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Shoppingscapes Architecture as a challenge: Possible pattern for Serbia

Abstract:

The paper is based on the multispecies analysis of the „ShoppingScapes“, buildings that are becoming the complimentary part of a city everyday contemporary living, as well as being social and global phenomena. The paper treats aspects of contemporary ShoppingScapes concepts as public spaces and factors of successful ambience created to make shopping more enjoyable. The analysis is based on researching building opportunities in WB, at first in Serbia.

These objects as huge energy consumers are more often becoming self-sustaining systems which are using and exploit natural resources taking an active role in creating a new ecology. Having in mind that ShoppingScapes buildings spend a great amount of energy in the service phase, the authors are interested in researching the sustainable pattern for Serbia.

This paper explains the influence of urban and cultural dynamic towards architecture of these objects and contemplates future possible solutions.

Keywords: ShoppingScapes, design concepts, public spaces, sustainability, architecture

1. Introduction

The contemporary increase of population, together with the rising production and consumption and human requirements for improving the quality of life created a new consumption system. Such system directly caused emergence of shoppingscapes. The commerce in the history of civilization was always present in various forms and communities, and it always represented a certain skill and ability of an individual or a group to win the consumer. Stamenović Dragan (2003) Development of commerce completely follows the development of human society, and the forms in which it manifests are always in line with level of economic development of the environment, appropriate social milieu and technical and technological potentials of its usage and existence.

According to Peter Coleman (2006) *the first forms of shopping illustrated the integral relationship between shops and the fabric of a town and its administration in the combined market hall buildings. Earlier exploration revealed that all shop-ping formats were originally located in the town centre, from the time of the earliest civilizations right up to the 1920s in the USA, and as late as the 1960s in Europe. The first European examples of planned town centre shopping are found in the post-war open precincts and the early enclosed centres in the UK.* As the cities were the essentially the core of shopping, the growth of population in them produced shopping centres as the result of growing agglomerations. The represented a controlled unity which in some way helped takes some load off the already encumbered city cores. In time the shopping structures were created that gained growing importance in the social fabric. Finally, in 21st century, the shopping centres become fundamental and attractive buildings, which to a great extent bring in variety in architecture of urban entities. Rem Koolhaas (2002) defines it: *Perhaps the beginning of the twenty-first century will be remembered as the point where the urban could no longer be understood without shopping.*

From its beginning in the USA integrated retail development has successfully spread to all parts from the world. In each country as shopping centre development matures, it creates its own national identity developed by many factors including: financial drivers, architectural and urban context, shopping culture and political will. The design of all retail environments confirms to basic planning principles, but all developments are still unique, and are shaped by their location.

2. Public space - general discussion

Public space is an interactive non-profit location gathering all social structures. In an ideal case, such urban space is a place arranged according to planning where various activities incessantly take place. It represents a city fabric, which formally serves to facilitate and enrich the common daily life to the users. If we exclude parks which are used as oases for relaxation and recreation, the role of the public spaces is to provide a spatial comfort to the community in course of performing business activities and accompanying daily activities. Very often, public spaces are loaded by traffic and parking spaces creating congestions encumbering the urban space.

Public spaces have a very important cultural-sociological role in creation an image of a society. Altman (1989) see this problems *through human action, visual involvement, and the attachment of values where people are directly involved in public spaces. People claim places through feelings and actions. It is direct or symbolic human involvement that invites an examination of control as a critical element of the values attached to urban spaces.*

By the increase of production and consumption, the public spaces which should, as a rule, belong to all social structures, become in a way endangered and encumbered by commercial functions. It is necessary that these spaces remain public property, because a space of such frequency is very suitable for various commercial functions, and commercialization can easily problematize the basic idea and importance of a public space. Shopping in various forms spontaneously colonized public surfaces and structures, with the pretext that it is indispensable for the contemporary society. In the 60s and 70s shopping malls were positioned in the city centres, while in the 80s the majority was constructed in suburbs. Until the 90s shopping malls return to city centres and this trend is still having momentum. Relocation of shopping malls in the existing city structure calls for a sensible and responsible procedure in designing, without imposed false associations or sentiment.

Mass production, multiplication of products, advertisements, obligatory monthly family shopping as well as the enclosed space in shopping centres, progressively weighs down on a contemporary consumer. In the time of capitalism and deficit of spare time, people must be provided all conditions that the time they spend is pleasant and of good quality. On the other hand, the need for returning to individuality and forgotten values slowly returns certain groups of craftsmen into city cores. This grouped form of shopping is the only sort of contemporary commerce offering original products, which has the identity of local cultural-sociological structure of a certain area.

For instance, in Serbian cities are characteristically central city pedestrian promenades, which, apart from a variety of cultural offer also feature attractive shopping centres. This raises the question to what extent the public space needs to be commercialized to be transformed to a shoppingscape and whether shoppingscapes become ne form of the public space?



FIG 1 a) Open public space street shops Knez Mihajlova Street; Belgrade, Serbia; b) Closed space street "Delta city" shopping mall; Belgrade, Serbia

2.1. *Contemporary concept of shopping malls architecture*

[4] The character and scope of shopping are determined by diverse and numerous influences, and to consider their action and consequences we must explore their sources. Within an architectural design of a shopping mall, they can be determined in its program structure, functional composition, and with implemented technological and constructive solutions with full observation of economical aspects of future usage. These influences should obligatorily be in accord with the already set norms in urban and wider regional planning regulations.

Shopping malls are a public character structures which in contemporary context represent multi-functional structures which have a role in everyday life of a large number of people in urban environments. These structures, defined as multi functional shopping malls, differ in terms of volume, position and accompanying functions. In many constructed examples and designed models of the new concept of design of shaping mall, all the principles defined as public space have been implemented, unified by a common space. These structures should achieve effect of

pleasance and comfort where each segment satisfies the needs for rest, relaxation, food and fun of its consumers besides shopping. Modern shopping malls also accommodate lodging, cinemas, theatres, concert and exhibition halls, play-grounds, sports issues, artificial nature, pools and other.

So ShoppingScapes, are becoming *small towns* where all free activities are taking place besides shopping and buying. These micro-cities, which are situated in macro space, represent urb-architectonic challenge where architects differently express their ideas in different forms.

Milan Lojanica (1999) *organization of such shops, positions of entrances and exits should encourage and motivate the buyer to use different paths in shopping and to facilitate the customers with as much as possible of merchandize on display. Such spatial solution comprise that shopping malls are not monotonous, but possess an allure, allow easy orientation and impression of attractive offer (so-called pleasant surprises) during shopping. The space must be maximally changeable and adaptable to various kinds of offered merchandize.*

3. Sustainability

Shopping centres, as high energy consumers progressively become self-sustaining systems using natural resources and actively taking part in creating a *new ecology*. The designing tendency is that the shopping centre structures are multiply cost efficient, primarily in terms of maintenance costs and consumed energy bills. One such benefit is the reduction of costs to operate shopping centres and retail stores by reducing their consumption of utilities, such as water, gas and electricity. Such a principle of cost-efficiency coincides with the concept of green architecture.

A shopping centre is defined as premises which are typically enclosed, climate-controlled and lit. It is also a fact that it is one of the major energy consumers among all types of buildings, owing to their huge lighting load, large and fluctuating number of shoppers and long operating hours. As a rule, they have large floor are, peculiar forms and volumes, imposing new technological requirement, both in the application of new materials and structures of large spans, and in the implementation of new technologies of the micro-climate support systems, in terms of temperature, humidity, purity of air, light and sounds in the enclosed space. The air is prepared in

special chambers, where it is purified and cooled via the chillers and then pumped into the structure via ventilation ducts.

The size of the structure, quantity of air, and meeting certain standards, and the special user requests also contributed to the development of these systems and equipment. The roofs, as a rule of huge areas, require application of new drainage technology, mostly by creating “vacuum” in the drainage systems, the so called “pluvial” system where the water is drained away from the roof at high rate. All the drainage fittings are placed inside the structure; therefore the facades do not feature drainpipes. In addition, such system requires special roof waterproofing employing PVC membranes. It was exactly the demands of shopping malls and similar structures which contributed to the development of these drainage systems, and also to the development waterproofing systems. GVA Grimley (2008) *The design of new shopping centres is reflecting the need to maximise recycling which will probably necessitate larger service areas to accommodate refuse bins and baling/compacting machinery.*

4. Shoppingscape and landscape, models around the world

The chain of MPREIS supermarkets is a new contemporary concept of designing of shopping malls in functional and formal terms. This example is greatly coherent to the discussed principles of green design. The architect Rainer Köberl, considers the shopping structures resembling *selling* boxes with no architectonic importance an inhuman way of shopping, as they create a sensation of selling *caves* with narrow corridors leading from entrance to the exit. A modern concept of designing of shopping malls comprises a more humane relationship towards consumers and the environment. The new context and idea of the MPREIS supermarket design is equivalent to the environmental sustainable concept of designing. Now those are spacious and well-lit modern buildings where the inside of the structure is visually open to the environment. The supermarket u Tyrol (*pic*), located on the slopes of the Alps, provides and completely new, *more entertaining* experience to the customers. The merchandize is visible on the dominant façade of the structure, resembling a large, living screen.



FIG 2 "MPREIS" Supermarkets, Austria

Apart from its characteristic urb-architectonic form, which is the main attribute of this structure, it is unique for its completely new energy designing principle. Namely, the principle it was designed after comprises that the structure must be built so that it takes into account the influence on the human surrounding and the changes it thus brings about on the environment, during its entire lifetime. The designed space of the shopping mall is covered by a transparent material, based on a plastic resistant to large temperature variations (ETFE), which allows access of daylight into the structure. Control of fresh air intake and collection of precipitation water and their further usage, are only some of the energy principles along which this structure functions.

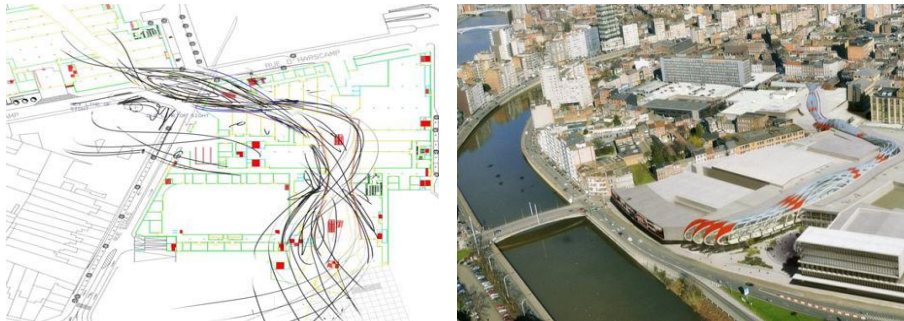


FIG 3 "Médiacité Liège" shopping mall, Belgium

Shopping mall *Médiacité Liège* (picture 3) with its form, volume and composition is an example of smart matching into the existing urban image of this part of the city. The specific trait of this shoppingscape is the main longitudinal curve representing an axis used for formation of the structure. This curve symbolically separates and unifies the city core zones, on one side a peaceful residential block and the frequent traffic, railway station and light industry zone on the other side. In this way the shopping mall represents a public space zone meeting the current needs of growing city for mixed-use functions.

Shopping mall *Selfbridges* (pic), is a monumental building which forever changed the appearance and urban image of Birmingham city, England. It is a part of chain of the shopping malls created at the beginning of 20th century, but it stands out as an impressive example of contemporary architecture of 21st century for its unique organic form, materialization and volume. The structure is situated next to a cathedral, where in symbolic way two opposing *temples* of architecture are conjured up. On one hand there is a historic, church architecture, and on the other, a modern – consumerist. This building is in a sharp contrast to the existing traditional urban agglomeration. The architect attempted to reconcile the traditional and the contemporary, with one new understanding of architecture of shopping malls, which differ not only in form, but in the role in a living community.



FIG 4 "Selfbridges"; Birmingham, England

The issue of usage of the commercial city space in the world, primarily in densely populated metropolises with already built city cores, is a primary one in the context of

development of further city development strategy. Japan is a developed, densely populated country which has a great problem of the free area shortage. The already built structures, which are underused are often redesigned or converted, according to the changing needs of the citizens, with the purpose of improving the movement and transportation dynamics of its users.



FIG 5 Shopping mall "Namba Parks "; Osaka, Japan

Namba Parks (*picture 5*) is a shopping mall which best illustrates the relations of a developed society with the concept of creation of mixed-use space and its integration in urban fabric. Regarding these parameters, a team of architects converts the existing railway station of the Osaka city, creating a new green gate of the city which simultaneously alleviates its cold, busy, businesslike character. The multi-functional structure now represents a green oasis, which dramatically changes the identity of the city. Namba Parks is an urban centre, inspired by the power of nature and its regenerative force as a universally understandable element connecting the Orient and the Occident. It was designed and constructed as an energy efficient building, completely imitating the nature. *The Canyon*, honeycombed with caves, inlets, natural colours creates a mystical feeling in the users. The building consists of eight floors, rising gradually from the level of the street, crowned by large green roof, which satisfies the need of the city for an open green area. Retail shops integrated inside the canyon, as well as recreation park, are designed to attract and humble offer an everyday adventure to the customers, in time when spare time is getting shorter and when every free moment becomes invaluable.

5. Serbia and region

5.1 General discussion

Heimsath, C. (1977) *the major changes that are needed to make cities more human must come from the climate of opinion of the society as a whole. However, a major first step in the direction can be achieved by acknowledging the role that building and city divisions play in creating inequalities. More positively, we must acknowledge that the real test for success in a building is how well it supports a positive social environment.*

Parallels are made with the current theory of designing and development perspectives in national circumstances are investigated. The research also provides for flexibility – allowing local builders to make green choices based on climate and geography as well as style preferences and budget.

In West Balkans and Serbia, countries in the social system transition, large corporations bring about innovative future habits in the shopping domain and thus the “*global architecture*”. The retail buildings of large dimensions until the beginning of 90's were recognizable buildings in Serbia, having the form of large department stores where for the first time in one place there was a wide choice of goods, and services offered, as well as supermarkets where food and consumer goods were sold. Most of them are built in period of '70 and '80 of the XX century that can be considered as the most prolific period of construction activity in Serbia. In 70's, visual interpretation become important elements in its formation, and the new materials become progressively successfully implemented. The structure becomes again a prominent compositional element in the search for the acceptable form, in harmony with the context. This was before disintegration of Yugoslavia that later influenced great political and economic crisis in Serbia. Before crisis, there was a good environment for great investments in the area of social welfare and in the facilities for shopping. After the turbulent political period in the 90's, with the first signs of the crisis abating, the first mixed-use shopping malls appeared, there is a mass construction of various forms of contemporary concept of shopping malls.

Nowadays, as the large companies and foreign investments entered the country, they should be used as significant potentials for long term strategy of development of urb-architectonic heritage. Underdeveloped places and towns must have increased awareness of the importance of the quality of built up environment, allowing for the future development and changes. The local authorities are obliged to stimulate construction of shopping malls in accordance with the specific town planning and financial limitations, primarily for the purpose of practical integration of structures in

a sensitive context of the existing urban core and cultural heritage. According to the current conditions in Serbia, it is necessary to introduce the principles of:

- Reprogramming and redesign of existing unprofitable, dilapidated or “dead malls”
- Implementing the green patent in the existing shopping structures;
- Model of green designing in the regulations, for the purpose of preservation of environment and building heritage.

While the economically developed countries were devoted to a planned filling in the necessary selling space, the transition countries of Central and East Europe have an uncontrolled expansion of shopping malls by the end of 90's. It can be said that today, shopping malls are the symbol of globalization imposing its own way of doing business in multinational companies, to the less developed countries, and thus the global architecture is imposed.

James Wines (2008) *XX century started as an age of industry and technology, but it rapidly transformed into an age of information and ecology*, and almost certainly of shopping. Nowadays, it is important the architecture of shopping centres becomes *smart* and compatible with people.

5.2. Possible pattern for Serbia and region

Knowledge about the limited reserves of fossil fuel and pollution of the planet advise saving energy and using the inexhaustible energy of the sun. Such architectonic though has announced a new age in progress and development of the architectonic form and principles of designing. The basic requirements is that the production has low energy consumption and that causes low environment pollution, that is, that it has low emission of hazardous matters in production and operation. A special attention in production is paid to recycling and waste management, reduction of noise, dust, and vibrations.

European Union decided that until 2020, 20% of the total energy consumption must be from renewable energy sources. In the long run, the humanity can rely only on two completely natural and pure energy sources. Those are the energy of the sun constantly radiating the earth and the geothermal energy of the molten interior of the earth.

[8] *Solar energy can be harnessed in two ways: by converting the solar energy into the thermal one or by converting the solar radiation into electric power. The solar systems for production of heat are applied in households, industry, agricultural structures and other structures using large quantities of sanitary water. However, in the last ten years,*

photovoltaic (PV) conversion of solar energy became a primary branch of the solar device industry, due to a large number of technological advantage in comparison to conversion to heat and due to a fast growth of relevant technologies and their designed potentials..

Usually, under the term geothermal energy is meant hot ground water at temperatures higher than 40°C. In respect to the traditional ways of heating, the heat pump has the best performance in respect to the used energy, the saving can be up to 70%, requiring the least operational costs and realizing the least impact on the environment. In combination with the floor heating, the financial savings in respect to the fossil fuels up to 16 times, since the floor heating system behaves as a thermo-accumulation device, and it is possible to actually activate the heat pump in the period when the grid electricity tariff is low.

Geographic location of Serbia, in the South-East Europe, as well as temperate continental climate, is very favourable, when discussing solar energy. The intensity of solar radiation is among the highest in Europe. The most favourable areas in Serbia have a lot of sun-hours, and the annual ration of true insolation and total possible insolation is around is approximately 50%. Energy potential of solar radiation is for around 30% higher than in the Central Europe. For comparison, the average value of global radiation of the territory of Germany is around 1000 kWh/m², while for Serbia, this value is round 1400 kWh/m². Despite such data, its potentials have not been sufficiently used.

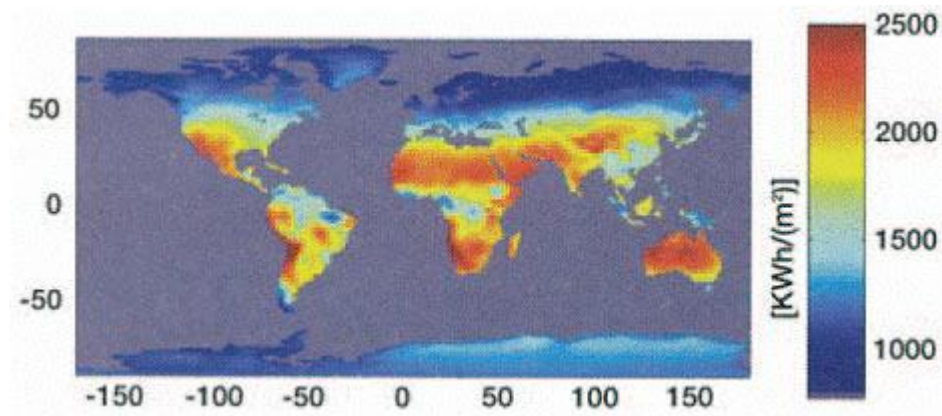


FIG 6 Global variation of irradiation

In Serbia, building of Shopping malls has only started, so new terms such as the Shopping mall technology, Shopping mall economy or Shopping mall architecture are often being mentioned. Powerful world brands with might economies and might advertisement mechanisms bring along modern technologies, management systems and modern architecture. New brilliance for the new age, new offerings for the modern man. In Serbia, there are two large Shopping malls, Delta city and Ušće in Belgrade. A new, the largest Shopping mall in Serbia - Delta Planet has been designed with the total area of around 200.000 square meters, with green roof, and led façade in combination with diverse vegetation.

UŠĆE (*picture 7*) is the first shopping mall and first facility built in WB region which entered into a process of getting the LEED certificate. UŠĆE has already started with the implementation of efforts related to increasing efficiency in water consumption, energy use in the best way possible from renewable sources, the use of natural, renewable and recyclable materials, as well as increasing the quality of the staying conditions in the mall.



FIG 7 UŠĆE Shopping Centre Belgrade, Serbia

UŠĆE Shopping Centre is designed, constructed and managed in the way to achieve effect of pleasure and comfort where each segment satisfies the needs for rest, food and fun of its consumers, but not to endanger the landscape and environment.

This project is applying measures of green building, at first by an integrated approach due the design, use of healthy materials and advanced control systems for air, trying to use the least amount of water and make efforts for maximizing energy efficiency,

and to implement an effective recycling process. UŠĆE shopping mall through an integrated planning and coordination has been the pioneer of the implementation of green building idea in the region, with a tendency to become a standard in the further development of these types of structures.

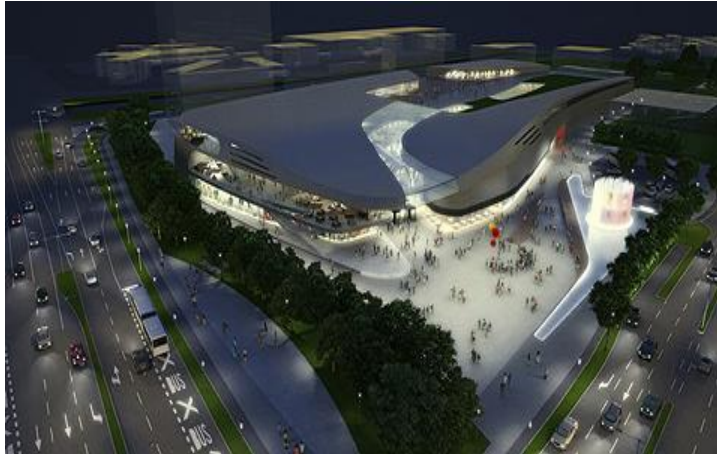


FIG 8 Green Shopping Centre” SISKI Ljubljana, Slovenia

The highly mixed district of SISKI (*picture 8*) on the northern edge of the Slovenian capital Ljubljana is in a process of transformation. With very good transport connections, the shopping centre is located precisely at the point of entry to the city and, together with the other buildings on the site, will assume the role of a gateway to Ljubljana. The Shopping mall Siska is an active participant in public life and the elements of the centre adjacent to the square will fill it with life. The “urban balconies” which are home to a highly varied selection of gastronomically options also offer a framework for the public activities which take place on the square. The amorphous design of the building allows it to nestle comfortably into its urban context. Its edges are soft and enriched by a series of smaller public spaces.

The SISKI Shopping Centre was conceived as a sustainable shopping centre which, besides taking into account the latest energy standards, also considered the CO₂ neutrality of materials. The centre is also notable for the way in which it addresses issues of social sustainability. The forecourt becomes a public square. Plans are currently being developed for the incorporation of such elements as a medical centre, fitness facilities, kindergarten and library.



FIG 9 Shopping City Süd, Vienna, Austria

Shopping City Süd (SCS) (*picture 9*) is one of the largest green centres in Europe. It was originally built in 1975; its transformation represents a model of the contemporary concept of organic architecture. The shopping mall is organized as a city, with the open central public space, surrounded by the parks and lounge areas. Natural trees, water, green, daylight and open roof create organic spatial climate providing pleasant atmosphere while shopping. Façade cladding is renovated according to the last environmental standards, which also constitute an attractive organic architectonic form.

6. Conclusion

Population growth influences vast changes in urban-architectural structure of the cities and therefore is the significant rise of the need for the new ideas for implementation shopping malls in the urban fabric. Increasingly retail is looking for more variety and mix-uses in the city, creating more value for the customer.

Koolhaas Rem (2002) *Shopping is arguably last remaining form of public activity. Trough a battery of increasingly predatory forms, shopping has infiltrated, colonized, and even replaced, almost every aspect of urban life. Town centres, suburbs, streets, and now airports, train stations, museums, hospitals, schools, the Internet, and the military are shaped by mechanisms and spaces of shopping.*

Shopping centres are an important part of today's quality lifestyle for citizens and tourists. They represent technically complex buildings with several areas, and are used for providing retail services (they include retail shops, food & beverage area, health or beauty spa, bank, etc.) and other commercial establishments. Lambert J (2008) *For the retailer and the consumer, shopping centres provide a clustering of goods and services that benefit both. Retailers benefit from the concentration of shoppers (foot traffic) and consumers benefit from the choice of shops, wide selection of goods and service offerings, and retailer competition.* In such structures, a high level of equipment, electronic devices and automatism both is required, both for the purpose of synchronization of the equipment operation, and for the surveillance and security systems. In the conditions of complex installations, synchronous plans must be produced. New technological schemes of Shopping malls and their complexity, as well as complex requirements of investors and users contribute to development and innovation of automatism designs. Mostly, new automatics technologies and electronics are for the first time started in such structures, sometimes for the marketing reasons, and sometimes because of the user's demands. The way the parking space is designed inside or outside the structure is very important, as well as regulation of traffic flow of motor vehicles, pedestrians, as well as the automatized control and payment of parking service, method of ventilation, lighting and air conditioning. Designing of parking space represents one of the most important details in designing of shopping structures.

Even though in the Serbian public, the Shopping malls were disputed as structures with brands, as structures extinguishing the traditional shops and habits, it is yet the way to promote the most contemporary equipment, technology and architecture in such small and not so wealthy communities.

In order to maximize the value „ShoppingScapes“ environments tend to respond to a number of fundamental factors. The science tells us that the shopping centre is a machine, with very precise design requirements.

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