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MULTIPURPOSE CHARACTER OF SHOPPING CENTERS - POSSIBILITIES AND DIRECTIONS OF FURTHER DEVELOPMENT

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Abstract

The significance of trade as a public function has strengthened alongside the progress of civilization. In contemporary cities, within the context of an expanding market economy, large-format shopping centers have assumed primacy. Their emergence is regarded as a culmination of human consumer behavior and one of the pivotal shifts in the organization of urban space. Shopping centers are evolving to incorporate a broader range of diverse functions, becoming gathering places and venues where spare time is spent. Consequently, they are no longer perceived solely as spaces for sales, but as places of consumption where trade and leisure intertwine.

The primary objective of the research is to examine current tendencies and strategies in the field of architectural design of shopping centers, as well as to explore successful design methodologies. The research commences with an elaboration of the fundamental characteristics of the modern shopping center. In the next part of the research, various types of shopping centers are analyzed using relevant case studies drawn from both international and domestic architectural practices. Finally, the possibilities and directions for further expansion of the offers are discussed.

Key words: *Shopping Centers, Multipurpose, Architectural Practice, Modern Tendencies, Limitations*

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1. INTRODUCTION

A series of urban, social, economic, and technological opportunities in the first half of the 20th century led to the development of shopping centers. Their proliferation was driven by the following factors:

- limited space for the expansion of the city cores,
- population growth,
- increased car ownership,
- congestion in city centers due to traffic,
- availability of large, accessible land areas, and
- advances in ventilation, air conditioning, and lighting technologies [1].

Seeking a more peaceful environment, residents moved in large numbers to the suburbs, where access to the city's commercial areas was limited. This type of residential suburbanization gained particular momentum in the USA after World War II.

The modern European shopping center originated in Sweden in the mid-1950s. During the 1960s and 1970s, shopping centers first appeared in Great Britain and France, followed by other Western European countries [2]. Their development mirrored the growth of personal incomes and greater consumer mobility, as well as the rise of larger retail chains.

Architect Viktor Gruen, an Austrian who immigrated to the USA in 1938, had a significant influence on the modern form of shopping centers. He envisioned them as a contemporary version of the traditional town square [3], designed as pedestrian-friendly shopping areas. However, he believed that it was necessary to protect customers from external influences and to create enclosed, climate-controlled spaces. As the designer of the first shopping centers, Victor Gruen, also wanted to redefine the modern city proposing that suburban shopping malls become the new urban cores. He saw shopping as part of a larger network of human activities, arguing that sales could be better if commercial activities were integrated with cultural and leisure activities [4]. Gruen saw the design of shopping malls as a way of producing new city centers, or as he called them "shopping cities".

Designing shopping centers as indoor facilities capitalized on the psychological effect that customers would stay longer and spend more if they were comfortable [5,6]. Gruen further explored this effect, finding that people in air-conditioned malls were more willing to walk longer distances. Featuring opaque facades with no connection to the outside - a design resembling a "blind box" - shopping centers used glass roofs to admit natural light. Around central courtyards with fountains, potted trees, gardens, and other furnishings visible from upper levels, Gruen placed restaurants and cafes, which he envisioned as gathering spaces [7] for various social activities [8].

Modern shopping centers have expanded in scale and function, incorporating diverse facilities such as department stores, supermarkets, banks, post offices, kindergartens, and more [9]. The diversity of additional activities from other spheres, unrelated to the primary activities of sales and hospitality, affects the multi-purpose character of shopping centers.

The paper discusses this multipurpose aspect of shopping centers and poses the following research questions: (1) are there opportunities for further expansion

of scale and function in these already very complex buildings, and (2) do outdoor activities, as a new preference of visitors, shape the future of shopping centres?

2. METHODOLOGY AND MATERIALS

2.1. Method

The following methods were applied in this research: the descriptive method, the method of classification, and the methods of analysis and comparative analysis.

The research focuses on current trends and tendencies in the reference architectural practice. The base of buildings on which the research was conducted consists of 20 shopping centers from Europe and Asia, built between 2010 to 2024, when it comes to foreign experiences, and 8 buildings built in Serbia, in Belgrade, Niš, Novi Sad and Kragujevac. Three typical examples from these buildings' databases were selected for case studies.

In the next stage, in order to perform more comprehensive summarization and systematization of the characteristics of the selected shopping centers, a system of criteria significant for determining the relationship between the expansion of the indoor and outdoor activities and the future development of these facilities was established.

2.2. Characteristics of modern shopping centers

A whole team of experts from different fields is involved in the process of designing shopping centers. The location of the future building and its characteristics, both strategically and physically, significantly determine the size, type, and character of the shopping center [10].

There are many different types of shopping centers and there are many criteria by which they can be classified. Part of these criteria are the following:

- location (regional, district, and local shopping centers),
- number of people visiting the mall (city and suburban shopping centers),
- constellation of activities
- combining with other functions (shops with additional activities),
- the character of the store (fashion centers, or “lifestyle” centers),
- physical forms (open and closed shopping centers, within shopping parks, shopping resorts, business districts, and mixed-use environments within the city center), and
- generation (measured by the level of changes that have occurred within a certain type [11].

According to the European standards [12], shopping centers are divided into traditional ones (very large, large, medium, and small) and specialized ones (sales parks, factory outlet centers, and themed centers).

Spatial organization should ensure a natural flow of movement through the shopping center. There are two characteristic types of organization of closed shopping centers, namely linear and circular [10]. Linear type (Figure 1. left) is the simplest type of organization of the base of the shopping center. It is defined by two endpoints, in the form of "anchor" stores, which are interconnected. Within

them, you can also find "focus points", with the function of housing vertical communications, the hub of horizontal communications, the formation of an angle at the base, or recognizable zones in communication spaces.

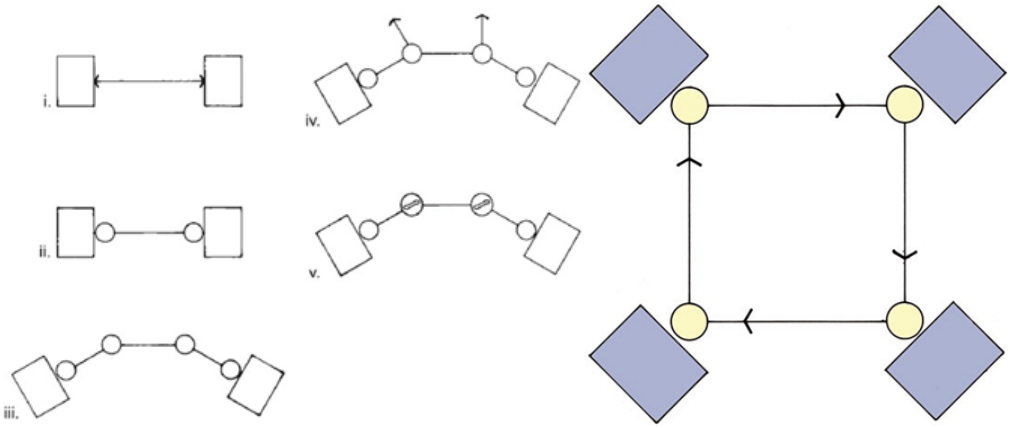


Figure 1. i) a unique sequence between two "anchors"; ii) string with nodes; iii) nodes used to change the direction of movement; iv) nodes receiving other paths; v) nodes that include vertical communications (left); circular organization with nodes anchored by stores (right); source: Beddington, 1982.

In circular organizations (Figure 1, right), visitors can access all parts of the shopping center without retracing their steps, ultimately returning to the point from which they started moving through the center [13]. The form of the number "8" is also considered a form of circular motion. Also, the vertical movement can be part of the circular movement through the center. "Anchor" stores, strategically placed and clearly visible, play a role in motivating movement.

The organization should be simple, easily recognizable, and it must not be monotonous. Points of interest or places of rest must be found every 200-250m because visitors lose interest after crossing those distances.

2.3. Case studies from foreign architectural practice

Among the reference foreign realizations, the following notable shopping center buildings were considered: the „Emporia“ shopping center (Malmö, Sweden), known for its distinctive architectural identity, „Mega Foodwalk“ (Thailand), which blends retail and public space innovatively, and „Parc Central“ (Guangzhou, China), renowned for its fluid design and integration of green spaces, all of which serve as the exemplary models of modern retail architecture.

2.3.1. Emporia Shopping Center / Gert Wingårdh, Malmö, Sweden, 2012.

"Emporia" shopping mall is located in the Hyllie district in the southern part of Malmö, Sweden. It is one of the largest Scandinavian shopping malls (Figure 2.). It has a mixed structure and, apart from about 200 shops, it contains administrative and business premises and certain accommodation capacities.

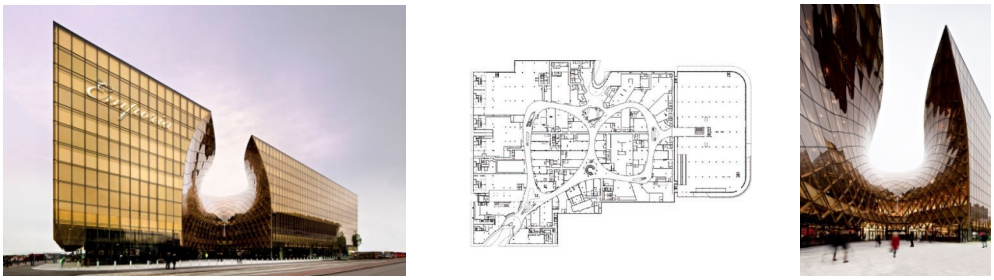


Figure 2. The appearance of the building and the ground floor, source: https://archello.com/project/emporia, 20.11.2024.

The main idea is to create a building with a strong visual identity to attract visitors to enter from the square and then lead them from the entrance deep into the block [14]. Within the block, retail is organized around a three-sided figure eight. There is a park on the roof, designed as the cultivated nature. The vegetation itself and the sun-facing paved gardens are accessible from both inside and outside. On the north side of the complex, a ramp leads to a garage for about 2,500 cars.

2.3.2. Mega Foodwalk / FOS, Tambon Bang Kaeo, Thailand, 2018.

The size of the Megabangna shopping complex is as large as a small town. Its central building is perceived as a downtown, whereas the Foodwalk zone on the east wing is formed as the countryside with more green areas and canals.

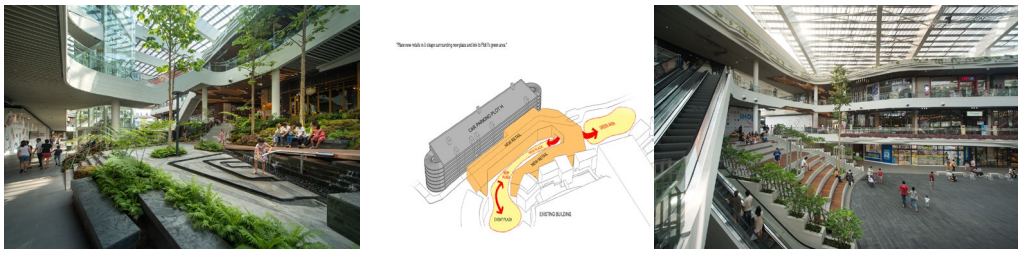


Figure 3. The appearance of the building, the circulation diagram, and the view of the interior of the covered area, source: https://www.archdaily.com/894133/mega-foodwalk, 18.11.2024.

To create a similar atmosphere of a natural valley, an open-air mall is created around a central courtyard space, in which a plaza with an amphitheatre (Figure 3.) in the lower part works as the customers' main social space for gathering and holding all kinds of events. Continuing from the plaza on the bottom level, the sloping green area in the middle of the complex, called 'the Hill', gently ascends to connect with the Mega Plaza on level 1. The Hill is intended to be a relaxing space where people can fully immerse themselves into the lush landscape with water features and outdoor equipment [15]. By embedding greenery into the open-air courtyard and throughout the building, the project becomes a hybrid of a marketplace and a public park where social interactions are more encouraged among people. Simultaneously, a network of walkways along shopfronts on every level is connected to a new car parking building via pedestrian bridges and a covered walkway in order to complete the communication system.

The idea of transforming the natural environment into a unique shopping experience is synthesized through its spatial organization and various architectural

elements. A series of walkways are formed, descending gently down from upper to lower levels, to create a similar experience to a 'hill walk'. This results in not only increased saleable areas on the lower levels but also continuous communication, circling endlessly on all four levels.

2.3.3. Parc Central / Benoy, Guangzhou, China, 2016.

Parc Central, Guangzhou is the urban park retail center in the heart of the city's Central Business District. Parc Central has introduced a new typology that uniquely blends the low-rise above and below-ground retail development within a multi-level parkland. Positioned along one of the city's major thoroughfares, this building combines retail, transit-oriented, and public realm design strategies.

Figure 4. The appearance of the building, the ground floor, and the view of the central part of the complex, source: https://www.archdaily.com/791640/parc-central-benoy, 18.10.2024.

Parc Central is a retail building that is designed around an open parkland environment. Forming the heart of the complex (Figure 4.), the landscape, with its varying levels and forms of greenery, has created a place to socialise, rest, and relax. It is a 'Place to breathe' within the city centre zone. Much of the building has been placed underground to achieve this and preserve the ground-level environment.

The gardens, planted walkways, and living walls create an undulating green space that integrates not only with the complex itself but also with the surrounding streetscape [16]. The two buildings curve around the central gardens and are joined by a pedestrian bridge at one end. The design enables the complex to function as a multi-dimensional gathering space with convenient accessibility above, below, and at ground level.

Parc Central is a low-rise building, with two levels above ground and three levels underground. Being lower than the surrounding buildings, the architectural design called for an eye-catching and powerful visual expression. The geometry of the architecture is fluid. The roof canopies are supported by tree-like columns beneath which sit a series of gardens that extend the landscape element up the building. Large atriums punctuate the retail string and draw light into the arcades.

Sustainably designed, Parc Central's environmental performance is also enhanced through the addition of a rainwater collection system and low-E glass façades, and an EFTE roof.

2.4. Case studies from domestic architectural practice

Among the representative examples from domestic practice, the following prominent shopping center facilities were selected and analyzed: "Ušće" shopping

center (New Belgrade, Serbia), “Ada mall“ center in (Belgrade, Serbia), and „Delta Planet“(Niš, Serbia), all of which reflect current trends in Serbian retail architecture.

2.4.1. “Ušće” shopping center/ Mihailo Janković, New Belgrade, 2009.

"Ušće" shopping center is one of the largest shopping centers in Serbia with an area of 130,000 m2. The building is located at the meeting point of the old city center and New Belgrade, which makes it equally distant from the city center as well as the new business center of the capital.

On 50,000 m2, there are over 135 shops, restaurants, bars, game rooms, supermarkets, as well as one of the most modern multiplex cinemas with 11 screens (Figure 5). It was built on four levels and has 1,300 parking spaces spread over two underground floors.

Figure 5. The appearance of the building, the ground floor, and the view of the escalators in the interior, source: https://www.gradnja.rs/tag/usce-trzni-centar/

The facility received the prestigious LEED certificate and thus became, in its time, one of the largest LEED-certified shopping centers in the region and Europe. In this way, it was confirmed that the facility applies the highest standards in five key areas related to environmental protection and human health, namely: sustainable development, water conservation, energy efficiency, adequate use of resources and materials, and the quality of interior space [17].

2.4.2. “Ada mall“ center/ Design International, Belgrade, Serbia, 2019.

The building of the shopping center has an irregular shape. Descending in a cascade, with its form and green terraces on two levels, it follows the movement of the surrounding terrain (Figure 6).

Figure 6. The ground floor and a view of the cascading descent of the building on the site, source: https://www.gtcgroup.com/en/portfolio/projects/serbia/ada-mall

Sales premises are located on the first three floors, while on the floors above, there are catering and recreational activities. All the premises and the movement of users are organized in a gallery style around a central, zenithally lit space.

The modernly designed building of 90,000 square meters stands out with facade brise soleils on large glass surfaces. The materials applied to the building are in accordance with the principles of environmental protection [18]. "Ada Mall"

has a LEED Gold certificate for construction and design, which confirms that it was mostly built with materials of the local origin, optimized resources, and with minimum CO2 emissions.

2.4.3. „Delta planet“/ Delta Real Estate, Niš, Serbia, 2021.

The first Delta Planet in Serbia is located close to the city center of Niš, and it is well connected by traffic to other city areas. With the construction of this building, Niš has become a place of modern shopping experiences, offering visitors a large selection of domestic and international brands, restaurants, cafes, playrooms for children, and many other facilities (Figure 7). Very soon after its opening, Delta Planet Niš became a favorite destination for shopping and socializing.

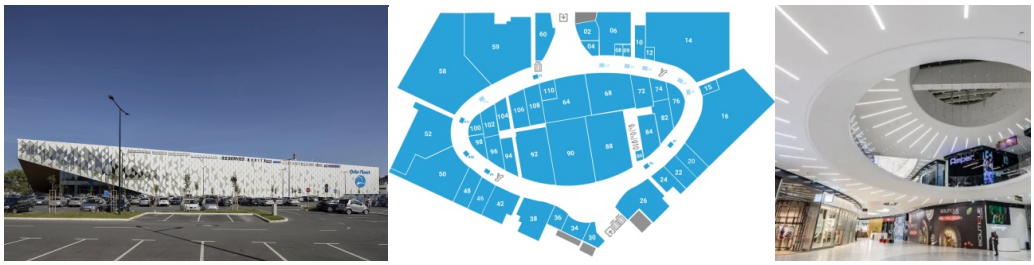


Figure 7. Architecture of the building, ground floor and view of the upper galleries, source: https://www.projektinzenjering.com/projekat/delta-planet-nis-srbija/

The inspiration for the authentic design of the facade was found in the synergy of elements from the traditional Serbian carpet of South Serbia and the tangram, which is a feature of the logo of Delta Holding Company. Attractive architecture, state-of-the-art technical and technological solutions, and an environmentally conscious approach, including the heat pump system [19], have made Delta Planet one of the urban symbols of Niš.

A major challenge during the execution of the works was in the area of the main entrance to the building, where the structure is practically suspended from the roof. This achieved an overhang at a height of 12 meters, which is a real rarity in architecture in the region.

3. RESULTS AND DISCUSSION

Both foreign and domestic experiences were examined through the analysis of characteristic shopping center examples as case studies.

Each of the distinctive buildings represents a unique and innovative approach to architectural design and materialization. The "Emporia" shopping mall, “Mega Foodwalk” and „Parc Central“ are attractive buildings with specific concepts. They are transforming shopping malls into urban public spaces with social features [20,21], aiming to enhance sustainability. These buildings are characterized by biophilic design [22], and offer an environmentally interactive experience within commercial spaces (Table 1).

Table 1. Characteristics of analyzed foreign examples (Source: Authors)

Selected example (foreign)	Characteristics
"Emporia", Malmö, Sweden 	• It has about 200 shops and includes administrative and business premises, as well as accommodation facilities; • petail is organized around a three-sided figure eight, and the rooftop park is designed as cultivated nature; • a structure with a strong visual identity; • a ramp on the north side of the complex leads to a garage with space for about 2,500 cars.
“Mega Foodwalk”, Thailand 	• Semi-open shopping mall; • an atmosphere similar to a natural valley, featuring green areas and canals; • a plaza with an amphitheater as the main social space for customers; • a hybrid of a marketplace and a public park; • every level is connected to a car parking structure.
„Parc Central“, Guangzhou 	• Large urban park retail; combined type • the architecture is characterized by fluid forms; • includes two levels above ground and three underground levels; • large atriums punctuate the retail area and draw light into the arcades; • the roof features canopies, under which a series of gardens pull the landscape elements up the building.

The research was initiated with the hypothesis that the continuous expansion of supplementary amenities beyond retail and hospitality is approaching its peak, resulting in the development of enormous architectural structures, including complexes and mega-structures. These new activities encompass offerings that cater to nearly all aspects of life and the diverse interests of visitors.

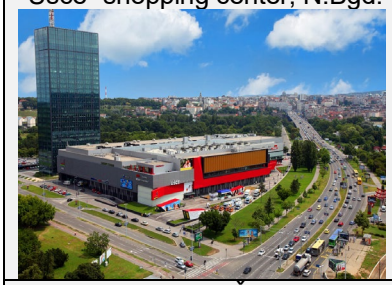
From this perspective, an emerging trend has been identified: the conceptualization of structures that integrate the external natural environment into their interiors, or, conversely, extend interior spatial qualities into the surrounding natural environment. This trend is exemplified by semi-open shopping centers or hybrid forms that combine enclosed and semi-open configurations.

A significant addition to these contemporary shopping environments, absent from traditional malls, is the inclusion of outdoor activities that are seamlessly interwoven with the shopping experience. Activities such as walking, resting, children’s play, outdoor social gatherings, and open-air events are conducted within a natural setting enriched by greenery and water features. The incorporation of natural elements and landscapes within these structures is no longer merely a response to sustainability principles but has become a strategy for enhancing the experiential quality and broaden the range of activities accompanying shopping.

Enclosed shopping centers, which are experiencing a decline in visitor numbers, are gradually being supplanted by hybrid and semi-open typologies that better align with evolving user preferences and behavioral patterns.

The buildings of domestic shopping centers are transitioning to multipurpose developments, combining retail with functions such as office spaces, fitness centers, apartments, commercial spaces, and event areas. Domestic shopping malls now aim to create socially engaging retail experiences by incorporating events, master-classes, job fairs, and a diverse retail mix. Another key characteristic is their adherence to sustainability principles, with many buildings obtaining LEED certification, reflecting their commitment to environmental protection and sustainable design practices (Table 2).

Table 2. Characteristics of analyzed domestic examples (Source: Authors)

Selected example (domestic)	Characteristics
"Ušće" shopping center, N.Bgd. 	• Over 135 shops, restaurants, bars, game rooms, supermarkets, and multiplex cinemas with 11 screens; • built across four levels, with 1,300 parking spaces spread over two underground floors.; • the building adheres to the highest standards of sustainable development, including water-saving, energy efficiency, resource optimization, and quality of interior spaces.
“Ada mall” center, Čukarica 	• Features an irregular shape with green terraces on two levels; • offers about 35,000 square meters of usable space, with three underground parking floors; • the first three floors house 100 shops, while the upper floors include catering and recreational activities; • organized in a gallery-style layout around a central, zenithally lit space.
“Delta planet”, Niš 	• Large selection of domestic and international brands, restaurants, cafes, playrooms for children, and other facilities; • destination for shopping and socializing; • features an authentic façade design, with the main entrance being a significant structural challenge; • utilizes state-of-the-art technical and technological solutions, including a heat pump system, to ensure environmental sustainability.

When it comes to domestic architectural practice, representative examples show that the closed form of shopping centers is dominant. Nature and elements of nature are represented only in certain buildings in the form of green roofs and terraces. The tendency to open is still in perspective, and modest forms of outdoor

activities are extensions of cafes that expand from the inside of the premises to the outside when the weather is good.

Table 3. Summary analysis and systematization of results

Analyzed buildings	A	B	C	D	E	F	G	H	I	J	K
Foreign examples											
"Emporia"	**o**	o	o				o	o		o	o
“Mega Foodwalk”	o			o		o			o	o	o
„Parc Central“	o				o				o	o	o
Domestic examples											
"Ušće"	o		o				o			o	o
“Ada mall” center	o		o				o	o		o	o
“Delta planet”	o		o				o			o	o

Legend: A- Shops with additional activities; B- Mixed structure; C- Closed physical form; D- Semi-open physical form; E - Urban park retail-combined type; F- Linear spatial organization; G- Circular spatial organization; H- Park on the roof; I- More green areas; J- Aspects of social sustainability; K- Aspects of ecological sustainability (Source: Authors)

The results of the comparative analysis of the selected shopping centers are summarized and systematized in Table 3. The multipurpose character of these buildings was analyzed with respect to several different criteria such as physical form, spatial organization, the presence of elements of the natural environment, and aspects of sustainability. The results show that multipurpose correlated with circular spatial organization in closed physical forms of buildings contributes to social sustainability. In the case of semi-open and combined types of physical forms, the presence of more green areas and additional outdoor activities contributes to the ecological and social sustainability of these buildings.

4. CONCLUSION

Throughout history, trade took place in markets, fairs, and squares, and over time, clusters of trades emerged in central city areas. The appearance of shopping centers is primarily related to the development of the automobile industry and the emergence of the so-called "sales boxes" on the outskirts of cities, primarily in the USA, which later transformed into multifunctional spaces for entertainment, recreation, socializing, and spending leisure time. The emergence of new trends in the creation of shopping centers represents a desire to modernize their concepts, as well as to build modern buildings, unusual constructions, facades, and shapes that will impress visitors and lead them to spend as much as possible [23,9].

Through the development of shopping centers, various types of these buildings were created based on their position in urban areas. It has been proven that shopping centers have a significant influence on the quality of the urban environment in the surrounding area, in terms of the habits of visitors and the way they use the space [24].

Shopping centers that do not have spaces that people can perceive as their own, and where they feel comfortable spending time, are doomed to fail. That is

why the shopping centers of the future must include smaller squares that bring a new spirit of "place" and thus grow into a public good. Therefore, shopping centers aspire to become new city centers. They will be the most visited "city squares", places to meet friends and combine shopping, entertainment, and enjoyment.

Respecting the context and integrating nature into shopping center buildings are key factors for their success and progress [22]. Consumer preferences have changed, and consumers favor relaxation in open spaces. "Lifestyle" centers appear as an answer. These centers feature extensive open spaces integrating shops, entertainment venues, parks, and business and residential buildings.

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