie making. It will emphasis on the atmosphere and recreations of spaces for heterotopia experience. Such images represent architectural forms that are connected to interactions that play on emotions with which we strongly identify as we pursue the characters who move into these spaces. The research objective is the representing spaces in the chosen movies which are heterotopia, and relation between architecture, interior design and genius loci and any kind of heterotopia, which has been shown to have strong psychological impacts on human's sense and perception. Moreover, experience and feelings have a substantial role in perception of effective interior architectural design. Understanding forms in space for creating a balance between the heterotopia and space perception, reaching harmony with the surrounding atmosphere, sense of place or genius loci and investigating the reflective design elements which one can brilliantly experience in these movies are crucial in this essay. The place-identity theory has provided important contributions to the field of psychology and to the social sciences of architecture, emphasizing the influence of the physical environment on identity and self-perception. The problem statement of this paper is lack of comprehensive studies on qualities of interior space of heterotopia spaces that have potential to stimulate audiences to watch films more careful. The limitation of the research is analyzing movies architecture spaces, interior places and elements according the heterotopian manner.

This research questions are:

- What is heterotopia?
- Which features of interior design environment of movies have more influences on human sense?
- Is it a specific space or it can be something else?
- How heterotopia can be shown in films?

This study is using qualitative and quantitative methods that is deal with design theory and observation of two specific case studies. This methodology creates theory by Focusing on two chosen films(The Hours & Alice in wonderland) and gathering data from different sources to prepare and analyze a theoretical report about the subject.

Key words: Interior Architecture, Cinema, Heterotopia (others), Identity, place.

1.Introduction

Foucault makes known to what he names heterotopias, "Of Other Spaces" (Foucault,1967). Heterotopias, that are "outside of all places, even though it may be possible to indicate their location in reality. Because these places are absolutely different from all the sites that they reflect and speak about, I shall call them, by way of contrast to utopias, heterotopias." Other spaces procedure within mutual relationships that hesitate between physical spatial realisms of commonplace life and unique, mythological, spaces in that history and time have extended. These other spaces could be deliberated a controversy of the real spaces in which we live (Voorhees, J.,2009). Before continuing to explain about heterotopia and it is characteristics, principles and sites, illumination of Identity is completely vital to understand. Identity has many kinds of meanings, mainly it says about who we are as a people and notify our logic of group uniqueness. Thus if we recognize a group spontaneously we make "the others". Lynch studies two purposes for identity. Firstly, the meaning is sense of acknowledgement. It means identity provides decision skill and assistances us realize the situation. Secondly, it is emotional purpose of atmosphere identity (Ukessays, 2015). Architecture attends by means of a documentation and beginning the identity perspective, characterizes the opinions of the people. as well as,

singular identity outcomes as of be in the right place. It is thoroughly related to recall which filter to a public group through communication and collaboration (Vladimr Czumalo).

Place, is element shaped via people's connection with bodily sets, singular and group actions, and senses (Najafi, & Shariff,2011). Particularly, place is varied with human ethics and ideologies. Consequently, it is a special space that concealed with connotations and morals by manipulators. Places has crucial part in human life time. Which each of them has their individual irreplaceable appeal. Rapaport claimed that places besides having physical structures consist of messages and values which individuals distinguish it according their characters, motivations and understandings (Najafi, & Shariff,2011). Explaining the connection between place and identity help us to recognize identity better than before. Connections among place and identity impact social realizations, cultural observes, and political movements. Place identity is an essential thought in the arena of ecological thinking that recommends individualities system relatively to surroundings. This was presented through environmental psychologists Harold M. Proshansky, Abbe K. Fabian, and Robert Kaminoff, who dispute which place identity is a platform of a one's self-identity, and involves of the information and emotional state established over and done with daily involvements of physical places.

Space and place always have difficult interactive dissimilarities amongst them. space and place in English. 'Space' is more intellectual than 'place'. The previous word talks about to a zone, an expanse, expressively relatively to Foucault's perception of heterotopia. The second more physical word which is interactive, worried about identity and accompanying to an occasion or an olden time, if they were legendary or factual. Usually space is a universal and detached idea, connecting to some form of situation, while place talk about to the precise, connected to the 'activity' of a locality (Agnew, 2005). Nevertheless, Foucault intensely uses the term which has a sense of mutually space and place which is 'emplacement'. Concentration of Foucault is on the official, spatial qualities of specific places, that are 'real and legendary', and precise historic alterations (emplacements). Heterotopia, resulting from the Greek heteros, 'another', and topos, 'place', is using in a wide-ranging typology to differentiate these emplacements from 'utopia'. Here the difference is haggard rather simplicity amid 'unreal' utopias and 'real' heterotopias. They do not have contrasting; they procedure a variety with the 'mirror' placed in the middle of an 'intermediate experience', wherever amongst the real and the unreal.

Foucault explicates the connection among utopias and heterotopias using the metaphor of a mirror. A mirror calls a utopia for the reason that the image reflected is a 'placeless place', an unreal simulated place that permits individual to understand one's personal visibility. Nevertheless, the mirror is likewise a heterotopia, it is a real object in that. The heterotopia of the mirror is simultaneously totally real, connecting with the real space nearby it, and completely unreal, generating a virtual image. Foucault offerings some samples of heterotopias, and a set of principles that rule their presence. He continues to disclose six principles as the foundation for his analyzing. He advocates, each human culture is invented of heterotopias and in their explanation keep it up implied social, ethical and political resistances for example private/public or pleasure/work.

Table 1: Foucault six principles of heterotopia's name and examples.

Foucault Six Principles of Heterotopia	Name	Examples
First Principle	Crisis Heterotopias	Prisons, Care Homes, Hospitals, Adolescents, Gay And Lesbian Life Or Marginal People, Pregnant Women, The Elderly.
Second Principle	Heterotopias Of Deviation	Hospitals, Asylums, Prisons, Rest Homes, Cemetery.
Third Principle	Heterotopia Of Single	Theatres
Forth Principle	Heterotopias Of Time	Museums Enclose In One Place Objects From All Times And Styles
Fifth Principle	Heterotopias Of Ritual Or Purification	Prison, Sauna, Hammam.
Sixth Principle	Heterotopia Of Real Place	Garden, Different Environments, With Plants From Around The World.

The first principle says that greatest cultures have recognized a Heterotopia such as sacred places, while currently they changed by "Heterotopias of Crisis", like prisons, care homes and hospitals. The second principle which is heterotopias of deviation at what time cultures creating present heterotopias in a very changed method,

for instance cemeteries and which it was most of the time at the middle of the city beside houses and religious places but now people perceive death as an infection, moving cemeteries to the suburbs. The third one is, contrasting heterotopia, despite the fact we can place contrasting spaces in the similar places, for example theatres and changing the stage to different spaces and diverse scenes can be entirely unlike and unreal.

The fourth principle that is heterotopias of time explains how it is regularly associated to a period of time and how it launches to function when Persons failure with their old time and how there are heterotopias get-together time repeatedly for instance libraries and museums. In addition, where they are linked to the flowing of time such as festivals and fun fair lands, or vacation villages. The fifth principle is heterotopias of ritual or purification which is about, having most of the time way of opening and closing for detaching them and make them available for example entering a camp or a prison, sauna and hammam. The sixth principle which is the last one and it is about real place articulates, allocation the impression of an actual place or form a space other than real space, such as Garden, different environments, with plants from around the world.

Table 2: Foucault's "Of Other Spaces" presents us with various examples of heterotopic sites.

Heterotopic sites	Heterotic definition	photo
Ship	A piece of floating space, a placeless place.	
Cemetery	Tombs form a sort of ideal town for the deceased, each placed and displayed according to his or her social rank	
Garden	The smallest parcel of the world and the same time is the idealized models of it.	
Museum	Contains infinite time in a finite space, and it is both a space of time and a 'timeless' space seeking to freeze time in "period rooms" that slice time into "set pieces".	

According above table 2, Foucault explains the ship is 'a piece of floating space, a placeless place'; it works with its instructions in the place among ports, amongst cultures, amid stable points. From fifth century ago the ship was at the same time the supreme device of financial expansion and the utmost replacement of imagination. Foucault notices that in "without boat, there is no dreams in civilizations". Foucault says, many years ago cemeteries were located at the middle of the city in or next to the religious places, and they were sacred places. Moreover, as death is changed personalized, everybody wants their space; hence the outskirt cemetery becomes the town of the dead. And it is a heterotopia for the reason that the graves procedure of perfect town for the dead people, bestow to their social level. Foucault recognizes the garden as a heterotopic site, for the reason that it is the minimum piece of the world and simultaneously it is the flawless models of that. For instance, Japanese garden reproduces the concept of balance in nature. Gardens try to reconstruct a perfect, utopian nature. Therefore, they reflect the beliefs of their generations. Foucault remarks Museum as heterotopia of time. It collects different stuffs from diverse times in a particular place for trying to encompass the full amount of time. Consequently, take part in a twice over inconsistency: it has immeasurable time in a limited place, and together it is a place of time and a 'timeless' place looking for stoppage time in era places.

Cinema is a heterotopia itself which means, the film was revealed in the cinema is a utopia that is an imaginary, cybernetic space that shows on the screen. In the dim area, a huge two-dimensional screen and outstanding sound organization. The cinema convinces our feelings whatever we saw on the screen was "unconditionally real. However, just the physical cinema was actual, the movie was "completely unreal". Therefore, the cinema is a heterotopia. Which are spaces outside all spaces, despite the fact it can be probable to designate their position in reality, as Michel Foucault says those spaces are totally different from all locations which are real spaces (Michel Foucault,1967).

Case Study

This study is using qualitative and quantitative methodologies that is deal with design theory and observation of two specific case studies. This methodology creates theory by focusing on two chosen films, "The hours", 2002 Directed by Stephen Daldry and "Alice in wonderland", 2010, directed by Tim Burton. Gathering data from different sources to prepare and analyze a theoretical report about the subject.

Table 3: The Hours film information briefly, made by author

Name Of The Film	**THE HOURS**
Director	Stephen Daldry
Cast	Nicole Kidman as Virginia Woolf/ Julianne Moore as Laura Brown/ Meryl Streep as Clarissa Vaughan Ed Harris as Richard/ Stephen Dillane as Leonard Woolf John C. Reilly as Dan Brown
Type of the film	Drama
producers	Robert Fox producer/ Scott Rudin producer Michael Alden associate producer/ Mark Huffam executive producer Ian MacNeil associate producer/ Marieke Spence associate producer
Production Companies	Paramount Pictures/ Miramax/ Scott Rudin Productions
Creation year	2002
Creation place	USA/ UK
Duration	114 minutes
Written by	David Hare
Based on novel	Michael Cunningham

The film The Hours Stephen Daldry is a great director of the movie, according an investigational novel which in that three women from separated places and times are connected through the book Mrs. Dalloway. As long as, there is sense of simultaneity and longitudinal heterogeneity is moderately noticeable. Assuming the impression of Heterotopia suggested by Michel Foucault, it demonstrates The Hours purpose with the intention of create heterotopian space and to hut light upon dominant subjects such as separation, sexual identity and death (heterotopia of crisis and time). The film relocations the failure and confluence of time and space from text to the screen, and moreover renovates its postmodernist. Furthermore, aesthetics and social meditative, proposing a stimulating inspecting experience for the audiences.

The Hours synopsis and analyzing

There are three women in three times at three places. Three suicide efforts, two were successful. Laura Brown in 1951, she is a pregnant housewife and planning a party for her husband, but she can't stop reading the novel 'Mrs. Dalloway'. Clarissa, a modern woman living in present times (2003) who is throwing a party for her friend Richard, a famous author dying of AIDS disease. These two stories are simultaneously connected to the work and life of Virginia Woolf, who's writing the novel in 1923. The novelist Virginia Woolf fills the pockets of her jacket with stones and walks to a river to drown. In Los Angeles in 1951, Laura Brown decides to suicide therefore she fills her purse with pills and checks into a hotel to kill herself. In New York in 2001, Clarissa Vaughan watches as the man she was once married to decides if let himself fall out of a window, or not (table3).

The novel is Mrs. Dalloway, written by Woolf in 1925. All three stories in "The Hours" start with making breakfast, include arrangements for gatherings, which all finish in sorrow. Two of the players in the second section seem again in the third story, but then the stories do not flow one by one. In its place, they all rotate from place to place of the imaginary personality of Mrs. Dalloway, who offerings a courageous look to the world but is only, completely alone, inside herself, and unattainable from the romance she requests. "The Hours," doesn't attempt to force these three stories to equivalent one another. It's more similar a meditation on distinct chapters connected through an assured sensibility, which of Woolf, a brilliant novelist who wrote a book named A Room of One's Own that somehow introduced modern feminism. Her opinion was that in history women did not have a private place for themselves, on the other hand their husbands and families occupied whole house. Austen wrote her novels, Woolf perceived, in a room where all the other family activities were also happening. Laura (Julianne Moore), in the 1950s, is a usual out-of-town housewife with a caring and dependable husband (John C. Reilly) whom she does not love him, and a son seems from another space. An unexpected kiss in the middle of her story proposes she might have been cheerier living as a lesbian. Clarissa (Meryl Streep), in

2003, is living as a lesbian; she and her lover (Allison Janney) are training a daughter (Claire Danes) and caring for their old friend Richard (Ed Harris), nowadays dying of AIDs. Even Virginia Woolf was bisexual.

This three stories processes displays that individual freedom extended significantly through the decades, but mankind duties and blame's continued the leading realities of life, which reminds us crisis heterotopia. Eventually, for the spectators, "The Hours" doesn't attach in a well-ordered way, but presents personalities who lighten whodunits of sex, duty and love (Camelia Elias,2016).

Table 4: Alice in wonderland film information briefly, made by author

Name Of The Film	**ALICE IN WONDERLAND**
Director	Tim Burton
Cast	Johnny Depp as Mad Hatter, Mia Wasikowska as Alice, Helena Bonham-Carter as Red Queen, Anne Hathaway as White Queen, Crispin Glover as Knave, Alan Rickman as Caterpillar, Stephen Fry as Cheshire Cat, Michael Sheen as White Rabbit, Timothy Spall as Bayard, Christopher Lee as Jabberwocky
Type of the film	Adventure, Family, Science Fiction for fantasy action, violence involving scary images and situations, and a smoking caterpillar
producers	Jennifer Todd producer/ Suzanne Todd producer Richard D. Zanuc producer/ Joe Roth producer Katterli Frauenfelder co-producer/ Derek Frey associate producer Chris Lebenzon executive producer/ Tom C. Peitzman co-producer Mary Richards line producer: UK/ Peter M. Tobyansen executive producer (as Peter Tobyansen)
Production Companies	Walt Disney Pictures (presents) Roth Films (as A Roth Films Production) Team Todd (as A Team Todd Production) The Zanuck Company (as a Zanuck Company Production) Tim Burton Productions (uncredited)
Creation year	2010
Creation place	Antony House, Torpoint, Cornwall,UK
Duration	108 minutes
Written by	Linda Woolverton (screenplay),
Based on book	Lewis Carroll

Alice in wonderland synopsis and analyzing

Presents by Disney ,directed by Tim Burton. Written by Linda Woolverton, based on the books Alice's Adventures in Wonderland and Through the Looking Glass by Lewis Carroll. Tim Burton's in 2010 created a fascinating heterotopia, a scenery of accurate fantasy indicating an actual diverse set of guidelines of performances. This sample of heterotopia demonstrates without a glitch the acceptance of behaviors regular in an unlike system of wisdom than the ones be appropriate to the normative world. All the doubts of Alice derive from the fact which, the observer is able to distinguish weather the Underland is governed by unusual reasoning or somewhat if it is only a human perception.

The movie starts with a bout seven years old Alice running in the middle of the night to explain her father that she is had a nightmare. He barged in a business meeting of foreign trade ways to brought her back into bed, where he tells her that Alice is mad which "all the best people are mad." The film then shows 13 years later. Alice, almost 20 years old, at her engagement party, she escapes the mass to deliberate if going through with the marriage and falls down a hole in the garden after noticing an unusual rabbit. She reached in an extraordinary and surreal place called "Underland" she finds herself in a world that look like the nightmares she had when she was a child, occupied with talking animals, wicked queens (red and white) and knights.

She understands that she is in that place with a purpose to defeat the dreadful Jabberwocky and reestablish the correct queen to her power. Her personality is well-known as taking the same innovative and explicative spirit like her father that is why she doesn't like putting up with the inflexibility and that's only advanced through the track that destiny has hard up her on the way to in Underland. Burton's made an attractive heterotopia, a scenery of accurate fantasy indicating an actual diverse set of guidelines of performances (table4).

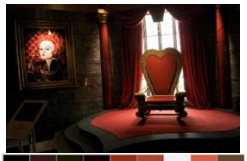
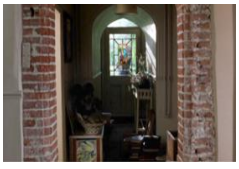
Findings

Table 5: A list of comparative summary of spaces in two films.

Space Of Actions	Spaces	Film 1 (THE HOURS)	Film 2 (ALICE…)
Home/Palace	Bathroom	✓	_
	Kitchen	✓	✓
	Hall	✓	✓
Circulation	Entrance	✓	✓
	Stairs	✓	✓
	Corridor	✓	✓
Office	Home office	✓	✓
	Office	✓	✓
Outside	City	✓	_
	Forest	_	✓

Table 6: A comparative summary of spaces of two mentioned films according style, material, aesthetics, structure, colors, pattern, lighting.

Space of Actions	Film 1	Film2
Bathroom	 Bathroom in 1920  Bathroom in 2003	
Kitchen	 The1920's kitchen style  Early American–style kitchen of 1951	 Art Nouveau kitchen style  Art Nouveau kitchen style

	 Modern kitchen of 2003	
Office/ Working Area	  Home office  Office	   Working area of red queen
Entrance Hall & Corridor	  Art Deco style	  Red queen palace 

Entrance Hall & Corridor		 White queen palace  Corridor
Exterior		  White queen palace entrance  City view
Forest		 Tea party outside somewhere in an underland  At the forest

According table 5, I showed briefly which spaces will be analyzed and compared in two mentioned movies. Table 6 demonstrates comparative spaces between two mentioned movies. According to this table, it shows bathroom at the first film in innovation manner, comparing use of basins of 1923 which is Victorian style using bowl water pitcher, and 2003 that is modern style using taped water.

The second part which is comparing kitchens of first movie that those are for three different decades then comparing with the second film's kitchen. The 1920's kitchen style which used black and white color tiled floors material were favored with clean understated varnish finished cabinets. The 1920's styles also brought the

electric dishwashing (innovation). Clean lines and efficiency was the theme of this era. materials they were easy to clean and maintain, stainless steel really came into play in this era along with metal cabinets and linoleum flooring. The second kitchen is Early American–style kitchen of 1951, as it is visible using flourish wall papers, and material like brick walls cladding. Fridges start making their way into more homes in white or other colors (innovation). 50 decades was also the birth of the open planned home. Modern kitchen of 2003 years, the kitchens color and the timeless shades of beige, cream and silver and magnolia becoming the favorite choice for walls and cabinets alike. Using silver color fridge more than colorful ones. Also it shows very important issue in twenty first century that is instead of only women working at the kitchen, this time there is a man in the kitchen helping the woman. This is new human generation manner which they dividing house chore between each other's. In the second movie it displays a kitchen in Underland with an island at the middle of kitchen is innovative for that time and it mixed with art Nouveau style. Having task lighting over an island help the passive natural lighting of kitchen. In the kitchen as well, has several huge and long vertical windows, for using natural day light.

The other space is office room. In the first film, indications some big vertical windows for bringing sun light inside of the building. Plus, having task lighting. Since the colors lack the contrast and tension of the complementary colors, they instead create a kind of visual unity. Innovation in 1923, and New technology of newspaper typing in printing office. In the second movie, office interior design is Art Nouveau style in this palace. it is inspired by natural forms and structures, particularly the curved lines of plants and flowers. Usage of Crafts such as: ceramics, stained glass, ironwork forging material. Entrance is another space for comparing, which is in the first film, entry has Art Deco style that was influenced by the bold geometric forms of Cubism; the bright colors of Fauvism. New materials arrived, including chrome plating, stainless steel, stained glass, bricks (which reminds us a rustic style) and plastic. In the second film, in the red queen palace, Interior style is inspired by Art Nouveau style with curved lines. There is very huge welcoming entrance with effective wall painting and ambient lighting. Through the hall and corridor most furniture shapes like Armchairs, doors, window patterns are like red queen hair style and colors are match with her hair and her make up (red and blue). These colors combined to convey an emotional state from the character. Black and red are violent and frightening where blue and white are cool and comforting.

It shows very nice natural day lighting through windows which make atmosphere more mysterious. In the white queen palace, interior has white and blue ceramic and stones which are match with blue columns and curtains. Using silver candlestick, mirror and statues. Curving forms and smooth, polished surfaces, which gives luxury feeling. Long and huge windows bring natural daylight inside, with help of candles make the environment brighter and warmer. Using blue and white colors are cool and comforting. Moreover, there is a vertical corridor with analogous color schemes utilize colors that are next to one another on the complementary color wheel. They tend to occur in nature and create a harmonious feeling that is pleasing to the eye. The city view in the first movie is very vague and it is not visible, mostly shows interior of the houses which have often dark and cold atmospheres. In the second film, the White Queen's palace which look like the Disney castle logo! designed with white polished luxury marbles material for flooring and façade. With use of white huge steel material entrance door. With analogous pastel pink tree color which make this palace dreamier, wonderful, warm and welcoming. But at the war sections city looks like dark and cloudy, like evening light which is gloomy and scarier and sad. It feels very cold and using dark colors. With showing sharp mountains and ruins.

There is a tea party at the forest in the Underland, but all the dishes are wrecked, the cups have sprung leaks and the event itself is sited in some wilderness. complementary colors combine warm and cool colors to produce a high-contrast, vibrant tension in the film. Plus, Ruined windmill and dead trees. Complementary colors combine warm and cool colors to produce a high-contrast, vibrant tension in the film. Happy delighted time has given way to a dark depressing reality. The darker reality is shown in shadow, with a bleak plain color palette. Using dark colors, like dark blue and dark green and black with sunset/ evening lighting gives scary cold feeling of heterotopia. The other photo at the green forest shows using contrast colors red and green with other complementary colors of them. The effect of this is to create a visual 'life' in the frame. Red and green, in the instance of him, both modern in the presence of their complementary color.

Conclusion and Discussion

In a nut shell, from the literatures of Foucault we recognize that heterotopia is always an entire architectural concealment of space / place. Space's heterotopic role is well-defined by the societal and cultural norms associated with it, or created by heterotopic space's implications and messages. Therefore, heterotopias are areas that need to convey and describe mental trials, such as the mirror or the cinema screen. The distinctiveness of heterotopia denotes conceptual meta-interruption in the spatial fact that we see, space that we see as our

environment, natural and social spaces colored in non-opposing notions. This exemplifies the existence of altered certitude that has evolving effects for our insights and consideration of daily actuality in our interior and exterior spaces.

Cinema could be called a' Zone', the other world unlike ours, which in progress has an emotional impact on us. Cinema trains the imagination; it draws the spirit and conducts it with unconscious cognition. Showing dreamy places, specially interior spaces with neutral colors or very colorful images of areas and furniture's, lighting that they use for showing the inside and outside of the zones and novel technologies like special effects have impact on spectators. Michel Foucault's claimed that cinema is naturally heterotopic. It creates very special interior and exterior areas that are not similar to the actual realm. The environments and individuals portrayed in the movie are charged successfully in aspects that actually change the perception of audience attachment. Hence, perception and emotions play a major role in the understanding of successful architectural interior design.

These two films dealt with heterotopic aspirations. Throughout their ethnically specific cultures, they spoke about perception to assess the heterotopic essence of the link between cinema and the world, which is not pre-cinematic, but has been profoundly changed by the increase in visual media. The world has turned beyond itself, heterotopic in comparison with what it had been before cinema emerged. Among some conservationists, there is a tendency to express sadness about the developments that gave us the 'age of the world picture' (Heidegger 1977), which one might say has turned out to be the age of the world motion picture. Thus, moving image can express the prospect of creating touching potential for more positive social thought.

To be conclude, Heterotopias are not just specific interior or exterior spaces where death, oldness, pain, misery bind us. Heterotopias are areas of other times and cultures, individual freedom which has expanded dramatically over the decades, but human duties and responsibility have continued to be the leading realities of life, reminding us of heterotopia in crisis. This article recognized the forms of space which create an equilibrium between heterotopia and interpretation of space and also finding balance with the ambient environment, genius loci and reflective architecture and interior architecture features. According Foucault's models of heterotopias and an arranged principles that rule their presence, the Hours aims to create a heterotopian environment (heterotopia of crisis and time) and to illustrate key topics such as separation, sexual identity, and death. The film relocates the failure and union of time and space from text to screen, and in addition renews its postmodernist. Plus, it provides beauty, social reflection and a provocative glance at the audience's experience. Heterotopia proves without a problem in the second film, Alice in Wonderland, embraces daily behaviors in a method of perception unlike those adapted to the normal world. Both Alice's suspicions stem from the fact that, if it is only a human experience, the spectator can discern the Underland's environment is controlled by odd logic, or somewhat. Therefore, movie spaces specially interior design of places can precise perceptions of viewers just as powerfully as those interconnected by performers.

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The philosophical links between "The Architecture of the Schrodar house" and "Modern Art -De Stijl"

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Abstract

Architecture is not only the built form rather it is a philosophy, idea and theory which helps in developing a built form. Architect is not only a person responsible for a product but there are theorists and philosophers also behind the architectural product to make it understandable and meaningful. Modern architecture is influenced by the modern art forms and is evident in most of the examples in the history. The philosophy behind both the art and architecture forms gives the clear picture of the influence they had on one on both. This paper will try to establish the link between the art and architecture forms with respect to the philosophy they both have.

Key Words: Modern art: Modern architecture: Philosophy: Art styles.

1. Introduction

De Stijl or The Style first began as a theory in the early 12th century. As it develop , the ideas formulat- ed have a major impact on progress towards a modern language of Art and Architecture. De Style is not a stagnated style where as it is dynamic and has been changed with the years. It is said that the elements of De Style is highly motivated with the flat lands of the Holland. Horizontal lines are considered to be the horizon line and a straight level line and vertical lines are the tall straight trees. This type of scenes in Hol- land influenced the De Stijl Artists and Architects. Theo Van Doesburg, considered theses aspects of the landscape while formulating the De Stijl theory in 1912.

He reintroduced the straight line and rectangle as a new language which could be used in many areas of design. Van Doesburg said "various spiritual means of expression (Architecture, Sculpture, Painting, Music and Literature) will be universally realized- i.e each will be enhanced by collaboration with the others". This new style is for a new architecture which is against the cube, symmetry, gravity and decoration.

One of the most important characteristic of the De Stijl is the abstract nature of the work. This is main- tained by reducing the ornamentation and decoration and working for the simplification of the forms. Or- namentation hides the true form and function where as simple forms shows the true function. They were in search of truth in their designs. Straight lines are direct where as curved or undulated lines does gives a true direction. They were creating without any fantasy, illusion and decoration. So they change their designs to the basic shape and form.

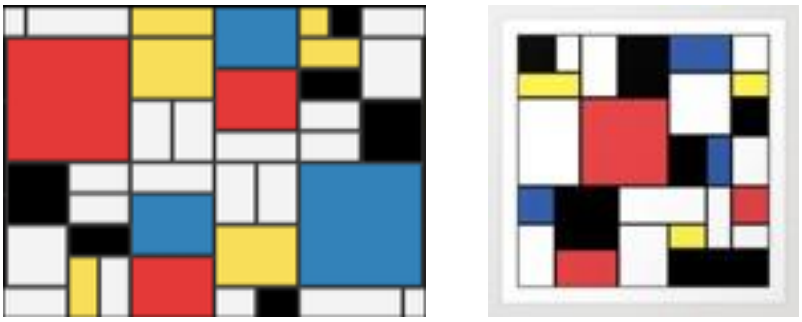

Fig. 1: De stijl paintings of Theo Van Doesburg

The new ideas behind the De Stijl led to innovative Architecture and one of the example is designed by Gerrit Reitveld, a De Stijl Architect - The Schroder House. Rietveld design the house for Mrs. Truss Schroeder, he did not create it entirely personal. He created a structure that is universally humanistic. " There can be no ideas which are not ideas of extended things, or extended things of which there is no idea". This cooperation idea of relationship is important in Art and Architecture, where ideas produce forms and forms interact with each other.

Fig. 2: Schroder House By Architect Geritt Reitveld

1.1. philosophy

There are three common philosophies i.e the importance of whole or entity, the emphasis on relationships and the significance of reason and rationality in the principles of De Stijl, and the ideas behind Rietveld's Schroder House. The importance of the whole or entity is an abstract concept, it relates generally to the universe. The entire world is part of this whole, united and in harmony. All individual souls and ob- jects are no longer viewed as a separate things but they are the part which constitutes the divine whole na- ture and god. Idea of whole is presented in Architecture. De Stijl displayed the wholeness of the design.

One of the most important idea in the de stijl was "the integral relationship of the parts to the whole and of the whole to the parts."we cannot separate the function of a part individually, the functions successfully when it is viewed in the context of the whole. In the architecture if a part of a design is removed, the whole doesnot function in the same manner. H.P Berlage a dutch Architect described De Stijl as "unity in plurali- ty". Gerrit Rietveld illustrated a concern for the importance of the whole in his design for the Schroeder house. He stated "the house is a complete composition or the total work of art. A visual independence of parts does exists" but these parts work closely together to compose the whole. All parts of the house, the facilities, furniture and equipments all are designed in relation to the whole. Moveable partitions in the upper floor function either to connect space or to separate it. To reinforce this concept and to show the whole in harmony, Reitveld developed a relationship between the exterior and the interior of the house. the corner windows and balconies allowing space to flow from inside to the outside. This house contains a " unity in plurality". The De Stijl Artists and Architects was most concerned about the relationship between positive and negative elements to produce the dynamic interactions.

1.2. relations

The De Stijl painter observed how primary colours and the monochrome related to each other by mak- ing the same composition side by side in primary colours and the monochrome colour black white and grey. similarly the Architects deals between the mass and space to create a dialogue. Both were concerned about the behaviour of the opposing elements and the effect on their relationship. Reitveld established the relation between the human and the house. Moveable partition within the house to give the freedom to alter the space as per the need and demand. Reitveld also dealt with the relationship the space inside and out- side.

The house is constructed as a system of elements that determine space. The dramatic spaces provides a change in mood from the corner of one space to the other to reflect the function. The house is essentially a dialogue. The relationship between the designer and the client the understanding of the ideas. Artist and the Architects of the De Stijl recognised that passions distract us and obscure our intellectual view of the whole.

De Stijl movement emphasised that a rational process would produce the best design. They moved away from feelings, emotion and faith. In the Schroader House Reitveld did not allow emotion to influence his design but dealt with the practical concerns. He found a rational solution for the flexible use of the space.

Fig. 3: interior view of Schroder House By Architect Geritt Reitveld

He made a functional building with the dynamism of function in the house. He understood function is not permanent in house and it could change with the time and need. The plan of the house is such the changes in function could takes place eg. moveable partitions. De Stijl followed a past philosophical point of view and created a new modern art movement which influences and directed visual art and architecture and various other fields also.

1.3. Literature review

Al-saati in his research paper Mondrain: Neo-Plasticism and its influences in Architecture has related principles of music with the principles of Mondrain's Neo-Plasticism. Reducing the complexity and mak- ing it in a simple form can surely makes music and art easily understandable.

He emphasized on the thought process of Mondrain which is forming unity and balance between art, con- tent and form. He states the importance of rectangular shape except the non-figurative art. This shape is stable and determined and could be established through free lines which intersected and form rectangles.

He further compares the earlier paintings of Mondrain the change in patterns and compositions occupying the whole surface to the assymetrical grid lines using primary and non-colours. Mondrain in his paintings equally distribute the weight in the whole surface. He had a great sense of colours and how intersected two

– black lines gives character of visual energy.

The concept of equivalence of plastic means, implied a sense of visual weights of individual primary hues and varying their amounts to balance the non-colors (white, black and grays). The amount required of the yellow spectrum, for example, would naturally have to be greater. It is this equilibrium of disparate elements with its great sense of strength and clarity that marks a genuine Mondrian work. He states that todays Architects can understand the relationship in geometrical forms but fail to understand the use of colours as they think colour as a painted surface.

The contribution of mondrain in architecture is not limited to the sense of colour, but also in his sense of proportions. His creation was not less important than the concept of modular principle by great Le Corbus- ier, which later became a universal instrument to obtain beauty and rationality in the proportion of every structure produced by man.

Al -Saati has tried to describe how neo-plasticism got influenced what are the general principles, form colour and psychological and social consequences on the paintings. Mondrain have admired Dr.M.H.I. Schoenmaekers, books Het Nieuwe Wereldbeeld (1915) and Beginselender Beeldende Wiskunde. Indeed, he translated it into English as The New Image of the World and Principles of Plastic Mathematics, these titles all rely upon the significance of the Dutch word "beelding." This is one of the best translated as "form-giving" and closer in definition to the German "Gestaltung" than to the English "image" or "plasti- cism." In any case, both the art theory of Mondrian and the philosophical system of Schoenmaekers adopt the concept beelding as a fundamental principle in viewing the world. Professor H.L.C. Jaffé is correct in finding an affinity between the "abstract" thought patterns of Mondrian and Schoenmaekers, which, in turn, share in Dutch Calvinist traditions of precise and logical intellectual formulation. * Nonetheless, the general tendency to grant such emphasis in Mondrian's art theory development to the role of Schoenmaekers has helped to obscure two essential facts; namely, the importance of Theosophy to Mondrian at a date previous to his contact with Schoenmaekers, and the incorporation of Theosophic ideas into his actual style of paint- ing.

Van der Leck and Mondrian shared an identical opinion that the modern world is in need of a new kind of art. Van der Leck's ideas were based on his experience as a stained glass artist and his admiration

of the formal simplification found in Egyptian art. † Mondrian was very taken with Van der Leck's use of colours. Van der Leck was impressed by Mondrian's search for abstraction. Following Mondrian's example, Van der Leck began calling his paintings 'compositions' and found the courage to abandon his figurative approach. Al-Saati further illustrate the general principles of neo-plasticism, relationship between neo-plasiticism and colour and form and neo-plasticism psychological and social consequences. He further tells about the in- fluences of neo-plasticism in the architecture. Discussing the possibilities whether mondrain is influenced by the work of the FLW or FLW's work is inspired by Richard Netra.

He stated few facts which proves that Mondrain theme is original and is not influenced or inspired by the Falling Water and Unity Temple designed by architect Frank Lloyd Wright. He further describe the De- Stijl influence on the plan of Brick Country House and Barcelona Pavilion House designed by Meis Van Der Rohe where as Meis Van Der Rohe rejected this stating that Van Doesburg never painted as beautiful a composition as a Barcelona plan. But comparing the painting of De Stijl and plan one can see the similari- ties.

De Stijl influenced the school of design called Bauhaus because one of the main leaders who was Theo Van Doesburg and various artists in the group had also taught at the design school so obviously the influ- ence of De stijl had come into play at the Bauhaus school of design. The elements of form follows function and the geometric principles had influenced a lot of the bauhaus architecture and art and this also carried on to what was called the International style.

‡Beyond the paintings of Piet Mondrian, the other manifestation of De Stijl that has imprinted the memory of the art world is its distinctive architecture. Indeed, it was architecture that caused the most disagreement among the artists. From 1922 on Theo van Doesburg devoted himself to the cause of a modern architecture appropriate to modern times. With the primary painters, Bart Van Der Leek and Mondrian, drifting away, van Doesburg sought to promote De Stijl primarily in terms of the built environment. though it was be- cause of the architecture the De Stilj finally became popular in Europe via exhibitions held in Paris and Berlin. Associated with the Bauhaus, van Doesburg made sure that his architects were presented as part of a wider effort in Germany and in Russia to revolutionize architecture. Sadly, the efforts of all of these ar- chitects would be halted by the Second World War. Still the De Stijl architects managed to build a few pri- vate homes and two notable attempts at small public buildings.

The absolutism inherent in De Stijl could be linked to the practical in architecture, that is, mass-produced elements allowed architecture to achieve a uniform, stripped-down reduced look. The idea of a mod- ern architecture, or what we would call "modernist architecture," was already in the wind. In his book, Art in Vienna, Peter Vergo stated, "Only in the buildings of Adolf Loos, with his disdain of elaborate ornament, does one find he beginnings of a wholly modern style in architecture…" Loos himself insisted in his fa- mous 1908 manifesto, "Ornament and Crime,"

It is easy to reconcile ourselves to the great damage and depredations the revival of ornament had done to our aesthetic development, since no one and nothing, not even the power of the state, can hold up the evolution of mankind. It can only be slowed down. We can afford to wait. But in economic respects it is a crime, in that it leads to the waste of human labor, money, and materials. That is damage time cannot re- pair. The speed of cultural development is hampered by the stragglers. I am living, say, in 1912, my neigh- bor around 1900, and that man over there in 1880.

Loos, as Le Corbusier remarked, "…swept the path before us. It was a Homeric cleansing: precise, philo- sophical, logical. He has influenced the architectural destiny of us all." From Vienna to Paris, Loos waged war on architectural eclecticism and the baroque assemblage of meaningless ornamentation torn from its original context and piled into a mass of decoration. Clearly, architecture in the nineteenth century was mired in the past and it was the task of modern architects to define modernist architecture. Van Doesburg had long been concerned with relationship between painting and architecture.

1.4. conclusion (Times New Roman, 10pt, Italic)

"When everything has been expressed on the present level of painting, new aesthetic potential will emerge therefrom for extending the scope of expressive possibilities," he stated and continued, "…a mon umental cooperative art is what the future holds. In this new form, various spiritual means of expression (architecture, sculpture, painting, music and literature) will be universally realized…"

Though Van Der leek rejected of any type of connection between paintings and architecture, but still the idea of applying ideologies to both art forms seems typically logical. his focus on painting states it as an independent medium, which Mondrian visioned that with neoplasticism. Van der Leek made the differ- ences between the motive of neoplaticism in painting and to dissolve this materiality of "naturalism" and architecture, characterized by "the space-restricting flatness…"the characteristics of the De Stijl style could be applied to architecture or not, it is more helpful to understand that the artists were trying to create a new form of architecture for a new world.

Like Adolf Loos, who had traveled to New York, the De Stijl architects were impacted by architecture in America, a new country that was erecting new kinds of buildings. Some of the architects associated with De Stijl were followers of Frank Lloyd Wright. Anti-monumental anti-ornamental architecture had

to be in keeping with character of city streets and new building materials, both of which were geometric for the sake of efficiency. Architects such as Van't Hoff were inspired by the work of Frank Lloyd Wright in America. In fact, Robert van' t Hoff had worked for Wright and his Huis-ter-Heide, in its turn, inspired Gerrit Rietveld. Wright's Prairie Style of flat roofs over long low structures seemed especially suitable for the flat landscapes of Holland. But, most importantly, Wright opened up the closed spaces of the Victorian structure into what is called today "the open plan." He also made sure that his early work was responsive to the surroundings and this is where Wright and De Stijl would ultimately separate. De Stijl sought, not the local, but the absolute, and its buildings make no concession to their environment.

As architect J.P.P. Oud said, "Though the importance of a work of art can only be judged from an abso- lute point of view, the significance of an act can only be appreciated according to a relative standard." For his part, Oud proposed use of mass production for limited number of standard types that would be a new urban architecture with a "form follows function" philosophy. However, the most famous De Stijl work of architecture was the well-known Schröder House by cabinetmaker Gerrit Rietveld, and this home was thoroughly individual. Still, the Schroder House uses certain elements of mass architecture to its advan- tage: reinforced concrete over steel. Rietveld collaborated with his client, Madame Truus Schöder-Schrader and completed her Utrecht home in 1924. Thanks to modern construction, this house could fulfill van Doesburg's 1924 Manifesto on architecture, demanding the "elementary, economic, functional, formless, unmonumental, asymmetry, afrontality, and anti-decorative." According to van Doesburg,

"The new architecture has broken through the wall and in so doing has completely eliminated the divorce of inside and out. The walls are non-load-bearing; they are reduced to points of support. And as a result there is generated a new open plan, totally different from the classic because inside and outside space in- terpenetrate."

Therefore, architecture is anti-cubic, anti-symmetrical and anti-gravitational, the elements float and hov- er. Despite the connections between van Doesburg and the attempts in Russia and Germany to rebuild the world, De Stijl architecture is uniquely Dutch, ironically, because it translated Mondrian's principles into architecture. In distinction to the uniformly whiteness of Weisenhofsiedlung, De Stijl buildings were white, with the floating exterior white planes augmented with red, yellow, blue and black trim. The weightless- ness of the floating sections is countered by the grey stucco on other segments. The bold use of blocks of colour is even clearer inside the Schröder House compared to the all-white interiors.

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CONTEMPORARY ARCHITECTURE IN THE LIGHT OF THE IDEOLOGY OF CONSUMPTION

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Abstract

This paper is a reading on ideology and architecture, focusing on Louis Althuser's writings on ideology, in order to discuss the relationships between architecture and social production in the light of the ideology and specifically ideology of consumption. Ideology of consumption is the dominant ideology of the contemporary world; existing among different layers of social structures and everyday life. On the other hand, architecture as a social practice, as it has been throughout the history, carries the task of production of spaces to serve the social actions of everyday life. From the production of dwellings to public spaces and urban environments, architectural works are responsible to deliver meaning. Architecture, in the age of consumerism, does not impose direct ideological thoughts or identities on the citizens, but it puts them in situations, within social and physical constructs, so that their behavior and activities will be a guarantee for the domination of the ideology of consumption. It transfers the ideology to the people who wonder or live within spaces as subjects of ideology. In other words architecture works as a mediator in consumer society. People, as the actors in social life, contribute to the social production; likewise architecture contributes to social production by positing people in the right places. With the least information, architecture is able to generate agency for ideology of consumption. It doesn't need messengers or symbols, as the architecture of previous eras, in order to be capable of orienting the masses or affecting their system of thoughts and beliefs. Contemporary architecture does not need to be evidently religious, or generally speaking, ideological to be effective and alive. This paper includes a specified literature review mainly on theories of ideology by Louis Althusser and it will support the discussions mainly by the works of Zygmunt Bauman, Manfredo Tafuri and Fredric Jameson on ideology and architecture. It is presents an analysis on the relationships between contemporary architecture and ideology.

Keywords: Louis Althusser, Ideology, Commodification, Architecture, Consumerism

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1. Introduction

Architecture is a practice directly engaged with the social production. It is not alien to any of the aspects of social life. Therefore, it cannot be considered as an independent act. It takes part in the social actions of everyday life. It has been under the circumstances of its own time and also is circumstantial to the ideologies that have dominated societies during different periods of time. There have been discourses about the relationships and connections between architecture and ideology.

Slavoj Zizek claims, in his lecture on architecture as ideology (2009), ideology is people's spontaneous relationship with the social world. Citing such claim, architecture as a medium for the social communication is inevitably involved with ideology. He continues by calling ideology as 'acting or embodied in what one is doing': "Ideology is distorting people's vision and therefore there is a gap created by ideology: between the way things appear to the person and the way things 'really appear' to the person".[2]

Contemporary society, known as the consumer society, is dominated by the ideology of consumption. People in modern societies are consumers with certain attitudes and certain needs, wants, and demands. What keeps such ideology viable is the cycle of production and consumption of commodities and services. In this context, an essential question regarding architecture is that what is the act of architecture in a society dominated by this ideology? It has become a medium through which the cycle of consumerism operates. As consumerism has been identified with the death of meaning, architecture in its temporal and spatial roles becomes a social practice to produce various types of spaces of consumption. To understand how ideology and architecture maintain a

[2] Slavoj Zizek. Architecture as ideology: the Failure of Performance Arts Venues to Construct a Communal Space. Presented at the Brikbeck institute for the Humanities (2009).

relationship in such society for architecture to work as a social practice, one may need to posit herself in a specified angel to see architecture in the light of ideology in today's world. Consumption is a sustaining part of the human condition; like a living organism ingesting, digesting and excreting. Raw materials of social life are provided by the core activities of this organism: production, distribution and disposal (Dalgliesh, 2014). Consumption, known as an ideological act, conditions the social life through spaces as other mediators. On the other hand, observing the priorities in social actions regarding the dominant ideology may shed more light on the understanding of how architecture adapts itself to become a social practice under the circumstances of production consumption cycle. An extreme form of this adaptation leads to commodification of architecture. This paper approaches architecture as the physical outcome; an object that encompasses spaces that serve the ideology of consumption.

2. Ideology and Architecture

Architecture in the consumer society is not an architecture directly produced to represent the ideology of consumption. This ideology doesn't apply symbols to represent its agenda in societies. What an architectural practice needs in the consumer society is to produce spaces to serve the growth of desire. Yet, a fundamental question is that whether one can call such architecture an architecture of ideology or not? Jameson in his analysis on Tafuri in his article "Architecture and the Critique of Ideology", claims that in the society that is enclosed under the capitalist system, an architect cannot hope to create a utopian architecture or space; or something that is radically different and revolutionary (Jameson, 1982).

However, in a systematic society with a dominant ideology, architectural and urban spaces are destined to fulfill the fundamental principles of such ideology for the society to work within a certain social and political system. In other words, as Jameson (1982) continues, political action is not denied in the consumer society, or not necessarily. However, Althusser considers the social levels and practices of social life as semi-autonomous. Accordingly, politics is drastically disjointed from the aesthetic practice (including architecture). Architectural practice cannot be directly political. Although, architects can be political as individuals in the society, but their work cannot be political in the present time.

If during the middle ages or in the rise of Islamism, architecture has always been involved with religious ideologies, in the era of consumer culture under the capitalist mode of social production, ideology should have found another way of emerging throughout spaces to maintain this mode of social practice. Considering the architecture of consumer society as 'not political'; in order to understand it as a social practice the attitudes of consumers become keys to cite the possible relations between contemporary architecture and ideology of consumption. Bauman (1990), identifies five elements in the consumer attitude. Firstly, consumers perceive life as a series of specified problems that are clearly defined, sorted and dealt with. Secondly, they believe that to deal with such problems or to solve them is the person's duty; and one cannot overlook without suffering shame and guilt. Thirdly, consumers believe that for any existing or appearing problem, there is a specific solution or recipe that is offered by specialists or people with higher knowledge. This comes as a combination of faith and optimism that leads people to seek continuous professional advice. Fourthly, people assume that the existing solutions and recipes are available in exchange for money. Therefore purchasing is the way to obtain them. Fifthly, life skills are taken to the level of finding objects and recipes. Shopping skills and power of purchase become the most essential life skills. Thus, consumer attitude has become a part of people's very own being, with which creates anxieties that later it will claim to ally. This results in the commodification of culture that is selling prepackaged solutions to the people. As Bocock comments with his critique of commodification, consumerism is "the active ideology that the meaning of life is to be found in buying things and pre-packaged experiences" (Bocock 1993: 50).

However, it is still necessary to go back to the basics and discourses about ideology itself. The expression 'ideology' was created by Cabanis, Destutt de Tracy and others, as the (genetic) theory of ideas. When Marx adopted the term after fifty years, he assigned a different meaning to it. For him, ideology is the system of ideas and representations dominating the mind of a person or a social group (Althusser, 1971). He continues by emphasizing that there is just one ideology that is by the subject and for subjects. To put it more precisely, there is only one ideology that exists for concrete subjects (people) and ideology makes its way through the subject and its functioning (Althusser, 2014). Regarding to this definition of ideology, anything other than the subject comes from the outside of ideology but for ideology to operate, the outside itself will be ideology. Translating this statement in the context of the city, one may approach to architecture not as the subject or the object of ideology but a mediator that makes it possible for the subjects to operate under ideology. In other words, architecture, as a functioning part of everyday life, cannot be considered non-ideological. But, yet, it needs to be clarified how architecture is ideological or relates to ideology. Does it work as an agent? Or does it work as a

representative? Does it act in the society as an ideological entity or it just works as an object? But surely it is not the subject of ideology.

Thus, the produced architecture might create an environment to make this subjectivization happen. It might not be the subject affected by ideology but it should be more as a functioning mediator for that ideology, which is targeting material subjects (societies). By providing spaces that serve the purposes of consumer attitudes, architecture becomes the agent for the ideology of consumption. For example, shopping mall, which Rem Koolhaas has addressed as the final destination for contemporary citizens, provides spaces for consumers to practice their shopping skills and examine their purchasing powers. This might not be the only way through which shopping malls are serving the ideology of consumption. For some citizens, shopping malls are the spaces within which they start identifying new problems that can be solved immediately by the act of shopping. Yet there is another question to be asked: Is architecture itself affected by this ideology in any way?

3. Commodification of Architecture in the consumer society

The origin of the term "commodification" was initially introduced by Walter Benjamin (1935), to explain the magical formation of the mass produced, consumable object to which consumers pay tribute. Moreover, commodification effects architecture as the container of culture in the urban context, a method of packaging design to render identities and social values by way of visual, formal and spatial approach, which is driven by market and information acceleration.

Slavoj Zizek discusses commodity in an interesting point of view: "you may think that the commodity appears to you as a simple embodiment of social relations and the commodity is really just an embodiment of social relations. But this is not how the commodity really appears to you; in social reality. By means of your participation of social exchange, you bear witness to the uncanny fact that a commodity really appears to you as a magical object with special powers".

Commodification is a result of the dominance of the ideology of consumption. Taking that into account, commodification of architecture in consumer society is a consequence of the consumer attitude and ways of ideology for recruiting its subjects. Architecture involves in the practice of this ideology as an agent to meet the needs of both parties. Regarding to Ideology, Althusser (1971) brings his second thesis as: Ideology has a material existence. An ideology always exists in an apparatus, and its practice or practices. This existence is material. In this context it is worthy to mention Tafuri's viewpoint on how he perceives the architecture as useless. In his book: Architecture and Utopia (1976), Tafuri points out that the critical analysis of the basic principles of contemporary architectural ideology does not pretend to have any "revolutionary" aim. What is of interest here is the precise identification of those tasks which capitalist development has taken away from architecture. That is to say, what it has taken away in general from ideological prefiguration. With this, one is led almost automatically to the discovery of what may well be the "drama" of architecture today: that is, to see architecture obliged to return to pure architecture, to form without utopia; in the best cases, to sublime uselessness.

Cunningham (2005) draws on Tafuri by growing what he saw as the irretrievable descend in its socially transformative desires towards a 'form without utopia to that of sublime uselessness'; and such uselessness has been massively in ideological use by the contemporary essentials of capital accumulation. Cunningham continues by calling the current drama of architecture as one of 'spectacle and brand image'. Architecture cannot prevail over such relationships, but it can endorse a coherent consciousness of their conditions and promote a new understanding of what they produce as new forms of subjective experience.

What Tafuri claims as uselessness of architecture, can be interpreted as a commodified architecture that has adjusted its role in the society in regards to the capitalist system; an aesthetic and functional object with mere contribution to any other system rather than a system that has the ideology of consumption at its core. Thus such architecture, as Jameson (1982) states, turned into "a comprehensive project aimed at the reorganization of production, distribution and consumption within the capitalist city".

4. Final Discussion: The Gap in Appearance

'The way architecture appears' in the contemporary society refers to how buildings look and are perceived. On the other hand, how it really appears in this society refers to what it does in this society or how it functions. Architecture operates as the mediator for both ideology and the society.

Slavoj Zizek claims that ideology creates a gap; and this gap is in the appearance. "It is between the way things appear to you and the way things 'really' appear to you. This is the paradox in ideology. Appearance is not reality". In this context, Althusser (1971) claimed that there are conditions of existence that are represented in

ideology with which people represent their relations. This is the central relation to every' ideological imaginary representation of the real world'.

Architecture may appear to you as a single building or a collective set of buildings in an environment (like the city), that functions in order to provide the society with spatial, aesthetic, functional and communal qualities. But, how it really appears is directly related to the ideology that it is mediating. It contains 'the representations of the real world' through which people see the reality of their everyday life.

Commodified architecture in the consumer society happens in a bigger scale. It happens in the scale of the city; creating networks of commodities that serve the subjects of the ideology of consumption. Buildings appear as independent architectural entities, while in the consumer society they create an urban network of mediation for the representations.

From different points of view, contemporary architecture is not directly an ideological practice but as a mediator for the ideology, it transfers it to its material subjects; and for doing so it becomes a commodity that is indirectly pursuing societies to practice the ideology of consumption in everyday life. On the other hand, one cannot emphasize on architecture as a tool for ideology. Contemporary architecture is not the architecture of ideology in practice. As any other social practice, architecture is under the influences of ideology constantly. It is affected in terms of choice of material, dominant types of functions, spatial organizations and spatial productions. Commodified architecture plays as a double agent for the ideology of consumption. Firstly, it provides the society with spaces within which they find their purpose: 'consumption'. Secondly, and simultaneously, it recruits subjects for the ideology of consumption. As it serves both ideology and its subject, its reality reduces to being an agent. But on the other hand the subjects of ideology, consumers, perceive it as architecture: the known definition with the same temporal, spatial, functional, and aesthetic qualities that are known for centuries.

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HIGH-RISE BUILDINGS IN CULTURAL CODE OF ISTANBUL: BÜYÜKDERE AVENUE EXAMPLE

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Abstract
The definition of the industrial city, which emerged with the industrial revolution, caused the urban perception to change and transform as the production units started to move to the city periphery in the 20th century. Population growth, rapid urbanization and changing social needs have made high-rise buildings inevitable for big cities. In this study, it was aimed to examine the change and transformation of the Istanbul Büyükdere region, which hosted the industrial structures of Istanbul for a period, as well as the spatial and urban context of mixed-function high-rise buildings, which are one of the most prominent examples that determine the current building stock of the region and to examine their effects on urban development. In this direction, analysis of the transformation of the city, space, and the users have been made through the examples of buildings on the Levent-Maslak axle. Büyükdere Avenue is a region where high-rise building stock is located on the central axle, and where the high-value buildings are located in the city. As a result, it has been concluded that in the Levent-Maslak axle, there has been a rise in sheltered office-housing-activity areas for the high-income group due to the earning concerns of large companies and this increased the interest to the region.
Key Words: *Urban Planning; Architecture; High Structure; High Rise Building; Tall Building*

Introduction

Developing and changing social needs, rapid urbanization, and population growth have made high buildings indispensable for cities. Solutions that also offer socialization areas within the framework of socio-cultural needs have become apparent. The coexistence of the urban area with architecture has led to the application of high-rise buildings with mixed functions, where living, activity, and working spaces are solved together. High buildings have emerged as structures that are higher than the surrounding buildings and change the city silhouettes since the 19th century. Commercial and economic developments after the industrial revolution increased the need for housing and construction in city centers. The height criteria of a high-rise building were expressed with different values on a country basis; 22 meters according to the German standard and 12 floors according to the American standard was accepted as a high structure [1]. Examples of the first high structures built without the proper materials and technology in Turkey are Emek Building in Kızılay, Ankara; and Odakule Building in Beyoğlu, Istanbul. The first trials of the curtain wall, correctly solved air conditioning systems were applied in Mersin Metropolitan, Sabancı Towers, and İş Towers [2]. Increasing needs, revitalization of social life, and the fact that residential and office areas could be solved together have included mixed-use into the concept of the high-rise buildings. The development of technology and the prominence of ecological design have made the use of housing-office-shopping mall functional mixed-use buildings gain importance. Mixed-use building designs have become important elements that define urban space by combining its own texture with the urban fabric, taking into account the residential properties of the near and far environments [3]. Rapid urbanization and increasing migration have caused unplanned settlements, and big cities have transformed into different lifestyles formed by different social classes. The increasing population has expanded towards different residential areas inside and outside the city in order to meet the housing need. Social, cultural and economic changes were experienced in big cities due to globalization in the 1980s. Increasing income brought the competition concerns, and the demand for housing led to spatial segregation. The intensive social and business-centered living conditions of the consumption culture have created a demand for mixed-use high-rise buildings with office, housing and shopping functions located in the transportation axles in big cities, especially in Istanbul. This mixed-use buildings included the concept of sustainability in the design process in order to meet the needs of future generations in environmental, social, cultural, and economic terms [4]. In this context, the mixed-use high-rise buildings in the Istanbul-Levent region are examined according to their location, structure, and functional characteristics. The process and reasons for the emergence of mixed high-rise buildings in Istanbul have been discussed and analyzed on selected examples.

The fact that the Levent-Maslak axle was chosen as an example in the study is because of the presence of important office-housing-shopping centers where Istanbul's high-income group lives densely. Mixed-use high buildings in this area were investigated with the help of photographs, drawings, personal observations, and

mutual interviews. First of all, in the analysis tables; the names, locations, plot zone, construction zone, heights, investors, and architects of high-rise buildings were included, and in the second stage, which building type corresponded structurally and functionally, it was questioned in accordance with the criteria determined in the study.

Architectural Urban Culture of Istanbul and Mixed-Use High Buildings

Istanbul is an important city in terms of culture and history, as well as being on the international transportation axles. It has also been the center of political, social, and cultural life in the Byzantine Empire, the Ottoman Empire, the Turkish Republic Period, and after. Especially the rural-urban migration that started in the 1950s rapidly changed social life in the urban area [5]. The infrastructure and zoning arrangements in the 1960s and afterward provided dynamism in the housing sector in 1967, in order to encourage high-rise buildings in Istanbul, an article was added to increase the high permit to be given to the building if less than 25% of the area is used. Despite this article, high-rise building construction was not allowed in most regions of Istanbul in those years [6].

Architectural urban culture of Istanbul

The main factor that plays a role in understanding urban culture is environmental perception. Lynch explained the urban image based on five factors as "borders, regions, roads, focal points and landmarks" [7]. According to a study on urban perception in 2002 [8], Urban Images of Istanbul, focal point: Taksim Square, landmark: Blue Mosque, Ayasoyfa, Galata Tower and Bosphorus Bridges, border element: Istanbul Strait, connecting element: E5 highway and regionally Beyoğlu and Kadıköy districts. As a result of the urban perception study, it has been observed that roads and focal points stand out in perception of the city compared to other factors.

The architectural urban culture of Istanbul has begun to change since the 1980s. The construction of second bridges and highways has enabled the development of tall buildings around the bridge [9], and at this stage, gentrification has begun. The gentrification process started in the two districts on the edge of Bosphorus: Kuzguncuk and Ortaköy, and spread to Beyoğlu in the 1990s and to historical peninsula in the 2000s. Istanbul has hosted people from many different cultures throughout its history, and this diversity has led to the unique development of each region [10]. The change in Istanbul since 1980 has moved away from the city centers and has created new spatial solutions that included many functions such as life, business, and entertainment [11]. These new residential and business centers have created new focal points outside the city and enabled the rapid development of high-rise buildings.

Mixed-use development of high building approach in Istanbul

As a result of the increasing international relations after the 1980s, the demand for land to build new office buildings has increased and residential areas have continued to develop along the main roads [9]. In the 1980s, the concept of globalization came to the fore with the introduction of technology and new materials into the country. While multi-level buildings have increased with globalization, office buildings have gathered in city centers. In the first periods, while the density of business centers on the Zincirlikuyu-Ayazağa axle, the central business areas shifted to Büyükdere Avenue due to the need for large areas, better infrastructure, and transportation facilities [12]. Especially in the urbanization-globalization process, urban space has become an important indicator of urban change, and multi-level housing has also enabled the creation of common living spaces together. The concentration of population in urban areas increased office and residential demand, the reduction of the construction area, increasing land prices and led orientation of economic production systems, multi-level offices, and residential buildings in the world and also in Turkey, these solutions were adopted [5]. With the inclusion of the residence in multi-level business centers, the number of mixed-use buildings has started to increase. The change of urban space has affected social and cultural life and revealed isolated residential areas. These new forms of the settlement have also manifested themselves as important reflections of spatial change in line with alienation and luxurious lifestyle. Since the 2000s, design, structure, material, air conditioning, and smart building technologies are highly developed, and mixed-function structures of different forms and heights have been made [13].

The vertical design of the functions in mixed-use building forms and the location of the building around the public space such as a park, plaza, atrium, gallery, or shopping center increase the value of the area and its surroundings in the long term [14]. Mixed-function structures, allow the user to benefit from activities such as residence, office, hotel, health, sports, as well as activities. High-rise buildings that contain office-residence-shopping functions, located in the city center were built especially on central axles. Therefore, the central axles that appear in the direction of spatial structuring in Istanbul are as follows: Zincirlikuyu-Maslak, Altunizade-

Bağlarbaşı, Kozyatağı-Ataşehir, Güneşli-İkitelli, Beylikdüzü-Haramidere, and Kavacık Axles. The Levent-Maslak axle considered within the scope of the study is a region where finance-based commercial housing is observed and high-rise buildings with mixed functions are concentrated [15].

Levent-Maslak Axle and Mixed-Use High Structures

In Istanbul, the axle that continues from Barbaros Boulevard to Büyükdere Avenue and then to Maslak region is defined as the central business area [16]. Besides, the Levent-Maslak axle is important because it is on the oldest transportation axle. This axle became popular in the 19th century, especially when middle-upper class aristocrats started building houses on the Bosphorus. This popularity raised the number of business centers around in line with the increasing demand for housing in the 1960-1970s, especially low-income Gültepe, Seyrantepe, and Sanayi neighborhoods were developed. The development of business centers on the transport axle has also paved the way for shantytowns in the immediate vicinity. The construction of the Bosphorus Bridges and freeways has also accelerated the urban development of the Maslak axle, making this environment a financial and business center [17]. There are many mixed-use buildings on the Levent-Maslak axle: Metrocity, Kanyon, and Sapphire are among these buildings. These structures contain functions such as shopping malls, residences, and activities altogether. On Büyükdere Avenue, from Zincirlikuyu to Maslak, there is about 50% of the city's total office area. Formerly the factories of medicine and textiles were in this region, and it has become the central business district of Istanbul in recent years [18]. The abundance of industrial structures turned the region into a business center, and the old industrial buildings regained their function as an office or residential.

Mixed-use high-rise buildings on the Levent-Maslak axle are structures that include functions such as residence-office-shopping-activity. This axle, where business centers are densely located, is close to main transportation networks and has structures where the high-income groups live and where social-cultural life coexists. Apart from physical, social and cultural factors, the criteria such as form, function, economy, location and environment may be effective among the reasons for the construction of mixed-use high structures.

Examples of mixed-use high-rise buildings selected on the Levent-Maslak axle

Levent-Maslak axle is one of Istanbul's important financial and business centers on transportation networks. Especially because of the prevalence of the financial sector in this environment, mixed-use buildings such as housing, shopping, and office are limited in number and most of these structures are business centers. In this context, three mixed-use high structures were examined in the Levent-Maslak region due to their location and construction features. These structures are Metrocity, Kanyon, and Istanbul Sapphire (Figure 1).

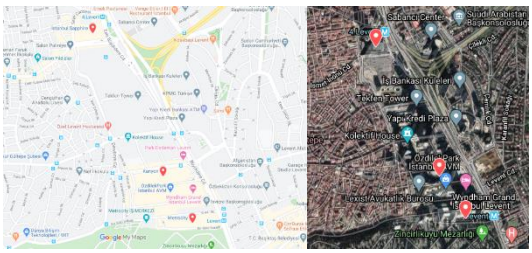

Fig. 1. Metrocity-Kanyon-Istanbul Sapphire transportation axle map and satellite images, Google Maps, 2020.

Metrocity

Metrocity is a mixed complex with a rectangular based plan of 138 meters, consisting of a 31-level office building and two 35-level residence buildings, on Büyükdere Avenue-Levent, designed by Doğan Tekeli and Sami Sisa in 1996 (Table 1).

Table 1. Metrocity, Istanbul.

Metrocity	
Function:	Housing, office, shopping mall
Location:	Büyükdere Avenue - Levent
Parcel Area:	16.000 m2
Total Construction Area:	210.000m2
Height:	143m tip
Investor:	Yüksel Yapı
Architect:	Doğan Tekeli, Sami Sisa

The building has three main functions: residence, shopping center and office. While there was a factory building on the parcel in the 1950s, it became the first mixed-use structure located on Büyükdere Avenue [19]. Metrocity is located in a district where transportation and urban life are intense and lively. Apart from the 51,000 square meters shopping center area, it also has residential and office areas. In addition to its direct connection with the metro, it is on the transportation networks. It has many functions such as shopping areas, cinema, restaurant, market, hairdresser, ATMs. It is also seen as an element of prestige in this region due to its location and being the center of luxury consumption. Metrocity also increased the land and rent values of the other buildings in its vicinity. While it was different from the surrounding buildings in the early periods, today there are multi-level business centers and mixed structures around it (Figures 2, 3).

Fig. 2. Metrocity, Istanbul.

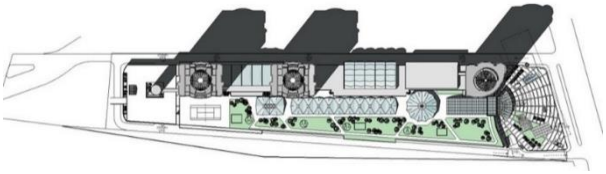

Fig. 3. Metrocity Layout Plan.

In the Metrocity project, while residences appeal to the upper-income group, the shopping center to the middle-upper income group. Although the building has users of different income levels, it does not have a public space where these social groups come together. Besides, the only connection with its surroundings is the square at the entrance [20]. Metrocity is the first building built on the Zincirlikuyu-Levent axle to be connected to the metro. While it was the focal point of Büyükdere Avenue in terms of shopping in the period it was built, with the construction of Kanyon in 2006, the focus was divided, but Metrocity was able to survive due to the difference in the user audience they address. This situation started to change after the Özdilek Park project, which was opened in 2014, again aimed at medium-level users.

Kanyon

Kanyon was built as a mixed-use high building in the Levent region in the 1940s in the rural area and on the parcel used as a pharmaceutical factory after the 1950s [19] (Table 2).

Table 2. Kanyon, Istanbul.

Kanyon	
Function:	Housing, office, shopping mall
Location:	Büyükdere Avenue - Levent
Parcel Area:	29.427 m2
Total Construction Area:	250.000m2
Height:	117m2
Investor:	İş GYO – Eczacıbaşı
Architect:	Tabanlıoğlu, Jerde

Kanyon is a semi-circular base structure that surrounds a circle in different levels, designed by Tabanlıoğlu and Jerde Partnership team in 2006. The building has three main functions: residence, shopping center and

office. Considering the other mixed-use high buildings, the Kanyon differs from them with its well-designed architectural form feature. Apart from the 40,000 square meters shopping center, there are restaurants, cinemas, sports clubs, car parks, shops, markets, ATMs, residential and office areas designed for different lifestyles at different levels. In addition to its direct connection with the metro, it is on the transportation networks. Kanyon is also seen as an element of prestige in this region due to its location, unique design, and being the center of luxury consumption (Figure 4 a, b).

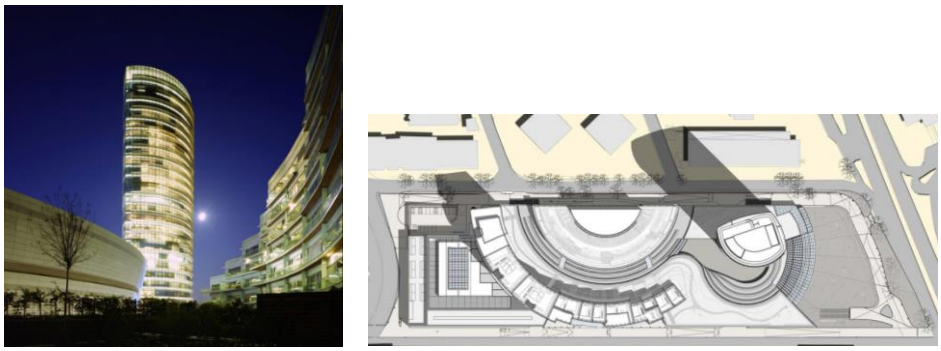

Fig. 4. (a) Kanyon, Istanbul (b) Kanyon Layout Plan.

Although the Kanyon project appeals to the upper-income group as a whole, it has a second entrance opening to the Gültepe (middle-income level) district behind it. Although, this entry did not affect the user profile, and the building is separated from the Gültepe district. In this context, public spaces designed to be open to using until late hours host events for only the upper-income level [20]. The building was defined as a closed box when it was built, and the user profile was diversified in line with the developing and changing demands and newly opened brands. Business centers developing in the direction of the entrance gate connected to Gültepe are one of the factors that made this change. In addition, it has managed to attract users from different levels with public seating elements positioned in the open spaces of the building.

Istanbul Sapphire

Istanbul Sapphire, designed by Tabanlıoğlu Architects on Levent Büyükdere Avenue with a rectangular base form, as Turkey's first ecological tall building in 2011 and it was built as the tallest building with 56 floors. It is located on the parcel of the factory building that built after industrialization in the 1950s [19] (Table 3).

Table 3. Istanbul Sapphire.

Istanbul Sapphire	
Function:	Housing, office, shopping mall
Location:	Büyükdere Avenue – 4. Levent
Parcel Area:	11.339 m2
Total Construction Area:	165.000m2
Height:	235m, 261m tip
Investor:	Kiler Group
Architect:	Tabanlıoğlu Architects

Sapphire that built on the Levent-Maslak axle, has a direct connection with the subway. With its 157,800 square meters construction area, it has 35,000 square meters shopping center, housing options as 1+1 to 4 +1 with floor gardens, lofts, and short-term use residences. Especially on the residence floors, there are green and natural ventilation areas designed to increase neighborhood culture. Another feature that distinguishes Istanbul Sapphire from other high-mixed buildings is that it was designed as an environmentally friendly building in accordance with bio-climatic design criteria. It is a building where office, residence and observation terrace are used together as well as the shopping center. It has many functions such as shops, cinemas, restaurants, markets. It is seen as an element of prestige in this region due to its location and being the center of luxury consumption (Figure 5 a, b).

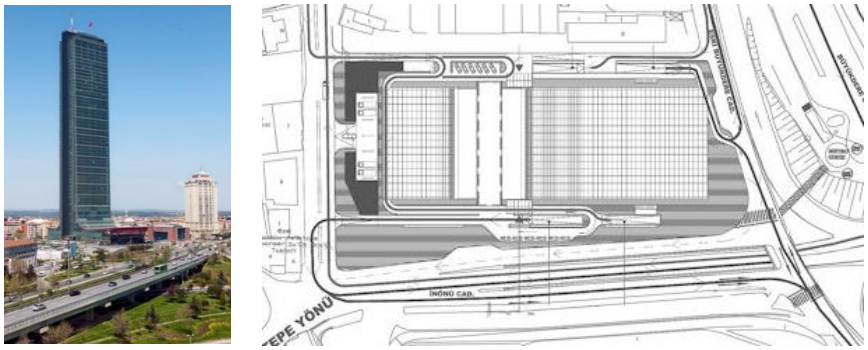

Fig. 5. (a) Istanbul Sapphire (b) Istanbul Sapphire Layout Plan.

In the Istanbul Sapphire project, the social areas on the mezzanine floors are designed for the users living in the building, they are not public spaces. Therefore, the project lacks of social areas except for the square at the entrance of the building, which functions as a connection point [20]. As the building is the tallest building in Istanbul, it attracts different types of visitors. Local or foreign visitors who come to Istanbul for the first time could use the building to go to the observation deck. In addition to this, the fact that the building is at the transfer point for public transport attracts temporary visitors as well as routine users.

Results and Discussion

Mixed-use high buildings in Istanbul are generally located in the Levent-Maslak axle and its surroundings. The presence of mainly financial centers in this region has increased the need for shopping and residential areas due to office buildings and luxury consumption centers. Especially, Metrocity's being the first mixed structure built in this region, having the functions of housing, office, and shopping center at the center of the transportation networks has made this environment more important and caused an increase in the land and income in the construction sector. In addition, high-rise buildings (office) and mixed-use high-rise buildings (offices, residences, shopping), which are closed to the outside and designed with different architectural features and functions, have increased in this environment.

The properties of the three mixed-use high-rise buildings selected for the study (Table 4):

Table 4. Properties of Metrocity, Kanyon and Istanbul Sapphire Buildings.

Building Name	Year	Location	Architecture Firm	Design Concept	Floors	Residental			Office	Shopping Mall	Square Effect		Central Transport Axle		
						1+1 2+1 3+1 4+1	Commercial Residence	Loft			High	Low	Metro	Public Transport	Private Car Park
Metrocity	1996	Levent	Norm Architecture	Mixed-use	31, 35	+	+	+	+	+	+		+	+	+
Kanyon	2006	Levent	Tabanlıoğlu & Jerde	Mixed-use	25	+	+	+	+	+	+		+	+	+
Istanbul Sapphire	2011	Levent	Tabanlıoğlu Architecture	Mixed-use	56	+	+	+	+	+		+	+	+	+

Accordingly, the determinations regarding the three mixed structures discussed in the study are as follows:

Metrocity appeals to all age groups as well as containing the shopping-office-residence functions, but the residential-office buildings serve the upper-income group. The shopping center, which resembles the neighborhood texture, partially meets the need for open and closed public spaces with its wide square. It also causes problems in terms of traffic due to its location on the transportation axles.

In addition to containing shopping-office-housing functions, Kanyon appeals to all age groups, but residential-office buildings serve the upper-income group. In addition to being a remarkable feature in the region with its unique design, there is a residential-office area appealing to the luxury income group. In the design

phase, the public spaces were planned to take into account the street culture. The fact that it is on the transportation axles creates problems in terms of traffic on the transportation axles.

In addition to containing the shopping-office-residence functions, Istanbul Sapphire appeals to all age groups but serves the upper middle-upper income group. It does not have a large square, it provides the need for public spaces for partial users with open areas created on mezzanine floors. Its difference from other mixed-use structures is that it was built as the tallest building in Istanbul. Also, being on transportation axles creates problems in terms of traffic.

Conclusion

The housing sector, which developed after 1980, gave its place to the housing typologies that spread to the city periphery, but today it has started to increase the demand for city centers again due to the convenience of transportation and the coexistence of shopping-housing-office areas. The problems experienced in transportation, the distribution of residences and offices, which spread the time consumption in and around the city, started the return to the central areas. The purpose of mixed-use high buildings is the idea of connecting the person to a single space. While it manifests itself as acquiring a social environment on the basis of the combination of shopping-office-residence and entertainment venues, it has become a clear indicator of the increasing economic polarization due to its being closed-out-highly secure. Lifestyles emerging due to social status also affect the development of urban space. Criteria such as the transformation of urban space, the infrastructure created by the increasing construction in parallel with the population increase, and the solution of transportation problems also have an impact on visual concerns and needs.

In this study, it is aimed to examine the change and transformation of the Istanbul-Levent region through three mixed-use high-rise buildings on the Büyükdere axle. In this direction, three different high-rise buildings on the same axle were evaluated and their similarities and differences were revealed. It is observed that the Levent-Maslak region has become a business-shopping-living center over time and the interest in the region has increased exponentially in line with the advantages provided by its location. In this process, as well as the change and diversification of user profiles, it is also increasing in numbers. This situation significantly affects the urban perception of the city of IstanbulAs Levent and similar large-scale new living centers develop, the focal points in the city change and increase. This changes the perception of the city.

As a result, the traces of urban change in the historical process are also reflected in housing typologies. The shift of commercial life to the Levent-Maslak axle, especially in the 1950s and 1960s, enabled the buildings that serve many different functions to turn into business centers. The selected examples demonstrate a difference in terms of shopping and public spaces. The use of mixed-use high buildings also expands its user group with the activity and living spaces it contains. Apart from being on the transportation axle, they have included streets, avenues, and squares in order to keep the neighborhood culture alive. With the use of mixed structures, different public areas have also been created, apart from the concept of a large shopping center. While office and residential areas appeal to the upper-income group, shopping areas are open to all segments of the society. Especially on the Levent-Maslak axle, it has been observed that there has been a raise in sheltered office-housing-activity areas for the high-income group due to the income concerns of large companies and the increasing interest to the region.

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DESIGNING WITH CULTURAL CODES: A CRITICAL REGIONALIST APPROACH TO KOREAN WAR MEMORIAL AREA AND VISITOR CENTER

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Abstract

Culture, which has a historical continuity, expresses an idealized whole of rules. Societies feed on the experiences, traditions and customs that preceded them. Culture teachings are created, kept alive and shared by the "dominant ideas" of people living in the community. These teachings are solutions that have been tried for generations many times. When the level of satisfaction provided by traditional solutions to people decreases with changing environment and living conditions over time, culture starts to produce suitable solutions by adapting to new conditions. All these features of the culture represent a holistic system with continuity. The traces of culture are reflected in the most open forms of people's lives. In this sense, it can be said that every place that joins people's lives is an expression of culture. In architecture, cultural elements are seen as components that direct design in both material, form and spatial organizations. Architectural design process is fed not only by tradition, tradition and life, but also from climate, topography and region-specific qualities. The term "regionalism" can be defined as an architectural design approach, which, in parallel with these approaches, aims to develop unique and local solutions for a specific region, culture and climate, while also representing the identity of a particular culture in original ways through architecture. Unlike the international style, in other words, modernist doctrines, "regionalism" takes a stance against universal unification across the world. Critical regionalist approaches, dating back to ancient times, still maintain their effectiveness and importance in architectural discourses.

Within the scope of research, an architectural project, which is prepared for the "Korean War Memorial Area and Visitor Center National Architectural Design Competition" held by Kırklareli - Luleburgaz Municipality (Turkey) were examined. Luleburgaz Municipality opened a national competition in order to display medals, photos and newspapers belonging to the 241st Infantry Regiment in the city of Luleburgaz. The architectural project designed with the "critical regionalist" approach for the competition. The project has been examined and evaluated comparatively in the context of architectural forms and construction methodologies between Turkish and Korean cultures.

Key Words: *Architectural Design; Cultural Codes; Critical Regionalism; Architectural Competition; Thrace Region.*

1. Introduction

For more than a century, the concept of "culture", in which philosophers, anthropologists and ethnologists have developed various definitions, has passed into the western languages as *"Cultura"* after the Latin word *"Colore"* [1]. The first equivalent in the western languages was to cultivate the land, care of things like crops and animals. From the 16th century, the use of farming, such as tillage, has been replaced by a separate field: *"mental processing"*. In fact, Cicero was the first philosopher who used the culture with the meanings of *"processing the mind and raising the mind"* [2]. With the inclusion of the concept of culture in the field of anthropology as a new discipline in the 19th century, studies on culture gained speed. Edward Tylor, who works in the field of anthropology at Oxford University, makes the following definition for culture in his book *"Primitive Culture"* [3]:

> *"Culture or civilization, in its broad ethnographic sense, is a complex whole that includes the knowledge, belief, art, morality, law, customs and other abilities and habits that people acquire as members of society."*

The purpose of the culture is to create a *"life design"* through various rules and principles, to identify societies and to explore values that will distinguish them [4]. Societies also fed on the lifestyle, traditions and customs that existed in the cultures before them.

Culture teachings are versatile solutions, whose success has been confirmed by generations. Although the culture in these teachings is not a material and observable phenomenon, it is possible to see the projections of the culture in human life [5]. In this sense, it can be said that they are a reflection of culture for all spatial productions. According to Heidegger, the architectural space, which is a place of interaction and experience, reflects the past passing through the simultaneous existence of past and preset beyond the objective approaches [6] . In his *"Poetics of Space"*, Bachelard uses a similar idea for space: *"Space contains compressed time"* [7]. In spatial productions, cultural elements emerge as the components that direct the design in both material, ways of making and spatial organizations. Architectural design process is nourished by the tradition, life that make up the culture, as well as from the climate, topographyand all other specific characteristics of the region. The *"Regionalism"* approach aims to produce unique and local solutions for a specific region, climate, topography conditions while preserving cultural values. It also aims to develop a design approach that represents the identity of a particular culture in original ways through architecture. With this sence, it can be mentiond that it has a design approach that has close ties with culture and cultural productions.

The history of regional architecture dates back to antiquity. An example of regionalist approaches in antiquity is discussed in Vitrivius' work *"De Architectura"*. Regionalist architecture for Vitrivius is shaped by internal and external borders. Physical environment and nature shape the architecture [8]. Unlike the international style and modernist teachings that spread in the early 20th century, regionalist approaches that continue their effectiveness in architectural discourses from antiquity to the present have a stance against architectural production that has become uniform throughout the world. According to Frampton, regionalism is a conscious resistance to global modernization that puts pressure on traditions and localism [9]. In the text *"Universal Civilization and National Cultures"* written by Paul Ricoeur in 1961, Ricoeur states that he sees universalism as the development of humanity but on the other hand leads to the destruction of civilizations and cultures [9]. According to this contradiction, culture and universality are two facts that cannot coexist. Frampton argues that cultural history and universal civilization, the two ends of this contradiction, can coexist. He opposes that architecture is seen as a consumer product, commodified into fashion and destroying its own identity. This approach, proposed by Frampton, finds it different from traditional *"Regionalism"* as *"Critical Regionalism"*. The principles of Frampton's *"Critical Regionalism"* approach can be explaned as follows [9] :

- The building is not a free-standing object in the built environment, it is designed for context.
- The building is a tectonic reality.
- Light is an important tool that reveals the tectonic value of the structure. All openings in the building are determined in a way that can analyze the needs of the building to natural methods according to climate and topography data.
- Tactile relationship is as important as visual relationship. The environment is not only perceived by visual sense, it is experienced by being grasped with different senses. Lightning, temperature, humidity, air movements, smells, sounds and space experiences are made more effective by addressing the senses.
- He is against the emotional repetition of local architectural elements. If necessary, contemporary interpretations of local elements can be used and foreign-sourced contemporary elements can be used. Its main purpose is to create a design approach to develop a place-oriented culture without being closed to any innovation.

"Critical Regionalism" is a design approach that takes an active place in today's architectural discourses. Within the scope of the study, the architectural project aimed to prepare with the "Critical Regionalist" approach for the "Korean War MemorialArea and Visitor Center National Architectural Design Competition" opened by the Municipality of Luleburgaz in 2018 was discussed.

2. A Critical Regionalist Approach to "The Korean War Memorial Area and Visitor Center"

Kırklareli City, located on the border with Bulgaria in northwest of Turkey, the transition from Anatolia to the Balkans has been a strategic location for centuries. The city has important traces of Helen, Roman, Byzantine and Turkish – Islamic civilizations from the Neolithic period (Hunter – Gatherer) to the present. The city, which was named *"Saranta Ecclesies"* which means *"Forty Churches"* in the Byzantine period, was named *"Kırk Kilise"* in Turkish in the 14th century during the Ottoman period [10]. After 1923, the establishment of the Republic of Turkey, the city is named *"Kırklareli"*. The city, which has been famous for its vast vineyards until recently, Bulgarians calls the city *"Lozengrad"* which means *"grape – vineyard city"*. Since it is a place where people of various beliefs and ethnic backgrounds live for many years, it is seen that it hosts different

architectural works. For many years, Greek, Bulgarian and Jewish families lived a common life with the Turks. This multiculturalism enriched the city's architecture as a mosaic. There is a similar ethnic and religious diversity for Luleburgaz, which is one of the districts of Kırklareli. Passing from the Byzantines to the Turks in the 14th century with the conquest of the Ottoman Empire, Luleburgaz remained in the Russian occupation in the 19th century. In the First World War, Luleburgaz, which was occupied by Greeks and French, got rid of the occupation in 1922 and came under the control of the Turkish State again [11].

Although the Korean War took place between North Korea and South Korea between 1950 and 1953, it was the first war of the Cold War and its effects reached international dimensions. At war, North Korea has been allied with Russia and China; South Korea has been allied with USA, Japan, England, Turkey and other Western countries. Following the inclusion of Turkey in the war by South Korea, the first Turkish brigade of 5090 people under the command of Brigadier General Tahsin Yazıcı was sent to Korea in 1950. Luleburgaz hosts the 241th Infantry Regiment, which is the first regiment sent to Korea from Turkey. The Infantry Regiment fought in Korea for 3 years and returned to the country with heavy losses. A "Korean Museum" was built by the 65th Mechanized Infantry Brigade Command in Luleburgaz in memory of the 241th Infantry Regiment. The museum displays war photos, maps, personal items, memory items (memorabilia), medals, movies, logbooks, newspapers, flags. However, the fact that the museum is located in the campus of the 65th Mechanized Infantry Brigade in Luleburgaz causes the visits to not be made easily. For this reason, Luleburgaz Municipality has opened an architectural Project competition to develop modern and unique projects that have a strong relationship with the city center, which will contribute to the identity and quality of life of the city and establish a human-nature relationship supported by environmental designs [12].

The area of the competition is an area of 11.143 m2 of surface area located at the intersection of Pınarhisar Road and Hamitabat Road at the north entrance of Luleburgaz and limited to the bed of Luleburgaz Stream in the north. The approaches expected from the designers in the competition specifications are as follows:

- Consideration of Hamitabat road, Pınarhisar road and Luleburgaz Stream bed, which determine the boundaries of the area, and existing infrastructure,
- Adding value to Luleburgaz by interpreting the relations with the city center,
- To be able to connect with the developing social and cultural life in the city,
- Handling the story of the war unusually; transferring the knowledge of war-based technology and culture, glorifying the hope that this accumulation will evolve in a peaceful and humanist direction,
- Besides the heroism and devotion of the soldiers, transferring the hope of lasting peace,
- Providing the continuity of the natural texture and character of the area and producing ecological sustainable solutions,
- Evaluate the relations in rural and urban intersections on the spatial plane,
- Expected to be original, creative and unique.

Projects for the competition announced on November 8, 2018 were delivered on January 18, 2019. The results of the competition were announced on the website of Luleburgaz Municipality on February 4, 2019 and the projects were exhibited until February 10, 2019.

2.1. Architectural Design Methodology

2.1.1. Location and environmental information of the design area

Design area is located at the intersection of Pınarhisar road and Hamitabat road at the northern entrance of Luleburgaz which is the district of Kırklareli (Fig. 1. (a) - (b). The Luleburgaz Stream bed is the northern border of the area and the eastern and western borders are the roads mentioned. The existing green texture of the area shows density at the intersection of Pınarhisar road and Hamitabat roads, and this texture density decreases in the North-east direction. The first degre road connecting the region to the city center can be defined as Pınarhisar road (Old Istanbul-Kırklareli road) which defines the eastern border of the area. Continuing Pınarhisar road, Turgutbey Street provides links between city center and project area.

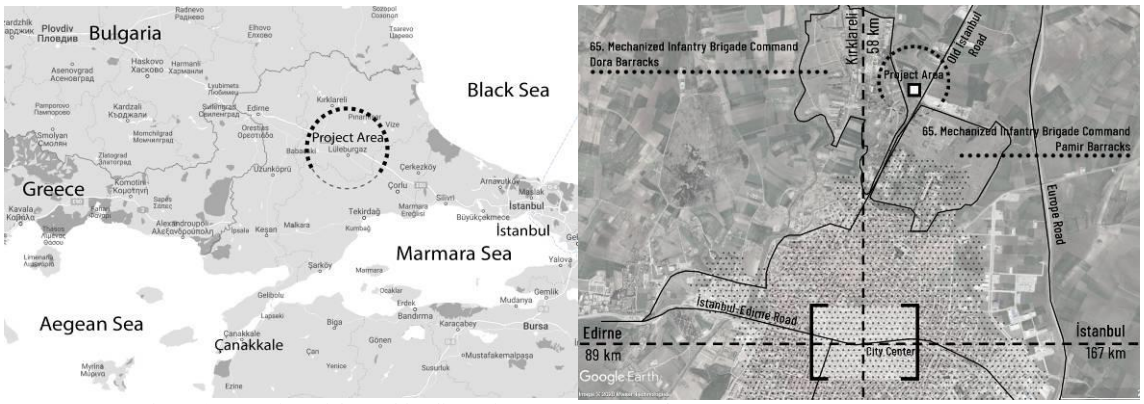

Fig. 1. (a) Location of the Kırklareli Province; (b) Location of the project area in the Luleburgaz City

2.1.2. Land use decisions

When the potentials of the land are evaluated, it is planned to develop an approach that will maximize the natural texture of the area. Accordingly, the existing green texture has been preserved and structure is positioned at the point where natural vegetation is the least. It is aimed to exist in the land by touching the natural ground minimum. The structure extending linearly on the east – west axis has been handled with a simple approach in its imaginative formation and its planimetry. With this approach, the exhibition units, which have relatively more closeness, are located in the north direction of the building, and the living units are located in the south direction to be integrated with the existing green fabric. Open spaces are designed in such a way that the feelings of "simplicity" and "calmness" that can be expressed as the general determinant of the design approach are effective. For this purpose, the open parking lot and bus stops are located at the point where the natural vegetation in the northeast of the area is the least. The memorial area and the entrance square, which can be defined as the starting point of the linear design, are associated with walking paths and bicycle paths, allowing users to visit the city without interruption (Fig. 2.).

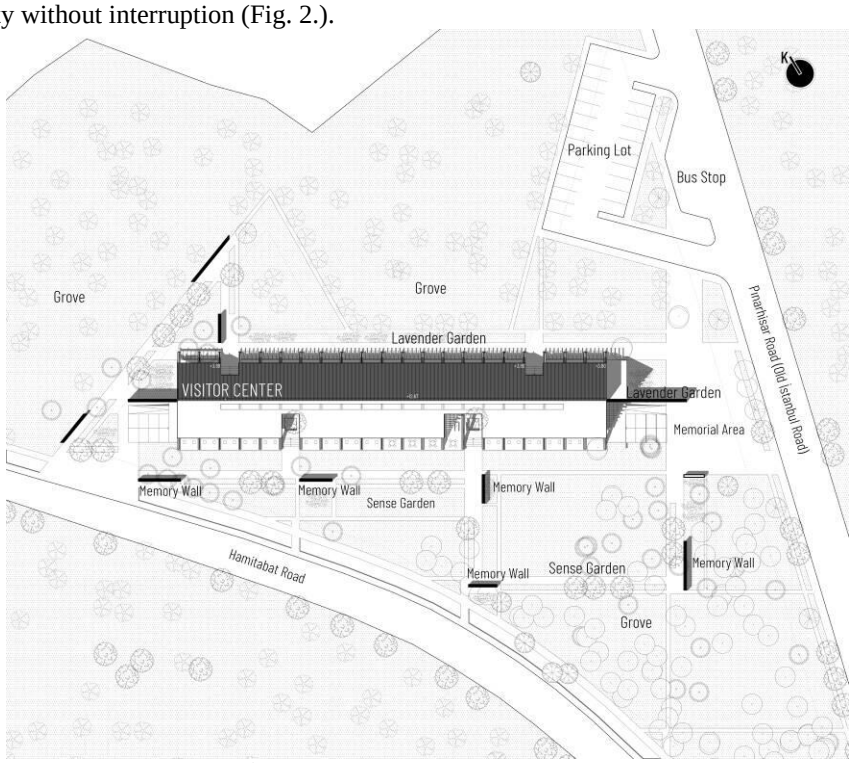

Fig. 2. Site Plan of the Korean War Memorial Area and Visitor Center project

2.1.3. Design concept

The Korean War has been an important breaking point in history for both the Korean and the Turkish nations. The idea of designing "one center" in which both nations and both locations can be represented has come up. With this approach, some questions were put forward that will shape the architectural framework while creating the design:

- How can a common architectural language be created with the "two locations, one center" approach? What is the place of this language to be created in the rural-urban intersection?
- How to establish close relations with the context while being original, creative and unique?
- How and in what ways can a building that can be experienced with all senses convey these experiences to the visitor?
- How can a sustainable approach, which is compatible with the natural texture where the building itself lives and ages, and which ensures the continuity of green, be developed?

The suggestion developed in the framework of all these questions is thought to be established through the senses, the relationship it will establish with both cultures, nature and context. As Pallasma expresses in his *"The Eyes of the Skin"* [13], the sense of vision is privileged compared to other senses and vision is accepted as our most important perception. Space has many sensory experiences that interact and fuse with each other, rather than just vision or the classic five senses. The basis of the space experience is related to the comprehensibility of the tectonic language and feeling of the structure by all senses. At this point, the shaping of the Korean War Memorial Area and the Visitor Center with the perceptual continuity of different senses was an important input that constituted the general design of the project. A visitor center that simultaneously calls all senses and offers sensory rich experiences, describes a design in which different emotions touch the people from the memorial area to the end of visitor center.

- *Scent*

Eight substance molecules are required to trigger scent at a nerve end, we can distinguish more than ten thousand scents. The most permanent memory of any space is the scent of the space. Pallasma [13] explains this issue as follows:

> *"A special scent allows us to re-enter the space that our retinal memory has completely forgotten. The nostrils awaken a forgotten image and enter into a lively dream."*

Lavender garden is positioned in the north east (prevailing wind direction) of the memorial area as it can be grown in the region peculiarly by the landscape analysis on the northern border of the wall. Prevailing wind Poyraz (north east) welcomes the visitors with the scent of lavender by passing through the gaps formed on the wall. This sensory interaction in the entrance area leaves its place in the building to the smell of wood. Wood, which is the dominant material in the building where traces of the life and past touch the visitors, provides a sensory experience.

- *Sound*

Hearing is another important factor that reinforces spatial experience. Pallasma [13] says the following for hearing:

> *"Vision isolates, sound combines; vision is directional, sound is in all directions. The sense of vision implies externality, sound creates an experience of innerness."*

Intense silence directs people's attention to existence itself. In the visitor center, which consists of two main parts planimetrically, the part where temporary and permanent exhibitions take place is separated from the use of daily living spaces. In this field, auditory interactions are limited; in silence, it is aimed to convey the feeling of loneliness and uncertainty of the soldiers who go to war alone with their own existence.

- *Retinal Vision*

The first sensory communication we establish with an architectural space is often a vision relationship. According to David Harvey [14] *"instant effect"* searches in contemporary productions reduce the depth of spatial experiences. The insipidity of standard constructions and weakened materiality make the impact of experiences instant and temporary. Natural materials tell the reality of substance, the story of its history and origins. All-natural materials exist in continuity of history and add their stories that have been enriched in the erosion of time to the buildings in which they are used. With this approach, the architectural design was developed by using the materials of the place and the style of construction specific to the region in the visitor

center. It is aimed to create a calm and simple image, which chooses to be present in humility and calm in the natural texture of the area.

- *Touch*

Touch is a sense that integrates the world experience with the experience of man. Tactile perception occurs with pressure, force, roughness or thermal stimuli. Knowledge and experience about what are touched by these stimuli occurs. The primary bodily limbs are hands for the sense of touch. Slager [15] stated the following in this regard;

> *"Hands is a delicate organism, a delta where life from the most diverse sources flows together, giving birth to a huge stream of action. Hands have a history; even their own culture and their own special beauty."*

Visitor center; it was designed by using natural, living and aging materials together. The fact that the users touch the wood, feel the stone, has an important place in the created design. It is aimed to increase the sense of life that the aging building with the user makes its visitors feel every day.

- *Taste*

Although the sense of taste seems to remain in the background in a spatial experience, it can be described as another sensation that contributes to the spatial experience through sensory transmissions. Pallasma [13] says:

> *"There is a delicate transfer between taste and tactile experiences. Vision is also transferred to taste; some colors and details also evoke oral sensations. A delicately colored brilliant stone surface is unconsciously saturated by the tongue. Our sensory experiences about the world are born in the inner sensation of the mouth and returns to its oral origins. The most archaic origin of the architectural space is the oral cavity"*

In the visitor center design, it is aimed to take a place in the memory of the visitor and immortalize the feelings at the time of visit (Fig. 3.).

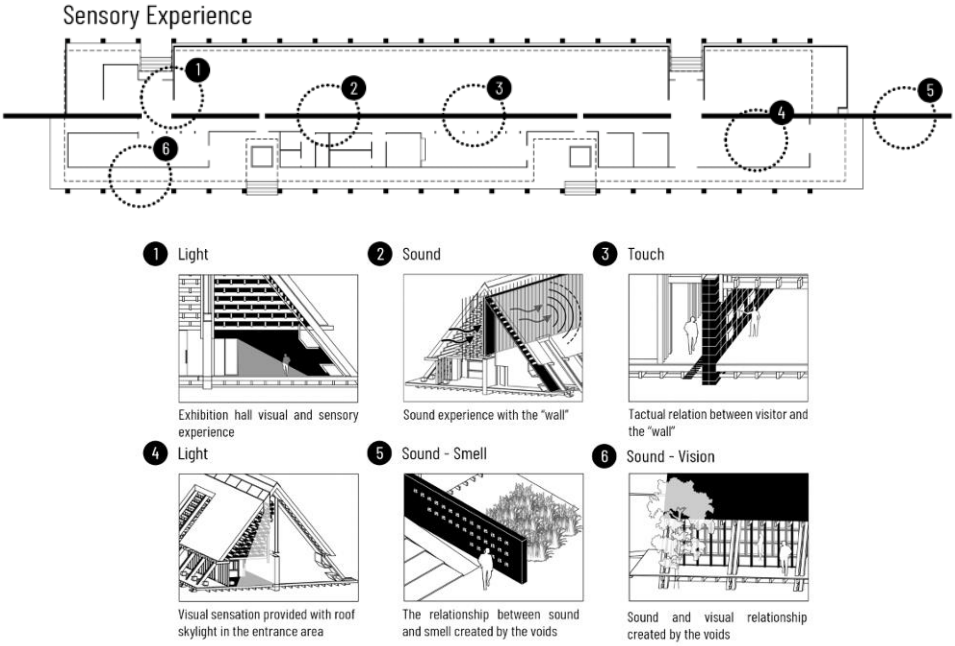

Fig. 3. Sensory experience visual graphic

2.1.3. Spatial layout and organization

In accordance with the land use decisions, the units specified in the requirement program are located linearly on the east – west axis of the land (Fig. 4.). In the north direction, there are temporary and permanent exhibitions with minimum daylight demand. In the south direction, there are living units that are included in daily life (Fig. 5.). A simple "Wall" that organizes the basic linear spatial setup of the project is an image that metaphorically represents two aspects of the war, establishing relations with all units starting from the memorial area (Fig. 6.).

The "Wall", which separates from the users with a gap created in the south direction at the entrance of the building, becomes the main architectural element that guides the visitors when it comes to the exhibition hall in the north direction.

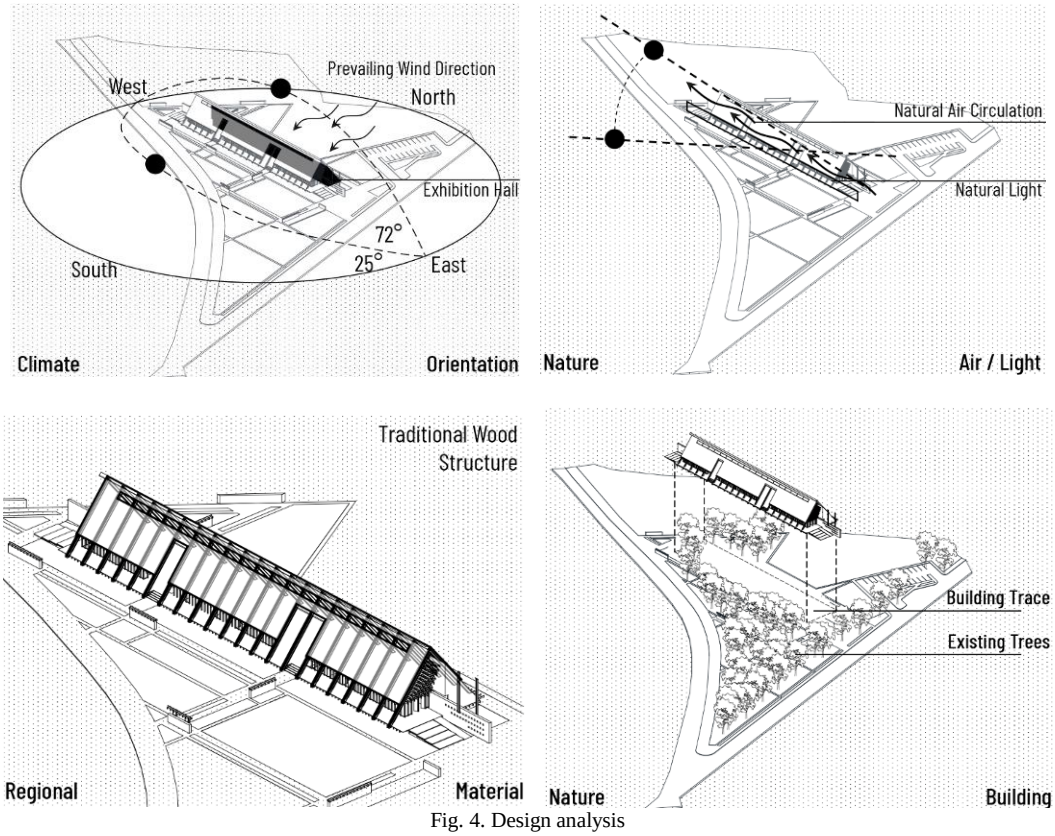

Fig. 4. Design analysis

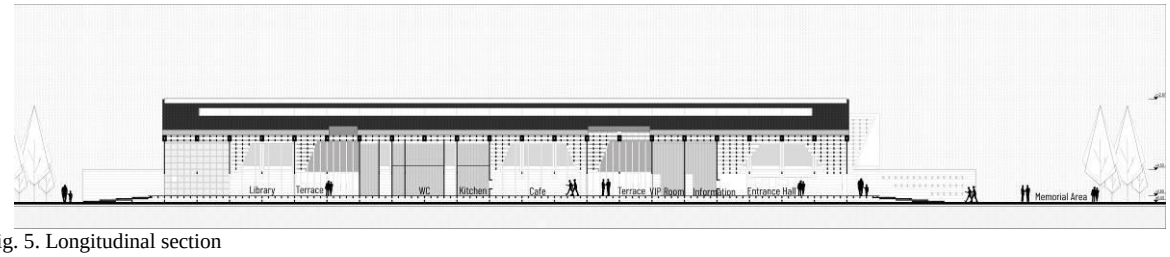

Fig. 5. Longitudinal section

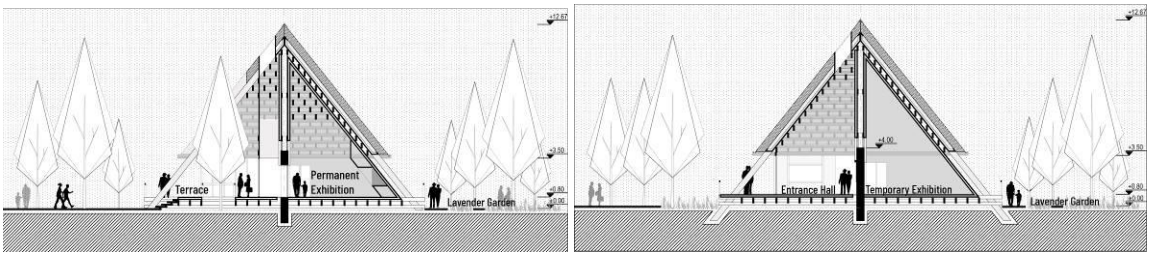

Fig. 6. Cross sections

2.1.4. Landscape design

It is seen that the natural and historical landscape character is effective and dominant in the land. Therefore, interference with the landscape was avoided as much as possible. While making the landscape, attention was paid to the selection of plants that would activate the senses of the visitors coming to the area in accordance with the architectural design. The landscape design that supports the calmness of the area comes to the fore. It is aimed to offer a different experience as there are plants that stand out with the smell of the prevailing wind. The existing trees in the land were not touched, pedestrian paths and general arrangements were shaped considering the existing trees. Some of the species that make up the natural vegetation of the land; Daphne (Laurus Nobilis),

Meilland Rose (Rosa Meilland), Diffuser Juniper (Juniperus Horizontalis), Cypress (Cypresus Sempervirens 'Pyramidalis'), Lavender (Lavandula Angustifolia), Red Barberry (Berberis Thunbergi) and Black Pine (Pinus Nigra). In the built landscape design, durable and local materials are selected in accordance with the nature and the spirit of the field (Fig. 7). Andesite and basalt stones are used as natural resources in the region.

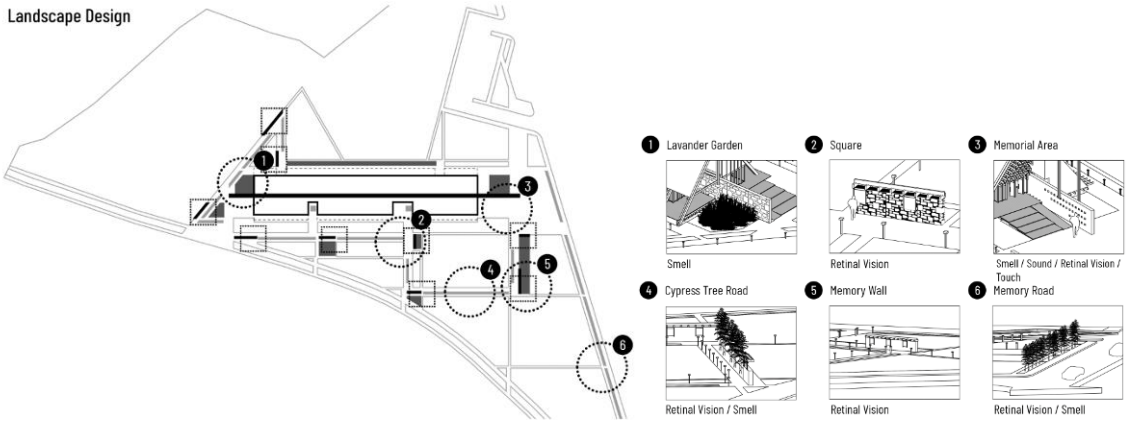

Fig. 7. Landscape design visual graphic

2.2. Construction methodology

The subject studied while creating the construction methodology was the question of how to develop an architectural approach of two locations. The similarities between the forms of nature-based wooden structure in the Thrace region and the traditional forms of wooden structure in South Korea have attracted attention. The idea of forming a common construction methodology on the traditional construction method and form similarities in these two cultures has emerged. "Cruck Building" which is the traditional form of wooden architecture in the Thrace Region, is a construction system with a wooden frame, which is formed by connecting the arched roofs formed by combining the two tree trunks from the top of the tree at regular intervals and connecting them with thinner tree trunks horizontally [16]. Arch shaped and generally "V" or "U" sectioned structure consisting of "Cruck Buildings" sample also possible to come across some regions in other countries is seen only in Turkey in Thrace region. A similar architectural form and construction with cruck structures can be seen in traditional Korean architecture. "Yangdong Village", a traditional South Korean village, can be considered as an example of this architectural tradition (Fig. 8. – 9. – 10.).

Fig. 8. Structural similarities between traditional wooden architecture at Thrace region of Turkey and South Korea

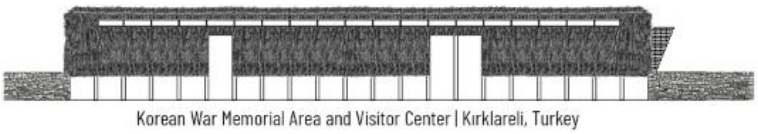

Fig. 9. Korean War Memorial Area and Visitor Center Design

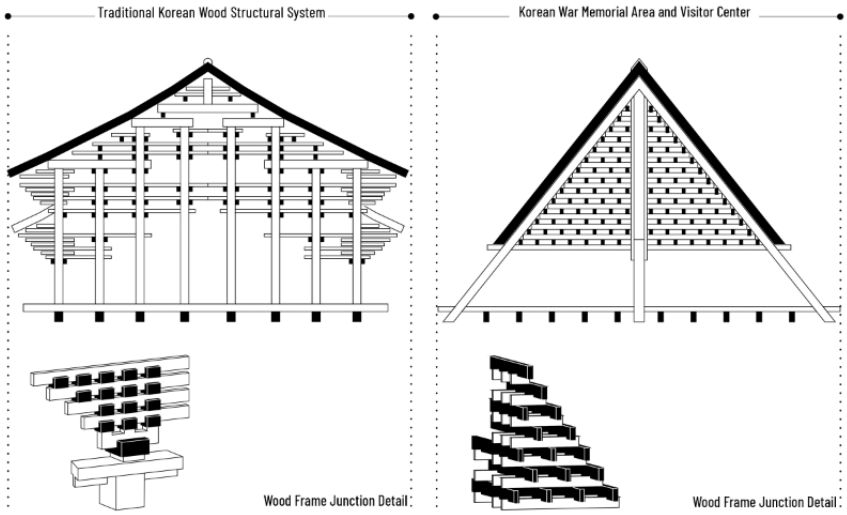

Fig. 10. (a) Traditional Korean wood structural system (b) Korean War Memorial Area and Visitor Center Project's wood structural system

A modesty and simplicity stand out with the understanding of respect for nature and place, commitment and transience, on the basis of this construction style and architectural approach, which have characteristics belonging to both cultures. The building is given the right to "live" as part of nature, the architectural parts that are aging over time are replaced and maintained and put into use again.

Conclusion

The Korean War Memorial and Visitor Center Project was shaped by a critical regionalist design approach that nourished culturally and addressed all senses. Design idea is considered as a direct integral part of the context, not like a free-standing object in the built environment.

Acknowledgements

The Korean War Memorial Area and Visitor Center National Architecture Design Competition project was prepared with the valuable contributions of the architect Cihan Sevindik, who is the founder of OfficePan Architecture Firm.

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From Palestinian traditional villages to Refugee Camps: Cultural Identity and the meaning of living space.

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Abstract

Palestinian refugee communities have been living within refugee camps scattered around Gaza, West Bank, Jordan, Syria, and Lebanon since the Zionist occupation started in 1948 and pushed millions out of their cities and villages. In those camps, refugees have been able sometimes to maintain their village atmosphere by themselves. Most of the literature regarding this subject introduces an understanding of how these communities are committed to their place of origin but do not focus on their forced living spaces. The users' experience with their living environment is what defines Identity and meaning towards their spatial setting. This paper aims to understand the identity and meaning of domestic living space and space organization in the traditional Palestinian village and home, as means of understanding how their cultural identity and meaning would be shifted from the traditional villages impacting the refugee camps which have also been extremely neglected by the governmental and administrative bodies. This short paper attempts to discover some important hints concerning the above mentioned theoretical issues. However, at first, a comprehensive literature review will be dealt with to decide the most relevant components of socio-cultural and spatial dimensions which will be observed in the traditional village home environment and spatial setting through relevant examples and cases selected from the literature.

Keywords: *Traditional village; Refugee camps; Cultural Identity; Meaning; Living space.*

Introduction

The users' experience with their living environment is what defines Identity and meaning towards their spatial setting. This short paper aims at understanding the identity and meaning of domestic Living space and space organization in the traditional Palestinian village and home, based on investigating the relations between the users their living environment. Through these relations which is based on living experiences and activity patterns of this particular community, spatial settings gain identity and meaning, as means of understanding how their cultural identity and meaning would be shifted from the traditional villages into the refugee camps. Moreover, this paper will investigate the relations between the users and their living environment which is expected to exhibit functional (indoor/outdoor), behavioral (formal/informal), and cultural/social (public/private) activity patterns.

For those purposes, the paper will identify the most visible components that give socio-cultural and spatial dimensions' identity and meaning in the home environment of the Palestinian village and home. It will also bring an understanding to how these dimensions survived when the Palestinian communities moved from their traditional villages into the refugee camps, clarify the effect of cultural identity on the transformation of the temporary dwellings in the refugee camps by the Palestinian communities, and explain the role of using spaces in that particular way in giving meaning and identity to them, in terms of dealing with the constraints and difficulties of the refugee camp environment.

The main research problem is considered to be the lack of knowledge in the literature and relevant academic research area on the Palestinian village and home. However, this issue even becomes more visible in the refugee camps which also hardly take any comprehensive academic attention in the field of space, meaning, and identity. This study is theoretical research based on a qualitative methodology, a narrative comparative approach will be used to analyses the data collected from the examples chosen from literature by picking up the important finding of other researches and build up the argument on this topic. The examples being explored within the literature are specified to previous books and articles regarding refugee camps in Jordan and the upper land villages of Palestine as they resemble the majority of the camps and villages and share similar characteristics, spatial / socio-cultural dimensions, and typologies. The researcher designed a special conceptual framework that will be used to develop the structure of the paper, this framework shows the relationships between the most relevant socio-cultural and spatial dimensions which will be observed in this study within the traditional village home environment and spatial setting and is shown in the diagram that follows. (fig 1)

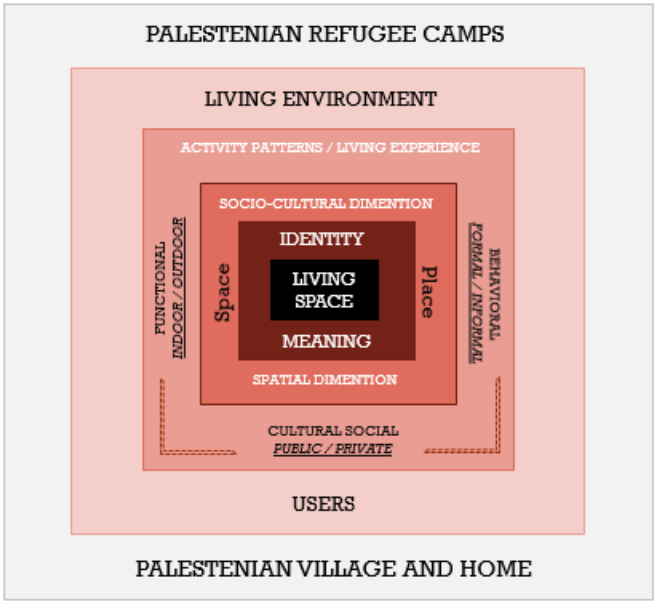


Fig. 1. Conceptual framework.

The concept of space, place, and identity

Many spaces are based on specific awareness of their users [1], without this awareness, they are just lost spaces. What is it that a human being is aware of when facing an open space within their built environment? The answer to that is complicated because so many factors cross the path of defining a 'space' into becoming a functional meaningful 'place' where people from different background reflect their cultural values and practice their social habits, where the real quality of life events happen on daily basis [2]. Douglas (1993) had an interesting interpretation of space, she described it to be an unidentified way of positive thinking to where the human feels most in control, sheltered, and safe [3].

We can find a lot of different understandings of place and space throughout the literature as many scholars discussed the theory of awareness, attachment, perception, and experience in terms of placemaking. Heideggar (1954) explained space to be a place with free and clear boundaries [4]. According to Tuan (1977) describes a space by how it provides venture and freedom, while a place is a shelter that provides safety. Or as he described it in his own words:

"A healthy being welcomes constraint and freedom, the boundedness of place, and the exposure of space" [1]

Thwaits (2010), a scholar with a focus on socially responsive landscape gave several understandings to the terms, according to him space is just an open landscape unless human needs are not neglected and individual's perception is completed, as those humans, and their activities along with the physical components of the space are what make them become meaningful and successful places [2]. From this point of view, the concept of place is when space integrates the human-environment relationship emotionally and functionally, depending on human behavior and psychological connection which induces place attachment. Abrar, N (2012) brings an understanding to how identity can be processed throughout the place in means of the user experience which may vary in scale from an individual's identity to a community or cultural identity in his article space, place, and identity [5].

For the purposes of this study, an understanding of space and place within the urban environment in terms of cultural identity must be explained. The perception of certain places can be identified through the user experience through them [2]. This is mainly due to different backgrounds of how certain cultures respond to different factors within their natural environment like climate [1], even if shared beliefs –religion- for example, played an important role in shaping the resulting form of the urban fabric and the shape of the open spaces and dwellings [5]

Refugees; The search for Identity

Identity can be understood as a constant variant in a world of change through time and space [5]. As for the built environment, Changes in a certain place, a village, or a town, can affect its identity. But it's important to understand that the identity of a place comes through its relationship with the communities within, any change to the place of any community will affect their sense of identity. In the matter of relocated communities, the people will not have any sense of belonging unless those places embodied the characters of their cultural identity [6].

After the Arab-Israeli conflict in 1948, an approximate count of 2 million Palestinians was shifter from their cities and villages into refugee camps. These camps share some common characteristics, as most of them provide poor living conditions with multiple environmental and social challenges. There is very limited evidence in the literature regarding the housing conditions in those camps, but a recent study by Alnsour, J and Meaton, J (2014) had explored this matter and identified key problems and challenges that revolved around how the poor housing conditions are the result of poor maintenance and lack of improvements done in those dwellings, which was partially caused by the refugees themselves [7]. The issue of socio-cultural habits of those refugee communities and their understanding of identity was the main concern.

The cultural process of how Palestinian experiences their living environment and space had been a big part of keeping their identity when they shifted to the refugee camps. The camps were made as planned and temporary settlements. But the spatial dimension in those camps overtime started reflecting the cultural identity of the communities inhabiting them. Identity for Palestinian communities was comprehended differently, as at first, the identity to them meant that they desperately needed to hold onto the right of return to their place of origin and refused any transformation to the temporary settlement they were offered in fear of losing that right, making improvements and changes at that point by the organizations building the camps or by individuals of their own was highly rejected.

"Improving the infrastructure, paving roads and planting trees for us won't replace our right for return, we shall keep working towards saving our Palestinian identity" [8] (The elders' organization,2009; from an interview with a refugee)

This had been explained in the chapter, Refugee Camp as Mediating Locality: Memory and Place in Protracted Exile of the book Memories on the Move;

"Refugees' growing attachment to their place of residence in exile is understood to occur at the cost of their commitment to their place of origin" [9]

But after the return became inevitably impossible, one could clearly see the adaptation of those camps to fit the socio-cultural dimensions originally present in the traditional villages of Palestine. The implications of their cultural/social and spatial dimension affected the pattern of the urban fabric of the camps as well as the living spaces of each unit of dwelling. Components of their vernacular architecture started appearing as well as the trends of activity patterns of their daily life. This resulted in the transformation of camps due to the dissatisfaction of the Palestinian communities towards them as they neglected the cultural and physiological needs of those communities. [10]

A housing unit is not a home

The adaptation of Palestinian communities to refugee camps after being forced off their traditional villages (fig 2) has been defined as the transformation of the temporary open settlements while being able to maintain a village atmosphere [11]. Here, we can argue to the fact that "home" for these shifted communities was not their place of exile, no matter how long they stayed in it, this had been shown in their resistance to improve or enhance camp conditions directly. According to (Unugur, Hacihasanoglu & Turgut, 1997) a home is tied up to a set of fundamental human concepts based on various relationships defining individuals and societies. [12]

They were given housing units to shelter them, but they were not given a home. This is understood by cooper, M. (1995);

"The notion of dwelling does not assume that the physical unit of a house defines the experience of home." [13]

This physical unit they were given, mostly a tent or a metal lifeless box (fig 3), it could never withhold the meaning and experience of a home, as according to (Unugur, Hacihasanoglu & Turgut, 1997)

"home is an expression of the dynamic interaction between the occupant and the dwelling…. Home is…. A kind of a mirror of its occupants rather than a shelter for domestic activities." [12]

Fig.2: A scene from a traditional village. [14]

Fig.3: Despair after relocation in camps. [15]

A Home is not just a dwelling

The concept of home in the Palestinian village was different from it in the refugee camp, As the home for the Palestinian villagers was not just inside their dwellings, it was connected experiences and activity patterns and how they carried out their daily routines throughout the context of the whole village.

Those spaces were made into places of specific meaning which reflected the socio-cultural dimension of those communities and formed the spatial organization of the villages. One example is "al-Saha" or as the modern world calls it plaza, an open space with no boundaries inside the village, the fact that the men used this space for informal social meetings turned it into a common known feature as a central place of value within the spatial organization of the village (fig 4). Usually, they built a room "Madafa" in this plaza for formal meetings with guests from outside the village, as men could not take their guests home, the home was a private place for women only, but on the other hand, each extended family called "homole" had their own courtyard "housh" (fig 5) for private family activities that were defined by the main gate and a group of housing units surrounding it. [14]

Fig.4: Al – Saha – social public space for men. [14]

Fig.5: Al-housh – private social place for one extended family. [14]

The activity patterns of man/woman in the village resulted in separate places with different functional use. As for men, their places were the "Saha", which reflected an informal public activity, while the "madafa" had a more formal private one. This type of activity also resembles the difference between the indoor/outdoor life routines of the men. As for women, their informal outdoor public place of social interaction was at the "taboon" (fig 6) where they backed their daily bread, and "al-ain" (fig 7) where they collected their daily need of freshwater, bathed, and washed their laundry. Their private place of the meeting and indoor activities were only in their homes., or in the outdoor courtyard of the extended family that their homes open directly into. [14]

Fig.6: Al Taboun - Pubic outdoor space for women. [14]

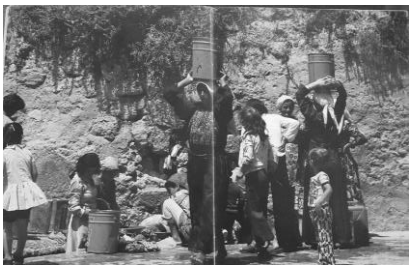


Fig.7: Al Ain – Pubic outdoor space for women. [14]

Socio-Cultural/ Spatial dimension of Neighborhood

In the village, each neighborhood belonged to one extended family "homole", here we can see how this affected the spatial organization within the village (fig 8), this same division was clearly seen in refugee camps overtime were each extended family of refugees grouped their units of the housing forming their neighborhood within the camps, subsequently each of these unplanned divisions – neighborhoods- ended up carrying out the name of the family or the homole occupying it which saved the identity of these families in exile. The alleys within these zones were strictly private to these extended family members, just like in the villages [16].

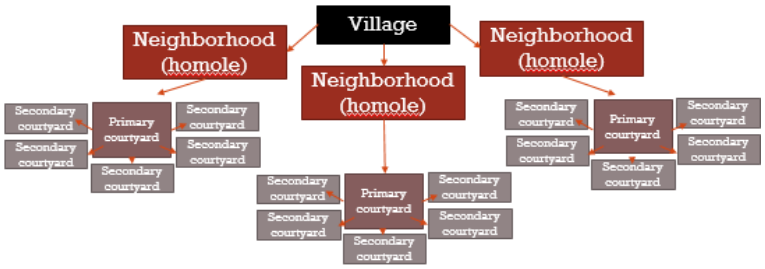


Fig.8: Spatial organization of Palestinian traditional village neighborhoods. (Author)

The members of each homole lived in attached units that open on a common courtyard (fig 9), the further members of the family separates and forms secondary courtyards from the primary family's one, these courts are connected with semi-private small alleys. This spatial organization offered privacy and quiet to the members of the family were no strangers were allowed to enter.

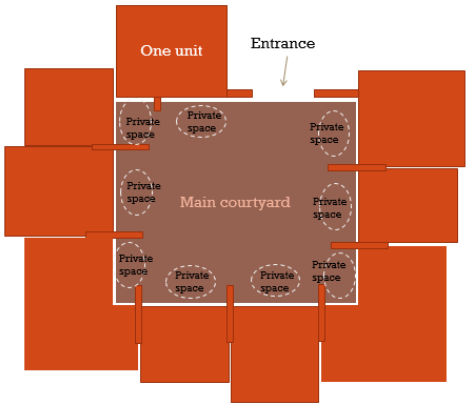


Fig.9: spatial organization of al Housh system (courtyard) of one extended family. (Author)

Within each courtyard, a more private space in front of each home was perceived as the private space of this specific family, the transitional space between the private home to the semi-private shared courtyard. separation from adjacent spaces where achieved by small uneven walls and laundry lines (fig 10), this formed the boundaries for each unit where this family would have its private social activities (fig 11) like having their meals outside [14]

Fig (10): Courtyard "housh" showing partitions between single units. [14]

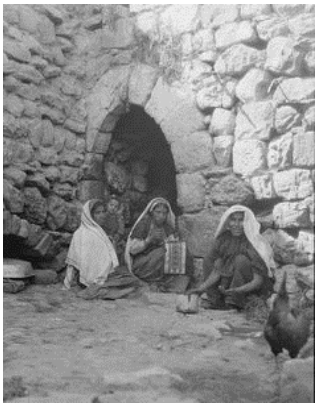


Fig (11): Single-family members socializing in their private space. [15]

The members of each "homoule" shared social functional responsibilities, where both men and women banded together in the outdoor shared spaces, one example of that is collaboration in the fields to fertilize the land or pick up the crops, this activity happened 4 times a year regularly. One interesting fact about this is that even though this was a shared activity, there was still a division where due to the fields being divided into the property of one "homole", the homole divided the neighborhoods of the village and the fields accordingly [14], Even this public shared event was more or less private. Another example of shared socio-cultural functional

activity was building the homes of the villagers, where it was a public event where both men and women participated (fig 12). This reflected the adhesion and unification of the architectural image of the whole village, this was carried out in the refugee camps as well, where each extended family built their housing units in collaboration (fig 13). [16]

Fig.12: Collaboration in construction at village. Courtesy of UNRWA photo archives) [15]

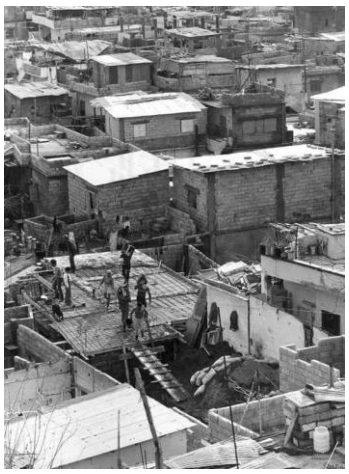


Fig.13: Collaboration in construction at (Bourj el-Barajneh camp in the 1970s. Courtesy of UNRWA photo archives) [15]

Socio-Cultural/ Spatial dimension of Home

Inside the home of a Palestinian single family (fig 14), we can see how they interpreted the meaning of space, the homes were commonly built as split level, each level serving a functional need (fig 15), where the upper level served as the private space for the single families, and the lower level served as a storage for their agricultural tool and a space to shelter their animals during the night. This division of functions within their homes reflected the needs of those families [14].

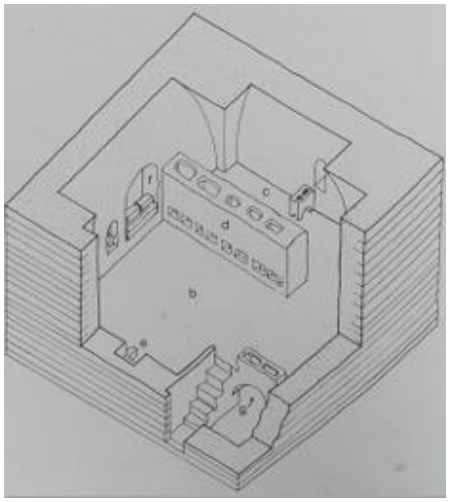


Fig.14: Inside the home of a Palestinian single family. [14].

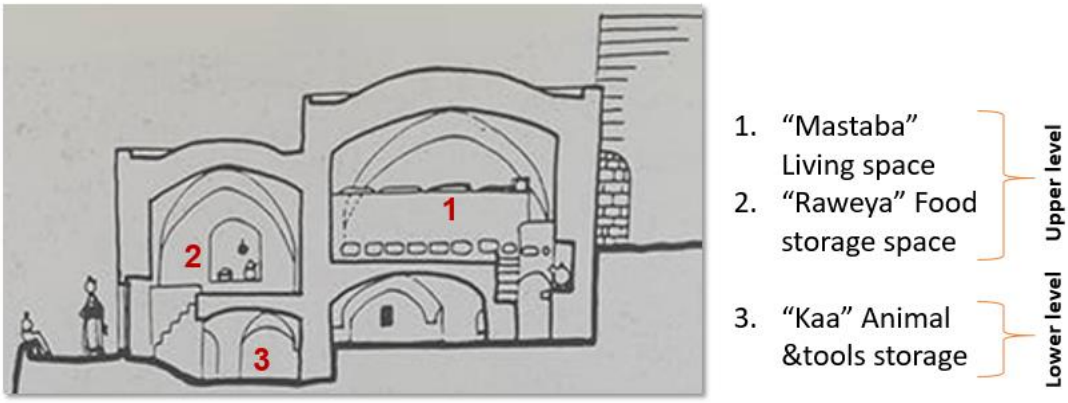
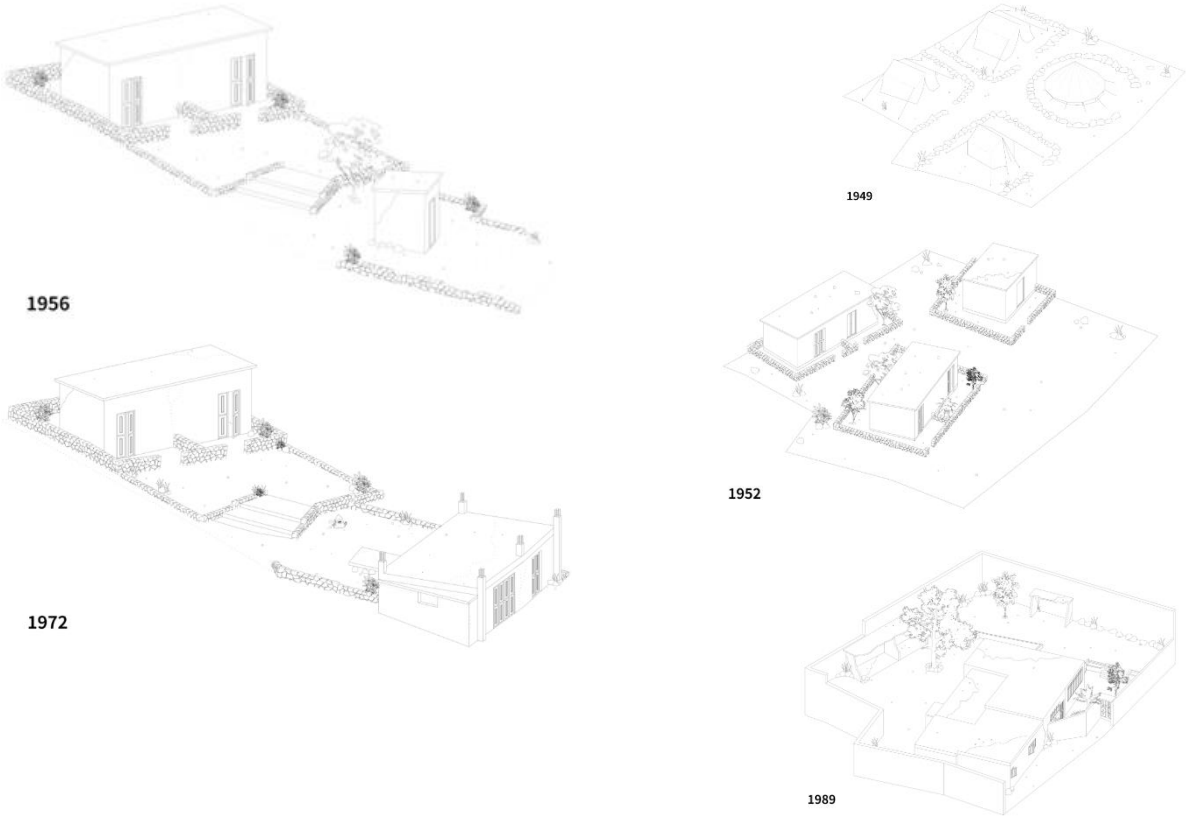


Fig.15: Section, showing functional division at each level. [14].

However, in the camps, building in levels continued, as it was their traditional way of utilizing functions within one space, but there was an important factor that played a role in the multi-level nature of housing units, which is the fact that they were used to build many units horizontally around the central court forming the extended family territory, but in the camps and due to the limited land they had to adapt this into building the units vertically, the availability of new building materials to support this verticality also helped like concrete and steel as in the camps they could only build with their traditional materials like stone and wood. (fig 16). [16]



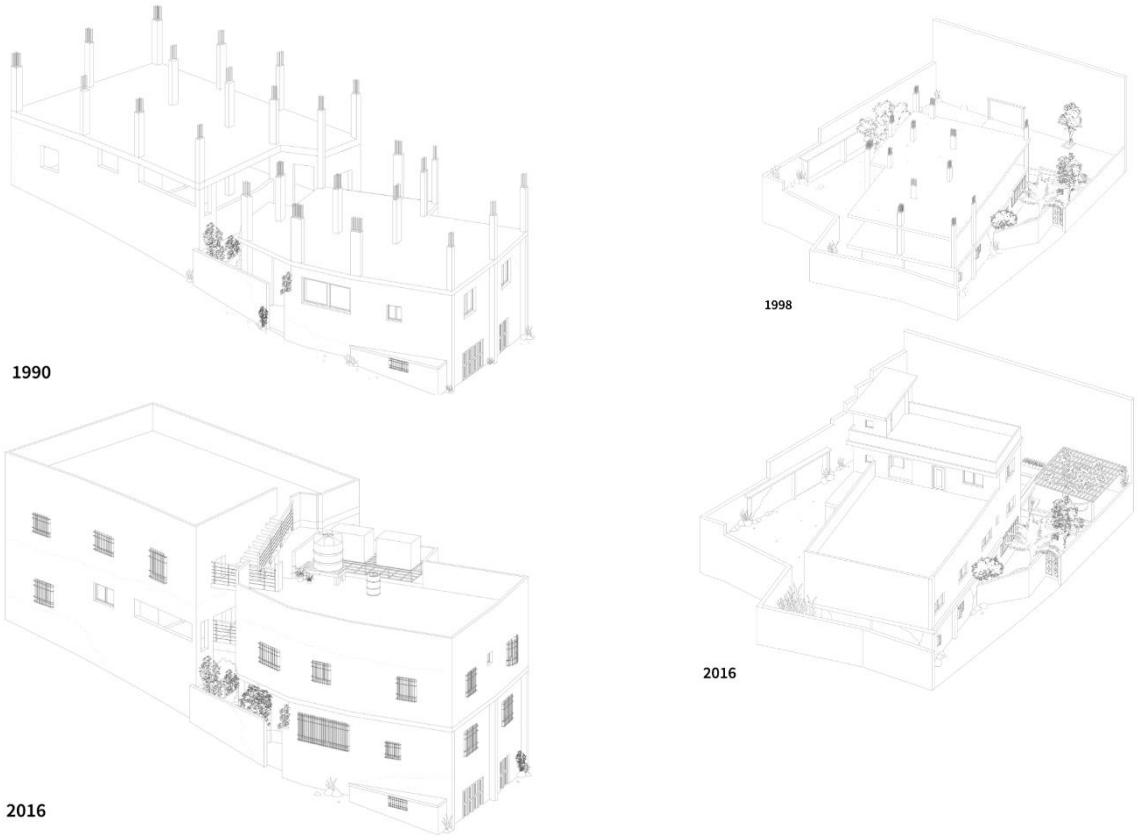


Fig 16: Examples from a typical development of family homes vertically in one refugee camp. The illustrations show the development of the small temporary units gathered around a central space into a big housing unit. This is typical because the extended family needed to carry on their traditional understanding of living space. But due to the lack of land at the refugee camps, they were forced to go vertical. (www.campusincamps.ps/ar/projects Retrieved May 2019) [17]

The internal space was open living space, no partitions, just mud pantries that were used to store food and were considered to be separating functions inside (fig 17). The common element of "beet el nar" the fireplace was one of the most important elements of the living space and acted as a focal point (fig 18), other functions would be adjacent to the walls surrounding this focal point, family members gathered around it during winter when they couldn't use the outer court, for their private social activities. [14]. At the camps, the housing units had regular brick partitions separating the functions of the house into several spaces, which was a huge shift in the original functional activity pattern and spatial organization of the Palestinian family home. [10]

Fig .17: Picture from inside the traditional Palestinian home, showing the mud partition. [14].

Fig.18: Family around the indoor fireplace. [14].

Final Comments

The shift of Palestinian communities from their villages to the camps was not an easy process, many forms of adapting their identity and reinterpreting their meaning of space within those camps was a major challenge within the limited resources they had, like shortage in units, materials, and land. All efforts made by the organizations responsible for supplying these camps failed to prevent the cultural identity and socio-cultural dimensions of those communities to appear, this resulted in the poor environment of the camps as those changes were not anticipated and resulted in the formation of a cluster like multi-level buildings in the place of the grid-

like single unit original plans. Which in most cases turned out to be similar to slum housing due to the poor state of their residents (fig 19). Where actually, if only those camps were planned to take the cultural background of the communities expected to inhabit them the result would have been much more different and better, the communities would have accepted their life in exile more easily and the organizations wouldn't have to find solutions to the results of the unplanned developments happening around almost every camp out there. These attempts in providing shelter for relocated communities must rethink their strategies for better long term outcomes.

Fig.19: A scene from a Bourj el-Barajneh camp today. Courtesy of UNRWA photo archives – showing the slum-like atmosphere due to poor conditions and unplanned cluster development. [15]

Acknowledgments

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SPACE DESIGN AND BODY

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Abstract:

Place; it is a space perceived by the human body and movement, where various actions take place. Merleau Ponty emphasized the relationship between body and space by saying "if I didn't have a body, there wouldn't be space for me". The human body is not just measured. With its physical and mental data, the body is considered as the main determinant in the design of the space. In the historical process, the distinctions towards the body caused by Cartesian thought have disappeared in today's spatial understanding and design and the body and space have become considered as an integrated system of values. The multiple relationship between body and space is one of the main problems of the approaches to space design. Changing space and body perception has highlighted the concept of spatial experience and the concepts of perception towards the body, movement and memory in spatial experience have become the basic data to be examined. The study discussed is aimed at revealing the data of the body, which is considered as the basic data for space design, in an integrated manner. Considering body and space as independent phenomena; instead of the Cartesian spatial understanding that grasps the body as a mere measurable and fixed object, it reveals the living space-living body understanding that gives importance to the subjective spatial experience arising from the body-space interaction. Changing space and body perception has highlighted the concept of spatial experience and the concepts of perception towards the body, movement and memory in spatial experience have become the basic data to be examined. The study discussed is aimed at revealing the data of the body, which is considered as the basic data for space design, in an integrated manner. Considering body and space as independent phenomena; instead of the Cartesian spatial understanding that grasps the body as a mere measurable and fixed object, it reveals the living space-living body understanding that gives importance to the subjective spatial experience arising from the body-space interaction. The study in question reveals the body's multiple relationship with space, by revealing the holistic data about the body. Rather than an absolute sense of space and architecture; the definitions of space and architecture, which establish a relationship with the body and consider the space as an experienced entity, are presented and the experience-based features of the space are tried to be revealed and definitions of what the body is for space design are included. Here, the components that make up the spatial experience are explained, the body, which cannot be considered separately from the spatial experience; it has been evaluated as an entity that communicates with space with its senses, perception, movement, concept of time and memory. Perception, which is the most important of these components, is not an instantaneous state but also the mental features that are shaped by the previous experiences of the body and that develop depending on time and process. In addition to this, attention has been drawn to other perception styles besides visual perception. In this study, instead of the space designed in accordance with the Cartesian thought system based on the separation of body-mind, the importance of an experience-oriented space designed based on the connection of body-mind is emphasized and it is aimed to raise awareness on this issue. Based on this understanding, Presentation Techniques 1 and Presentation Techniques 2 courses were given to Istanbul Okan University, Faculty of Art, Design and Architecture, Department of Interior Architecture and Environmental Design as an elective course in 2018-2019 Education-Instruction Fall and Spring Semesters. The students were informed at the first stage of the fourteen-week academic semester of the Presentation Techniques 1 Course given in the 2018-2019 Academic Year Fall Semester.
In the second stage of the course, in line with the information given from the students, it was asked to select a few of Kazimir Malevich's works and transfer the two-dimensional work to three-dimensional work and to make architectural shell designs. In the Presentation Techniques 2 course given in the 2018-2019 Education-Instruction Spring Term, students were asked to design body-interactive interiors in accordance with the same concept. Within the scope of the lesson I assisted, the space designs suitable for the experience-centered approach to space and body were introduced by the students. The space designs that focus on experience on the space-body relationship forming the concept of this study and this course were evaluated. As a result, with this study, space-body relationship, the results of the study presented in accordance with the concept of the lesson, the aims of the lesson and the student outcomes were included. In this direction, the study is supported by the literature data that reveal the approach of the body to space design from past to present.

Key Words: *Space-Body Relationship, Space Experience, Interior Architecture Education, Space Design, Body Perception*

Introduction

Contrary to the understanding that focuses on the numerical data of the body and deals with the body in the plane of representations, as in the Cartesian spatial understanding that emerged in the historical process, today it aims to capture a holistic perspective on how the body should be perceived for space design. In the historical process, changes in body perception have been observed due to scientific advances from the Greek, Roman and Renaissance periods to the present. Here, the understanding of body-space, which was handled in accordance with the Cartesian thought system in the Roman Period, was presented.

Perhaps the most basic definition of architecture was given by Marcus Vitruvius, one of the ancient Roman architects, around 25 BC (Roth, 2000, s. 29). The question of 'What is Architecture?' Is a topic that has been discussed since Vitruvius' book 'Ten Books on Architecture', which is known as the first written

architectural theory book (Soygeniş, 2019, s. 9). In the expression of Görgül, it is seen that while the subjects are being discussed in De Architecture, which is the only work in the field of Architecture that has survived from ancient times, it is seen that quotations from many Greek and Roman publications and references from mythology are used. Vitruvius added his own experiences and professional experiences to this information. Efforts to define architecture and create a set of rules about architecture are thought to give the work a theoretical feature. Vitruvius tries to describe architecture in the second part of his first book by explaining its points (Görgül, 2000, s. 11). These points are seen in Vitrivius's words: 'Haec aut em ita fieri debent, ut habeatur ratio firmitatis, utilatis venustatis' Now these should be applied in a way that takes into account durability, usefulness and elegance. Architecture, Vitruvius wrote, "must provide usefulness, strength and beauty," or in Sir Henry Wotten's later expression in the seventh century, "usefulness, strength, beauty" (Roth, 2000, s. 30).

It has been observed that the concept of beauty put forward by Vitruvius takes place in nature and the understanding of beauty in nature is based on the laws of universal proportion and symmetry. The human body, which includes natural dimensions, has also been used as a model and ruler for space design with its proportions. The connection Vitruvius put forward between the proportions based on the understanding of perfection and the body is directed towards how the ideal human body, which is shown to fit both in a circle and a square, is conceptualized for the creation of the ideal space.

With the words of Vitruvius, there must be a great correspondence between the general dimensions of a temple and the whole. Again, the center point of the human body is naturally the navel. Because when a man lies on his back with his hands and feet open, the tips of his fingers and toes will touch the circumference of a circle drawn by a compass placed on his navel. A circular shape can be obtained from the human body as well as a square shape. (Vitruvius, 2015, s. 51).

In the following process, the "Vitruvian Man", which Leonardo Da Vinci sketched the golden ratio found in the human body, emerged in the Renaissance Period, representing the way the body is handled and associated with space. Through the "Vitruvian Man", it was revealed how the body was defined with mathematical values based on the golden ratio in the Renaissance Period. The "Modulor" concept, which consists of the golden ratio and the series of measures based on the Fibonacci sequence, put forward by Le Corbusier in the Industrial Revolution and the following period, has been revealed with its content regarding the way the body is conceived. Le Corbusier; He tried to create a "range of measurements" that could be applied in design by using the measurements of an average human body in the measurement system named Modlor. Le Corbusier strives to create an architecture set to standards. He believed that with the system of proportions for the body he put forward, architectural structures would get much faster and more accurate results by minimizing possible mistakes in the construction process, and the system revealed by Le Corbusier includes the red series produced from the height of the standing human (183 cm) and the blue series derived from the human height (226 cm) with the standing arm raised. he was criticized in this context (Rasmussen, 1962'den aktaran İnce, 2015, s. 13). Le Corbusier believed in the universality of the two strings he created based on human height and raised arm height, so he accepted that they could be used for all purposes. This order, which Le Corbusier calls "Modulor" is a universal tool that can be easily used to achieve beauty and logic in human-made objects all over the world. That's why Le Corbusier used this measurement system from his buildings to his furniture (Rasmussen, 1959'dan aktaran Görgül, 2000, s. 29-30).

Until today, the changes in the way the body is handled show that the body does not consist of only mathematical values and measures; basically, it reveals that it has an integrated structure that continues its existence with concepts of sense, perception, movement and memory.

Space-Body Relationship

Space does not exist separately from the body, but comes into being when it is experienced through the body. In spatial experience, the body, which cannot be considered apart from the space; senses, perception, movement, memory and time are considered as an integrated data that relates to space. It is noteworthy that socio-cultural life has changed visibly from the modern period to the present under the influence of globalization in general. With concepts such as Consumption Society and Consumption Culture, daily life has become debatable. In our age of globalization and consumption, the dominance of the sense of vision has increased. In this direction, it is important to emphasize the multi-sensory holistic perception instead of the single vision-centered perception in the space experience. Place; smell, sound, touch, sight, taste, skeletal and muscular systems are perceived, measured and shaped at the same time. Space is perceived through the holistic body. The body subject to the study in question is an unfinished, unlimited, open, changing body. However, here the concepts of motion and memory, which are other important elements in spatial experience, are included.

In the classical architecture discipline, it can be said that the space is seen as a solid entity that can be comprehended mainly with the sense of touch and sight. Architect Juhani Pallasmaa suggested that the space can be comprehended with different senses beyond the five senses, and thought that spaces focused solely on touch

and vision bring isolation and alienation by not being integrated with the body. As an example of different senses, Rudolf Steiner, working on Perception Psychology, presented the 'twelve senses' consisting of senses such as life sense, warmth, conceptual sense and ego (Pallasmaa, 2011, s. 27).

At the same time, "Man is not a body and a soul, but a body and a soul". To the extent that the body reaches every being, it gives it human qualities and turns it into a soul and body. Perception of things is reached only through our body, which is the body and soul. Thus, the body turns every being into a "mixture of body and soul" by adding human qualities to it. Instead of a homogeneous three-dimensionality to space; it is a heterogeneous spread that relates to the characteristics of our body and our condition as beings launched into the world (Merleau-Ponty, 2017, s. 26).

Body Interactive Space Design

In this study, instead of the space designed in accordance with the Cartesian thought system based on the distinction between body and mind, the importance of an experience-oriented space designed based on body-mind connection was emphasized and it was aimed to raise awareness on this issue. With this understanding, Presentation Techniques 1 and Presentation Techniques 2 courses were given to Istanbul Okan University, Faculty of Art, Design and Architecture, Department of Interior Architecture and Environmental Design as an elective course in 2018-2019 Academic Year Fall and Spring Semesters. The students were informed in the first phase of the fourteen-week academic semester of the Presentation Techniques 1 Course given in the 2018-2019 Academic Year Fall Semester. In the second stage of the course, in line with the information given from the students, it was asked to select a few of Kazimir Malevich's works, transfer the two-dimensional work to three-dimensional work, and make architectural shell designs. In the Presentation Techniques 2 course given in the 2018-2019 Education-Instruction Spring Term, students were asked to design body-interactive interiors in accordance with the same concept. Within the scope of the lesson I assisted, the space designs suitable for the experience-centered approach to space and body were introduced by the students. The space designs that focus on experience on the space-body relationship forming the concept of this study and this course were evaluated.

Student's name and surname: Berfu Ceren Demiral

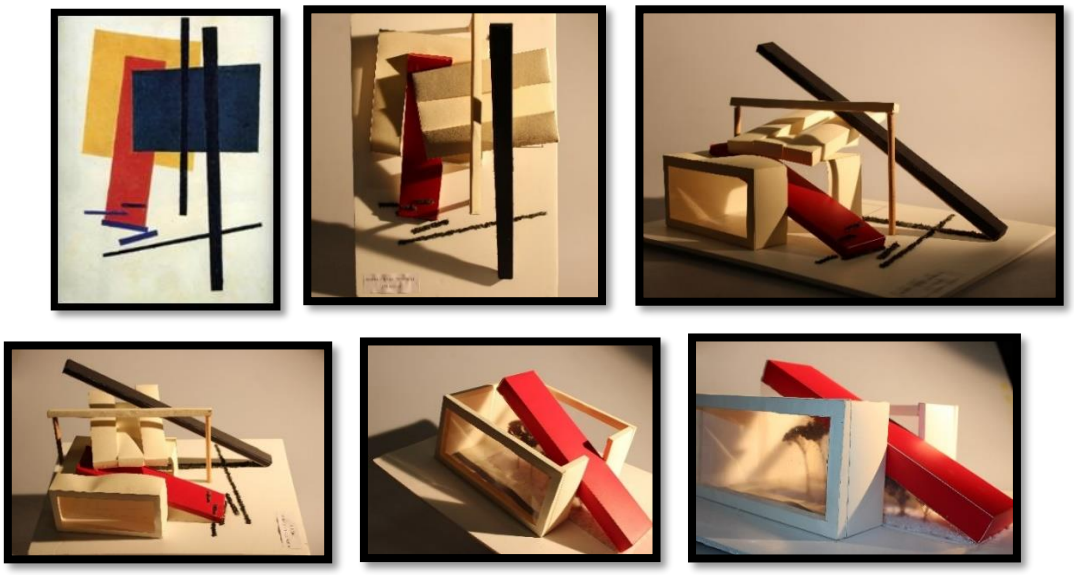

Fig. 1. Kazimir Malevich Transferring Works from Two Dimensions to Three Dimensions
(Architectural Shell - Interior Design - Structure Study), (Photos: Altuntaş, May 2019)

The body interactive architectural and interior structure study in Fig. 1 is shaped by the work of Kazimir Malevich. The elements that form the conceptual content of the design are the two-dimensional linear elements in the work. By transforming two-dimensional lines into three-dimensional work, "How can we make the user experience the space?" spatialized over the question. The first encounter and exit with the place was established with the inclined structure consisting of red bands that will give the feeling of falling. It activates the user with the sound of water in the structure that creates a special lantern space with code difference in a transparent and high ceiling space. With the metaphorical nature of the space design, the user interacts with sound, sight and movement.

Student's name and surname: Melisa Aydın

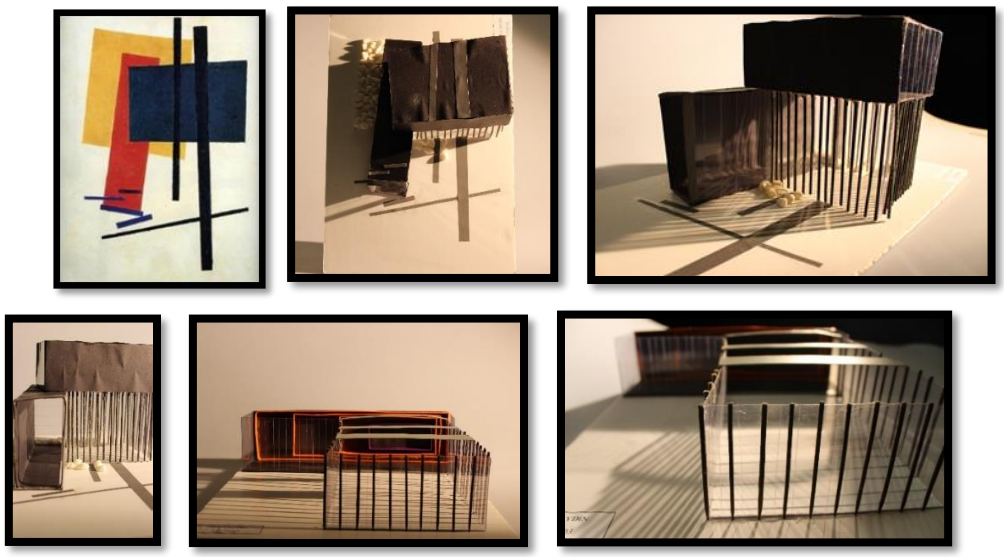

Fig. 2. Kazimir Malevich Transferring Works from Two Dimensions to Three Dimensions (Photos: Altuntaş, May 2019)

In the space designed with the different interpretation of the same work by Kazimir Malevich, the op art movement is based on. In the design of the space, it was desired to experience the illusion of color and size elements with interwoven stripes of different thickness from large to small. Unlike the architectural design, which is a pure rectangular prism, the user experiences the perception of infinite space-time with the fragmented prism after entering the interior. Body interaction in space is created by eye perception.

Student's name and surname: Hacer Lermioğlu

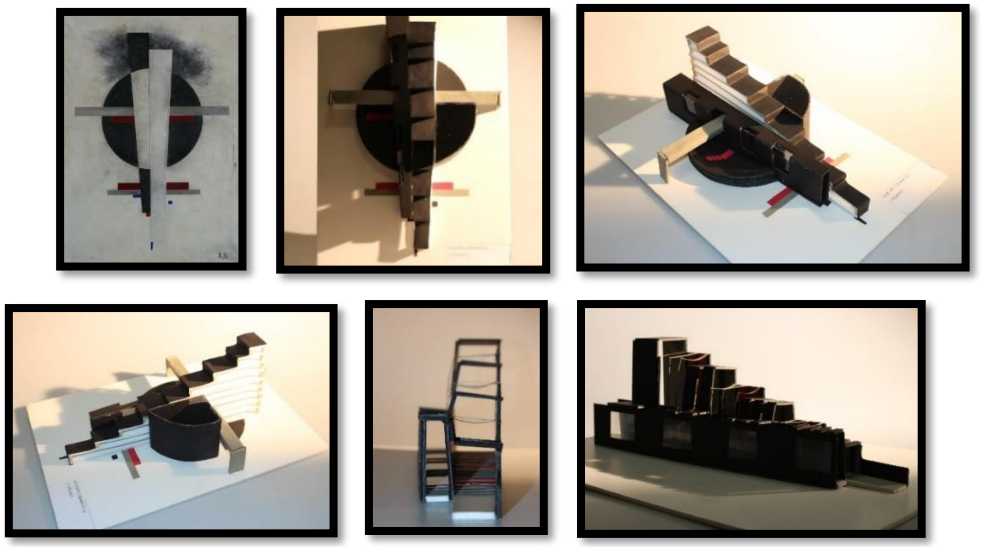

Fig. 3. Kazimir Malevich Transferring Works from Two Dimensions to Three Dimensions (Photos: Altuntaş, May 2019)

It is possible to see the effects of the architectural shell shaped by the abstraction of two rectangular prisms into different forms in the interior space. In the indoor experience, vision and movement are dominant.

Student's name and surname: Beyzanur Şahin

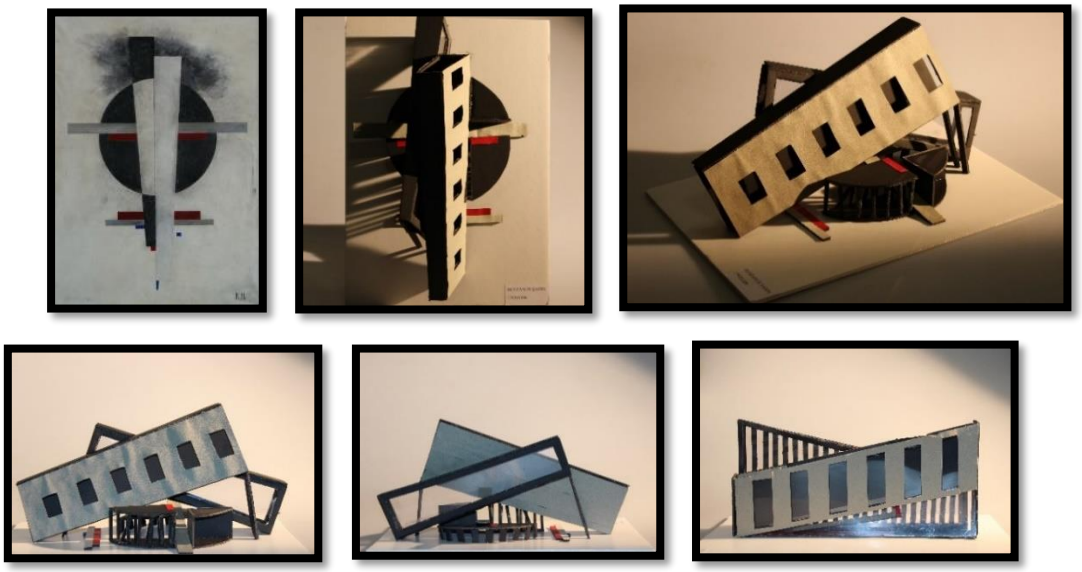

Fig. 4. Kazimir Malevich Transferring Works from Two Dimensions to Three Dimensions (Photos: Altuntaş, May 2019)

It is possible to see the effects of the architectural shell shaped by the form in which two rectangular prisms intertwined in the interior design. In the indoor experience, vision and movement are dominant.

Student's name and surname: Beyza Yayla

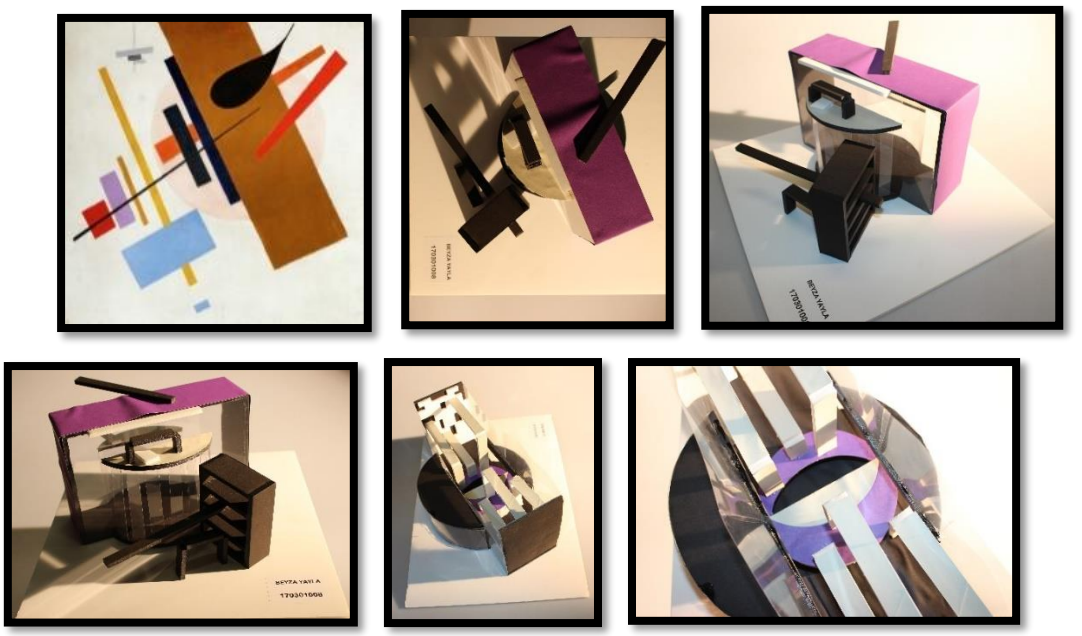

Fig. 5. Kazimir Malevich Transferring Works from Two Dimensions to Three Dimensions (Photos: Altuntaş, May 2019)

The space design is transparent, reflective and it is possible to see the effects of the architectural shell shaped by the form in which the circle and rectangular prism are intertwined. In the indoor experience, the sense of vision is dominant.

Student's name and surname: Duru Akçay

Fig. 6. Kazimir Malevich Transferring Works from Two Dimensions to Three Dimensions (Photos: Altuntaş, May 2019)

Thanks to the frequency of the music given to the environment, vertical bands shaped by the perception of sound create rhythm within the space. Thanks to its circular movement with its guiding attitude in the space, it makes the user experience the whole space through movement.

Student's name and surname: Sezin Cimilli

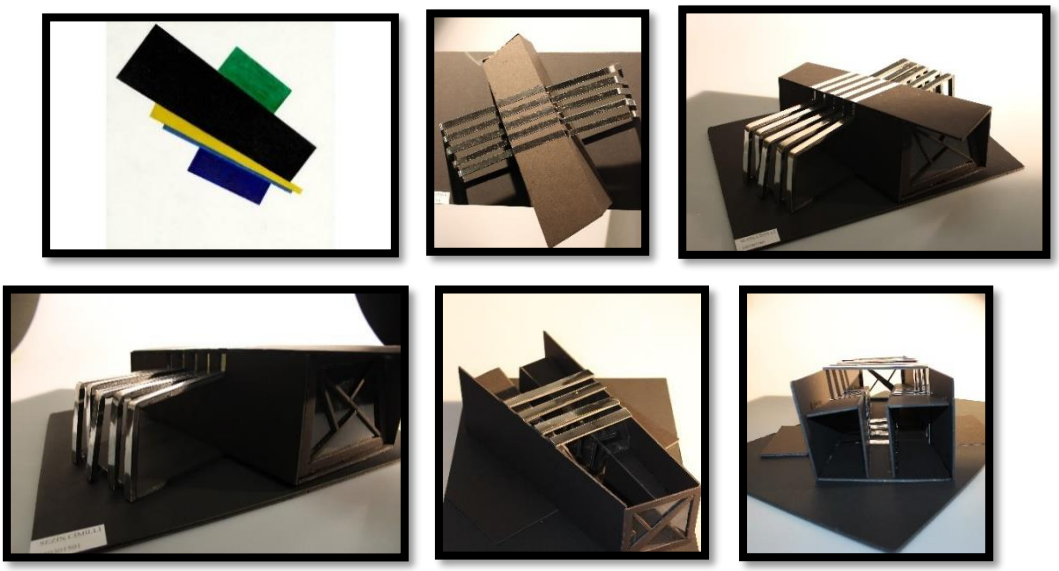

Fig. 7. Kazimir Malevich Transferring Works from Two Dimensions to Three Dimensions (Photos: Altuntaş, May 2019)

Each part of the two labyrinths is designed for a different sense in the space, which is designed from low to high, from dark to light and where the sense of vision is dominant. The sense of sight is dominant in the space that passes from a dark entrance to the light. While fragrant scents spread in the fragrance labyrinth, the space is experienced as cold and hot in the labyrinth of touch. Body-space interaction is reshaped with tactile, olfactory and visual perception.

Student's name and surname: Şeyma Kaya

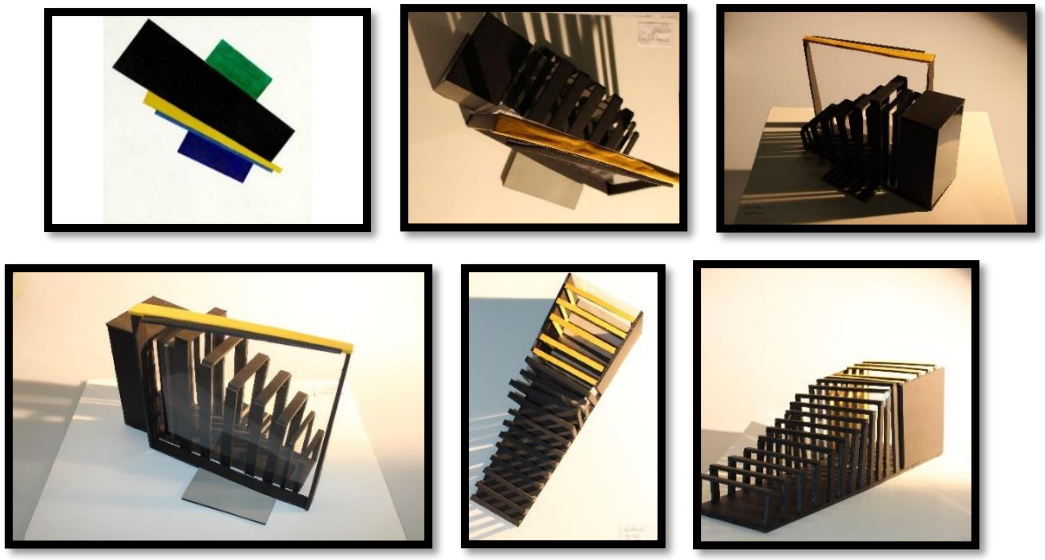

Fig. 8. Kazimir Malevich Transferring Works from Two Dimensions to Three Dimensions (Photos: Altuntaş, May 2019)

The space was designed so that the strips were intertwined by breaking the square mass. The motifs designed as the shadow of the stripes on the floor change direction according to the movement of the user. Vision and movement are dominant in this design.

Result

Today, it is accepted that there is an inseparable network of relationships between space and body. Spatial and Spatial experience can be revealed through the body. In spatial experience, the body corresponds to the 'living body'. The body we are talking about here is an open, variable body without limits. Therefore, it is seen that the body is handled in different ways in the concept of Cartesian space followed in the Renaissance period and the relational space understanding where spatial experience is given importance today. Within the scope of the study, the changes in the way the body is handled-comprehended as data in the space design are examined and evaluated. In this direction, nowadays, the inputs for the body, each of which is a subject of in-depth research, have been included with their basic features.

As a result, it has been tried to reveal that the body as data is not seen as a physical reality based on numerical data and mathematical values in today's production of space. Space comes into existence with the concept of experience that is possible with the coexistence of many perception styles. Here, the concepts of movement and memory support perception and enable spatial experience in an integrated way.

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HAPTICWALK: A TACTILE EXPERIMENT FOR CONSTRUCTING SPATIAL KNOWLEDGE IN THE LACK OF VISION

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Abstract
In today's world where the sense of vision and the act of seeing are becoming more and more dominant, the relationship between the perception of space and the act of seeing has been questioned from a view that passivates this very act. In a situation where there is no sense of vision, the attempt of the body and its other senses to experience its environment as active information seekers become important both in terms of the daily spatial experiences of people who lack this sense and the expansions it will bring to the discipline of architecture trying to understand the space in all its states. In this context, the two main questions of the study arise as follows: 1) How can it be possible to actively use spatial information and seek alternative ways of constructing spatial information in the absence of vision and active touch. 2) Is there any possible tool for both sighted and blind people to experience and form a common understanding of a space organization. In order to find answers to these questions, a tactile experiment was designed and conducted. For this experiment a prototypical interface has been produced in collaboration with electrical and electronics engineers and software developers. The prototype functions with Arduino systems and provides peripheral data to the experiment subjects by gathering spatial information from distance sensors. According to the outcomes from individual experiments, in the lack of vision and active touch; passive touch (where hands are restricted and body is sensitive to any stimuli coming from space transported by intermediaries) provided valuable information for test subjects which helped them to develop an understanding of surrounding space. Additionally this type of haptic experiments has been found promising for further research which aims to bring together sighted and blind individuals to form a common understanding of space. As a contribution, further developments of this kind of prototypes and interfaces between body and space may be beneficial for visually impaired individuals to construct spatial knowledge beforehand visiting an actual space. This kind of approach also found valuable for providing a different perspective by highlighting the multisensory quality of spatial perception, for designers during the design phase of their projects as well.
Key Words: Haptic experience; Space-body relationship; Spatial experience without vision; Tactile oriented perception

1. Introduction

The sense of sight, which has been praised as the most precious sense since the classical Greek thought system, has strengthened this hegemony and preserved its power over the senses until today due to technological developments. The technological developments that started with the invention of the printing press and the domination of printed visual products in many areas (education, art, daily life, etc.) has conditioned the sharing of ideas and events first through the act of seeing. With the broad use of television and various digital media, the importance of vision has increased in the environment-human communication and today, daily experiences that largely ignore the sense of touch have started to be offered with the development of virtual reality technologies. Taking into account Pallasmaa's words “vision separates us from the world whereas the other senses unite us with it”[1], with this study we aim to draw attention to the lack of other senses in these physical and digital environments supporting the hegemony of vision.

Not only in these environments but also in their design and generally in the design field, the domination of the visual materials support this hegemony. A quick overview of the literature reinforces this thought showing the pros and cons of the visual-oriented design. Although some researchers such as Cross(1982), Goldschmitt & Porter(2004) and Lawson(2000); describe the visual focus in the act of design as a strength and as a practical tool to represent and convey the ideas between designer and user, whereas according to researchers like Franck and Lepori(2007), Dischinger(2006) and Heylighen(2011) it may fail to give an exact idea of how the space will actually be perceived [2]. Because as mentioned before, the spatial experience is a continuum of all the senses and space itself is “a place for many senses: sight, sound, touch, and the unaccountable things that happen in between” [3]. Looking from both sides and considering both the daily spatial experiences of people and its design related aspects, this study aims to grasp a tactile oriented multisensory perspective of perception space without underestimating the importance of seeing.

When we consider the perception of the individual in daily experiences, it is an undeniable fact that s/he uses all five senses from time to time while perceiving his environment. In addition to seeing the space, the individual in the space as an experiencer collects the information from the surfaces s/he touches, from the smell s/he receives and the sounds s/he hears, and then constructs the layers of the perception of space to be remembered later. Yet, if we only rely on the perception which is dominated by the sense of vision, we may say that the individual looks at a series of moments rather than experiencing a place in the act of focused vision. However, spatial perception requires a peripheral vision. As Pallasmaa (1996) mentions, the very essence of the lived experience is moulded by hapticity and peripheral unfocused vision; focused vision confronts us with the world whereas peripheral vision envelops us in the flesh of the world. Alongside the critique of the hegemony of vision, we need to reconsider the very essence of sight itself [1]. In such a reconsideration he points out that all the senses, including vision, are extensions of the tactile sense; the senses are specialisations of skin tissue, and all sensory experiences are modes of touching and thus related to tactility.

Based on the assumption that vision is an extension of the sense of touch, it can be said that through peripheral vision, in which other senses are also active, the individual perceives the space, visualizes the form of the space in his mind through cognitive processes along with all other material features of that space, his experiences in that space gathered by in his own body. What is meant by one's own body here is not only the senses of the body but also its physical limits and range. Because it is also unlikely that any stimulus which does not affect the personal space of the body will be perceived through the senses. Bodily identification that will provide peripheral vision will only take place in the individual's personal space. While perceiving peripheral space, the individual perceives and evaluates spatial dimensions and qualities by the help of both its vision and by comparing space with its own bodily dimensions. The haptic experience seems to be penetrating the ocular regime again through the tactile presence of modern visual imagery [1].

2. Haptic Experience of Space with and without Vision

The relationship between the perception of space and the body includes a unitary transformation rather than a simple comparison between the limitations of the body over space. The person who perceives the space through its body and bodily boundaries, can also re-examine its bodily capacities over space and spatial boundaries. Spatial perception that occurs with senses and bodily intervention therefore should not be evaluated as a passive system.

According to the psychologist James J. Gibson, perception is not a passive process, animals, in nature, actively pursue environmental information through the act of discovery. Hence, Gibson treats senses as active information seekers rather than solely passive receptors, and instead of approaching them as five separate senses, he classifies the senses in five sensory systems: the visual system, the auditory system, the taste-smell system, the guiding basic system, and the tactile system[4]. According to him, it is only possible for a mobile and active organism to gather environmental information. Therefore, anyone who desires to perceive around too, must move their body, head or eyes to gather any visual information. Due to the fact that the act of seeking information via visual and tactile perception is based on this common essence, Gibson continues that the active touching action of the fingers and the examination of the surroundings produce a similar search with the eye movements. In respect to this, he calls active touch as tactile scanning by analogy with ocular scanning. Active touch, just like the eyes scanning around, emerges as a discovery that aims at acquiring environmental information rather than just being a receptive one. “Such movements are not the ordinary kind usually thought of as responses. They do not modify the environment but only the stimuli coming from the environment. Presumably they enhance some features of the potential stimulation and reduce others. They are exploratory instead of performatory”[4].

In addition to the theories of Gibson, Katz and Revesz [5] suggested that the hand, as the organ that performs the act of active touching, is also a kind of sensory organ. Revesz, who also observed the performance of the blind, suggested a non-forgetting experience mode called haptic, which went beyond the classical method of touch and kinesthesia. Haptic perception refers to the process of perceiving any kind of environmental information through touch. It is a complex perceptual system that encodes inputs from cutaneous as well as from kinesthetic receptors distributed over our body [6]. Haptic perception is formed by compounding tactile acuity, active movement, and what is derived from spatial cues.The active movement is narrowly linked to perception in the haptic sense. It tends to guide the observer’s attention towards the tactual properties, which are related to the substance, the structure, the surface and the moving parts of the object [7]. Active hand movement plays an important role in haptic perception since the focus of the users should be placed on the tactile scale model rather than their own bodily sensation, in order to perceive the spatial information[6].

On the contrary, it can be said that passive movement tends to enable the observer to focus on its own bodily sensations. This highlights two seperate possible ideas among haptic perception; without any active touch body could also perceive environmental information via its overall skin, through pressure, heat etc. and time is another

contributor to the whole process of perception that one need to take into consideration since every environmental effect on skin has its own pace, repetition and duration. Piaget and Inhelder [8] noted that the temporal metric is strictly related to spatial metric development. "Space is a still of time, while time is space in motion"[9]. Therefore we tend to easily perceive and interpret the whole course of action which lasts for some time in space. Also any kind of repetition or a period of touching is thought to be necessary to understand and differentiate possible conscious touch from arbitrary contact, in order to gather information about periphery during this passive movement. These types of movements are especially performed by visually impaired and blind individuals during peripheral discovery and this is why we found it important to develop a brief understanding of their spatial perception processes.

Starting from Piaget's idea, one might hypothesize that, when vision is not available, such as in blindness, temporal representation of events could be used to set spatial representations. If this is the case, we expect space representations of blind individuals to be strongly influenced by the temporal representation of events.[10] Morgan (1999) confirmed that blind individuals would often have overdeveloped abilities in other sensory functions to compensate for their lack of vision.[11] Researches indicate that blind individuals tend to evaluate the distance among objects correctly according to the sound they produce one after another[10]. Likewise, touching surroundings in an urban environment support enough information for blind individuals to move around without aid and haptic perception replaces visual information gathering. This supplanting between sensory systems is called cross modal plasticity. "The cross modal plasticity is the adaptive reorganization of neurons to integrate the function of two or more sensory systems. For the blind without visual experience, the visual system is still active. The information reaching the visually deprived 'visual 'cortex is coming from other sources since all afferents from the eyes to the visual cortex are largely atrophied: the born-blind subjects are capable of using other sensory modalities to integrate these inputs via the visual system to produce concepts capable of graphical representation"[12]. To process spatial information, sighted and blind participants both use the same stream with a slight difference; blind participants reroute their information which is gathered by auditory or haptic perception instead of the visual.

In addition, as Steyvers and Kooijman(2009) bring forward, blind individuals have to rely on environmental information other than vision, such as vestibular, haptic, and auditory information. In order to reach the target, they should understand the spatial relations. Therefore, blind individuals are able to construct a cognitive map from non-visual cues of their surroundings[13]. Millar(1994) highlights the multimodality of our spatial perception and claims that each of these senses, which are complementary to and which might overlap each other, is significant to understanding the environment[14]. In an unfamiliar environment, a blind person has many difficulties collecting spatial information and locating landmarks that make their way-finding process easier[15]. As Steyvers and Kooijman suggest, blind individuals' experiences in the environment are based on route-based information, which means that all collected environmental cues come from the route itself during the way-finding process[13]. However, the body as a measure sometimes may lose its efficacy, especially when the environmental scale gets larger and peripheral information spreads around a much larger area that one may not be able to touch and grasp a whole understanding of at a time. Passini and Proulx state that "to move freely in the large scale architectural and urban environment can be a difficult task for any person; but it can be an exasperating one for the visually impaired"[16].

Other than scale, Gaunet and Briffault propose that, blind individuals' ease of way-finding in urban environments relates to the complexity of the urban environment[17]. They depict basic environments as "structured urban environments, i.e., streets bordered by narrow sidewalks, walls or fences, with cross- and T-intersections, crosswalks perpendicular to sidewalks, one-step crossing, and a less than 15-m-wide road." Whereas they describe complex environments as "unstructured areas such as open areas, campuses or major roundabouts, which are usually avoided by blind pedestrians"[17]. They also propound that wayfinding for blind people gets difficult as the environment gets more complex and unstructured.

We, as sighted individuals, tend to perceive space by its visual qualities at first and most. However, it is important to consider the spatial relationships and elements regarding different senses, especially for universal designing. Haptic perception in that sense, seemed an effective tool for both sighted and blind people to experience and form a common understanding of a space. In order to equate circumstances, rather than leaning towards the active touch; which blind individuals might be more competent at spatial information gathering, we envisioned passive touch as a designated haptic perception method for our experiment.

Pereira as a blind architect enforces the importance of multimodality of senses during the process of spatial perception in his letter to Pallasmaa. He describes how a plain wall, placed on the edge of the sea, can shape the wind blowing and how many different experiences may the individual have about the same windblow around this spatial element:"...Now the air has lost its transparency. With this wall you can make so many colours and details in the air"[18]. Likewise in this short experience, during the experiment test subjects are expected to

develop an understanding of spatial organization and map their journey afterwards regarding the spatial boundaries they perceive.

3. Experiment: The Hapticwalk

3.1. Technical background and the design of the prototype

Designed to trigger an awareness of the potential of the space to nurture all senses, the project was built on the basis that the senses are active information seekers as mentioned by J. Gibson [4]. Theoretically, when the balance, established between the senses, is disrupted by any sense deficiency, the body tries to use the senses with which it is still exchanging information more effectively. The body restores this balance by developing a more sensitive perception of these senses than ever before. It is assumed that an excited state of the body which is triggered by blocking the sense of sight, will direct the body to engage with the sense of touch, one of the archaic senses, and thus the tactile sensing of the space may occur.

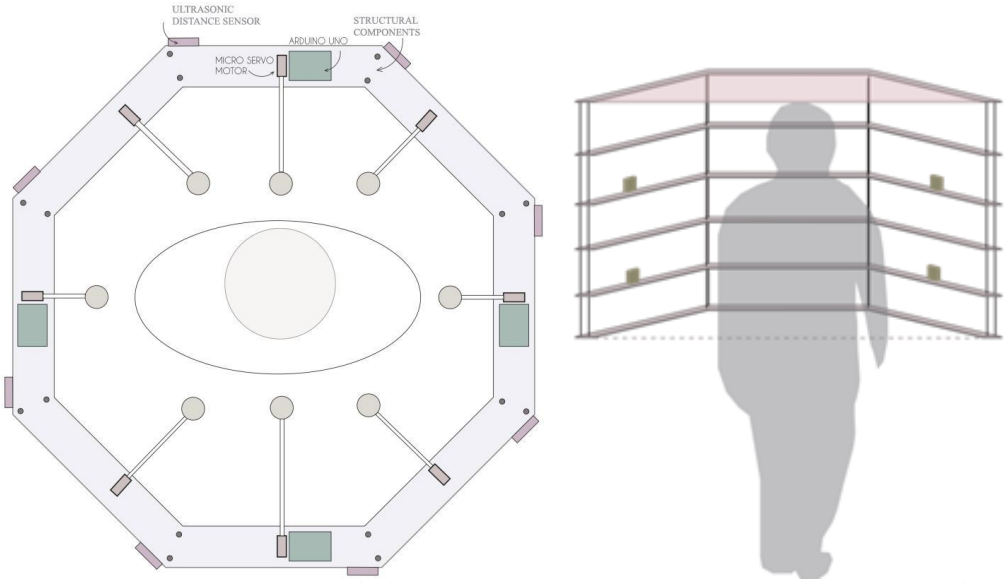

Fig. 1. (a) schematic horizontal section of the prototype indicating components; (b) schematic vertical section of the prototype indicating body-component relations

In order to meet these conditions, a prototype that can be worn on the upper body has been worked on. This prototype, consisting of three main and three auxiliary, six octagonal segments in total, is covered with rectangular modules consisting of photoblock in order to simulate visual deficiency (Fig.1).

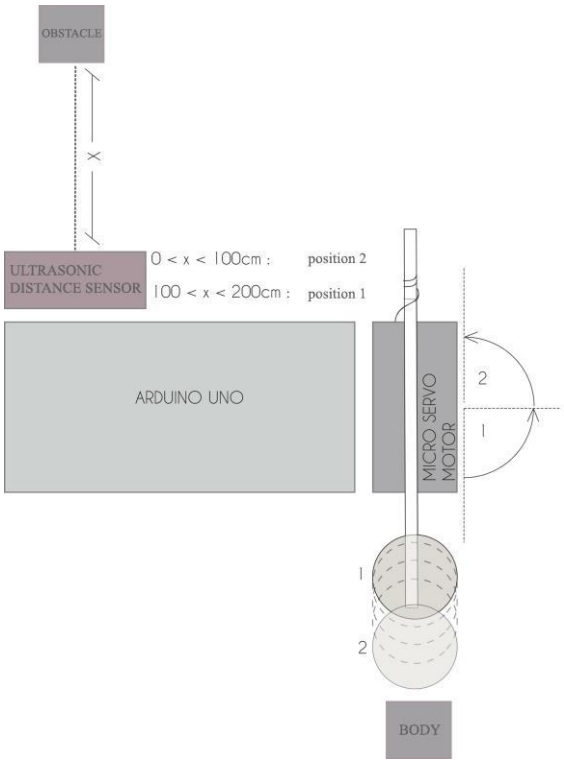

Fig. 2. Electronic circuit working principle scheme

The mechanical system of the prototype is digitally supported with robotic circuit elements. In this system, where one-to-one data flow can be provided from each ultrasonic distance sensor to the servo motors to which it is connected, all elements are connected in series to the circuit in order not to interrupt the simultaneous data flow. 4 Arduino Uno boards per segment and 8 Arduino Uno boards in total were powered by 9-volt batteries in order to provide user mobility.

Arduino code prepared to perceive the obstacles at most 2 meters away. It provides a 90 degree rotation to the servo motor for the distances between 1 meter to 2 meters and it provides 180 degree rotation the servo motor for the distances under 1 meter. The bar that resets in its gap the momentum of this rotation, only moves forward and backward directions. Thus this bar forces pushing and pulling force to the foam ball fixed on the tip of the bar, two of which constitute the stimulant component of the structure.

Subjects wear the prototype and experience the space around with the sense of touch from a total of 16 points at two different heights. It was aimed that the subjects could access rough information about the dimensions and form of the obstacles they encountered, and thus mentally map the place or route they were experiencing. Converting the digital data collected by ultrasonic distance sensors into data perceived by the body's sense of touch through the electromechanical structure; has been seen as a step to both the idea of inter-sensory transference in the perception of space and the idea of an interface design in order to temporarily break the hegemony of seeing (Fig.2).

2.2. The experiment and its outcomes

The experiment took place in Istanbul Technical University Taşkışla Campus in June 2017 by the contribution of randomly selected volunteers. Every experiment took approximately 1-4 minutes according to the adaptation duration of every individual to the given circumstances. For every subject, other volunteers performed a unique spatial organization, being spatial obstacles by their own presence in the space(Fig.3). After each experience, subjects are asked to evaluate their journey through space and if possible to provide simple explanations for their wayfinding which then helped research conductors to map their space perception. Selected transcripts of their individual experiences are involved below as samples of the outcomes of this experience which might be beneficial for further interpretations.

Fig. 3: (a) Random obstacle routes that can be created, (b) prototype

Subject 1:

"First of all, I felt that I was physically deficient due to the prototype restricting my sense of vision. After taking my first two steps, I felt stimulated from my right shoulder. I started walking to the left for a while. Then I felt one of the stimuli in front of me react. After a while, my body adapted to this limited situation, and with the guidance of the stimuli generated by the prototype, I mapped the physical boundaries of the space without hitting any obstacles, especially, without my sense of sight. It was a valuable opportunity for us, sighted people, to experience the spatial perception processes of blind people".

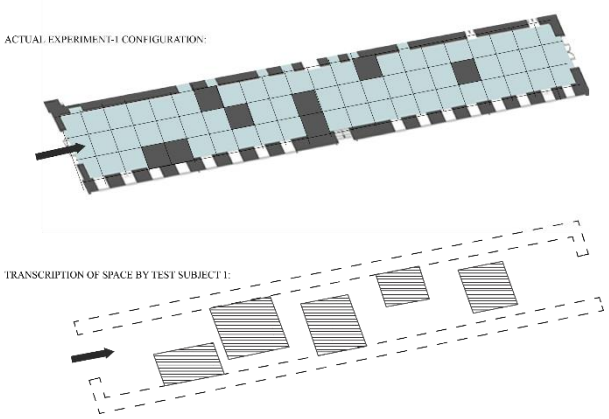

Fig. 5. First experiment's spatial organization and transcription

Subject 2:

"The inside of the prototype was very isolated and cramped. The fact that my body was in a restricted state made me feel uncomfortable at first. The direction of the stimuli with clear movements enabled me to draw my course in the space cognitively. I was able to understand in which direction there was a physical obstacle around my body by haptic sense. I observed that the discomfort caused by the prototype's physical limitations in the beginning turned into a feeling of security as the place was experienced. I can say that it was similar to the experience of a natural navigator mounted in my body which restricts my sense of vision".

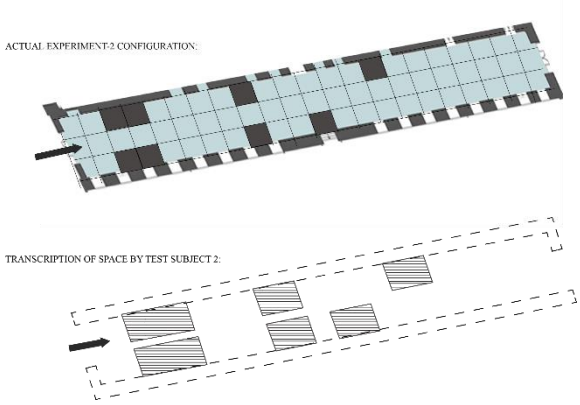

Fig. 6. Second experiment's spatial organization and transcription

Subject 3:

"In a state that prevents me from using all the usual ways to experience the place I am in, it forces me to heavily use my bodily eyes I can say.. It was a surprising experience that how fast my body quickly became active when I was blind. Since the spatial organization was kind of organized and repetitive, at a point I grasped what to expect next and moved relatively easier then. As a designer, it made me think of every little detail I designed and placed in a room with a bodily perspective, since now the thing matters, rather than any visual effect and material I rely on, is the true effect and importance of any interference designed in the given volume".

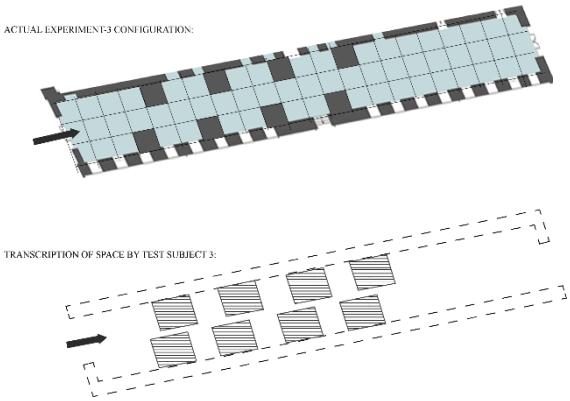

Fig. 7. Third experiment's spatial organization and transcription

Subject 4:

"When I wore the prototype, it seemed that my previous knowledge of the place I am in began to rapidly transform. Since I was no longer able to progress visually and determine my distance from where I was, my full attention was on the points that touch my body with reference to my distance from surroundings. I felt like these points approaching my body and moving away were integrating with my body at some point, my body and they were like moving together. While my body is sending information to my feet and my feet to my mind, the potentials of the space in triggering the senses came to my mind. It was also a useful experience to gain empathy for blind people as well as to imagine the space and the city in their respect as an architect".

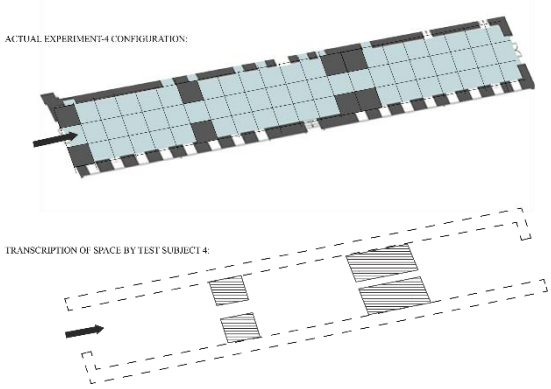

Fig. 8. Fourth experiment's spatial organization and transcription

4. Conclusions

As a result of this research in which the prototype was experienced, it was possible to make significant inferences regarding the research questions addressed before. The limits of the cognitive space of individuals with sight are determined in the most basic way by the sense of vision. The individual is able to have a spatial perception from its fixed position, without taking any action, as long as its sight perception allows. On the other hand, the limits of the spatial perception of blind individuals are drawn as a result of the individuals' movements within the space. To put it more clearly, it will not be possible for this blind individual to perceive the space by standing still at a point. The perception of space and its mental mapping towards this space will increase regarding the amount of experience the body has in that space. The first research question of the study deals with the issue of recognition of space through passive movement. The subjects who have restricted active hand movements because of the narrow interior space of the prototype, were able to discover the obstacles and create simple mental maps of the physical boundaries in space, by the help of the prototype stimuli that touched their bodies wandering around the space.

The secondary research question of the study varies depending on the results of the relationship between sensory and bodily identification and the correct perception of space, the number of subjects and the scale of the prototype. In this experiment, regarding the scale of the environment and the wearable prototype, individuals were introduced to the stimuli that touch their bodies representing the boundaries and obstacles directing them around the space, rather than a precise perception of the exact volume of the space. Bodies and movements that got rid of the hegemony of the sense of vision in exploring space have encountered an extraordinary experience that they can identify with space only on the scale of their own body. The "Hapticwalk" experience, projected here within the scope of the research subject, has the potential to create more accurate projections about the perception of space in the mind by reproducing and refining the data transferred to the sense of touch.

These results contributed to our prior assumption about the adaptation process of passive touch oriented peripheral discovery of sighted individuals, once the body was adapted to the wearable prototype it became easier to move around with it and explore the spatial boundaries consciously. Using stimulant component based navigation, it was possible for subjects to recognize and remember the spatial organization of an indoor environment. Interpretations of the presented haptic information through cognitive mapping of individuals were compared to actual experiment spatial organizations. It is observed that since there were different degrees of touching stimulation varying to the proximity of the body to the obstacle, individuals perceived obstacles larger than they actually are as seen in the space transcripts. This situation also led individuals to perceive closer obstacles as one larger unit than separate entities. For individuals to gather more detailed volumetric understanding, it is observed that the prototype needs more stimulant components around the body, and the distance susceptibility should be more accurate.

The outcomes from this feasibility study show that with further research and improvements, blind individuals may benefit from this haptic system for gathering information about the spatial configuration of a building, obstacles and routes around it even before actually visiting. This type of a system combined with auditory data would be helpful for individuals especially who need to be at crowded complex buildings such as museums, campuses, concert halls beforehand. Being situated in an empty space and experiencing the aimed space virtually within the prototype, after several repetitions they might develop a mental map of their route and other potential paths of interest inside the aimed building. Further research should be carried out in order to examine the specific factors affecting distance susceptibility and volumetric perception precisions as well as electrical coding techniques which might include prior saved volumetric data to perform within an empty space for haptic perception of individuals. Therefore not only blind people but also the designers could be able to experience

their architectural designs, not guided by sense of vision but haptic and other senses to test the multisensory quality of their designs. However, it is hoped that future researches will benefit from this experimental design and results shown here.

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The Ship of Theseus: a paradox fit for Master of Architecture students

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Abstract

This paper describes a pedagogical exercise involving Master of Architecture students and their investigation of the ancient paradox of Theseus' ship. The myth was offered as a starting point for developing a personal design brief and was conducted in collaboration with a real client, who represented the philosophy forum at the University of Lincoln, thus mimicking the reality of client-designer relationship in professional practice. Work was developed by students both individually and as a group and the exercise forms part of ongoing action research led by the authors. The Greek myth, with its inherent abstraction, presented students with a conundrum regarding their expectations from a brief but also, quite importantly, it tested their approach to challenging, unfathomable problems. Their responses revealed their thinking patterns, tried their ability to experiment outside of comfort zones and altered the expectations of student-tutor relationship: answers could not be given, the process had to be led by the students and their individual research into the paradoxical world opened by Theseus' ship myth. The goal of the project for our client was the building of an installation to be exhibited on campus in Lincoln, students had to divide labour for this enterprise to be successful: from designing it, to procuring materials and building it, to PR exercises and feasibility studies for suitable display spaces. The work was student-led, under the guidance of the two authors, in the spirit of the 'Student as producer' ethos embedded into our teaching and learning practice at the University of Lincoln. The paper presents our pedagogical approach, the students' responses as their completed work and the production of the installation, detailing some aspects of the process, which unfolded, tripped or accelerated like any live project. The paper also offers a contextualisation of the significance of such philosophical approaches within architectural education and practice, through several case studies analysed here from points of view suggested by Theseus' ship paradox.

Key Words: *architectural pedagogy, action research in architectural education, active learning, Theseus' ship and architecture, students as producer*

1. Introduction

Greek myths are not simplistically optimistic, rarely didactic and almost never black and white. If those myths had been mere stories, they would have been long forgotten. They were much more. Those ancient intellectual seeds have been growing into an orchard of paradoxes treasured by thinkers the world over. Greek myths have given birth to a great family of philosophical ghosts, asking often uncomfortable or unanswerable questions. Greek paradoxes test you. They like to ask profound questions without offering easy answers. They ask you to take a side. They seem to say, 'Tell me what you think about our paradox, and we will tell you who you are.'

Plutarch, in his mythical story, created the ghost of 'Theseus Ship' when he wrote:

The ship wherein Theseus and the youth of Athens returned had thirty oars, and was preserved by the Athenians down even to the time of Demetrius Phalereus, for they took away the old planks as they decayed, putting in new and stronger timber in their place, insomuch that this ship became a standing example among the philosophers, for the logical question of things that grow; one side holding that the ship remained the same, and the other contending that it was not the same.

Since the time of ancient Greece ghosts have inhabited humanistic ecosystems of various philosophical fashions. Their ethereal bodies allowed them to levitate over cities and time. They were always eager to accompany painters, poets, writers, politicians, and psychologists such as Sigmund Freud, as he gave names to Narcissism or the Oedipus complex. Thanks to the paradox of Theseus' Ship, the problem of identity encapsulated a seminal European dilemma: is an object with all of its parts replaced still the same object? – a question still asked today by thinkers as diverse as Thomas Hobbes, Ted Sider and even Noam Chomsky, thousands of years after Plutarch.

We took on this question, but could one of the oldest concepts in Western philosophy resonate with 21st century architecture students? And if it did, would it have any relevance to their development, their thinking, their ability to find their voice, define their beliefs - within the profession or even life? This article reflects on our experience, following the trials and tribulations of the 2018-19 year 4 Master of Architecture students who were asked at the beginning of their studies to consider the *Ship of Theseus* paradox.

The context of this teaching and learning experiment at the University of Lincoln was a collaboration between Graham Freestone, from the *Centre of Experimental Ontology*, and the MArch year 4 students and tutors, Marcin Kolakowski (studio tutor and year 4 coordinator) and Doina Carter (studio tutor and MArch programme leader). The *Theseus' Ship* live project followed the success of our previous work conducted in cooperation with Graham in 2017-18, when he initiated and funded the building of a contemporary *Orgone accumulator* (Kolakowski & Carter 2018).

2. The paradox of Theseus' ship

Fig 2: The ship of Theseus (https://thefunambulist.net/literature/philosophy-the-ship-of-theseus)

Across millennia, philosophers approached the *Theseus' ship* thought experiment differently, some suggesting further questions, others proposing epistemological frameworks to help derive solutions for the paradox. The original question was: which is the *identical ship* to the *original ship*? Is it, what Brown (2015) calls, the '*continuous ship*, which is the ship whose spatio-temporal history is *continuous* with that of the original ship' or is it the '*reconstructed ship*, which is composed of the same set of planks as the *original ship*?' (Brown 2015 p145). The attempt to solve the paradox raises questions of identity, place, time, matter and so on. The thought experiment has several variants, for instance the *grandfather's axe*, and was furthered with questions such as: if technology allowed the stored rotten planks to be reassembled into a working ship, would this be the ship of Theseus?

The paradox surfaces in various fields of philosophy and our students investigated some of them. For instance the philosophy of mind (the mind-body paradigm), in which case the paradox is applied to a person instead of the proverbial ship and the question becomes: do physical, psychological, circumstantial changes, trauma or the passing of time, affect one's identity? The film 'Tully' (2018), written by Diablo Cody (directed by Jason Reitman), is a parable based on the paradox, a very un-Hollywoodian view of motherhood, raw and often uncomfortable. Theseus' ship paradox is mentioned in conversation, one of the few ciphers to the film's meaning which punctuate the narrative.

The question of a person's essence, body versus soul in defining one's identity, was Morolaoluwa Tolani's premise for her project and her response was a kinetic installation which appeared to be a generic box but contained symbols of decay and permanence and surprised with its movement (fig.3).

Fig 3: Morolaoluwa Tolani – *She*

Another field in which Theseus' ship has relevance is the philosophy of law or practical law, where for instance a trading name is disputed by founding and subsequent members – our own year 4 cohort was the subject of one of the projects developed along this theme (fig. 4). Tunny Lok Leung posed the question of our identity: we were the *MArch year 4 of 2018*, a uniquely identifiable entity formed by a combination of people. Variations to this composition would not affect how the entity was known, but leaving or joining the group would change its dynamics, its *soul* – Tunny considered that the 'spiritually' the group would be different.

Fig 4: Tunny Lok Leung – the Ship of Us

However, for our 4th year students, the question of identity and its essence became the most investigated consequence of the paradox. Usefully, for the purpose of categorising their responses, Aristotle and his disciples, considered that there are four *causes* or *explanations* which described a thing (Lloyd 1968):

- **Formal cause** or form (the *cause* of an object's form or of it having that form) is its design.
- **Material cause** is the matter of which the thing is made.
- **Final cause** or **end** is the intended purpose of a thing – for our students that would be the *function* (mythically, the ship's original function was to transport Theseus, while politically its existence as a feasible vessel served to convince Athenians that Theseus was once a living person despite the ship's material cause changing with time).
- **Efficient cause** is how and by whom a thing is made.

For architecture students, materiality and craft are important aspects, the *efficient cause* was ingeniously investigated by Fatin in her project (fig. 5). She used the same paper of the same size but different techniques to make boxes, as a commentary on the individuality of each plank despite the fact that they looked the same, as if mass produced. Looking at the paradox from this point of view, Fatin contends that there could be no question about the mended ship being considered original.

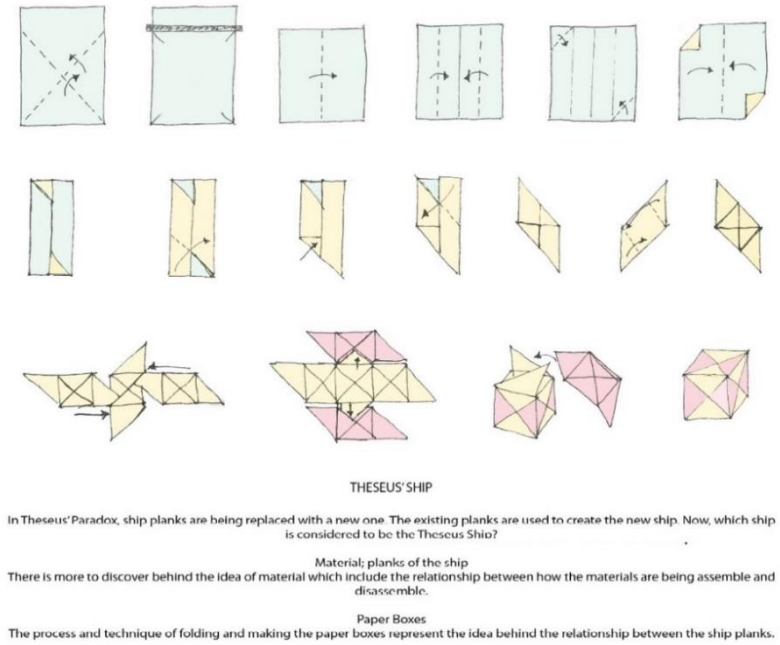

Fig 5: Nurfatin Syahirah Mohd Yusof – Making the 'planks'

Not so usefully, Aristotle believed that 'what it is' of a thing is its *formal cause*. In other words the identity of a thing is its *form*, therefore the 'continuous ship' was Theseus' ship, because it remained the same despite its *material cause* changing. Our students' investigations and conclusions disagreed with this stance, especially when applied to identity, be it of an object, an individual, a group, a nation.

Because of this incongruence, some students' investigations moved on to consider perception: if 'what it is' of a thing is its *form*, therefore what you see, what happens if what you see is dependent on your point of view? An intellectual or spatial point of view.

Fraser Swindell took this as his cue for developing a response: the ship in the Athenian harbour meant a lot of things to different people: a vehicle, armour and auspicious vessel for Theseus and his crew, a carrier for the merchants, a means to achieve political gains for the rulers, a welcome sight for the sailors' families. Their perception of the ship was informed by their interests, it depended on *what* they saw in it. Fraser's sculpture embodied this commentary (fig. 6).

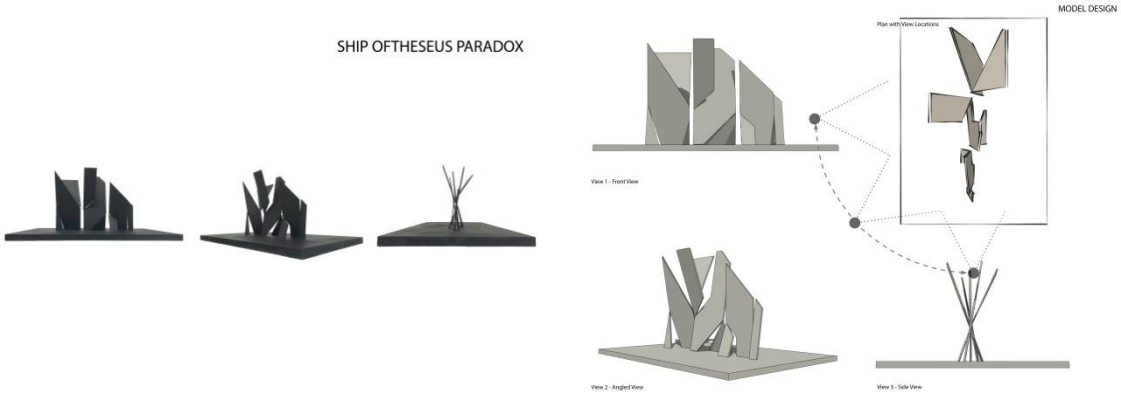

Fig 6: Fraser Swindell – Is it a ship? Or a conglomerate made from a deconstructed tree?

The idea of optical or perceptual illusions was taken further by other projects. Oluwatomiwa Saba proposed a box of illusions (fig.7), where simple tricks of physics manipulated the perception of one object, a tree. This

could be seen as a potent commentary on mediated relay, such as contemporary journalistic methods of conveying news - truncation, magnification, repetition, exaggerated exposure and so on.

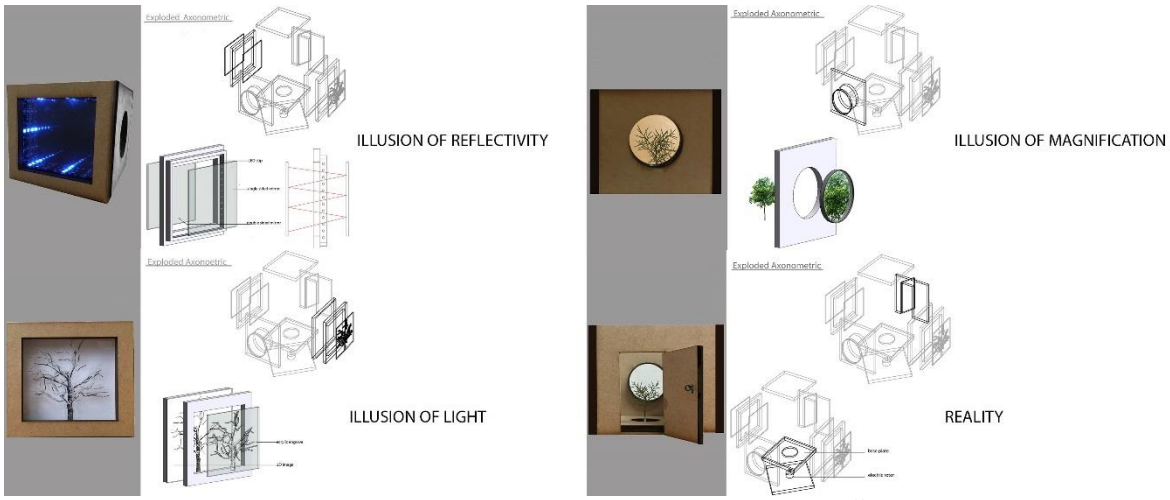

Fig 7: Oluwatomiwa Saba – 4 illusions: seeing the same object through different portholes

The concepts of perception and illusion also guided Farhan Ahmad Bin Syed Amanullah's proposal development, assisted by his interest in Javanese and South Asian traditional art theatre known as 'Wayang Kulit'. In Frahan's view, the decision on which is the original ship will depend on one's perception. Wayang Kulit uses shadow casting on a screen in order to tell a story. Farhan talks about how the screen is our perception: the image *on* the screen is what one sees, that becomes true, regardless of what is *behind* the screen, which can be anything forming the 'idea'. His installation plays further tricks, because he used the same drawing to cut positive and negative profiles that, when rotated, create several different images projected on the screen (fig.8).

Fig.8: Farhan Ahmad Bin Syed Amanullah – It's an illusion

Another issue with Aristotle's four causes is that they do not include the symbolic or spiritual dimension of a thing, which is something students revealed as fundamental when trying to define *identity*. For Lily Lambert the essence is the story carried by an object rather than its appearance, in her case *the* teddy bear – comforter, toy, comrade, guinea-pig, confidante, witness (fig.9). Here there is no paradox to be had: a teddy bear will always be *one's own* teddy bear, missing 'planks', grafts, button eyes and all.

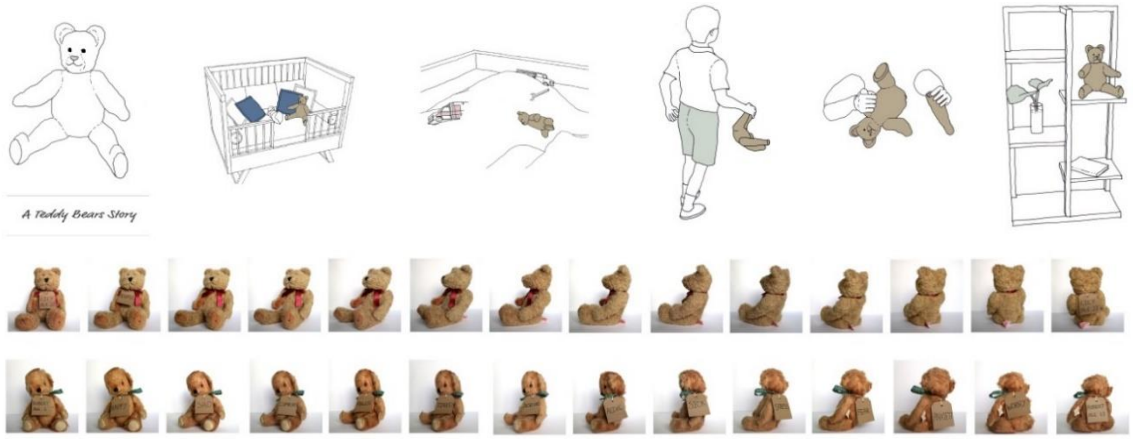

Fig 9: Lily Elisabeth Lambert – A teddy bear story

Another project which focuses on identity is Maddie Anderson's globe. It carries the powerful statement that physical appearance only shapes the perception of its identity (fig.10).

Fig 10: Concept and cast by Maddie Anderson

By ignoring *the soul* (or *essence*) of the thing, whatever that might be and however defined, the view that 'what it is' of a thing is its *formal cause* reinforces the supremacy of the visual in cognitive processes, information acquisition and knowledge accumulation. Theorists and practitioners have argued that this stance is particularly detrimental to architectural design, because atmosphere in architecture relies, amongst other things, on haptic, auditory, olfactory perception (Pallasmaa 2016, Zumthor 2010). Also, the form of the *architectural thing* follows other causes. For architectural educators it is of primordial importance to convey the idea that form, the *design* of a building, is a response (to numerous factors and constraints) rather than only a visually pleasing creation. Because of this, the Aristotelian belief in the pre-eminence of the formal cause is troublesome: a hospital could not function if it only *looked* like a hospital. The corollary is also true: architecture which only fulfils a function is not sufficient either. For instance, the function of a place of worship is to provide shelter for a congregation – this necessity could be fulfilled by a warehouse. A church however is much more than a large space, as Pevsner (1957 p23) pointed out: 'A bicycle shed is a building; Lincoln Cathedral is a piece of architecture. Nearly everything that encloses space on a scale sufficient for a human being to move in is a building; the term architecture applies only to buildings designed with a view to aesthetic appeal'. For architects, Vitruvius' definition of architecture having to have utilitas, firmitas, venustas still stands (usefulness, solidity, beauty).

3. Pedagogical paradox

For our students, the speculative nature of the paradox seemed to place the dilemma posed by *Theseus' ship* firmly in theory, as if belonging exclusively to the world of academia, rather than that of practice. Such an amorphous, fluid, vague starting point was vexing for a live project, meant to be pedagogically 'situated learning' (Lave & Wenger 1991) which by definition creates an environment mimicking practice because 'human knowledge is initially developed not as "general and abstract", but as embedded in social, cultural and material contexts' (The New London Group 1996). Indeed, a lot of students found Theseus' ship intellectually challenging, the idea of the

paradox being too abstract to offer any immediate, or even foreseeable, relevance to architectural work - in consequence some decided to pursue this very uncertainty as their line of inquiry.

A conundrum, for Harriet Oxley, was the paradox itself: for whom and why might it be important which was Theseus' ship that the question of authenticity becomes a paradox? She reasoned the ship's preservation was significant for the citizens of Athens and that was because the ship was like a palimpsest, its markings and scars 'narrated' the journey of labours undertaken by Theseus, Athens' founder. Thus, the value lies in the ship being an artefact, an original, as those stories ingrained in its flesh testified to the accuracy of Theseus' myth. As material proof of their continuous history, the ship becomes an object of symbolic and emotional value, to which the social unit of the city of Athens is associated, a tendency Goldenweiser (1910) defines as totemism. Following this rationale, Harriet proposal was a vessel to which a community's (hi)stories could be attached and carried in perpetuity (fig. 11).

Fig 11: Harriet Oxley – Material transmission of wisdom

Other students, on the contrary, found the abstract nature of the paradox as a brief liberating and they embraced the intellectual freedom given by philosophical speculation, as it allowed them the rare chance to investigate and eventually conceptualise very personal, emotive issues (such as Lily's *Teddy bear story,* Fig.9).

Exposure to the intellectual challenge of the paradox as a starting point for a design brief revealed our students' thinking patterns or preferred approaches when dealing with alien concepts. Resulting propositions varied from empirical approaches to material experimentations or examinations of self or society, as attested by the examples described here.

Macaulay Curt dissected the paradox in an almost scientific way, using entropy as the premise for his argument. He posits that the ship's disintegration is to do with the second law of aerodynamics, which states that the entropy or disorder of a system always increases. Mac's argument was that the ship will follow this tendency to disperse which is in contrast with the human desire to establish and maintain order. He concludes that the ship can be perceived as the same ship only if it retains the same ordered form rather than a random one (fig.12).

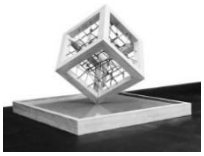

Fig 12: Macaulay Curt: Entropic ship

Mac's installation allowed the reading of the effects of time (fig.12 right), following his other experiments which demonstrated the chaotic, amorphous outcome of melting ice cubes, a typical example used to explain entropy.

Another pragmatic approach was that of Yifan Shi, who started dismantling the paradox with the precision of a scientist, because for her that was a familiar territory. The proposal however got formalised in the speculative world of philosophy. She questioned the paradox with an initial interrogation: what is known to us? The question is posed relative to different dimensions: even if we assume we know which Theseus' ship is to begin with, expanding on the allegory of Plato's cave suggests that our understanding might be inadequate in any case (fig. 13).

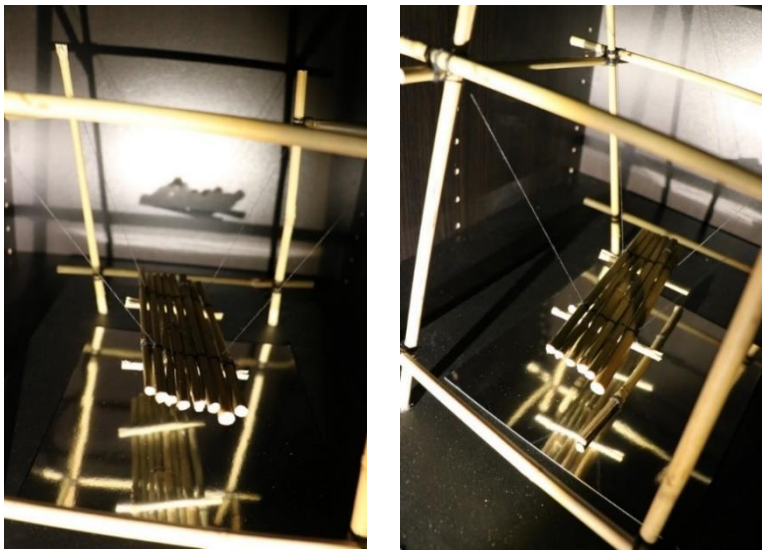

Fig 13: Yifan Shi: The ship in the 4th dimension

For us as educators, these first forays into the project, which involved (self)interrogation and (self)discovery, accompanied by doubt, constituted one of the most successful phases of the project.

For Billie Chell for instance, the project became a contemplative examination of identity and growth. She observes that stasis is unrealistic, but also that change can be either beneficial or damaging to versions of self. However, it is through reflection and learning that the 'system' can continue (fig.14).

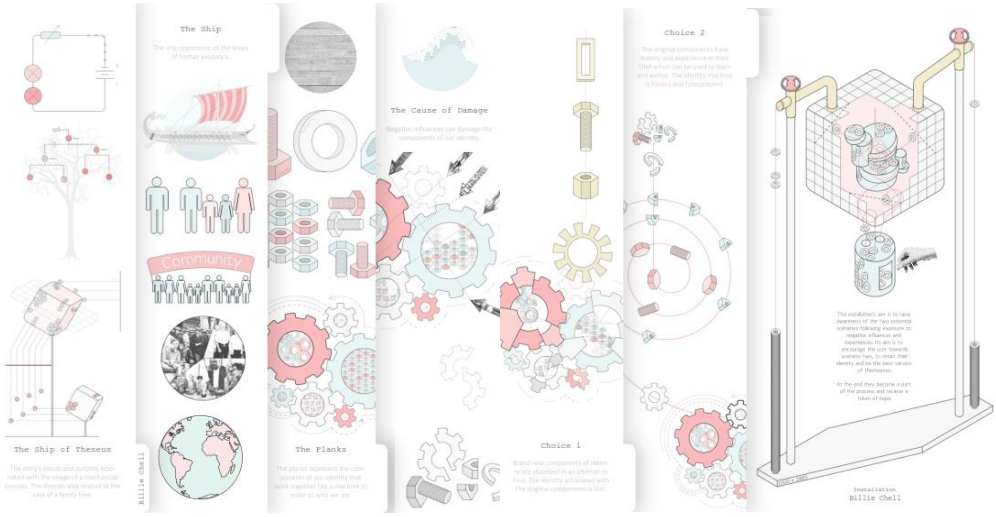

Fig 14: Billie Chell – Change as learning

For Kenneth Smith the project allowed him to delve into the worlds of myths and philosophy and he concludes that deciphering the paradox depends on tools of understanding; as a result, he proposed eight different lenses through which the paradox could be scrutinised, identified as 'glyphs' in his installation (fig.15).

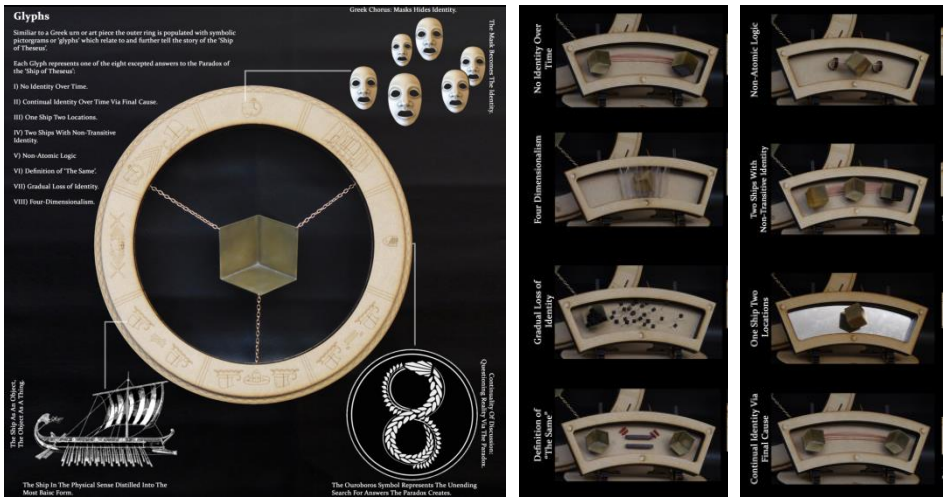

Fig 15: Kenneth Smith – Glyphs, tools for deciphering the paradox

4. The learning

Our students were encouraged to consider the paradox in search of authentic reactions, to learn and reveal more about themselves, their beliefs, knowledge or preconceptions, rather than attempting to resolve it. This pedagogical approach characterises problem-based learning, when the process of developing a resolution to a problem starts with questioning the question; in consequence, students engage with complexity and see and manage ambiguity (Savin-Baden 2010). Students need the confidence to take risks, to investigate without any certainty that the path scrutinised is the right one and be able to test ideas and continuously calibrate their responses according to new knowledge revealed in the process.

Assignments proposed in the first year at post-graduate level rely on sets of knowledge and skills assumed to have been acquired in undergraduate years and experience in practice. However, the levels of enquiry at which students have to operate while studying on a Master course represent the highest rungs in Bloom's taxonomy (in Atherton 2011): students need to be analytical, critical and develop their ability to synthesise and create. We encouraged our new cohort, who arrived with a variety of backgrounds, to use any techniques at their disposal to externalise, record,

express, refine their thoughts because the most important single factor influencing learning is what the learner knows already (Ausubel et al 1978). For us it was important to engage students from the start, even if they found the task challenging, and they responded well: the physical models they produced in response to the paradox demonstrated they felt confident to experiment and take risks (fig.16).

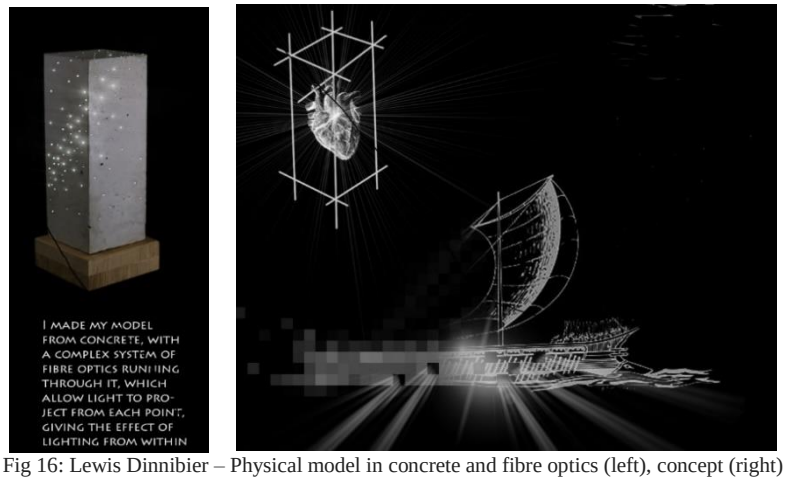

Fig 16: Lewis Dinnibier – Physical model in concrete and fibre optics (left), concept (right)

While live projects in architectural education are seen as essential, issues such as accreditation criteria having to be met by all UK validated programmes' curricula could pose limitations of time, money or resources. Both of the MArch live projects run in the last couple of years were adopted because they encouraged the study of 'cultural, social and intellectual histories, theories and technologies that influence the design of buildings' and facilitated 'the application of appropriate theoretical concepts to studio design projects, demonstrating a reflective and critical approach' (ARB 2012 p3), these forming part of the criteria being required to be met by all architecture graduates. Chandler (in Harriss & Widder 2014) stresses that only explicit mention in formal terms of accreditation can ensure that such highly labour and material-intensive undertakings are funded by schools. However, in this case, the projects were well supported financially and logistically by our client Graham Freestone and the CEO, as well as by the *School of Architecture and the Built Environment*.

5. Final design and construction of the Theseus' ship installation

In the first instance, the brief issued in September 2018 asked students to develop individual reactions to the paradox, employing any methods of investigations they considered appropriate, with an emphasis on experimentation and encouragement to test comfort zones – in thinking, design methodology and processes, representation. This approach proved successful as students challenged prior knowledge and understanding and their outputs were impressively diverse, often the results of techniques they used for the first time, such as casting in concrete and clay (Maddie Anderson – fig. 10, Lewis Dinnibier – fig. 16), making Japanese style bound booklets (Harriet Ozley, fig.11), testing of temporal changes of physical states (Macaulay Curt – fig.12), crafting motorised or mechanical kinetic models (Morola Tolani – fig.3 and Farhan Ahmad Bin Syed Amanullah – fig.8) and so on. As mentioned, another successful aspect of the project was the leap of faith taken by students when engaging with a brief like no other they had attempted before, as they questioned themselves and experimented with their ideas and designs.

After the initial stage of individual work, the whole 4th year cohort started the design, procurement and building of a Theseus' ship inspired installation, which was sponsored by our client and was to be displayed in the university library and other spaces after the vernissaje in our school. The work was conducted by students almost completely independently from us, in parallel with their individual studio projects. It was decided to design and build a projector similar to Farhan's proposal, with an internal carousel-like moving part reminiscent of Farhan and Morola's models, which offered views of an ever changing sculpture based on Fraser's concept.

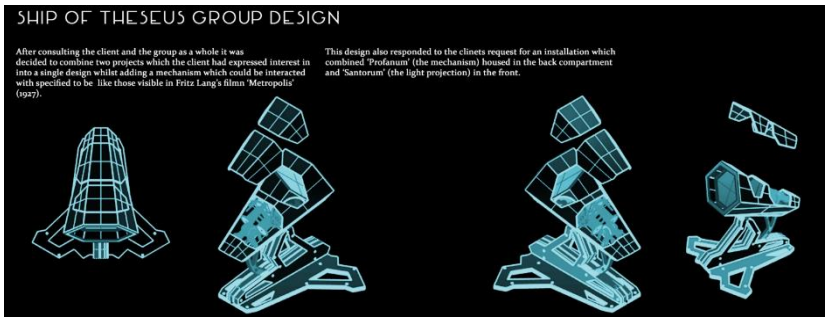

Fig 17: Kenneth Smith: design for the Theseus ship installation

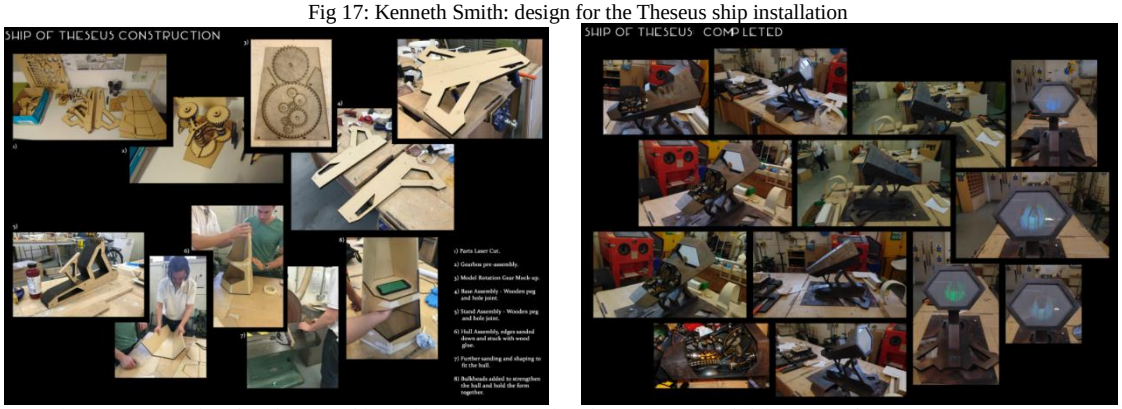

Fig 18: Constructing the Theseus' ship projector, from cutting the components (left image) to finished product (right image)

The initial brief asked students to explore the philosopical, ecological, technological, ethical, historic and design ramifications or posibilities suggested by Theseus' paradox. The expectation was for them to use a multitude of methods, knowledge and skills to investigate and develop a personal view point in relation to this thought experiment, because its premise deals with questions confrnted by architects in practice. Their enquiry could then be applied to the natural, urban or building environments. Are buildings in which most elements have been replaced still the same buildings? What about cities or communities? What is our and the built environment's relationship to change? Isn't change the essence of life? Every seven years all the cells in our body are replaced. Are our bodies the original 'ship' or not? How does or should architecture respond to time and change? Should architecture be unchangeable or learn from life? What are the issues posed by preservation, restoration, revitalisation, regeneration?

6. Conclusion

The theme of Theseus' ship paradox created an intellectual space for our students on their return from a year or more practice, a good medium to help them readjust to the academic world. Although they found it abstract, especially introduced as a live project, their readiness to explore and creativity resulted in an impressive variety of conceptual proposals, presented here. For us it was rewarding to see that students took on the challenge together with our advice to use the process as means of finding out more about who they are as people and future architect-citizens. The project saw them wrestling with the subject being a paradox or their attempt to solve it in a way that suited their patterns of thinking, their view of the world, their life experience and so on.

Interestingly, our projections for the outcome were different from what the students produced and until the end of the project, when the physical model was complete, we continuously recalibrated our expectations. Witnessing and supporting the students' personal incursions into unfamiliar philosophical territories and the subsequent emergence of personal responses, articulated in a proposal, represented the pedagogical success of the project. In effect the students managed to develop new *ways of thinking and practicing*, considered to be 'a crucial threshold function in leading to a transformed understanding' (Meyer and Land 2003 p9). Transformed understanding or threshold concepts are considered the fundamental building blocks of learning (Meyer and Land 2003).

Although as pedagogues we had run similar projects in the past, having refined the delivery and organisation with every iteration, the variables introduced by individuals make the process less predictable, especially in cases such as this, where students are left to self-regulate as a group.

The paradox enriched our curriculum, its implications being perpetually relevant to architects as buildings are some of the most durable traces humans leave. Looking after them - laden with symbolism or more modest memories, eroded by the elements or us - is a job that requires sensitivity and sensibility, and how better to form these traits then challenge novice Master of Architecture with a paradox or two.

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Fig 1-18: Students' own work and Doina Carter

6th International E-Conference on New Trends in Architecture and Interior Design

October 16-18, 2020

A METHOD OF BASIC DESIGN TEACHING FOR INSTILLING CREATIVE THINKING PRACTICES IN THE CHANGING STUDENT PROFILE: CONCEPTUAL-CONSTRUCTIVIST TEACHING METHOD

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Abstract

The developing technology leads many changes in daily life of individuals, especially young people. Their expectations and judgments are evolving into a different version compared to the past. Especially the internet and the use of social media as a new social platform affects not only the familial and peer relationships of the young generation, but also their education. Encouraging young adults to think and to be participated in the courses are gradually being difficult for the practitioners. Therefore, character of 18-24 year-old young adults necessitate a new approach in education. In this context, this study recommends "conceptual-constructivist teaching method" for increasing the active participation and creative-thinking practices of the recent student profiles in basic design studio. The study also contains a sample application for clarification of the method. The data collected during the research process indicates that the recommended method will improve creative-thinking in students taking basic design education and allow them to play a constructive role in the basic design education process.

Key Words: (Times New Roman, 8pt, Bold-Italic) *Basic design education, Conceptual-constructivist teaching method, Creativity, Technology, Social media*

Introduction

Design is the experiments during the process of transforming certain images created in the mind into concrete and original products, within the limits of the problem and in line with certain goals. International Council of Societies of Industrial Design (ICSID) defines design as the main factor of humane humanification of technology, and a vital factor for cultural and economic transformation [1]. Design is a proposed plan for the solution of a problem. It is an idea at first. The imagination includes a dynamic of formation and in this process, the idea becomes concrete [2]. Therefore, the process must be defined, not only the word itself. The design process is the process of finalizing the design shaped or produced in the mind by creating plans or sketches [3]. The relationship between this process and creativity begins with having the ability to create something beautiful, something different and unique. The presence of an infinite number of solutions within certain limits indicate creativity in design.

The definition of creation is bringing something into existence from nothing, making the beautiful, setting up and giving birth. Creation of the undiscovered and unique is the essence of the word. Researchers define creativity as elite or democratic; reproduced from nothing or everything and adaptable; spontaneous or thought-out and learned; universal or culture-specific; imaginary and intuitive or knowledge and skill-based; inexplicable and instinctive or qualitative and testable [4]. [5] Denel claims that almost every child is born with creative abilities, but while some develop and improve this ability, others lose the ability gradually by ignoring to hone this skill. Similar to Denel's argument, [6] Van Gundy claims that biological factors, personality, motivation and education are crucial factors in the development of creativity [7]. Education in this context refers to a multi-faceted and complex process beginning in the family and continuing with schooling. One of the breaking points of the process is the first year of university education. It is quite difficult for the student to adapt to this structure, which is very different from what they are used to.

Constituting a large part of the first-year experience, basic design is a widely discussed and ever-changing experimental education in terms of content and method. The curiosity and experience of the students support the two-way communication of the education. Therefore, some concepts relevant to the course may be transferred to the student within this process of learning and teaching. In recent years, the use of the Internet and especially the use of social networks has affected many aspects of the students' lives, including their learning habits. The changes in the content and method of the education have been investigated considering it is not right and realistic to stop this ongoing transformation. In this context, the study aims to recommend a new, active, constructive and

two-way method appropriate to changing psychosocial structure of young students, especially those between 18 and 24.

Conceptual Thinking And Classification Of Information

Initially, basic design education in Beaux Arts period was a teacher-centered, one-way and passive education model (Table 1). Afterwards, education environment evolved into a two-way communication with Bauhaus' active and student-centered approach (Table 2). This active education and training environment based on the Bauhaus period requires a new evolution with the technological, sociological, cultural and economic effects of today. The familiar linear alignment in information sharing leaves its place to a more sophisticated but more productive, active and multi-faceted sharing and production process. The speed of information acquisition allows the information to increase exponentially in a very short period, transform and evolve, and allows the individual to transform the information and create new information at the same speed. So, the information is structured repeatedly. Thus, leaving behind the past teacher-centered demotivational education system which is based on the teacher's personality and limited to the teacher's knowledge. [8].

Table 1. Passive information transmission process

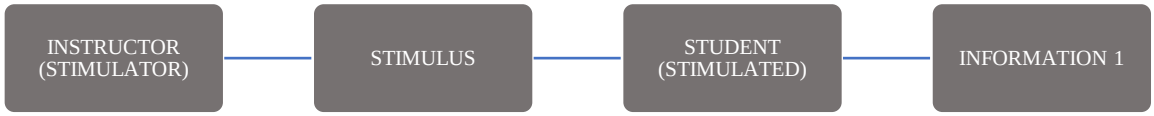
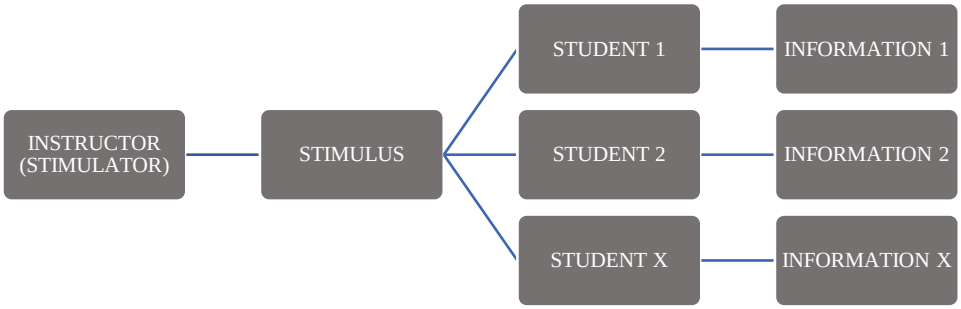


Table 2. Active information transmission process



The current basic design courses were initially based on Bauhaus teaching, and then adopted Ulm School's methods. However, this process has lost its importance in the 1960's; basic design education was completely discontinued in some schools in Germany. Nonetheless, in the last 20 years and more, the demand for this education and the belief in the necessity of the education increased, and due to changing environmental conditions there have been many recommendations regarding the education process [9]. These recommendations are based on the common characteristics of the target audience, i.e. design students, which are shaped by the current social, technological and physical environmental conditions.

Technology, especially the intensity of social media usage, leads to changes in the social attitudes of the young adults. Nowadays, young people want to have more say in the society, they want the society to feel their physical and mental presence. Their expectations in education are also changing because their ideas can be seen, shared, and liked by millions of people. These expectations should be considered, their adaptation in the education environment questioned and discussed during the basic design education, which is the first step for a dynamic and multi-faceted design education. Therefore, the study recommends providing an education environment with similar qualities of possibilities social media provides to young people. See Table 3 for implementing controlled adaptations regarding the content and plan of education.

Table 3. Application of social media's features to the content of basic design course

Features of Social Media		Definition according to the Common Use in Social Media Language	Recommendations on the Method of Adoption in the Course
Brief information about user profiles and their backgrounds	Name-surname, home country, educational status and place of education, profile photo, hobbies etc.	Name-surname, home country, educational status and place of education, profile photo, hobbies etc.	Providing an active education environment where students are acknowledged. Ensuring the contribution of the students' inner world as much as they want, rather than limiting themselves to student identity.
Topic or Thread	Main topic, sub topics, re-tweet,	Trend topic, likes, dislikes etc.	Defining main concepts, discussing sub concepts and brainstorming
Sharing	Sharing their location, emotions, and activities	Sharing, location, feeling,	Providing the possibility of written and oral descriptions of the concepts, acquiring feedback of their feelings during the process
Language Use	Teaching through irony and jocular methods	Name-surname, home country, educational status and place of education, profile photo, hobbies etc.	Allowing and ensuring a certain degree of humorous and symbolic use of language during the course.
Video and live broadcast	Recording and sharing their activities, live or not.	Trend topic, likes, dislikes etc.	Allowing the students to record their own ideas and designs and share them with designers or designer candidates.

In recent years, the search for new methods for basic design education has accelerated. The proposed education model for the new generation should have a design pedagogy based on cognitive and experimental studies as they are born into a technology-based age [8]. It is recommended to adopt an education model that considers the aptness, socio-cultural and economic backgrounds of the students. Kocadere and Özgen suggests six criteria to evaluate the success of this education [10]. These criteria are the following: knowing whether the course is student-centered or not, stimulating creative mind, creating a cooperation-based education method, being practical, increasing different perspectives, and allowing an education environment in which training and evaluation are concurrent. Similarly, two important methods may be emphasized, first is "active learning principles and constructive cooperation". The features of this method are as follows [11]:

- What it is not - How?
- Methods and principles of working
- Active, student-centered: interactive
- Feedback: learning from each student
- Focusing on practical learning skills
- Focusing on own teaching materials and tasks
- Creating a secure environment

The second method is “collaborative learning”. The characteristics of this method are:

- Individual responsibility: are each student responsible for the parts of the assignment/task?
- Positive dependence or co-dependence: do the students need each other for a good result?
- Simultaneous activity: Can they work in the same studio or at the same time?
- Equality of workload: Is the workload shared equally? [11].

"Constructing information" should be the focal point of this education method, which is closely related to the methods, based on design pedagogy but still considered to have clearer answers to the demands and needs of the new generation. The study aims to benefit from concepts on constructing information. The secondary objectives are analysis of relationships between concepts and ensuring the knowledge transmission on hidden topics through concepts.

Concepts are parts of our daily lives, they allow us to understand the world, govern our thoughts and enable us to communicate with the world. The point where the concept meets with information marks the beginning of a new method in basic design education. The study defines this method as "conceptual-constructivist education

method" in which information is re-constructed and the message is transmitted through main concepts and sub concepts.

Method

Conceptual - Constructivist Education Method

The traditional teacher-centered education system is evolving into a creativity and problem solving-focused structure with modern education methods. One of the best methods for doing this is creating a constructivist environment [12]. The constructivist approach provides the students a new perspective focusing on their own understanding and therefore producing their own knowledge rather than conveying what is thought to be right. The transfer of knowledge is not as easy as it is thought, because the information is not simply a copy of the outside world [13]. Each individual construct their own information based on the relationship between concepts and their own lives. Therefore, each learner has the representation of knowledge they construct based on the solutions and relationships they find to the problems and ideas. This approach is usually called "learning-by-doing". The main objective is enabling the learner to construct conceptual structures in the field of the information rather than constructing an experiment or an object. It is valuable to know the construction and grasp the conceptual network in the structure [8].

An application example

The proposed method in the study, "conceptual-constructivist education method" will be explained through a sample assignment that has given for a better and concrete understanding. The students are asked to define "two different things" in the sample assignment. They are introduced to the tools and methods they may and may not use during the assignment. The "hidden elements", the main objective of the assignment, are not shared with the student at this stage. The steps in which the method may be used in the sample assignment are listed in chronological order:

Stage 1: Students introduced to "two different things" as main concepts. They are not informed about the hidden elements of the assignment like shape, background, visual field, balance etc. and are expected to find and make sense of these concepts on their own during the course of this assignment.

Stage 2: The students are informed about the size of the paper they may use, and the type of paper if necessary, and instructed to limit themselves to this format. Apart from this, they are not informed about whether they could change the form of the paper or not.

Stage 3: The students are divided into groups and tasked to divide the "two different things" in the assignment into sub concepts by discussing together. The students are asked to transfer all the concepts they think that are related to these concepts into small papers according to the order of proximity.

Stage 4: After the time limit, the prepared sub concepts are shared with the whole class and discussed, some concepts are merged together and some are deleted, and the concepts emerging during the process are added. Meanwhile, the students discover the hidden elements of the assignment by associating them with sub concepts. This time, the students are tasked to share the three sub concepts of their choice by writing one, describing the second, and acting out the final sub concept.

Stage 5: From this stage onward, students are asked to work individually. After reminding them the instructions, they are expected to continue the assignment in accordance with the information they constructed on their own.

Stage 6: After the time limit, the prepared sub concepts are shared with the whole class and discussed, some concepts are merged together and some are deleted, and the concepts emerging during the process are added. Meanwhile, the students discover the hidden elements of the assignment by associating them with sub concepts. This time, the students are tasked to share the three sub concepts of their choice by writing one, describing the second, and acting out the final sub concept. See Table 4 for the necessary sample assignment paper for managing the process described in the study.

Table 4. Sample assignment sheet

Hidden Elements:
Figure-ground relationship Visual Field Balance Ratio Expressing more with less Concepts of symmetry-asymmetry Figure-ground relationship Visual Field Balance Ratio Expressing more with less
Main Concept:
Two different things
Sub-concepts: Two different things, Object, Similarity, Concrete - Abstract, Contrast
Activity:
Group Work **Finding sub-concepts** **Identifying 3 sub-concepts** **Writing, explaining and acting out the ideas on these concepts**
Note: Methods like folding, cutting etc. are allowed. However, only one paper will be used.

As mentioned in the method part, conceptual- constructivist method propose student centered and active process in education. Regarding this method, the sample assignment in the study provide each student construct their own information based on the relationship between concepts and their own lives as well. Students can manage the learning process with the guide of the instructor and learn by doing the exercise. Table 5 shows the overlaps between the steps of assignment and the recommendations on the conceptual- constructivist method of adoption in the basic design course

Table 5. The relationship between the steps of the assignment and the Recommendations on the Method of Adoption in the Course

Steps of the Sample Assignment	**Recommendations on the Method of Adoption in the Course**
The students are divided into groups and tasked to divide the "two different things **Ap** in the assignment into sub concepts by discussion together. The students are asked to transfer all the concepts they think that are related to these concepts into small papers according to the order of proximity	Providing an active education environment where students are acknowledged.
After the time limit, the prepared sub concepts are shared with the whole class and discussed, some concepts are merged together and some are deleted, and the concepts emerging during the process are added. Meanwhile, the students discove the hidden elements of the assignment by associating them with sub concepts. Thi time, the students are tasked to share the three sub concepts of their choice by writing one, describing the second, and acting out the final sub concept	Ensuring the contribution of the students' inner world as much as they want, rather than limiting themselves to student identity. Providing the possibility of written and oral descriptions of the concepts, acquiring feedback of their feelings during the process
This time, the students are tasked to share the three sub concepts of their choice by writing one, describing the second, and acting out the final sub concept	Allowing the students to record their own ideas and designs and share them with designers or

designer candidates.

CONCLUSION

This study investigates the effect of first-year students' characteristics shaped by social media, access to information etc., on the method of basic design education, and the contribution of "conceptual-constructivist" method, which is recommended to adopt based on the aforementioned effect, to the students' creativity.

Technology, especially social media and its influence on social life, has had a great impact on the young people's life, nowadays. The young generation who matured by socializing on the streets, now enjoys showing themselves on the world of technological devices like smart phones and computers. This sharp change has had a great impact on the field of education too. It is necessary to analyse the issue in-depth to form a correct reaction, and change the content and application of the education according to the results.

The study recommends "constructing information" as the ideal method for adjusting the basic design studios, which are intended to contribute to a unique and creative process, to the young people's on-going transformation, and "analysis of the concepts and their relationships" as the best way for achieving the recommended objective. Because the linear information transmission from an individual to another is bound to be biased, limited and static. However, the students coming to design studios to receive basic design education do not want to accept anything that is static, internalize any biased information; on the contrary, they aim to be individuals as active and participant as possible. Therefore, they need to be provided with constructive authority, rather than just being participants, and practical, down-to-earth problems.

"Conceptual-constructivist education method" aims the to nurture students as active, constructive, expressive, literate, cooperative and co-productive, questioning, contemplative individuals who share and express their ideas by using the relationship between main and sub concepts during the process of constructing information.

In conclusion, the conceptual-constructivist education method may be improved by investigating the sociological reasons of the common characteristics shared by basic design students, and therefore increasing the method's contribution to education.

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BIOPHOBIA EFFECT OF BIOPHILIC FURNITURE DESIGN, A CRITICAL APPROACH FOR FURNITURE DESIGN

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Abstract
Nowadays, interior designers and architects design biophilic furniture designs by giving a sense of a perceptual vitality to furniture designs for purposes of attracting people's attention, enabling users to make emotional connections with their furniture and increasing furniture-human interaction. However, in some of their designs, they use the biophobic stimulations, which are the sub-expansions of people's biophilic tendencies. It is foreseen that such furniture and urban equipment used in interiors and urban spaces will change submental perception and sensitivity towards living things in long term use. Designers, architects and interior designers are responsible for making designs that are sensitive to the biophobic impulses of living creatures and humans, considering that furniture can negatively affect the user in the psychological, perceptual and social context during long term use. The issue of biophobic design is a substancial term that should be approached with awareness, in context of both animal and human rights. The term of biophobic design is an issue that needs to be approached with awareness both in terms of animal rights and human rights and designers should show social sensitivity over those. For this purpose, hypotheses have been put forward for how biophobic furniture can affect children in urban space and interiors. The differences of biophobic furniture design from biophilic furniture design have been put forward by comparison method and descriptive method. Dialectic critical approach method was used in the study. In scope, the definition of biophobic furniture, the design methods of biophobic furniture, user interactions that may occur in the short and long term have been handled by limiting the psychological and perceptual context. As a result, it has been argued that biophobic and zoomorphic furniture in urban and interior spaces, which has been given the impression of perceptual vitality, can make people insensitive to animals, trivialize animals in the long term, increase negative prejudices and phobias towards animals, and may have unpleasant consequences in terms of animal rights in ethical context. In some cases they may effect the biophia level possitively according to human age, gender and personal background even if they seem biophobic.

Key Words: *Biophilia; Biophobia; Biophilic Furniture; Biophobic Furniture; Zoomorphic Designs*

Introduction

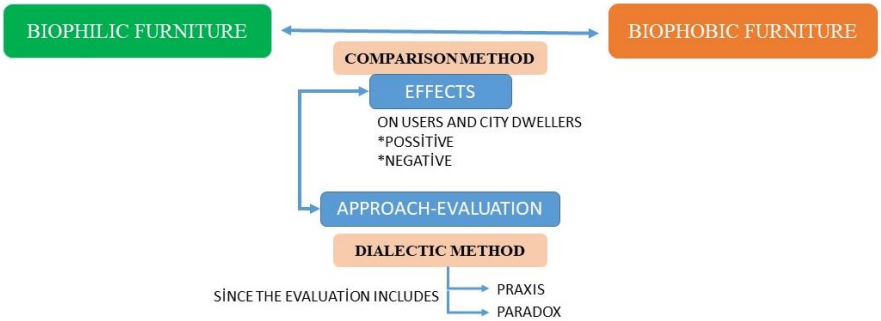
"I don't think that architecture is only about shelter, is only about a very simple enclosure. It should be able to excite you, to calm you, to make you think." Zaha Hadid (2014*)*

Today, designers create biophilic and biophobic furnitures that form emotional interaction between design products and users. For this purpose, they make design models that can create a sense of perceptual vitality. There are many reasons for this situation such as ever increasing loneliness and individuality in modern age due to modernism. Due to many reasons such as people spending more time in indoor and ever increasing opportunities to work at home-office, people want the feeling of perceptual vitality in their living spaces more than ever.

Biophobic furniture is becoming widespread in urban and interior spaces. **Aims of this study** are;
*to prevent people who interact with biophobic furniture for a long time from being insusceptible to scary objects and events,
*to raise awareness for furniture designs that can trigger biophobia can cause accidents in urban and interior spaces by affecting reflexes of children.
*To prevent negative effects such as ethical and moral desensitization in context of human rights and animal rights, and to emphasise the responsibility of the designer on these issues in a conscious scientific framework.
*To highlight the potantial alluring capacity of biophobic furniture as a trend in interiors and urban space.

In the scope of the study, the definition of biophobic furniture, the methods of biophobic furniture, user interactions that may occur in the short and long term are limited by the psychological, perceptual context. While there are sample biophilic design methods in the literature, there is no model for biophobic furniture design since the biophobi is the sub-extension of the biophilic. In this context, a model proposal is presented for biophobic furniture design methods to be avoided in design progress. In the study, dialectic critical method and methods of comparing biophilic furniture with biophobic furniture were used.

Importance of the subject Recently, designers have designed biophobic interior furnishings and urban equipment focused on creating sense of fear and excitement, by imitating animals such as reptile, centipede, shark in their designs, establishing an analogical connection. Abstractions such as fur, horns, teeth used in furniture designs cause instinctive phobias. Biophobic patterns in furniture and biophobic furniture can negatively affect people's attitudes and emotions towards animals. Biophobic design is a substential subject that designers should show social sensitivity in terms of animal rights and human rights. In some designs they may effect the biophia level possitively according to human age, gender and personal background even if they seem biophobic. Since this study highligts the paradoxes and praxis dialectic method is used during the process of approach.



Biophilia

The term of biophilia was first described by psychologist Erich Fromm as "love of life". American Biologist Edward Wilson explained the definition of biophilia by developing the term in his book “Biophilia” (1984). In his work titled "In Search of Nature", Wilson defined the concept of Biophilia as "affiliation of life and life-like processes". According to Wilson, this affiliation is innate and instinctive. It is understood that in his book, although he expresses human affiliation on life and lifelike processes, its understood that affiliation to nature, life and vitality of all living organisms. Similar to biophilia, Spinoza B. (1663) expressed this tendency in his book Ethika as "the desire to sustain the effort of maintaining the current state of each modus".

As Spinoza (1663) stated, the interaction of every modus in nature is inevitable as human is a part of nature. The fact that man is an *inseperable part of nature* overlaps with human biophila tendency. Therefore, every attempt to increase human-nature interaction develops humanoid qualities. However, defining biophilia as an instinctual tendency found only in humans can sustain human-oriented philosophies and lead to abuse designs. The concept of biophilia should be perceived as the affiliation of the entire ecosystem and habitats for life. Because each organism is a whole with its habitat and its living environment.

Kellert & Calabrese, (2015) emphasizes that biophilic design aims to create a healthy habitat for people as a living organism in the modern times built environment that advances people’s wellbeing, health and comfort. As Oktay H.E., Abdollahi S., (2020) stated, biophilic design is a design approach that focus on the life of human in habitat and take care of human – nature interaction, also in urban spaces.

Biophobia

Biophobia can be defined as the tension and fear we feel for other unfamiliar beings and incidents in order to sustain our vital life process healthy. Since it is instinctive and interactive with nature, it is the sub-expansion of the biophilia. It is complementary of biophilic tendencies of living organisms. As Wilson states, people are twittered by the prospect of unfamiliar creatures, whether in the unbroken forest, the deep sea, or remote mountains". (Wilson, 2002, 134)

Wilson stated conquering biophobia and completely accepting biophilia isn’t a right approach in context of *“a sense of genetic unity, kinship, and deep history are among the values that bond us to the living environment*.” They are completely our survival mechanisms for protecting ourselves and our species to sustain *biological diversity as an investment in immortality*. (Wilson, 2002, 133).

Biophobic Furniture Design

Designing by emulating animals and nature is not a new concept approach. Nowadays, while the method of using objective interaction with the environment decreasing, the method of tendency of using emotions and instinctive affiliations of people is becoming increasingly widespread. It can be thought that this can be occurred because of increasing virtual reality possibilities and fantastic movies increased in recent years. Also in reaction to the increasing artificial intelligence applications and robotic technologies, people tend to choose emotion-oriented objects in order to make them feeling perceptually more human. Unfortunately, increasing home office facilities and gaming software trigger human biophobic impulses. Biophobia and biophilia are both necessary as a whole for our survival. But, because of the increase of biophobic furniture trend in urban and interior spaces shows that a new life model has begun to be adopted. Biophobic tendencies such as discovery, curiosity, and

mystery are required for our survial, but today, it is seen that the teeth, horns and fur of animals are used in furniture designs without being abstracted and even exaggerated as a part of furniture ironically. This situation is unfavourable in terms of both design quality and the impact of people's psycho-social responses in the long run.

It cannot be said that the use of all kinds of animal organs in design is biophobic. Designs that make people feel like domesticated like a birdhouse or feather are generally biophilic. (Fig.1.a) The designs that use emotions that we aren't accustumed to like sense of perceptually falling, fear, flying that trigger the phobias are biophilic designs. Designs reminding animal organs like horns, teeth, predatory organs and wild animal abstractions such as snakes, scorpions are biophobic furniture designs. (Fig.1.b)

Fig 1.(a) Biophilic Design by Paula Silvagni interiors, (b) Scorpion Armchair Biophobic Design by Vyacheslav Pakhomov [1,2]

The design methods of biophobic designs are partially different with biophilic design ways. These are biomimetic (mimicking behaviour, imitating their qualities), analogical design, metaphoric design, symbolic design. Each design method is an explicandum. However, today's biophobic designs fake animals and their organs as sculpturally, as regardless of any abstraction. This biophilic design approach is similar to design of the sphinxes in ancient architecture. However, they are in the replica category, since their design method look out for only formalism. It is regarded as an utilitarian design philosophy because it attracts attention and demanded by the emotional tendencies of people. A similar approach consumes animals for their skins and look on them as meta. These are by-products of the philosophy of consumption sector. In this context, it is objectionable in terms of animal rights and ethical context because of leading prejudice in children.

One of the most common biophobic furniture strategy is the painting of blue on window frames, doors and furniture in hot climate regions where scorpions have widely living. Örnek (2019) emphasized the biophibic fact that Scorpio perceives the blue color as red, therefore they avoid this color to protect themselves. Since blue is the color of the sea and the sky, it also symbolizes freedom and infinity for users. It is believed that the doors, windows and furniture painted in blue protect the hosts to be affected by the evil eye. (Fig.2.a)

Fig. 2. (a) Biophobic Effect for Scorpio, Blue (b) Biophilic Effect for Human, harmony with bougainvilleas [3,4]

As in the case of scorpio, the situation that creates a biophobic effect for one living organism may not be biophobic for the other living thing (human). There is even a biophilic effect for the people living in that area because it evokes sense of camouflage and unity with the sea and the sky. Similarly, painting urban equipments, doors and furnitures on streets with fuchsia color for intensifying the floral effect enabling harmony with bougainvilleas is an approach that maintain the biophilic effect. (Fig.2.b) Spinoza (1663) stated in Ethika that, in the interaction of each modus, modus that arouse good feelings in someone boast human energy and those who arouse negative feelings in someone decrease human energy.

Design Methods of Biophobic Furniture

Furniture design is made with many methods such as learning from nature, simulating nature, emulation to nature, analogical method, metaphoric method, symbolic method. There are formal approaches such as biomorphic, zoomorphic when approached as in focused framework of biology science. Transferring the formal and functional features of organisms to design from a technical perspective within the framework of the technique (biomimetic) is also becoming widespread in furniture design. In all these design methods, generally zoomorphic designs that are frightening and lead to biophobia effects.

2.1.1.Analogical Method

It is a shape-focused, formalist approach, since only the formal quality of the creature is imitated with regardless to functionality. It can be seen as biophilic because it reminds nature and provides indirect interaction with nature. Design is inspired by the creature's texture or behavior on analogical method. (Fig.3)

Fig.3. (a) Pangolin animal (b) A lighting equipment design by Paul Cocksedge [5]

Zoomorphic method belongs to subcategory of the analogical method. Zoomorphic furniture designs may cause biophobic effects in some cases and they may be biophilic in some cases.

While a design can be regarded as biophobic from the point of inspired origin, there are cases where it is actually biophilic design. Moreover, we have instinctively snake or crocodile biophobia (Wilson, 1994), furniture designs reminiscent of crocodile or snake scales are preferred widespreading furniture designs thanks to presenting an aesthetic texture. (Fig.4)

Fig. 4. (a,b) Furniture Designs Reminiscent Of Crocodile Or Snake Scales [6]

A feature of a natural space evoking nature analogically can lead to biophobic effect. Adam Williams' Icicle Console Table design reminds some users the stalactites in the caves. As its pattern is sharp formed, it can affect users biophobically. This approach is similar to one of Kellert's (2014) biophilic design pattern "nature in space". (Fig.5)

Fig. 5. (a,b) Adam Williams Design Icicle Console Table [7,8]

2.1.2.Methaphoric Method

Contrary to popular belief, metaphor is not based on analogies, but on the contrary, it's is generally based on

crossing connections in our experience and creates perceived similarities between the two cases or fields including metaphor. Metaphor allows us to understand one type of experience according to another. (Lakoff, Johson 2003: 277) It is a metaphorical and biophilic approach that a furniture design consists of natural materials, perceived as a heart, togetherness and evokes love. (Fig.6)

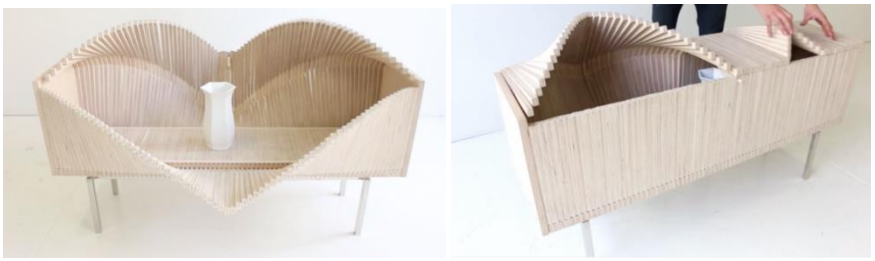


Fig. 6. (a,b) Biophilic Furniture Design by Sebastian Erra Zuriz [9]

The perception of a chair's carrier reminding animal bones with a similar metaphoric approach is an example of a biophobic effect with regard to reminding of death or decay. (Fig.7.a) However, as Spinoza (1663, 395) states, the least thing that an independent person thinks is death, actually his philosophy bases on the way of thinking about life. The design that Marks Levis expresses captivity and creates an irony by a chained chair design is an example of a metaphoric biophobic design. (Fig.7.b) As a metaphor, the designer hangs the chair on the wall, expressing that the dog or a pet is both dependent on its owner and actually captive.

Fig. 7. (a) chair's carrier reminding animal bones metaphoric approach (b) Marks Levis tasarımı oturma elemanı (1985) [10,11]

2.1.3.Symbolic Method

Symbolic method is a design expression method that meaning of symbols can differ according to cultures and various religions. The use of symbols imprinted on one's mind traditionally, in furniture decorations, patterns or furniture legs is an example of the symbolic method.

While some designs are perceived as biophilic design, there may be cases where they are perceived as biophobic design today. For example, the infinity tree in rug patterns in Anatolia can be perceived as centipede today. This situation can be explained by the semantic shift of symbols and cultural disconnection. In the past designs, while many patterns of water were expressed in symbolic methods in rugs, today floral or animal patterned fabrics stand out. This shows that our past biophilic level was symbolic and aims keep us alive, while today's approach is a formal-focused, imitative biophilic design method.

Biophobic furniture designs independent of objective analogy

It is the designs of biophobic furniture that are caused by unusual situations, which are related to perceptual illusions, which contradict our perceptual biophilic needs. The appearance of a furniture design as if it was flowing, melting, or flying as if it was falling can cause a biophobic effect because it contradicts our need for perceptual security.(Fig.8.) It is usually related to our perceptual security needs. In most cases, it aims to create a biophobic effect by using the gravity factor.

Fig.8(a,) Biophobic Furniture Designs flowing, melting or flying using gravity factor as an inspiration (b)Design; Schwarzmann [12]

In furniture design, the perception of fragility or slenderness in the furniture carrier triggers our biophobic instincts. The reason why we experience more excitement in furniture that is generally designed in a hanging state can be explained biophobically. (Fig.9) Perceiving a feeling of falling instinctively may trigger biophobic tendency. Therefore, it is inconvenient for children to use these furniture as their reflexes and behaviors are in the process of developing. After falling a few times with sudden reflexes due to the effects of such furniture, they can turn into a still and fear-oriented personality type in the long run.

Fig.9. Hanging Bed Design Photos by Manuel Ocaña [13]

When the steel stairs were first designed, the users surmised a perceptual biophobia-based illusion as if thin steel structures were unsafe structures. Today, wide spreading use of steel stairs shows that our biophobic perceptions have changed with experience.

Fracture effect, disintegration effect and fragmentation effect used in furniture designs are also examples of biophobic design approach. (Fig.10) While these biophobic furniture designs aiming to make you feel unusual experience serve an exciting experience in the short term, long-term use of perceptual illusions can change reflexes of human.

Fig.10. Biophobic Furniture Designs by Perceptual illusions [14,15,16]

Biophobic Effect in Space Perception

In the perception of space, biophobia occurs when the opposite of the factors causing the biophilic effect are seen. Conditions that cause dissatisfaction and instinctive fears in the space perception cause biophobia.

Factors that can cause biophobia :

Darkness in the space, extreme silence in the space, non-patern on the surfaces, the space being full white, design problems related to space proportions (feeling stuck in space, shaft effect, tubular effect, corridor effect), designs that cause perceptually lose the sense of time for users (daylight deprivation), perception of infinity, sense of being underground, perceptual safety factors such as problems, unusual feelings about gravity (falling, flying, perception of fragility in the carrier), feeling alone in the space can be biophobia effects. In addition, lack of space, sense of placelessness, non-identity in the space, non-contextual space, lack of belonging to the space lead to biophobia.

3.1.The role of biophobic furniture in space perception

In space perception, biophobia occurs in some cases with furniture designs that can cause biophobia. Although biophobia is generally caused by the furniture designs by visual perception, there may be situations where it occurs by way of other senses. Since yellow color is stimulating for babies, it is a biophobic action that they feel restless and cry in the space.

Dinçer (2011) stated that the effects of forms on spaces are substantial thanks to their adding value and quality to space. He also stated that space quality make people feel more relaxed and comfortable in spaces. He pointed out that curved soft forms evoke a sense of excitement, as hard forms trigger feeling of excitement. The effects of hard objects expressed by Dinçer in his thesis are instinctive actions based on human biophobia. But this approach leads to form-focused design concepts with regardless to other livings biophobic and biophilic tendencies, as well.

There are several reasons why angular furniture leads to a biophobia effect. Accidents that occur in childhood related to the use of cornered furniture can trigger biophobia. In addition, the angular long tables and furniture highlighting status and expressing prestige and power are strategies that use biophobia. The design of the boss rooms locating at the end of the long corridor, the use of shaded lights to make the corridor feel longer, and the use of sequential paintings on the corridor walls are biophobic approaches based on power or strength demonstration.

The transfer of past experiences of sharpy objects with teachings and experiences over generations strengthens biophobia against such objects. For example, events such as the collection of electricity on sharp surfaces and lightning strikes to these objects in open areas have turned into experience and imbedded in ones subconscious as biophobia. For example, legends and epics that have been described for centuries about the cards can make people feel uncomfortable biophobically by turning negative symbols of eagle talons into a symbol of power. (Fig.11)

Fig.11. Biophobic Furniture Designs reminding Eagle Talons [17,18]

As can be seen in the furniture designed by Galle, there is no mention of any kind of zoomorfic furniture that creates a biophobic effect. (Fig.12) Because in many cultures, it is believed that some animals metaphorically protect people, bring peace and abundance. This situation was reflected symbolically on the rugs and furniture decorations. Since there are cultural changes in many cultures, it is normal for these decorations to be perceived differently from their symbolic meanings. In addition, Spinoza (1663; 265) stated that people with different structures can get different effects from different objects from the same object, and that the same person may be affected by the same object at different times.

Fig.12. French Art Nouveau Dragonfly Table design by Émile Gallé [19]

Psycho-social effects of biophobic furniture on children

Children may develop biophobia when they do not have regular interactions with nature (White, 2004; Bixler, Carlisle, Hammitt and Floyd, 1994). In addition, when they do not interact with nature in the lifetime of early stages, fear of nature, ecophobia and biophobia effects can develop. According to Ulrich (1993), Biophobia appears as reactions that can be learned by experience rather than a genetically inherent situation. In this context, biophobia can be defined as "fear of nature" or "aversion related to nature" like ecophobia.

Fear related to animals such as snakes, centipedes, fears such as darkness, height are instinctive and within the scope of biophobia because they are fears that keep us alive, survive and associated to nature. Designs that make negative connotations in context of these feelings in urban spaces and interior spaces are inconvenient because they trigger children's biophobia. In addition, such designs can lead children to develop instinctive attitudes towards animals, see animals as objective and worthless, and see them as toys or commodities. As a paradox, sometimes children desire the sense of entertainment thanks to interesting designs (reminding cactus, dragon etc.) by improving their imaginary and dream world as they evoke mystery and exploration through touching and hugging them.

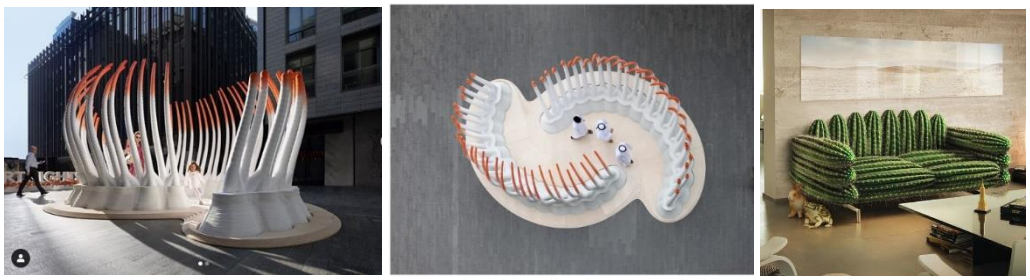


Fig.13. Deciduous 3D printed pavilion by "mean design" [20]

Like Deciduous- sharp pointed, animal-abstracting designs are striking in urban spaces and squares, children who suddenly see such a design are likely to fear, fall or develop phobias with sudden reflexes. This situation can lead to various accidents as well as causing a fear-focused dream world of children. (Fig.13) It may not be objectionable in places like museums that spend a short period of time, but since urban spaces are places where we interact more with the environment, the impact on children should be taken into account when interacting with nature or making designs related to nature. Since the designs made especially in the squares will have imprinted on urban memory, urban equipment that can make such negative associations should be avoided.

5.Conclusion

People-oriented approaches regarding animals as objects are also reflected in furniture design methods. Zoomorphic furniture design of the designers, who designed them converted to the object of desire, became widespread. While in ancient civilizations, zoomorphic designs reflect meaning of power, wisdom, valor (Coates, Brooker, Stone; 2009) today they have turned into formal imitations by losing cultural context.

Wide spreading in urban and interior spaces, long-term side effects of biophobic furniture on children are ignored. However, such designs, which will imprinted on urban memory in long-term use, are thought to lead to the spread of biophobia and fear-excitement-oriented experiences. It is thought that the wide spreading zoomorphic biophobic designs will strengthen the negative prejudices of children towards animals and invalidate animals in the long run. Designers who make such designs, which are inconvenient in terms of ethical and

animal rights and for the healthy survive of children's psychological perceptual development, should act responsibly.

In this study since zoomorfic designs are form based approaches, we see examples in context of analogy and critized the formal approach as a trend. During the developing technology age, we will see more robotics as furniture triggering biophobia as they reflect animal like behaviors using the method of biomimetic as well. In some cases they may effect the biophia level possitively according to human age, gender and personal background even if they seem biophobic as well.

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ARCHITECTURE CONCEPTUALIZATION EFFECT ON THE DESIGN PROCESS OF BUILDING REFURBISHMENT

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Abstract
The process of refurbishment involves a progression of different elements that focus on improving building performance. Recently design refurbishment has expanded from being a secondary type of work to an intensive thinking process. Several Architects have taken on projects that make refurbishment as motivating as the original design, with robust concepts and ideas. The architecture concept is the idea and the driver of the design process. While an architecture concept can be 'an approach' to the design. It can be an abstract idea that is carried throughout the design process. This paper aims at exploring the design conceptualization effect on design attributes. Using a fourth-year architecture studio project, students refurbished a residential unit in a neighborhood in Dubai, UAE. Based on the various students' approaches, different design concepts immerged from the initial design, which affect the design process, and final design outcomes.
Key Words: *Conceptual Design, Architecture Design Process, Building refurbishment, Architecture Education*

Introduction

The architectural design process is a long journey of three main activities: planning, designing, and construction. One of the Architect's key roles is to maintain the balance between these activities. The design concept is the very first phase of the architectural design process [1]. Architects have always aimed to find meanings for their buildings forms. Starting from Plato and Aristotle, they were trying to relate building forms to a metaphysical and aesthesis basis. Afterwards, Vitruvius looked at nature as a source of concept and form making in both art and architecture. Then the renaissance idea of representation took a big step into building design, mind, and perception. Different theories immerged to guide the various design approaches and make them more meaningful based on art, science, materials, culture, tradition, function, and structure [2].

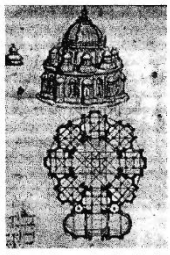


Figure 4.1. Leonardo. Church, view and plan. Ashburnham MS 2037, f. 5v.

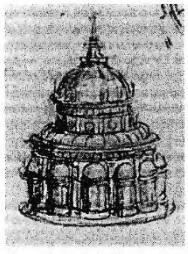
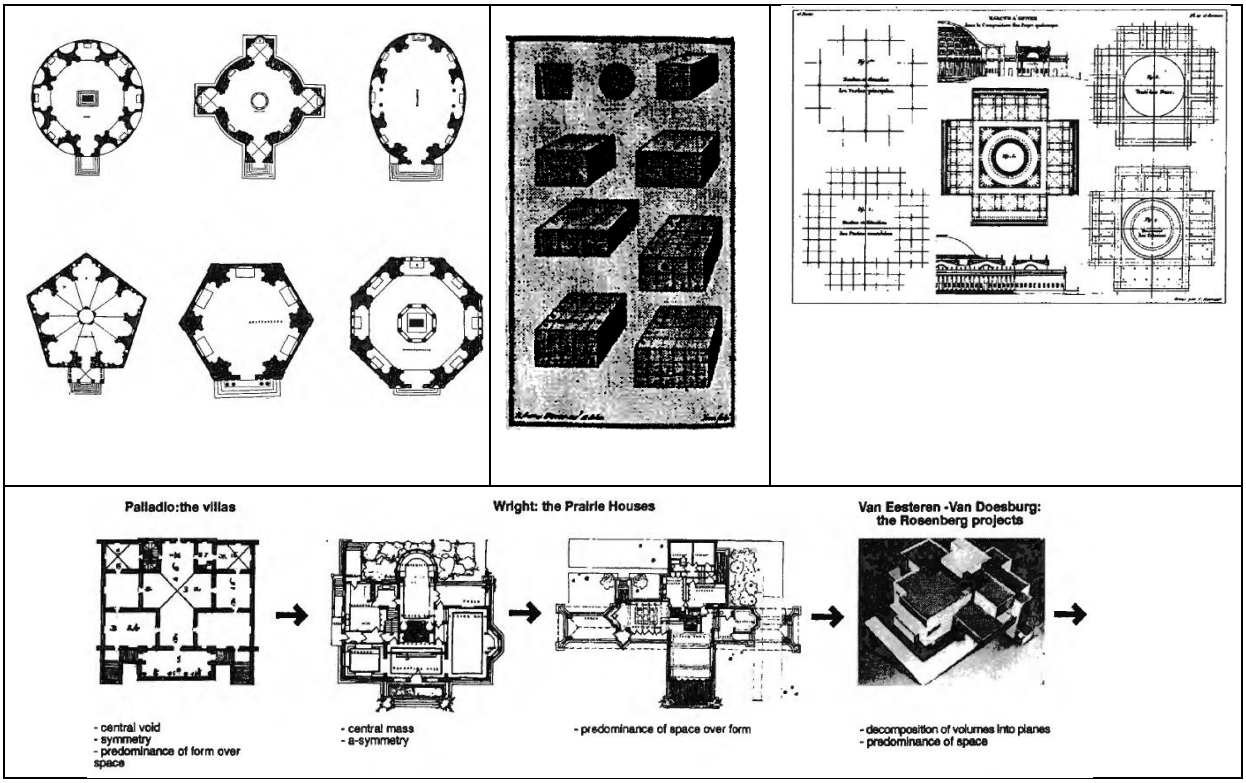


Figure 4.2. Leonardo. Church with twelve apses. Paris MS. B, f 56v.

Figure 4.5. The five types of centralized plan of Leonardo, according to Jean Guillaume.



Based on the complexity of the project, series of analysis and research are conducted to conclude the project requirement and design expectations which leads to the design concept. Such concept represents the idea that integrates a variety of components into a whole new design. These components can be philosophies, notions, thoughts, and observations [3]. The concept supports the project's key intentions and goals and respects its unique features and limitations. The concept is simplified and abstracted to be translated into a formal architectonic concern and is reflected in each stage of the design process [4]**.** Concept generation varies between new and existing buildings. For the new ones, the guiding idea can generate from daylighting, sonic, structure, space-making, and sequences of spaces, integration of structure and form, and settings of the site. On the other hand existing buildings refurbishment idea can be for sake of changes in capacity, function and performance, and keeping several key components including structure, space planning, or the building outer skin. Existing buildings redesigning could be minor, medium, or major, with complex approaches of renovation, retrofitting, and refurbishment [5] [3]**.**

Research Methodology

With the buildings increasing carbon footprint there is a strong movement towards building re-use represented in retrofitting, refurbishment, remodeling, and restoration. Several design concepts can be the main drivers of the building retrofitting including 1-building envelope, 2- energy performance, 3- Daylighting, 4-façade. The harsh weather countries such in the UAE designers and decision-makers were always forced to depend on HVAC systems and sometimes artificial lighting to better isolate the building. Natural ventilation and daylighting were not considered as part of the occupants' comfort in building phenomena. However, in recent years some research was applied to achieve more sustainable design approaches, which have dramatically affected the buildings' energy performance and occupants' comfort [6]. Several green buildings codes like Estidama were inaugurated to be applied in the Middle-East area [7] [8].

This research is an examination of the design concept effect on the design process, through a community-engaging design project [1][6]. To better investigate the outcomes of design conceptualization, a group of fourth-year architecture students in one of the architecture and design colleges in Dubai, UAE was asked to remodel/retrofit/refurbish a building as an individual studio project. The examined project design followed an iterative process where learning from alternatives applications helped the students to refine their ideas .

Project description

Architecture Design students were asked to remodel a townhouse into a specialty cafeteria in one of Dubai's, United Arab Emirates' new residential neighborhood to serve its residents. The cafeteria shall have one main specialty with minimal kitchen requirements (ex. coffee, tea-house, salad-house, etc.).

The selected townhouse was situated in the middle of a residential neighborhood with its main focus is to: 1- serve the neighborhood residents, 2- minimize the residents commute, 3-enhance the social interaction among the neighborhood community, and 4- enhance the walkability among the residents.
The students were asked to consider the following:

- The key design concept that reflects the cafeteria specialty, design approach, and set in a residential neighborhood.
- Preservation of the existing universal design provisions when planning for alteration and additional works.
- Improvement and upgrade of existing accessible facilities
- Legal requirements such as building codes, fire and life safety regulations, and specialized equipment or system codes.
- Energy and Environmental Design (LEED), Estidama, or other sustainable design goals.
- Energy considerations, such as facility source, load energy consumption, and cost goals.

Base Case

The selected building is a residential townhouse in a residential neighborhood with a site area of 300 square meters. It consists of two floors (ground and first) with a parking garage and a small basement. The roof is also accessible and can be used for various outdoor activities. The house has two aims of vertical movement: a staircase and an elevator located in the center. The house has a small backyard on all three sides. It shares the central wall with a neighboring house as shown in the floor plan drawings, section, and initially proposed rendered figure, Figure 1.shown in the floor plan drawings, section, and initially proposed to render in Figure 1.

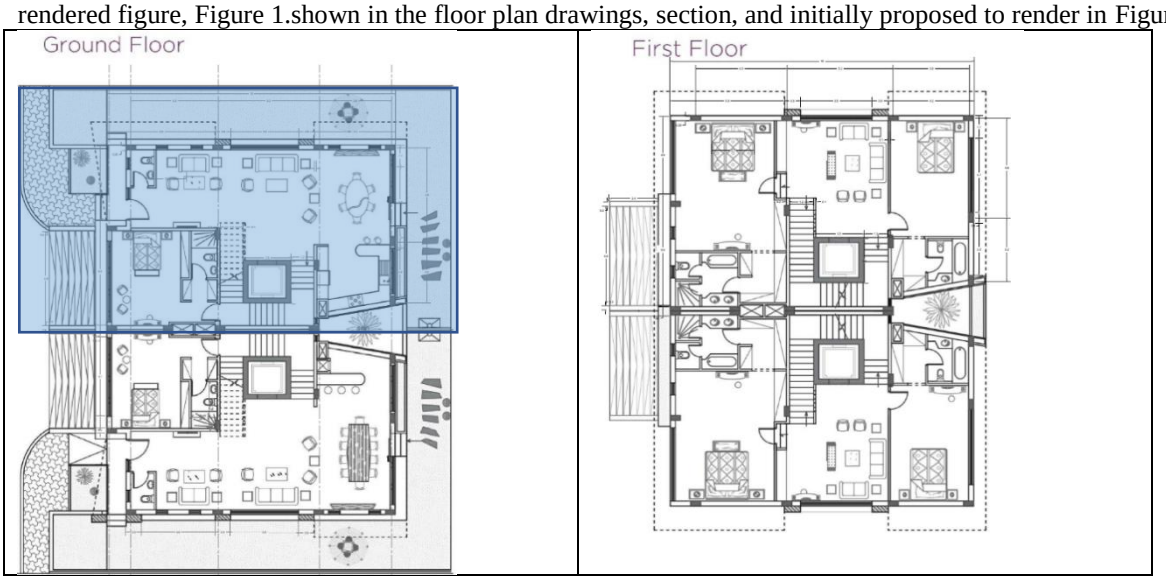


Figure 1: Original Design

The Design Process

Architecture concepts are capable to dramatically change the experience of the building and give different impressions about the design. They give depth and meaning to the work, they open the door for more research, related ideas, and creativity, which makes the work of architects meaningful . To develop their concepts the students used an iterative process that starts with creative exploration, then analytical refinement and organization of the findings, as shown in Figure 2 discussed in the following section:

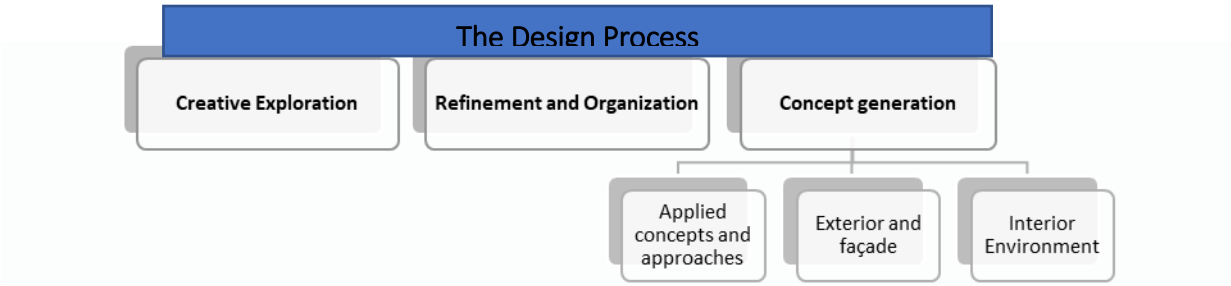


Figure 2: Conceptualization in the Design Process

A. Creative Exploration

In this stage the students were not seeking answers, they were exploring and collecting information and raising more questions. During this stage, the students recorded their thoughts and ideas in diagrams, sketches, and text. Exploration focused on 1- understanding the difference between retrofitting, renovation, and refurbishment and deciding which path they want to follow; 2- Considering design guidelines related to specialty coffee shops and its various aspects, 3- exploring green retrofitting, especially in the UAE, 4- exploring double-skin façade application on the existing building, and 5- applying structural retrofitting to existing constructions.

B. Refinement and Organization

In this stage the students were advised to refine their findings from stage-one and focus on one/several ideas and explore them deeply, sometimes multiples ideas were combined into one. AT this stage the students started to create clearer, stronger, imaginary picture about their concepts through several iterations

C. Concept generation

In this stage, the students communicated their concept(s) to maintain achieving the project goals and objectives. In this paper, four students concept generation was examined and compared in three levels: 1 Applied concept and approach, 2- Exterior and façade, and 3- interior environment. The students recorded their colleagues and professors' feedback at the end of each level to enhance the design and the better ground the story behind it.

Level-1: Applied concepts and approaches

This level compares the students' abilities to use guidelines, site analysis, and case studies to define and communicate their final concept and approach [3].

Hereby the four students' approaches are summarized and are discussed in the following sub-sections:

A. Case-A Environmental approach: provides a natural green space within the community considering environmentally friendly materials, approaches, and café service.
B. Case-B Socio/Philosophical approach: focuses on a philosophical approach to enhance the life of the people through art.
C. Case-C Social approach: focuses on enhancing social interaction among customers.
D. Case-D Socio/cultural approach: aims at reminding the society of the traditional architecture, and heritage.

Case-A Environmental approach

This main design approach was to create a common indoor-outdoor space for the residents to enhance the greenery presence on the site while considering environmental aspects. Greens were the main elements; presented in fruits, vegetables, and spices distributed along with the site and in interior spaces on each floor, Figure 3. The shop specialty is salads, where greens are freshly picked on-site, such process is part of the shop experience.

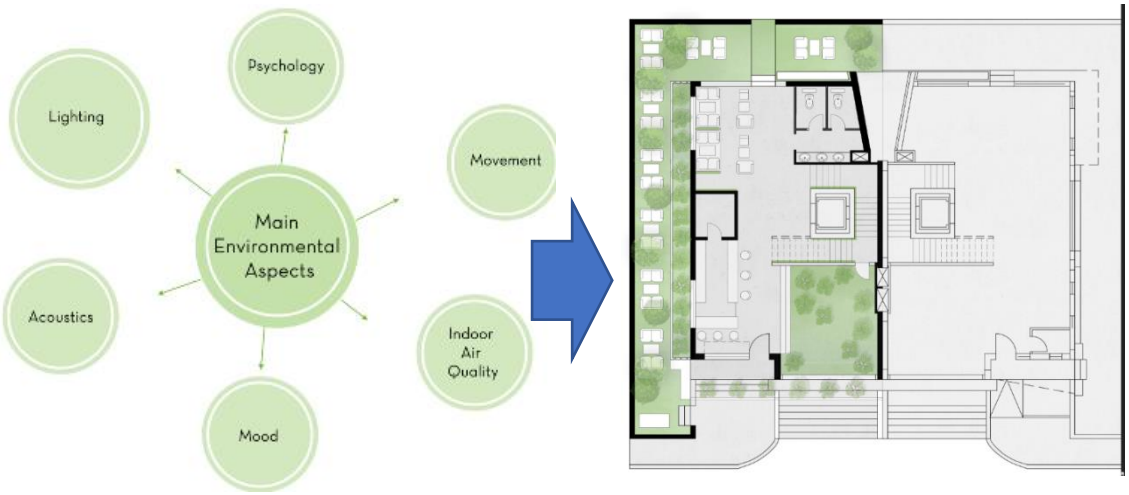


Figure 3: Environmental approach concept generations

Case-B Socio/Philosophical approach

This design approach aimed at following the philosophy of the Artist Piet Mondrian; which aims at enhancing humanity using art and design, concluding equality, communication, and unity between the man kinds, Figure 4. The specialty of the shop is art and coffee, where the visitors enjoy their coffee exploring Mondrian life path and philosophy.

Figure 4:Socio/Philosophical concept generation

Case-C Social approach

This design approach intension was to create a space that enhances social interaction and communication between the neighborhood residents. By looking at the most interactive and social cultures it was found that far-eastern civilizations were the most prominent ones; villagers would gather along the river, where they drank tea and socialized, Figure 5. The shop specialty is a tea- shop.

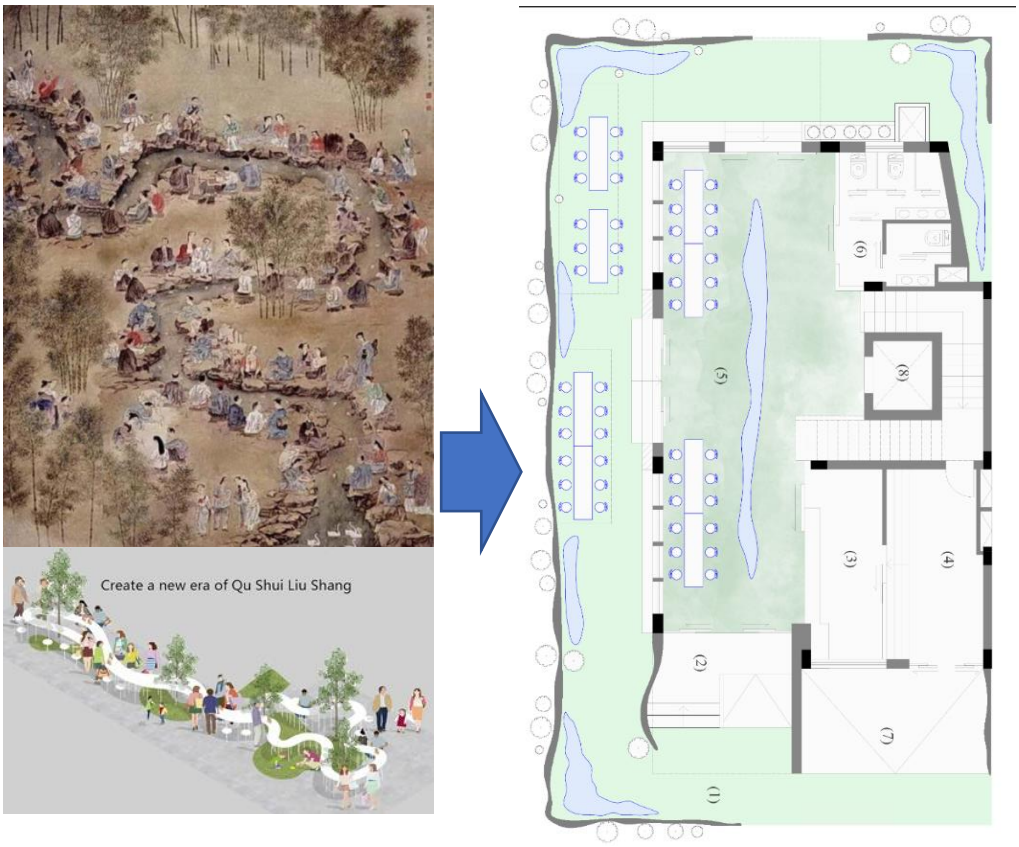


Figure 5: Social approach concept generation

Case-D Socio/cultural approach

In this design, the selected unit and the site were examined. It was found to be centralized and stable in the site, which represents a point of coming back, so is the heritage which can be forgotten in modern life, represented in the architecture style of the neighborhood. The traditional style was used for the retrofitting of the building to show the contrast between old and new. It is also a reminder of how architecture has been developed in the country quickly, Figure 6.

The cafe will serve Karak (Traditional tea) and Luquimat (traditional Arabic snack).

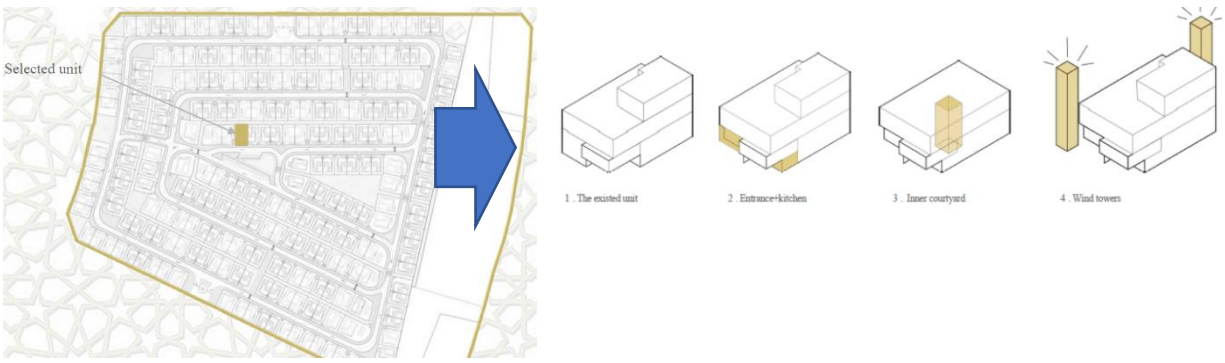


Figure 6: Socio/cultural approach concept generation

Level-2: Exterior and façade

The façade of a building is often the most important aspect from a design standpoint, as it sets the tone for the rest of the building. The students selected concept from level-1 highly affected the exterior design façade;

Case-A Environmental approach

In this case, the student aimed to minimize the negative environmental impact of the building by efficiency and

balance in the use of façade materials and energy performance. A double-skin façade was applied to minimize direct sunlight and heat transfer, recycled glass (collected from the building) was used to implement the double skin. Between the two skins, plants were embedded, selected herbs, and greens that grow well in the UAE weather were selected as shown in Figure 7.

Figure 7: Environmental approach exterior and facade

Case-B Socio/Philosophical approach

In this case, the student aimed to use the same geometries and philosophy of Mondrian in the façade. Two approaches were selected to achieve such goal: 1- protecting the exterior and the interior environment, and 2- maintaining the same identity of Mondrian's signature, however dynamic art. The Algae façade was found to be an ideal solution as it can satisfy both aims through its shaping flexibility, environmentally friendly (low greenhouse gas emission, and reduce carbon footprint). It also can change color and transparency depending on the weather condition and season (seasonal shading), Figure 8.

Figure 8: Socio/Philosophical approach facade and exterior

Case-C Social approach

The student followed the same approach to achieve the most suitable human module and it was found to be the Tatami, a module that came from a type of mat used as a flooring material in traditional Japanese-style rooms, where the length is double the width. Photovoltaic panels were proposed on the roof. Therefore an extension for the façade was proposed to maintain the façade module appearance, Figure 9.

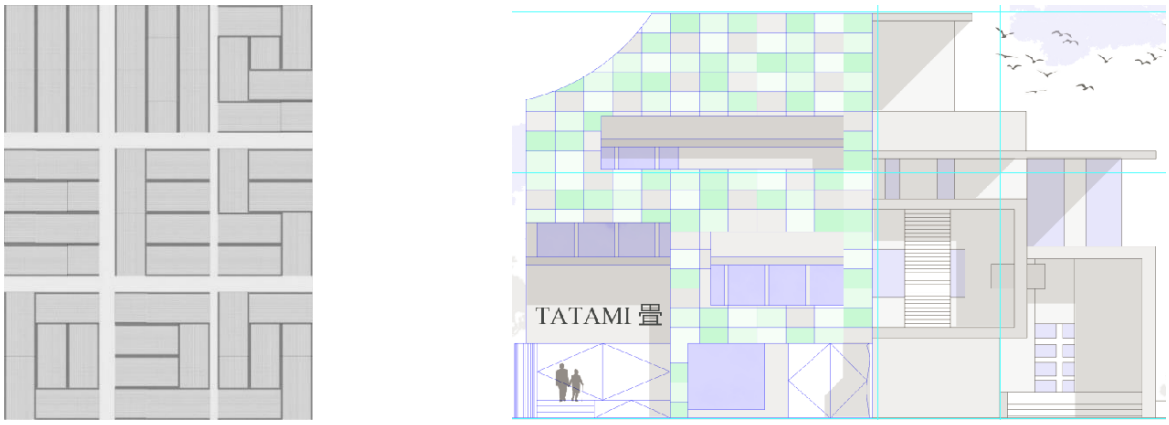


Figure 9:Social approach facade and exterior

Case-C Socio/cultural approach

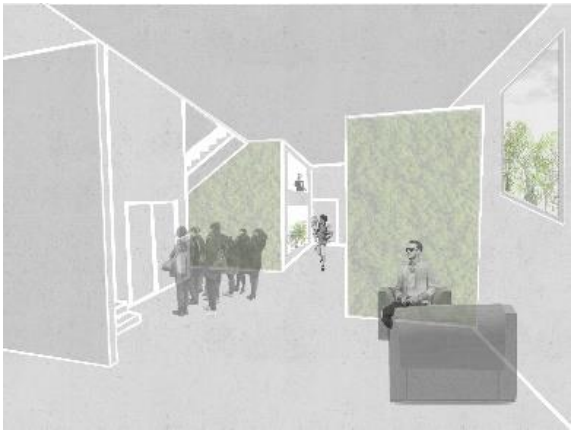
In this case, the main aim was to stand out from the surrounding modern buildings. The traditional Arabic house style was used where window screens, traditional materials (mud-bricks) appearance was carefully designed so that neighborhood residents are aware of the tradition that exists within the modernism of the neighborhood site, Figure 10.

Figure 10: Socio/cultural approach facade and exterior

Level-3: Interior Environment

A. Case-A Environmental approach

While keeping the same environmentally friendly approach in the design the interior layout was designed to create a space where the visitors can feel at their best. Partitions with green wall moss helped to enhance the environmental conditions in the café, Figure 11.



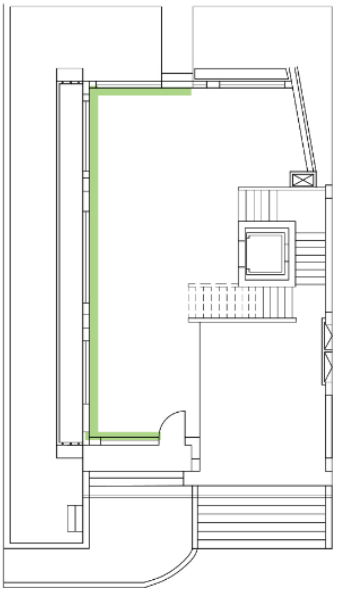
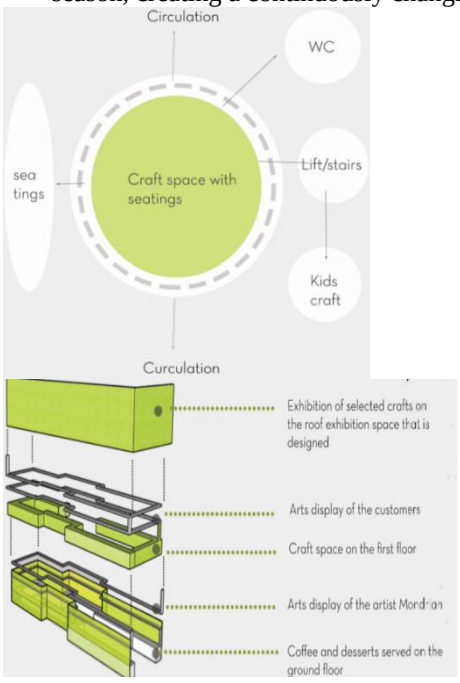


Figure 11: Environmental approach to the interior environment

B. Case-B Socio/Philosophical approach

The philosophy of Mondrian has strongly affected the interior design approach; the art was the center of the space where all activities circulate. The algae façade and changing opacity, transparency, and color strongly affected the interior environment; the light was dynamically filtered throughout the year depending on the season, creating a continuously changing interior Figure 12.



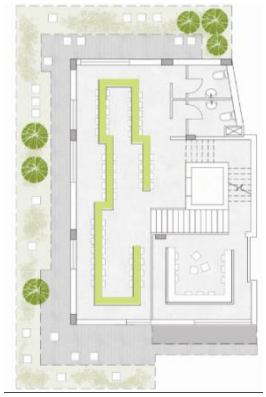


Figure 12: Socio/Philosophical approach to the interior environment

C. Case-C Social approach

The Tatami unit was applied as the main module in the interior spaces in the tables, seating, space configuration, window, and internal opening sizes. A kid play area where the Tatamibari game (Japanese puzzle game based on Tatami) took place. Japanese interior designs tend to combine minimal details and unfinished surfaces. Unfinished tables and chairs were allocated using the Tatami principles combination with water surfaces where visitors gather around for socializing and communication.

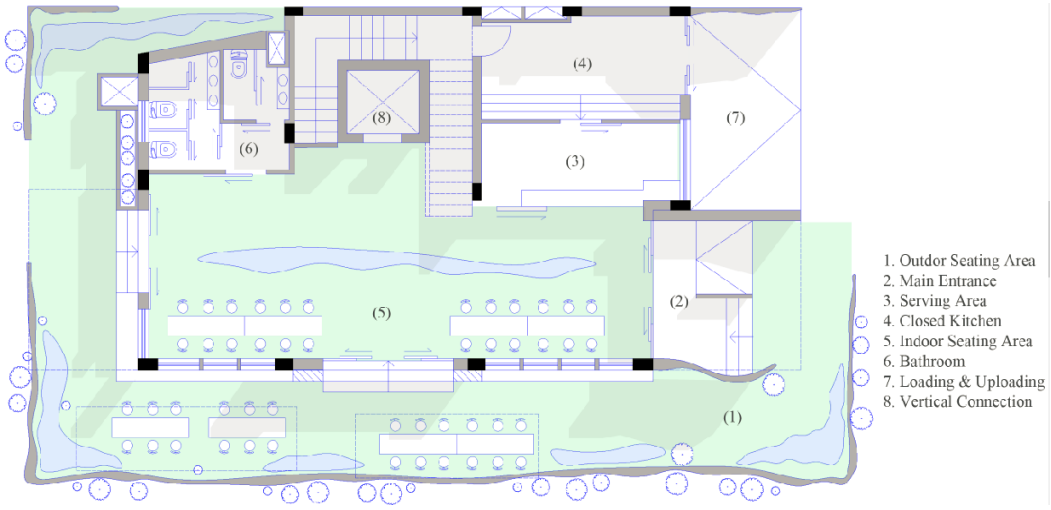


Figure 13: Social approach to the interior environment

D. Case-D Socio/cultural approach

The interior design features a subtraction between all floors to create an inner courtyard. Wind-towers were added to serve both the environmental and cultural approaches. Linear direct circulation was maintained, while the back of the café was kept indirect and invisible. Such an approach imitates the traditional Arabic homes public and private circulation theory, Figure 14.

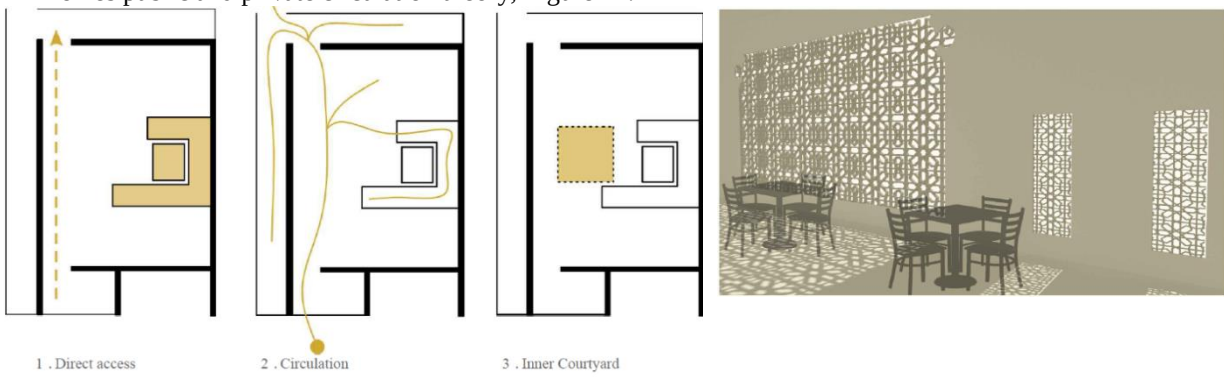


Figure 14: Socio/cultural approach to the interior environment

Observations

It was observed that the essential architectural approach used by each student strongly affected the design aspects along the stages of the design process. To better evaluate the design success four design considerations were compared between the four design cases: circulation; environmental approach; façade and materials; and interior environment aspects as discussed in detail in the following section:

First for the circulation; It was observed that case –A focused on the circulation and recycling of the daily materials (glass and plastic). However, it did not show a clear explanation of the visitors' circulation. For Case-B one of the key directors of the design was the vertical and horizontal circulation continuation in the floor plans and through different floors. It highly succeeded in coordinating both types of movement. In Case-C the circulation focused on the relationship between the concept of the large tatami tables and water surfaces. However, the proposed water surfaces caused tighter and more difficult circulation around the space. Case-D follows the concept of private and public circulations (from the traditional Arabic homes), which was achieved by the proposal of the inner courtyard.

For the Environmental Approach: since Case-A main approach is to provide an environmentally friendly shop in the neighborhood; the design highly succeeded in this aspect in several ways including the double skin for better thermal performance and less heat transfer from the outside, the recycled materials, and the plantation of herbs, interior moss green, and fruits and vegetables on site. Case-B correspondingly succeeded in linking this aspect to the main concept (Art and dynamism effect on people's life) by providing the Algae façade which satisfied more than one aspect. Case-C considered a new highly insulated exterior wall, unfinished furniture

elements, and photovoltaic panels on the roof. Case-D considered energy performance enhancement through the proposal of wooden window screens (Mashrabyia) and wind towers.

For the façade and materials: Case-A succeeded in providing a successful façade by proposing a double skin façade, made from recycled materials that provide views, shading, natural ventilation, and evaporative cooling. Case-B Algae façade succeeded in creating a dynamic building façade that changes depending on the season and weather using the change in its color and transparency. Case-C did not provide a clear understanding of the relationship between the proposed module and the existing neighborhood, or the reason behind the selected module and size. Case-D main aim was to contradict with the existing neighborhood. It was achieved using the traditional Arabic architecture style and materials. However, the façade did not clearly show such a contradiction in terms of proportions and opening sizes and locations.

For the interior Design aspects: Case-A concept was reflected in the interior green moss wall, the planation that represents the main view of the space. Case-B interior spaces are highly linked to the concept, where the selected artist's most famous art pieces geometry and proportion are used. Case-C succeeded in achieving a more engaging environment where its visitors can easily socialize and communicate through the large shared tables and minimal separation among seating. Likewise, Case-D succeeded to follow the principle concept of public and private in the traditional Arabic homes by separating the customer's seating and proposing seating close to the wind towers. A comparison between the different means of concept success is shown in Table 1:

Table 1: Design Cases Comparison

Comparison/Success	Case- A Environmental approach	Case-B (Philosophical approach)	Case-C (Social approach)	Case-D (cultural approach)
Circulation				
Environmental approach				
Façade and materials				
Interior environment Aspects				

Findings, conclusions, and future research

Although applied to the same building, it was concluded that the disparity of concept approaches considerably affected the final design. When applied throughout the design process design concept affected various building aspects including circulation, spaces relationships, approach, façade, materials, and sequence. The students were able to communicate their concepts using different materials including diagrams, parts, and morphology. Although the examined architectural ideas were presented in single static applications that have been simplified and abstracted to a formal architectonic concern, it is important to explore the effect of parametric design iterations and different simulation effect on each of the proposed architecture concepts. Such parametric exploration achieved using 3D modeling software (design-aid tools). It is important o examine in future explorations how the final design can be re-imagined with parametric analysis. A comparative analysis with the original base-case can change how architects can visualise and imagine their spaces depending on their approach with large data, rather than static individual ideas. Further investigations are needed to communicate even larger data related planning, interior designs, building energy and structure performance, and construction.

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Multifunctional Solar Façades: Impact of PV-Integrated Solar Shading on Office Energy Performance

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Abstract

Advancements in technology have emerged multifunctional solar façades where the conventional building components can be replaced with integrated systems to perform a dual purpose. Building-integrated photovoltaics (BIPV) is considered as a promising technology that is suggested in building envelope construction to reduce material costs and produce renewable solar electricity simultaneously. This study examines the impact of photovoltaic technology, named photovoltaic integrated solar shading (PVISS), on energy performance and electricity generation taking an existing office in Erbil. The PV system was integrated into a fixed south-facing sunshade with a tilt angle of 20° using OpenStudio® for building performance simulation. The reported results indicate a reduction amount of 2% in the total cooling and heating loads after implementing the proposed photovoltaic integrated solar shading method. The lower amount of electricity needed for cooling refers to minimizing heat gain in the summer by blocking excessive sunlight penetration into interior spaces. The integrated PV system produces approximately 50% of the total electricity demand for air conditioning in the office. The applied technology can save about 1,385.4 US Dollars annually by producing 9236.11 kWh, considering electricity price at the study location. Overall, using this PV system approximately 9262.31 kg CO_2 emission can be avoided per annum.

Keywords: *Solar façade; photovoltaics; PV-integrated solar shading (PVISS); energy-efficient building*

Introduction

The building façade or envelope involves all the physical components that separate the indoor spaces from the outdoor environment, and as a phenomenological aspect to express architectural identity and meaning in a given context. Recent technological advancements have enabled designers to embed different integrated design approaches into façades, within the concept of Integrated Façade System (IFS), including photovoltaic- (PV) integrated solar shading [1, 2]. The PV has great potential for offices in regions with long sunshine hours and a considerable amount of solar radiation; however, this technology still lacks its place [3]. Despite many improvements of PV integration methods in the last decade, Salem and Kinab [3] indicate a few factors that have restricted the integration of PV in buildings, namely aesthetical, technical, economical, and social factors. To overcome these concerns, the Building Integrated Photovoltaic (BIPV) has been proposed as an innovative alternative to the conventional photovoltaic system [4, 5]. In addition to being solar electricity generators, BIPV can replace some of the conventional building envelope components and perform shading or cladding functions, representing multifunctional solar façades.

The aim of this study is to investigate the impact of photovoltaic integrated solar shading (PVISS) on the energy performance and electricity generation of office spaces in Erbil. The study focuses on designing and installing PVISS on the south orientation of the case study using the overhang shading type as the most effective solution to this façade in the study location. Using a building performance modeling and simulation approach, this study attempts to compare the energy performance of the existing office with the PVISS scenario. As a hypothesis, this technique is efficient in reducing the energy demand for cooling loads in the summer period as well as generating an adequate amount of electricity from the renewable solar source.

Integration of photovoltaic in architecture

Photovoltaic is the most promising renewable energy technology that produces electricity directly from the sun without pollution, regular maintenance, and depletion of materials. The available basic commercial

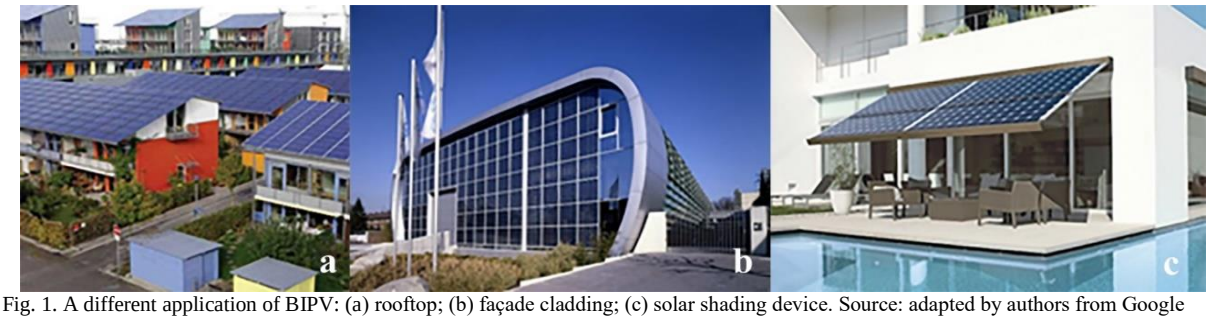

Fig. 1. A different application of BIPV: (a) rooftop; (b) façade cladding; (c) solar shading device. Source: adapted by authors from Google Search Engine.

photovoltaic module technologies include 'thick crystal products' and 'thin-film products' with 108.7-130.4 W/m^2 and 43.4-54.3 W/m^2 under full sun, respectively [4]. The integration of photovoltaics in buildings is an overwhelming process that serves as envelope materials and solar electricity converters, considering building aesthetic and environmental factors. The state-of-the-art reviews distinguish different types of BIPV, such as roof integration and façade integration [1, 2, 5], as illustrated in Figure 1. The façade PV integration should be prioritized due to the larger exposed surface area to the solar radiation compared to the building roof area.

Within different types of BIPV, solar shadings are of vital importance due to numerous reasons, such as a dual purpose of solar control and producing electricity, in addition to other functions reducing the cooling load in summer dominating regions, providing visual and thermal comfort for occupants [6, 7]. Recently, solar shadings have been intensively considered for the integration of PV particularly the south orientation in the southern hemisphere [8, 9]. Compared to vertical façade, PV modules installed horizontally can generate 50%-70% more electricity [4]. According to evidence [6], the BIPV system can produce 1-5% of the electric demand of a typical office building in Korea when factors of orientation and inclined angle are well-studied before the system installation. Di Vincenzo et al. [10] studied the importance of building layout and orientation on the urban scale.

The operating mechanism of PVISD encompasses both systems of the photovoltaic system and solar shading, as presented in Figure 2. Firstly, the shading device has to be studied and designed based on the window orientation and sun path diagram of the building location [11]. Then, the most suitable type can be selected, such as overhangs for south orientation [7]. Concerning the installation category, there are different types of solar shading installation, such as fixed [12], adjustable [13], and adaptive (or responsive) [14]. Fixed systems are claimed to be more applicable due to the low cost of installation comparing to other installation types [7, 12]. Finally, the PV type is chosen to be used as a covering material of the shading device. Similar to other PV integration systems, the PVISS can be used individually or connected to the grid. The PVISS involve the challenges of both PV and sunshades; for instance, a possible blocking of sky view, visual impact (daylight related issues), the PV power output depends on direct sunlight (about 10-25% lesser efficiency if the cell is not directly facing the sun), and atmospheric shortness (e.g. dust, cloud, etc.) [14, 15].

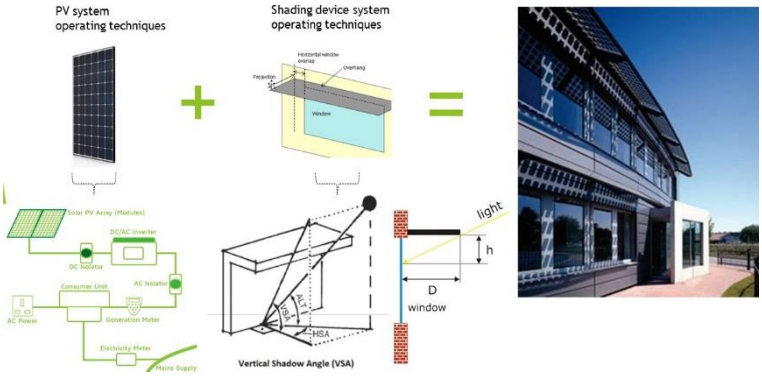

Fig. 2. The operating mechanism of PVISS. Source: adapted by authors from Google Search Engine.

Methodology

In light of the study aim, a computational modelling and simulation method was utilised. A case study office building in Erbil was chosen for the integration system. Initially, the building was assessed in terms of energy performance, and then the traces of the PVISS was evaluated in accordance with the baseline reference. Thus, the amount of generated electricity through this application and energy demand reduction were calculated and recorded.

Case study; office building in Erbil

The climate of Erbil (latitudes 35˚30′ and 37˚15′ N and longitudes 43˚22′ and 45˚05′ E) is semi-arid with hot, dry summer and cold, rainy winter. The average sunshine hours per day of the warm period and cool period are twelve and six hours, respectively. The excessive weather of Erbil requires the solar shading consideration to reduce energy demand for cooling loads in the warm period [9]. Furthermore, using photovoltaic as a shading system can promote the United Nation's Sustainable Development Goals (SDGs), such as reducing materials, spaces, and extra costs as well as generating renewable energy, which is freely harnessed and does not contribute to greenhouse gas (GHG) emissions.

The building's plot area is 150.0 m^2 and has two floors, namely the ground floor is a showroom and the first-floor functions as an office. The south and east-facing façade are exposed surfaces at which windows are located. The large window of the south orientation has not an external solar shading, which can result in inefficient energy use. Figure 3 shows the plans and perspectives of the study building.

Fig. 3. The case study (a) first-floor plan and (b) exterior view.

Modeling and Simulation of Energy Performance

Developed by National Laboratory of the U.S. Department of Energy (NREL), OpenStudio® [16], along with EnergyPlus, were used for energy performance analysis and PV generation system. The building performance simulation was performed only for the first floor (the ground floor has a set back of 2.5 m), which is dedicated to serving as an office. The building type, construction set, and schedule set were defined in the OpenStudio® software. A thermal zone, including HVAC packaged rooftop VAV DX with reheats, office equipment loads, and interior lighting loads, was assigned to the office floor, as outlined in Table 1.

Table 1. ASHRAE based building component features of the model and actual features.

Component	U-Value ($W/m^2.K$)	Construction	Actual features
Windows	4.260 SHGC: 0.253	ASHRAE 189.1-2009 ExtWindow ClimateZone 2	Glass with aluminum frame (6mm thick green tempered)
Walls	0.700	ASHRAE 189.1-2009 ExtWall Mass ClimateZone 2	Concrete block and composite aluminium cladding (300mm thick)
Roof	0.223	ASHRAE 189.1-2009 ExtRoof IEAD ClimateZone 2	Reinforced concrete without insulation (200mm thick)
Floor	1.174	ExtSlabCarpet 4in ClimateZone 1-8	Reinforced concrete (200mm thick) & Marble tiles (20mm thick)

Design of photovoltaic integrated shading device

The large south-facing window of the building has not any external solar shading. When designing a shading device, the sun path diagram of the location should be studied. The city's location requires overhangs—horizontal solar shading—as an effective solution to south orientation recommended by previous research [9]. Figure 4 presents the sun path diagram of Erbil.

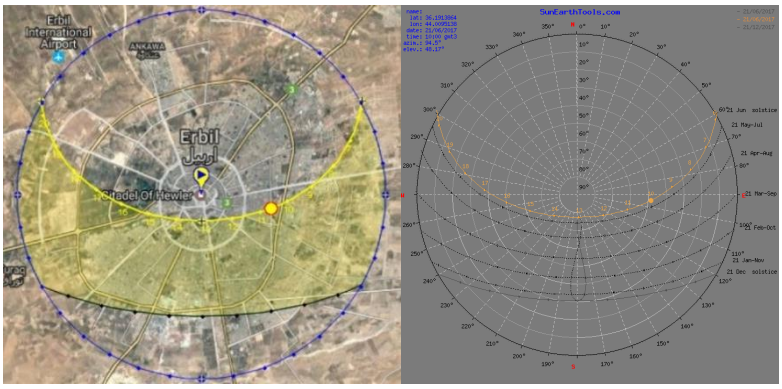

Fig. 4. The sun path diagram of Erbil. Source: [17].

In reference to a study [15], horizontal single blade in the most efficient solution for daylighting and visual comfort compared to other types of horizontal shading devices (i.e. outrigger system, horizontal multiple blades, etc.). Therefore, this study implements horizontal single blade to prevent excessive sun exposure entering the office space, starting from the summer solstice 21 June, 10 am when the Sun's altitude is about 50º. Accordingly, the cooling load can be lowered in the summer period while maintaining the useful solar heat gain in the winter period to minimize the heating load. Figure 5a illustrates the design of solar shading in accordance with the sun's altitude angle.

The PV type *standard crystalline silicon* was used as a reason for a reasonable price and efficiency. The module's temperature coefficient of power is -0.47%/°C offering an efficiency of 15%, approximately. To maximize the efficiency of a photovoltaic system, the tilt angle is of vital importance. Evidence [6] claims that a fixed south-facing PV system can be more efficient when installing the system at the tilt angle of 20º to 30º for which the former was applied in the current study. Figure 5b illustrates the design of the multifunctional solar shading using photovoltaic as material. The PV-integrated shading system prevents solar radiation penetrating inside during the summer period, while allows useful solar heat gain in the winter to lower the cooling and heating loads. In addition, the total reduction of CO_2 emission (kg CO_2) due to the PVISS system, from reducing the cooling electricity consumption of the sunshade system as well as solar electricity generation of the PV system, was calculated using the Sun Earth Tools [17]. Based on the mix of energy sources (e.g. fossil fuels) used to produce electricity in Erbil, Iraq, the production of one kWh electricity releases 1002.8 CO_2 g/kWh into the atmosphere [17].

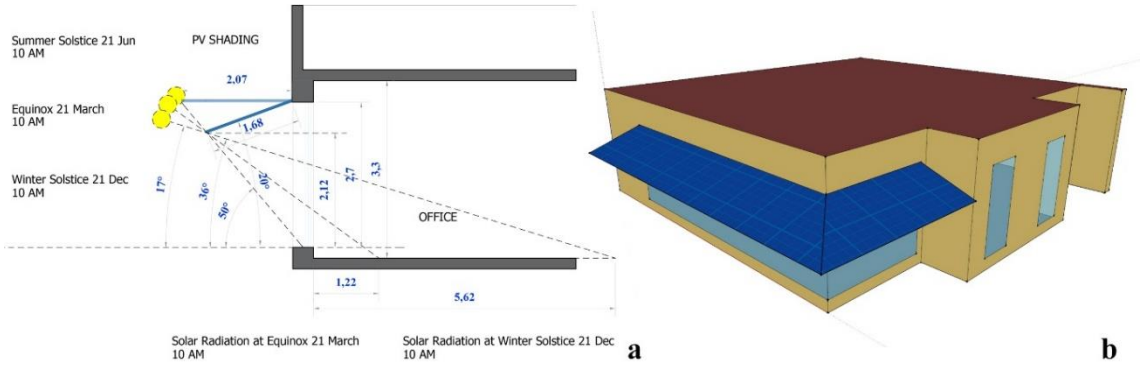

Fig. 5. The design of (a) horizontal single blade shading and (b) the PV-integrated shading at a tilt angle of 20º.

Results and Discussion

The findings of this research were obtained from two sequencing study phases. Accordingly, the results are presented and discussed with a comparison of both the baseline and PV-integrated solar technique. Finally, the system electricity generation, as well as space's energy demand coverage, are stated.

Results of office energy performance

By looking at Table 2, the annual total energy demand of the existing office was 84,013.8 kWh and the PV-integrated solar shading system lowered it to 82,380.5 kWh, representing 1,633.3 kWh of energy saving per annum. In general, the space cooling demands far more energy than other utilities, which is 55.04%, next is interior lighting 17.32%, and then comes interior equipment which is 14.81%, as presented in Figure 6. The total electricity end-use of the cooling and heating utility were 15,404.01 kWh and 2,978.02 kWh in the baseline case, while it can be read as 14,756.74 kWh and 3,386.38 kWh in the case of PVISS, respectively. The total end-use

amount of heating and cooling are stated in Table 3. Thereby, the cooling demand decreased by 2% due to preventing excessive solar heat gain in the summer. The total reduction amount of electricity for air conditioning is 238.91 kWh.

Figure 7 demonstrates the monthly electricity peak demand of different energy consumption sources. The maximum cooling peak demand in August decreased from 6.40 kW to 6.2 kW after the integration method. Furthermore, the cooling peak demand in the summer period is noticeably decreased. The statistics indicate that, due to limiting the exposed window area to the direct sunlight, the peak demand for heating load increased. Allowing sun radiation in the winter can be useful for heating up interior spaces; however, it can severely affect visual comfort performance, as claimed in the literature. Furthermore, sufficiently controlling the sunshine through adjustable shading devices can improve the indoor environmental quality of the building both in the summer and winter season.

Table 2. The annual total source energy for the baseline and PV-integrated solar shading.

	Total energy (kWh)	Energy per area (kWh/m2)
Base-case	84,013.8	560.0
PVISS	82,380.5	549.2

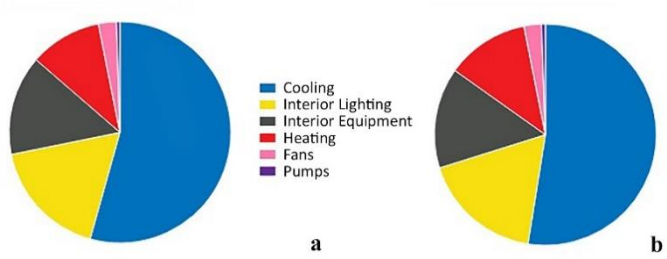

Fig. 6. The overview of annual end-use per utility.

Table 3. The annual office electricity end-use.

	Electricity loads (kWh)		
	Heating	Cooling	Total End Uses
Baseline	2,978.02	15,404.01	18,382.03
PVISS	3,386.38	14,756.74	18,143.12

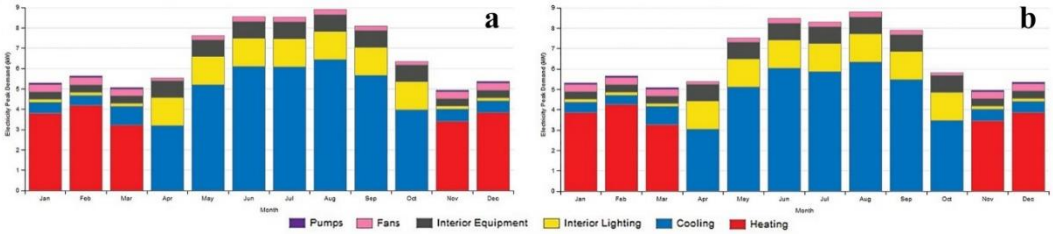

Fig. 7. The overview of the monthly electricity peak demand for (a) the base-case and (b) PV-integrated shading system.

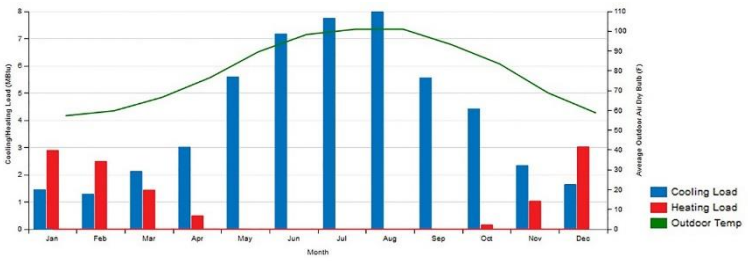

Fig. 8. The monthly HVAC load profiles after the integration method.

Table 4. The utility uses per total floor area.

	Electricity Intensity (kWh/m^2)	
	Base-case	PVISS
Lighting	31.24	31.24
HVAC	121.53	119.93
Other	26.08	26.08

Total	178.86	177.26

Integrated PV shading devices can control solar radiation, thus lowering massive heat gain in summer. Figure 8 shows the HVAC performance after the building integration system, cooling demands in summer months decreased to an average of 2.0 kWh (6.8 MBtu). Therefore, the reduction amount in cooling demand is 0.1 kWh (0.36 MBtu) comparing to the base-case cooling demands. Electricity intensity of lighting approximately stayed at the same amount 31.24 kWh/m^2 whereas, HVAC electricity intensity reduced from 121.53 kWh/m^2 to 119.93 kWh/m^2. The reduction amount of HVAC electricity intensity is 1.60 kWh/m^2 as outlined in Table 4. The simulation statistics of the PV-integrated solar shading emphasize that there is a considerable amount of energy saving, thus paving the way toward the energy-efficient building with lesser greenhouse gas emission and utility bills.

Generated electricity from the PVISS and feasibility of the method

The photovoltaic panels that were used as the construction material of the solar shading system generated 9236.11 kWh per annum, as outlined in Table 5. Therefore, the system can provide about 50% of the total electricity demand for HVAC of the studied office. This amount of electricity production shows the advantage of the utilization of PV in the external shading devices. The system is highly compatible with sustainability principles and objectives, which leads to sustainable development. Assuming that electricity price for commercial buildings in Erbil city is about 0.15 US Dollars per kWh and thus this system saves up to 1,385.4 US Dollars annually. If the photovoltaic system has a lifetime of 20 years, then an amount of 27,708.3 US Dollars can be saved, excluding the capital cost, efficiency reduction, and maintenance costs. A detailed life-cycle cost analysis is important to access the viability of this integration system. Furthermore, producing this amount of clean energy corresponds to avoiding 9262.31 kg CO_2 emission into the atmosphere annually.

Table 5. The annual photovoltaic electricity generation.

	Annual Energy Generated (kWh)	Reduction of CO_2 Emission (CO_2 kg)
PVISS system	9236.11	9262.31

Conclusion

This study presented a method of photovoltaic integrated solar shading for an office in Erbil. Energy performance and electricity generation of the integration method were evaluated. A computer simulation was performed using OpenStudio® for a reference office as well as after the integration method with the aim of investigating the impact of PVISS on energy performance and producing renewable solar energy. The statistics proved that this integration method has reduced total HVAC electricity demand by up to 2% compared to the existing office's energy performance. Therefore, this reduction in electricity cooling demand refers to minimizing heat gain in summer through blocking harsh sun's rays penetration into interior spaces. The PV system used as solar shading produces approximately 50% of the total electricity demand for air conditioning the office. This PVISS system saves up to 1,385.4 US Dollars annually by generating 9236.11 kWh as well as about 9262.31 kg CO_2 emission is avoided.

In general, integrating PV in shading devices has multiple benefits. Starting from being highly efficient and viable in generating sustainable alternative energy, which is the globally growing concern of today's sustainable development. It offers ab energy-efficient building by minimizing operation demand, accordingly, a considerable amount of carbon footprints can be reduced. Furthermore, within the concept of multifunctional solar façades, architects should handle such integration systems as building elements to stimulate functional and aesthetical aspects of physical architectural components during the design process.

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