

SHOPPING MALL DESIGN BASED ON THE PLACEMAKING AND SUSTAINABILITY FACTORS

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ABSTRACT: Placemaking is one of the recent most important and sensitive issues in architecture. Its related studies include various fields of sciences and arts. These sciences and arts must be integrated with each other to become a powerful tool in the hands of designers. On the other hand, there are many discussions about shopping mall design in the field of architecture. In some countries, shopping malls have become a central and attractive point, so shopping malls have effective potentials to become a place. But it is important to know that how do they become a place? How can they attract people? How can they keep shoppers or other people for hours inside the mall? And how can people have a goal more than a purchase? To answer these important questions, architects must not only assess and study successful shopping malls as a place, but must look at this type of building from different points of view and carefully. Today shopping malls are mostly multi-functional buildings with different facilities for customers and visitors too. Here, the first issue to be a place, is a location of the mall which influences the local people to involve easily in the building. The location issue first must be considered by planners of the area and then by architects in design. Another issue is a climatic consideration to provide and design elements for customers' comfort according to the local climate conditions. These climatic issues must be considered as sustainability consideration which is updated regularly. New creative spaces are the next important issue to attract people according to their desires, habits and needs. These new defined spaces are the most effective tool to attract and gather people in shopping malls, like a fashion space as important magnet, with different weekly shows. Also the safety can be the other important issue for people to feel secure when they are visiting shopping mall. Therefore they will be encouraged to visit and use this mall as a safe place. This safety is provided by public services, security controlling, and secure spaces and elements for all ages. From another point of view, shoppers and visitors like to have new and unique experiences in shopping malls, so there can be a place for them. This place also can be a local hangout for people. This research is done as a master thesis of architecture in Islamic Azad University (UAE branch). First, the sustainability and its factors were studied and reviewed according to different references. Then shopping mall and its features studied and analyzed along with analysis of some local and global case studies. Parallel to these reviews, different interviews (with specific questions regarding sustainability and design, in selected case studies) occurred with shoppers and shopkeepers in Dubai-UAE and Esfahan-Iran. After these steps, findings and results analyzed to reach to the specific design patterns like easy access, energy saving, recycled and renewable materials and respectful architecture. Therefore design of a sustainable shopping mall as placemaking has done in proposed site in Esfahan, Iran, according to all studied standards and factors.

KEYWORDS: Analysis, Design Pattern, Placemaking, Shopping Mall, Sustainability

INTRODUCTION

This research is done as a master thesis of architecture in Islamic Azad University (UAE branch). First, the sustainability and its factors will be studied and reviewed. Then shopping malls will be studied and analyzed with some case studies. Parallel to these reviews, different interviews (with specific questions) will be occurred with shoppers and shopkeepers in Dubai, UAE and Esfahan, Iran. After these steps, findings and results will be analyzed and so design of a sustainable shopping mall can be

done in proposed site according to all studied standards and factors.

LITERATURE REVIEW

2.1. Shopping Environment

To talk about shopping centers in any location, there is need to review it from different point of views and regarding different theories. It is important to know that what is shop itself first and also what are its history and types. Then we can understand what is shopping and its characteristics. After that bigger scale of subject can be reviewed like shopping centers or malls.

This kind of approach will help a researcher and designer to get familiar with shopping roots and concepts in order to reach to the better, successful and acceptable design. Shopping involves the buying of products by consumers, with different types of shopping products according to the thinking of consumers and their ways of buying. Current century witnesses new challenges for designers regarding new types of shopping facility. New urban movements in this field are going toward combination of traditional qualities and today commercial efficiency, convenience and operational benefits. These facilities can be defined by product, places, and type of environment however public trend is toward more unique shopping environments. Shopping facilities are an expression of a market. Normally they provide a showcase for manufacturers to sell their products and they are part of the large complicated system of economy of the country, region and district. Typical human activities like consuming and trading are reflected in this field and these activities have roots in our society since ancient times at the heart of the towns and cities. Because of changing in shopping nature with more different activities, designer has a more difficult job to work on these buildings. The Key issues in design and development of shopping centers are three main areas: 1- Social and Human Issues (sense and perception of the public); 2- Planning Issues (significant influence on shopping center design by connecting shopping environments with town centers and other urban zones); 3- Economic Issues. The fundamental criteria of design should: Understands the local market, meets the requirements of the retailers, provides adequate back of house facilities, provides a safe and comfortable public environment, and agrees with planning guidelines ([Coleman, 2006](#); [Callender, 1987](#))

2.2. Sustainability

In addition, another important element of today architecture, sustainability, must be reviewed and studied to be used in design of building, so increase building's age and use. Human wants to build continued shelter otherwise there cannot be any more civilization. Buildings and cities are long-lived and they are connected to the future which is unstable, unknown. In this case role of architects as building designers is considered seriously. The value of building depends on satisfaction of users regarding their needs, environmental changes conditions, and expected design quality. There are three main domains in sustainability: Environmental, economic, and social. A key word in the definition of

sustainable development is the future which is about a blueprint and architects design for future. So this issue forces architects to enhance their knowledge regarding future, materials, and technologies to be responsible for their role in this field. In design, visualizing, shaping and making human environment are practiced. This is important when we understand that nature is the guiding light of sustainability however there are various ways for designers to use nature by their specific ways. So the logical way is to use technological and ecological issues together to reach to the best way of sustainability in designs. Guidance of nature to building design can be in four ways: learning from nature (it encourages an appreciation of the interaction between resource-energy, water and materials going in; and waste, pollution and contamination coming out), using nature's models to inform, making nature explicit (inviting nature into the buildings brings both practical purposes and spiritual one), and using nature for ecological accounting (because of global warming, energy is considered more than others) ([Edwards, 2010](#); [Minke, 2006](#); [Radford, 2003](#)).

INTERVIEWS

One of the important parts of this research was different interviews with shoppers and shopkeepers of case studies in Dubai, UAE and Esfahan, Iran. By two different series of questions, shoppers and shopkeepers asked about important factors of design of shopping mall, so the general and repetitive answers had gathered to be analyzed. The questions which are related to the shoppers: How is the access to this mall? What is your opinion about the car parking of the mall? Are the Facilities of the mall enough for you? How is your circulation in the Mall? Do you feel comfort? How is the design of the shops? The first series of questions which are related to shoppers or customers, were made to be asked from 20 persons and then be answered by them and after that be analyzed for this research. The interviews were done in each case study separated. These questions made according to principal factors in design of shopping mall and also according to shoppers' needs and concerns. These factors are access, car parking, facilities, circulation, feeling and design. Then these questions like questionnaire distributed within shoppers of three famous malls in Dubai, traditional bazaar of Esfahan and new shopping complex in Esfahan. It is important that what are the needs and expectations of shoppers of shopping malls because the most important thing is that it is a functional building and first must provide users and customers' needs. So their attitudes about

asked important factors and questions will help architects to consider them in their design. The questions which are related to the shopkeepers: How is the access to this mall? What is your opinion about the car parking of the mall? Are the Facilities of the mall enough for you? What is happening to the wastes? Do you feel comfort? What is the reaction of shoppers to the design of mall and shops? What is your opinion about the design of the mall? How is the sustainability of this mall? Shopkeepers are other side of this research that are effective and have important role in shopping malls and their success. Therefore similar questions were asked from 10 of them in their shops which are located in case studies, to reach to their opinions about case studies of this research. Same important factors as for shoppers were mentioned in the questions plus sustainability which is related and important to shopkeepers and also sustainability is today's attractive, important and technical issue in design of all types of buildings. Then these sorts of questions again distributed as questionnaire to be answered by more shopkeepers. Same as shoppers, shopkeepers also have some rights, needs and facilities for their shops and services therefore their opinions are helpful and effective in design process of shopping mall and their concerns must be considered by architects and planners.

CASE STUDIES

4.1. Mall of the Emirates (Dubai, UAE)

The complex mall, Mall of the Emirates, combined of the leisure, entertainment and shopping resort opened in 2005. It is planned and located according to the strategic reasons, within the new areas of Dubai, and presents a full range of shopping, leisure, and entertainment. The design of this shopping center is according to make imaginative forms and facilities, to provide new features of adventure and excitement in order to attract regional and global tourists. Its design style as new bazaar of region, is combination of modern features and traditional elements with wide entrance. It uses nice moorish arches to its ceiling. Parapets and fountains lead to a rock climbing mountain, an indoor ski slope, hotels, restaurants and a big box retail center anchored by the hypermarket Carrefour ([Malloftheemirates](#); [Faarchitects](#))

4.2. Dubai Mall (Dubai, UAE)

Dubai mall is multi-functional development that focusing on shopping facilities as micro urban design. This complex is located at the downhill of the burj khalifa as the tallest building in the world, to be considered as one of two new

symbols of Dubai globally. It includes the world's largest indoor aquarium, features an all-weather shopping grove, indoor adventure park, and Olympic-sized ice skating rink. The surrounding project development contains different towers, hotels and residential complexes as Dubai new downtown. With scale of spaces in this mall is played to provide diversity and welcome for shoppers and visitors. Also the attachments and hierarchy were important to the mall's planning. Therefore, the scale of center is like a city with its related elements like pedestrian streets, nodes and landmarks. At smaller scales, architectural details provide a visual dynamism that extends though each of the mall's spaces. These elements get signs from traditional regional motifs and symbols, facade articulation patterns, skylight designs, and the fabricated patterns of interior finishes ([DPA](#)).

4.3. Mirdif City Center (Dubai, UAE)

Another big and famous shopping mall of Dubai which opened recently, is Mirdif city centre that is located in the mirdif area of Dubai. Mirdif city centre is planned and designed in a way to be the first shopping centre in the Middle East to achieve a gold rating for Leadership in Energy and Environmental Design. The centre's architecture combines sustainable design with concepts that reflect the region's landscape. The interior of the center tries to reflect the concept of local urban design with combination of enclosed and semi-enclosed spaces connected by a series of streets and passages. The mall includes public spaces, which can give services to large groups of people for promotional events, in three levels and with dramatic clerestory ceilings with extensive graphic and lighting installations. The mall's front door is the garden plaza, a glorious landscaped outdoor space that integrates with the mall's interior. Three types of space in each zone create visual and sensory variety: transition malls with lower ceilings, white rooms with medium-height ceilings and tapered central balconies, and the more colourful and decorative central rooms ([Gulfnews](#); [Greentechno](#)).

4.4. Esfahan Bazaar (Esfahan, Iran)

Bazaar of Isfahan is considered as one of the most famous and glorious bazaars of Iran and even Middle East. The primitive bazaar was included two different parts, the old section, which was planned around the old square and close to the Friday mosque and the new section, which started from naqshe jahan Square and extended till the old section. The main street in bazaar is the 1.5 km long shopping street which is vaulted as the longest vaulted bazaar street in

the world. By counting the number of schools, mosques and baths in the bazaar, we can understand to what extent the bazaar acted as the center of Isfahan. The bazaar also had cisterns, warehouses and stables. In order to create comfortable and pleasant environment during Isfahan's hot summers and cold winters, the major bazaar route was covered with a high and long series of brick vaults or domes. For natural light and vertical ventilation, there were openings between the shops and the vaults or domes of bazaar route. In the winter, the brick roofs would block the penetration of winter winds. The high heat capacity of the bazaar's building fabric would keep the warmth inside. The most common construction material for bazaar was brick. Because of the high heat capacity of brick, temperature fluctuations between day and night were low and the extreme temperatures of the outside were modified considerably ([Ghobadian, 2009](#); Tehrantimes).

4.5. Park Shopping Complex (Esfahan, Iran)

This Complex is designed in a way that buyers and visitors not only enjoy the shopping but also enjoy the green spaces. It is considered as one of shopping attractions of the city of Isfahan. This project includes about 400 shops of famous brands in different categories. Also there are different service spaces like offices, consultants and ceremonial halls. The complex has a rectangular ground plan and is divided into two parts, thus separating the commercial from the residential area. The housing units, placed on the eastern part of the plot, are grouped in six blocks with a south-west / north-east orientation. Vehicular circulation is restricted to the containing of the site and directed to the underground parking spaces. Pathways connect the residential buildings to the commercial area. The latter is organized around a central courtyard. The yellow brick facing acts as a thermal and sound insulation barrier ([Parkesfahan](#); [Archnet](#)).

4.6. Gateway Theater of Shopping (Durban, South Africa)

It is a good example of regional shopping and leisure centers with different facilities. It was largest in its type in the country when it opened. It was developed by Marcland Developments for Old Mutual Properties and is planned as a problem solving for the new town of Umlanga, allowing for the Northward growth of the important city of Durban. The attractions of this center are planned for all levels of people and visitors. The mall is organized in a way of outward orientation with the shape of crescent

and as entrance. The project exterior is planned and designed in a way to prepare the building for the future developments. The mixture of internal and external retails and sport activities is an innovative design in shopping centers. This kind of center not only provides memorable experiences for visitors but can be an adventure travel in holidays. Different internal and external water features are designed and used in this center including entrance with nice views ([Coleman, 2006](#)).

4.7. Asmacati Shopping Center (Izmir, Turkey)

Asmacati Shopping and gathering place is located in the city of Izmir, Turkey. The center provides good lifestyle of Izmir for people to spend their free time in the outdoors area according to local warm climate. Its design is in a way to provide semi-open spaces as shopping facility with natural leisure zones between shops. These spaces as open air patios present a relaxing feeling under the shadow and glitters of the bower made up of contemporary material, and the design imitates grape leaves of the local landscape ([Archdaily](#)).

4.8. Abercorn Common (Georgia, USA)

It is the first center that achieved LEED certification in US, according to considering efficiency in building design. The center is integrated with Savannah's downtown historic district, with using canopy, brick facades, fountains and brick sidewalks and also natural features. According to the sustainability elements, this mall is using some features like reflective roofs, water conserving appliances (i.e. sinks and toilets) and the use of low-volatile organic compounds. Some main features of sustainability of this mall are: using cistern for collection of rainwater to be used for irrigation; using water-efficient systems in different sections; using highly-reflective white roof to reflect away the heat and keep cooling; and recycle of the construction wastes ([Abercorncommon](#)).

RESULTS

According to two different factors, this research reviewed the literature which these factors are shopping mall design and the important factor the sustainability. Different books are in these two separate ways are chosen and studied to achieve the main and important point of each book in related category. Some books are talking especially about design and architecture of the shopping mall like location, spatial comfort, good circulation and scale of the design. Other books are talking specifically about the sustainability in all building types like saving

energy, using solar panels and waste recycling. All common and important issues are collected and gathered in literature analysis table (Table 1). The next step was the providing the summary of all points and issues of interviews with shopper and shopkeepers in selected shopping malls. These interviews were important to be done because of the essential role of shoppers and shopkeepers in the success of any commercial environment. Their opinions and advices were gathered in two different tables for shoppers and shopkeepers. After that

the summary table of all interviews is provided with two separated column of influential points (Table 2). After the selecting different case studies from different part of the world, from traditional to the modern types, they were studied and analyzed to catch the main ideas and design elements of each one as advantages and disadvantages. After these steps, the common and effective elements and factors are shown in the related table, with their points as summary of the case analysis (Table 3).

Table 1: Literature Results and Analysis

Literature Analysis	
Shopping Mall Design	Sustainable Design
<ul style="list-style-type: none"> - Located in a place for reasonable goals - careful site selection and analysis - considering spatial comfort - importance of human scale design - considering surrounding characteristics like local heritage and culture and urban fabric - strong layout design as key success of the mall regarding location of shops, circulation, safety and access - providing shoppers expectations - importance of accesses and surrounding transport - providing enough entertainment facilities and spaces for shoppers - design of gathering spaces - standards modular design of shops 	<ul style="list-style-type: none"> - using natural resources - construction sustainability - energy saving - waste recycling - water management - using renewable energies - using materials with less environmental impacts - considering current technologies - integration with nature - think about the future developments - study of traditional sustainability design - renew, reuse, recycle

Table 2: Interviews Results and Analysis

Interviews Analysis	
Shoppers	Shopkeepers
<ul style="list-style-type: none"> - the access must be easy - car parking should be enough and without complex circulation - considering environmental comfort in design - providing enough facilities like services and variety of shops and entertainment - importance of circulation to be easy and comfortable - shoppers like to have a good feeling in mall regarding safety, design, and comfort - design and architecture must be respectful and related to the culture 	<ul style="list-style-type: none"> - good location to have an access to the city center and main markets - providing comfort space work with considering climatic elements like skylight and air circulation - special car parking must be close to the shops for faster access and goods loading - the waste of the mall and of the shops should be collected and recycled for less environmental impacts and for cost efficiency - shopkeepers need specific facilities for their work like stores and utilities - easy circulation from car parking to the shop - design of building and shops must be related to the kinds of shops and brands - it is important to reduce energy use and consider the cost for shops with using sustainability in the malls like solar panels and materials recycling

Table 3: Case Studies Analysis

Case Studies Analysis				
Location	Facilities	Sustainable Elements	Comfort	Architecture
<ul style="list-style-type: none"> - importance of nearness of the mall - easy way of access - not separated from adjacent area 	<ul style="list-style-type: none"> - providing various standard facilities - importance of parking availability and circulation 	<ul style="list-style-type: none"> - using renewable materials - waste recycling - Energy saving - using modern climatic and modern sustainable elements 	<ul style="list-style-type: none"> - providing thermal comfort internally and externally, with new modern systems - providing enough facilities for shoppers and shopkeepers comfort 	<ul style="list-style-type: none"> - considering local characteristics and climate - design an attractive building

CONCLUSION

The final step was the gathering of all data and analyzing them in order to reach to the fixed

common factors as design patterns and using of them in the design of sustainable shopping mall. To make this final table, all tables of this chapter

compared together according to the most effective and important elements of design of shopping mall with respect to the sustainability considerations. These final design patterns can be useful and educational, not only for this research, but for all future shopping mall design, to be used by other architects and planners of each specific city or region (Table 4).

Table 4: Design Patterns as Conclusion

Design Patterns
Easy Access
Standard Car parking design
Enough Facilities
Renewable and Recycled Materials
Climatic Design
Energy Saving
Easy Pedestrian Circulation
Respectful Architecture
Waste Recycling
Thermal Comfort
Technologic Systems
Sustainable Elements

REFERENCES

- Callender J. Time-Saver Standards (Building Types). Singapore, McGraw Hill, 1987.
- Coleman P. Shopping Environments (Evolution, Planning and Design). New York, Routledge 2006.
- Edwards B. Rough Guide to Sustainability. London, RIBA 2010.
- Ghobadian V. Sustainable Traditional Buildings of Iran (A Climatic Analysis). Universal Company 2009.
- <http://greentechno.ae/mirdif.html>
- <http://gulfnews.com/business/general/mirdif-city-centre-in-dubai-opens-to-the-public-1.598537>
- <http://www.abercorncommon.com>
- <http://www.archdaily.com/145545/asmacati-shopping-center-tabanlioglu-architects/>
- <http://www.dpa.com.sg/>
- <http://www.faarchitects.com/index2.html>
- <http://www.malloftheemirates.com/MOE/En/MainMenu/AboutMOE/tabid/64/Default.aspx>
- <http://www.parkesfahan.com/About.aspx>
- <http://www.tehrantimes.com/highlights/96081-isfahan-home-to-the-worlds-longest-vaulted-bazaar-street>
- https://archnet.org/library/sites/one-site.jsp?site_id=737
- Minke G. Building with Earth. Berlin, Birkhauser, 2006.
- Radford A. Understanding Sustainable Architecture. London, SPON Press, 2003.