

# Interconnection of Built Environment and Social Composition of Architectural Space of Post-War Socialistic Housing Estates

## Abstract

The article identifies the specialties of the formation of socialist large-panel housing estates built in the post-war period in opposition to historical cities. Apart from the ideological background and economic and technical aspects the architects and urban planners tried to find out tools to create qualitatively new architectural environment appropriate for the new mode of life. Taking into account the importance of the social dimension for mass housing in the formation, implementation and transformation while changing contexts, the article introduces the concept of social composition of architectural space which is interconnected with the classical concepts of spatial composition of housing estates and also refers to the patterns of space usage by different social groups and their daily practices.

Key words: large-panel housing estate, spatial composition, social compositions of architectural space, hierarchical system of spaces

In the development of the majority of European cities the turning point was the second half of the twentieth century when the combination of factors including the industrial development, population growth, post-war housing crisis, active automobilization and lifestyle changing became a prerequisite for changing the approach to city planning and interpretation of architecture. The principles of city planning composition and building typologies, which were influenced by the characteristics of historical periods and had strongly marked local features, were replaced by the principles of mass architecture in many countries. It was then that universal methods and rapid development of large areas contributed to the creation of new approaches to the setting of new living environment. Housing development was undertaken on a massive scale. Due to A. Murie and A. Power, housing estates, which in most cases consist of prefabricated dwellings, can be defined as groups of buildings that are recognized as distinct and discrete geographical areas, planned by the state or with state support [3]. In the post-war period mass housing construction became a global social experiment. For the first time the architecture had to solve social problems, in particular to house large number of people and to create optimal and equal living conditions for the new society [9]. Thus political, economic and social conditions of the second half of the twentieth century combined with the rapid development of industry were reflected in the methods and approaches of the new living

space design. In many countries similar city planning principles and building technologies were used during designing process and construction of such areas. Today the context and the requirements to the environment have changed but such residential estates continue to be the place of residence for millions of people. In particular, due to the lack of alternative housing and economic conditions in the former Soviet Union such areas are mainly perceived as satisfactory place for living. The differences between the historical city and new modernist districts occurred at the level of ideological perception and at the level of the composition and functioning. A. Lefebvre considers the historic city as spontaneous, one that was created "in natural, blind, unconscious way" and sets it in opposition to the environment of new housing estates, which were created "in international, reflective, rational way"[7]. A. Lefebvre believes that the modernist city is an attempt to simulate the historical city but in a much simplified form: complex inner relationships of the historical city are reduced to three main processes in modernist one: work, consumer services and

leisure. Spatially segregated they form a new structure of the city and its embodiment in spatial composition. In this way the city planners tried to reproduce rationally the social life. However the new architectural complexes were the most layered at all levels: apartments, buildings, districts and city in general. It is worth noting that urban planning theory was significantly transformed during the period of industrial typologism of the twentieth century. In this context the sense of social engineering has changed from imposing new social models to more balanced efforts of new structures integration in the existing built environment. And at the beginning of the XXI century the concept of "social engineering" appealed mostly to research, participation and bottom-up approach transformation processes in large-panel housing estates. Social component is one of the key aspects for the formation of the theoretical basics of spatial composition and design of buildings and structures as well as for the transformation and functioning of mass housing estates.

Soviet city planning of the second wave of modernism that used social models elaborated by constructivists in 1920–30s qualitatively differed from the analogues in Europe in developed social ideological background. Perhaps it was largely seen in theory and less realized practically but the Soviet city planners opposed their design principles to those used in capitalist countries. Accordingly, there are two key approaches to the formation of housing estates: neighborhood that is more inherent to the capitalist countries and micro district that is more associated with the Soviet city planning. Besides functional organization, the approaches also differ in core idea and refer to different categories: the definition of micro district appeals to structural categories and neighborhood – to social ones. The concept of neighborhood was criticized by soviet theorists who did not support the ideas of western sociologists that neighborhood unit was to provide a comfortable environment for the development of "neighborly relations". They believed that it contributes to creation a kind of "island complexes" isolated from the outworld [5]. Instead, as outlined in the theoretical writings, micro district had to have functional and social links with the rest of the city and to be one of the elements in the overall hierarchical structure of the city. It was claimed that in a socialist city the micro district is not a "spatial multiplicity" of residential buildings but the entity [6].

One of the main factors that influenced the development of architecture and urban planning was mass industrialization. It meant the unification of industrial methods in construction, standard design in architecture and integrity of decisions in urban development. The spatial composition started to be one of the most important aspects of urban development as it was necessary to consider a city, a district, a micro district and a residential complex as levels of a spatial unity. To this end the «Stepped system of services» was developed whose links had different usage frequency. The first level of the system considers the services that satisfy the daily needs of the population, the second one – services of periodic use and the third – occasional services. This classification corresponds to the hierarchy division of urban areas into micro districts that are formed around the center of the first level of services; dis-

tricts are formed of micro districts and tend to the services of the second level; and city combines services of the third level [6].

The spatial composition of buildings of mass housing estates was based primarily on standard city planning links: every building had to be a part of a larger urban structure and to perform the definite function in it. Moreover the spatial solution was affected by standard design of buildings and the standardization of industrial methods of construction. Prefabrication of building elements and peculiarities of their installation defined the formation of the tectonic structure of buildings [6]. The construction of residential buildings included mostly the construction from large panels whereas public buildings had broader structural invariants schemes depending on the category of a building: prefabricated method, large-block method, large-panel method and prefabricated and frame method. Residential buildings were built only according to standard projects except the cases where the need in individual project had a significant urban justification. Public buildings were often built according to the individual projects as important city planning accents. The composition of the architectural object had to reflect its purpose not allegorically, but it had to be the logical result of the program and tectonics.

Thus, the main factors that influenced the formation of the main trends of architectural composition of mass housing in Soviet Union in post-war period were:

- development of an industrial method of construction;
- shifting tendency from construction the districts in suburbs into construction in the central parts of the city;
- mass reconstruction of historic centers;
- attempts to recall the national character of an architecture;
- increased attention to the architectural heritage;
- increased value of the city's and region's individuality [8].

There was no single concept of urban planning in the post-war period that most of architects followed. However, according to A. Zinchenko several definite periods can be defined. Spatial composition principles changed during every of them.

– *The first half of the 1950s: formation of the state construction industry, changing the urban planning and designing system* [4].

– *The second half of the 1950s: the increase of the construction amount, especially residen-*

tial, the development and implementation of new methods of prefabricated construction and putting into operation the standardized construction [4]. During this period the theoretical concept of the city divided into functional homogeneous zones dominated [8].

– 1960s: active creation of land-use planning programs, construction of new cities, development of architectural and planning solutions of certain types of buildings and complexes; special attention to aesthetic issues and to the protection of historical heritage [4]. During this period the number of new homogeneous districts started dominating over the historical parts of the city and lacked some architectural originality. As a result, the composition replenished with new methods of individualization of volumes of residential buildings and city planning decisions. Since then the meaning of the historical part of the city and its role in the design enhanced [8].

– 1970–80s.: the use of new construction machinery; organization and management structures; search for new theories; the traditional sections of architectural discipline (theory of composition, theory of formation, history of architecture) started to include interdisciplinary ones— architectural sociology, architectural psychology, architectural semiology [4]. At this time a special attention was paid to the integrity of spatial structures. Design decisions tried to restore social and compositional benefits of traditional streets pattern that was lost during the application of the principle of free plan. Also, more attention was paid to the formation of the active front on ground levels, landscaping and architectural details [8].

Fundamental changes in the compositional approaches can be seen in the projects created in the 1950s and 1980s: mainly ribbon development of elongated linear residential buildings was transformed into the complex structures with more various building typologies and spaces. A. Zinchenko believes that the theoretical concept of composition during this time changed its vector from functional to historical and cultural [4]. This change can be seen in design methods of separate buildings and urban complexes. After period of rejecting the traditional design principles in the end of 1950s – early 1960s architects gradually returned to principles more similar to ones applied in the historical environment of the city. These changes were the result of practical implementations analysis: micro district concept as a basic element of

spatial composition of the city was “artificial and does not reflect the reality of social relations” [6]: the functions of housing estates were not interconnected; a significant social segregation caused lack of communication within local communities. However schools and clinics as well as trade and consumer services were actively visited by residents, but mostly all services of second and third level of the stepped system didn’t function properly. It should also be noted that «Stepped system of services» which was developed in theoretical studies wasn’t consistently implemented in any of the Soviet cities.

New peculiarities of functioning of mass housing estates appeared after the collapse of the Soviet Union and the abrupt transition to capitalism. It was visualized by space transformation and new behavioral patterns. Thus, residential areas were turned into large urban laboratories out in the open. Key aspects of the new areas and new spatial practices faced the new challenges.

One of the key issues was a security and emergence of physical boundaries between private and public spaces (a large number of fences, lattice, locks, metal doors, etc). Former mainly homogeneous common spaces of districts were full of new barriers.

Since the system of short functional links laid on the basis of micro district planning couldn’t operate in the new economical context, a need to travel long distances to work places and some public facilities appeared. Long distances, improper public transportation system and a gradual increase in welfare caused swift automobilization. As a result a shortage of parking spaces caused the uprise of parked cars and garages in residential yards and green areas.

Infrastructural questions also became more sharpen. The amount of existing public facili-

Fig. 1. Comparison of urban tissue fragments of Lviv built in different periods: (1) 1950s, Vyhovs’koho Str. – Liubins’ka Str.; (2) 1960–1970s, Hrinchenka Str. – Hmelnyts’kogo Str.; (3) 1980s – housing estate Sykhiv; (4) – historical core of Lviv



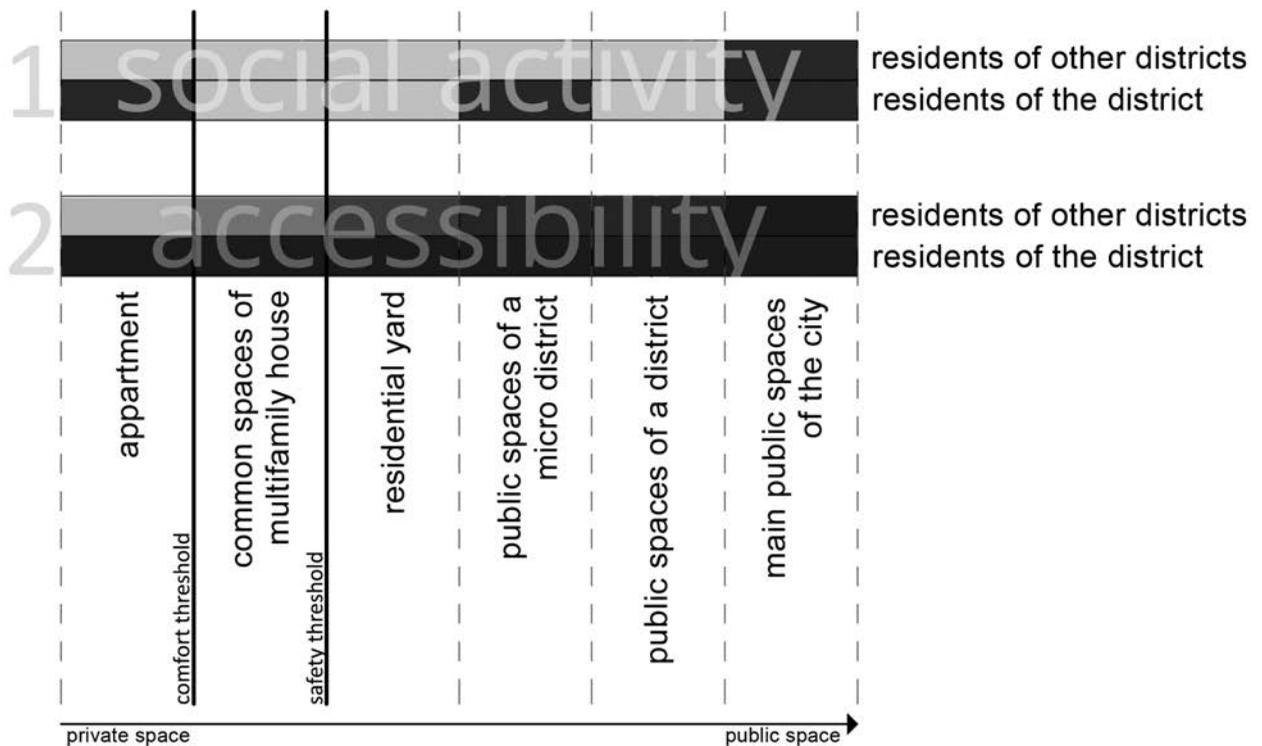


Fig. 2. Social activity (1) and accessibility (2) of a city structure for the residents of the definite district and other districts of the city

ties wasn't enough especially in the new economical context. Spontaneous trade, small architectural forms with trade functions, and later on large supermarkets became all the attributes of residential housing estates.

After the communist period in the Soviet cities religion began to emerge in the urban space and religious buildings were actively built also in the mass housing estates.

In addition, the chaotic and often unauthorized densification with new public and residential buildings often significantly altered the urban tissue of housing estates. Consequently, there was a loss in numerous recreational areas that were one of the most important advantages of socialist housing estates.

It should be noted that there exists a lot of cliché concerning large-panel housing estates. They significantly affect the image and perception of the districts. However, for various reasons in the post-soviet states such areas continued to remain a satisfactory place for living for the considerable part of cities residents.

Taking into account the new patterns of everyday activities in large-panel housing estates, it's possible to define the livable spaces and those remained outside social activity. It is also important to determine what functions are important for comfortable living in the district.

In post socialist housing estates spaces with active social interaction are mainly apartments and some public buildings: schools, clinics, children institutions, and daily services. Analyzing the gradation levels of privacy-publicity of the space, one can notice a "comfort threshold" between the apartment and common spaces of multifamily house, and a "safety

threshold" between common spaces of multifamily house and outer space (Fig. 2). In this conditions residential yard, public spaces of micro district and district are turning mostly into homogeneous and anonymous spaces. Undoubtedly, the spatial composition influenced functioning of all scales: from a scale of a city to a scale of a building and apartment. But existing models of social behavior are different from those defined by ideology of socialist architecture both in urban planning structure and design of separate building. Analysis of the residential district shows the new social structure over its physical structure. Thus, the concept of social composition of architectural space, which is directly related to spatial composition, should be introduced.

*The social composition of architectural space means the social structure of housing estate containing spaces for various purposes, which are interconnected and are places of social processes, where needs of different social groups can be meet.*

Due to the initial structure of the city there are spaces for social interaction on each hierarchical level of its composition: at the first level it is quarters of an apartment, at a level of the residential building it is a common spaces of multifamily house, at a level of residential

complex it is a residential yard, at micro district and district levels – local public spaces, and at a city level – main public spaces and structures of a city.

The research of the social composition and its interconnection with the urban planning and architectural composition of mass housing estates helps to define causes of successful or unsuccessful development of the urban structure. To form a comfortable environment the spatial gradation from public to private spaces should be stepped and contain all the qualities required for meeting the needs of residents on each level. The range of human needs in Maslow's hierarchy of needs was used to analyse the social structure of architectural space of the district. The most widespread version of this hierarchy of needs includes five levels, which can be divided into basic needs – physiological; safety; belonging and love; esteem; and growth needs of self-actualization. Due to the model, basic, low-level needs such as physiological requirements and safety must be satisfied before higher-level needs are pursued [2].

In the case of social composition study of architectural space it is important to find the tools for comparing social activity and qualities of physical space. To visualise the possible structure of social composition it is necessary to compare the social and spatial structure. Namely, Ch. Correa in his work «The New Landscape» combines social and spatial dimensions [1]. The author describes the hierarchical system needed to form the comfortable space, which consists of four levels:

- space needed by the family for private use;
- areas of intimate contact;
- neighborhood spaces;
- open space used by the whole city [1].

Ch. Correa claims that the apartment in a multifamily house – «is only one element in a whole system of spaces people need in order to live». The author considers that in «different societies the number of elements and their interrelations may vary, but all human settlements throughout the world [...] have some analogue of such a system; an analogue which modulates climate, income levels, cultural patterns, etc. of the society concerned. This comparison confirms The hier-

archy of spaces by Ch. Correa also partially corresponds to the structure of the micro district and district (Fig. 3). Also there is some synchronicity between mentioned concepts and Maslow's hierarchy of needs. Namely, comparing A. Maslow's hierarchy of needs with the structure of micro district and district within the city it can be assumed that on each structural level of architectural space certain need can be met, as likely shown in Ch. Correa's model. Of course, it is possible that the same need can occur on several levels of the space at the same time but it tends to be much more urgent on ones than on others. Also it should be noted that this classification is rather formal and may vary depending on the personal characteristics.

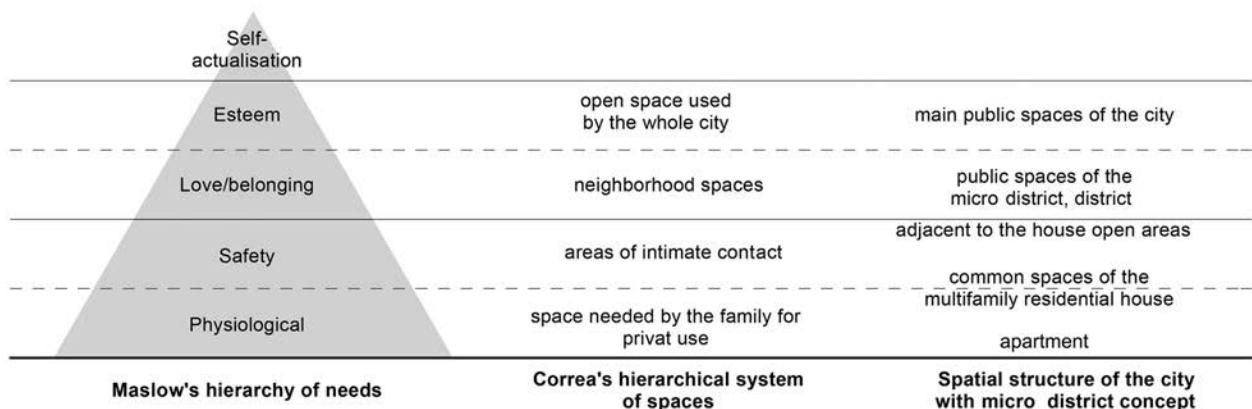
A. Maslow's hierarchy of needs could be interpreted in the following way:

**Physiological needs** (basic needs): the apartment with all necessary physical properties is the main space for meeting the physiological human needs. In Ch. Correa's system of spaces it corresponds to the private space needed for one family.

**Safety needs** (basic needs): Limits of a safety zone in a district structure is often wider than a comfort zone. This can be seen by installing various barriers – entrance metal doors, bars on the windows, fences around adjacent to the building area, etc. Thus there is the strong need for security in the common spaces of multifamily houses and surrounding areas. Regarding this spaces Ch. Correa's system includes the areas of intimate contact of a small group of people.

**Love / belonging needs** (psychological needs): to meet these needs there should be a space that would give the opportunity to in-

Fig.3. Comparison of A. Maslow's hierarchy of needs, Ch. Correa's system of spaces and spatial structure of the city applying the principle of micro district planning



teract with the local community, to participate in social events and to have good neighborly relations. Micro district and district public spaces fit in with it.

**Esteem needs** (psychological needs): municipal public spaces are essential to meet these needs.

**Self-actualization** (self-fulfillment needs): This group of needs does not depend on the physical structure of the city.

Integrity of the gradation of public and semipublic spaces is one of the main preconditions of creating livable district with high social interaction. A. Maslow claims that one of the most important human needs is to feel oneself as a part of a group of other people. Otherwise, there is a feeling of loneliness and unsafety, while regular meetings develop a culture of co-living. In addition, qualities of public space have a big influence on the overall image of the district and are important for perception formation both for local residents and people, who live in other districts of the city. Public space of good quality can provide the opportunity for active social interaction and as a result improves the quality of life in a whole housing estate.

### Conclusions

Theoretical learning, practical implementations and functioning of built environment in Soviet city planning usually were disconnected and existed separately. However, their analysis may show the aspects of Soviet city planning through different lens: ideological, professional and social.

In the postwar period there wasn't a single concept of architectural composition, but nevertheless three main stages of the theory can be defined: the second half of the 1950s; the 1960s; the 1970-80s. During these periods composition of mass housing estate inherited some features of historic environment and changed its vector from functional to historic and cultural.

The system of social ties of the micro district did not «work»; instead new social models of architectural space of large panel housing estates are constantly being formed. While urban tissue is relatively constant, the social structure of mass housing estate that provides its functioning is in the state of change. It could be assumed that the formation of appropriate social space model in post-socialist housing estates is crucial for their success or failure.

To interpret the processes taking place in mass housing estates, it is important to introduce the concept of social composition of architectural space, which is directly related to the spatial composition of housing estate. The social composition of architectural space means the social structure of housing estate containing spaces for various purposes, which are interconnected and are places of social processes, where needs of different social groups can be meet.

“Comfort threshold” and “safety threshold” are characteristic of the social composition of architectural space of

large-panel housing estates. They appear between private and semi-private spaces and between inner and outer spaces respectively. Moreover spaces of some levels in the structure of the district are often withdrawn from a social model of the built environment. Often only the space of apartments and some public spaces on the level of micro district became active social places while common spaces of multifamily house, residential yards and many public spaces are often removed from the social structure of the housing estate. As architectural environment and social composition are interrelated, the improvement of quality of spaces, that are not included into social activity, and creation of the necessary conditions for the activities that are not reflected in the real structure, can help to change the general social composition and have an impact on the district functioning and built environment.

### BIBLIOGRAPHY:

- [1] Correa Ch., The New Landscape. Urbanisation in the third world, Architectural Press, 1989
- [2] Maslow A. (1943) A Theory of Human Motivation, Protokól dostup: <http://psychclassics.yorku.ca/Maslow/motivation.htm#f11> [25.06.2015]
- [3] Murie, A., Knorr-Siedow, T., van Kempen, R., Large housing estates in Europe: General developments and theoretical backgrounds, Utrecht: Faculty of Geosciences, Utrecht University, 2003
- [4] Зинченко А., Развитие архитектурной теории, Сборник научных трудов «Исследование архитектуры социалистических стран», Киев, 1984, С. 74-83 / Zinchenko A., Razvitie arhitekturnoy teorii, Sbornik nauchnykh trudov «Issledovanie arhitekturyi sotsialisticheskikh stran», Kiev, 1984, S. 74-83
- [5] Иконников А. Архитектура города. Эстетические проблемы композиции, Москва: Издательство Литература по строительству, 1972, 214 с. / Ikonnikov A. Arhitektura goroda. Esteticheskie problemi kompozitsii, Moskva: Izdatelstvo Literatura po stroitelstvu, 1972, 214 s.
- [6] Иконников А. Эстетические проблемы массового жилищного строительства, Москва: Стройиздат, 1966., 160 с. / Ikonnikov A. Esteticheskie problemyi massovogo zhilischnogo stroitelstva, Moskva: Stroyizdat, 1966., 160 s.
- [7] Лефевр А. (1967) Идеи для концепции нового урбанизма, Protokól dostup: <http://cyberleninka.ru/article/n/idei-dlya-kontseptsii-novogo-urbanizma> [20.04.2015] / Lefevr A. (1967) Idei dlya kontseptsii novogo urbanizma, <http://cyberleninka.ru/article/n/idei-dlya-kontseptsii-novogo-urbanizma> [20.04.2015]
- [8] Никитин В., Композиционные особенности застройки жилых районов, Сборник научных трудов «Исследование архитектуры социалистических стран», Киев, 1984 / Nikitin V., Kompozitsionnye osobennosti zastroyki zhilykh rayonov, Sbornik nauchnykh trudov «Issledovanie arhitekturyi sotsialisticheskikh stran», Kiev, 1984
- [9] Шмидт Г., Социалистическая индустриализация строительства и социалистическая архитектура, Москва, Государственное издательство литературы по строительству, архитектуре и строительным материалам, 1963 г., 40 с. / Nikitin V., Kompozitsionnye osobennosti zastroyki zhilykh rayonov, Sbornik nauchnykh trudov «Issledovanie arhitekturyi sotsialisticheskikh stran», Kiev, 1984