

CHANGE PHENOMENON ON THE CONCEPT OF CONSUMPTION

An Empirical Study on the New and Existing Retail
Structures in the Context of Istanbul, Turkey

Doruk Salali

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An Empirical Study the New and Existing Retail Structures in the Context of Istanbul, Turkey

Master of Science Thesis in Architecture

Politecnico di Milano
School of Architecture, Urban Planning, Construction, Engineering
Architecture

Student: Doruk Salali

Supervisor: Prof. Laura Daglio

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ABSTRACT

Retail structures are in transformation—again—. The evolution of these structures in the history shows how these places have always needed to keep changing and renovating. This dynamic nature of consumption and the structures allocated for the purpose of consumption conduce toward the necessity of being up to date or even be ahead of time for these structures by following, predicting and proposing new trends and technology.

Although the translocation of these structures from urban center to periphery is a fact for more than 60 years, some structures used particularly for retail purposes are still located in their historical places—the consolidated urban core—.

Nevertheless, the perception of the users of these structures are changing. While the new out-of-town structures are creating new centralities with the use of state-of-the-art technologies and futuristic designs, the central retail venues are trying to keep up by new innovations, technologies and trends. These places are becoming the 'consumption based monuments' in the urban context. They have developed a new characteristic besides shopping. Moreover, the phenomenon of change did not change the fact that these places are always the most prominent public spaces of their times as they currently are and will presumably be, forevermore. That is the reason why these structures need particular attention by the architects, with the help of urbanists and other disciplines.

This thesis is a holistic work which is not only analyzing the new 'sustainably certified' structures, but also evaluating the renovation and retrofitting of the existing structures in a particular context in an empirical way. The main goal of the work is understanding "How these central public realms are changing shape in the globalized and high-tech world?" and "How the existing shopping centers can make correspond and be adapted in its urban context to the new and sustainable structures and strategies?"

"Veni, vidi, vici"
(I came, I saw, I conquered)

Julius Caesar

"They came, they saw, they did a little shopping."

Jeff Klooger

Motives on the Choice of Topic

Dynamic Aspect of Consumption
Phenomenon of Change

The Structure of Thesis

Infographics of the Thesis

Architectural Culture and Trade

Negligence of Retail Structures in History
New Emphasis on Commerce

1.1. Motives on the Choice of Topic

Shopping has been in existence ever since the past and it will exist in the future, even in the most inappropriate places. When the history of shopping analyzed thoroughly, it can be seen that it differs from one place to another due to the social, economic and cultural characteristics of particular communities. However, there are many common points in all of these different communities. One—and probably the most important—of these common points is that shopping needs a space with specific features.

The focal point of this thesis is that consumption—so shopping—needs dynamism. As a consequence of this, the structures built for these purposes are keep changing, in another word, evolving. Many architects have largely ignored this dominant form of urban activity and neglected to deal with these complex structures due to the fact that it is predictable, almost scientific and this prohibited us—the architects— from having an effect on its quality as Rem Koolhaas stated in his interview.

“Unfortunately we as architects have never investigated those concentrations as a creative act. Large-scale shopping environments are an evident development where we prefer to take a position of abstinence, because of their presumed undemocratic aspects. But by maintaining that abstinence we disqualify ourselves for any participation, so we are in the difficult situation where our judgment before investigation has now put us in a position that makes it hard to judge ever again.”¹

But still, architectural discipline must deal with this dynamic nature of the shopping structures and it needs the involvement of the architects more than ever not only because it is a necessity, but also retail structures became the new public spaces where humans interact and spend their most valuable leisure time. It would be a huge mistake to ignore this fact -as architects-. As Victor Gruen stated, the importance shifted from the aesthetics of the structure to the beauty of financial statement and this is the point where architects must intervene. The ‘planning’ of these structures must be an all-embracing approach. It shouldn’t be restricted to only physical planning but it should also consider economic, leasing, financial, administrative, ecologic and sustainable planning. These are the reasons why there is a need of a holistic work, gathering all these special attributions of this particular type of architecture.

¹. Architectural Research Quarterly, Volume 5, Number 3, Koolhaas on Shopping, 2001.

Figure 1. Cover of New York Post Newspaper. Date: 18.05.2014



1.1.1. Dynamic Aspect of Consumption

“Shops and stores are the most ephemeral of all building types. The ultimate architectural fashion victims, their need to remain up-to-date ensures that even the most expensive schemes, by the most renowned architects, have fleeting lifespans.”²

Most institutions have played a historically stable role within the city, whether because of their general acceptance as indispensable organizations or because of the civic apparatuses that have ensured their existence. Shopping, on the other hand, is continually being reinvented, reformulated, and reshaped to keep up with the most subtle changes in society. No other program has seen so many new concepts and new configurations designed to follow shifts in cultural tastes and in social and urban patterns.³ This special –but not always positive– characteristic of these consumption places causes them to be in need of consuming *per se* to be alive.

The innumerable forms that shopping has taken throughout history attest to the way shopping has had to invent new techniques to make itself accessible and appealing to the public. While the marketplace and the individual shop have endured as forms that have followed the development of civilization, other forms have taken shape to reflect the changing relationship of humans to material goods and to the city. Because shopping is so intimately tied to the shifting desires of the market, and because its survival is premised on tapping into and sustaining the public’s attention, these forms are always facing the threat of obsolescence. Shopping, rather than being a subtle urban building block, is best described in terms of cycles, births, declines, and measures in terms of life spans.⁴ This idiosyncratic character of consumption leads to a continuous change in these structures and the uses of them.

This dynamic character of these spaces altered them from being a structure only for shopping. The modern shopping environment, whether the shopping center or beefed-up downtown that transformed itself, now constitutes the meeting place and the place for production of ‘social surplus’ in the fragmented city: “Consumption, an ambivalent and multi-faced activity, takes on more and more social functions as a form of sociality.”⁵

In this day and time, the new integrated shopping environments have to be acknowledged as the new public spaces of the city where people spend the most of their leisure time.

2. Goode, Patrick, ed. *The Oxford Companion to Architecture*. Vol. 2. New York: Oxford University Press, 2009.

3. Leong, Sze Tsung. ... And Then There Was Shopping. *Harvard Design School Guide to Shopping*. Köln: Taschen GmbH, 2001.

4. *Ibid.*

5. Hemmersam, Peter. “Shopping – Integrating the Fragmented City.” *Nordisk Arkitekturforskning* 17, no. 2 (2004): 97-109.

1.1.2. Phenomenon of Change

In the recent decades we have witnessed a proliferation of new kinds of retail space. Retail space has cropped up just about everywhere in the urban landscape, at libraries, workplaces, churches and museums. In short, retail is becoming a more and more manifest part of the public domain. The traditional spaces of retail such as city centers and outlying shopping malls are either increasing in size or disappearing, producing new urban types and whole environments totally dedicated to retail. The proliferation of new retail space brings about a re- and de-territorialisation of urban public space that also includes the transformation of materialities and urban design, and even of the logic and ways through which these design amenities meet the needs of retailers and/or consumers.⁶

The transformative world of contemporary retail spaces is a gold mine for the architectural researcher interested in the role of architecture in the construction, stabilization and destabilization of spatial meanings and usages in our every day urban environment.⁷

The transformation is quite palpable. Some of the obvious examples can be the increased distance from home to store, increased size of retail spaces and relocation of these structures to the outlying places in the urban context. Markets were often located at the central square, at the city gates or along the more well connected streets leading into the center but now they are in the periphery.

These changes has significant effects both socially, environmentally, and economically. These structures became more than a place for retail, they became multi-purpose hybrid structures which serve nearly all the needs –not only needs, but also wishes and desires– of its users. This is the reason why the habits of the people have changed and are still changing. People are expecting more from these structures than before.

On the tangible side, the effects of these huge structures can not be underestimated. For instance, the change of these structures create tremendous amount of construction opportunities. Without a proper supervision, the consequences of these new constructions can be irreversible and socially, environmentally and economically devastating. These developments need a sustainable approach while following the changing consumer and demographic patterns or there is no escape for them to be one of the already obsolescent, outdated retailing concepts.

6. Karrholm, Mattias. *Retailising Space: Architecture, Retail and the Territorialisation of Public Space*. Surrey: Ashgate, 2012.

7. *Ibid.*

1.2. The Structure of Thesis

This thesis consists of 6 chapters.

First chapter is the introduction to the topic and can be perceived as an entrance to the world of consumption. This chapter also includes the part showcasing the close relationship between the architectural culture and trade.

In the second chapter, research deepens and shows the historical evolution of the shopping spaces in a chronological order. Then, the chapter explains how the traditional shopping center should be planned. Furthermore, it includes a taxonomy of the elements of a shopping center to truly understand what a retail structure is and what it consists of.

Third chapter is about the main topic: the phenomenon of change. It starts with the identification of the context (Europe) due to the fact that it would not be reliable to compare completely different places with different traditions when the retail structures are shaped by the users' characteristics and habits. Then, the change in the people's, planners', and developers' preferences are evaluated to see how the contemporary shopping center is shaped. The criticisms on these contemporary shopping centers are analyzed to understand what the users and the planners expect from such a structure.

This chapter also includes the innovative aspect of a shopping center, the affiliation of technology, sustainability, and the retail spaces since planning of such a structure can not be done without considering sustainable measures. That is the reason why, an analysis and a comparison of the 3 most appropriate sustainability assessment methods (BREEAM, DGNB, LEED) is done in this chapter.

Fourth chapter is about the 3 case studies selected in the context of Istanbul, Turkey. Case studies are selected according to the sustainability assessment methods analyzed in the previous chapter.

Fifth chapter is the intervention part including the retrofitting and renovation suggestions for an existing shopping center named Galleria Atakoy, which is the first shopping center of Turkey.

Sixth chapter is the conclusion which summarizes the research and displays the new perception of retail spaces with a discussion and future scenario.

1.2.1. Infographics about the Thesis



Pantone® Process Cyan U
Pantone® Cool Grey 1 C
Pantone® Cool Grey 5 C
Pantone® Cool Grey 10 C



Futura® Bold
Futura® Medium
Futura® Light
Futura® Light Oblique



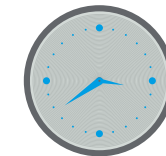
Article Pages Read
≈ 1000



Total Consumption of Caffeine
≈ 7700 mg



Shopping Centers Visited
27



Total Hours of Work
≈ 4000



Start Date



Books Analyzed
53

1.3. Architectural Culture and Trade

Shopping and culture meet on a common ground. Trade has always been an important aspect of the community. The places for trade are also the places where economical, political, social and cultural factors cluster. Even in the middle ages, these spaces were in the city center and the city itself shaped around it. Merchants formed guilds and that was the way they developed their trade and artisanship. While these merchants are located in the civic center, they shaped these centers as the symbol of the city. Developed cities have also improved the trade and big cities were generally situated in the junction of the trade routes.

When it is analyzed in the historical process, the places where the shopping act happen have also been used as the socializing point for the citizens. These shopping places were the most used and crowded spaces in a city. Even though these structures are criticized harshly in a continuous way by saying that they lack tradition and identity and referred to as a “non-place”⁸, their importance in the society is irrefutable. The role of commercial retail architecture and planning is not neglectable in building of a contemporary city. It should be seen as one of the fundamental elements in establishing or renewing urban culture and believed that a diverse architecture and urban design of retail could restore the attractive power of downtown and create new public spaces and new images for the city.⁹

Even though the term “architecture for retail” may be contradictory since buildings are designed and built to last for decades, the life span of a retail space may not be that long. This case has both positive and negative effects on the architects. For instance, it takes Norman Foster far less time to see his striking boutiques for the British luxury purveyor Asprey in New York and London come to life than his skyscrapers in Hong Kong or Frankfurt but those stores will probably last for a far shorter time than his additions to skylines around the world.¹⁰

Shopping as phenomena and metaphor increasingly encompass our environment, new public buildings in the city adopt the spatial principles of shopping, and most planning and architecture is either a product of, or inspired by shopping.¹¹ The above-mentioned contradiction is one of the main reasons why the effects of trade on architectural culture can be seen faster than the any other type of architecture.

Today, a successful urban public space can not be thought of without associating it with shopping.

1.3.1. Negligence of Retail Structures in History

Retail stores, breathtaking only in their warp-speed proliferation and disappearance (they last, on average, about seven years), have come to dominate urban landscapes. Furthermore, as the global economy expands, so does global consumption, and therefore shopping malls—once monuments to a uniquely American materialism—are now ubiquitous. From Xian to Chicago, there is no escape from shopping. Yet retail design is neglected by architects, who strive to build enduring masterpieces like libraries and skyscrapers, not big-box stores.¹²

Retail architecture was not much appreciated during architectural modernism and functionalism, and, for example, seldom made it into the compulsory course literature in architecture and architectural history.¹³ Some architects even asserted that store design is not architecture. “Stores were designed by draughtsmen, who did not need degrees in architecture.” said Morris Lapidus in his book *The Architecture of Joy*.¹⁴

However, it is impossible to separate architecture and commerce. Throughout the history, it can be seen that the impact of commercial structures on the community is significant. For instance, the department stores in the 19th century was the “most prominent and spectacular manifestation of the new culture of uninhibited consumption.”¹⁵

1.3.2. New Emphasis on Commerce

Today, architecture has become an important competitive tool, and a series of contemporary star architects like Jean Nouvel, Rem Koolhaas, Herman Hertzberger, Ben van Berkel and Caroline Bos, and Daniel Libeskind have taken the task of designing shopping centers and malls. Meanwhile, architects who used to be more anonymous are being raised to prominence. Victor Gruen (the father of the mall) is now celebrated or investigated in one book after another. An architect like Jon Jerde, specialized in retail facilities, has also attracted increasing attention. The move of retail architecture onto the scene of ‘high architecture’ began as early as the early 1970s with the influential pioneering work *Learning from Las Vegas* by Robert Venturi, Denise Scott Brown and Steven Izenour, following a more general post-modern ambition to erase the line between high and low culture. One of the seminal texts to raise this issue in architecture during the last decade is *The Harvard Design School Guide to Shopping* (Chung et al. 2001), one of the books produced in Rem Koolhaas ‘Project on the City’.¹⁶

8. Augé, Marc. *Non-Places: Introduction to an Anthropology of Supermodernity*. London: Verso, 1995.

9. Wall, Alexander. *Victor Gruen: From Urban Shop to New City*. Barcelona: Actar, 2005.

10. Barreneche, Raul A. *New Retail*. London: Phaidon Press, 2008.

11. Hemmersam, Peter. “Shopping – Integrating the Fragmented City.” *Nordisk Arkitekturforskning* 17, no. 2 (2004): 97-109.

12. Dupree, Catherine. “Designed to Shop.” *Harvard Magazine*. July 01, 2002. Accessed January 11, 2018. <https://harvardmagazine.com/2002/07/designed-to-shop.html>.

13. Karrholm, Mattias. *Retailing Space: Architecture, Retail and the Territorialisation of Public Space*. Surrey: Ashgate, 2012.

14. Lapidus, Morris. *The Architecture of Joy*. Barcelona: Actar, 2005.

15. Wall, Alexander. *Victor Gruen: From Urban Shop to New City*. Barcelona: Actar, 2005.

16. Karrholm, Mattias. *Retailing Space: Architecture, Retail and the Territorialisation of Public Space*. Surrey: Ashgate, 2012.

Historical Evolution of Shopping Spaces

- First Trade of Commodities
- First Permanent Retail Shops
- First Arcade
- First Department Store
- First Modern Chain Store
- First Unified Shopping Mall
- First Supermarket
- First Enclosed Mall
- Introduction of E-Commerce

Notion of Shopping Center

- Planning Principles
- Taxonomy of Elements
- Classification and Comparison of Different Typologies

2.1. Historical Evolution of Shopping Spaces

Humankind has gotten through many cultural breakthroughs in the course of its history. In this process, the act of shopping, which started with the exchange of the goods produced, has taken place in a planned or unplanned way in different, but specific places. Shopping is one of the first activities where human interactions could be observed in a particular place. These places have become structures after a while by some innovative approaches. These innovative approaches not only changed the shape of these structures, but it also changed the society. According to Will Durant - the American writer, historian and philosopher - "Trade was the great distributor of the primitive world".¹ Due to this fact, shopping places have always been the public structures where people have relations with each other. These spaces came into existence in the proto-city settlements and keep evolving and changing shape throughout the history of humankind.

This chapter includes the examination of the historical evolution of shopping spaces from the Agricultural Revolution (which can also be stated as the Neolithic Revolution or Neolithic Demographic Transition) and after a long journey, to today's shopping centers by analyzing the milestones in the history of shopping mainly emphasized by Sze Tsung Leong² which shows how these spaces changed along the journey of humanity and how the daily habits and requirements shape these spaces.

2.1.1. First Trade of Commodities

One of the many results of the shift from hunter-gatherer to agrarian society was the first trade of commodities. In the ancient times, people began to barter goods and services with each other and these activities were taking place in particular meeting places. In this degree, permanent settlement by the reason of agricultural revolution led up to the first "shopping spaces" for the trade activities. First evidences of these trade activities can be found in one of the Neolithic period settlements, Çatalhöyük, Turkey around 7000 B.C.E.

1. Gharipour, Mohammad. *The Bazaar in the Islamic City: Design, Culture, and History*. Cairo: The American University in Cairo Press, 2012.

2. Koolhaas, Rem. *Harvard Design School Guide to Shopping*. Köln: Taschen GmbH, 2001.

2.1.2. First Permanent Retail Shops

Around the 7th century B.C.E, the first coins have been invented by the Lydians and this coincides with the time of first retail shops in permanent locations. The script from the book *Histories* by Herodotus stated that "They (the Lydians) were the first men whom we know who coined and used gold and silver currency; and they were the first to sell by retail."³

3. Herodotus. *The Histories*. Cambridge: Harvard University Press, 1920.

2.1.3. First Arcade

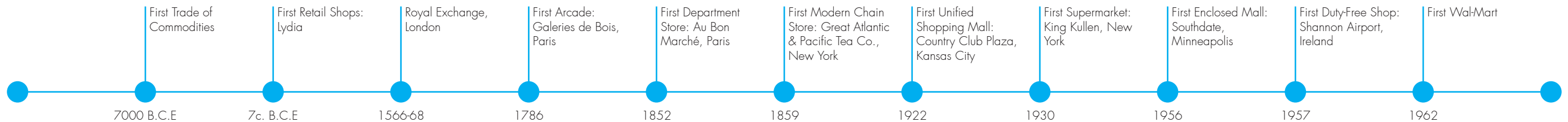
"At that time, the Galeries de Bois were one of the most illustrious Parisian curiosities. It is useful to describe this ignoble bazaar because for 36 years it played such a great role in Parisian life that there can be few men aged 40 to whom this description - incredible as it may seem to the young - will not give pleasure."

The above mentioned text has been written by Honoré de Balsac in his serial novel *Illusions perdues* - in English, *Lost Illusions* - to describe the Galeries de Bois.

4. Willsher, Kim. *Paris's Galeries de Bois, prototype of the modern shopping centre - a history of cities in 50 buildings, day 6*. The Guardian, March 2015

Galeries de Bois can be considered as a mix of souqs from Arabia and the forums of Ancient Rome.⁴ It was the first inspiration for the covered shopping passages. It was a place for the aristocrat city dwellers to 'flâner' - to wander around -. The description of the place can show how this structure can be considered as the early prototype of the modern shopping center. "Galeries de Bois were made up of a triple line of shops that could hardly be called luxurious. There were two parallel lanes covered by canvas and planks, with a few glass panes to let the daylight in. Here one walked quite simply on the packed earth, which downpours sometimes transformed into mud. Yet people came from all over to crowd into this place, which was nothing short of magnificent, and stroll between the rows of shops that would seem like mere booths compared to those that have come after them."⁵

5. Benjamin, Walter. *The Arcades Project*. Cambridge: Harvard University Press, 2002.



2.1.4. First Department Store

"The most profound innovation of the industrial age. It's not the steel or railways, but the creation of department store."⁶

The emerging middle class gained wealth from the industrial revolution. The first department store was different than the previous structures for shopping. It was not only selling goods, but also selling a lifestyle. That was the time when the shopping transformed to fun from necessity. Au Bon Marche, which can be translated as 'the good market' or 'the good deal' into English, had some amazing innovations both in terms of architecture and management such as guarantee of exchange and refund, price tags, sales, trying before buying, public toilets, dormitory for the sellers and a male coatroom to leave the husbands to browse dailies while wives shop in peace.⁷ It also led the way for the latter well-recognized department stores like Selfridges, Wanamaker, Macy's and Myer all around the world, each with new and innovative features. These department stores started to be an importance part of their cities. When people think of a city, they started think of these department stores instinctively (Selfridges - London, Macy's - New York, Myer - Melbourne). People visit these places not only for buying something, but for experiencing these places because these are the part of what these capitals are about. At the turn of the 20th century, department stores are becoming the anchor of a modern metropolis.⁸ These department stores had huge effects on the society of today. Such that, even mother's day has been invented by John Wanamaker (the founder of Wanamaker's Department Store) which is a clear example of how shopping is shaping the society. So significant was their effect on the urban fabric that the construction of a new department store might signal both the demise of smaller establishments and the relocation of entire shopping districts. Elite architectural designs were emblems of corporate identity for retailers competing in an international market. The range of goods was comparable to that of any world's fair exhibition hall. Aristide Boucicaut's palatial Bon Marche of 1869-87 was the first Parisian precedent, its conventional exterior concealing an iron frame that carried massive floor loads. Ecole-trained Jean-Alexandre Laplanche ornamented the iron technology of Louis Auguste Boileau, a pairing duplicated in the second phase by the design of Boileau's son Louis Charles and the framing of engineer Gustave Eiffel. Among the stores that followed were the chic Au Printemps of 1881 by Paul Sedille and the more populist Grands Magasins de la Samaritaine of 1905 by Frantz Jourdain, a colorful Art Nouveau confection of frankly revealed steel and glass.⁹

6. Aitken, Sally. *The Birth of Shopping Part 1: A Genius Idea*, 2011.

7. *Ibid.*

8. Aitken, Sally. *The Birth of Shopping Part 2: A Modern Game*, 2011.

Figure 2. Au Bon Marché - General View. Source: *Agenda-Buvard du Bon Marché*. Brown University Library. Call Number: G1019.W3 3.5

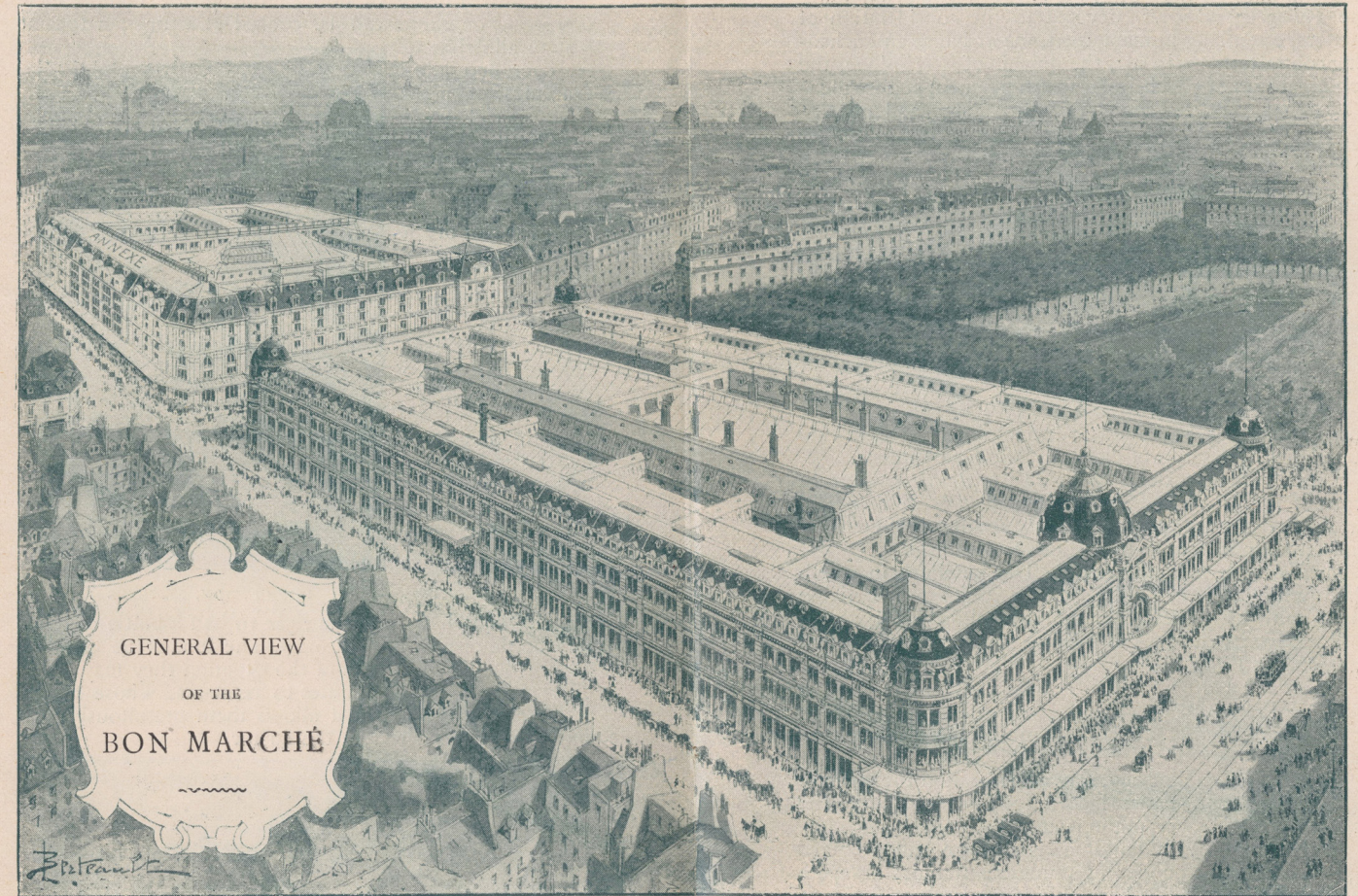
9. Sennott, R. Stephen. *Encyclopedia of 20th century architecture*, 2004.

PARIS

AU BON MARCHÉ

MAISON A. BOUCICAUT

PARIS



At the **UNIVERSAL EXHIBITION OF 1900**, the *BON MARCHÉ* figures in :

CLASS 71 : Artistic furniture. — Interior decoration. — Upholstery.

CLASS 85 : Dresses and Mantles.

CLASS 86 : Lingerie and linen underwear for Ladies, Gents and Children.

CLASS 102-109 : SOCIAL ECONOMY : Salaries. — Participation in profits. — Provident Institutions.

AT THE INVALIDES, rue de Constantine, Entrance 27 bis, is the pavilion of the *BON MARCHÉ*, specially affected to furniture and interior decoration.

2.1.5. First Modern Chain Store

A&P was a famous American chain of grocery stores operated until November 2015. These “resplendent emporiums” were the largest retailer of grocery/food in United States for 60 years. It is often assimilated to ‘Walmart’ of today. It started to grow very fast and in 1900, it operated 200 stores. After the great war, the expansion got even bigger and the store opened its 13961st store.¹⁰ Mom-and-pop stores couldn’t compete with A&P in terms of price. On average, each supermarket replaced six older combination stores.

2.1.6. First Unified Shopping Mall

Suburban malls in United States were the reason of declination of the town center and the high street. These structures were the alternative solution to the congested and restricted urban centers.

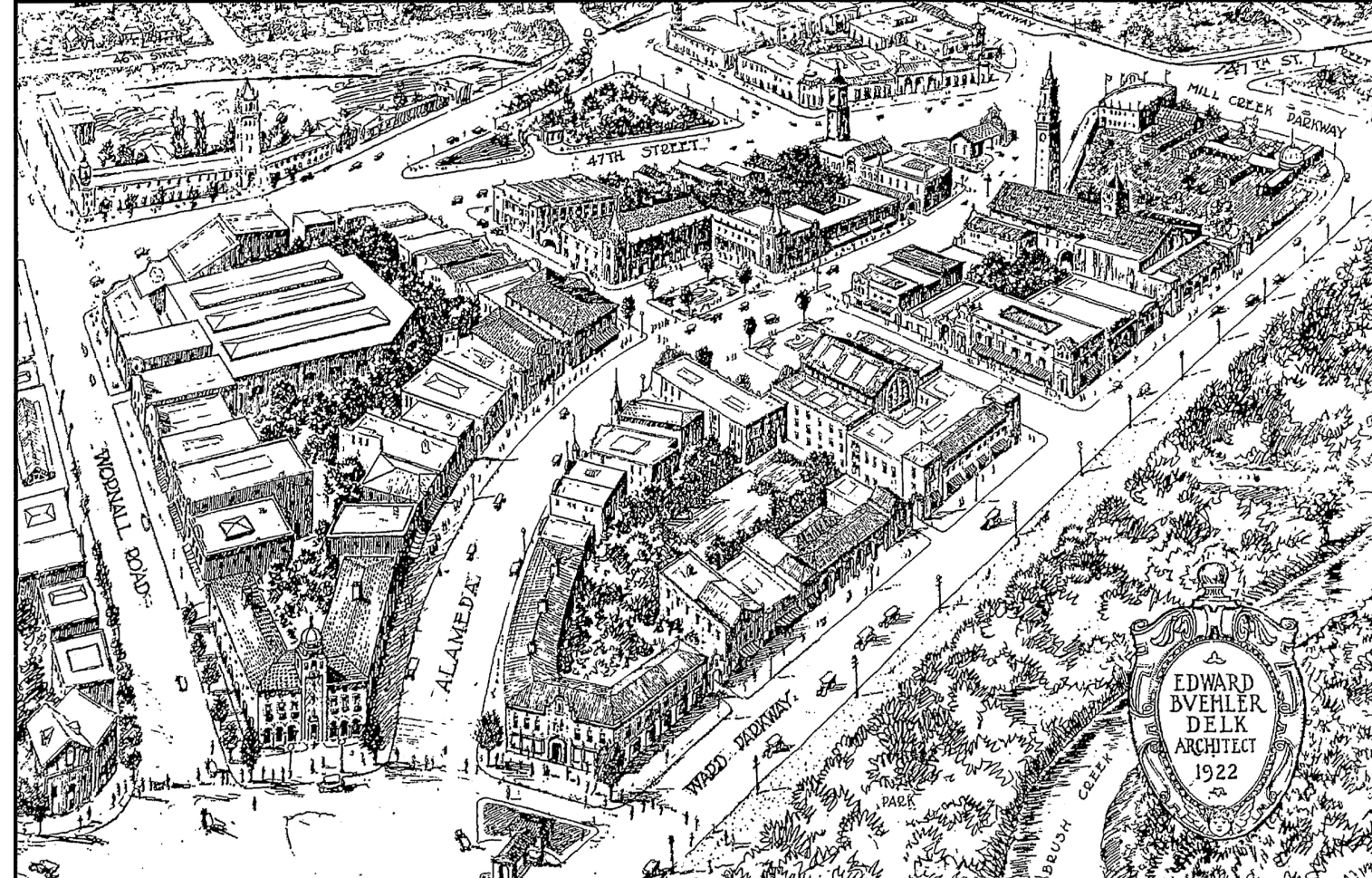
Country Club Plaza in Kansas City of United States, was the first of the suburban shopping center to be designed and built outside the urban center and was planned to welcome the shoppers arriving by automobile. It was a part of a well planned community of eight thousand homes.¹¹ The innovative aspects of this structure include the easy access to the facilities and plenty of parking. Even the location had been chosen to provide the residents with a direct route to the Plaza by Jesse Clyde Nichols—the developer of ‘The Plaza’ —. Jesse Clyde Nichols commissioned the design in 1922 having assembled the land from various run-down plots and swamp land. The masterplan consists of the shopping structure and large amounts of residential property.¹² The intention was to orientate that population to use the new shopping center. The vision of the developer was based on a Spanish theme. The design included courtyards and open streets surrounded by stucco and tiled roof buildings. Moreover, Nichols characterized the place as an outdoor museum of Romantic Spanish architecture and European art with many works of art in the form of figurative sculpture. A place of style and fashion has been created in the suburbs for the first time. The Plaza was a place more than just a shopping center. It continuously changed and expanded to be able to accommodate new stores and attractions for the visitors. One of these famous attractions is the Plaza Art Fair which is the Mid-West’s premier art fair.

It was a complex consist of retail establishments, restaurants, entertainment venues and offices. Even though it is accommodating the visitors arriving by their cars, parking is concealed in multilevel garages beneath or above the buildings.

10. Anderson, Avis H. *A&P: The Story of the Great Atlantic & Pacific Tea Company*. 2002.

11. Gruen, Victor and Larry Smith. *Shopping Towns USA: The Planning of Shopping Centers*. New York: Reinhold. 1960.

12. Coleman, Peter, *Shopping Environments: Evolution, Planning and Design*. Oxford: Elsevier Ltd, 2006.



2.1.7. First Supermarket

King Kullen was founded by a former Kroger employee who also worked as a clerk for Atlantic & Pacific Tea Co. It is “the first to fulfill all five criteria that define the modern supermarket: separate departments; self-service; discount pricing; chain marketing; and volume dealing.” as stated by the Smithsonian Institute. The vision was to create “monstrous stores, size of same to be about forty feet wide and hundred and thirty to a hundred and sixty feet deep, and ought to be located one to three blocks off the high rent district with plenty of parking space (ample parking), and same to be operated as a semi-self-service store - twenty percent service and eighty percent self-service.”¹³

Figure 3. Rendering of Plaza Plan in 1922 by Edward Buehler Delk. Source: Country Club Plaza: History and Significance. Missouri Department of Natural Resources. 2016.

13. <https://www.kingkullen.com/about-us/>, Accessed in June 2017.

2.1.8. First Enclosed Mall

Southdale Center by architect Victor Gruen—father of malls—opened in 1956 as being the first enclosed mall. Then it became a model for the malls that came after it with its features such as climate-control. The decision to introduce covered and completely climate-controlled pedestrian areas was, in the case of Southdale, based on the fact that the climatic conditions, with extremely cold winters and hot summers, were not favorable to the enjoyment of the outdoors.¹³ Construction of an enclosed mall with a roof and air-conditioning system capable of 24°C was an amazing advantage against the other stores in the harsh climate of Minnesota.

“... However, special conditions, such as limited sites, extreme climate, unusual topography, demand unusual solutions. Especially significant is the center with enclosed pedestrian areas, as represented by Southdale near Minneapolis.”¹⁴

The causes of the expansion in the number of suburban malls were the population growth, restricted space for expansion in the urban cores, universal spread of car ownership, traffic congestion in town centers, abundance of available and accessible land and the technological developments in ventilation, air-conditioning systems and lighting.¹⁵ Southdale Center was the recipe which blends these ingredients.

Victor Gruen was a European-style architect taught in Austria. The idea of building such a shopping mall was to find a more efficient store layout than the downtown stores, with particular focus on 1950s ‘car-centric’ suburban American lifestyle. That is why Gruen wanted to design a building not only for shopping, but also for communal gathering where people can shop, eat, drink and socialize. So it brings the community together by gathering art, culture and entertainment under one roof with retail.¹⁶ Obviously, this new layout and the features of Southdale Center lead to both positive and negative critiques on the mall’s overall design. Frank Lloyd Wright visited the mall in 1956 and stated “the garden court has all the evils of the village street and none of its charm.”

Not only did Southdale Shopping Center fulfill the vision of its creators as a center of commerce and of social life for suburban residents, it also fueled suburban growth and became a much-imitated model. His vision of replacing the traditional city centers with more efficient malls is still used today by the developers and planners.

“the joys of the outside brought inside”

James Lileks

“You should have left downtown, downtown”

Frank Lloyd Wright

¹³ Gruen, Victor and Larry Smith. *Shopping Towns USA: The Planning of Shopping Centers*. New York: Reinhold, 1960.

¹⁴ *Ibid.*

¹⁵ Coleman, Peter, *Shopping Environments: Evolution, Planning and Design*. Oxford: Elsevier Ltd, 2006.

¹⁶ Roberts, Karen. *Meet the new mall: trends shaping our shopping centers*, 2015.

Figure 4. The Southdale Center in 1956. Source: <http://www.businessinsider.com/first-shopping-mall-us-southdale-center-history-photos-2017-8>.



2.1.9. Introduction of E-Commerce

“Yes, e-commerce is a strange situation for an old guy like me. You can buy a TV online, OK, but to buy a dress or shoes? Ugh. The customer has to go back to the store and breathe and smell and have a good time. Because shopping is a good time - like going out to a nice restaurant.”¹⁷

E-commerce is a transaction of buying and selling online. The explanation is simple. However, it keeps improving. The different types of e-commerce such as online shopping web sites for retail sales direct to customers (B2C), online marketplaces processing business to consumer and consumer to consumer sales and business to business (B2B) buying and selling have significant effects on brick and mortar retailers. This relatively new commercial activity is affecting the architectural culture and trade by generating new architectural typologies like “brick and click” stores where customers can shop both online and physically.

The increase in the number of households owning a PC connected to the internet open a road for buying things online easily. With the introduction of different devices such as laptops, tablet computers and smartphones, the mobility increased and people started to buy products and services everywhere.

The advantages of e-commerce include convenience since they are mostly available 24 hours a day unlike the physical stores. Also, visiting a retail structure requires travel and generates related costs. Moreover, the information about the product or services that is being bought and the review of the other users can be seen.

E-commerce has an immense potential to thrive among shoppers and retailers seeking access to shopping outside of these limitations. The introduction of virtual dimension has forced shopping to adopt an alternative nature, to transcend the physical.¹⁸

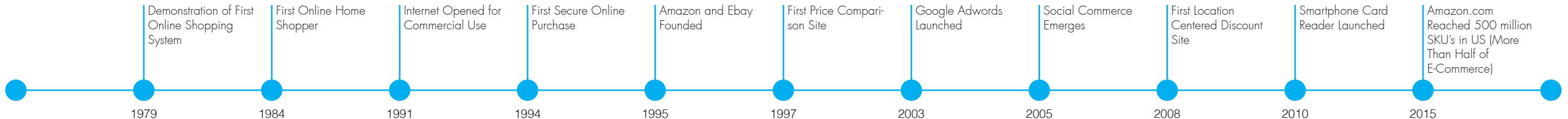
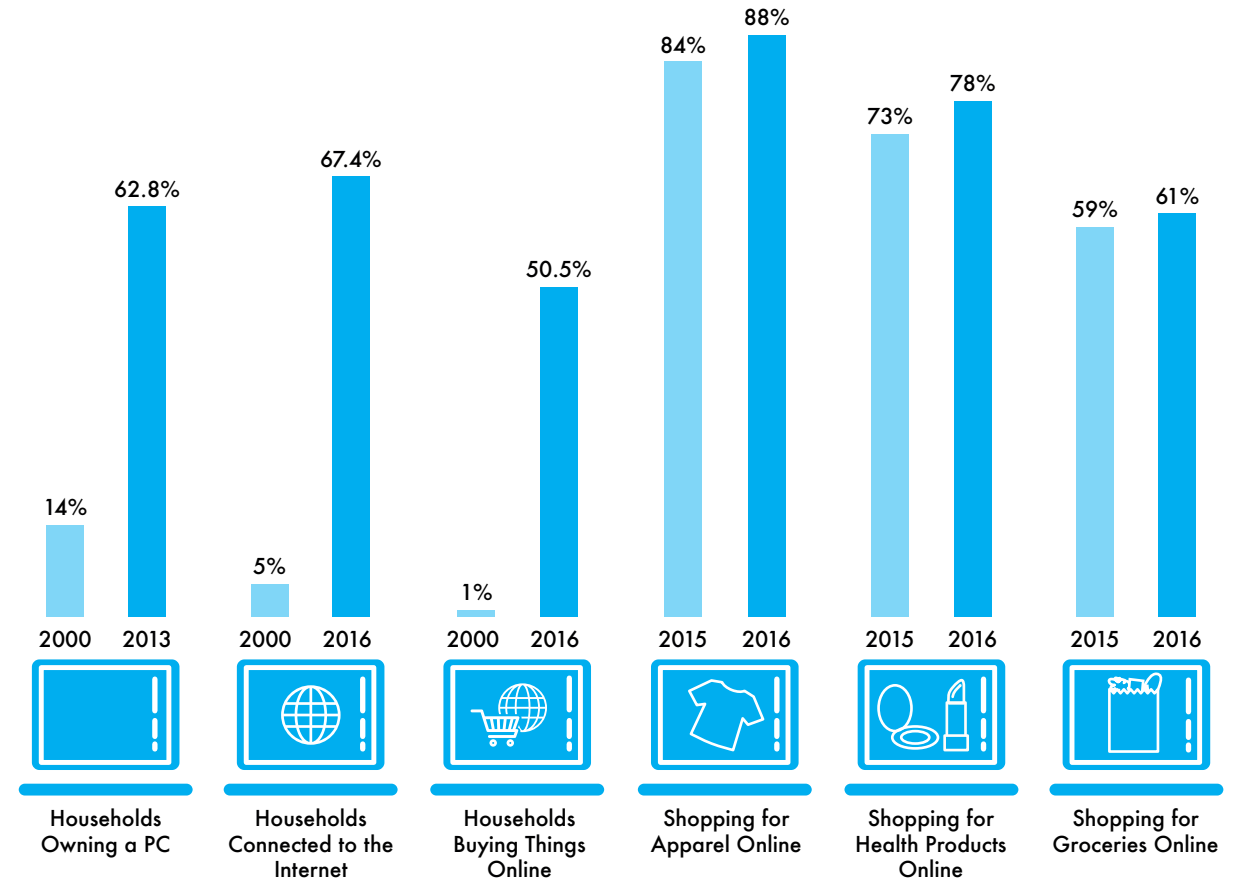
¹⁷ Moore Booth, As BCBG turns 25, Max Azria reflects on his legacy.

Figure 5. Change in the Use of Internet. Sources: ISTAT: Citizens, enterprises and ICT. 2016. ISTAT: Citizens and the ICTs. 2013. Harvard Design School Guide to Shopping. 2001.

Figure 6. Change of Online Shopping Habits. Source: Accenture 2016 Global Research: Customers are shouting, are retailers listening. 2016.

¹⁸ Palop-Casado, Juan. e-uropo.

Change in the Use of Internet



2.2. Notion of Shopping Center

There is a great number of definitions for shopping centers. Organizations particularly working on the shopping centers (such as ICSC, ULI etc.) have different but not distinct answers to the question of what a shopping center is. The Urban Land Institute defines a shopping center as “a group of commercial establishments planned, developed, owned, and managed as a unit related in location, size, and type of shops to the trade area it serves. It provides on-site parking relating to the types and sizes of its stores.”¹⁹ The characteristics which set the shopping centers apart from other commercial land uses are defined as following:²⁰

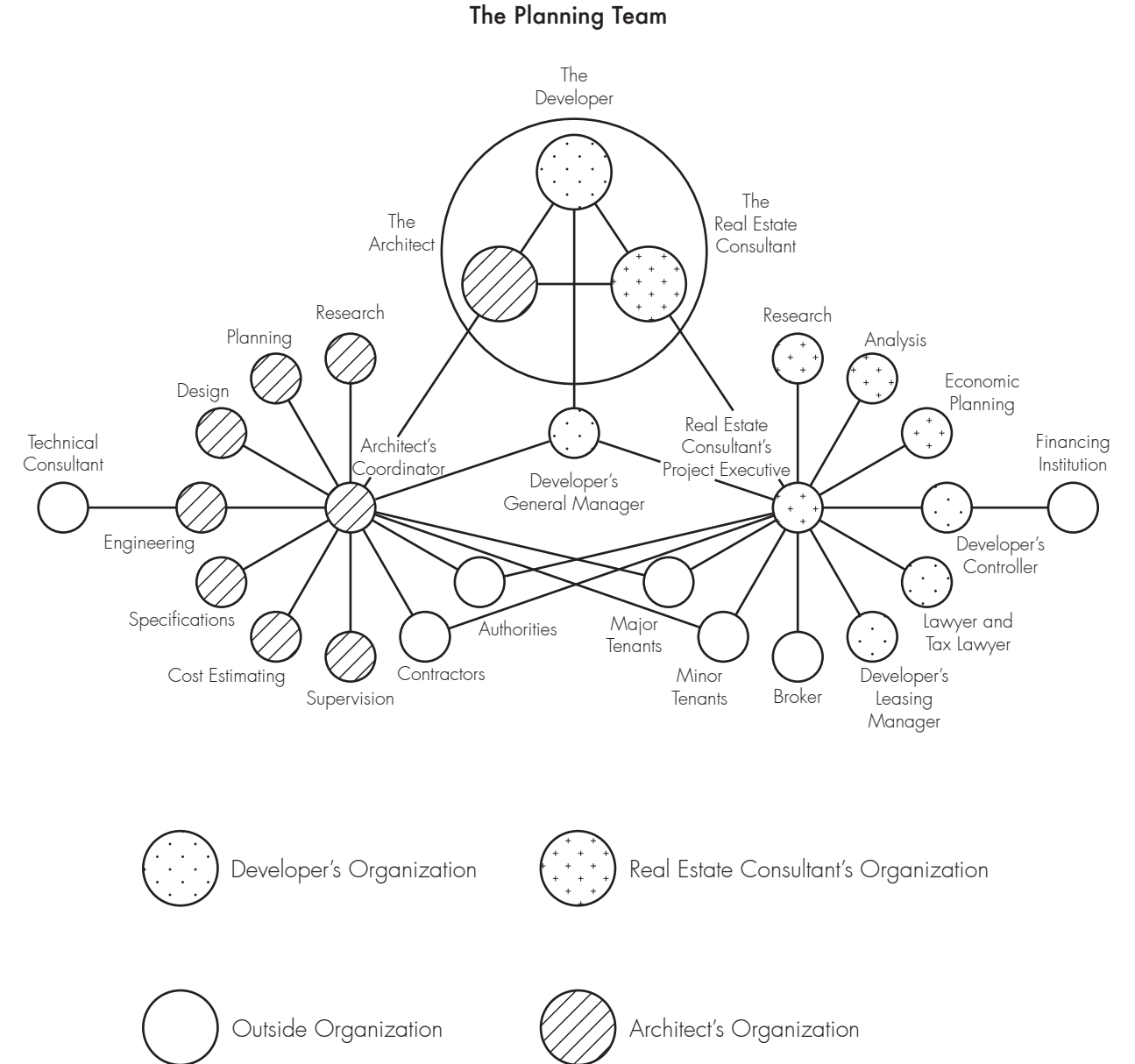
1. Coordinated architectural treatments, concepts, or themes for the building or buildings providing space for tenants that are selected and managed as a unit for the benefit of all tenants.
2. A unified site, suited to the type of center called for by the market. The site may permit the expansion of buildings and the addition of new buildings, uses, or parking structures if the trade area and other growth factors are likely to demand them.
3. An easily accessible location within the trade area with efficient entrances and exits for vehicular traffic as well as convenient and pleasurable access for transit passengers and pedestrians from surrounding development.
4. Sufficient on-site parking to meet demand generated by retail uses. Parking should be arranged to enhance pedestrian traffic flow to the maximum advantage for retail shopping and to provide acceptable walking distances from parked cars to center entrances and to all individual stores.
5. Service facilities (screened from customers) for the delivery of merchandise.
6. Site improvements, such as landscaping, lighting, and signage, that create a desirable, attractive, and safe shopping environment.
7. A tenant mix and grouping that provide synergistic merchandising among stores and the widest possible range and depth of merchandise appropriate for the trade area and type of center.
8. Comfortable surroundings for shopping and related activities that create a strong sense of identity and place.
9. Additionally, a team of experts from various fields are required to produce a profitable shopping center within a scheduled time period. The team usually includes: developer, leasing agent, attorney, architect, general contractor, lenders, advertising professionals, knowledgeable principals, investors and accountants.²¹ The planning team should be chosen carefully to overcome the complexity of the task.

¹⁹ Urban Land Institute (ULI), *Dollars and Cents of Shopping Centers / The Score* 2008, 2008.

²⁰ Kramer, Anita, *Retail Development*, 2008.

Figure 7. The Planning Team. Source: Shopping Towns USA: The Planning of Shopping Centers. 1960.

²¹ Anatomy of a Shopping Center, Chicago Association of Realtors



2.2.1. Planning Principles

Business potential and quality of design are completely different things. But to turn business potential into advantage, a successful design needs to be executed. If there is a potential for something, there is competition. That is why, design is the crucial aspect to increase preferability.

The following guidelines should be considered in order to attain the highest feasible productivity of land over an extended period of time while allocating the space for different uses.²²

2.2.1.1. Considering the Surrounding Areas

Since the development of the surrounding areas are somehow unpredictable, it may or may not be the danger in the future for the sake of the shopping center. That is why, the shopping center should be designed in a way that the effect of adjacent land will be minimum. Designer should take into account the protection from noise, fumes, smells, unsightliness, etc. in both directions (surrounding areas to shopping center and vice versa).

The coordination and connection should not be sacrificed while protecting the shopping center from the surroundings. This can also generate the problem of neglecting the neighborhood and turn the shopping center in upon itself.

²² Gruen, Victor and Larry Smith. *Shopping Towns USA: The Planning of Shopping Centers*. New York: Reinhold, 1960.

Figure 8. Truck Tunnel of Broadway Mall in New York.
Source: <https://pitchengine.com/pitches/ec2d0845-29d9-492b-bdc4-6889ca56040d>



2.2.1.2. Maximizing the Exposure to Potential Buyers

"Automobiles do not buy merchandise." Dense foot traffic will have to be created. The importance of window shopping is one of the facts which encourages the uninterrupted foot traffic and compactness. There are two distinctively different types of foot traffic. One - and less important - is the traffic from the car storage areas toward the location where the shopping activity will take place. The other one is the walk from one store to another which is the vital point of shopping centers. This exposure to pedestrians is affected by many other factors. The location of public transportation, attraction points, food courts etc. are attracting foot traffic. For example, restaurants in a shopping center are generally located on the upper in order to attract traffic to upper floor levels.

2.2.1.3. Detaching the Different Types of Traffic

One of the biggest mistakes that can be made while designing a shopping center is to put the entrances of the supply trucks and customer cars to the same location, or letting the customer and garbage meet on the same place.

The solution of placing the services to the back side of the stores contradicts with the first point which is 'Considering the Surrounding Areas' because the service activities should not face the surrounding residential areas. The best way to enhance the shopping experience is to allocate different roads for different traffics (Figure 1). Sidewalks with landscaping, low garden walls, etc. is one way to create a separation.

2.2.1.4. Providing Comfort to the Users

This one is the first things that comes in mind when thinking about the design of a shopping center. Every detail must be thought thoroughly such as the access to the site, internal signalization, comfortable parking, protected environment for pedestrians and so on and so forth.

2.2.1.5. Creating Aesthetically Pleasing and Neat Environments

Other points are somehow tangible and by required knowledge, they can be implemented. But this point is a bit tricky. It requires knowledge and architecture. Every major and minor aspect such as the architecture of structures, composition of structures, relations in between structures, materials, colors, signage and even the types of the plants used for landscaping must be done carefully and in a unity.

2.2.2. Taxonomy of Elements

The architect should start working by planning the site. For this purpose, the planner has to be fully aware of the elements which come together and generate a shopping center. Design elements in a shopping center are mainly:²³

- One or more units housing the retail
- A customer and employee parking
- Provision for delivery of the retail goods
- A method of access for both customers and trucks
- One or more public roads from which access is gained.

A more detailed categorization can be made by analyzing the specific usages in a shopping center. There are basically 7 categories which can be seen in Figure on the next page, where the areas are used differently.²⁴

2.2.2.1. Structures

These "structures" include the structures for retail purposes, structures for service purposes (heating and air-conditioning plants, electric substations, maintenance shops, truck roads, loading docks, equipment storage etc), structures for other commercial usages (offices, recreational facilities, etc.) and structures for public usage such as civic and social facilities (community center, auditorium, exhibition space, children's play areas, etc.).

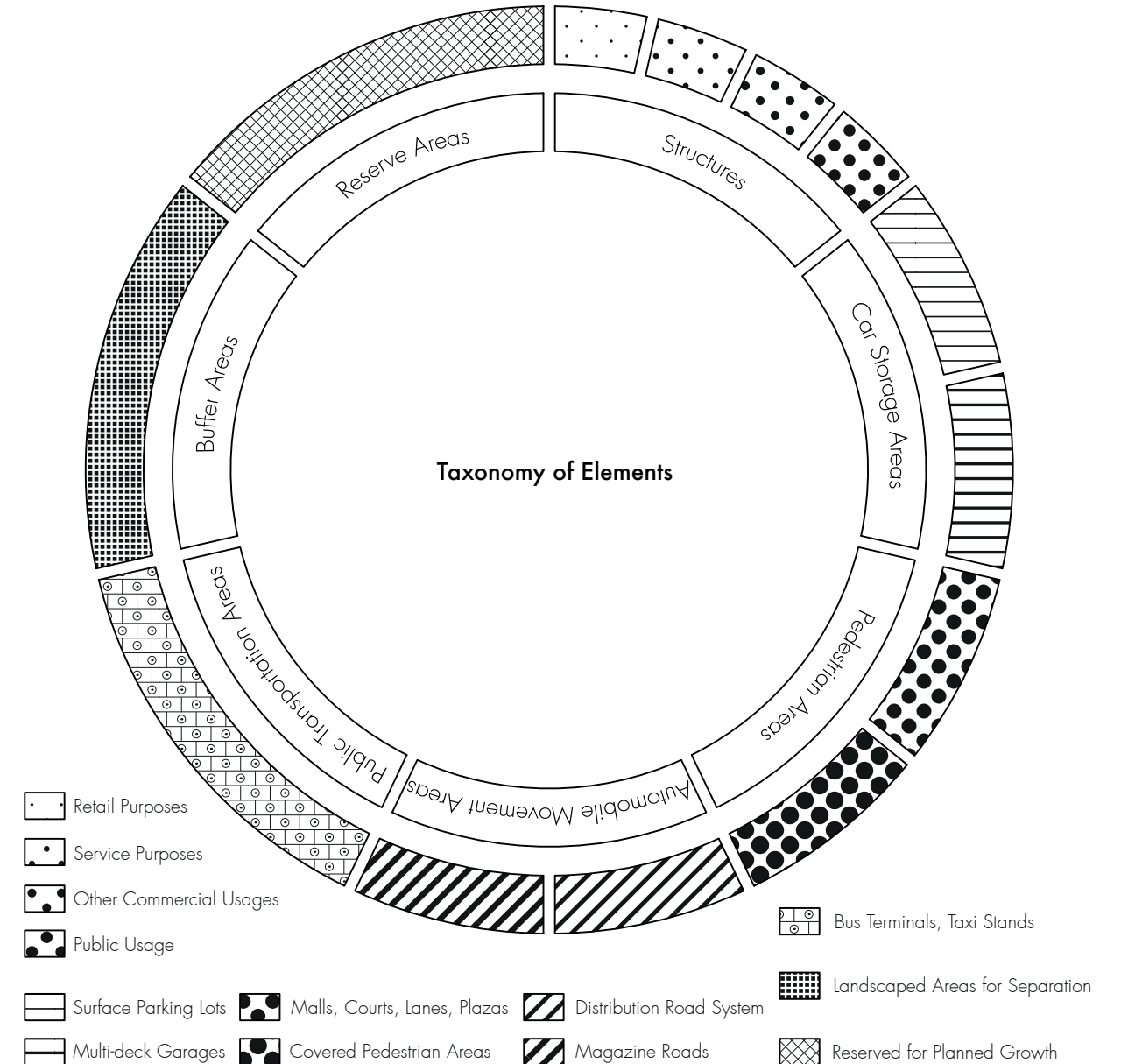
1. Structures for retail purposes form the nucleus of a shopping center and attract the customers to use the facility. In such manner, they are the most important accommodation of a shopping center. These structures are in the form of units and these shop units make up the majority of accommodation in a shopping center. They include both the retail of merchandise and the catering facilities.
2. Service structures can be considered as the hidden world in a shopping center which is not accessible by the general public. They ensure the facility to function properly.
3. Structures for other commercial usages are the areas which are designed as commercial but not for retail. They can be used by the companies which benefit from being in such a complex such as a gym in a shopping center where the users can do sports and then use the other facilities of the center.
4. Structures for public usage are the areas where the leisure facilities are combined with shopping and catering facilities. These structures are the add-ons to a shopping center which are extending the attractiveness and widen the appeal to more customers.²⁵

²³ Box, Paul C. *Elements of Retail Shopping Center Design*. Scottsdale, 2012.

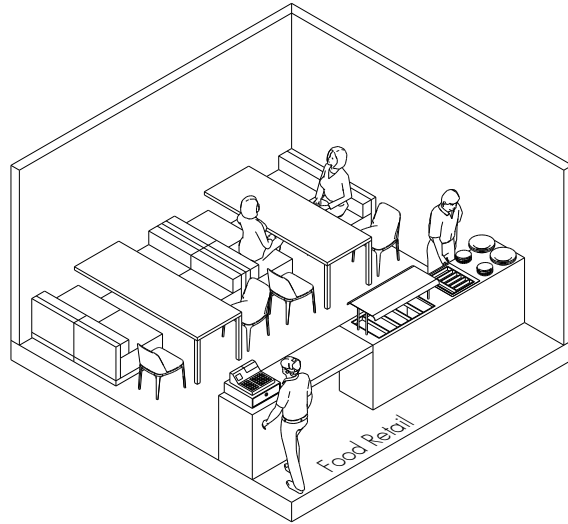
²⁴ Gruen, Victor and Larry Smith. *Shopping Towns USA: The Planning of Shopping Centers*. New York: Reinhold, 1960.

Figure 9. Taxonomy of Elements. Source: Shopping Towns USA: The Planning of Shopping Centers, 1960.

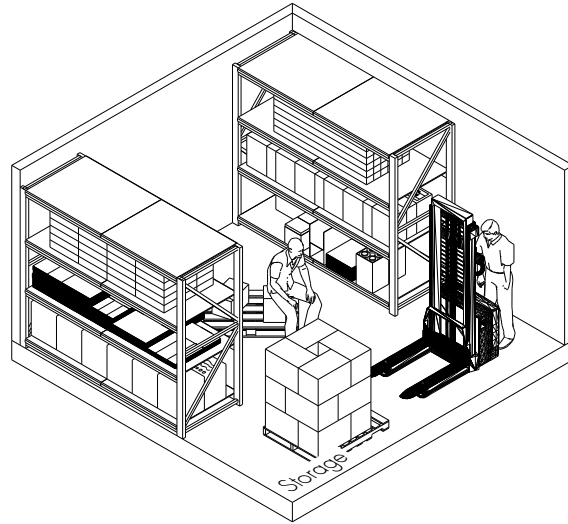
²⁵ Coleman, Peter, *Shopping Environments: Evolution, Planning and Design*. Oxford: Elsevier Ltd, 2006.



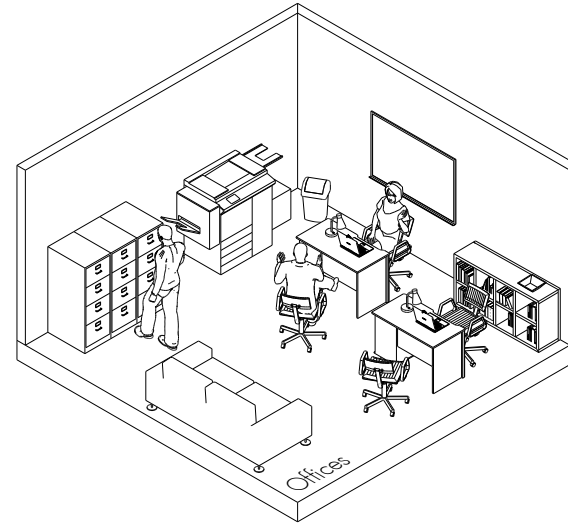
Structures for Retail



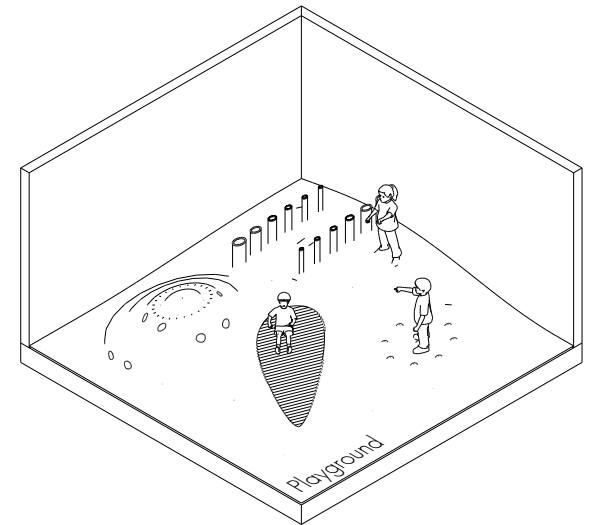
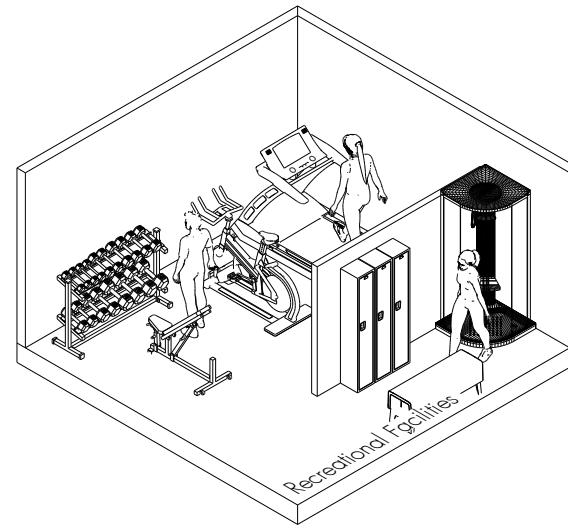
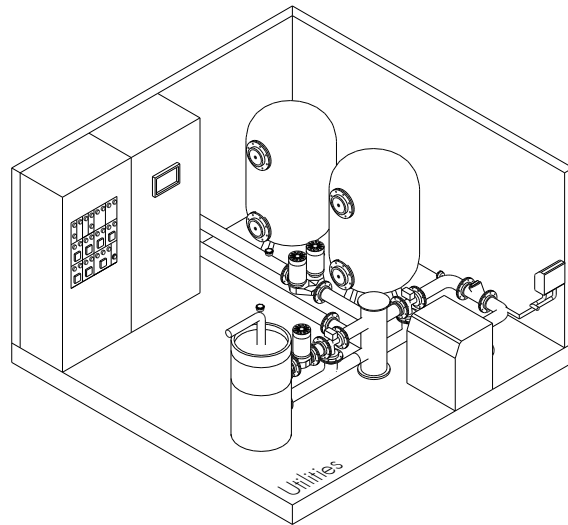
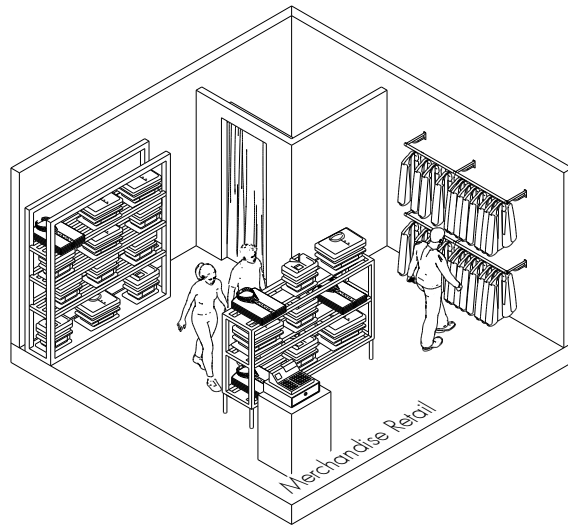
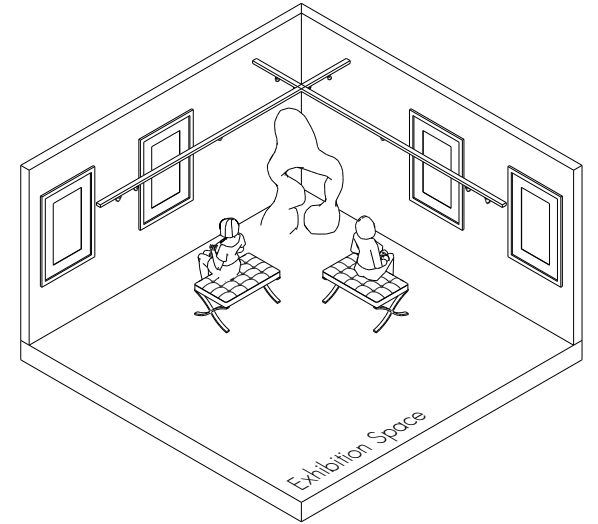
Structures for Service



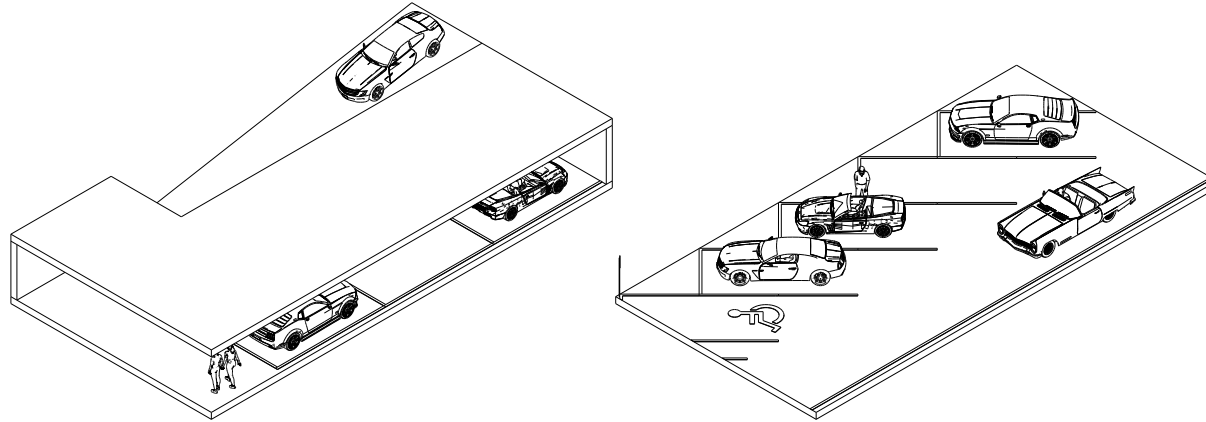
Structures for Commercial Usage



Structures for Public Usage



2.2.2.2. Car Storage Areas



Appropriate amount of car parking is an essential in forming a successful shopping center. A remarkable proportion of the users of a shopping center are usually reaching their destination by their cars. Car parking is one of the most important aspects in a shopping center since it comes in the first place for most of the users in decision making process to choose a shopping center to visit. The quality and the quantity of car parking affect the commercial success of a shopping center.

The layout of a car park must be simple, comprehensible and provide good circulation. The pedestrian access from and to the shopping center should be direct and secure. The factors determine the type of car parking in a shopping center are:²⁶

- the amount of available land in a vicinity
- the size of site
- the value of land
- the type of site and sensitivity of the location

The most common types of car storage areas are as follows:

- Surface Car Parking: this is the most economical type of car storage. As in all types, it has both advantages and disadvantages. Surface car parking can be a suitable choice for out-of-town locations since it uses a substantial amount of land. However, travel distances from the parking to the center need to be considered because when there is a large amount of cars parked, there might be unacceptable distances to the center. Also, it is not a good choice in urban shopping centers where the value of the land is high.

²⁶ Coleman, Peter, *Shopping Environments: Evolution, Planning and Design*. Oxford: Elsevier Ltd, 2006.

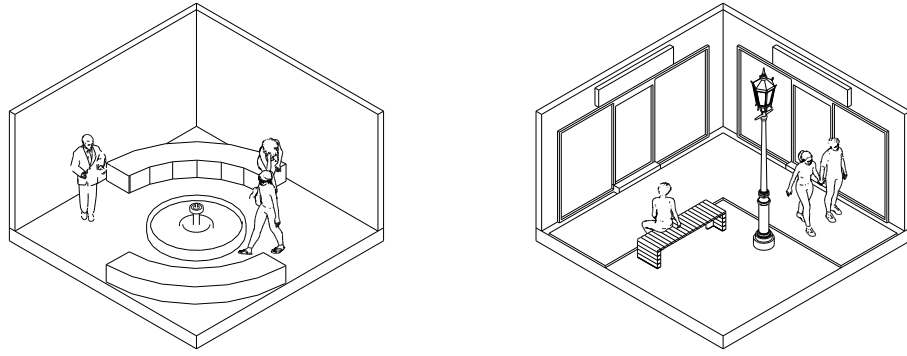
- Over the Center Parking: When the land availability is an issue, this typology can be used. One of the disadvantages of this type is that it requires long ramps and time to reach.
- Basement Parking: besides being the most expensive and complex solution, basement parking has its own advantages. Good lighting, ventilation and signage is required. A common grid needs to be adopted due to the interrelationship between the structural grid of the car park and the shops above and this is highly affecting the flexibility.
- Decked Parking: Horizontal, stacked decks one above another. It has several advantages such as feeding the shopping center above ground level, flexible grid not constrained by the shopping mall, and good use of available land.

While designing a car park, considerable amount of different topics need to be thought holistically such as the car park capacity, bay dimensions, ramps (if the car storage area is designed as multi-level), pedestrian circulation, lighting, signage, payment systems, barrier capacity, and management. Without an integrated approach on all of these topics, the car parking can affect the customers in a negative way which might decrease the users of the shopping center.



Figure 10. Gordion by Chapman Taylor in Ankara.

2.2.2.3. Pedestrian Areas



Pedestrian areas are the areas which allows the circulation of the public in a shopping center such as courts, lanes, plazas, covered public corridors, etc. Public circulation space is the 'armature' in a shopping center.²⁷ Lexical meaning of the word "armature" is a framework or formal structure.²⁸ And the public circulation space is the element that organizes and joins together the different parts of a shopping center. The main function of the circulation space is allowing the users to conveniently move and locate between all the different facilities in the shopping center. It is one of the only elements which completely designed by the architect. The success of the building depends on the circulation space by reason of it's importance on forming the planning structure and layout.

Durability is of the most important features of a circulation space since it has to accommodate thousands of people a day. In particular cases, the number of visitors visiting a shopping center can exceed the number, visiting a major railway station on a daily basis.

Circulation space has a significant influence over the functioning of a shopping center as well as the character of space. Therefore, a particular attention by the architect should be given on the design of these spaces. The essential (both for single and multi-level arrangements) and recommended requirements for a successful circulation space can be seen in figure on the next page.

Different types of spaces are used for different needs of a shopping center. These spaces can be open, covered, enclosed or hybrid. Each type has it's own advantages and disadvantages. While planning these areas, practicality and cost should be considered. The balance between these two is critical. The wrong typical choice of public circulation space can lead to the failure of a shopping center.

27. Coleman, Peter, *Shopping Environments: Evolution, Planning and Design*. Oxford: Elsevier Ltd, 2006.

28. <https://en.oxforddictionaries.com/definition/armature>.

Figure 11. Public Circulation Space Requirements. Source: *Shopping Environments: Evolution, Planning and Design*. 2006.

Public Circulation Space Requirements

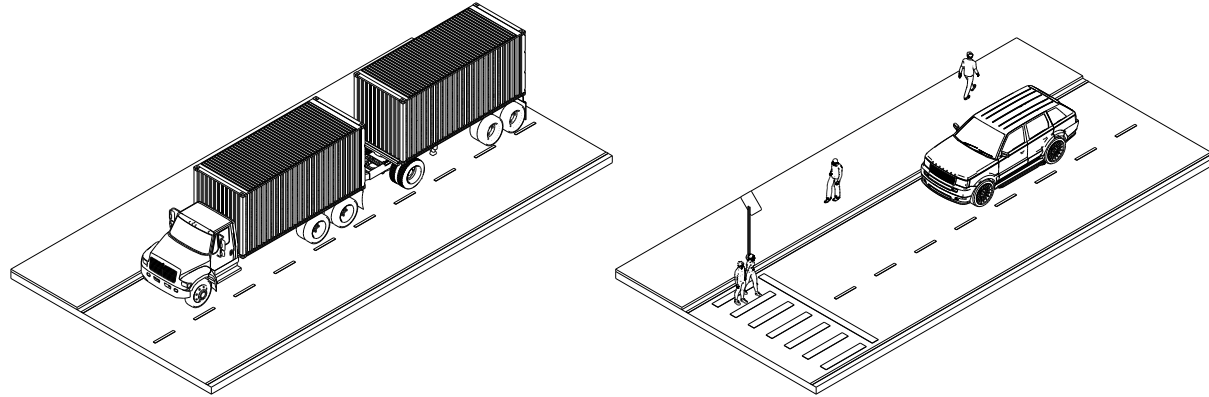
Establish the organisational framework for all the accommodation	Arrange the accommodation to ensure footfall in front of shops	Utilise points of punctuation to accommodate changes of direction	Form the means of pedestrian access	Organise the accommodation and circulation to achieve equal footfall	Provide protection from the weather	Provide a positive memorable experience
Provide an attractive environment for activities	Size to allow the freedom of movement in all directions in peak periods	Arrange the space to form natural pedestrian circuits	Organise space into identifiable lengths of shopfront	Position the circulation to allow convenient access	Form a comfortable environment	Consider general quality and proportion of spaces
Provide pedestrian access to all facilities	Size to establish a sense of activity in quiet periods	Form node spaces at the punctuation points	Arrange space to address any level changes across the site	Size space to allow visibility between circulation and shops	Provide a chilled environment in summer	form the space to facilitate the occurrence of informal social and civic uses
Form points of pedestrian linkage with the existing streets	Form an organizational arrangement easy to understand	Make use of the node spaces as points of focus	Position shops on each side of the space to have visibility of shopfronts	Consider giving different areas separate identity	Provide a heated environment in winter	Encourage the visitor to dwell and experience space
Connect the accommodation with means of vehicular access	Provide well-lit spaces during day and night	Locate the stores to lead visitors from one place to another	Provide convenient crossing points for access	Establish a hierarchy between circulation spaces	Establish a sense of well-being from the environment	

Functional Requirements (Essential)

Functional Requirements in Multi-Level Arrangements

Qualitative Requirements (Recommended)

2.2.2.4. Automobile Movement Areas



What to do with the automobiles and the trucks is one of the most important issues that the architect should deal with. Certainly, the designer should not only consider the storage, but also the connections. It should be the essential design consideration since most of the users use their cars to reach the shopping centers.

Automobile movement areas are the roads for the cars of the users, both the customers and the employees, and the distribution road system on site. The minimum dimensions of these roads are decided by the rules for every country.

One important point that has to be mentioned also in this chapter is that the private automobile traffic, public transportation, service traffic and pedestrian traffic should be separated from each other and specially designed. (refer to Page 35, Detaching the Different Types of Traffic)

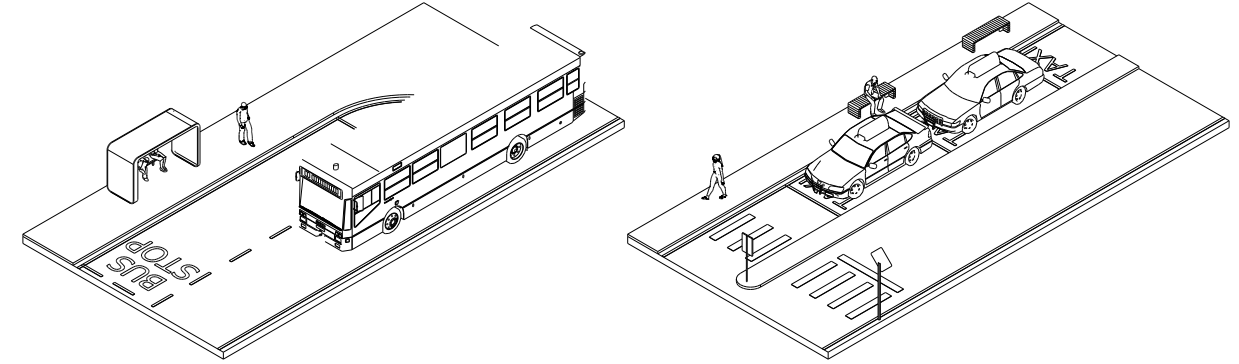
A much more difficult problem to solve than dealing with the passenger cars is the question of service trucks.²⁹ The noise, and the need of space for the manoeuvre due to their large sizes are the factors separating them from the automobiles of the users. That is the main reason why they need particular attention and design.

The truck tunnels which are the underground tunnels beneath the shopping center are one way to hide the distribution road system. Another typology for the distribution road system is to use different levels for service roads and roads of the users. For instance, the trucks can use the underground level while the cars are accessing the structure from ground level.

Some of these solutions are not the most economical ones but in long term, they will cover their expenses by helping the success of their shopping center.

²⁹ Scott, N, Keith. *Shopping Centre Design*. London: E & F N Spon. 1989.

2.2.2.5. Public Transportation Areas

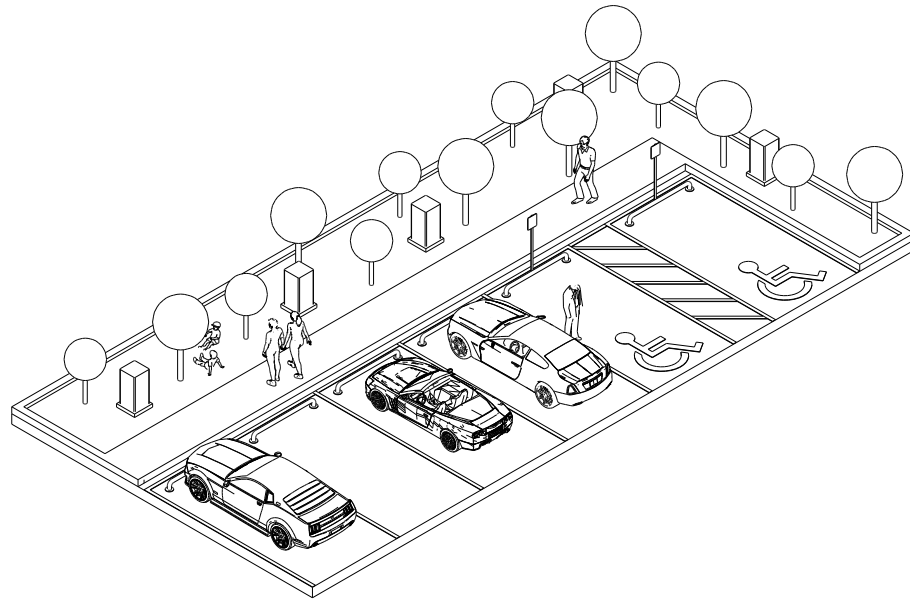


"Nothing is more fundamental to the survival of shopping than a steady flow of customers and goods. The correlation between amount of foot traffic and volume of sales has made the relationship between shopping and urbanism indistinguishable from the issues of mobility: how to move people about, whether by foot, moving sidewalk, underground, or car. Shopping's effectiveness in generating constant activity has made it an indispensable medium through which movement in the city is enacted. Not only has shopping become the basic building block of the city, it has, moreover, become one of the best tools for providing urban connectivity, accessibility, and cohesion."³⁰

One of the necessities for a successful shopping center is the flow of customers. Even though the shopping centers are reached mainly by the private automobiles, public transportation also plays an important role on the preferability of the center. Public transportation areas include the bus terminals and taxi stands in a shopping center, or if the complex can be reached by a metro network, the corridors allocated to access the station can be considered as a public transportation area. The distance between these areas and the facilities should be appropriate and the structures should allow the people waiting for their rides in a comfortable way. Additionally, the signage system in the shopping center should be clear enough for the users to understand how they will reach to these structures.

³⁰ Leong, Sze Tsung. *Mobility*.

2.2.2.6. Buffer Areas



Buffer areas are the landscaped areas separating car storage areas or service areas from the public road system, separating parking areas from each other, or separating parking areas from service areas.

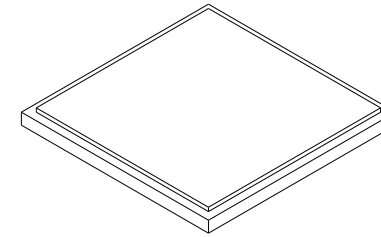
Planting is an important issue in these areas. Landscaping of these areas in a shopping center can create a complimentary effect to the architecture of the main structure. Furthermore, the psychological benefit to the visitor of adding a natural element to an otherwise commercially driven environment should not be underestimated.³¹ These buffer areas can be open-air, covered or enclosed spaces. Each typology has its own requirements. The selection should be made considering the environmental conditions and a professional advise should be taken from the specialists in landscaping because of the natural needs of the plants.

Buffer areas can be put to good use by using these areas for features such as water features, sculptures, instruments or seating. By particular attention to these areas, they can be an addition to the social spaces in the complex.

These areas tend to increase the value of the shopping center if executed successfully.

³¹ Coleman, Peter, *Shopping Environments: Evolution, Planning and Design*. Oxford: Elsevier Ltd, 2006.

2.2.2.7. Reserve Areas



Reserve areas are the portions of site to be held in reserve for the planned growth of the shopping center. A successful shopping center must be designed as an urban organism. So, the future enlargement should be foreseen initially. For instance, without this kind of planning, problems such as changing the area allocated to car parking would need to be converted to a new structure for retail. By this kind of changes, the efficiency and effectiveness of the shopping center would become less.

There are two ways of constructing a shopping center that are used commonly:

- In first case, all the essential elements to create a shopping center are built in one operation. In this way of construction, the planning for the expansion and addition of stores must be done as a part of the original plan. If the shopping center is located in a growing area, the store may have the desire to enlarge their areas. Traffic load should also be considered while expanding a center. In technical point of view, the expansion can mean a vertical addition and in this case, larger foundations and stronger columns are needed. Or a horizontal addition can create the problem of the construction on the areas allocated for pedestrian or car storage. The air-conditioning structures should be dimensioned accordingly for future additional equipments.
- In the second case, the construction can be done in stages so first, a portion of the development can take place and some elements can be built in another construction stage. For instance, if an accelerated growth is foreseen on a site, this kind of construction is feasible. Even though only a portion of the project will be built in the first stage, a complete master site usage plan is needed. The uncertainties are the biggest problem in such a development. One other necessity is to create a profitable shopping center in all the stages. That's why, a professional planning team is required.

To calculate this area in the planning process is a task so complex that it can, in most cases, only be achieved by an empirical approach.³²

³² Gruen, Victor and Larry Smith. *Shopping Towns USA: The Planning of Shopping Centers*. New York: Reinhold, 1960.

2.2.3. Classification and Comparison of Different Typologies

The shopping industry is constantly going through some major changes. The globalization had its massive effects also on the classification of this industry. For the further improvement and innovations in the sector, a taxonomy of these shopping centers must be done thoroughly. A holistic classification has to be done in order to help the existing shopping centers to respond to changing demographics, tenant performance, and new competitive threats.

The common classification criteria consists of 5 different variables:

- Size
- Design
- Location
- Number of Anchors/Tenants
- Themes

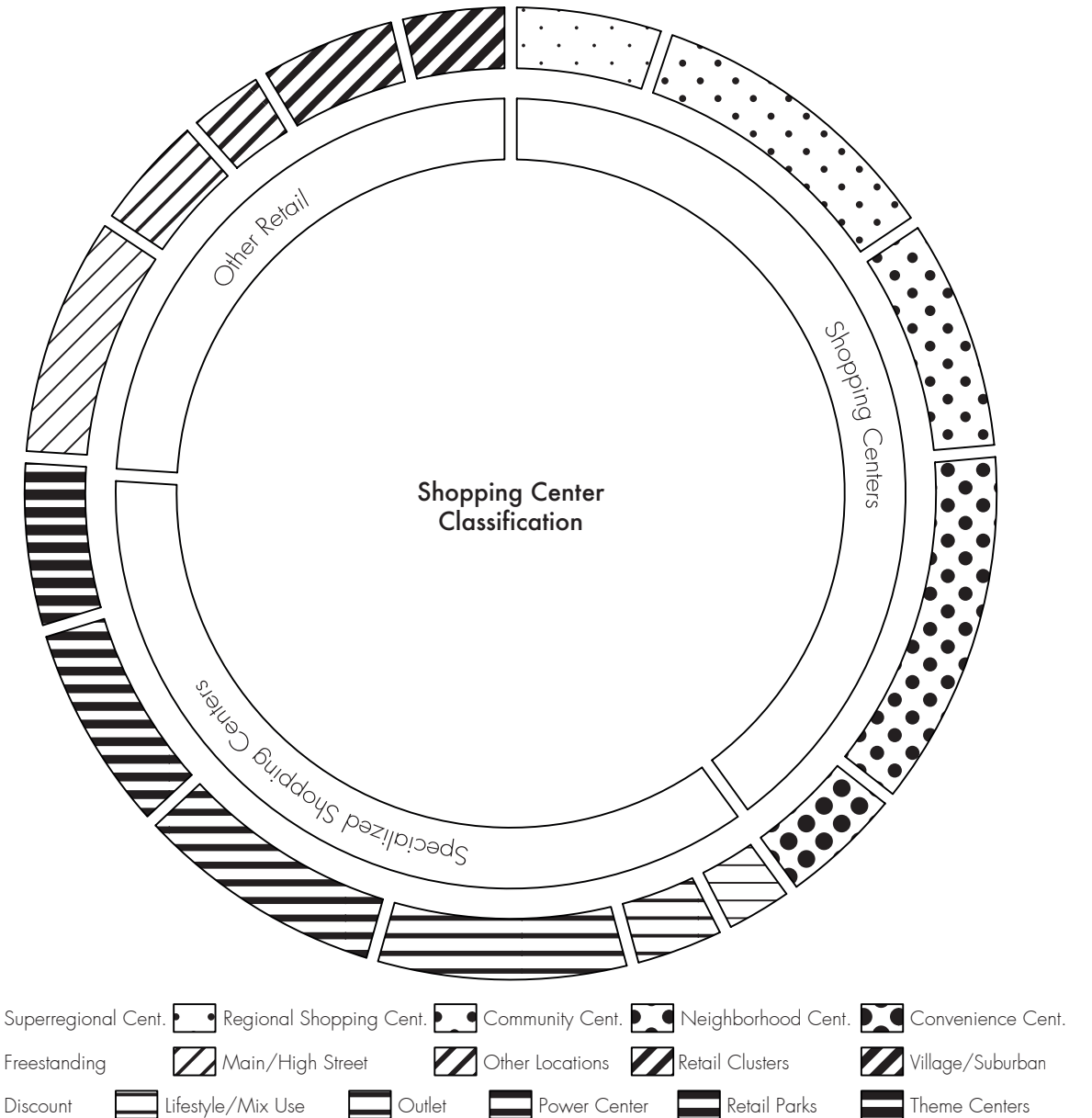
The development of an unambiguous, meaningful, and measurable classification of retail shopping center formats is critical to the mission of ICSC (International Council of Shopping Centers).³³ There are different classifications for different continents proposed by ICSC but since the world is globalizing in an expeditious way, there is a lack of one standardized classification. The Europe Shopping Center Classification by ICSC is splitting shopping centers into two main categories; "Traditional Shopping Center" and "Specialty Shopping Center". The sub-categorization is done according to the gross leasable area of the shopping center. This system of classification may be sufficient for most of the previous shopping centers that has already been built but in the future, the classification must be 'glocal', which means globalized without losing its local aspects.

The alternative classification to ICSC system proposed by James R. Delisle can be seen in the following page. It is based on three major classes and the aim is to create a classification system which is unambiguous, meaningfulness, implementable, politically palatable, and comprehensible.³⁴ ICSC system created considerably different classifications for different continents to be applicable. On the other hand, the system proposed by Delisle is more universal than ICSC system because it is applicable on all continents. For instance, "traditional" label in ICSC system suggests that such centers are static and rigid, that they do or cannot be modified to stay up with the latest trends. However, the dynamic nature of shopping centers does not tolerate such inflexibility.

³³ ICSC, *Europe Shopping Centre Classification and Typical Characteristics*, Accessed January 15, 2018.

³⁴ Delisle, James R., *Towards Global Classification of Shopping Centers*, 2009.

Figure 12. Shopping Center Classification.



Conflict of the City and Retail

From High Street to Shopping Malls

From Urban Center to Periphery

Criticisms on Contemporary Shopping Centers

Affiliation of Technology, Sustainability, and the New Retail Spaces

Sustainability Assessment Methods

Building Research Establishment Environmental Assessment Method (BREEAM)

Deutsche Gesellschaft für nachhaltiges Bauen e.V. (DGNB)

Leadership in Energy and Environmental Design (LEED)

Comparison of the Certificate Systems

3.1. Conflict of the City and Retail

“If, in the United States, the suburban shopping mall has effortlessly replaced the town or city square to become a modern-day Main Street by sustaining activities once reserved for urban centers, what will happen to cities in Europe, regions traditionally active in urban and community preservation, when a shopping mall moves in next door? Does the European city quietly succumb and abandon its center to deteriorate like its American counterpart? Or does it fight the incursion and resist?”¹

The question above, asked by Chuihua Judy Chung with Juan Palop-Casado, draw attention to the phenomenon of change in retail spaces and the how the response of the tradition could take place.

New shopping formats in Europe have emulated American shopping types not only in magnitude, but also in location. With city centers limited by space constraints and high real estate costs, and congested by population and traffic, large-format retailers moved to out-of-town areas for counter-urban qualities.

Alarmed by the speed and severity of the retail-induced changes in their cities and towns, anxious Europeans began to organize a resistance movement in the early 1990s, comprised of independent retailers and small store owners threatened with elimination, national politicians fearful for dwindling urban centers, and even environmentalists horrified by the ecological damages caused by American-style shopping. Each group has advanced their own campaigns against the American threat. Independent retailers and central government planners have opposed the development of shopping malls, despite their inevitable construction. Environmentalists have protested the increase in air pollution and road construction, two of the most harmful results of escalating traffic to suburban shopping areas. Even proponents of American-style retail, the shoppers themselves, have developed a shopping mall wariness.

Eventually, European cities and American style shopping intertwined and shopping centers resized into the smaller spaces of city centers. Moreover, in some European capitals, governments have regenerated cities by converting urban streets into shopping centers.

¹. Chung, Chuihua Judy and Juan Palop-Casado. Resistance.

While there are many regulations and planning legislative frameworks related to the classification and standards of shopping malls around the world to protect the already existing traditional and historic retail spaces (refer to Figure 13), such development has just began to form in Turkey. Although some regulations for planning the retail spaces have existed since the 1960s, many of them lacked both international standards and a national classification schema that fits for Turkey’s unique market demands. Even the most recent legislative framework of Turkey cannot fully address a unique, sustainable and national classification schema for shopping malls.²

However, all these different techniques to protect the cities such as the legislations, restrictions or specifications can not hinder the transformation. The conflict of the city and the retail is obliged to continue and the constant change and transformation is inevitable.

². Ceylan, Rumeysa, Buket Aysegul Ozbakir, and Isil Erol. “Alisveris Merkezlerinin Turkiye’deki Mevzuat Cercevesinde Degerlendirilmesi (1)” METU JFA 34, no.2 (2017): 245-64.

Figure 13. Resistance to Retail in Italy.

Resistance to Retail in Italy

Date	Policy	Target	Restrictions (Specifications)	Effect
1971	Law 426	Large stores	“Tighter rules to obtain licenses, and the definition of priorities granted to existing shop-keepers who wished to transform & enlarge their shops. Retail organizations based on cooperation of independent retailers were favored over multiples.” “Stores larger than 1,500 m ² must obtain a permit from the regional authority. For municipalities with populations of less than 10,000 this applies to all stores with over 400 m ² of sales area.”	“The enforcement of the law slowed down the entry of large stores. But its influence runs much deeper and has helped to shape many aspects of the retail industry.”
1982	Law 887	Stores already active for at least three years	Authorized enlargements up to 200 m ² .	—
1987	Law 121	Stores already active for at least three years in the same “product list”	Authorized enlargements up to 600 m ² by concentration of existing stores.	—
1988	DM 375	Large stores greater than 200 m ² allowed to sell certain types of goods	Limited selling of goods to those categories set by the government.	—

3.2. From High Street to Shopping Malls

The street was—and still is to some people—the most usual public space. It is the space where people are living their “moments”. All kinds of social activities was taking place in the streets such as meeting friends, doing sports, taking air, and last but not least, shopping. These public spaces has a wide range of roles which can be classified as ecological, psychological, social, political, economic, symbolic and aesthetic. The city is known with it’s streets. Streets are not only a tool that takes people for one point to another, they are a place to live in.

The rise of automobiles which started before the Second World War but accelerated after it, started to shape the cities and the way people use them. The importance of the street kept decreasing. The city center invaded by cars. The street became “the traffic machine” as stated by Le Corbusier.³

Increased motorization and transformation of the streets to the “traffic machines”, shopping activities started to change place. They moved away form the contaminated city centers to new out-of-town shopping centers. The evolution of these shopping centers changed the perception of high streets. The fact that cities are known by it’s streets has changed. Open-air became closed buildings. But still, these new shopping centers are imitating the streets because of the praxis. People are used to the streets for many years and it is easier and more efficient to imitate them. These decentralized, inward-oriented, new public units are isolated from the city itself, and generally accessible only by car. They are covering all the needs of a modern citizen including shopping and leisure time activities. They became more and more popular by being open on weekend as well. There are also hybrid centers which include some other functions such as offices, residences, hotels and corporate headquarters.

The role of high streets in urban social life has been decreasing due to increasing car traffic on streets as well as high numbers of shopping centers in and out of city centers in competition with high streets. Additionally, researchers, planners and politicians seem to be aware of the effect and value of streets in urban life and there are movements, such as reviving the streets. There are studies trying to reinvent the role of the high street with the suggestions about what can be done to compete with shopping centers such as repurposing the surplus or under-utilized space for use by community groups, combining the offerings of different shops and creating a ‘combo store’ which is offering retail, leisure and food services at the same time,

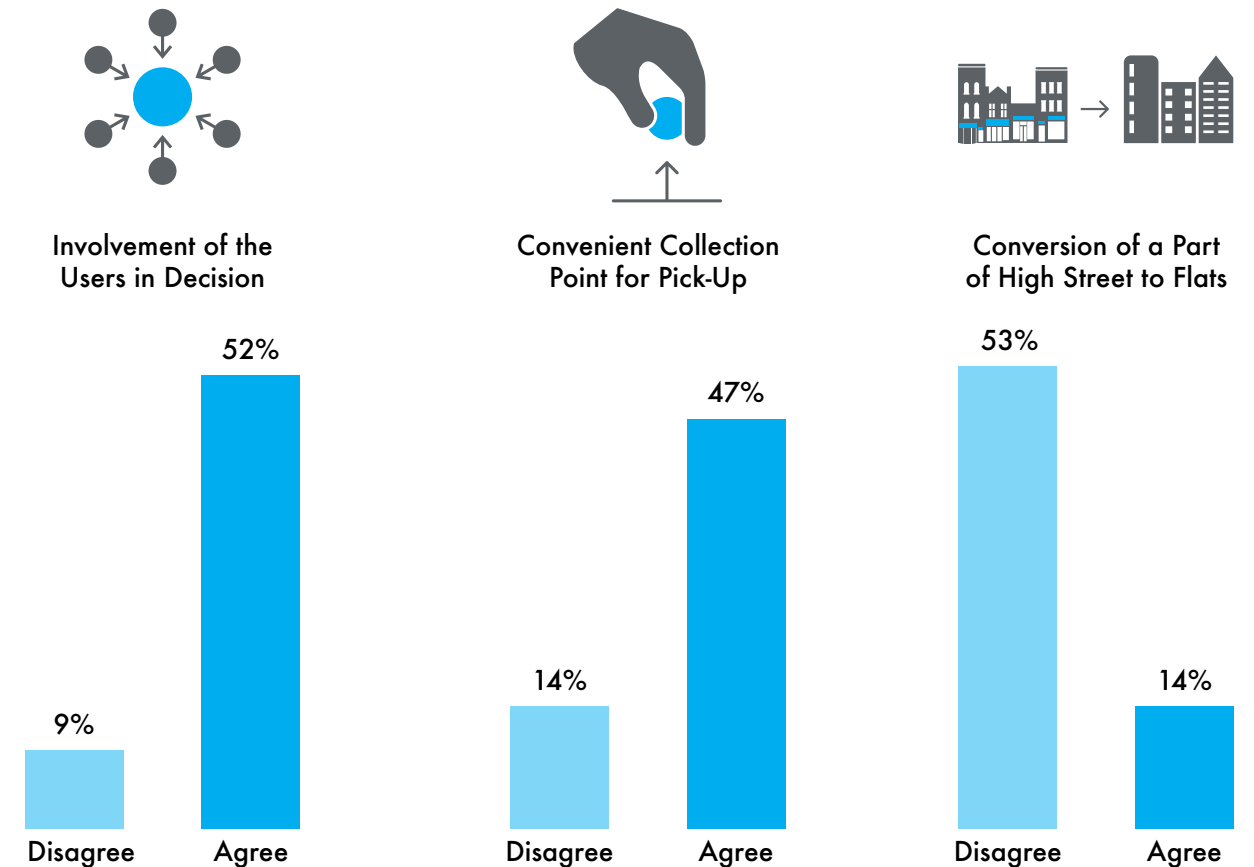
³ Carter, Paul. *Repressed Spaces: The Poetics of Agoraphobia*. London: Reaktion Books, 2002.

enhancing the customer experience by providing them what shopping centers can not, exploiting the accessibility of high street in their advantage by facilitation of car parking etc.

All these efforts can not change the fact that shopping malls have already replaced the high streets both physically and mentally. Except some famed streets. It is inevitable that if high street wants to exist, it must keep up with the dynamic nature of consumption as all retail structures should do.

Figure 14. Consumer Attitudes Towards the Future of High Street. Source: The Deloitte Consumer Review: Reinventing the role of the high street. 2013.

Consumer Attitudes Towards the Future of High Street



3.3. From Urban Center to Periphery

The modern shopping mall was an invention of the 1950s, the brainchild of Victor Gruen, an architect from Vienna who yearned to recreate the European city in America. The typical American city had become hopelessly congested with traffic. In the vast suburban sprawl of subdivisions and highways, Gruen saw an opportunity to make a new urban center, one that accommodated the car, but celebrated, a la Vienna's Ring, the pedestrian. His first step in remaking the American city was to build a vast, interior shopping concourse ringed by parking. Gruen's "recipe for ideal shopping center" was to:

"Take 100 acres (4.047 m²) of ideally shaped flat land. Surround same by 500,000 consumers who have no access whatever to any other shopping facilities. Prepare the land and cover the central portion with 1,000,000 square feet of buildings. Fill with first-rate merchandisers who will sell superior wares at alluringly low prices. Trim the whole on the outside with 10,000 parking spaces and be sure to make same accessible over first-rate under-used highways from all directions. Finish up by decorating with some potted plants, miscellaneous flower beds, a little sculpture, and serve sizzling hot to the consumer."⁴

This description may sound like a bit superficial but frankly, it is what we see when we visit a shopping center. This new building type, would demarcate a center amid undifferentiated sprawl, instantaneously establishing a "city" of five hundred thousand consumers. Gradually, real urbanization of this new core would occur: densification, programmatic differentiation, socioeconomic diversification.

Gruen designed over fifty malls from the early 1950s through the late 1960s. Canonical Gruen malls include Northland (near Detroit, 1954), Southdale (near Minneapolis, 1956), and South Coast Plaza (near Los Angeles, 1967). These malls reoriented the terrain outside of the city. Northland was located twenty miles north of Detroit's urban core. But "north" would become center, as Northland drained shoppers from the downtown and sparked the development of housing and other businesses around itself. Likewise with the Eastland Shopping Center, located forty miles east of Detroit: what had been "east" became one more center. Eventually "center" turned into nowhere: Detroit went cold next to the "sizzle" of Gruen's malls.

Or so Gruen had hoped. Detroit, and many cities like it, did go cold, but the malls were not sufficiently sizzling. Malls established centers for new would-be cities, but malls were still malls—shopping centers, and sometimes entertainment centers, but not urban centers. The mall could replace neither the complexity of the city nor its unpredictability.

Retail spaces such as shopping malls, hypermarkets and theme parks, usually located on a city's periphery, have become the core of the urban experience: public spaces divorced from the city center and the surrounding streets, which were the traditional focus in urban centers. In metropolitan areas, where the retail structure is more complex than in smaller centers, changes in the relation between the city and retailing express a clear center/periphery dichotomy that challenges urban sustainability in many countries. This development has caused much debate about the role of new retail forms in the viability of the urban core in many European countries.⁵

In recent decades, the process of retail decentralization and urban sprawl has contributed to the decline of city centers. Several policies and coalitions have tried to deal with this issue.

5. Erkip, Feyzan, Ömür Kızılgün, and Guliz Muga. "The role of retailing in urban sustainability: The Turkish case." *European Urban and Regional Studies* 20, no. 3 (2012): 329-42.

Figure 15. Aerial View of Southdale Center, 1956. Source: <http://mall-hall-of-fame.blogspot.com.tr/2008/05/victor-gruens-best-known-and-most.html>



4. Scott, N. Keith. *Shopping Centre Design*. London: E. & F.N. Spon. 1989.

3.4. Criticism on the Contemporary Shopping Centers

Politicians, operators, and citizens' initiatives have debated the shopping mall since its emergence about sixty years ago. These artificially laid out shopping centers located either on greenfields outside of the city or in an urban setting offer shoppers a multifarious selection of goods in a concentrated space. According to critics, the resulting magnet effect represents a danger to both cities and the retail sector, while investors propagate the opportunities for their economic and social development. If nothing else, these controversies are the result of the fact that contradictory aspects are already inherent in the concept of the shopping mall: it unites the real with the imaginary, relies on sensory perception as much as it does on control, suggests urbanity despite the fact that it isolates itself both spatially as well as socially from its immediate environment. The anthropologist Marc Augé, for example, warns against these places that lack tradition and identity and refers to the shopping mall in general as a "non-place".

*"Place and non-place are rather like opposed polarities: the first is never completely erased, the second never totally completed; they are like palimpsests on which the scrambled game of identity and relations is ceaselessly rewritten. But non-places are the real measure of our time; one that could be quantified—with the aid of a few conversions between area, volume and distance—by totaling all the air, rail and motorway routes, the mobile cabins called 'means of transport' (aircraft, trains and road vehicles), the airports and railway stations, hotel chains, leisure parks, large retail outlets, and finally the complex skein of cable and wireless networks that mobilize extraterrestrial space for the purposes of a communication so peculiar that it often puts the individual in contact only with another image of himself."*⁶

Cities having a long history with bazaars, grand markets and traditional artisans such as Istanbul, resisted to these "non-places" which lack tradition and identity since the trade culture had to change completely. However, the reason why the shopping centers are invented in United States is that, there is no significant market culture in the cities and the new shopping centers were ideal to fill this gap. Yet, the gap is filled quickly and overflow of the new developments resulted in vacant shopping centers.

6. Augé, Marc. *Non-Places: Introduction to an Anthropology of Supermodernity*. London: Verso, 1995.

7. Bekiempis, Victoria. *The Rebirth of the Shopping Mall*. *Newsweek Magazine*. 2014.

*"I am often called the father of the shopping mall, I would like to take this opportunity to disclaim paternity once and for all. I refuse to pay alimony to those bastard developments. They destroyed our cities."*⁷

Victor Gruen

*"The average time shoppers spent in malls dropped by half from 1980 to 1990."*⁸

Greg Hassell

*"In a recent survey ... 38% of respondents said they planed to shop at malls less often this year than they had in the past.. Regional malls clearly have a life cycle, and a lot of them are in their last throes. ... (B) by 2010, 55% of the nation's shopping (is predicted to) be conducted in non-store venues—online services, direct mail, catalogs, 800 numbers, and the like)"*⁸

Kenneth Labick

*"Vacant big box space in the Chicago area now totals more than 12 million square feet."*⁸

John Hendley

*"Only a very few giant retailers—in some markets, perhaps only one or two— will survive and prosper in each segment of retailing and in each geographic market."*⁸

Walter Salmon

*"If retail is bad now when the economy is rolling, what happens when a recession hits? It's the same old story: too many stores, outdated retailing concepts, obsolescent mall, changing consumer and demographic patterns, faltering suburban districts, and encroachment by new electronic formats. 'There's lots of trash out there.' Many cavernous old malls are dinosaurs that can't compete with the convenience of drive-up value retailers in power centers or strips."*⁸

Emerging Trends in Real Estate 1998

*"Aggressive builders like Walmart chief executive officer David Glass, along with old retail pros such as Stanley Marcus, are predicting that 50 to 75 percent of present retail will be extinct within a decade."*⁸

Dale M. Lewison

In the United States, Asia, and the Emirates, the largest malls can expect up to one million visitors a day.⁹ However, this huge success of the shopping mall is ending up in becoming a massive failure. Aged and underperforming shopping malls are becoming obsolescent and have become deserted and are in need of a transformation. This need brings out the notions of retrofitting, reinhabiting and "regreening" of the former structures. Moreover, the new structures should be developed sustainably to be able to compete and survive in this abundance of retail spaces.

8. Crisis. Chung, Chuihua Judy, Jeffrey Inaba, Rem Koolhaas, and Sze Tsung Leong, eds. *Project on the City II: The Harvard Guide to Shopping*. Köln: Taschen, 2001.

9. Bader, Vera S. *The Architecture of the Shopping Mall*. Berlin: Hatje Cantz, 2016.

3.5. Affiliation of Technology, Sustainability, and the Retail Spaces

Consumption has become one of the leading topics across the social sciences and vocational disciplines such as marketing and business studies.¹⁰ The integration of this notion to architectural discipline have become an important issue. The magnitude of this issue can be revealed by analyzing the table below which shows the revenue of major retailers such as Walmart Stores and online retailers such as Amazon.com is bigger than the GDP of some European countries. It is obvious that without a proper approach on this issue, the tangible results of consumption may be vicious for humanity. This is the main reason why a sustainable approach is more than an added-value for retail spaces. It is a necessity.

This massiveness of consumption sparks the interest of other disciplines like technology. The introduction of technology in the realm of retail spaces facilitated the work of sustainable retail spaces. It also causes major changes in the design of the accustomed retail spaces. However, without a legitimate guidance, the use of technology and sustainable equipments can not beneficial for such developments. To make use of these new technologies appropriately, sustainable design of a retail space is essential and this design should follow the guidelines of prominent sustainability assessment methods.

¹⁰ Fine, Ben. *The World of Consumption: The Material and Cultural Revisited*. London: Routledge, 2002.

Figure 16. GDP of Some Countries vs. Revenue of Some Top 100 Retailers. Sources: National Retail Federation and Worldbank, 2014.

GDP of Some Countries vs. Revenue of Some Top 100 Retailers

	Name	GDP or Revenue*	Rank	R.R.R**	Origin
1	United States of America	17,393,103	1		
2	China	10,482,371	2		
3	Italy	2,149,814	8		
4	Turkey	798,781	18		
5	Walmart Stores Inc.	485,651		1	USA
6	Schwarz Unternehmenstreuhand KG	102,694		4	Germany
7	Carrefour S.A.	98,497		6	France
8	Amazon.com Inc.	70,080		12	USA
9	Luxembourg	65,371	70		
10	Coop Italia	14,860		66	Italy

*: Million US Dollars

** : Retail Revenue Rank

3.6. Sustainability Assessment Methods

The concept of sustainable development was seriously taken up in the early 90s and has since developed in most of scientific and industrial branches. Since the arrival of this concept, various definitions have been offered and different methods have been applied for realizing this concept.¹¹

Apart from the diverse definitions, sustainable development has three major aspects which are environmental, economic, and social. It is generally accepted that the 'Triple Bottom Line' (TBL) of sustainability, social, economic and environmental factors are required for sustainability to be achieved.¹²

It is essential for any development within the built environment aspiring to deliver a high degree of sustainability to consider the contribution that it will make to the local culture, place and systems; and the impacts of these on the wider region. In order to achieve this, a number of key issues need to be considered within the context of the entire life-cycle of a building.¹

Current sustainability assessment methods in the built environment are principally focused on the projected energy consumption and environmental impacts of new-build projects; tending to focus on assessment during design and construction phases, prior to the occupation of the building.¹

Following from the implementation in the UK of BREEAM (Building Research Establishment Environmental Assessment Method) as the first rating system in the early 1990's, there has been an increased awareness as to the requirement for building practices to be both sustainable and responsive to environmental issues. Afterwards, LEED was launched in 1999 by the US Green Building Council. Since then it has become one of the most widely recognized and applied tools internationally. It has been adapted by a number of countries, including Canada, India, Brazil (LEED 2009) into their own region specific tools. Last but not least, DGNB system was introduced in 2008. In comparison to BREEAM or the LEED it is an evaluation system of the second generation, which means especially that it emphasizes an integrated view over the whole life-cycle of the building.

This following part includes an overview and a comparison of the most widespread sustainability assessment methods which is applicable in the context of the case studies (Turkey, Istanbul).

¹¹ Hamedani, A. Zeinal, F. Huber. "A comparative study of DGNB, LEED and BREEAM certificate systems in urban sustainability" *WIT Transactions on Ecology and The Environment*, Vol 155 (2012): 1487-96.

¹² Poston, A, Emmanuel, R and Thomson, C. "Developing holistic frameworks for the next generation of sustainability assessment methods for the built environment." *Proceedings 26th Annual ARCOM Conference*, (2010): 1487-1496.

BREEAM®

3.7.1. Building Research Establishment Environmental Assessment Method

Rating System



Total Building Registered
2.267.516+ (563,454+ Certificates)

Established in
1990

Typologies
Communities
Infrastructure
New Construction
In-Use
Refurbishment & Fit-out

Organization
BRE (Building Research Establishment)



*Scoring and rating of BREEAM In-Use International assessed assets

BREEAM, first published by the Building Research Establishment (BRE) in 1990, is the world's leading sustainability assessment method for masterplanning projects, infrastructure and buildings. It recognizes and reflects the value in higher performing assets across the built environment life-cycle, from new construction to in-use and refurbishment.¹³

^{13.} What is BREEAM? Source: www.breem.com

The first version of BREEAM was only for assessing office buildings. This first version is followed by a new version including other building typologies such as industrial units and existing buildings. Afterwards, BREEAM went on with adding new building types with annual updates. In 2008, the first international version of BREEAM has been published. Since then, updates are being published about refurbishment and fit-out, enhancement of in-use buildings, new constructions, infrastructure and communities. At the present time, there are 6 BREEAM schemes which are categorizing different scales and building types and are as following;

- BREEAM Infrastructure is to assess new infrastructure projects.
- BREEAM Communities is to assess developments at the neighborhood scale or larger.
- BREEAM New Construction is to assess the new built domestic and non-domestic buildings.
- HQM (Home Quality Mark) is to assess the new-built domestic buildings.
- BREEAM In-Use is to assess the existing non-domestic buildings which are in-use.
- BREEAM Refurbishment is to assess the domestic and non-domestic building fit-outs and refurbishments.

Retail buildings (described as the shops or shopping centers, retail parks or warehouses, 'over the counter' service providers, showrooms, restaurants, cafés and drinking establishments, and hot food takeaways.¹⁴) are mostly focused on the on the following schemes; BREEAM New Construction, BREEAM In-Use and BREEAM Refurbishment.

^{14.} BRE Global, BREEAM International New Construction 2015, 2016.

Only, In-use buildings are assessed in 3 parts; asset performance, building management, and occupier management (third part is in pilot version and not available yet). The rest of the schemes are assessed in a single part.

Every development is assessed by using the following 10 categories and awarded accordingly.

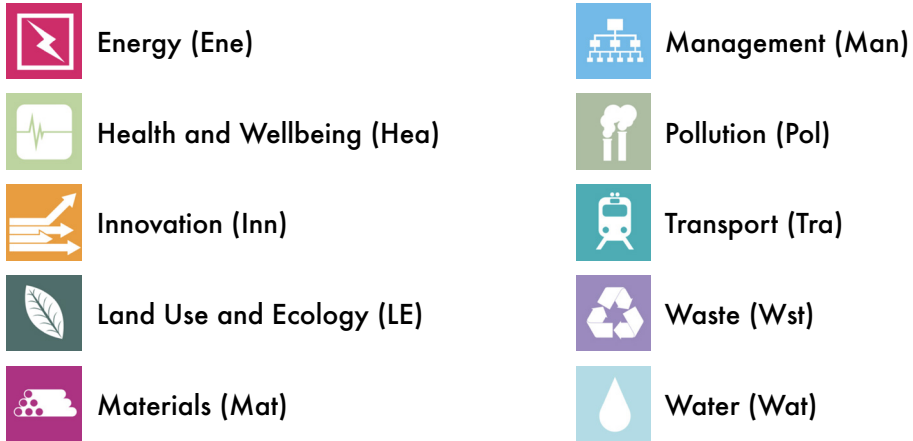


Figure 17. BREEAM Category Issues. Source: <https://www.breeam.com/discover/how-breeam-certification-works/>

Energy (Ene)

This category encourages the specification and design of energy efficient building solutions, systems and equipment that support the sustainable use of energy in the building and sustainable management in the building's operation. Issues in this section assess measures to improve the inherent energy efficiency of the building, encourage the reduction of carbon emissions and support efficient management throughout the operational phase of the building's life.

Ex: Ene06 Energy efficient transport systems.

Determining the optimum number and size of lifts, escalators or moving walks.

Health and Wellbeing (Hea)

This category encourages the increased comfort, health and safety of building occupants, visitors and others within the vicinity. Issues in this section aim to enhance the quality of life in buildings by recognizing those that encourage a healthy and safe internal and external environment for occupants.

Ex: Hea06 Accessibility.

Providing safe access to and from the building.

Innovation (Inn)

The innovation category provides opportunities for exemplary performance and innovation to be recognized that are not included within, or go beyond the requirements of the credit criteria. This includes exemplary performance credits, for where the building meets the exemplary performance levels of a particular issue. It also

includes innovative products and processes for which an innovation credit can be claimed, where they have been approved by BRE Global Ltd.

The cost-saving benefits of innovation are fostered and facilitated by helping encourage, drive and publicize accelerated uptake of innovative measures.

Ex: Inn01 Innovation.

Demonstrating exemplary level performance in one of the BREEAM assessment issues.

Land Use and Ecology (LE)

This category encourages sustainable land use, habitat protection and creation, and improvement of long term biodiversity for the building's site and surrounding land. Issues in this section relate to the reuse of brown-field sites or those of low ecological value, mitigation and enhancement of ecology and long term biodiversity management.

Ex: LE04 Long term impact on biodiversity.

Minimizing the long term impact on the biodiversity of the site and the surrounding area.

Materials (Mat)

This category encourages steps taken to reduce the impact of construction materials through design, construction, maintenance and repair. Issues in this section focus on the procurement of materials that are sourced in a responsible way and have a low embodied impact over their life including extraction, processing and manufacture, and recycling.

Ex: Mat03 Responsible sourcing of construction products.

Sourcing the key building materials responsibly to reduce the environmental and socio-economic impacts.

Management (Man)

This category encourages the adoption of sustainable management practices in connection with design, construction, commissioning, handover and aftercare activities to ensure that robust sustainability objectives are set and followed through into the operation of the building. Issues in this section focus on embedding sustainability actions through the key stages of design, procurement and initial occupation from the initial project brief stage to the appropriate provision of aftercare.

Ex: Man05 Aftercare.

Providing the necessary infrastructure and resources to the building occupiers to provide aftercare support.

Pollution (Pol)

This category addresses the prevention and control of pollution and surface water run-off associated with the building's location and use. Issues in this section aim to reduce the building's impact on surrounding communities and environments arising from light pollution, noise, flooding and emissions to air, land and water.

Ex: Pol01 Impact of refrigerants.

Reducing the impact of the refrigerant through specification and leak prevention.

Transport (Tra)

This category encourages better access to sustainable means of transport for building users. Issues in this section focus on the accessibility of public transport and other alternative transport solutions (cyclist facilities, provision of amenities local to a building) that support reductions in car journeys and, therefore, congestion and CO₂ emissions over the life of the building.

Ex: Tra01 Public transport accessibility.

Providing good public transport networks to the developments in order to reduce transport-related pollution and congestion.

Waste (Wst)

This category encourages the sustainable management (and reuse where feasible) of construction and operational waste and waste through future maintenance and repairs associated with the building structure. By encouraging good design and construction practices, issues in this section aim to reduce the waste arising from the construction and operation of the building, encouraging its diversion from landfill. It includes recognition of measures to reduce future waste as a result of the need to alter the building in the light of future changes to climate.

Ex: Wst01 Construction waste management.

Reducing the construction waste and developing a construction resource management plan.

Water (Wat)

This category encourages sustainable water use in the operation of the building and its site. Issues in this section focus on identifying means of reducing potable water consumption (internal and external) over the lifetime of the building and minimizing losses through leakage.

Ex: Wat03 Water leak detection and prevention.

Installing a leak detection system capable of detecting a major water leak and placing the leak isolation valves easily accessible.

System: BREEAM
Scheme: In-Use (International)
Part: 1 (Asset Performance)
Category: Waste
Criterion: Wst 01

Storage of Operational Waste

Question

Is waste collected and separated at a central location?

Available Credits

Sufficient space to separate 1 waste stream (1 credit)

Sufficient space to separate 2 waste stream or, where waste is collected commingled, separated in 2 waste streams off-site (2 credits)

Sufficient space to separate 3 waste stream or, where waste is collected commingled, separated in 3 waste streams off-site (3 credits)

Sufficient space to separate 4 or more waste streams or, where waste is collected commingled, separated in 4 waste streams off-site (4 credits)

Aim

To ensure assets have adequate space for waste stream separation on site, allowing for recycling to take place and thus reduce waste being sent to landfill or for incineration.

Assessment Criteria

1. Separate bins should be provided for different waste streams (if this is necessary), examples of these include (but are not limited to):
 - a) Glass
 - b) Paper
 - c) Aluminum Cans
 - d) Plastic
2. Different colored glass separation is classed as one waste stream.
3. If recyclables are stored or collected in the same container (commingled), the assessor must verify that the waste collector separates the commingled waste in the identified waste streams.
4. Bins located in this central area should:
 - a) Be grouped together
 - b) Be easily identifiable in terms of the waste streams they hold
5. Bins should be in an appropriate location, easily accessible to those responsible for disposing of waste.

System: BREEAM
Scheme: New Construction (International)
Category: Water
Criterion: Wat 05

Water Monitoring

This credit applies to

All Buildings (1 credit)

Aim

To ensure water consumption can be monitored and managed, and therefore encourage reductions in consumption.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. The specification of a water meter on the mains water supply to each building; this includes instances where water is supplied via a borehole or other private source.
2. Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, are either fitted with easily accessible sub-meters or have water monitoring equipment integral to the plant or area (see Compliance notes).
3. Each meter (main and sub) has a pulsed or other open protocol communication output to enable connection to an appropriate utility monitoring and management system, e.g. a building management system (BMS), for the monitoring of water consumption (see Relevant definitions on page 251).
4. If the site on which the building is located has an existing BMS, managed by the same occupier or owner (as the new building), the pulsed or digital water meters for the new building must be connected to the existing BMS (see Relevant definitions on page 251).

Figure 19. Wat05: Water Monitoring. Source: BREEAM International New Construction 2016 Technical Manual

Figure 18. Wst01: Storage of Operational Waste. Source: BREEAM In-Use International Technical Manual. February 2016.



3.7.2. Deutsche Gesellschaft für nachhaltiges Bauen e.V.

Rating System



Bronze*
>35



Silver
>50



Gold
>65



Platinum
>80

*Valid only for existing buildings.

Total Building Evaluated
563.242

Established in
2007

Typologies

Office and Administrative Buildings
Residential Buildings
Educational Facilities
Healthcare Buildings
Hotels
Retail Buildings

Tenant Fit-out
Assembly Buildings
Industrial Buildings
Business Districts
Urban Districts
Industrial Locations

Organization

German Sustainable Building Council



German Sustainable Building Council (DGNB) was founded in 2007, in Stuttgart by 16 initiators from various subject areas. In cooperation with the Federal Ministry of Transport, Building and Urban Affairs (BMVBS), the DGNB developed a comprehensive method for the assessment of sustainable buildings and the aim was to promote sustainable and economically efficient building even more strongly in future.

The first version was published in 2008 and called "New Construction of Office and Administration Building, Version 2008". The non-profit organization DGNB has currently more than 1200 members throughout the entire world.

The "German Sustainable Building Certification" is based on the main pillars of sustainability: ecology, economy and social aspects. In addition to them, two more categories were added targeting technical and process quality of a development. The site location is assessed in an extra grade so that each building might be evaluated independent of its location. In conclusion there are now six topics;

- Ecological Quality
- Economical Quality
- Socio-cultural and Functional Quality
- Technical Quality
- Process Quality
- Site Quality

Briefly, these topics are subdivided in criteria groups and the criterion which are relevant for the certification. Each criterion has a value of ten points and speciality of the system is that to ensure flexibility of the assessment, each criterion can be weighted depending on the relevance for the building type from 0 to 3.

The German Sustainable Building Certificate covers all relevant topics of sustainable construction, and awards outstanding buildings in the categories bronze, silver, gold and recently added, platinum.

The system is present in all stages of the construction from construction through operation, renovation to removal. It leads to a well-defined planning and process.

The core topics which are determinative in the assessment process are; the people focus, circular economy, baukultur (architectural culture) and design quality, sustainable development goals, EU-conformity and innovation.¹⁵ Thus, DGNB aims to be an innovative, future-centric planning instrument.

15. Lemaître, Christine and Anna Braune. DGNB System – Foreword of Criteria Catalogue New Construction Buildings, Version 2017, 2017.



Each scheme put emphasis on different topics. The essential topics for a retail building such as the high demand for energy, aspect of family-friendliness, future building operation and management, and a flexibility and adaptability to changing requirements are concentrated more on the Retail Buildings scheme of DGNB system. This methodology of weighting relevant criteria distinctly is the advantage of DGNB system on evaluating different typologies in a more coherent way than other assessment methods.¹⁶

Environmental Quality (ENV)

A building has many impacts on environment during its life cycle. Since DGNB is a holistic system which is involved in every phase of a development, it has substantial effects on the environmental quality. The main intention of this section is to ensure the reduction of the negative impacts of the building on the environment. As a consequence, this topic is also related to the social and economic standards.

Ex: ENV 1.3 Responsible Procurement

Using materials with recognized social and environmental standards to protect forests, exclude child labor and maintain social and environmental standards in quarrying natural stone.

Figure 20. DGNB Sustainability Concept.
Source: <http://www.dgnb-system.de/en/system/dgnb-sustainability-concept/>

¹⁶ DGNB GmbH, *Excellence Defined. Sustainable building with a systems approach*. 2013.

Economic Quality (ECO)

Economic quality is dealing with the monetary aspect of the development. It assesses if a development has the potential to respond the user demand or if a building is flexible in terms of adaptation to changing requirements to raise user satisfaction which should be one of the most important feature of a retail structure. Without a proper economic sustainability guidance, the life span of a retail structure can be less than expected.

Ex: ECO 1.1 Life Cycle Cost

Paying attention to the follow-up costs during its use as much as the initial construction cost.

Sociocultural and Functional Quality (SOC)

This section is mainly concerned with the health and comfort of the occupants of the building. It also includes very important topics such as the functionality and the aesthetic quality of a building. A building typology such as shopping centers which are hosting a great number of guest everyday should attach importance to sociocultural and functional quality to be advantageous.

Ex: SOC 3.1 Design and Urban Quality

Finding the best solution for the architectural and structural challenges by using methods such as competitions.

Technical Quality (TEC)

Section about technical quality is assessing the technical implementation quality. Fire safety is the prerequisite in this section to be certified. All systems (Sewage, water, gas, ventilation, air-conditioning, power etc.) are assessed in this section.¹⁷ These systems are effecting the other qualities in a building and that is the reason why this section has significant importance.

Ex: TEC 1.3 Building Envelope Quality

Reducing space heating demand and achieve a high level of thermal comfort by showing attention towards performance parameters of the building envelope.

Process Quality (PRO)

Quality of planning and construction is at the forefront in this section. Since there is no standard solution for the planning and construction of sustainable buildings, each project requires utmost care on this topic.

Ex: PRO 1.2 Integrated Design

Coordinating all project participants closely from an early stage to achieve a significant improvement on the design process and the final outcome.

¹⁷ DGNB GmbH, *DGNB CORE14 Core and Scheme Sheet Offices Version*, 2014.

Site Quality (SITE)

Evaluating a site together with its environment and the amenities provided in the surrounding area is one of the most important part of an architectural design. Site quality is about this link in between the development and the surrounding areas. For the economic and social quality of a location which is critically important for a successful retail structure, it is crucial that it does not just satisfy functional requirements but also conveys a positive image. Usually, the building has a positive influence on the location itself and this positive outcome improves the evaluation of the building. Ex: SITE 1.3 Transport Access

Connecting the building geographically and efficiently to the individual forms of transport.

The 37 criteria covering six areas of action come to a conclusion with an evaluation method that takes all aspects of sustainable building into account which can be analyzed in the following figure. Each color shows a different quality and qualities are divided into a number of criteria.

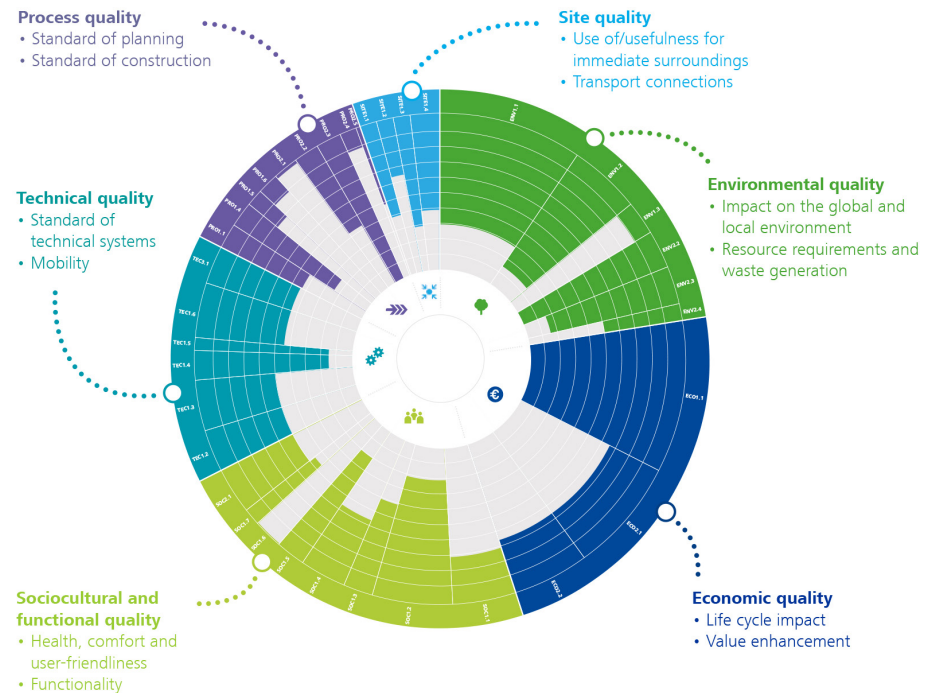


Figure 21. Evaluation Chart of the DGNB Certification System. Source: *Planning, Building and Operating Buildings Sustainably*.

System: DGNB
Scheme: Office
Quality Section: Technical Quality
Evaluation Topic: (TEC 10) Quality of Technical Implementation

(TEC 1.5) Cleaning and Maintenance

Share of Total Score (4.1%)
Relevance Factor 2

Objectives and Relevance

Cleaning and maintaining a building has a major effect on a building's cost and its environmental impact in use. Well-maintained building components last longer. Easy-to-clean surfaces require less cleaning materials and reduce cleaning costs. Hence, the aim is to keep costs for cleaning and maintenance as low as possible and prolong building components useful life.

The criterion exclusively evaluates the period during which the building is in use. Building components which are cleaned and maintained regularly, and which allow for easy cleaning and maintenance, are evaluated positively.

Method

The ease of cleaning and maintaining the building structure is evaluated on the basis of a checklist relating to the following three building component types:

1. Load-bearing structure
2. External non-load-bearing structures, including windows and external doors
3. Internal non-load-bearing structures

The design of each building component corresponding to these types is examined as to whether it facilitates efficient cleaning and maintenance. Each component type is assessed individually, both in terms of maintenance and cleaning. Where the design results in a significant variation of scores in different areas of the building, these should be scored individually and the subtotal point scores should be factored into the overall result on an area-based weighting in m².

System: DGNB
Scheme: Office
Quality Section: Sociocultural and Functional Quality
Evaluation Topic: (SOC 30)

(SOC 3.2) Integrated Public Art

Share of Total Score (0.9%)
Relevance Factor 1

Objectives and Relevance

Art in buildings creates a direct link between the public, the building, and the uses it accommodates. Art can capture the public's attention and help it identify with a building. Art can also strengthen local identity and foster public approval. Art in buildings may be integral to the fabric of the building or located elsewhere on the site and there is no restriction to specific types of art.

The criterion exclusively evaluates the period during which the building is in use. Building components which are cleaned and maintained regularly, and which allow for easy cleaning and maintenance, are evaluated positively.

Method

The evaluation considers whether an appropriate proportion of the budget has been allocated to art and whether the procurement process meets relevant guidelines.

1. Funding
2. Procurement
3. Awareness-raising
4. Alternative: Minimum public art requirement

Figure 23. SOC 3.2: Integrated Public Art. Source: DGNB GmbH, DGNB CORE14 Core and Scheme Sheet Offices Version, 2014.

Figure 22. TEC 1.5: Cleaning and Maintenance. Source: DGNB GmbH, DGNB CORE14 Core and Scheme Sheet Offices Version, 2014.



3.7.3. Leadership in Energy and Environmental Design

Rating System



Certified
40-49



Silver
50-59



Gold
60-79



Platinum
80-100

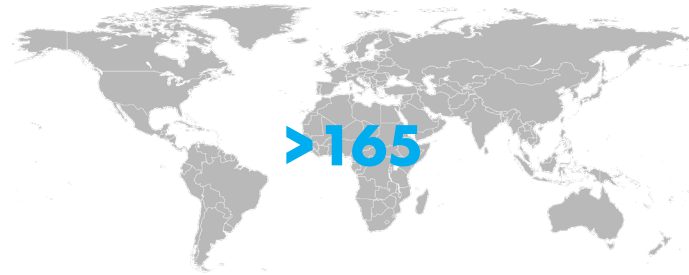
Total Buildings Certified
over **92000 projects**

Established in
1993

Typologies
BD+C (Building Design + Construction)
O+M (Building Operations + Maintenance)
ID+C (Interior Design + Construction)
HOMES
ND (Neighborhood Development)

Organization
USGBC (U.S. Green Building Council)

Number of Countries



LEED standards, in full Leadership in Energy and Environmental Design standards, is a certification program devised in 1994 by the U.S. Green Building Council (USGBC; founded 1993) to encourage sustainable practices design and development by means of tools and criteria for performance measurement. It is “a voluntary, consensus-based, market-driven building rating system based on existing proven technology.”¹⁸ Since its foundation, LEED has evolved to be more comprehensive and accurate. LEED New Construction v1 yield to LEED NC v2.0 in 2005. Afterwards, LEED 2009 (v3) was introduced. The most up to date version which is being used today is LEED v4 which was introduced in November 2013.

There are six critical areas of focus, as laid out by the USGBC which are; sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation in design and operations.¹⁹

- Sustainable site development involves the location and the building technique of the building. A sustainable project is more than just a building. It supports the community life, promote healthy living, and create a sense of place.
- The operation of buildings accounts for a substantial amount of water everyday. Since the potable water supply is limited, buildings should be more careful on water use.
- Buildings and their colossal mass is in need of energy immensely. Energy is both an environmental and an economic issue so it needs particular attention. A building can profit from green energy while protecting the environment. Use of free energy (natural ventilation, orientation of the building etc.), monitoring the consumption of the building and use of renewable energy has a positive effect on the environment.
- The foundation of buildings is materials and resources. Manufacturing, packaging, transportation and disposal of these materials and resources has significant environmental, social and economic consequences.
- Indoor environmental quality (IEQ) is to improve quality of life and protect health by paying attention to building-air quality, lighting, thermal conditions, ergonomics and their effects on the occupant or residents of the building. On long term, these strategies can have a large return in investment since the health of the occupants is influencing everything.
- Innovation category encourages the project team to create additional environmental benefits which are not guided by LEED standards. To achieve an innovative aspect, the building should use innovative strategies by using latest techniques, processes and products.

¹⁸. LEED Standards. Source: <https://www.britannica.com/technology/LEED-standards>

¹⁹. US Green Building Council. *Green Building and LEED Core Concepts Guide*. DC: USGBC, 2011.

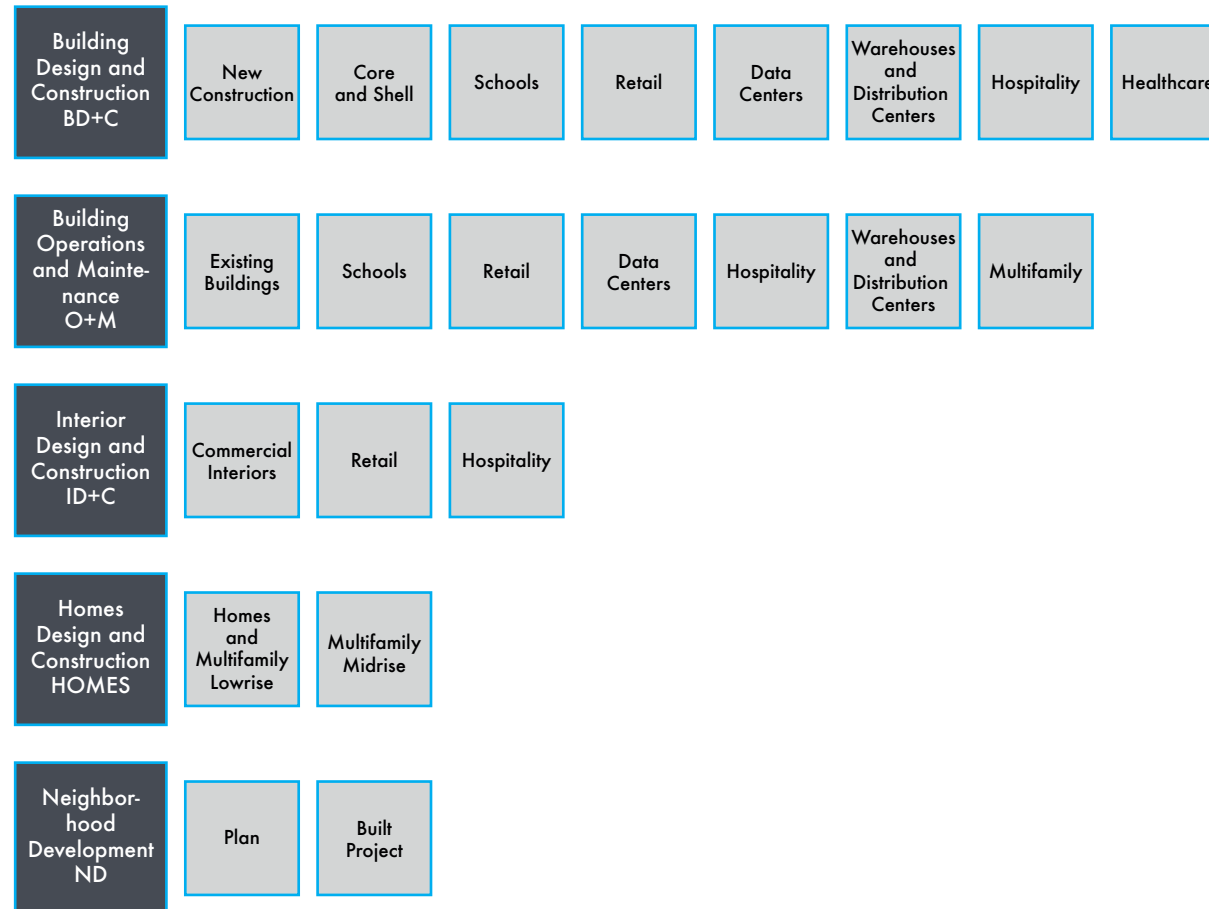
LEED system can be analyzed under 5 different categories which are sub-branched according to the use of the building. It has a holistic approach starting from a broad scale (Neighborhood Development) to a narrow scale (houses). It also covers the building operations and maintenance of existing buildings.

Retail buildings are mostly focused on the following categories;

BD+C: Retail, O+M: Existing Buildings, O+M: Retail and ID+C: Retail.

By concentrating on these categories, a framework for new and sustainable retail structures can be developed. These categories also include the intervention opportunities on the existing retail structures.

Figure 24. LEED Categories. Source: LEED v4. 2013.



There are two types of criteria called 'prerequisites' and 'credits' in LEED system. Prerequisite are mandatory criteria that the building should fulfill in order to be considered worthy to have a LEED certification. Credits are the criteria which a building can get points which determine the rank (certified, gold, silver, platinum) of the certification for that building. Each criteria has its own intents and requirements. The explanation of the main topics will be done considering a retail structure. The main topics which consist of these prerequisite and credits are as follows; (except Neighborhood Design);

Location and Transportation (LT)

The criteria about location and transportation are mostly the credits in which the intent is to enhance ways of access to the facility, to reduce the pollution from automobile use, to promote walkability etc. The main goal is to increase the transportation efficiency and to reduce the environmental impact of the development.

Ex: Access to Quality Transit (Credit)

Locating a functional entry of a shopping center within the walking distance of bus or rail station.

Indoor Environmental Quality (EQ)

Indoor environmental quality is an important criterion both for the quality of building and well-being of the building occupants. A building must establish minimum standards for indoor air quality. Materials for a building should also be chosen carefully so that they do not damage air quality, human health, productivity, and the environment. The building should meet the requirements for thermal comfort. The use of daylight is an important specialty of a building since it effects the use of electrical lighting as well as reinforcing circadian rhythms.

Ex: Environmental Tobacco Smoke Control (Prerequisite).

Prohibiting smoking outside the building except in designated smoking areas located at least 7.5 meters from all entries, outdoor air intakes, and operable windows.

Regional Priority (RP)

Each region has its own peculiarities and that is the reason why a project should be site specific. Regional priority is an incentive provided by LEED system for the projects that address geographically specific environmental, social equity, and public health priorities.

Sustainable Sites (SS)

These criteria have a wide scope. In the scale of houses, it includes credits and prerequisite such as nontoxic pest control (credit) and preventing the use of invasive plants through landscaping (prerequisite). These credits are easier to execute and have important impacts on the overall environmental quality. In larger scale such as the retail facilities, schools, hospitals etc., the main intent of the credits are reducing the consequences of development for life and people and to encourage interaction with the environment. Construction activity pollution prevention is a prerequisite for both of the scales.

Ex: Heat Island Reduction (Credit).
Installing a vegetated roof.

$$\frac{\text{Area of High-Reflectance Roof}}{0.75} + \frac{\text{Area of Vegetated Roof}}{0.5} \geq \text{Total Area Roof}$$

Figure 25. Vegetated Roof of Zorlu Center, Istanbul
Source: Emre Arolat Architects



Water Efficiency (WE)

The main intention of these criteria is to reduce the water consumption of a building and support water management by tracking water consumption (water metering), reducing the water requirement of the project's landscape and using high efficiency fixtures to reduce water consumption.

Ex: Outdoor Water Use Reduction (Credit).
Landscape design requiring no irrigation system.

Energy and Atmosphere (EA)

Energy and Atmosphere criteria is mainly concerned about the environmental and economic harms associated with energy use by increasing self-supply of renewable energy. A deep analysis must be made about the energy performance of a building and its systems. If the building is a new construction, renewable building production can be considered since it is a credit. If the building is an existing one, optimizing the energy performance is a way to earn points in this topic.

Ex: Enhanced Refrigerant Management (Credit).
Using only non-ozone-depleting refrigerants.

Materials and Resources (MR)

Waste management is an important issue since some of the new building typologies (such as the shopping centers) are generating excessive amount of waste. To reduce the generation of this waste by building occupants, there are requirements for buildings. Moreover, these buildings are keep changing because of their dynamic nature and more materials are bought for these changes. To reduce the environmental harm from these materials used in the operations and maintenance of buildings, bio-based materials and local sourcing should be considered.

Ex: Purchasing-Facility Maintenance and Renovation (Credit).
Purchasing recycled content at least 50% by cost of the total maintenance and renovation materials.

Innovation (IN)

Innovation is one of the most important concept in architecture. LEED system is also emphasizing it by IN credit. The intent of this criterion is to encourage projects to achieve exceptional or innovative performance. The building should achieve significant, measurable environmental performance using a strategy not addressed in the LEED green building rating system.

Ex: LEED Accredited Professional
Hiring a LEED Accredited Professional (AP) in the project team.

Indoor Environmental Quality (EQ)

Indoor environmental quality is an important criterion both for the quality of building and well-being of the building occupants. A building must establish minimum standards for indoor air quality. Materials for a building should also be chosen carefully so that they do not damage air quality, human health, productivity, and the environment. The building should meet the requirements for thermal comfort. The use of daylight is an important specialty of a building since it effects the use of electrical lighting as well as reinforcing circadian rhythms.

Ex: Environmental Tobacco Smoke Control (Prerequisite).

Prohibiting smoking outside the building except in designated smoking areas located at least 7.5 meters from all entries, outdoor air intakes, and operable windows.

Regional Priority (RP)

Each region has its own peculiarities and that is the reason why a project should be site specific. Regional priority is an incentive provided by LEED system for the projects that address geographically specific environmental, social equity, and public health priorities.

Figure 26. Zorlu Center Smoking Area from Above. Source: <https://www.archdaily.com/514825/zorlu-center-emre-arolat-architects-tabanlıoglu-architects>

Figure 27. Zorlu Center Smoking Area from Interior. Source: <https://www.archdaily.com/514825/zorlu-center-emre-arolat-architects-tabanlıoglu-architects>



System: LEED v4
Category: ID+C
Topic: EQ
Criterion: Credit

Construction Indoor Air Quality Management Plan

This credit applies to

Commercial Interiors (1 point)
Retail (1 point)
Hospitality (1 point)

Intent

To promote the well-being of construction workers and building occupants by minimizing indoor air quality problems associated with construction and renovation.

Requirements

CL, RETAIL, HOSPITALITY

Develop and implement an indoor air quality (IAQ) management plan for the construction and preoccupancy phases of the building. The plan must address all of the following.

During construction, meet or exceed all applicable recommended control measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2nd edition, 2007, ANSI/SMACNA 008–2008, Chapter 3.

Protect absorptive materials stored on-site and installed from moisture damage.

Do not operate permanently installed air-handling equipment during construction unless filtration media with a minimum efficiency reporting value (MERV) of 8, as determined by ASHRAE 52.2–2007, with errata (or equivalent filtration media class of F5 or higher, as defined by CEN Standard EN 779–2002, Particulate Air Filters for General Ventilation, Determination of the Filtration Performance), are installed at each return air grille and return or transfer duct inlet opening such that there is no bypass around the filtration media. Immediately before occupancy, replace all filtration media with the final design filtration media, installed in accordance with the manufacturer's recommendations.

Prohibit the use of tobacco products inside the building and within 25 feet (7.5 meters) of the building entrance during construction.

System: LEED v4
Category: BD+C
Topic: EA
Criterion: Prerequisite

Fundamental Refrigerant Management

This prerequisite applies to

New Construction
Core & Shell
Schools
Retail
Data Centers
Warehouses & Distribution Centers
Hospitality
Healthcare

Intent

To reduce stratospheric ozone depletion.

Requirements

NC, CS, SCHOOLS, RETAIL, DATA CENTERS, WAREHOUSES & DISTRIBUTION CENTERS, HOSPITALITY, HEALTHCARE

Do not use chlorofluorocarbon (CFC)-based refrigerants in new heating, ventilating, air-conditioning, and refrigeration (HVAC&R) systems. When reusing existing HVAC&R equipment, complete a comprehensive CFC phase-out conversion before project completion. Phase-out plans extending beyond the project completion date will be considered on their merits.

Existing small HVAC&R units (defined as containing less than 0.5 pound [225 grams] of refrigerant) and other equipment, such as standard refrigerators, small water coolers, and any other equipment that contains less than 0.5 pound (225 grams) of refrigerant, are exempt.

Figure 28. EQ Credit: Construction Indoor Air Quality Management Plan. Source: LEED v4 for Interior Design and Construction. Updated in July, 2017.

Figure 29. EA Prerequisite: Fundamental Refrigerant Management. Source: LEED v4 for Building Design and Construction. Updated in July, 2017.

3.7.4. Comparison of the Certificate Systems

Most of the assessment schemes are to a certain extent similar to each other. They take into account criteria with relevance for the environment and the resources such as the sustainability of sites, indoor environmental quality, outdoor environment, energy, materials, transport, water, land use, emissions/pollution, and health & well-being. Each of these criteria consists of numerous sub-criteria and indicators which are assessed during the assessment process and depending on the fulfillment of the requirements the building receives a score for the individual criterion. The scores for the criteria are summed up and depending on the total score the building is certified or not.²⁰

Some assessment tools are superior than the others in terms of their evaluation systems. As can be seen from the following table, DGNB system appear to be the most holistic sustainability assessment method since it covers more criteria than the other SAMs.

The German DGNB system can be regarded as the system with the most comprehensive holistic approach. Not only ecological aspects are taken into account but also economic, socio-cultural, functional, technical and procedural qualities of the building. This refers to the fact that sustainability as well is not only a question of ecological sound behavior, but acknowledges the importance of economics as well as of social aspects. All criteria of the ecological category are touched through the DGNB system with the exception of innovation, but, nevertheless, not considering this criterion does not decrease the appropriateness of the assessment scheme. DGNB system is designed to increase the standards required for a successful certification. Another advantage of the German system—its flexibility—makes it easy to adopt it to different building types as well as export it to other countries.

Despite this, the established reputation of BREEAM and LEED tools are making them the most popular SAMs in the world and new versions are still being produced to update these two tools.

Sustainability assessment methods for buildings provide relatively transparent and objective evaluations of the sustainable building quality. However, different setting of priorities and varying sets of criteria and indicators potentially result in differing assessments of the same building when the analyzed schemes are applied. Therefore, a standardized scheme would be desirable to produce comparable results.

²⁰ Dirlich, Stefan. "A Comparison of Assessment and Certification Schemes for Sustainable Building and Suggestions for an International Standard System" *The IMRE Journal* 5 no. 1 (2011)

Figure 30. Comparison of General Assessment Categories. Source: Poston, A, Emmanuel, R and Thomson, C. "Developing holistic frameworks for the next generation of sustainability assessment methods for the built environment." *Proceedings 26th Annual ARCOM Conference*, (2010): 1487-1496.

Tool	BREEAM®	DGNB	USGBC
Sustainable Sites	✗	✓	✓
Land-use & Ecology	✓	✓	✗
Energy Efficiency	✓	✓	✓
Water Efficiency	✓	✓	✓
Materials & Resources	✓	✓	✓
Environmental Loadings	✓	✓	✓
Indoor Environment	✓	✓	✓
Service Quality	✗	✓	✗
Transport	✓	✓	✓
Social Aspects	✓	✓	✗
Economic Aspects	✗	✓	✗
Cultural Aspects	✗	✓	✗
Regional Priority	✗	✓	✓
Management	✓	✓	✗
Innovation & Design	✗	✓	✓
Awareness & Education	✗	✗	✓
Life Cycle Assessment	✗	✓	✗

Motives on the Choice of Case Studies

Significance of the Urban Region (İstanbul)

Kanyon Shopping Mall, İstanbul, Turkey
Sustainability Aspects

Mall of İstanbul, İstanbul, Turkey
Sustainability Aspects

Quasar İstanbul, İstanbul, Turkey
Sustainability Aspects

Learning from the Case Studies

4.1. Motives on the Choice of Case Studies

Empirical research is conducted on 3 carefully selected case studies to analyze what modern-day shopping center consist of. The selection criteria for the case studies are chosen to involve all the aspects of a contemporary retail development in the aforementioned parts of this thesis. To be able to attain comparable outcome, the typologies of the retail structures are the same with minor differences such as the sustainability assessment methods and centrality in the urban context.

The first case study, Kanyon Shopping Mall designed by the Jerde Partnership and Tabanlıoğlu Architects, is a world renowned mixed-use development consists of residences, retail structures, commercial areas and offices located in the heart of the financial district of Istanbul. It has a BREEAM certificate for in-use buildings.

Second case study is Mall of Istanbul, designed by DDG and Omerler Architecture. This mixed-use project accommodates a shopping mall, residences and offices. Also, a hotel is within the scope of the project although it has not been built yet. Location of the project can be considered as the outskirts of Istanbul. Development achieved a LEED certificate under the category of Building Design and Construction: Core & Shell.

Third—and the last—case study is Quasar Istanbul, designed by EAA (Emre Arolat Architects). This project is also a mixed-use project consist of residences, hotel, offices and retail structures. It is a gentrification project to create a “breathing zone” between dense urban blocks in the congested center of Istanbul. Quasar Istanbul is the first—and only until now—project precertified with DGNB system.

The role of the empirical cases is thus to form basis for a discussion of new ways of looking at in retail structure transformation and for the development of analytical tools that can enable investigations and new perspectives on the role of built form in public space transformation considering the shopping structures as new public spaces. Moreover, the choice of buildings certified by different sustainability assessment systems gives chance to compare the evaluation methods. Furthermore, the location of the developments are selected carefully to be able to comprehend two prominent venues of a shopping structure—city center and out-of-town—. These three case studies are also providing great opportunities to understand what a successful shopping center means today since they are preferred by tens of thousands of people everyday.

4.2. Significance of the Urban Region (Istanbul)

After 1980s, technology and urbanization in Istanbul metropolitan area advanced very rapidly. In 2000s, Istanbul received even more foreign capital and this new resource let the city expand and develop in an incredible pace. In 21st century, the daily tempo of a citizen living in Istanbul is keep getting higher and the life keeps getting complicated due to many reasons such as the raise in the number of cars in the traffic and proportionally the traffic jam.

Number of Vehicles in Traffic
by July 2017

3.772.046¹

¹ Türkiye İstatistik Kurumu
(Turkish Statistical Institute)

This expansion and the complex nature of city causes dwellers to spend more and more time on traffic and this results in a reduction in the allocated time for the family and friends. The remaining time after the educational or professional purposes is so valuable to spend on traffic so people are in a pursuit of places where they can socialize, shop, spend their leisure time, playing with their kids, etc. under one roof. This is the main reason why there is a boom in the number of shopping malls in Istanbul in the past 10 years. (Currently there are around 120 shopping malls in Istanbul metropolitan area)

In 21st century, shopping has been a common activity which people prefer to do with their families, rather than an individual activity as it were in the history. Today, shopping malls are the places where people go both for shopping, eating, enjoying the atmosphere and many other activities, especially in Istanbul. The fact that shopping is more than buying the necessities nowadays, the shopping malls became a tool for pleasure and amusement.

Another reason why Istanbul is one of the most shopping mall hosting city in Europe is that the city does not have enough public spaces where people can interact. Citizens are trying to compensate this lack of public spaces by shopping malls.

The climate of Istanbul is another factor for people to prefer shopping malls because Istanbul can be disturbingly hot in the summer and cold in the winter. The air conditioning of the malls is a great advantage in the extreme weather conditions.

These are the significant aspects of the context and the main criteria of the selection of this urban region.



4.3. Kanyon Shopping Mall

Cost
≈ 200 million \$

Opening
May 30th, 2006

Site Area
28322 m²

Total Building Area
255.000 m² (Retail: 37.500 m²)

Number of Stores
160

Typology
Mixed-Use

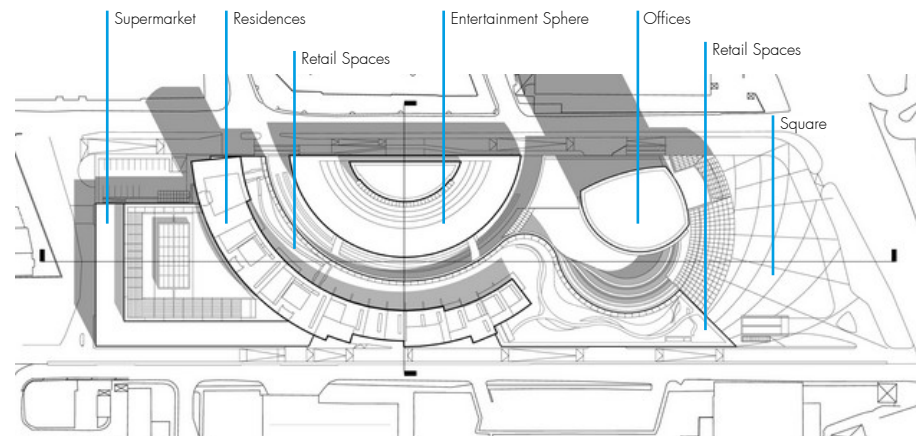
Architect
The Jerde Partnership

Executive Architect
Tabanlıoğlu Architects

Sustainability Certification
BREEAM In-Use (Part:1 Excellent, Part 2: Outstanding)

Kanyon, the awarded shopping center of Istanbul (Cityscape Awards 2006: Commercial Built, ULI Award for Excellence: Europe), which is one of Europe's largest mixed-use districts, introduces a new concept for urban living in Levent, Istanbul's central business district. The Jerde Partnership which the founder and former chairman Jon Jerde is known as "the Walt Disney of American shopping malls"², designed the state-of-the-art project to combine modern offices, luxury residences with local and upscale retailers in an organic, open-air design that includes an amphitheater, plazas and rooftop park spaces where workers, residents and visitors can gather. The unique design, which is distinct from Istanbul's many mixed-use projects and enclosed shopping malls, has helped attract stylish residents and many well-known retail brands that were new to Turkey back in the day it opened.

In the growing and highly competitive retail market, Kanyon was conceived as a modern mixed-use destination with a retail component that would stand apart from Istanbul's vast retail offering by its unique design. Jerde designed Kanyon to be an open, vibrant and green project. The design is envisioned as a family of bold architectural shapes, each housing a different use, that come together to form a dynamic and iconic composition.³ Between the architectural shapes, the perspectives and views through the project constantly change, resulting in a vibrant and energetic space that engages users. Kanyon's uses are connected by a central, open-air walkway that carves soft curves in the buildings' forms, creating a dramatic "canyon" effect. The 180 meter long canyon connects the office, residential, retail and entertainment uses with an exploratory path that features a variety of courtyards, terraces and other spaces where workers, residents and visitors to the project can interact.



2. Wainwright, Oliver. All hail Jon Jerde, the Walt Disney of American shopping malls. The Guardian, February 2013.

3. The Jerde Partnership | Kanyon. Source: <https://www.architectural.com/the-jerde-partnership-kanyon/>

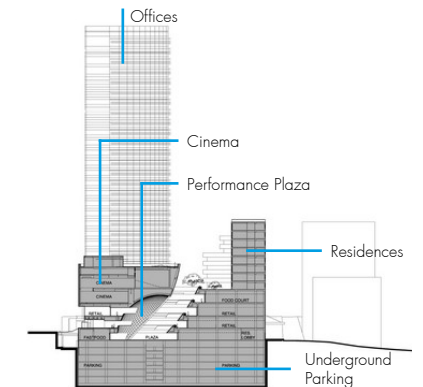
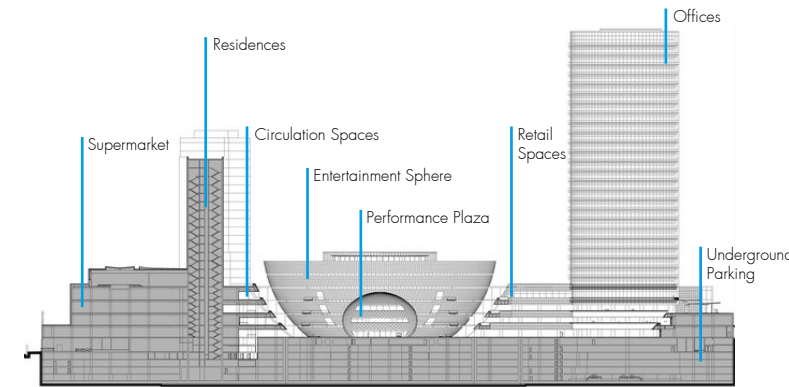
Figure 31. Kanyon Shopping Mall Site Plan. Scale: 1:2500

At the heart of the project, the canyon opens to a performance plaza, an amphitheater carved into the base of the project's entertainment sphere that will be the stage for activities of all sizes, from strolling entertainers to symphonies. The canyon is lined on both sides by the project's four level retail and entertainment complex. One side features three levels of retail and one level of restaurants, nightclubs and other entertainment venues. The four levels are terraced, allowing visitors on each level to overlook the activity occurring in the canyon below. The other side features the four-level entertainment sphere that contains a nine screen cinema. The roof of the entertainment sphere features a restaurant with outdoor seating that enables diners to view the activity occurring within the project below. These features can clearly be seen in the longitudinal and cross sections below.

In addition to connecting and activating the canyon, the retail base contains multiple entrances at different levels that knit the project into the city fabric and provide access from the metro, street and parking structure.

Tabanlıoğlu Architects describe the project as follows;

*"In our opinion, the most powerful and striking aspect of Kanyon is carrying the joy of street shopping concept to the comfortable, modern and exclusive environment. The distinguishing feature of the design is to move the living, jobs, shopping and entertainment from closed boxes to open air freshness."*⁴



4. Kanyon Sinema. Source: <http://yoyo.gen.tr/kanyon-sinema.html>

Figure 32. Kanyon Shopping Mall Sections. Scale: 1:2500

Unlike Istanbul's modern enclosed shopping centers, Kanyon has an open-air retail center with heaters and windbreakers that allow shoppers and visitors to enjoy the fresh air in a climate controlled setting that is protected from wind, rain and snow.

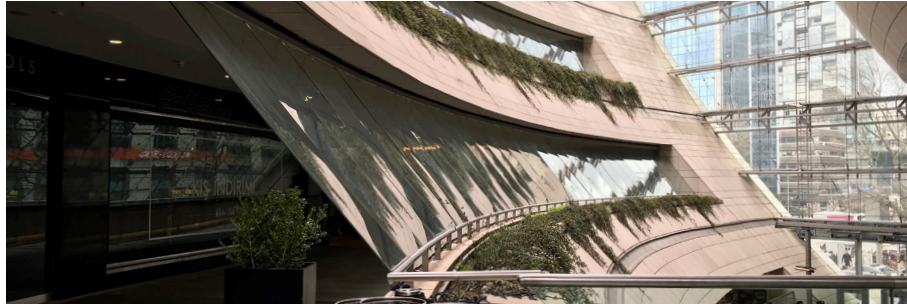


Figure 33. Kanyon Shopping Mall Windbreakers.
Source: Author

Building materials complement and reinforce the project's strong architectural forms. Common areas, designed to evoke a canyon, are made from a combination of stone, tile and concrete. Kanyon has been built to withstand earthquakes exceeding the worstcase scenario for the district.



Figure 34. Kanyon Shopping Mall Site Plan.
Source: <https://www.architectural.com/the-jerde-partnership-kanyon/>

According to the taxonomy of elements in the Chapter 2 (Research), Kanyon hosts all of the elements of a contemporary shopping center except reserve areas for further development since it is in the center of the condensed business district of Istanbul.

Retail structures for food and merchandise retail, service structures for HVAC, security etc., commercial structures including a private gym facility, and public structures for special events and temporary exhibitions and is located in the "mall" part of the development.

Underground parking which can accommodate 2300 cars is provided both for residences, offices and the shopping center. There is also a small parking area that is allocated for the use of valet service in front of the entrance. Automobile movement areas are designed carefully in the side of the building to prevent the encounter of personal vehicles and service vehicles.

Pedestrian areas are designed in a different manner than the usual shopping centers. The circulation space between the shops are open-air and different storeys are connected with escalators and elevators.

Public transportation areas, metro station, bus and taxi stops in this case, are designed especially for the building itself. To access the metro, customers do not have to get out of the shopping center and walk to the station. The station is connected inside of the shopping center. This fact is valid also for bus and taxi stops as well.



Figure 35. Kanyon Shopping Mall Metro Station Connection
Source: Author

Buffer areas are designed to separate the heavy traffic and the structure itself. The relatively big square in front of the buildings is detaching the boulevard and the building.



Figure 36. Kanyon Shopping Mall Buffer Area New Year Decoration.
Source: Google Images

4.3.1. Sustainability Aspects

In 2012, Kanyon achieved an Excellent rating under BREEAM In-Use and in 2015, it became the first building to achieve BREEAM Outstanding for building management in Turkey. Kanyon also has two awards (BREEAM In-Use Award, 2013 and BREEAM In-Use Award, 2016) from BREEAM which is proving that the building is an exemplary case about the sustainable retail facilities and building management.

“Kanyon aims to be a pioneer in reducing energy use, water consumption and waste, via an innovative and comprehensive management strategy. Investing in sustainability has resulted in 11% annual savings in energy costs. BREEAM was the most suitable tool for assessing the environmental aspects of our design and building management performance, and will guide us in improving our sustainable projects. Achieving high BREEAM scores helps and encourages our tenants and staff to participate in sustainability activities.”⁵

⁵ Tuncay Kinikli, Operations Director of Kanyon Facilities Management and Marketing. Source: <https://www.breeam.com/retail/kanyon-istanbul/>.

Kanyon has an advanced Building Management System (BMS). This system collects data to monitor, control and optimize the consumption throughout the facility and it substantially reduce the amount of energy consumed by space heating, cooling, fans, humidification, lighting, and small power systems. (ENE 62 - Energy consumption monitoring)

35% of the facility's hot water demand in the facility is met from solar panels (ENE 24 - Water heating energy sources). Most of the lighting fixtures are replaced by LEDs (ENE 26 - Internal lighting types). A co-generation system meets 10% of the space heating demand. Thanks to the energy consumption measures such as the heat recovery system in fresh air units, efficient cooling systems and the widespread provision of daylighting, facility consumes 45% less energy.

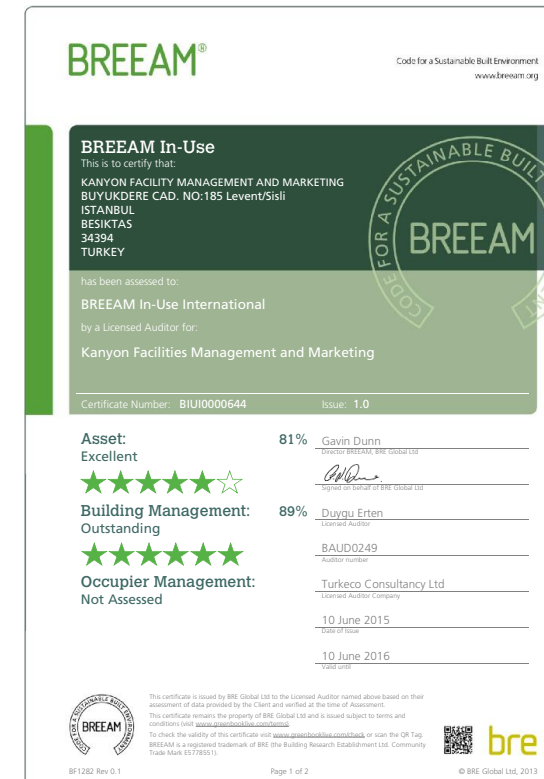
Isolation valves and consumption monitoring has a significant effect on reducing potable water use. Rainwater and greywater collection systems collect water to use in public toilets and irrigation system. These systems are evaluated in both parts (asset performance and building management) of BREEAM In-Use and Kanyon got 77 and 73 points respectively in water (WAT) category.

High levels of fresh air and natural light thanks to the design of the building has a

positive effect on 'indoor' environment (indoor may not be the correct word since the space in between the individual shops are semi-open). Acoustic (HEA 20 - Acoustic conditions) and illuminance performance meet the best national standards. Kanyon has many waste collection points for glass, paper and other recyclable materials, waste food from restaurant and cafés, and electronic waste. The waste separation and collection system in the facility is scored 100 out of 100 in waste (WST) category under asset performance.

Kanyon is located in 'Levent' district which is famous with its high-rise plazas and shopping centers, and the facility turning this central location into an advantage by making use of the public transport (bus and metro lines) provided mainly for the white-collar workers in those plazas. Due to these features, Kanyon has 100 out of 100 in transport (TRA) category under asset performance.

Figure 37. BREEAM In-Use certification for Kanyon Shopping Mall, Certificate Number: BIUI0000644, 2015.





MOI
MALL OF
ISTANBUL

4.4. Mall of Istanbul

Cost
≈ 350 million \$ (Mall: 194 million \$)

Opening
May 23rd, 2014

Site Area
139.000 m²

Total Building Area
673.630 m² (Retail: 513.721 m²)

Number of Stores
350

Typology
Mixed-Use

Architect
DDG

Executive Architect
Omerler Architecture

Sustainability Certification
LEED BD+C: Core and Shell (Gold)

The Mall of Istanbul, is one of the biggest malls in Turkey with its 154.902 m² of leasable retail area and hosts the leading brands in the world and Turkey. It opened to visitors in 2014 and is developed by Torunlar REIT, the biggest domestic Shopping Center investor of Turkey and hosts 350 stores, gourmet center, MOIPark, the first specially designed theme park, traditional arts street and performance arts center. With these features, Mall of Istanbul claims to be “Turkey’s most functional shopping center” with this concept.⁶

The development is in Ikitelli district, which hosts the biggest organized industrial site of Europe. The location can be considered as the outskirts of Istanbul but it is located on the main transportation network named E80 (also known as TEM in Turkey which is the abbreviation for Trans-European North-South Motorway).

Mall of Istanbul has five atria, three large and two small, each with different concepts. With 83 escalators and 42 lifts, the mall provides its visitors with easy vertical navigation and shopping opportunity with its vast aisles. Standing out for its entertainment concept, Mall of Istanbul hosts Turkey’s first themed indoors amusement park, MOIPark, with its giant rides and Horror Hotel on a land of 12.000 m².

6. Mall of Istanbul Shopping Mall. Source: <https://www.omerlermarlik.com/mall-of-istanbul-shopping-mall>.

Figure 38. MOIPark. Source: www.mallofistanbul.com.tr



Turkey’s biggest cinema complex with 16 theaters and 3050 seating capacity is another special feature of Mall of Istanbul which can be seen in the section below. A snow-park has also been designed but it has not been realized.

Alongside the mall, four adjacent residential towers and a hotel tower (which has not been built yet) stand atop landscaped podiums, which connect to the green roof of the mall proper via a series of pedestrian sky bridges.

It has been designed by the internationally renowned planning, architecture, graphics and design firm DDG in collaboration with the local architectural office named Omerler Architecture. A holistic design approach is conducted by DDG and the graphics and logo have also been designed by the same office. This dynamic multi-use development combines vibrant, contemporary energy with an extraordinary range of live, work, and play experiences. With retail, residential, office, hotel space, and a large entertainment area, the Mall of Istanbul appeals to high income and upper middle class clientele with an abundance of recreational, shopping and dining options in Ikitelli district.⁷

7. DDG USA Mall of Istanbul Project Description. Source: <http://www.ddg-usa.com/wp-content/uploads/2015/01/Mall-of-Istanbul.pdf>

Aesthetically and architecturally, the Mall of Istanbul is inspired by the culture of this unique Eurasian metropolis, Istanbul. This strong historical culture and the modern interpretation of it proved the development to be successful in terms of vision, innovation, value and achievement by being awarded “ICSC Viva Best of the Best” in 2017.

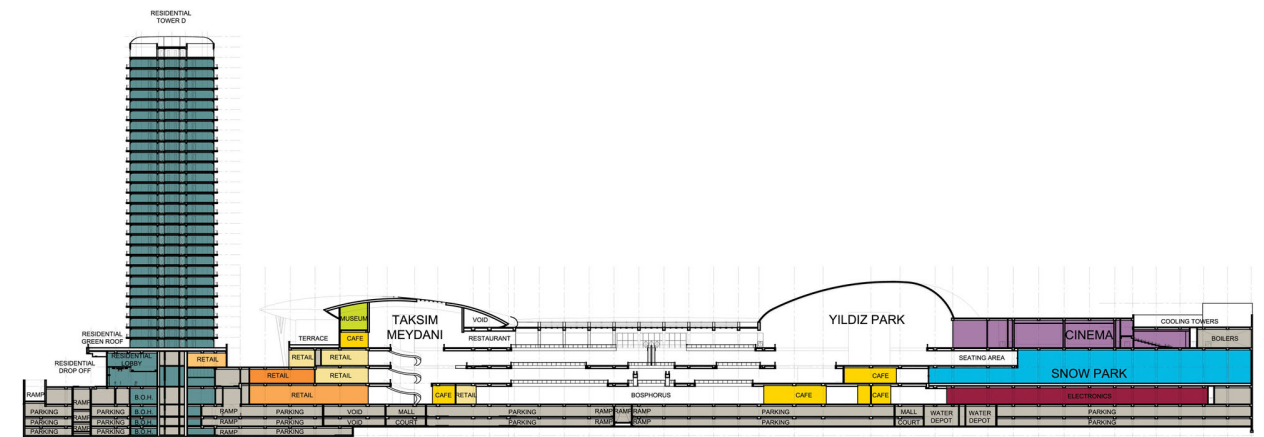


Figure 39. Mall of Istanbul Section. Scale: 1:2500

The taxonomy on Chapter 2 fits perfect on Mall of Istanbul since it covers all the elements of a contemporary shopping center.

The retail structures are located mainly on the ground, first and second floors. The food court is on the third floor with the cinema and a theater named MOISahne for special events such as concerts and shows. It also includes a 2.000 m² gym and a exhibition hall for temporary exhibitions named MOISergi. The service structures for HVAC systems are located in the west side of the mall marked in grey in the plan below.

The car storage problem is solved by a 228.000 m² underground parking which serves the residences, offices and the mall. Truck service drive and loading docks are separated from the user roads to prevent the congestion and unwanted encounters which can be seen in the ground floor plan below.

Pedestrian areas are connecting the shops and the five atria where the main vertical circulation take place. The corridors are spacious when compared to many shopping malls in Istanbul.

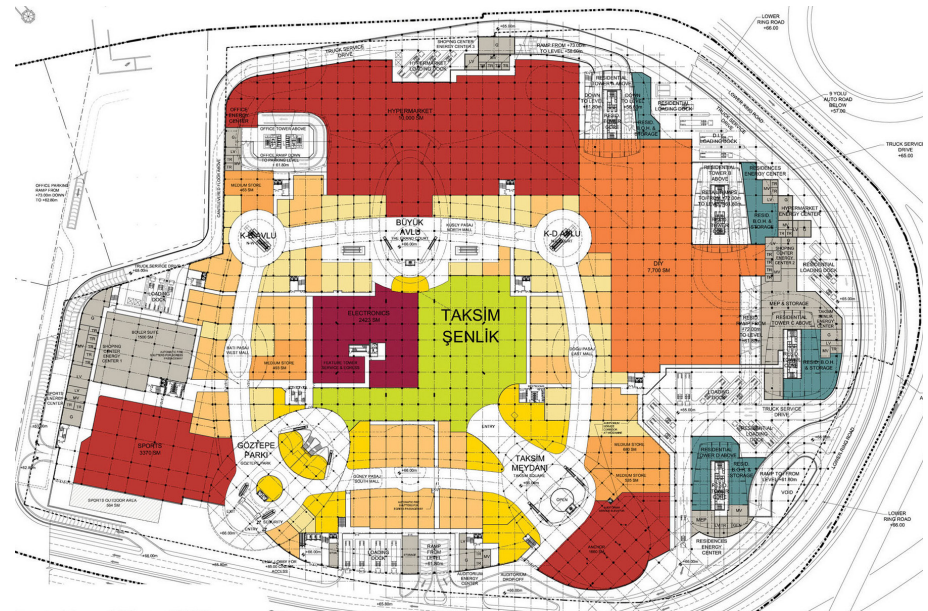


Figure 40. Mall of Istanbul Floor Plan. Scale: 1:4000

Mall of Istanbul can also be reached by public transportation. Even though it is 10-15 minutes from the nearest metro stop, the mall management provided a free shuttle service for the users from the metro station to mall. Moreover, 5 bus lines are serving Mall of Istanbul although it is located far from the city center.

Since the development is located next to an important highway in a dense traffic zone, landscape has been designed carefully to create a buffer zone between the heavy traffic and the users of the mall by the use of recreational areas and unique palette of plants.

In the aerial photo of the construction below dated June 2012, it can be seen that Mall of Istanbul is surrounded by the highway and lateral roads which means a horizontal expansion for further development is not possible. However, there is an area allocated for a future hotel development reserved in the site.

This photo also reveals the size of the development and the importance of a sustainable approach both for the construction and management of such a facility. Without a proper guidance, the consequences could be catastrophic.



Figure 41. Mall of Istanbul Construction Aerial View. June 2012.

4.4.1. Sustainability Aspects

The thermal gradient differences between developed and underdeveloped areas of the projects such as Mall of Istanbul should not be underestimated. By providing an underground parking and selecting the hardscape materials carefully, MOI is reducing the heat island effect. Further, location of the project is within walking distance to the various ways of public transportation. This way, MOI is reducing pollution from automobile use.

The building is reducing the burden on municipal water supply and wastewater systems water use reduction measures. Besides, the landscape is designed carefully to limit the use of potable water for irrigation.

The excessive need for energy as in all shopping malls is overcome by optimizing the energy performance of the building to reduce the environmental and economic impacts.

Use of materials extracted and manufactured within the region has a significant effect on reducing the environmental impact in such a huge complex. Using indigenous resources has an advantage in terms of transportation both economically and environmentally. Also, managing the construction waste by recycling nonhazardous construction and demolition debris and redirecting the recovered resources back to the manufacturing process and reusable materials to appropriate sites has an important effect on environment. Moreover, since retail structures have a bad reputation on generating tremendous amount of waste, recycling should be handled professionally and MOI is paying attention to this topic.

Providing a comfortable thermal environment that promotes occupant productivity and well-being is an important criteria and HVAC systems in MOI are designed accordingly. Low-emitting materials are used in the interior surfaces.

By having LEED AP (Accredited Professional) in the project team, MOI truly integrated the design with the certification process.

MOI is an exemplary case on showing how the impact on the region can be minimum. As a proof, the building got 4 out of 4 regional priority points by water efficient landscaping, innovative wastewater technologies, water use reduction and tenant sub-metering.

1000021806, Istanbul, Istanbul

MALL OF ISTANBUL - AVM VE OFIS

LEED BD+C: Core and Shell (v2009)

GOLD, AWARDED MAY 2015

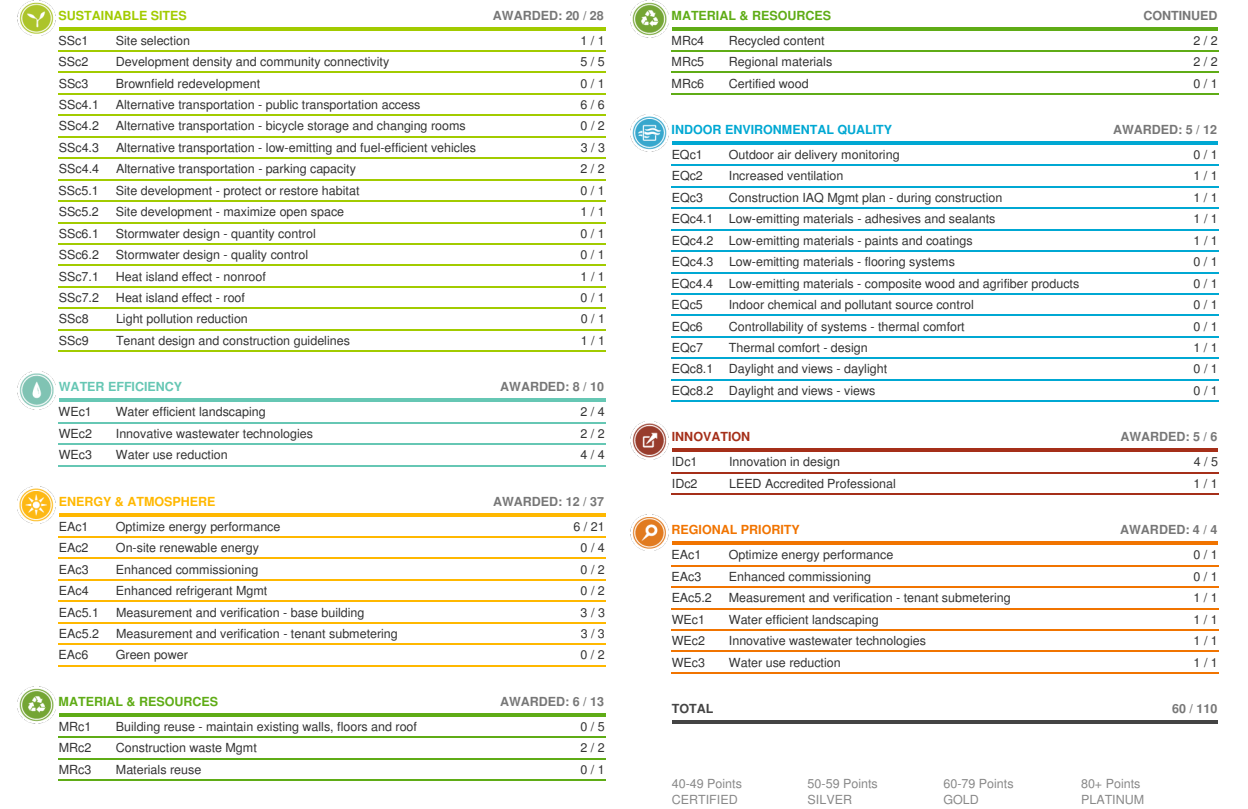


Figure 42. LEED Scorecard of Mall of Istanbul. Source: <https://www.usgbc.org/projects/mall-istanbul-avm-ve-ofis?view=overview>



4.5. Quasar İstanbul

Cost
≈ 510 million \$

Opening
?

Site Area
23.700 m²

Total Building Area
190.000 m² (Retail: 9000 m²)

Number of Stores
17

Typology
Mixed-Use

Architect
Emre Arolat Architects

Interior Architect
Marcel Wanders

Sustainability Certification
DGNB Pre-certification (Gold)

The Quasar Istanbul project takes its name from the brightest star in the galaxy. It is comprised of an old liquor factory which is developed into a mixed use project of residence, hotel, offices, shops and a culture, arts and fashion center. The project also comprises the restoration and refurbishment of the existing historic liquor factory. It is turned into a new international cultural, art and fashion centre, complete with statues and historical sycamores.

Quasar Istanbul is located in the middle of a quite central, condensed and crowded area in Istanbul called Mecidiyekoy on a land formerly used by a Liqueur and Cognac Factory designed by Robert Mallet-Stevens at 1930s. However, the factory had been surrounded by “highly dense and bulky buildings, lost its aura, weakened structurally and turned out to be an average and unqualified building as a result of interferences that lack any elegance and knowhow.”⁸ according to the architectural office that designed the new development, Emre Arolat Architecture.

The actual reason why the historic liqueur factory has undergone a transformation is this particular land in the center of the city has lost its function and it is bidden to private investors in order to develop a profitable real estate project. On the other side of the land, the former Galatasaray stadium stood as a giant structure inaccessible for the daily use in the heart of the city. It had also been demolished and a similar mixed use development named Toruncenter has been built by another investor. Both developments are designed by the same architectural office.

The aim of the design is to create a public space with a holistic approach on both of the sites, and to propose a continuous, green, open public space with commercial activities. This green buffer zone is to create a breathing zone between the dense urban block in Mecidiyekoy district. The two landmarks covering around 24.000 m²—the former Galatasaray stadium named Ali Sami Yen and the Liqueur factory—gave the opportunity to reconsider these spaces in the congested neighborhood.

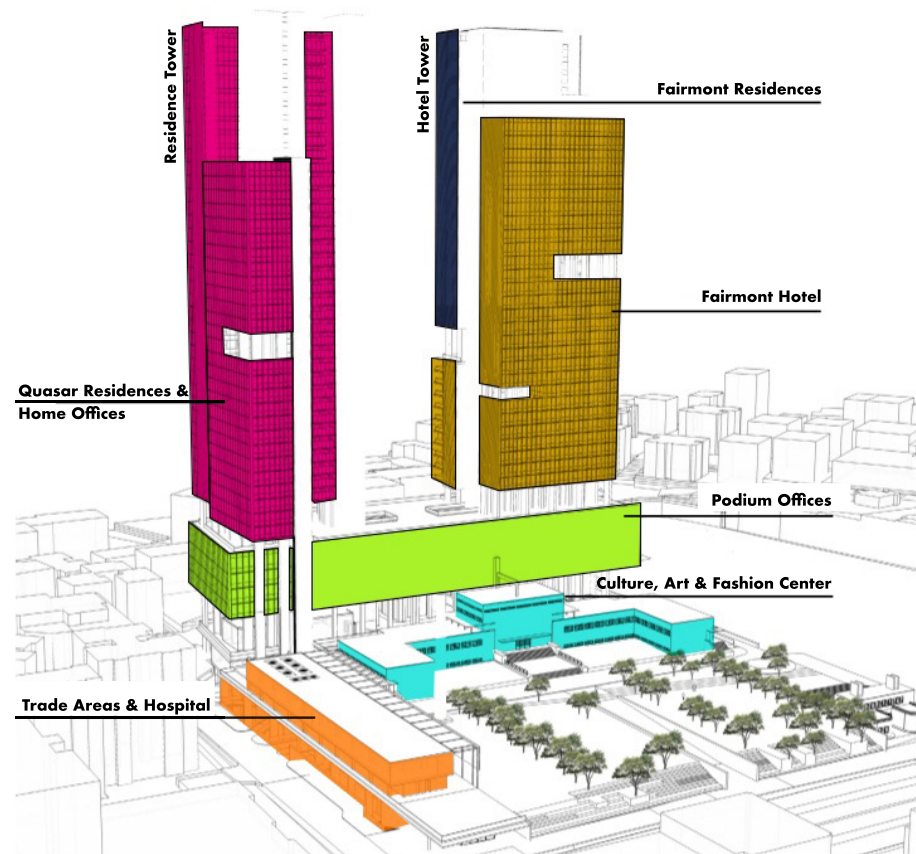
The vertical towers for residences give the chance to leave the northern part of the land for commercial and public green areas even though the density is high. By amassing the residences on the southern side, the green space is maximized.

The project is the winner of the grand prize in the field of “Best Commercial Multi-Use Project” at the Cityscape Exhibition in Dubai, one of the world’s largest real estate exhibitions as well as other important awards such as the “Best International Apartment” in the International Property Awards in London.

8. Mixed Use in Mecidiyekoy Quasar & Toruncenter
Source: http://emrearolat.com/eaaprojects_pdf/Mecidiyekoy%20Towers.pdf

Figure 43. Ali Sami Yen Stadium and Liqueur Factory before demolition.
Source: <http://civelekoglu.blogspot.com.tr/2013/11/likor-ugruna-istanbula-kadar-gelen-bir.html>





The retail structure of the building can not be considered as a “shopping mall” as it is in the first two case studies. It mainly serves the residences and the hotel although being open for the visitors from outside.

The trade areas are located on the east side of the site in a horizontal building. The taxonomy of a shopping center can also be applied to this building. The retail structures are located in the ground and first floor. These structures include small boutiques and cafés. Top floor is allocated for the use of a hospital. The ground floor and basement floor is being used by small boutiques and cafés. There is a supermarket on the northern facade of the building. A fine dining restaurant is located in between the podium offices and the culture, art and fashion center.

Figure 44. Functional 3D Drawing of Quasar Istanbul.

The parking facility has been built under the liqueur factory by demolishing and rebuilding the historical factory by adapting the original plans even though it is a controversial decision.

The entrance for the service trucks and resident parking is located in different parts of the site. The residents are using the entrance on the east side (under the trade areas). The entrance allocated for the service trucks is in the south of the land. This way, the detachment of the different types of traffic is achieved.

The circulation spaces are mostly open-air which is accompanied by a landscape design since different functions such as the shops, restaurant and market are dispersed throughout the site. However, most of these function can also be accessed by elevators and escalators from the main towers.

Provision of public transportation for the buildings is gratifying for the users because it can be reached by a lot of bus lines and it is 1 km away from the nearest metro stop Gayrettepe. The provision of the public transportation is quite important for this particular area because it is located in one of the most congested zones of Istanbul in terms of traffic. This is a significant point affecting the masterplan as well by creating a buffer zone in between the road and the buildings.



Figure 45. Supermarket in Quasar Istanbul.
Source: Author

4.5.1. Sustainability Aspects

Quasar Istanbul is the first—and only one as of yet—DGNB precertified development in Turkey. Pre-certification allows a development to be optimized from a sustainability perspective from the very beginning as well as generating an official record of this process. This is the reason why DGNB criteria should be incorporated in the planning phase as early as possible. When Quasar Istanbul is analyzed profoundly, the benefits of this approach with respect to planning, construction and marketing can be seen in the development.

The central location of the project provides many advantages such as an excellent access to amenities and access to transportation nodes. These criteria are increasing the site quality of the project. The most controversial part of the project in terms of sociocultural quality is the method adapted for the restoration and reuse of the existing liqueur factory which was designed by the famous architect Robert Mallet-Stevens at 1930s. The design firm justified the choice of completely demolishing and building the original building in the same spot with and addition of a underground parking for the high-rise residences and hotel as “the existing liqueur factory, had been surrounded with highly dense and bulky buildings, lost its aura, weakened structurally and turned out. So, this land is rehabilitated and this central location in the city joined the city life”.⁹ Moreover, the original factory building is converted to a office building in 2002, and the building had lost its authentic character by these changes. The historical building that has been built in the 30s which had been demolished and the identical new building can be seen in the next page.

Process quality of Quasar Istanbul is the strongest section of the development with a solid 100 out of 100 point. All criteria are gone through elaborately to reduce the environmental impact of the construction, Since the project is in the center of the city surrounded by many buildings, achieving a low noise and low dust building site to protect all the people who work on the building site and live adjacent to it was very important.

Project management of the development was undertaken by Arup, world famous firm providing services for all aspects of a built environment, to attain the best level of construction quality. Since each project requires new solutions to address the broadest range of issues, an interdisciplinary planning team developed an integral design approach at an early stage, in order to make these interact as well as possible and contribute to an optimum solution.

9. Mixed Use in Mecidiyekoy Quasar & Toruncenter
Source: http://emrearolat.com/aaa-projects_pdf/Mecidiyekoy%20Towers.pdf

Figure 46. Historical Liqueur Factory.
Source: <http://lcivelekoglu.blogspot.com.tr/2013/11/likor-ugruna-istanbula-kadar-gelen-bir.html>

Figure 47. Rebuilt Liqueur Factory.
Source: Emre Arolat Architects



Environmental quality of Quasar Istanbul is considerably high with a score of 91/100. Emissions of the building assessed carefully considering global warming, depletion of the stratospheric ozone layer, summer smog etc. and the negative effects of the building on the environment is minimized. To protect forests and maintain social and environmental standards, the materials used in the construction have been selected carefully, complied with recognised standards. The energy demand of the building is minimized and the use of renewable energy for supplying this demand is maximized for the benefit of global protection of the climate and resources. Land use of the buildings are designed to reduce the proportion of the earth's surfaces that is sealed and made impermeable by leaving area for landscape as much as possible, thereby preventing rainwater infiltration through asphalt and concrete surfacing.

Economic quality of the development may seem like the least successful one with a score of 64/100. This may be a side effect of the location and the segment of the users of Quasar Istanbul. The aim of the project is to "transport the concept of luxury beyond dreams." and the reduction of the building's life cycle costs could not be so easy to correspond to this aim. However, the adaptability of the buildings are reducing the risk of vacancy and contribute to economic success.

About the sociocultural and functional quality, external recreational areas are designed to contribute to improving the urban image. Also, user has the control on the building about adjusting the temperature, daylight and artificial lighting. Visual comfort is obtained by ensuring an adequate and uninterrupted supply of daylight and artificial light in all interior areas. Another positive aspect of the development is in luxurious projects in Turkey such as Quasar Istanbul, the buildings are overprotected and completely closed to the surrounding areas, even the public areas designed in the developments. Since the "Design for All" criterion is an exclusion criterion in the DGNB certification system and buildings which do not meet the minimum requirements for barrier-free access cannot be certified, Quasar Istanbul is designed barrier-free to integrate the building better into the urban context. Moreover, all these areas are fully accessible for disabled people.

Technical quality is assured by fire safety features compliant with local building regulations, building envelop quality to reduce space heating demand, achieve a high level of thermal comfort, and to prevent damages to the building fabric, providing a high level of acoustic quality since there are offices, hotel rooms, shops and residences in the same complex.

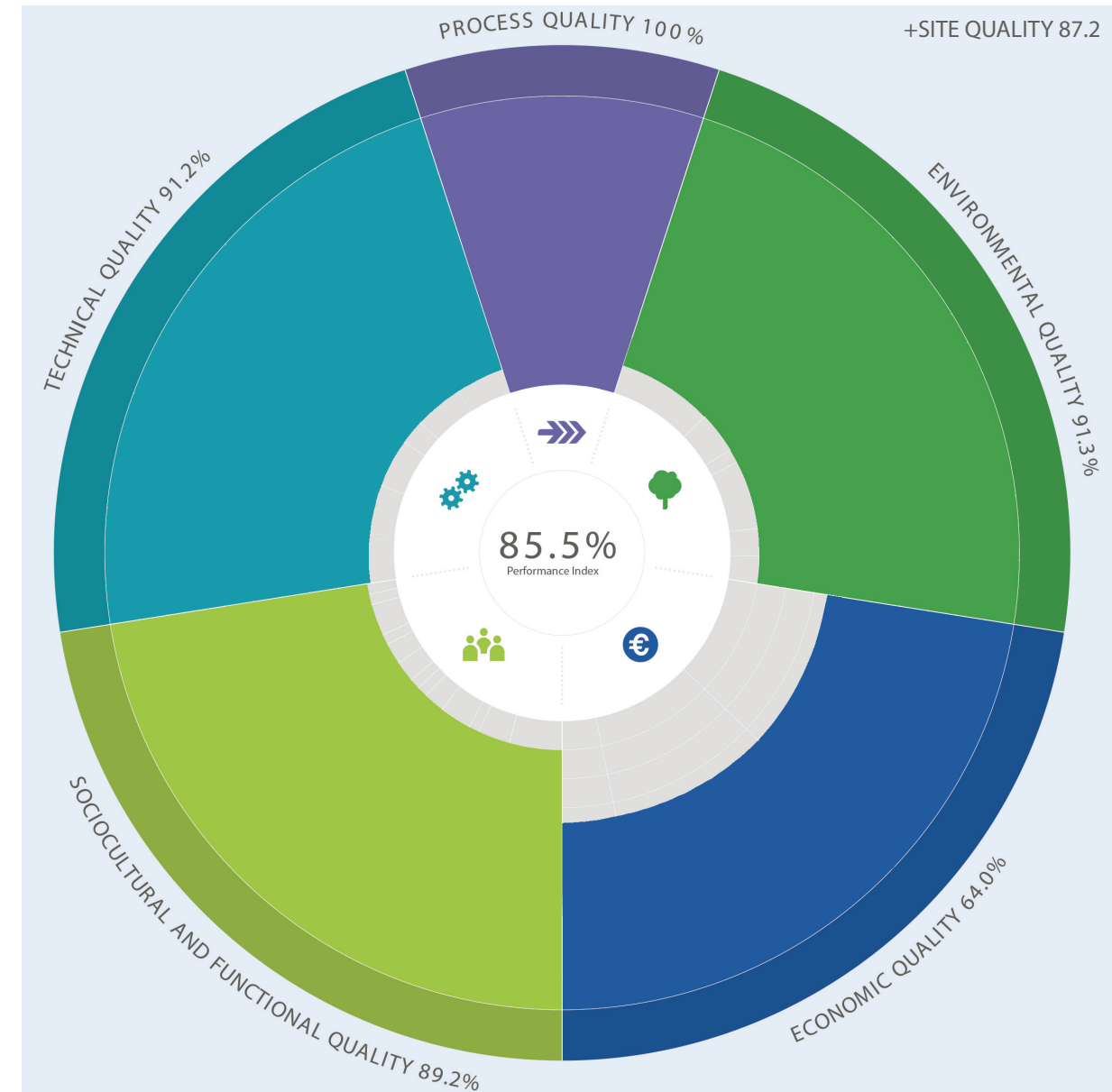


Figure 48. DGNB Evaluation Chart of Quasar Istanbul.

4.6. Learning from the Case Studies

The aforementioned case studies can be considered as the successful design practices in the urban context. The sustainability certifications can be regarded as evidences for their economic, environmental and economic success both in construction and management phases. Also, the best indicator for a successful shopping center—the customers—are proving their eminence over their analogue competitors in the market. The profound analysis on these case studies clearly states what people want in their favourite shopping malls.

It can be seen that retail structures are in need of becoming complexes with a function more than ‘just shopping’. Customers are looking for experiences that transcend the traditional shopping and these structures can not ignore the necessity of combining ‘everything’ that their customer is in need of in one place. That is the reason why now, more than ever, retail structures are seeking new ways to stay up-to-date, drive growth and boost efficiency. They happen to be the heart and soul of communities. Moreover, these structures are combining two irrelevant-looking notions, being the foundation of retail economies and a social place for people. Which means economic success of a shopping place is playing a substantial role on the social lives of the people interacting with that space.

As can be seen by analyzing the previous chapter, all of the case studies are proposing more than shopping. ‘Kanyon’ is a place where white collars meet during their lunch break, or a place they can visit after work for the big screen, or a place where Galatasaray supporters can leave their car, spend time before the game and take the metro to the stadium. ‘Mall of Istanbul’ has a stage where famous artists are performing. Quasar Istanbul project includes a fashion, art & culture center and a theater of a famous director and producer. These features are the added values for those structures and clearly help them to attract their customers.

By learning from these exemplary cases, a guide can be done on the renovation and retrofitting of the existing structures. Because, without any enhancement or changes on the existing shopping centers, most of the them will be abandoned and create negative effects on the environment and the lives of people. However, with relatively small expenses and proper guidance, the lifetime of these structures can be extended considerably and both the customers, investors and the tenants can benefit mutually. In the following parts, the implications from the exemplary cases will be revised and proposed to an existing shopping center, Galleria Atakoy.

“If shopping in the pure state is less and less attractive, retail must go where there are other reasons of interest and for aggregation. Shopping can arouse interest but it’s certain that his ability to be the only magnet is running out”

5

INTERVENTION

Retrofitting and Renovating the Existing Venues

Galleria Atakoy, İstanbul, Turkey

Interactive Relation with the City and the Citizens

Structures

Car Storage Areas

Pedestrian Areas

Automobile Movement Areas

Public Transportation Areas

Buffer Areas

Reserve Areas

Additional Refurbishment Criteria

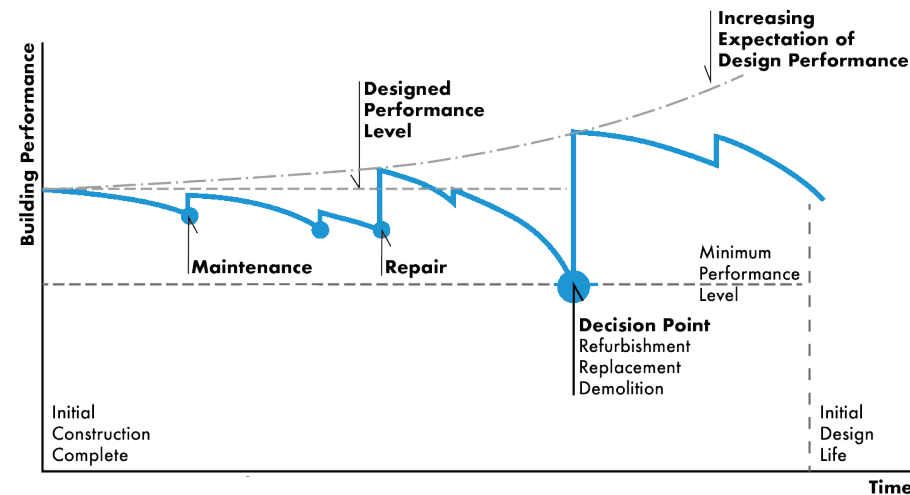
Repair vs. Replace

5.1. Retrofitting and Renovating the Existing Venues

Consistent with the practice of looking at the big sources first, within the building sector the existing building stock is where the opportunity for improvement is largest.¹ These buildings have an immense potential if they are reconsidered in a sustainable way and the proper treatment of this existing building stock will hopefully begin to heal the planet.

The replacement of Main Street development with shopping centers is the example of a new land use that abandoned a more sustainable pattern, and reveals two major problems; what to do with the big box retail development and its huge parking lots and highways, and what to do with these colossal buildings that are now deteriorated and more challenging to renovate. There are a few ways to respond to these questions.

One of the ways to answer the changing needs is to execute a successful adaptive reuse project which transforms shopping centers into many different building typologies such as schools, hospitals and even an appropriate mix of apartments and retail space. However, this approach can generate further problems like some buildings may have the wrong function in the wrong place. In order to successfully handle this issue, the judgment made on the “decision point” (refer to Figure 49) plays a significant role on the future success of the development.



¹ Gelfand, Lisa, and Chris Duncan. *Sustainable renovation: strategies for commercial building systems and envelope*. Hoboken, NJ: John Wiley & Sons, 2012.

Figure 49. Life Cycle of a Shopping Center
Source: *Construction Technology 3: The Technology of Refurbishment and Maintenance*, revised by the author.

One other possibility to answer the increasing expectation of building performance is to replace the structure. The decision to replace a building should meet the following criteria, otherwise it can only be an addition to the deteriorating building stock. If the total energy used in demolition and waste disposal of the existing building plus construction and operation of the new building will save more energy than the energy used in renovating and operating the existing building and reputable amount of the components of the existing building can be productively reused, replacement of the existing structure can be preferred.

However, the optimum “survival” strategy for shopping centers is retrofitting and renovating the structure to solve weaknesses and enhance qualities in a sustainable way. In the following table, indicators and criteria for a sustainable refurbishment project are set after the analysis of the International Organization for Standardization (ISO) catalogue about sustainability in building construction and the sustainability assessment methods mentioned in the previous chapters. Thereupon, in the following part, these criteria will be proposed on the elements of an actual shopping center—Galleria Atakoy—to truly explain how these criteria can be put into practice.

Figure 50. Indicators and criteria of Sustainable Retrofitting

Indicators

- Emissions to Air
- Use of Non-Renewable Resources
- Water Consumption
- Waste Generation
- Site Impact
- Access to Services
- Accessibility
- Indoor Conditions & Air Quality
- Adaptability
- Costs
- Maintainability
- Safety
- Serviceability
- Aesthetic Quality
- Process

Criteria

- Life cycle impacts of materials
- Energy efficiency improvement, energy monitoring, low carbon technologies
- Water consumption monitoring, water efficient equipment
- Construction waste management, operational waste
- Enhancing site ecology, reduction of noise and light pollution, construction site impacts
- Travel plan, alternative modes of transport, proximity to amenities
- Safe access
- Visual comfort, indoor air quality, thermal comfort, acoustic performance
- Flexibility and adaptability
- Life cycle cost assessment, service life planning
- Design for durability and resilience
- Security, fire safety
- Stakeholder participation
- Design and urban quality, integrated public art
- Comprehensive building design, construction quality assurance, integrated planning, sustainability aspects in tender phase, documentation for facility management



galleria[®] ATAKÖY

5.2. Galleria Atakoy

Cost
≈ 11,9 million \$

Opening
October 1st, 1988

Site Area
56.000 m²

Total Building Area
80.000 m²

Number of Stores
95

Typology
Retail

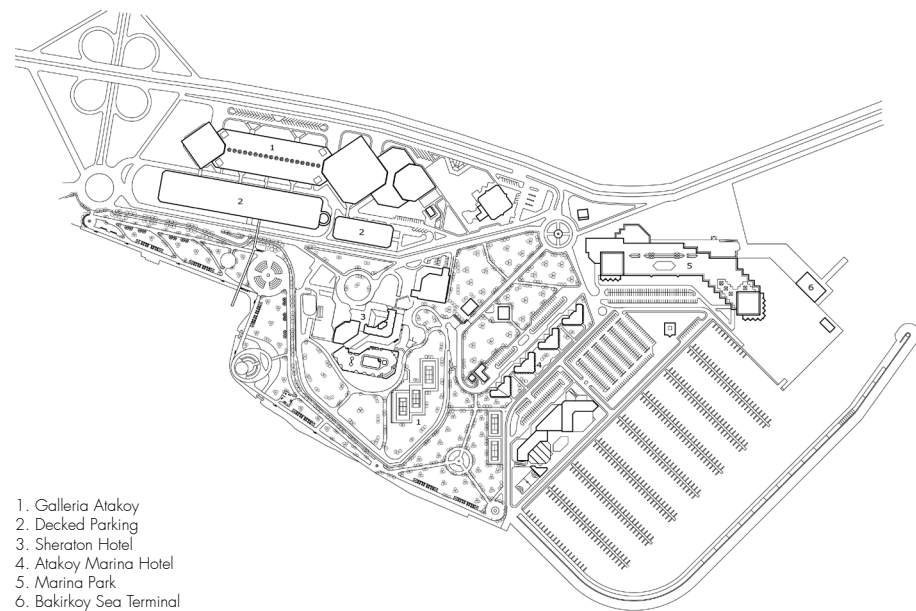
Architect
Hayati Tabanlıoğlu

Renovation Architect
Tabanlıoğlu Architects

Galleria Atakoy is the first shopping center of Turkey in a modern concept. It is a facility located in Atakoy Ticaret Merkezi (Atakoy Tourism Center) which also includes two hotels and a marina for 1054 boats.² Galleria Atakoy was a special request from the prime minister of Turkey back then—Turgut Ozal—when he saw the “The Galleria” in Houston, Texas.

The Galleria itself is comprised of a building block with 5 storey having an atrium in the middle, a long building block with 3 storey opening to that, a big shop of 5 storey at the end of the long block and a large entertainment center containing 3 and 4 storey buildings. Pedestrian entrances, that are provided at the level of the coastal road lead to the atrium and the main galleries. Additionally, it has a decked car storage area on the southern side which is connected to the main complex with bridges.

When it first inaugurated in 1988 with its unprecedented features such as climate control which is very common for every shopping center nowadays, it quickly impressed the visitors and other developers in Istanbul and it has opened a road for the following shopping centers in Turkey.



1. Galleria Atakoy
2. Decked Parking
3. Sheraton Hotel
4. Atakoy Marina Hotel
5. Marina Park
6. Bakirkoy Sea Terminal

² Tabanlıoğlu, Hayati, Dr. “Atakoy Turizm Merkezi.” Mimarlık Dekorasyon, 1995, 71-73.

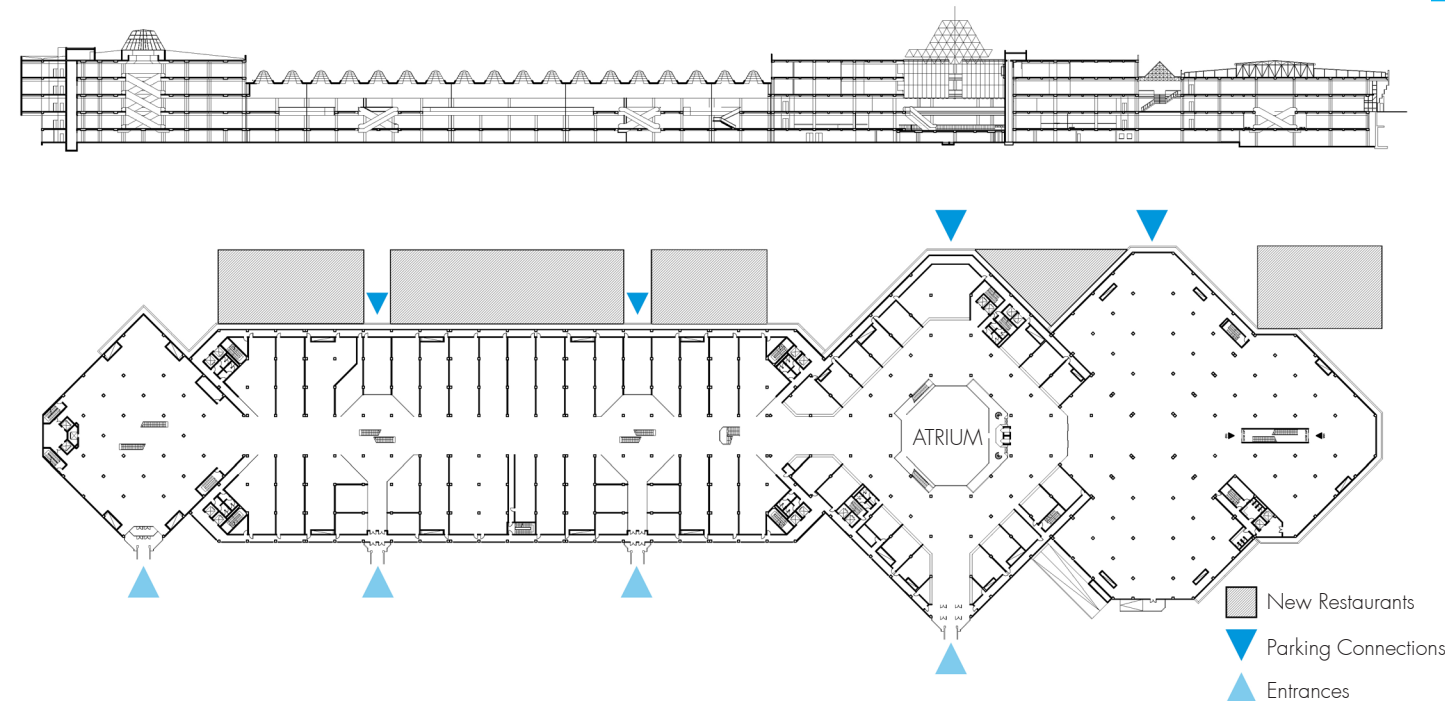
Figure 51. Atakoy Tourism Center Site Plan. Scale: 1/10.000

In 2011, the second generation Tabanlıoğlu Architects, (which is also the executive architect of Kanyon Shopping Mall) realized a renovation project for Galleria. The owner company of Galleria—DATI Investment Holding—disbursed around 20 million dollars for this renovation project to revitalize and “face-lift” the complex.

“As one of the big issues in urban life is to make the city interactive so that people become truly cosmopolitan, units are redesigned to repair the collectivity of space and to renew physical and social capacity of the facility aiming to rebuild the ceremonial and informal public spaces of our era.”³

The motivation for the renovation is explained by Tabanlıoğlu Architects as above. Alongside a physical expansion of 3.000 m² leasable area for restaurant and cafes, a de-malling strategy is adopted on the facade facing the coastal road.

In the following parts, Galleria Atakoy is broken into parts and analyzed as in the taxonomy of elements (refer to Page 36). Each part includes the proposed interventions for the sustainable refurbishment, retrofitting and fit-out of the units.



- New Restaurants
- ▼ Parking Connections
- ▲ Entrances

³ Same Client, Same Architect, Renewed Urban Qualities. Source: <http://www.tabanlıoğlu.com/project/ata-koy-marina-park-regatta-galleria-shopping-center/>

Figure 52. Galleria Atakoy Section. Scale: 1/2.000

Figure 53. Galleria Atakoy Ground Floor Plan. Scale: 1/2.000

5.3.1. Interactive Relation with the City and the Citizens

Istanbul's involvement in the capitalist world economy intensified twice in its recent history: first, in the nineteenth century when it acquired a new role as the nodal point of commercial and trade networks with Europe and second, since the 1980s, when Turkey has experienced an economic restructuring.⁴ This second transformation has been represented by the shift of power from traditional, small traders such as the grocery store, butcher, draper etc. to large domestic and foreign corporations. Before, small-scale, capital-weak, independent, and family-owned retailers had a dominance in the market. Then, large-scale retailing structures got involved and this transformation affected the urban structures and generated free-standing stores, multiple establishments scattered throughout the urban system under a common ownership, and large purpose-built shopping center developments.

The first signs of this transformation into a large-scale retailing structures have already started to change the retail landscapes of the metropolitan cities of the country, such as Istanbul. As Galleria Atakoy is the first modern shopping center of Turkey, it is more than any random shopping center in the perception of its users. It is the first embodiment of this transformation. When it first inaugurated in 1988, it attracted customers not only from Istanbul, but also from all around Turkey. Galleria reflected the changing face of Turkey in the late 1980s and became a symbol of modern life with the stores selling a wide range of goods, most of them imported, cafés and restaurants, which made going there a popular day out. At weekends in particular, people rushed to Galleria from all over the city. Due to its close distance to Atakoy Yacht Marina and Atatürk International Airport, Galleria was also very popular for tourists. For several years, Galleria was without any competitor, but it led the way for other shopping malls that were opened in Istanbul.

Although Galleria used to attract customers from whole Istanbul at the beginning, today it serves people especially from adjacent quarters. This is a result of the abundance of shopping centers in every neighborhood. Galleria appealed to people especially from high-income level when it first opened. Also, the target population of Galleria has been planned to be from high and mid-high income. However, Galleria is mostly visited by people from mid-high and mid-level of income today. This occurrence is a clear example of how a shopping center should adapt to changes including the transformation of customers. In the following part, the elements of Galleria is analyzed to understand and propose how it can be adapted to the needs of today, and even tomorrow.

4. Tokatli, Nebahat, and Yonca Boyaci. "The Changing Retail Industry and Retail Landscapes." *Cities* 15, no. 5 (1998): 345-59.

5.3.2. Structures



The structures in Galleria Atakoy are mostly the merchandise retailers. The food retailers are accumulated around the big atrium in the middle. These retailers are combined with the structures for public usage such as an exhibition space and a playground for children. Since all the shops are located in an optical integrity, with natural illumination around the atrium on 2 stories, visitors are able to locate all shops in a spatial integrity. In the recent renovation of the shopping center in 2012, de-malling strategy is adopted for the addition of new restaurants and the reserve spaces in between the main road and Galleria Atakoy is used to articulate 6 new restaurants and cafes with open-air terraces.

Adaptation to climate change could be proposed for the structures over the lifespan of the building because without a highly adaptable technical system that respond to the changing framework conditions, the building's service life and user satisfaction can decrease and the running costs can increase. This way, both the economic and environmental sustainability could be promoted. Also, the waste generation by the users of the complex can be reduced and the renovation debris of the structures during tenant changes can be recovered and recycled since most of the materials are reusable in this kind of transformations.

Figure 54. Merchandise Retailer in Galleria Atakoy. Source: Author

Figure 55. Food Retailer in Galleria Atakoy. Source: Author

Figure 56. Exhibition Space in Galleria Atakoy. Source: Author

5.3.3. Car Storage Areas



The car storage areas in Galleria Atakoy is designed as a decked parking for 2000 cars. This multi floor autopark located in the south of the complex and is connected to the main structure by 4 pedestrian bridges (see Figure 1). The provision of ample parking was important for the facility because Atakoy district had been considered as the outskirts when Galleria first inaugurated although it is situated "in the city" today and people were accessing the facility mainly by their private cars.

The roofs of the two car storage areas are proposing 16.000 m² of suitable space for possible photovoltaic installation. This area is enough to easily generate 2.700.000 kWh/year of electricity⁵ in this particular context which means 1.250.000 Turkish Liras (approx. 330.000 \$) can be deducted every year from the electricity bill.

Another proposition could be the use of vertical greening systems on the facade of the parking area in order to mitigate the heat island effect. The parking structure can benefit from the organic beauty of the selected plants and provide a more pleasant experience for the visitors of the shopping center. Last but not least, vertical greening system can reduce the noise and the air pollutants generated by the cars.

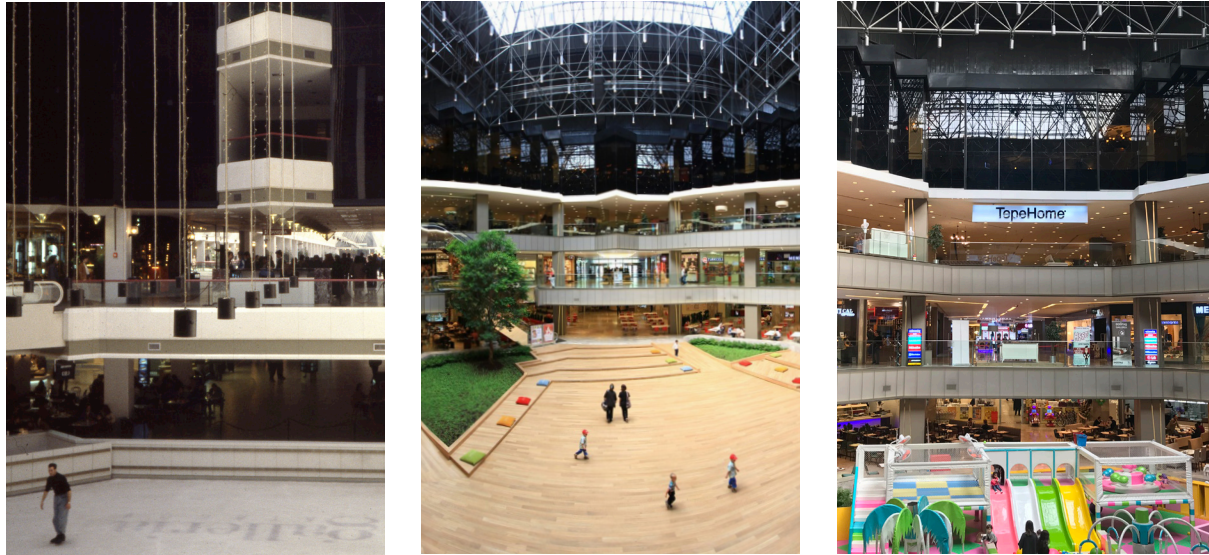
Figure 57. Decked parking of Galleria Atakoy.
Source: Author

⁵ PVWatts Calculator.
Source: <http://pvwatts.nrel.gov/pvwatts.php>

Figure 58. Proposed Vertical Greening System on Decked Parking.
Source: Author



5.3.4. Pedestrian Areas



All pedestrian areas are covered and naturally lit in Galleria Atakoy by the help of transparent polycarbonate panels on the ceiling. The supply of daylight to the interior plays a particularly significant role here. Natural light has a positive effect on people's physical and mental health.⁶

These areas in Galleria Atakoy has gone through many changes during 30 years. When it first inaugurated, the big atrium was being used for indoor ice skating and it was a huge breakthrough for that time. In its renovation, the ice rink turned into a covered plaza after 22 years due to the fact that it completed its mission.⁷ Nowadays it is rented to a company and became a playground for children.

A proposal for the pedestrian areas could be the increase of flexibility and adaptability of such areas to create the greatest possible potential reuse.

Additionally, ensuring the thermal comfort in this kind of spaces with high ceiling and large floor area requires a lot of energy. To reduce the need of energy, the building envelope quality could be enhanced. For instance, the air-tightness of the polycarbonate panels could be increased.

Figure 59. Ice Rink in the Atrium of Galleria Atakoy.
Source: Salt Research

6. DGNB Core 14 SOC1.4
Visual Comfort

7. Galleria'nin 22 yıllık buz pisti yesile donuyor.
Source: <http://www.milliyet.com.tr/galleria-nin-22-yillik-buz-pisti-yesile-donuyor-ekonomi-1219622/>

Figure 60. Atrium after the renovation in Galleria Atakoy.
Source: <http://www.galleria.com.tr/galeri/5>

Figure 61. Playground in the Atrium.
Source: Author

5.3.5. Automobile Movement Areas



In Galleria Atakoy, the service aisles are located longitudinally at the rear of shops (see Galleria Atakoy Ground Floor Plan, pg.). Thus, the service circulation reaching all the units lead to the cargo lifts and loading-discharging docks for deliveries and waste disposal. These docks and the parking area for the service vehicles are separated from the passenger parking and secluded by the landscape.

However, when the open parking area for the customer vehicles in front of the complex have been converted to restaurants and cafes, the only place remaining for the customer vehicles became the decked parking on the backside of the structure and the road for the delivery docks and the decked parking is common. Certainly, the fact that the service trucks and customer cars using the same road can have negative impacts on the users. A proposal can be the separation of the distribution road system by a signage system to arrange the interflow of different traffic in different ways. Moreover, these days electric cars are becoming widespread but limited number of shopping centers are providing their customers a electric vehicle charging station. These stations can be placed in the automobile movement areas so that while the users are spending their time in Galleria—eating something, going to a movie, etc.—can charge their cars in the meantime.

Figure 62. Loading dock and service parking in Galleria Atakoy.
Source: Author

5.3.6. Public Transportation Areas



The location of Galleria Atakoy is provided by different types of public transport which makes it reachable to as many people as possible. In addition to 10 bus lines, it can also be reached by seaway. Currently, two new metro lines are in construction to connect Atakoy to metro network of Istanbul and the station will be right next to Galleria Atakoy. The connection of these metro stations to Galleria should be designed carefully since an easy and direct access highly affects the choice and perception of the customers.

Even though Galleria Atakoy is well supplied with public transport—which makes it easier to reach 17.000 daily customers on weekdays and 21.000 daily customers on weekends⁸—personal public transport is missing and can be proposed. Car sharing systems are present but still not very common in Turkey, however car sharing can increase the quality of transport which is important for a shopping center. An easily applicable program before the car sharing systems become widespread in Istanbul can be the bicycle sharing. The customers can pedal to Galleria Shopping Center by using the bicycle paths and leave these bicycles to the station in front of the complex without any hassle. This way, a sustainable way of transportation can be encouraged for the visitors.

Figure 63. Bakirkoy Terminal.
Source: Google Maps

Figure 64. Construction for the new metro line next to Galleria Atakoy.
Source: Author

⁸ <http://www.dati.com.tr/kurumsal/2>

Another proposal can be increasing walkability and embracing pedestrian mobility. Since Galleria Atakoy is located near the sea, the coast park next to it can be extended till the complex and walking to the complex can be encouraged. This can improve public health by encouraging daily physical activity.

Additionally, the sprawled planning of Atakoy Tourism Center makes it difficult for pedestrians to reach from one point to another. A monorail system can be proposed to connect the marina, hotel, sea terminal and Galleria Shopping Center. An elevated monorail system can attract additional customers to enjoy the scenery of the coastline. Almost all modern monorails are powered by electric motors so that it would not have a negative impact on the environment as well.

If the complex is well provided with all means of public transportation, one of the most important characteristics of a successful shopping center—the ample parking—may no longer be as crucial as it once was. This contribute to minimize the environmental harms associated with parking facilities, including automobile dependence, land consumption, and rainwater runoff. Moreover, it provides an opportunity to use the excessive parking areas for different functions.

Figure 65. Proposed Monorail System to Atakoy Tourism Center.
Source: Author

5.3.7. Buffer Areas



As can be seen in the photo above, buffer areas in between the side road for valet parking and the restaurants are separating the direct visual and physical contact of the passer bys and the customers. The buffer zone in this side of the complex was bigger before the renovation and the addition of the new restaurants but still, a space is allocated for a green belt along the whole length of Galleria.

This green belt can be used for the integration of public art because art in buildings creates a direct link between the public, the building, and the uses it accommodates. Art can capture the public's attention and help it identify with a building. Art can also strengthen local identity and foster public approval.⁹ That is the reason why an open air sculpture gallery can be proposed in the buffer zone of Galleria.

Furthermore, even though Istanbul is not the best city about the infrastructure for cyclists but Atakoy is one of the few districts with a bicycle road. If a bicycle parking area is positioned in the area in front of the restaurants, environmentally friendly personal transport can be encouraged and supported. The reason about the choice of this location for bicycle parking is to guarantee a high level of acceptance among the users since it is situated right next to the entrances from the street.

Figure 66. Buffer area between restaurants and open parking.
Source: Author

⁹ DGNB Core 14 SOC3.2
Integrated Public Art

5.3.8. Reserve Areas



In the case of Galleria Atakoy, buffer areas of the complex separating the road system and the building became the reserve areas for future development in need of an enlargement in the coastal road side of the complex. The green areas and the parking in front of the shopping center (see Figure 1) converted to 6 restaurants/cafes with covered terraces which means an additional 3.000 m² of new leasable area for the owner company of the complex.

Of course this attachment of the new restaurants/cafes revitalized the use of the complex and make it more intertwined with the street in front of it but still, it has some negative effects as well. First of all, the green buffer area in front of the building which can be put to good use for features such as water features, sculptures, instruments, or seatings that can increase the aesthetic quality of the complex is significantly reduced.

This conversion of buffer areas to leasable areas also reduced the acoustic and outdoor quality of the outdoor restaurants/cafes since they are too close to the road. The external areas could contribute to improving the urban image and microclimate and enhance the well-being of the users if designed accordingly.

Figure 67. An aerial view of Atakoy Tourism Complex during construction.
Source: Salt Research

5.3.9. Additional Refurbishment Criteria



Figure 68. HVAC Systems External Units on the Sidewalk.
Source: Author

Other than the proposals on the elements of Galleria Atakoy, additional refurbishments can be proposed to increase the sustainable quality of the complex both socially, economically and environmentally. The economic performance of a shopping center in the future will also be judged by its energy performance so these three pillars of sustainability can not be approached individually.

For instance, the need of additional HVAC (Heating, Ventilation, and Air Conditioning) systems for the complex (see Figure...) and the choice of location for the external units on the sidewalk between the decked parking and the building is causing a negative effect on the users. These units should be replaced with a more efficient system and located in a place with no direct human interaction since they create heat and sound which is a discomfort for the customers. About this issue, a comprehensive energy metering should be done and minimum level of operating energy should be established. This energy metering helps to estimate the amount of energy consumed annually due to the quality of its structure, its energy-consuming equipment, and its operating system and generally 20 to 25% of operating costs are energy costs. Therefore it is essential to master energy performance in order to control the intrinsic and financial performance of a building.

Other than the energy performance, the shopping center toilets are the places where the circulation can reach extreme amounts. Water saving sanitary wares in the toilets of Galleria Atakoy could regulate the excessive water consumption. Additionally, determination of the annual rainfall at the location and using the rainwater that is collected can be used for irrigation and toilet flushing.

Another fact is, cleaning and maintaining a building has a major effect on a building's cost and its environmental impact in use. Well-maintained building components last longer. Easily cleanable surfaces require less cleaning materials and reduce cleaning costs. Therefore, the aim is to keep costs for cleaning and maintenance as low as possible and protract building components' useful life. In retail structures, massive amount of cleaning products are used everyday. To reduce the environmental effects of the cleaning products, green cleaning should be adopted and the best way of achieving green cleaning is designing the building finishes and systems accordingly.

Waste generation and treatment is another important topic of a shopping mall management since considerable amount of waste is produced 365 days in a year. This fact requires utmost attention. To establish a successful recycling program, the following 10 steps should be followed according to United States Environmental Protection Agency;

1. Obtaining management support, determining legal requirements, and identifying other incentives or disincentives
2. Identifying a recycling coordinator
3. Forming a "green team"
4. Assessing waste stream
5. Identifying materials to be collected
6. Selecting a recycling service provider
7. Determining collection program logistics
8. Implementing recycling and management program
9. Reaping the public relations benefits
10. Monitoring, evaluating, and refining the program

A proposal for an initiative for Galleria could be the placement of recycling machines where people can bring their recyclable waste and get credits to their loyalty cards in return, to spend in the shopping center. This can encourage customers to recycle more waste while Galleria is compensating this value by selling the recyclable materials that are collected.

5.3.10. Repair vs. Replace

Even though the buildings have historically been designed for specific purposes—schools as schools, houses as houses, shopping centers as shopping centers—many of these structures no longer serve their intended, original uses. Because of economic, social, cultural and political reasons, the purpose of the structure as intended may become obsolete. When a building loses its original, intended use, it is typically either demolished, abandoned or adapted for another use. “Adaptive reuse” is the term used to describe the process of adapting an existing building for a non-traditional use.

Therefore, the first question that has to be asked in the decision making process about the future of an obsolescent shopping center is; “repair or replace?”

In Galleria Atakoy case, the answer of the question was to “repair”, that means retrofitting and refurbishing, due to different reasons; to keep up with newer shopping centers and retail formats, to become sustainable with addition of new technology and features, and to increase the satisfaction of the users.

In managerial point of view, rental income gradually decreases over time and renovation costs keep increasing over the years. The right time for the renovation of a shopping center is when the marginal cost of renovating equals the marginal loss of rental income. This was the situation in Galleria Atakoy case.

On the other hand, the practice of taking an existing structure and repurposing it for some other use is an option for such obsolescent shopping centers. As cities grow, buildings in a central location that once served a non-residential purpose such as a shopping center are now placed in areas that present attractive residential, public or different commercial opportunities. Moreover, adaptive reuse is supported by historic preservationists because the action saves the structure from demolition by reusing it for another purpose.

After all, the question should be asked to the building and the action should be taken accordingly. If the building is worthwhile to renovate, as in Galleria Atakoy case, it should be renovated and retrofitted. If it can serve better as a building with another function in its future lifecycle, adaptive reuse strategy should be adapted. The third and fourth options—abandoning and demolishing— should be avoided under any circumstance.

“the greenest building is the one that is already built”

Carl Elefante

From Shopping Structures to Consumption Based "Temples"

Regeneration of Shopping Structures

Role of Architects

Discussion

Future of Shopping

6.1. From Shopping Structures to Consumption Based 'Temples'

"A yuppie steps out of the changing room and asks the store attendant for the Wi-Fi password. Scrolling through bargain deals on the very sweater she has just tried on, this hunter migrates between the city of tangible cashmere and the touch screen of instagram."¹

The shopping experience changed tremendously in the past decades. Nowadays, the customers are able to reach whatever they want, whenever they need. This fact brings a new question by the customers of shopping centers; "Why to go to a shopping center if I can handle all my needs with the click of a button?"

To answer this question, shopping structures are forced to be evolved. They had to become "more than a shopping center". They were obliged to offer new, unique experiences since sometimes the main intention of visiting a shopping center is just an urban exploration and making social and aesthetic observations—not even shopping—.

This approach by the "modern flâneur"—the stroller, the passionate wanderer emblematic of nineteenth-century French literary culture²—towards shopping is changing the perception of the shopping structure to a "temple" where almost any kind of interaction can be experienced. The "modern flâneur" is directly or indirectly affected by the design of these particular urban public spaces. Not only the building and the user *per se* is affected, but also the neighborhood, even the city is in the sphere of influence. For instance, the prices of the housing units are adjusted according to the proximity to these "temples"—shopping centers—.

Furthermore, shopping centers are not the only places for consumption based activities anymore. At the present time, hospitals, train stations, museums, universities and practically every architectural typology include a consuming aspect. The experience of an airport is seamless with that of a shopping center. So everything is melting into shopping and shopping is melting into everything.³ Shopping has become inevitable. However, this fusion resulted in a crisis. Since almost everywhere became a place also for shopping, shopping structures in particular have overreached the saturation point. The abundance of these structures aggravated the competition in between these structures and to survive this competition, a sustainable regeneration is indispensable.

¹ Honsa, Jesse and Donald Eric van Ruiten. *The Blase and Flâneur*. Delft: The Berlage. 2017.

² Stephen, Bijan. *In Praise of the Flâneur*. *The Paris Review*: 2013.

³ Leong, Sze Tsung. ... And Then There Was Shopping. *Harvard Design School Guide to Shopping*. Köln: Taschen GmbH, 2001.

Figure 69. Illustration from *Physiologie du flâneur* by Louis Adrien Huart.



6.2. Regeneration of Shopping Structures

The need of continual regeneration for the sustainable success of a shopping center is caused by the dynamic characteristic of this building typology which makes it harder to deal with the overall design. In consideration of the shopping centers are the urban public spaces of the time, this regeneration can be regarded as urban regeneration to compete with the other urban public spaces.

All the reasons—physical, social and economic—for the regeneration of a shopping center is affecting each other. For instance, obsolete finishing of a shopping center which seem completely physical can affect economically due to the repair and maintenance expenses and socially due to the decreased comfort and unattractiveness.

In this competitive environment, a contemporary shopping center should upgrade itself in an innovative way to survive. Usually, this upgrade is an expansion of the shopping center to increase diversity for the customers but this approach may generate further problems. Another upgrading methodology is the facelifting and renovation of the structure to be able to attract customers continuously.

The power of shopping centers on people and architecture are so effective that these structures are still contributing to architectural terminology by adding new words to it. The third option of regeneration is “de-malling” which is the new hope to survive the unsustainable and obsolescent shopping centers.

Since two decades in the United States, several large-scale retail structures including shopping malls, big box stores and strip malls have been affected by failure and demise phenomena.⁴ Some of these places, once temples of consumption, are currently abandoned along the highways or in the suburbs of American cities, displaying the short life cycle of retail buildings. However, many of these structures have a potential for interesting architectural and urban transformations. The main intention of these interventions is to revitalize the abandoned spaces with alternative uses and functions, either partially or completely.

This phenomena of failure and demise is not only valid for United States, it has already started to be observed in Europe and it is clear that many more shopping centers in this continent will share the same fate with their counterparts due to their brief life cycle and the designers should be conscious before it is too late.

6.3. Role of Architects

The role of architects in a new shopping center construction differs from the regeneration projects. In regeneration projects, the circumstances such as the existing structures and systems are limiting the role of the architects when compared to a new construction. Moreover, the architectural brief of shopping structures—either new or existing—are usually stricter than other building typologies and they are mostly economically driven because of the diverse stakeholders. Therefore, architects have less liberty in terms of design. But still, the architect should take over a huge amount of responsibilities and have one of the biggest effect on the success of a shopping structure. Refurbishing an existing structure requires a continuous coordination with engineers starting from the pre-design phase to examine the current condition of the existing structure and system. This is the advantage of a regeneration project because there is a chance of receiving feedback from the building and its current users. Eventually, the architect has an extended role as a communicator in a sustainable refurbishment project. Additionally, sustainable developments are relatively young in the field of construction and this can generate extra costs and time to the principal designer—the architect—. In the following table, role of the architect and stages of a sustainable project is analyzed. The first row shows the stages of a project, the second line is the core objectives that have to be achieved and the third row is the suggested tasks for a sustainable life cycle of a building.

Figure 70. Role of Architect and Stages of Work. Source: RIBA Plan of Work 2013, revised by the author.

0	1	2	3	4	5	6	7
Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out	In Use
Identify client's Business Case and Strategic Brief and other core project requirements.	Develop Project Objectives , including Quality Objectives and Project Outcomes , Sustainability Aspirations , Project Budget , other parameters or constraints and develop Initial Project Brief . Undertake Feasibility Studies and review of Site Information .	Prepare Concept Design , including outline proposals for structural design, building services systems, outline specifications and preliminary Cost Information along with relevant Project Strategies in accordance with Design Programme . Agree alterations to brief and issue Final Project Brief .	Prepare Developed Design , including coordinated and updated proposals for structural design, building services systems, outline specifications, Cost Information and Project Strategies in accordance with Design Programme .	Prepare Technical Design in accordance with Design Responsibility Matrix and Project Strategies to include all architectural, structural and building services information, specialist subcontractor design and specifications, in accordance with Design Programme .	Offsite manufacturing and onsite Construction in accordance with Construction Programme and resolution of Design Queries from site as they arise.	Handover of building and conclusion of Building Contract .	Undertake In Use services in accordance with Schedule of Services .
Review Feedback from previous projects.	Prepare Handover Strategy and Risk Assessments . Agree Schedule of Services , Design Responsibility Matrix and Information Exchanges and prepare Project Execution Plan including Technology and Communication Strategies and consideration of Common Standards to be used.	Prepare Sustainability Strategy , Maintenance and Operational Strategy and review Handover Strategy and Risk Assessments . Undertake third party consultations as required and any Research and Development aspects. Review and update Project Execution Plan . Consider Construction Strategy , including offsite fabrication, and develop Health and Safety Strategy .	Review and update Sustainability , Maintenance and Operational and Handover Strategies and Risk Assessments . Undertake third party consultations as required and conclude Research and Development aspects. Review and update Project Execution Plan , including Change Control Procedures . Review and update Construction and Health and Safety Strategies .	Review and update Sustainability , Maintenance and Operational and Handover Strategies and Risk Assessments . Prepare and submit Building Regulations submission and any other third party submissions requiring consent. Review and update Project Execution Plan . Review Construction Strategy , including sequencing, and update Health and Safety Strategy .	Review and update Sustainability Strategy and implement Handover Strategy , including agreement of information required for commissioning, training, handover, asset management, future monitoring and maintenance and ongoing compilation of 'As-constructed' Information . Update Construction and Health and Safety Strategies .	Carry out activities listed in Handover Strategy including Feedback for use during the future life of the building or on future projects. Updating of Project Information as required.	Conclude activities listed in Handover Strategy including Post-occupancy Evaluation , review of Project Performance , Research and Development aspects. Updating of Project Information , as required, in response to ongoing client Feedback until the end of the building's life.
Pre-Design Phase			Design Phase		Construction Phase		Operation Phase

4. Source: <http://www.de-malling.com/>

6.4. Discussion

First of all, a shopping center complex is more than just a building in comparison to other building types as it is mentioned many times throughout this thesis. This is a result of the task these complexes have taken on and the shopping center owner's concurrent dependence on the contentment of two different demands. More specifically, the owner of the shopping center needs to satisfy the demand from various tenants—that range from retailers to restaurants and cafés—and simultaneously ascertain demand from consumers who visit the facility and “keep the ball rolling”.

In addition, these various tenants are conducting businesses in highly competitive sectors and this causes additional complexity. This multidimensional relationship between the shopping center owner, the tenants and the costumers inevitably makes the management and design of a shopping center diverging from the rest.

The owner has another crucial mission. To successfully manage the shopping center and constantly renew and adapt it in order to continuously adjust to prevailing market conditions. Additionally, the management team of the shopping center needs to continuously follow the new trends and the technologies in order to stand out amongst the other shopping centers and remain competitive.

Correspondingly, contemporary shopping centers have undoubtedly evolved to something else and become a place offering its visitors more than a charming and pleasant shopping experience. They have transformed into a complete meeting place for people who are not only shopping but also eat, hang around, run errands and spend most of their leisure time. As a means of distinguishing oneself from other, it has become more common to assign a specific theme or concept to the shopping center and have an entertainment center merged into it.

As a result, commercial and architectural aspects have commonly been prioritized in connection to the development of shopping centers while issues concerning the shopping centers' negative impact on the environment have not necessarily been given equal attention. This thesis is analyzing each and every aspect of shopping structures and discussing how architectural, commercial and environmental conditions can be designed successfully in the same place in a sustainable way. Sustainability should not be perceived as it is only about dealing with the environmental issues as in most of the “sustainable” shopping centers nowadays. A holistic sustainable approach can have a significant effect on the success of a shopping center.

6.5. Future of Shopping

This part is a further discussion and an insight about how the future of shopping will be. It is a fictional narrative about a customer having a shopping experience in the near future.

The protagonist—a shopping enthusiast—needs a pair of sneakers because she will visit Milan for the design week and this means a lot of walking. Traditionally, she would head for the mall, visit all the stores that sell sneakers and hope for the best to find a nice sneaker with a fair price. Instead, she started his journey of shopping by searching sneakers online from an app from her smartphone. Then, she uploaded an actual image of herself and the app superimposed the sneakers on her photo. The app suggested 3 other sneakers according to her selection of the first one. She picked one of these suggestions, “tried them on” virtually, and liked them. The price was fair but she thought that she could find them even cheaper. She minimized the first app and searched for the same sneakers on another app that compare the prices. Just as she thought, she found them 20 percent cheaper. She added them to her cart and proceeded to checkout. She did not want the sneakers to be shipped to her address because she wanted to try them on physically and the store was on her way to work.

The day after, she visited the shop, greeted by her name, walked to the dressing room stocked with her selection. While she was trying the sneakers on, the digital mirror recommended socks and other piece of clothing that match well together. She added the socks to her cart from the touch screen mirror and checked out with her smartphone.

While she was heading for the door, she saw herself on one of the mirrors with a rain coat on. She instantly thought that it could rain and she did not have rain coat that match well with her new sneakers. However, she was in a rush to get to work in time and she did not want to carry the coat with her all day. She scanned the personal code in the mirror and requested the coat to be shipped to her place on the night of the same day. She left the store, she was happy.

This technology is already available and soon it will be ubiquitous. As can be seen in this fiction, the line between e-commerce and physical shopping is disappearing. This omnichannel retailing requires particular attention from the architects. They should not only cope with the structure anymore. They should design this experience.

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