

VERTICALITY OF CADASTRAL PLOT: MULTIPURPOSE FUNCTION IN SPACE

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ABSTRACT

This research aims to address specific problems and results in the process of understanding the character of the cadastral plot. The unified role of the cadastral plot is not only the identification of ownership and the area visible in the legally prescribed reference system by pointing to the geospatial image of the defined boundaries but is also a guideline for urban development in accordance with a specific law act, whereby in the aforementioned software regime the surface defines its existing, i.e., planned land use. The cadastral system has been developed in detail by the competent authorities; however, the needs of urban planning often exceed the capabilities of the aforementioned systematic development of space. This work aims to understand the requirements of planning practice, and the research points to the need for understanding the verticality of individual cadastral parcels beyond the already established horizontal regulations. The need for vertical elaboration of the plot is primarily observed in the planning document, however, looking at the layers and multiple planning documents that are implemented on an individual cadastral plot, the problems of producing different functions of surfaces on it were observed. This paper aims to identify the problem of urban development on an individual cadastral plot due to the impossibility of managing all functional purposes—planned land use of surfaces that are vertically located at different levels of the cadastral plot and that are treated separately with different construction conditions and ownership. It is assumed that this research work can see the needs in the vertical regulation of the plot as much as in the horizontal one, setting proposals related to the ownership and multi-functional purposes of the cadastral plot, which in certain spatial units greatly requires a pluralistic approach.

KEYWORDS _ *cadastral plot, verticality, land use, planning document, ownership*

Introduction

This research tends to be directed towards the analysis and function of the cadastral plot by using an example in the Republic of Serbia, its importance in planning practice, and the historical development of the individual usage of surfaces in space. This research is based on the potentials of the spatial unit manifested as functional characteristics whose impact is manifested on the ambient environment and the wider picture of the spatial unit in a positive or negative sense. Regarding this, the mentioned potentials are multifunctional, and depending on the purpose profile, they are intended for users depending on their needs (Marinović, 2017). In order to approach the aforementioned position impartially, the theoretical results from urban planning will be applied in the textual and graphic documentation, in which the determinants for the further development of the planned purpose of the areas on the individual cadastral plot are determined. Looking at the cadastral plot from the observer's point of view, the cadastral plot is a barrier to limiting one's ownership (Hanus, Peska-Siwik, Szewczyk, 2017). Observing the cadastral plot from the point of view of the owner with ownership of real estate, the cadastral plot is an asset of immovable property, i.e., it is treated through real estate, and as such, it is often an element of property-legal relations that the user of the plot manages depending on the needs (Demir, Coruhlu, 2009). If we look at the cadastral plot from the point of view of the person who performs the tasks of urbanism and spatial planning, the cadastral plot determines the planned and existing land-use of the surface and, depending on the land-use, determines building codes and usage (Milosavljević, Vaništa-Lazarević, Marić, 2022). In this research paper, it is argued that the power of urban management instruments (Azuela, Herrera-Martin, 2009) is precisely reflected experimentally on an individual cadastral plot, treating them as a management tools. Taught by the results in practice, the authors of this research paper set the subject and problems of the research precisely within the previously mentioned management. Although this research paper will not specifically talk about the instruments of urban management that are indicated as threatening factors on an individual cadastral plot, it fundamentally places the subject of research on the functionality and strength that the cadastral plot has as a tool for managing legal procedures of the property-legal relationship. In conclusion, this research paper focuses on the planning document as a method of regulating space, as a way to define the functionality, possibilities, and limitations of an individual cadastral plot.

Also, it is assumed that the multi-functionality of a cadastral plot is recognized due to several valid planning documents on the same plot with equal power manifested in their implementation, where different planned land-uses of the surface are recognized on a single cadastral plot—one planning document, one land-use of the surface. Ownership of the plot is established in relation to the planned purpose of the surface, where the cadastral plot is not viewed in a vertical sense but exceptionally in a horizontal sense, which takes into account the existing occupation capacities, borders, and the total area of the cadastral plot. The selected example of a metro station, the construction of which, along with the construction of the metro route, is planned as an underground and above-ground intervention on the site of an existing building for commercial purposes—the Staklenac shopping center in the City of Belgrade as a case study that points to potential omissions in the process of preparing the parceling and pre-parceling project according to all the planned land-uses of the areas vertically placed on different floors of the cadastral plots where the horizontal occupation is equal to the existing area of the plot. Specific approach in this research paper will be explained in theoretical results part, referring to the identification of urban management methods, i.e., methodological tools that manage the cadastral plot individually or as a whole. Identification of these methods as potential accidents on the cadastral plot is of particular importance, which, depending on the management method, can be treated as a negative influence on property legal relations, the shape of the cadastral plot, and the surface land use. Recognized tools of urban management are planning documents, subdivision projects, and the influence of public authority holders. Their individual impact will be of great importance for this research and will be closely presented in the example of the analyzed case study: TC Staklenac. The methodological approach promoted in this research paper includes a systematic analysis of the literature review in the context of urban management and intervention

models adopted and developed in the Republic of Serbia – using planning documents with direct implementation guidelines for the selected case study and, in conclusion, aims to identify the problems presented through the analysis of the selected case study in a theoretical and design sense.

THEORETICAL RESULTS – INSTRUMENTS

The management of space is almost always a matter of general interest. Interest is also treated as a norm of neutrality, which almost always includes clusters of different goals, cultural values, and needs of individuals with individual activities whose spheres of interest often overlap (March, Olsen, 1984). Assuming that the mentioned fragmentary factors are actors whose needs mutually affect the development of the spatial unit, they are positioned as urban policy actors (Pierre, 2011). Without specifying the hierarchy of each of the previous actors, mutual participation in urban management increases the capacities of the urban unit in a functional sense (Stone, 1989). All the procedures and procedural activities by which the cadastral plot as a neutral body is subject to changes, visible only in its borders and surface, are elements of urban policy. As previously stated, the cadastral plot includes an area whose boundaries, considering its historical context, are variable depending on different circumstances. Thanks to the reference system created by the competent authority in the affairs of the regional state cadastre of the Republic of Serbia, one or more owners—users with the right of use on the cadastral plot—have been recorded¹. Due to the visible variable of the usefulness of the cadastral plot, its borders are often changed due to the regulation of property-legal relations or due to the initiation of some legal procedure, such as the development of a project, or this is foreseen by the planning act. Any of the previously mentioned methods of cadastral plot utility and plot surface management are considered instruments of space management (Pierre, 2011). With the subdivision and preparcellation projects, in accordance with the Law on Planning and Construction², along with secondary legal acts, it is possible to set theoretical results in the domain of jurisdiction, then the method of managing the cadastral plot, and the method of implementing the intended usage of the areas from the planning documents. According to Article 65 of the Law on Planning and Construction, the subdivision project is prepared for the purposes of regulating the borders of the cadastral plots that have been changed by the valid planning document or are the subject of several different land-uses, as a result of which it is not possible to initiate any intervention in the space. In accordance with the same article, the local self-government unit approves the subdivision and preparcellation projects.

Projects of subdivision and pre-parcellation make a real contribution to the determination of existing and new users by determining the planned purpose and thus regulating the space. While treating the project of subdivision and reparcellation as a way of management, i.e., regulation of space, its definition as a management instrument is a question. If a part of the cadastral plot is determined to have a planned public land-use after the adoption of a valid planning document, for example - the route of the infrastructure corridor, where analytical-geodetic points of public land-use are placed in the graphic attachment of the planning document, the road route as a part of the cadastral plot will be a separate cadastral plot whose land-use is managed by the public authority holders. Regarding this, the specified part of the cadastral plot, which is currently the property of the owner, will be a proposal for expropriation due to the legal regulation that requires changing the ownership of the new cadastral plot, which is intended for public purpose³. If the instrument of expropriation is an urban space management profile, the planning document and the subdivision project would actually be redefined

¹ Article 66. of the Law on Planning and Construction ("Official Gazette of the Republic of Serbia", no. 72/09, 81/09 - correction, 64/10 - US, 24/11, 121/12, 42/13 - US, 50/ 13 - US, 98/13 - US, 132/14, 145/14, 83/18, 31/19, 37/19 - other law, 9/20 and 52/21, 62/23)

² Article 65. of the Law on Planning and Construction („Official Gazette of the Republic of Serbia“, br. 72/09, 81/09 – correction, 64/10 – US, 24/11, 121/12, 42/13 – US, 50/13 – US, 98/13 – US, 132/14, 145/14, 83/18, 31/19, 37/19 – other law, 9/20 and 52/21, 62/23)

³ Article 20. of the Law on Expropriation ("Official Gazette of the Republic of Serbia", br. 53 /1995, 23/2001 - SUS, 20/2009, 55/2013 US, 106/2016)

as implementation methods. After the theoretical support has been established, the next question arises: how is the project of parceling and preparcelling for the purposes of determining ownership and planned purpose of the surface created if the number of valid planning documents is greater than one on specific cadastral plot? The same question applies to the development of an individual project for building on a plot: Which planning document is the basis for direct implementation if the number of valid planning documents is greater than one?

The authors of this research paper assume, based on the results achieved in practice so far, that the realization of any of the mentioned projects is impossible due to several different guidelines for their implementation indicated by valid planning documents. If there are different purposes in different parts of the cadastral plot, looking at it in a horizontal sense, the mentioned problem is not recorded as a difficulty in implementation, and the cadastral plot would be divided into several parts. However, the main problem in this research work is recognized if we treat the cadastral plot vertically and if the cadastral plot contains several different purposes for the surface indicated by different planning documents at different elevation positions. Also, if the aforementioned problem is examined from the point of view of the ownership of the cadastral plot, it is assumed that all multi-actors on the plot, whether it is an owner or the public authority holder, are present on the subject cadastral plot at the same time, and will be equal managers of the cadastral plot, which would result in mandatory mutual consent for any intervention in that area. For example, if an underground traffic route is planned on the cadastral plot while there is an existing building for residential use on the above-ground surface of the cadastral plot, two results are possible: In the cadastre reference system, only one of these two purposes will be listed without recording the other purpose of the surface (Višnjevac, Šoškić, Mihajlović, 2022), or both owners will have equal power on both planned purposes of the areas, given that they are located on the same cadastral plot and it is not subdivided as such in the vertical sense. None of the above results, which actually exist in the Republic of Serbia, can represent an example of good practice. If the research focus is shifted to the previously mentioned management instruments, it is assumed that in this case the mentioned instruments cannot be implemented as such and that legal support is needed for a completely new instrument that will treat the cadastral plot equally in both horizontal and vertical regulation.

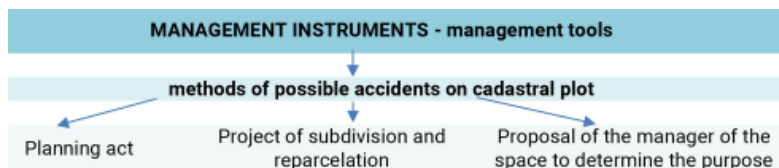


Figure 1: Table of Instruments of urban management – Methods of accidents on cadastral plot

CASE STUDY: TC STAKLENAC, THE CITY OF BELGRADE

The significance of the theoretical results achieved in this research lies in posing questions, assumptions, and recommendations that will direct the research to a selected case study of an existing object on a cadastral plot whose multifunctionality of planned land-uses is precisely observed through some of the methods used in the previous chapter. Cadastral plot number 2342/2, Stari Grad, the municipality in the City of Belgrade, is a specific location with a well-founded existing condition created partly informally with the former land-use of the market area, i.e., the purpose of the area of business-commercial mobile facilities without dedicated regulation. Due to the unified need to improve the existing area with specially planned interventions, a decision was made to build a building with commercial and business content, the modern name of a shopping center, as a forced solution with a floor area higher than two levels and set up as a temporary building. The functionality of this facility and the internal organization of commercial and business content greatly changed

the intended classification of a “temporary” facility into a permanent building facility. The reason why this cadastral plot was chosen for further elaboration and analysis of this research work is the aforementioned definition of an accident, i.e., confronting what was planned and what was realized on the cadastral plot in question, with a special focus on accidents caused by different planning documents.

PLANNED PURPOSES ON THE PLOT 1, 2 I 3 - CULTURAL PURPOSE

The cadastral plot in question is the central object of research, with contact plots no. 2341, 2342/1, 2342/3, 2343/1, and 2344 all belonging to the municipality of Stari grad, Belgrade, for which the General Regulation Planning document of the building area of the local self-government of the city of Belgrade envisaged the land-use of public urban areas, i.e., a land-use that is not the same as the existing one: commercial contents, while in the textual part of this planning document the direct guidelines for implementation foresee the land-use of this location a cultural purpose, with a cultural building planned on all the listed cadastral plots⁴. The development of this project is preceded by a mandatory call for tenders for a cultural facility, followed by mandatory verification of the conceptual solution after the tender has been completed⁵. In an attempt for the city to remedy the existing problem to the best possible extent, the planning document replaces the existing land-use of the surfaces with a new, planned one and provides for the removal of the existing building. In theory, the change in functionality of the spatial entity is carried out in a regular way. However, in practice, the possibility of this procedure is examined. Among other things, we are not talking about a mere change of use; we are talking about changing private land into public land. The indicated problem caused by the planning act will additionally affect the existing property-legal relations, whereby the existing multi-actors on the plot will lose that same right, given that the public authority holders will have the new right.

PLANNED PURPOSES ON THE PLOT 4 I 5: METRO

The authors of this research paper arrive at the following results: The mentioned area as a case study, which includes all six previously mentioned plots is implemented directly, by the immediate application of the building codes with the mandatory development of an urban project, and now by a new planning document of a recent date, the General Regulation Planning document of rail systems with elements of detailed regulation of the metro system.



Figure 2: Graphic example 1 – Planned usage of Area, General Plan regulation of rail systems with metro system

⁴ Chapter 6.10. General regulation planning document of building area of the City of Belgrade (Official newsletter of the City of Belgrade, no. 20/16, 97/16, 69/17, 97/17)

⁵ Chapter 6.11. General regulation planning document of building area of the City of Belgrade (Official newsletter of the City of Belgrade, no. 20/16, 97/16, 69/17, 97/17)

By looking at the textual and graphic parts of this planning document, this document does not achieve mutual communication with the existing planning document of an earlier date, i.e., the General Regulation planning document of the building area of the city of Belgrade. In relation to that, the cadastral plot in question is treated at the above-ground level, while also below-ground level, whereby all cadastral plots belong to the area of public use, i.e., the area reserved for the needs of subway construction, whereby the metro route passes under the existing or planned building, while a metro station is planned at the same location as part of the metro route, which will partly be located below and partly above the ground level with a direct impact on the planned purpose from the second planning document: the object of culture⁶.

The authors of this research paper refer to accidents caused by the planning document as accidents that directly affect the cadastral plot by conflicting with mutually different land-uses. The area in question has two directly implemented planning documents, one of which lists two different planned land-uses for the area, one of which is placed on the underground floor of the analyzed area, while the other is placed both above and below ground. The second planning document lists the third, fourth, and fifth planned land-uses of surfaces placed under and above ground. Although the planning document for the general regulation of rail systems took over the planned land-use from another planning document in order to achieve compliance, it defines the purpose of the cultural institution: *Trg Republike*, taking over the role of the General regulation plan of the building area of the city of Belgrade and forming building plot J9-21, where this document is no longer the planning basis for the formation of a building plot, given that the new planning document adapted it for the needs of the metro. In terms of ease of understanding, regardless of the fact that in practice the mentioned planning document is no longer the planning basis for the formation of a building plot, in the theoretical sense this planning document is in full force and is directly implemented at this location. The problem is all the greater if we interpret the stated position from the General Regulation Plan of rail systems, where the building plot underground enjoys the planned land-use of the metro station, subway route located under the metro station, underground garage, above-ground land-use of the warehouse space in the function of culture, and finally, enjoys the planned land-use of a cultural object with spatial possibilities.

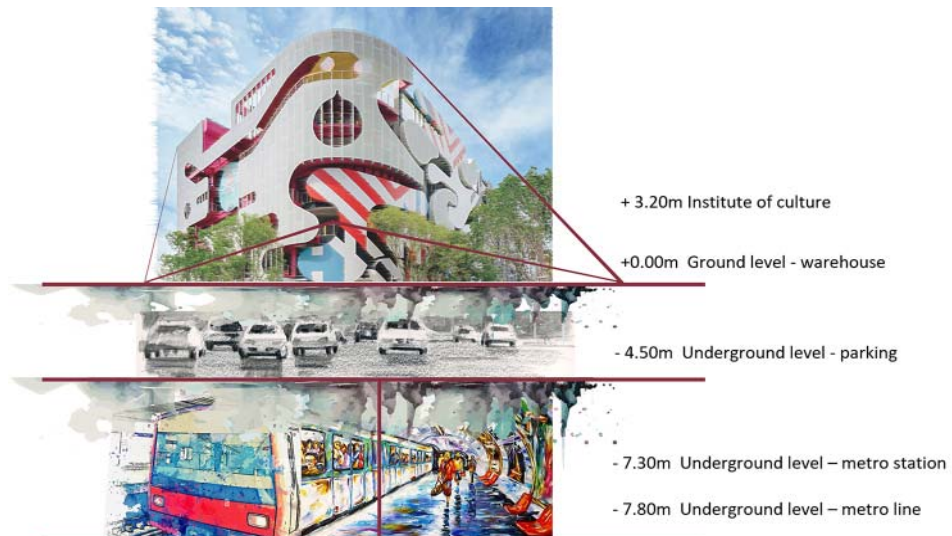


Figure 3: Illustration of vertical usage plan – Consideration of five different Plan usage purposes on location

⁶ General regulation planning document of rail systems with elements of detailed regulation of the metro system in the City of Belgrade (Official newsletter of the City of Belgrade, no. 123/22, 6/23)

Now it's possible to conclude that the analyzed area, as a case study of this research, enjoys as many as five planned land uses. The question arises as to how the development of the project or projects will be carried out, considering that the same area is carried out with one planning document through an architectural competition, then with the verification of the conceptual solution, while with another planning document, the same area is carried out with the development of an urban project.

CONCLUSIONS

It is concluded that in the new planning practice there is an eminent presence of multifunctionality of completely different aspects that, in the form of conflicting parties, represent spheres of interest, actors who, in this case realize their interest through the planning document, not caring about the hierarchical shortcomings and ambiguities that raise the basic question already at the stage of setting up the project concept: How is the building project confirmed if it is preceded by the verification of the conceptual solution whose legal justification is not observed in the legal procedure, and in accordance with the above, how many conceptual solutions are needed for the area in question? Speaking from experience, the conceptual solution must regulate each planned land-use of the areas separately, and to put it simply, the only basis for creating a single project for all five planned public uses is the building plot J9-21 defined by the plan. Regarding this, this research paper observes some of the basic problems that will relate to the right of use on the plot. Multy actors in this case, the public authority holders on the plot for the metro route and the road facility, i.e., the metro station facility, will have equal importance as the public authority holders of the public parking lot that is planned on the floor above the metro station. Finally, the management of the public purpose of the cultural building has equal importance. In practice, the previous position is a guide to the problem that the mutual interaction of all actors with the rights on the plot—users on the plot—is not treated in a vertical but in a horizontal projection. As stated in the previous chapters, there is a need for a new space management instrument, an instrument that will be viewed as a vertical cadastre of the land-use that will theoretically cover the needs of regulating property-legal relations and at the same time determine the purposes for each regulation set vertically in accordance with the planning acts. Although this management instrument is foreseen through certain projects of three-dimensional treatment of the cadastral plot, it would be applied and put into practice in a simplified manner – recording one or more owners—users with the right of use on the cadastral plot—in a vertical view with the capacities for every single level of the plot. In the current practice, the building permit will be issued for the cadastral plot regardless of the previous actors and land uses, while with the proposal of a vertical overview and demarcation of land uses at different levels, the unified procedure would be issued for an individual land use. In conclusion, the goal of this research work was to define the potential of the cadastral plot and to present the problem of the vertical lack of view of the plot, with the proposal to use the cadastral reference system to present the possibility of a clearer view of the space both vertically and horizontally.

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