

## INTERRELATIONSHIP OF PUBLIC SPACES AND BUILT-IN CORNER BUILDINGS BASED ON THE EXAMPLES OF MODERNISM IN "MALI LIMAN" AREA IN NOVI SAD

*UDC 711.4-111:721(45)*

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**Abstract.** *Corner buildings, according to their position in an urban block, can be more freely shaped than other built-in buildings. Due to their position and perception, above all, from surrounding public spaces, they dominate inside an urban matrix of a residential area and very often represent urban model of cities. Relationship of these buildings to public spaces, which are in their immediate environment, represents a specific problem. Regarding the observed period of Modernism, the problem of the origins and transformation of corner buildings, was treated in different ways, and therefore surrounding public spaces had different characteristics and values. Buildings, originating in the above mentioned period in the territory of Novi Sad and their interrelationship to public spaces are subjects of the research, according to different parameters of shape and function. On the basis of the conducted analysis the quality of interaction of buildings and public spaces is being evaluated, from the viewpoint of their morphological, architectural, and urban structure, but also through programs, social, psychological and environmental values.*

**Key words:** *Public space, corner building, Modernism*

### 1. INTRODUCTION

Public spaces emerge as obligatory elements of the urban matrix through the whole development of civil engineering. Through different historical contexts, a series of conditions and particularities of a certain period are being viewed, from social, economical, scientific, to technical and ethnological and realization to what degree construction of that particular time responded to needs of society, applying their own shapes or copying elements of past epochs. These spaces "...are the greatest artefacts created by the human hand...", and they have numerous and different influences on the mind of the users, "...non-homogeneous mass, which uses urban space in different ways, interprets it differently, experiences its influence in different ways." [5]

The quality of public spaces can be viewed through their morphology, architectural and urban structure. However, the genuine quality of these spaces is based on their programmes, social, psychological and environmental qualities, which are realized through mutual interaction between objects that form them.

Relationship between built and open spaces is being researched by Camilo Sitte, who says that "...in modern urban planning, the relationship between built and open space has been reversed. In the past, open space - streets and squares created a closed and expressive design. Today, the building plots are arranged as regular self-contained shapes and whatever is left becomes square or street" [1].

There are numerous expert reflections on public spaces, observing them from a viewpoint of their spatial and sociological place on a city map, which, according to Lefebvre "are always in relationship to society as a whole, with its structure and functions. Changes of a city begin when society as a whole is changing" [12].

Public spaces in a city have vital role in an urban area. Numerous functions which they have, services they offer to their consumers, directly affect quality of life. By studying three basic components: character, structure and importance of public spaces, we may obtain a clear picture of the existing condition of the city. The role of these spaces is not only to establish the environmental quality, but also the necessary psycho-social relations in a society.

## 2. CONSTRUCTION OF CORNER BUILDINGS IN MODERNISM IN "MALI LIMAN" AREA

Modernism, as a movement emerged at the beginning of the twentieth century, and buildings which were built in this period in the territory of Novi Sad were works of architects educated mainly in the Austro-Hungarian Empire (Vienna, Budapest, Prague), and because of that, the formative elements applied were in accordance to the standards of these parts. Architects of Modernism relied on basic geometrical shapes, and on the application of basic principles of shaping, for which the most important theoretical contribution was given by Le Corbusier [8] in his works, and which had immediate influence on creation of city urban structures. Disappearance of classical urban block with appearance of new structures - free standing buildings, stands on the opposite side of importance of corner building construction which at the same time creates accompanying public spaces [7]. However, although architects from Novi Sad followed new tendencies more than architects of nearby cities of the Pannonian Basin, Modernism was not entirely implemented in construction. Almost none of the five principles of Modernism, not even "free standing building in greenery" can be recognized in the Novi Sad area, on the buildings constructed in the analyzed period. Recognition of a new style appears only through application of architectural elements on buildings, applied in recognizable manner.

By construction regulation of the city of Novi Sad of 1918, it was determined for streets to intersect at the right angle in order to give the city a symmetrical shape.[2] The basic unit was a built-in rental house on the alignment line, and corner built-in houses of rectangular foundation layouts were situated on the fringes of the blocks. Construction of "Mali Liman" began in 1922, in accordance to the Regulation plan of 1921, and based on the design of the architect from Budapest Szilard Zielinski (1860-1924) of 1910, as the greatest urban project in the history of Novi Sad (the first city-planning of Novi Sad in the

Kingdom of SHS.[11] Urbanization of "Mali Liman" formed at the time the most modern boulevard in the state (former Queen Marija Boulevard, nowadays Mihajlo Pupin Boulevard), with entire grid of modern streets, from Dunavska to Radnicka street. In that way, a parallel heart, in comparison to old, historical centre, of the modern city was created. At the same time, the main ground for construction of public buildings and apartment houses in the period between the two Wars was created as well [9].



Fig. 1 Analysed area of "Mali Liman"

Symmetrical type of block was predicted in regulation plans in the period 1933-1941.[4] The management of Engineers and Technicians Association demanded that it should be in the same style and height in comparison to other buildings in that part of the city, and that it is obligatory to have a rounded corner, not acute, since "Ministry of Construction and Ministry of Internal Affairs approved regulation plan for "Mali Liman" with curves in that block". We know nowadays that this request, at least the question regarding order of buildings in the block, was not accepted in practice [10].

During the fourth decade of the twentieth century, the most prolific architects of Novi Sad, such as Dundjerski, Schmidt, Kacanski, Tabakovic and Brasovan, designed representative corner multifamily buildings in the territory of "Mali Liman". Numerous buildings with accentuated corner roundness were built, which was demanded by the Management of Engineers and Technicians Association. Corner emphasis and accentuation of the buildings in architectural terms were successfully designed only in the period between the two Wars.

After the post war reconstruction, the city got in 1963, a new general urban plan, which defined development projection until 1990, and in the meantime some of very important, crucial constructions were started, which restricted the use of corner and corner

houses, emphasizing freestanding buildings in greenery. In Social Modernism we can rarely find examples of architecture which sustains and emphasizes the corner element. Successful examples of corner residential built-in house in this period can be found in the contact areas of old and new urban matrix.

### 3. TYPOLOGY OF PUBLIC SPACES SITUATED NEXT TO BUILT-IN CORNER BUILDINGS

The main definition of public spaces, with regard to their physical aspect, where people are gathering, is undoubtedly a built structure which forms them, giving them a meaning. Corner position of the house presents an impressive trait of a public space and gives the possibility of introduction of the whole block. Corner can also be a model for construction of nearby buildings and apart from façade/façade sheet, corner is the constituent, morphological element which influences the perception of building configuration the most, it can be a beginning or an end of a street, boulevard or avenue along which the observer or user is going [3]. Corner house, at the intersection of streets and squares, belongs to an important urban motive, and the way of its realization results from realization of immediate city environment.

The main criteria for studying phenomenon of public spaces and corner buildings interrelationship is defined as follows:

- According to the building shape (symmetrical, asymmetrical, volume, applied architectural elements).
- According to the ground floor character of buildings, which forms a direct relationship of built structures and open spaces through the mere function of the spaces on ground floors and through their availability to users. The purpose of the ground floor of buildings, and articulation of facade sheet, is a part of uninterrupted functional processes, which take place within boundaries of public spaces.

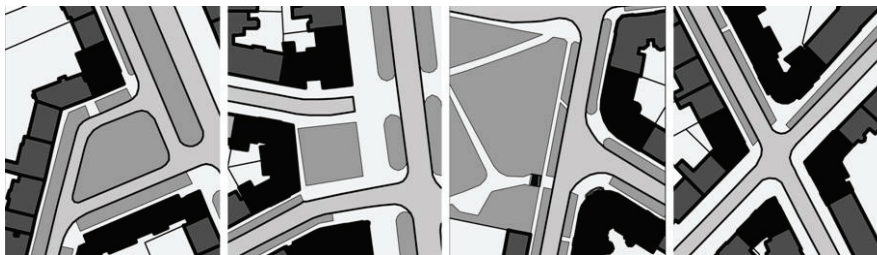


Fig. 2 Different types of public spaces – square, piazzetta, park, street

On the basis of analyzed samples, the following typology of the characteristic public spaces which appear in the interaction with built structures originating from the period of Modernism in Novi Sad is represented:

- square - represents a complex morphological element, a space in town with clearly defined relationship between public space and nearby traffic arteries or built structures which define it, and which, by their specific purpose and position, have a certain social purpose;

- piazzetta - morphological element which has characteristics of a square, but which is much smaller according to its dimensions and social functions;
- park - open public space in a city, with greenery planted according to a plan
- street - public space inside a residential area whose main function is to enable flow of people and goods. Depending on its importance, function, location and spatial shape, it can be a boulevard - wide, representative city street, most commonly bordered by row of trees; residential street, which has to satisfy local needs in residential areas, width from 8-12m; quay - line of communications along the embankment.

The previously mentioned typology is related to studied characteristic elements of urban morphology, which appear in the urban structure of "Mali Liman" and form specific interrelationships with surrounding built structures and built-in corner buildings from the period of Modernism.

#### 4. ANALYSIS OF THE EXAMPLES OF INTERRELATIONSHIP OF PUBLIC SPACES AND BUILT-IN CORNER BUILDINGS

The corner of the building can be defined as a meeting place of two walls which, "depending on a geometrical structure of the street, can have different shapes, and therefore directly influence functional solutions of the interior spaces of architectural buildings" [3]. Apart from the influence on a functional solution, corner buildings, together with public space which directly surrounds them, make a compact whole. Depending on the type of a public space, its dimensions, shape and importance in the city, buildings which are present are viewed in different ways, visually as well as with regard to their importance. Corner buildings, with their shape, influence the creation of public spaces and their particularity with regard to shape and function.

On the basis of researched area of "Mali Liman" several basic types of public spaces situated next to built-in corner buildings have been identified: square, piazzetta, street, and park.

There are two examples of squares next to built-in corner buildings in the area of "Little Liman". This type of public space can be recognized on the example of the Neznani junak Square and Ferenc Feher Square. Both spaces do not have clearly distinctive characteristics of a square as a public city space. Geometrically, square corners are formed by buildings of rectilinear shapes which form obtuse angles, so it can be noticed that there is direct connection of urban block shape and the building itself. Square is defined by buildings mainly of multifamily housing typology, and in both cases the connection of buildings themselves, which form square space, is interrupted by line of communications. Especially on the example of Neznani junak Square the whole public surface is in fact web of communication lines which lead to the Liberty Bridge. Public space in Ferenc Feher Square is converted into green space bordered by communication lines, so it is moved away from the nearby buildings which define square space itself. Both analyzed squares, do not have a social component which is necessary for the public space in order to provide have meaning for its potential users, and buildings themselves which form it do not make a compact whole, neither in shape nor in function.



Fig. 3 Public space in the Ferenc Feher Square

In scope of urban blocks of analyzed area, along Jovana Boskovic Street, Sonje Marinkovic Street and Mihajla Pupina Boulevard, buildings of rectilinear, rectangular shapes form piazzetta, green open space, and its main function is relaxation of the nearby residents. Buildings forming the piazzetta are positioned towards public space with dominant morphological elements, such as balconies, bay windows, terraces or towers on the corners and in that way they give the impression of the an integrated whole of built and open space. The purpose of the ground floors is residential, and therefore the public space of piazzetta makes a unity with the surrounding buildings, functionally as well as environmentally.



Fig. 4 Piazzetta, green open space along Jovana Boskovic Street, Sonje Marinkovic Street and Mihajla Pupina Boulevard

Communication lines which are represented in the area of "Mali Liman" have contributed to the development of a variety of formations of urban blocks. Irregular shapes of blocks have conditioned construction of corner buildings, which followed the regulation line and in that way responded with their form to the street grid. In that regard, three inter-relationships of built-in buildings towards the street, boulevard and quay are typical in analyzed area.



Fig. 5 Built-in corner building which follows street directions at the intersection of Sonje Marinkovic and Vojvode Misica Streets

The typical example of a built-in corner building which follows street directions is situated at the intersection of Sonje Marinkovic and Vojvode Misica Streets. Represented buildings on the corner form obtuse or right angles of blocks, and corners themselves are emphasized by the use of a balcony, which is followed by curved or right lines of buildings themselves. Although by doing this, corner is emphasized, i.e. crossroads of the streets themselves, the very buildings are asymmetrical and mainly positioned towards the street where there is entrance. Since all the buildings are of multifamily residential type, in the sense of functionality, relationship of the street as a public space and building itself is realized through entrances situated on the dominant side of each building.

Importance of a character and domination of a public space is observed on analyzed buildings which are situated close to Mihajla Pupina Boulevard and Kej Zrtava Racije. The corner buildings of the blocks beside these two types of public spaces are residential buildings and office buildings, which suggests frequent use of public surface and its specific function. In that way the interaction between buildings themselves and public spaces is emphasized even more, and environmental unity of the built and open space is more unified. The position of the buildings is especially emphasized by the application of morphological elements of balconies and terraces towards public spaces.



Fig. 6 Buildings situated along Kej Zrtava Racije

In relation to parklands, corner buildings are mainly positioned towards public spaces with their entrance. Most commonly they form obtuse angles within urban blocks, of rounded or straight lines. The appearance of vertical communication on the corner itself is typical, as a morphologically dominant element. Since buildings are not situated immediately on the parkland, interaction of built and open spaces is realized exclusively visually, and it is emphasized by entrance/exit location immediately towards greenery.



Fig. 7 Corner built-in buildings across the park

## 5. CONCLUSION

Analyzing interrelationships of public spaces and built-in corner buildings from Modernism in the area of "Mali Liman" in Novi Sad, it can be noticed that direct influence of urban definition as well as geometry of these buildings derives as a result of the treatment of an urban block as a whole. With regard to this, interrelationship of buildings and public spaces are considered as a whole.

The most prominent types of public spaces which appear are square, piazzetta, street, boulevard, quay and park. Buildings which are situated directly next to these public spaces, by their function and geometrical structure, in most analyzed cases, have clearly defined interrelationship with surrounding public spaces. While buildings clearly define squares, piazzettas and follow the plan of streets, boulevards and quays, public spaces along with them, improve the whole built structure of urban blocks in "Mali Liman" and create quality environmental micro-spaces.

Influence on interrelationship of public spaces and corner buildings has internal organization of the space, and therefore it can be concluded that geometry of researched buildings and application of different morphological elements follow dominant internal space on the corner of the building itself (appearance of vertical communications or residential units and business offices where two facades meet). With more complex geometry of corner buildings, difference in floor organization can be noticed, conditioned by the application of different elements in building shaping itself, with the aim to realize different relationships and position towards dominant public space around the building.

Application of different morphological elements has an important role in establishing interaction of all above mentioned types of public spaces and built in corner buildings. Corners of buildings themselves are often shaped by balconies, galleries, and terraces, and sometimes even more emphasized by addition of flag masts, sculptures, reliefs and similar morphological elements.

Important point of view and perception is symmetry/asymmetry in shaping corner buildings. Façades symmetry is present on most buildings which are situated on corners of traffic arteries of the same importance. In case when a building is at the corner of main and side street or located towards open public spaces (square, park, piazzetta) geometry of morphological elements, including façade shaping is always more dominant and more developed on the "main" façade.

Having in mind that public spaces of a city, formed under the influence of social, economical, political and other imperatives, make a framework around which urban form develops [1], and "in the whole development of architecture corner building is an element which gives the building its visual stability"[6], it can be concluded that mere varieties of geometries of corner buildings being analyzed from the period of Modernism in Novi Sad and interrelationship with surrounding public spaces, have direct influence on the formation of the image of the city and define its spatial, psychological character through numerous social and symbolic values, and indispensable functions of city spaces in scope of its needs and certain social and cultural contexts.



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## MEĐUODNOSI JAVNIH PROSTORA I UGRAĐENIH UGAONIH OBJEKATA NA PRIMERIMA MODERNE, NA PODRUČJU "MALOG LIMANA" U NOVOM SADU

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*Ugaoni objekti, prema položaju u urbanom bloku, poseduju veću mogućnost slobode oblikovanja od ostalih ugrađenih objekata. Svojom pozicijom i sagledavanjem, pre svega iz okolnih javnih prostora, dominiraju unutar urbane matrice naselja i vrlo često predstavljaju urbane repere gradova. Specifičan problem predstavlja upravo pitanje odnosa ovih objekata prema javnom prostoru, koji se nalazi u neposrednom okruženju. Kroz posmatrani period Moderne, problematika nastanka i transformacije objekata na uglu, tretirana je na različite načine, a samim tim i okolni javni prostor imao je različite karakteristike i vrednosti. Predmet istraživanja su objekti nastali u navedenom periodu na području Novog Sada i njihov međudnos sa javnim prostorom, kroz različite parametre forme i funkcije. Kroz sprovedenu analizu valorizuje se kvalitet interakcije objekata i javnih prostora, sagledan kroz njihovu morfologiju, arhitektonsku i urbanističku strukturu, ali i kroz programske, socijalne, psihološke i ambijentalne vrednosti.*

Ključne reči: javni prostor, ugaoni objekat, Moderna