

Oleg Sleptsov, Ali Alimadad Soltani

FEATURES OF FUNCTIONAL-PLANNING SOLUTIONS IN THE ARCHITECTURE FORMATION OF CONTEMPORARY IRANIAN SHOPPING AND ENTERTAINMENT COMPLEXES

*Kyiv National University of Building and Architecture
31, Povitroflotsky Avenue, Kyiv, 03037, Ukraine
aam_soltani1362@yahoo.com*

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Abstract. Based on the analysis of modern experience of architectural organization in shopping and entertainment complexes, in this study authors have identified the main functional-planning schemes of the Iranian shopping and entertainment complexes. A correct approach to compositional solutions and shopping and entertainment complexes formation has been considered in this article. The existing models of this type of buildings in contemporary cities of Iran have been analyzed, large shopping and entertainment complexes have been particularly regarded.

Key words: shopping and entertainment complex (SEC), functional-planning structure, composition solutions.

1. Introduction

The rapid development of science and technology, which we can observe over the past decades, has been reflected in the architectural space of the whole world and also affects the architecture of Iran. A large number of established stereotypes has been changed, new gadgets and social networks are close to replace many functional processes from our everyday life, including the formation process of surrounding space (Abyzov, V. A., 1985). All these aspects allowed to create new conditions and requirements for architectural environment designing in the East. The interior and exterior space gradually ceases to exist separately and it's synthesizing in forming new systems, sometimes even peculiar ecosystems and the center of those is human.

Environment is a concept of a global scale, it covers natural conditions of the material world which cannot be influenced by them (natural environment), and the adapted conditions of all processes and types of life activity (artificial environment) as well. The world of artificial and natural environment is also a subject of interpenetration and synthesis due to the increasing human activity. However, in any form-making activity there are some issues that combine variety of aspects into one, therefore the object which is projecting becomes more perfect and self-sufficient (Timokhin, V. O., 2010). It is important to take an integrated approach to the environmental design process, which provides the predevelopment of algorithm for actions that pass through certain "filters" of the variable selection to get the best solution.

Modern technologies allow to solve many issues including the artificial environmental formation issue. But the environment itself constantly requires elaboration of additional techniques and methods for its organization and development, reconstruction and modernization (Sleptsov, O. S., 1999). For example, it is easier to develop the structure of a dwelling unit due to its small size and the structure of large social and cultural centers

is much more difficult to form because of the size and expanded room nomenclature. These premises are designed for various functions such as work, leisure, education, culture, that is why it is very difficult to combine them together. In conditions of contemporary Iran, such complexes are subject to very significant changes, frequent replacement of functions, modernization, which is why the principles of universality and transformability in the architectural and planning organization of Iranian construction are most relevant. The transformability and universality principles may be well supplemented by a number of other architectural forming principles which are characteristic for space organization, such as the principle of complexity, flexibility of space, functional accessibility, spatial development, systematicity, etc. (Attavna, Bashar., 2011). Consideration of such problematics on the basis of the Iranian SEC construction is possible through the prism of typological features that determine the functional-planning and volume-spatial structure of a building.

2. Analysis of recent research and publications

The publication analysis considering issues of space harmonization and architectural – planning features of the SEC buildings organization as the main scientific directions of the architecture development in SEC of Iran and the world. Many scientific studies of local and foreign authors are devoted to the environmental typology issues. It is necessary to mention scientific studies of Abyzov V. A. (1984, 240 p.), Kutsevich V. V. (2004, 455 p.), Timokhin V. O. (2008, 628 p.). These and other authors use the concept of a systems approach, considering architectural environment as the integrity of the human material world conditions on various levels of its modeling. *Breus A. I.* (1990, 199 p.) and *Attavna Bashar* (2011, 245 p.) paid a lot of attention to the development of shopping and entertainment architectural complexes. However, the topic of functional planning of the space remains not fully opened, which determines the relevance of this research.

3. Research findings

To compile up recommendations for designing and arranging the internal space of shopping and entertainment complexes of Iran, it is efficient to analyze already existing global and local experience of such type of building design and eventually determine its area and functional planning solution.

The research is focused on searching of necessary aspects of space development of the SEC due to its modernization, universality and complementarity of various functional zones. Complex functional-planning schemes of shopping and entertainment complexes include a wide range of zones which are blocked by a developed communication system of interconnections (vertical and horizontal). (Abyzov, V. A., 1985). It is necessary to remember that while drafting up functional-planning schemes of the Iran's SEC, it is needed to follow some requirements such as economic, functional and technological, ecological, aesthetic, socio-demographic, ergonomic and traditionally-cultural, which are the basis for this type of planning. For example, functional and technological requirements allow to take into account construction conditions to make possible the usage of new technological processes inside of the building and allow possibility for further re-planning and transformation of space. Economic requirements make possible to use materials that guarantee a reduction in construction costs, to apply constructive technologies and rational architectural solutions. And cultural-traditional requirements allow us to find the right approach to the SEC architecture formation taking into account the features of culture and traditions of Iran.

Systematization of contemporary types of shopping and entertainment complexes has a great meaning in principles defining their architectural and planning organization. SEC are usually classified according to such basic features as size, planning organization and place in the service system, seasonality of use, compositional solution, form of plan and its location in the planning structure of the city (Kutsevich, V. V., Abyzov, V. A., 1990).

The functional-planning schemes of SEC are characterized by four main types of this building: **small, medium, large and very large (complex)**. This kind of classification is also characteristic of the Iranian shopping and entertainment architectural complexes (Fig. 1).

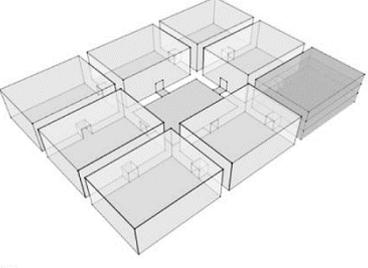
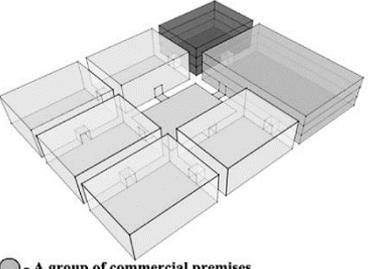
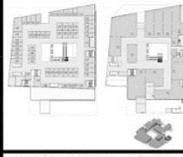
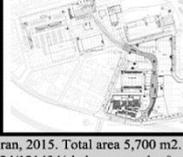
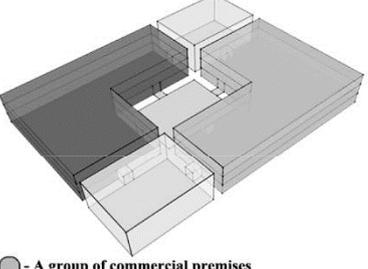
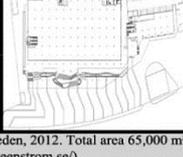
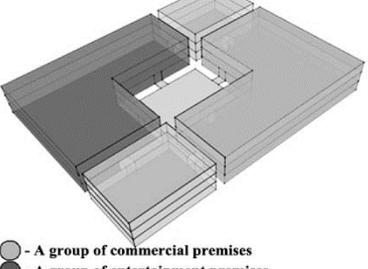
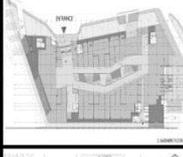
Typological signs		Model of the complex	General view of the complex
Architectural and planning organization of shopping and entertainment complexes by size and capacity	Small Trade + Entertainment	<p>Total area from 1000 to 3000 m²</p>  <p>● - A group of commercial premises</p>	<p>a)   </p> <p>b)   </p> <p>a: Palmyra Junction (shopping center) Cape Town, South Africa, 2010. Total area 2,200 m². Number of floors 1. Source: (http://www.rba.co.za/projects/retail/22/Palmyra_Junction) b: Lady shopping center (shopping center). Moscow, Russia, 2000. Total area 2,650 m². Number of floors 2. Source: (http://metplus.com/complex/55)</p>
	Medium Trade + Entertainment	<p>Total area from 3000 to 9000 m²</p>  <p>● - A group of commercial premises ● - A group of entertainment premises</p>	<p>c)   </p> <p>d)   </p> <p>c: Bazaar Chorsu (shopping and entertainment center) Tehran, Iran, 2015. Total area 5,700 m². Number of floors 7. Source: (https://www.kojaro.com/2016/8/24/121434/chahrsu-complex/) d: Mediacite Mall (shopping and entertainment center) Liege, Belgium, 2009. Total area 9,750 m². Number of floors 2. Source: (https://www.mediacite.be/)</p>
	Large Trade + Entertainment	<p>Total area from 9000 to 30000-85000 m²</p>  <p>● - A group of commercial premises ● - A group of entertainment premises</p>	<p>e)   </p> <p>f)   </p> <p>e: Emporia mall (shopping and entertainment center), Malmö, Sweden, 2012. Total area 65,000 m². Number of floors 4. Source: (https://emporia.steenstrom.se/) f: The Street Ratchada (shopping and entertainment center), Bangkok, Thailand, 2016. Total area 42,000 m². Number of floors 7. Source: (http://www.thestreetratchada.com/)</p>
	Complexes Trade + Entertainment + Business functions	<p>Total area from 50000 to 150000 m² and more</p>  <p>● - A group of commercial premises ● - A group of entertainment premises ● - A group of various public buildings</p>	<p>g)   </p> <p>h)   </p> <p>g: Buyaka Mall (shopping and business center) Istanbul, Turkey, 2012. Total area 155,365 m². Number of floors 4. Source: (http://www.buyaka.com.tr) h: West Edmonton Mall (shopping and entertainment center) Alberta, Canada, 1981. Total area 350,000 m². Number of floors 3. Source: (http://www.wem.ca/?utm_source=google&utm_medium)</p>

Fig. 1. Suggestions for functional-planning organization of shopping and entertainment complexes

Source: scheme by Ali Alimadad Soltani

Small SEC (shopping centers in microdistricts) serve microdistricts for 6000–30000 inhabitants and combine several small enterprises and institutions, their area is 1000–3000 m². Radius of transport and pedestrian accessibility is 500 m, approximately 5–10 min. Accommodate from 6000 to 10000 visitors.

Medium SEC (District shopping centers) serve residential areas for 30–100 thousand inhabitants with a large number of enterprises, institutions and public service organizations. The area varies from 3000 to 9000 m². The radius of walking and transport accessibility is 5–10 minutes. The number of visitors is up to 40,000 people.

Large SEC (regional shopping centers), urban significant, serve areas of more than 100 thousand inhabitants and combine multi-component facilities with various forms of trade, food, leisure, communication, entertainment and information. Area is from 9000 to 30000–85000 m², able to accommodate more than 100,000 visitors. The radius of walking and transport accessibility is from 10 to 30 minutes.

Very large (complex) SEC (Superregional shopping centers) are located in the public centers of large cities, combine multi-component cultural, everyday, shopping and entertainment facilities. The area varies from 50,000 m² to 150,000 m² or more. The radius of walking and transport accessibility is from 30 minutes to 1.5 hours. Capable to accommodate over 150,000 visitors. Large shopping and entertainment complexes include a group of retail premises and a group of entertainment premises (which may include playgrounds, multiplexes and leisure facilities), general purpose premises, consumer services, catering establishments (cafes, restaurants, bars, canteens), business center premises, administrative and business institutions, boutiques, exhibition halls and more.

Natural and climatic conditions, the same as a design and construction zones, play an important role in designing of trade and entertainment complexes of Iran. All volume-spatial solutions of SEC and its accepted scheme (open, covered, half-open) are often dependent on such zoning.

The system approach will help in modeling of necessary parameters of space, develop acceptable search options for the future model, classify and systematize the SEC according to various typological characteristics, which, in general, will allow for the complex formation of the architectural space of the institution, starting with trade, recreation and leisure zones and ending with the landscape of the territory. Purpose of the research outlines the boundaries of this article and the possible development directions of the designed space of SEC in Iran (Linda, S. M., 2010).

4. Conclusions

There is a reasonable need in searching for a new ways and methods of complex architectural space designing of shopping and entertainment complexes in Iran. The authors propose new models and approaches to the harmonization of compositional solutions and ways of space reorganization in the structure of contemporary megapolices and especially of large shopping and entertainment structure complexes in the cities of Iran. Conclusions of the research provide for an integrated approach to the architectural environmental analysis of the East. Such models are completely dependent on the algorithm of the developed sequence of the designed modules of various sizes and specificities. The contemporary design of SEC in Iran is based on the individual design, which is grounded on the previously developed basic typological models and those models are conditional theoretical models obtained by the experiment. So, the designers introduce conditional hypotheses “what if?”. Predicting the possible development of space for various functions that may appear in this zone, the architect will be able to improve and modernize space, to determine the degree of possible interpenetration for different functional zones into each other.

The main research conclusion is that the proposed method will help to significantly improve the architectural space design of the Iranian shopping and entertainment complexes, to harmonize the environment and interconnect the functions of leisure and shopping.

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Олег Слепцов, Али Алімадад Солтани

ОСОБЛИВОСТІ ФУНКЦІОНАЛЬНО-ПЛАНУВАЛЬНИХ ВИРІШЕНЬ У ФОРМУВАННІ АРХІТЕКТУРИ СУЧАСНИХ ТОРГОВО-РОЗВАЖАЛЬНИХ КОМПЛЕКСІВ ІРАКУ

***Анотація.** У цьому дослідженні, основаному на аналізі сучасного досвіду архітектурної організації торгово-розважальних комплексів, виявлено основні функціонально-планувальні схеми ТРК. Подано правильний підхід щодо композиційних вирішень і формування торгово-розважальних комплексів та проаналізовано вже наявні моделі цього типу будівель у сучасних мегаполісах, зокрема розглянуто великі торгові й розважальні комплекси. Основна спрямованість дослідження полягає в пошуку необхідних аспектів розвитку простору ТРК за рахунок його модернізації, його універсальності й взаємодоповнюваності різних функціональних зон. Складні функціонально-планувальні схеми торгово-розважальних комплексів охоплюють широкий перелік зон, що блокуються завдяки розвиненій комунікаційній системі взаємозв'язків (вертикальних і горизонтальних). Систематизація сучасних типів торгово-розважальних комплексів має дуже велике значення у визначенні принципів їх архітектурно-планувальної організації. ТРК прийнято класифікувати за такими основними ознаками як величина, планувальна організація і місце в системі обслуговування, сезонність використання, композиційне рішення і форма плану, розташування в планувальній структурі міста. Для функціонально-планувальних схем ТРК найхарактерніші чотири основні типи цієї будівлі: малі, середні, великі й дуже великі (комплекс).*

***Ключові слова:** торгово-розважальний комплекс (ТРК), функціонально-планувальна структура, композиційні вирішення.*