Classification of Social Spaces of Shopping Malls by the Prevailing Element

Olena Berezko¹, Roksolyana Kvasnytsya¹, Violetta Radomska¹, Anna Znak¹, Ivan Znak²

¹Department of Design and Fundamentals of Architecture, Institute of Architecture, Lviv Polytechnic National University, 12 Bandera street, Lviv, Ukraine, 79013
²Department of Architectural Design, Institute of Architecture and Design, Lviv Polytechnic National University, 12 S. Bandery street, Lviv, Ukraine, 79013

olenav.berezko@lpnu.ua

Abstract. A new wave of shopping malls development is expected in Ukraine, which makes the study of this type of building and its social spaces even more relevant. The aim of this study is to develop a classification of shopping malls’ social spaces by prevailing element for further research and usage in regulatory frameworks. The article analyzes 16 malls located in different countries in Europe, with different sizes and planning layouts. The analysis of their floor schemes is carried out. The study identified 3 types of social spaces by the prevailing element: linear type (the most popular), court type and mixed type.

1. Introduction

Under the current COVID-19 pandemic circumstances, the quarantine measures have been introduced in most European countries since March 2020. These measures are related to the prohibition of certain activities, including the operation of shopping and entertainment establishments, except for establishments selling essential goods. Under such conditions shopping malls suffered significant economic losses. As a result of the lockdown, no new shopping malls appeared in Ukraine in the first quarter of 2020.

However, since the easing of quarantine measures and the invention of the COVID-19 vaccine, interest in malls as commercial real estate has grown again in Europe and particularly in Ukraine. According to the Cushman & Wakefield’s April 2020 Report, between 2020 and 2022 it is planned to open six new malls in Kyiv and at least eleven new malls in other regions of Ukraine [1].

Given such a new round of active shopping malls development in Ukraine, in-depth study of this building type is becoming more important than ever, especially the one focusing on malls’ structural elements such as social space – a link between all the mall’s functional content parts.

The development of a new classification of malls’ social spaces might become an important component of the new regulatory framework for shopping malls design offering a deeper understanding of the principles of its communication space formation. Hence, the aim of this study is to develop a classification of social spaces of malls by the predominant element.
The current study is based on the following works: Besemer S. "Shopping-Center der Zukunft. Planung und Gestaltung" [2], Maitland B. "Shopping mall. Planning and Designs" [3], Dönhöfer K. "Shopping mall und neue Einkaufszentren" [4]. Also, the paper builds upon diagrams, photos, and information from the books "Today's Shopping Malls" [5] and "New Shopping Malls" [6] by Broto C. Author studies plans and schemes obtained from the official websites of the analyzed malls.

2. Mall’s social space elements

During the previous studies [7] we divided the mall’s social space into two groups of elements: linear and point ones. Linear ones include the main and side malls, while point ones include central and anchor courts:

- **central court** – court at the crossroads of main malls;
- **anchor court** – court located in correspondence to the location of the functional element of mall performing the anchor function;
- **main mall** – mall between two anchors, or between the main mall and an anchor;
- **side mall** – mall that is not connected to any certain anchor [8].

Each of those elements has got certain characteristics and properties. They differ in their functional load and area occupied, they may also be classified by the degree of human activity within them and the amount of rent paid for the use of commercial areas. The detailed description of the characteristics of each of the identified elements can be found in previous studies [7].

For a deeper understanding of the identified elements, it was decided to analyze in detail the floor plans of several malls. Even at the stage of the data gathering and preliminary analysis, it became clear that the structure of social space of some malls is dominated by linear elements, while in other malls the proportions of linear and point elements are approximately the same. Therefore, for a detailed study of the proportional ratio of linear and point elements in mall’s social spaces, 16 European malls were selected.

3. European shopping malls chosen for the study

The main criteria for the selection of malls for the current study were:

- wide geography,
- different area (GLA),
- different types of architectural and planning organization [3],
- the opportunity to obtain sufficiently informative mall’s floor plans.

Thus, the following objects were selected (Figure 1, 2):

1. **Berceo** (Logrono, Spain) opened in 2004. The mall’s total GLA is 41,260 m². It is divided into three different buildings: the hypermarket, the commercial area and the restaurants. All these buildings are connected by covered transitions [5].
2. **El Boulevard Shopping Mall** (Vitoria, Spain) finished in 2003, size is 125,000 m². It has three levels of commercial space that gravitate around the centrally placed hypermarket and a big cinema on the second floor [5].
3. **Zlote Tarasy** (Warsaw, Poland) opened in 2007 is a mall of modern design. It was constructed as a part of a bigger complex. The total area is 205,000 m² and 51,000 of them are occupied by offices and a hotel [9].
4. **Smáralind Shopping Centre** (Reykjavik, Iceland) built in 2001, size is 63,000 m². This mall is by far the largest building in Iceland, housing a large number of stores, restaurants and a cinema with five auditoriums [6].
5. Trafford center (Manchester, UK) built in 1998. Since its opening the mall has undergone significant changes. In 2008, Barton Square was opened, the building of which was connected with the mall by a glass bridge. And in 2020, its reconstruction began, during which the Barton Square retail space was increased, and its social space was covered with a glass roof, which made its building a full-fledged part of the mall. Thus, today its total GLA is around 180,000 m² [10].

6. Domina (Riga, Latvia) opened in 2003, total GLA is 42,000 m². The mall has two floors, but the second floor occupies a much smaller area than the first. This fact strongly distinguishes Domina from other objects analyzed in this study [11].

7. Mediterranean Cosmos Mall (Thessaloniki, Greece) opened in October 2005, total GLA is 46,000 m². It is the largest retail and entertainment development in Southeastern Europe. It contains more than 200 stores, it also features 30 restaurants and coffee shops, 11 multiplex cinemas, a playroom for kids, a large supermarket, hairdressers & manicure services, a church and so on. Gross leasable area (GLA) of mall is 46,000 m² [12].

8. Skymall (Kyiv, Ukraine) opened in 2010, total GLA is 68,000 m². The mall has three floors with more than 250 stores, an entertainment center for children, a cinema, bowling, karaoke and a large area of food courts [13].

9. King Cross Leopolis (Lviv, Ukraine) opened in 2010, total GLA is 50,000 m². The mall contains 110 shops, 5500 m² of entertainment area with a cinema and an ice rink [14].

10. Ocean Plaza (Kyiv, Ukraine) opened in October 2012, total GLA is 70,000 m². The mall has 4 floors with more than 420 shops, a grocery hypermarket, and about 40 cafes and restaurants. For recreation and entertainment purposes the mall provides: a cinema, children's amusement park, a beach club on the roof of the parking lot as well as the largest ocean aquarium in Eastern Europe [15].

11. Donauzentrum (Vienna, Austria) built in 1975. The mall underwent significant reconstruction in 2010, after which its size became 133,000 m². The mall consists of three separate blocks, which are connected by passages at the level of the second floor and have separate entrances from the street [16].

12. Shopping City Süd or SCS (an oldest and biggest shopping mall in Vienna, Austria) opened in 1976, size is 173 000 m². It contains 330 shops and offers 10,000 parking spaces for visitors [17].

13. Centrum Galeria (Dresden, Germany) built in 2009, total GLA is 52,000 m². The mall consists of two blocks, connected by a passage on the second floor and contains 85 shops and 1000 parking spaces for visitors [18].

14. Alexa Shopping Mall (Berlin, Germany) built in 2007, size is 54,000 m². This mall has five floors, 180 shops and many food courts [19].

15. La Vache Noire (Paris, France) built in 2007, total GLA is 44,000 m². The main difference between this mall and the rest in the study is a large green garden on the roof. The main area of the garden is a public space, but its part belongs to the mall and is its outdoor terrace [20].

16. WESTside mall (Bern, Switzerland) opened in October 2008. In addition to 55 shops, 10 restaurants and bars, hotel, multiplex cinema, fun bath with wellness center and housing, this mixed-use construction radically reinvents the concept of shopping, entertainment and living. The mall’s area is 139,000 m² [21].
Figure 1. Schemes of analyzed shopping malls with highlighted structural elements of social spaces, based on [5, 6, 9, 22–25]
Figure 2. Schemes of analyzed shopping malls with highlighted structural elements of social spaces, based on [14, 16, 17, 19–21, 26, 27].
4. The principle of study of selected shopping malls

We used "Archicad" software to determine the conditional area occupied by social space of the mall on the floor schemes to get the proportions of structural elements. The conditional area of each of the structural elements was determined in the same schemes, thus maintaining the proportional relationship between the dimensions. The conditional area of the social space is taken as 100%, hence we determine the percentage occupied by each of the elements.

The areas of atriums and open terraces caused contradictions during the analysis. Within the framework of this study, it was decided to consider the atriums separately and do not include their areas into any of the elements. The terraces’ areas were considered as anchor courts in case they belonged to the covered parts on buildings, were not rented by third parties and freely available for all the visitors.

Figures 1 and 2 show the principle according to which the mall’s social space was divided into structural elements. For each of the malls selected for the study, the distribution scheme is shown for the most indicative floor only. The percentages mentioned in the figures mean the part of the whole mall’s area (on all floors) occupied by a certain structural element.

To quantitatively compare the areas of linear and point elements, the X value is introduced, where X is the difference between the area of linear and point elements in percent ($X = S_{l.e.} - S_{p.e.}$). Here $S_{l.e.}$ is the sum of linear elements’ areas ($S_{main~mall} + S_{side~mall}$), and $S_{p.e.}$ is the sum of point elements’ areas ($S_{central~court} + S_{anchor~court}$), both in percent. Thus, the value of X will be positive if the social space of the mall is dominated by linear elements and negative if the point elements prevail.

5. Classification of social spaces of malls by the prevailing element

Using the above principle of comparison, we can distinguish three types of social space by the prevailing element: linear type, court type and mixed type. The court type corresponds to the point elements: anchor court and central court, while linear type corresponds to the linear elements. The mixed type includes shopping malls, where the ratio of linear and point elements in the social space is close to 1, and therefore the value of X is close to zero: $-10 \leq X \leq 10$. The linear type includes social spaces whose area of linear elements exceeds the area of point elements by more than 10, and vice versa: the court type includes those social spaces whose area of point elements exceeds the area of linear elements by more than 10. (Figure 3)

![Figure 3. Types of shopping malls’ social spaces by the prevailing element]

Based on this classification, we can conclude that among the studied malls there are: 11 malls with linear type of social space; 2 malls with court type and 3 with mixed type. Therefore, the most common type of social space is an alley.

6. Conclusions

The developed classification reflects the proportional ratio of point and linear elements in malls’ social spaces. This classification is intended to improve the analysis of existing malls for future research. It
will be useful when designing new shopping malls and making recommendations for their design. Also, the results of the study can be incorporated into regulatory frameworks for the shopping malls design.

References

[1] Cushman & Wakefield. Marketbeat. Commercial real estate market / May-August 2020 (in Ukrainian). [Online] 2020, [Accessed 31 Jan. 2021], Available at: <https://www.cushmanwakefield.com.ua/sites/default/files/2020-11/UA%20Marketbeat%20Retail%20-%20Ukraine%20Q2%202020.pdf>.

[2] S. Besemer. Shopping-Center der Zukunft. Planung und Gestaltung. Wiesbaden: Deutscher Universitäts-Verlag GmbH, 591p., 2004.

[3] B. Maitland. Shopping mall. Planning and Designs. London: Construction Press, 194 p., 1985.

[4] K. Dönhöfer. Shopping mall und neue Einkaufszentren Urbaner Wandel in Berlin. Berlin: Dietrich Reimer Verlag GmbH, 190 p., 2008.

[5] C. Broto. Todays Shopping Malls. Barcelona: Links International, 120 p., 2006.

[6] C. Broto. New Shopping Malls. Barcelona: Links International, 240 p., 2007.

[7] O. Berezko. “Principles of urban structure in social spaces of shopping malls,” Housing Environment (Srodowisko Mieszkaniowe), vol. 13., pp. 5–11, 2014.

[8] G. Booth. Dollars & Cents of Shopping Centers. ULI, 417 p., 2002.

[9] D. Anderson, Z. Czajewski, S. Clarke et al. “Zlote Tarasy,Warsaw, Poland,” The Arup Journal, No. 1., pp. 31–53., 2008.

[10] Wikipedia, Trafford Centre, [Online] 2021 [Accessed 31.01.2021], Available at: <https://en.wikipedia.org/wiki/Trafford_Centre>.

[11] Domina Shopping, About us, [Online] 2021 [Accessed 31.01.2021], Available at: <https://www.domina-shopping.lv/en/domina-shopping/about-us/>.

[12] Mediterranean Cosmos, Mediterranean Cosmos, [Online] 2021 [Accessed 31.01.2021], Available at: <https://mediterraneancosmos.gr/en/shops/marks-spencer-2/>. 

[13] Sky Mall, Pro nas, [Online] 2021 [Accessed 31.01.2021], Available at: <https://skymall.ua/pro-nas/>.

[14] King Cross Leopolis, King Cross Leopolis, [Online] 2006 [Accessed 31.01.2021], Available at: <http://www.kingcross.com/e-scheda.asp?IDcentro=56>.

[15] Ocean Plaza, About us, [Online] 2021 [Accessed 31.01.2021], Available at: <https://oceanplaza.com.ua/en/about/>. 

[16] Donau Zentrum, History, [Online] 2021 [Accessed 31.01.2021], Available at: <https://www.donauzentrum.at/en/centre>.

[17] Shopping City Süd, History, [Online] 2021 [Accessed 31.01.2021], Available at: <https://www.scs.at/en/centre>.

[18] Altmarkt-Galerie Dresden – Past, Present and Future. ECE, 56 p., 2010.

[19] German-architects.com – Profiles of Selected Architects, O & O Baukunst. Alexa Berlin, [Online] 2007 [Accessed 31.01.2021], Available at: <https://www.german-architects.com/en/oando-baukunst-berlin/project/alexa-berlin>.

[20] Groupe-6, La Vache Noire, programme mixte, [Online] 2007 [Accessed 31.01.2021], Available at: <http://groupe-6.com/wp-content/uploads/2017/02/groupe-6-dp-arcueil-vache-noire.pdf>.

[21] Archdaily, Westside Bruennen / Daniel Libeskind, [Online] 2011 [Accessed 31.01.2021], Available at: <https://www.archdaily.com/101991/westside-bruennen-daniel-libeskind>.

[22] The Trafford Centre, Centre Map, [Online] 2021 [Accessed 31.01.2021], Available at: <https://traffordcentre.co.uk/centremap>.

[23] Domina Shopping, Map, 1st Floor, [Online] 2021 [Accessed 31.01.2021], Available at: <https://www.domina-shopping.lv/en/map/1st-floor>.

[24] Grekomania, Mediterranean Cosmos Pocket Map, [Online] 2015 [Accessed 31.01.2021], Available at: <https://www.grekomania.ru/userfiles/catalog/mediterranean-cosmos/PocketMap-2015.pdf>. 
[25] Ukrainska Pravda Kyiv, *SkyMall vidnovyy roboto, ale povnistiu vidkryetsia do kintsia bereznia* [SkyMall has resumed operations, but will fully reopen by the end of March], [Online] 2011 [Accessed 31.01.2021], Available at: <https://kiev.pravda.com.ua/news/4d7e6afec5e72/>.

[26] Ocean Plaza, *Floor Map*, [Online] 2021 [Accessed 31.01.2021], Available at: <https://oceanplaza.com.ua/map/>.

[27] *Centrum Galerie Dresden*, [Online] 2021 [Accessed 31.01.2021], Available at: <https://centrum-galerie-dresden.klepierre.de/>.