

# An Investigation of Shopping Mall Design Requirements <sup>†</sup>

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**Abstract:** Shopping malls may be considered as controversial structures since they sometimes fail to comply with the expectations of the project stakeholders throughout the project life cycle. New mall projects often attract the attention of people since such a structure has a potential to reshape the neighborhood it is located in; however, the impact is usually negative. On the other hand, the parties involved in mall projects may be subject to criticism from both the public and the industry during the design, construction, and operation. During this study we conducted semi-structured interviews with five managers of an international company that provides real estate services worldwide, and mainly focuses on managing shopping centers within the context of Türkiye. During the interviews, we collected insights on shopping mall design and criteria that have an impact on the operational success and/or failure. We analyzed the interview data to understand the shopping mall design requirements from the experts' perspectives. We summarized our investigation under three main categories as location, shop and brand mix, and design. Analyzed data indicates that the requirements and use of shopping malls evolve and change over time. The change is driven by things such as changing habits and expectations of the users and new marketing approaches. Understanding such changes is essential for designers and investors to propose new design approaches and space compositions in order to be able to adapt to the changes. Through our analysis of the collected data, we provided insights on requirements, and new trends that affect design of malls. As further explained in the paper, our analysis indicates a number of important topics during design such as, the need to design to fit the ever changing spatial needs, providing feel-good environment for users, correct placement of spaces and stores related to each other, designing circulation that supports commercial activities, designing with a consideration of operation and maintenance. According to the collected data, the trend of shopping malls design is towards integration of hybrid uses, free forms, more open spaces, increased emphasis on gastronomy, and enabling socializing while leveraging technology and being more sustainable.

**Keywords:** Shopping mall; architecture; design; requirements

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## 1. Introduction

Shopping malls play important role in the city life and economy [1]. Their use and functions evolve and change in time [2] [3]. Design of shopping malls have been the focus of many studies. Previous research focused on topics such as effects of spatial configuration [4], shopping center as a spatial system [5], architecture as a factor on determining shopping center rents [6], effect of physical environment and environment factors on shopping response [7]. It is important for the designers to understand the changes in the market that reflect on design requirements in order to create mall that live socially and economically. It is essential to understand how important of a role malls play in city life so that designers and investors can integrate the science behind the mall requirements into their existing and new projects. Important decisions need to be made at early stages of mall project, and these decisions have direct relationship to the performance during operations. It is essential to get the right people involved as early as possible in the design process. Although issues may be project specific, significant ratio of the issues with the

malls result from not being able to envision the operational functions, or not complying to technical requirements. This study aims to provide insights on mall design requirements and uses data from the interviews that we performed with a leading international organization that mainly focuses on managing shopping centers within the context of Turkiye.

## 2. Methodology

Data was collected from the semi structured interviews we performed with five key personnel from an international company that provides real estate services. The interviewees were the national director (also the national CEO), a senior director for re-leasing, a senior operations manager, a shopping mall manager, and an interior architect from the main office. The interviews were recorded and later transcribed. These transcriptions were analyzed in detail using MAXQDA to provide insights about the interview questions. Although the set of questions covered a range of topics related to shopping malls, for this article we only focused on the ones related with the questions about the architectural design of malls.

## 3. Results and Discussion

Mall projects involve different profiles such as, investor, tenant, consumer, and employee profiles. These are all factors that shape up the shopping mall's big picture, image, goals and the way it operates. Consultants' early involvement, as early as the decision making process for the project site, is essential in mall projects. The consultants offer help during concept creation on topics such as location, number of floors, number of stores, m2 of rentable area, and overall mall concept development. The consultants coordinate with the developer/owner's architect and provide feedback on design features such as service corridor availability, development of plan layouts according to the location of store brands, and service requirements. The mall also needs to be spacious, and one should be able to walk around the mall easily. Finding and reaching the brands in a mall should be easy, which does not necessarily mean immediately. The consumer should be able to walk around the mall without getting tired. The mall should also not tire the consumer architecturally either. Then it comes to providing the space she wants and desires. This can be related to the topic of creating a space that she can feel good when she enters the mall. Brand mix, location, and architecture are important, and these three are the main basic elements of a mall. Available products and tenant mix are also important to get desired consumers and tenants. More information on location, shop and brand mix, and design is presented in the following sections.

### 3.1. Location

Often the location defines the customer profile that the mall has the potential to acquire since the shopping centers receive the most visitors from the nearest areas, five minutes or fifteen minutes away. Therefore, the income group that is within fifteen minutes from the project land is analyzed, and the brands are positioned accordingly. When renting mall space, the brands make decisions on store positions and store designs according to such data. In terms of location, the important things are the shape of a potential lot, whether there is enough population, and accessibility. When deciding on the location for a mall project, being on the right transportation axes is very valuable. It is not about being in or out of the city, it is about being easily accessible. Accessibility is an essential criterion for the users when selecting a mall over others. The location and the building uses in close proximity of the potential plot are important, but the interview data suggests that it is challenging to describe what is good and what is bad in this context. Architecture and spatial organizations may become more important if there are number of malls in the region. In such cases the malls evolve into spaces that their architecture shapes them into: depending on the qualities such as being new or old, a mall can evolve into a place

for more shopping, or socializing, or spending free time. The shape of a mall plot is important since it has to have a suitable depth and size. The ideal shape for a mall site is a rectangle, or a square as a second alternative. The project plot may be large, but the depth of the plot or the floor area coefficient of the land may not be sufficient. If there is a maximum height restriction on the land, you may not be able to get the leased area on the floor and density you want in the shopping mall project. Therefore, the shape and building permissions and requirements for the specific plot are important in shopping mall projects.

### 3.2. Shop and brand mix

A mall specific shop mix defines a mall, and then the spaces in the mall are rented, and later managed according to this mix. Very important stage in design is deciding what brands should be in the mall and which stores should be assigned to these brands. Shop-mix is a legend that includes information on the sectors and brands that are available in a mall. The brands that will be in the mall are important for the tenants. Some brands may agree to come only if a certain brand is also included. Brands want to work near other brands that can create synergy and improve sales. There is a consumer profile that always uses the same brands and their habits develop like so, that's why it is important to keep such stores together. A store's location within the mall, in the sense of whether the space enables them to reach their targeted consumer group, is also an important factor for the tenants. At the retailer point of view, the retailer wants to present his store in the best way possible, wants his store front and signage to be clearly visible. Therefore, design decisions such as the column axle spacing or the store depth should be suitable for retailers' requirements. Retailer wants both the electro mechanics not to bring much load, and the building to be equipped with new systems that will ensure low operational cost. The retailer also expects to make a good turnover after the opening of the shopping mall. In order to do this, he needs to place an ideal store in the shopping mall. The retailers may not be able to implement the ideal store in an incorrectly designed mall, yet this situation is not very uncommon. These decisions are strongly related to who you would like to accommodate or invite to the mall project. Because the purpose for a mall's existence is to provide a space for the consumer both to spend time and to shop. In order to keep sales going, there needs to be a homogeneous brand mix so that the mall can attract the group of customers to satisfy the brands, in return you create an environment that enables to keep a good percentage of tenants happy and satisfied. There is more leverage if the architecture is a fit and location is good in terms of attracting more brands.

### 3.3. Design

One of the biggest problems is to manage a building that is not invested in, in terms of not accurately planned. The design stage is the most important stage in a shopping mall project lifecycle. It is very important that the design to be up-to-date, that is, if the mall will be opened in three years, the design should be in a way that would still be appealing three years later. There is the fact that all of the mistakes that will be made during the design phase will cost millions of dollars after the mall is opened. The environment should make you feel good when you enter the mall, and the circulation areas, ceiling heights, corridor widths should contribute to such feeling. There needs to be space to move freely, to comfortably walk around, and that's why there are currently more free form designs. It is important to create spaces that people can easily interact. A consumer would notice things like: landscape within the building, decorations, architectural materials used, light, created corridors that take you in and out. The interior space may be designed according to target consumer profile. For example, the floors may have a dark color, since dark gives the feeling of luxury, and the dark color has been considered to be more appealing to the upper income level group. Whereas the floors that can be more easily cleaned, cheaper and more accessible floor surfaces are preferred at malls that have a wider target group

and more circulation. In the background there are service spaces that that the last users see, and spaces used during operation, such as receiving area for goods, and lifts for loads. It is a very important problem if there is an access issue between the service lifts and receiving bay. Open and closed parking, and access to parking is essential. Same as issues with parking: like accessibility issues for the handicapped, circular ramp design, or clearance between columns. Placement of service spaces, like dining hall, for security and cleaning teams have to be easily accessible, since these teams' time is already limited. There may also be special designs that users are not aware of but are intended by the management like the placement of stairs, relationships between stairs and lifts. The management would like the visitors to spend time inside building. It is important to get the visitors walk towards the corridors in the direction that the management wants. You create a different world where the visitor can rest, shop, eat, and also go to a movie. You create a specific space for fast food, location of fast food stores is important because one of the basics is that the people eat when they visit malls. Movie theatres are alike, you go there and also eat, so the proximity of fast food and theatres is important. You make people reach such places after you show them the whole mall.

There are many malls that go under renovation and change their particular spaces. There may be blind spots that the consumer does not want to visit, there may be back corridors, or areas that make us feel cramped, or there may be areas that are not used due to the physical conditions, or there are areas that are well constructed but its function during operation wasn't much evaluated. There may be a space designed for a coffee shop, but that space may not work as intended, people may not want to sit there. There are malls that have a lot of fast food areas but the fast food space does not work. There may be too many fast food stores, and people may not feel good in such a space. There may be spaces that are not working because you may have gone up too much in designing a multistory mall. That's why things may change during operations. Although there are formulas for shopping mall design, such formulas may differ internally in time. There was a period when the designers used the idea of a shopping mall where one could get lost inside and with this method the mall was intended to look bigger than it actually was. Today the malls where the people can understand the plan layout easily after the first visit, can wander around comfortably, won't get lost, can easily go to the washrooms, use vertical circulation, and have comfortable and spacious parking lots are more prominent. The consultants have formulas for the placement of the anchor stores with big square meters. Depending on the context you may come up with rules or mathematics for creating the right shop mix. According to the interview data it is not recommended for a shopping mall to have less than 40% of stores that are more than 1000 m<sup>2</sup>. But if there are more than %55-60 above 1000 m<sup>2</sup> stores, this time the operation will be in trouble financially. Gastronomy units in malls used to be %20-25, but they went up to %40 over the past years.

While the important thing for users, namely visitors, is to enjoy the experience and be comfortable, the mall design still needs to comply with regulations, laws, and standards related to such topics like job safety, and accessibility. Security, job safety, visitors' safety, creating a secure and safe environment, creating livable spaces are important requirements. Design of a mall needs to be aligned with the environmental requirements. In certain climates it is very difficult to create spaces that are all around open, since you may want to control sun or rain. The mall also need to answer the tenant specific requirements such as HVAC and electrical requirements. Users' generally like a spacious, comfortable (thermally, lighting etc.) spaces. The design also needs to comply with special bylaws which include design requirements and restrictions such as the location of the infirmary which cannot be located on a parking level, or the requirement to provide a space for ambulance. During the design phase it is essential to be able to foresee potential issues and develop the project accordingly.

Design without the consideration for O&M leads to extra costs during the lifecycle. Performance during construction and operation, such as performance of maintenance and cleaning activities, is strongly related to decision making and planning during design and

construction. Malls live 24 hours a day, they need to be prepared during the night, and they may be visited by up to tens of thousands of people during the day. Operational requirements such as cleaning requirements are essential, such activities need to be performed by targeting closest to perfection. The design characteristics have potential effects on the operational performance of a mall. One of the main problems is defined as designing without the consideration of operation, which often leads to additional costs after construction. For example, recessed walls create hard to reach, hard to clean areas, surfaces that collect and gather dirt, and hard to clean areas require additional chemicals for cleaning. The designer needs to be able to realize and re-evaluate design, when working too much off certain design limits. Space height is important since the cleaning staff may need equipment to access these spaces for cleaning and maintenance. The design should consider safety and accessibility for maintenance. Roof access through ladders make it hard and dangerous for the maintenance crews to service roofs. For the roof maintenance and cleaning, it is better to have lifelines and right type of railings so you don't need costly professional cleaning teams. Such operational costs get immediate attention by the owners, which in turn leads to criticizing the quality of the initial design. Not designing all the required spaces such as spaces to store garbage bins, or not including baby changing rooms in design often lead to redesign and renovation during operations.

### 3.4. Current Mall Trends and Future Characteristics

The use, spatial needs, and requirements of malls evolve and change in time. However, the malls are designed based on the period specific needs. However, the malls have become a space for socializing, and such changes reflect on the design of malls as new trends that need to be adopted architecturally. Such changes in the mall use trigger the need for new spatial needs and requirements. Over the past years more malls with free forms, with increased need for terraces and open spaces are build. There is more emphasis on gastronomy, and the number of restaurants and coffee shops is also increasing. There are more hybrid mall projects with residences and offices, and even amusement parks. There are movie theaters with increased number of screens. There is also more emphasis on sustainability as well as increased landscaping outside as well as inside malls. There are overall smaller store floor areas than before, whereas number of incorporated seating and resting areas is increasing. Interviewed experts think that more shopping will be done online in the future. But people will come to these comfortable environments to socialize, and malls will be used as support points. Current trend indicates that we will embrace and use technology, develop more technology infrastructure in shopping malls. A shopping mall has to offer you an experience and promise to attract you there. That's why the shopping malls have to become experience centers and they are evolving into such. There will be entertainment areas for all user groups. Socializing has become the main reason for mall use, and the malls are going to be offering more comfortable environments.

## 4. Conclusions

The requirements mentioned in this study affect the decisions taken during the design phase. The designer has a serious job in terms of responding to all these criteria. The consultants provide measurements specifically tailored for each mall project. In general, the tailored measurement involves topics such as: the number of stores in the mall, the size of the mall, the depth of the mall, the size of the movie theatre and the market. During the interview the national director (national CEO) mentioned that "if only there was such a technology that could control all the mentioned design criteria. Project design development, which often takes months, could be done in a much shorter period". It is very useful to identify the design requirements, make them available to all project stakeholders, get the right people involved early in the design process, and design in compliance with the previously identified requirements. When asked about what would make his job easier, the national director mentioned that it would be very useful if there was a nationwide

master plan that would not change. This way, through analysis and calculations, they would be able know how the malls will be developed. Secondly the malls are handled with a wide spectrum by the laws. It would make things easier for the consultant firms if there was a solid legal infrastructure for shopping malls. The next is mentioned as the education, which is not necessarily for the personnel, but in terms of developing consciousness and awareness at the level of investors. The research indicates that there is no comfort zone in mall design and management. You have to find solutions to situations that change constantly, so you need to be proactive. The results and analyses that the shopping malls research will draw in the coming period should be a guide for shopping mall designers. The researchers should continue to see shopping malls as a field of expertise, since the industry definitely needs it. As the lives of modern people change, the place of the malls for the city life will get bigger in terms of needs and spaces. The malls that change in the right direction, or place themselves right would get the fair share of the future volume.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Conflicts of Interest:** The authors declare no conflict of interest.

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