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TYOPOLOGY OF CONFIGURATIONS OF OPEN PUBLIC SPACES WITHIN PUBLIC HOUSING NEIGHBOURHOODS

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Public housing neighbourhoods with collective dwelling units were built in the second half of the twentieth century all over the world. The concept of the Neighbourhood Unit as a method of planning and design of the housing units have produced in different environments different effects on quality of life, but related problems as well. Urbanity problems are visible both in the social domain in the form of poor connection between people and people and places, and in the spatial domain in the form of poor liveability of open public spaces.

The basic question of this paper is how to define a model of spatial transformation of the public housing neighbourhoods, which may contribute to the positive effects of the process of urban regeneration, especially the progress of vitality and socialization? The starting assumption of the study implies that the spatial transformation of the public housing neighbourhoods should be approached with knowledge of socio - spatial relation underlying the collective life of the neighbourhood. Public spaces and their use are an important component of this relation. The presence of people in the open public spaces does not imply the existence of urbanity, but it is a necessary condition to establish the relationship between people and space and communication between people with each other. The organization of space and its physical characteristics influence the relationship between people, their activities and ideas. The configuration of public space can affect the patterns of daily use which support local community identity and its integration into the global system of the city.

The paper will present the analytical device for analysing the configurations of open public spaces within public housing neighbourhoods which is defined in the form of a universally applicable typology. This typology is based on spatial and sociological theories about relations between spatial form and social processes. The main purpose of the typology is to measure the capacity of urban structure and architecture of the neighbourhoods for supporting the collective patterns of use of open public spaces.

KEYWORDS

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PUBLIC HOUSING NEIGHBOURHOODS AND PROBLEM OF URBANITY

The concept of the *Neighbourhood unit*, as a community inhabiting geographically defined area whose spatial characteristics contribute to social interaction and cohesion of its members, was developed in the planning discourse of the United States during the 20-ies of the last century. Since then, the concept of neighbourhoods, primarily as an instrument of planning methodology of residential structure of the city, was adapted and applied in different spatial and social contexts. Along with socio-political concept of the *community* and the architectural concept of the *Functional city* was an important component in the creation of *collective housing* complexes throughout Europe and beyond.

Shortly after the construction of many public housing neighbourhoods in Europe there has been plenty of empirical knowledge about the problem of urbanity, understood primarily as a lack of presence of people and their interaction in public spaces, and was anchored by numerous other spatial, social and economic problems. According to the early criticism, including texts by Jane Jacobs [11], Richard Sennett [14] and Henri Lefebvre [13], there was a problem of spatial *distinctness* and *completeness* of the urban and architectural concept, which, as such, could not produce and support the concepts of diversity and coexistence of differences as the epitome of urbanity. This thesis was later called architectural determinism in the fields of urban sociology and environmental psychology.

Life in the collective neighbourhood involves a group of people (socially and culturally homogeneous or heterogeneous) which daily shares the same geographical area. Spatial closeness in the routine activities of daily life is imposing the patterns of space use in which people encountering and recognize each other. Modern communication and mobility networks are allowing people to associate and establish social relationships which are based in a very wide geographical frame or which are completely independent from location. However, the fact that cannot be ignored in the studies of neighbourhoods is that of the spatial connectivity between residents and the territorial nature of socio-spatial relationships.

At the same time, to explain the concept of the neighbourhood unit in the context of spatial and social theory of urban heterogeneity means that the neighbourhood should be understood otherwise than unambiguously defined territory of its inhabitants [6].

The neighbourhood is a spatial topology which is the integral part of the overall urban structure and whose inhabitants are connected to each other by looser social ties and exposed to daily encounters with strangers [1][2][6].

Open public spaces has the most important role in supporting and generating this kind of perceived neighbourhood relations, as a key factor of connection between local spatial and social organization to the global system of the city. In this research, the open public spaces are considered as an elementary context and mediator in the social relations of neighbourhood residents, and at the same time of the socio-spatial relations of neighbourhood and the city as a whole.

CONFIGURATIONAL THEORY OF URBAN SPACE

Based on the knowledge of urban planning principles of collective neighbourhoods in the second half of the twentieth century and their relations to the social and spatial problems in inherited European neighbourhoods, this research started with a few questions about the spatial transformation principles. In what way spatial

transformation of neighbourhoods and their public spaces can contribute to the wider process of urban regeneration, which includes the progress in vitality of space and communication between residents? How does the method of spatial transformation of neighbourhood public space can include information about the heterogeneous nature of urban society and as a community of place at the same time?

Analytical theory of Space Syntax and certain theories of urban territoriality were selected as a basic theoretical framework of the research. Although there is the idea that these two theories are mutually exclusive, or that are contrary in their starting points [6], their modern interpretations show some important common features and the possibility of their combination. Both theories deal with the relation between spatial characteristics and forms of sociability. Both theories put the practice of daily activities at the centre of the relationship of space and society, thus complementing usual role of space as a set of representations of social structures and relationships. Both theories point to the importance of the configurational characteristics of urban structure, and impact of its global pattern on the local spatial structure and social forms.

Spatial configuration is defined by relations between spatial elements and by relation of spatial elements to the whole. Arrangement of spatial units and their interconnections by boundaries and their permeability, is called a *spatial syntax* - a system of spatial relations. The Space Syntax theory assumes that the spatial arrangement of physical objects and empty volumes between them, called a configuration, generates and arranges the relations between people in the area, namely groups them, separates them and connects them. According to the theory, buildings are social objects through their own form, not only through their role of the important visual symbols and representations of social relations. The one of the main premises of the Space Syntax theory is that of the predisposition of urban and architectural form for a determination of social forms [7].

Contemporary theories of territorial structure of urban space are suggesting that neighbourhoods are not the spatial units with fixed boundaries, which are unambiguous subject of control by the same group of people. Urban territories in open public spaces are in a constant process of production through the practice of their daily use, and they can have a different characters according to duration of use and the number and diversity of people who are using public space [5][12]. These theories of urban territoriality observe the phenomenon through the concept of complexity, namely, the simultaneous occurrence of a large number of territories of different duration and repetition, overlapping in the same public space. Their complexity should be viewed in relation to the spatial configuration, i.e. characteristics of urban form which are taking part in the production of the patterns of collective use and territorial arrangements of public space and neighbourhoods.

TYPOLOGY OF OPEN PUBLIC SPACES WITHIN A NEIGHBOURHOOD CONFIGURATION

General criteria and indicators of typology of neighbourhood public open spaces were formulated on the basis of analytical concepts defined in theories above. Typology criterion 1 is called *the depth of access configuration*.

The value represented by the j-graph in the Space Syntax theory is called depth and represents the distance of the initial space unit from the final space unit when we are moving through configuration. This

representation clearly shows the syntax of a plan and allows a comparative analysis of spatial relations in different structures [7].

In this research, depth of access configuration is seen as a pedestrian move line from the streets as the most accessible public spaces to the entrances of residential buildings. The longer the sequence of movement, and the greater the number of transitions from one space unit to another within the configuration, the more isolated are residential buildings and public spaces in the end of sequence from the network of streets as the most accessible open spaces.

This means that the number of users of the space along the sequence is reduced, as well as the possibility of encounters between residents and strangers.

According to the criterion of the depth of access configuration, public spaces within neighbourhoods can be classified into open spaces with one change of direction in connecting the street to the housing entrance, open spaces with two changes, and finally, in open spaces with three or more changes.

These changes in the number of turns, in correlation with the integration value of public space, takes role in constitution of collective spaces with significant differences in the patterns of privacy, place sharing and encounters with strangers. Axial map is proposed as a main representation for measuring changes in direction of movement, as well as measuring the integration value of the individual units of the axial configuration [8].

The first type of public open spaces, according to the first criteria, is called *street neighbourhood*. These are the public spaces that are most integrated into the global network of streets and are contain the only one level of axial lines that connects the street to the entrance of a residential building, i.e. one change of direction. The second type is *backyard neighbourhoods* which contain two levels of axial lines between the street and the entrances, i.e. two changes of direction. The backyard neighbourhoods, comparing to street neighbourhoods, are including an additional space unit that is directly connected to the street, but which can provide some level of privacy to residents in relation to the area of the street and can provide a higher level of territorial appropriation.

The third type of public spaces is *enclaves*. This is the least integrated type, because it has the largest number of levels of associated axial lines in the movement sequence from the street to the entrances. Enclaves are the most complex type of the collective area of the neighbourhood, because their permeability pattern is consisting of a plurality of physical units which can be connected in a different ways. Their spatial organization defines different forms of privacy and collective use.

Criterion 2 is called *the constitution value of configuration*. In this case, the area of urban neighbourhood is viewed as a complex system of barriers and entrances which is affecting the patterns of movement, copresence, separation, grouping and proximity, which are perceived as essential categories in the study of sociological implications of urban form [10].

Permeability pattern that is created by the disposition of entrances is a critical point in the formation of different patterns of use of public spaces and forms of privacy and collectivism. In addition, the different permeability patterns can be defined on the same morphological type, creating a negligible difference in the climate and structural requirements of architectural structures. But, changes in the patterns of use of outer and inner space are highly significant [9].

Based on this criterion, the public spaces are classified according to whether the open public space has an access value relative to the housing units (included other buildings that surround it) and more importantly, what is the access value (how many entrances there are)? So, the question is about the access value of public spaces within the neighbourhood configuration, i.e. what is its role in connecting the indoor and outdoor living spaces? The greater the number of entrances from the inside to the outside, the greater is the possibility of copresence and encounter in the everyday use of collective space. This criterion classifies public spaces into one with *higher or lower constitution value*.

If there are no entrances, the units of public space are considered as *blind spaces* that has no constitutional role in neighbourhood configuration [10]. The more blind spaces neighbourhood has, his physical capacities are less used for daily routes, i.e. less residents encounters on the way from the apartment building to the parking lot, the nearest shop or bus stop. Blind open spaces are often used for other urban activities such as recreational activities and children playgrounds.

However, blind areas are often not passable, but represent a break in the sequence such as spatial and visual distance between residential buildings to each other and to the space of the street. In cases where the blind areas are spatially isolated parts of the neighbourhood, and when their visual connection to other open and indoor spaces is at the low level, the blind areas may become dilapidated, dangerous and forgotten public spaces, outside of any kind of territorial appropriation.

Measurement of the constituency of the collective spaces is possible if we are familiar with the boundaries of space units for which the measurement is performed. The question is to what criteria to perform the spatial division of neighbourhood public space, more precise, the question is where one unit ends and where the second begins?

The convex map of neighbourhood is a proposed representation in the purpose of the abstract division of the public space that allow precise measurement of certain attributes of the area [8].

Public spaces that are not on the daily shortest routes leading from the street to the entrance of a residential building are called *the optional public spaces*, according to a term that was first used by Ian Gehl [4]. These public spaces have negative values for both of criteria above and are comprised of a group of blind convex units. Their value in terms of supporting encounters and socialization can be increased by their purpose for other urban functions. Usage of these public spaces largely depends on the quality of the urban design and their equipment, but also of integration value.

Due to a negative value of their connection to the interior spaces, their relationship with other public spaces is important at the level of neighbourhood and the city.

Criterion 3 is called the *visual connectivity between inside and outside spaces*. Contact surfaces or spatial elements through which the outer space touches the inner space are recognized as structures of importance in theories dealing with the relation between spatial form and urbanity. These areas are of crucial importance in the socio-spatial discourse as places of social "condensation" [11] [7] [3] [5]. People need to see what is happening in their immediate outer space, because it affects the sense of security, control over space and orientation. People in outer space feel more comfortable and safer when they see the presence of people in the buildings around them comparing to the blind walls and fences. To see and to be seen is the main criterion defining the sociological concept of the copresence.

Thus, the vitality of public space is directly related to the physical characteristics of their primary boundaries in terms of uninterrupted visibility between the outer and inner space. The presence and distribution of windows of residential and other buildings that frame the spaces of collective usage significantly contribute to spontaneous and informal social control among people who are outside and the people who are in buildings.

To measure the visual connection between interior and exterior space, it is necessary to map out the basic elements of primary spatial boundaries constituting the open public space.

More precisely, it is necessary to map the entrances to the buildings, windows and their height distance in relation to the ground.

This will provide us with the tool to measure the percentage of blind interface within open space unit. According to this criterion, the public spaces are divided into *types with higher or lower value of visual connections*.

Based on the criteria and indicators of the presented typology, there are 14 types of public spaces or spatial patterns of collective use. The typology measures the connection between public open spaces to each other and the connection between public open spaces and indoor facilities as the important spatial relations in context of sociability. The theoretical thesis of spatial configuration of neighbourhoods as directly related to patterns of use of open public spaces and potential modes of sociability, gives the typological classification her primary value.

CONCLUDING REMARKS

The presented typology of open public spaces within collective neighbourhoods has the function of checking the capacity of the urban structure for supporting and generating the simultaneous presence of people, opportunities for encounters and ultimately communication. It is a method of determining the weak points of the configuration, and a clue for the first of spatial interventions, which in this way are no longer solely based on professional intuition.

The proposed typology is not a formal or functional, but it is based on the research of the relationship between spatial forms and patterns of use. Application of typology allows overcoming of the analysis of open public spaces from the perspective of fixed morphological categories and enables their observation inside dynamic relation between local and global patterns of form and use, whose variations are defined as the main factor of sociability in public areas. A set of defined criteria, indicators and finally types, are seen as a method of measuring the social performativity of urban structures, universally applicable in the inherited collective neighbourhoods.

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