A POSSIBILITY OF INTRODUCING THE CONCEPT OF FORM INTO URBAN PLANNING IN SERBIA

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This paper analyses the methodology of drawing up urban plans in Serbia and identifies the effects of their implementation on the quality of built environment. It points out that certain negative effects and problems in spatial development could be related to the absence of the concept of form in planning, or to the lack of direction in the process of developing physical structure through planning guidelines. The analysis of the planning documentation shows that the approach to planning is either too general, disregarding the specificities of the location, or too deterministic, manifested in the rigidly defined building rules that do not allow for diversity in architectural design. It can be concluded that this situation is facilitated by the fact that neither the Law nor the current context of planning support research in planning which would include a systematic existing situation analysis, spatial verification of planning solutions and introduction of parameters of quality in construction, in addition to the current predominantly quantitative ones. On the other hand, this paper points to up-to-date research in the area of urban morphology and contributions to the education of researchers and professionals which could improve planning methodology, and consequently the existing urban practice in Serbia.

Key words: urban form, architectural and urban design, urban planning.

INTRODUCTION

The question of introducing the aspects of urban form into design and planning procedures has been present on the international scene from the 1960’s until today. It has emerged as a reaction to the issues observed in the built environment created on the basis of architectural and urban conceptions of modernism. In the architectural and urban theory these problems are defined as the absence of context (Nezbit, 1996), separation of architecture and urbanism through the disintegration of traditional spatial configurations such as urban blocks (Castex et al., 1980), the lack of human scale relative to exaggerated dimensions of buildings, distance between them, poor accessibility and safety in movement through urban space.

Contrary to stances saying that form is a visual and aesthetic phenomenon, in the theory of urban morphology form is seen as a complex phenomenon and physical result influenced by different factors of development: socio-economic, functional, sociological, psychological, visual and perceptual. As such, it represents a source of knowledge about developmental processes and the starting point for future development. The introduction of the concept of form into planning suggests a necessity to systematically connect different scales of professional interventions – planning, designing and construction, and to raise awareness of all actors included in the development of built environment about the fact that all these interconnected activities end with an urban form as a physical result of the process which is, in the majority of cases, irreversible.

Tony Hall has observed that physical form has not always had the same position and value in urban planning. Especially in the 1970’s, when socio-economic issues took precedent, form was considered a mere result of social and economic goals. After that, the return of the concept of form into planning represents a reaction to that previous period. The position of form was additionally strengthened during the 1990’s, when it stood in the heart of research and activities, inspiring requests for its integration with the issues of sustainability and quality of living environment (Hall, 2013).

Certain problems in the development of built environment in Serbia can also be traced to the absence of the concept of form in planning, or to the lack of direction in the process of developing physical structure through planning guidelines. The analysis of the existing planning and design practice in Serbian cities has identified the problems of one-sided...
approach to planning originating in architectural and urban conceptions of modernism (favouring technical and functional aspects), overly general approach to planning, indiscriminate application of imported models, and partial interventions on the level of the city block (Niković et al., 2016).

This issue has been recognised in scientific and professional communities in Serbia for a long time now, but nevertheless, there are no mechanisms which could connect different levels of expert interventions in order to achieve a desired quality of built environment (Niković et al., 2015).

This paper analyses the methodology of drawing up urban plans which have regulatory dimension, and which also contain elements that regulate future construction. Apart from that, it calls to attention urban plans that are strategic in their character, but which also contain regulatory elements, and underlines consequences of implementing these kind of plans in practice. Through the monitoring of the methodology of drawing up a plan, which in general has three basic phases, the existing situation analysis, the phase of defining planning solutions, and the phase of controlling planning solutions, we have established the structure of the paper in three chapters discussing each of the abovementioned phases from the aspect of the possibility of introducing the concept of form into planning.

The context of planning in Serbia is characterised by challenges brought about by the process of transitioning from the previous rational planning model to collaborative model initiated by the change of socio-economic system in the 2000 (Lazarević Bajec, 2009). In addition to all other elements of market-oriented and democratic society Serbia strives for, which are essential for the introduction of a modern planning model, it is necessary to re-examine the form of the plans which should reflect key requirements instead of professional practice strictly relying on formal planning system.

EXISTING SITUATION ANALYSIS

In order to start drawing up a planning document it is necessary to have as clear a picture of the existing situation as possible. That is why existing situation analysis represents the initial phase in the process of planning. It includes obtaining land registry and topographical under-lays and requirements set by all relevant public enterprises and institutions in charge of spatial values protection and equipping the given location with utilities. Besides that, it should include site analysis and additional expert reports. Dedicating enough time to gathering and systematisation of input data is of great importance. A good existing situation analysis could affect the long-term fulfilment of the planning goals to a great extent, since it represents the best way to assess possibilities, limitations, weak spots and potentials of the given location relative to the set goals.

However, while the content of a planning document is defined by law, the methodology of its drawing up is not, depending instead on the planner’s approach. Taking into account general changes in the approach to planning, which has stopped being research-oriented, focusing instead on a quick and efficient adoption of plans as regulatory basis for issuing building permits (Gligorijević and Graovac, 2018), the existing situation analysis phase is routinely reduced to elementary analyses and outlines, lacking a detailed expertise of the space encompassed within the plan boundary. In conformity with the laid down content of the planning document, the result of the existing situation analysis phase consists of a textual and graphic part. The textual part describes the existing situation – built-up area, landscaping, infrastructure, etc. As a rule, the graphic part illustrates the distribution of use in the existing surroundings. The plans are drawn up over land registry or topographic under-lays which are often fragmentary or out-of-date. At best, they contain delineated dimensions of the buildings and the number of floors.

Consequently, in the majority of existing regulation plans the planning process usually begins with this kind of information about physical structure as its basis, since neither the law nor the practice require additional analyses of the existing state. The third dimension and spatial effects of planning are disregarded from the very beginning. This situation is exacerbated by the fact that these parameters remain unverified during the control phase of the plan, which will be further discussed in the chapter about the control of planning documents. Graphic parts of the plan illustrating the distribution of the planned use, roadways and utility infrastructure are the end result of regulation plans. In the textual part of the plan, the building rules are laid down for each planned use – parameters for maximum allowed built-up area – usually not based on the analysis of the existing built area. This “grey area” represents a wide window of opportunity for use, but also for the misuse of the space.

The problem of inadequate recognition of and distinction between the characteristics of urban structure in planning procedures, design, and construction affects the quality of the environment and the potential for sustainable development. Indiscriminate interventions in space, especially in the case of partial construction, disturb the balance of obligatory elements present in the conception of architectural and urban solutions, such as green surfaces, open spaces, relations with the street and neighbouring facilities and lots.

Based on the analysis of the existing state of urban and physical structures in Serbian settlements, conducted within the contextual analysis for the Sustainable and Integrated Urban Development Strategy of the Republic of Serbia until 20302 (Trkulja et al., 2018), a large number of valuable architectural and urban types has been noticed – urban settlements with specific typological characteristics and recognisable architectural typology. On the other hand, it has also been noticed that the typology of physical structure is not sufficiently recognized in the planning documents, and that urban settlements, facilities and wholes which represent important Serbian cultural and historic reference points (especially the smaller ones, located in the economically poorer parts of the country) are decaying. Planning procedures and procedures for

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2 Sustainable and Integrated Urban Development Strategy of the Republic of Serbia until 2030 (developed by a wider team of experts, currently in the procedure of adoption).
the management of urban development do not properly recognise and distinguish between important features of physical structures which represent elements of their identity and potential for their growth.

The buildings of vernacular architecture, which make up the majority of urban tissue in urban settlements, are not sufficiently recognised as valuable building heritage, and the same goes for industrial heritage. The protection practise disregards the building heritage of the 20th century, especially facilities built after the World War 2 in modernist architectural and urban style of significant historic, cultural and civilizational value.

The problem of heritage and its position in the planning process has become a separate issue within the context of planning methodology. The most recently adopted declarations (HUL) expand the concept of cultural heritage so that it includes buildings that are not under protection of official institutions, but which have important role in the creation of a wholesome urban and rural environment. In this context the existing situation analysis has become increasingly significant.

On the other hand, the stance that reconstruction and protection of the existing urban forms, the same as the production of new ones, should be founded on the knowledge and understanding of the existing built environment, its distinctive traits and past development, is one of the basic premises in the theory of urban morphology. In this context, typo-morphological and comparative analysis are suggested as useful means for the existing situation analysis. It is used to define and recognise different types of tissues and to conduct a consistent categorization. For example, the urban plan of Porto makes use of the typo-morphological approach which identifies different tissues based on the analysis of morphological characteristics (Oliveira, 2006).

In Serbia, there is a significant number of valuable studies (eg. Kurtović Folić et al., 1997, Perović, 2008, Đokić, 2009) and informal planning documents (eg. strategies of urban development, visual and urban identity, cultural heritage protection with accent on the ambiances, etc.) that study the characteristics of physical urban structure and the effects of construction, and show potential to integrate morphological approach with practice. However, these contributions are not legally binding, and thus not obligatory.

**SPATIAL VERIFICATION OR VISUALISATIONS OF PLANNING SOLUTIONS**

The second phase, following the existing situation analysis, is the process of defining planning solutions. This phase also results in graphic illustrations of the distribution of use and textual definition of the building rules. Taking into consideration that the planning system in Serbia is based on vertical hierarchy of plans, which means reconciliation of regulation plans with the plans of higher order, it often happens that recommendations laid down in the plans of higher order, in cases when they have regulatory dimension, are taken over ("rewritten") by regulation plans. On the one hand, this enables the plans to be reconciled, and speeds up the planning procedure, thus satisfying the criterion of fast procedure. On the other hand, however, the building rules that supposedly regulate the future construction, more often than not do not conform with the character of the space enabling different interpretations in space.

The problem of non-comprehending the character of a location is especially prominent in areas that contain registered cultural assets, facilities and urban compositions of architectural value that do not fall under institutional protection. There are no practical guides and methodologies pertaining to research and evaluation of wider areas that contain valuable cultural and historic assets which could be implemented during the planning process, especially in cases of regeneration (Niković and Roter Blagojević, 2018). In addition to that, since they are not legally binding, regulation plans do not make use of the possibility to examine the location in more detail using the instrument of urban design which could encourage a wider understanding of planning solutions by the local community, and consequently contribute to a more active participation of the public in the planning procedure. It is important for professional preservationists who re-examine preservation approaches to the context of planning, to recognise this issue. They have observed that a detailed analysis of the location could help define clear principles on which to found planning solutions, whose recognition and implementation might improve and preserve the existing context (Dimitrijević Marković, S., 2012).

Additionally, the introduction of the concept of form in the phase of defining the planning solutions primarily represents an instrument which a planner can use to examine the potential of the location. This should be differentiated from the concept of image – which is a visualisation of a planning solution often created in order to convince someone (by planner to convince investor, or investor to convince user) that the solution is valuable. This concept of image is usually used in environments such as Serbia, where the pressure of foreign models, often adopted indiscriminately, is particularly strong. In such cases, typo-morphological studies and conforming with the context have a key role in the preservation of the location’s character and identity (He, J. W. and Henwood, M., 2012).

The inclusion of the urban-architectural competition phase in the planning procedure can be a useful way to define guidelines for the regulation plans. It would be especially important for the zones of urban renewal where competition could provide the most suitable proposals suggested by the current Law on Planning and Construction (Art.27): compositional and massing plan, and the landscape design project.

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2 Milenković points out that in the future, the majority of interventions in the area of design and planning will entail reconstruction and renewal of the existing physical and urban structure, and that designer’s role will be predominantly that of a preservationist obligated to conduct a more detailed research of the existing situation, and to consider to a much greater extent its typological, topological and morphological characteristics (Milenković, 1993).

3 This is the case with the previous Master Plan of Belgrade 2021, which prescribed urban indicators for determining the construction capacity and based on which the urban conditions for construction were issued for locations that were not covered by the regulatory plans for further elaboration. In addition, the same construction rules were prescribed for parts of the city with different morphological characteristics (Niković et al, 2014).
Malfroy (2001) points to the example of the Pariser platz’s competition in Berlin (1996) where, according to him, the successful reconstruction of this public space subsumed the critical approach and extensive preparation, especially morphogenetic studies having the proximity of the important structures such as the Brandenburg’s Gate. The interaction between the informatics on space and the idea of the square as a representative public space resulted in the Master Plan with precise conditions in terms of urban rules (mixed use, the spatial hierarchy which supports the Gate as the dominant, directing traffic and introducing the landscape elements) and building typology (the continuity of the fronts, facades with maximum of 50% of openings, gradually decreasing heights of buildings as they get closer to the Gate; respecting the proportion and scale of classical order; restrictive use of materials and colours – the neutral ones). Đokić (2009) gives the guidelines for the city square development in Serbia on the basis of the evaluation of existing conditions. He points to the criteria which could be used in evaluating the existing ones, as well as in planning the future squares, where these places have to be: expressive, protected, meaningful and accepted by users. Moreover, he relates these criteria to the physical characteristics – position, size and shape, and gives valuable guidelines for planning: concerning the architectural frame of the square which in Serbian examples usually misses continuity and unity; raising the level of urbanity (through higher occupancy and construction indices and mixed uses); making distinction between squares and parks and decreasing square’s dimensions. The value of these recommendations is demonstrated through several examples of competitions. However, in Serbia, even when the competitions are held with the aim of examining location and integrating the best results in plan in the final outcome, the investors’ interests prevail which affects the resulting physical form (Marić et al., 2010)

Even though the visualisation of planning solutions, primarily through images, is the expected result of the introduction of the concept of form into planning, in its essence it serves to make connections between the model of space and the model of life (Milenković, 1993), that is to say, between performances of urban form and users’ needs. Corresponding to the users’ requests, performances of urban form do not belong only to the visual and aesthetic domain, but also to the domain of technical functionality and spatial experience. They constitute a set of criteria that can be used to evaluate the suggested model of urban form; which is a flexible and dynamic system of dialectically linked elements, and which enables us to change and redefine the system configuration, i.e. the final, resulting physical forms (Figure 1).

This approach enables us to re-examine both foreign models and past models that are sometimes also used indiscriminately in the attempt to introduce a human dimension and the qualities of traditional town into architectural and urban conceptions of Modernism. Instead of that, entities that have already established themselves in traditional urban and physical structure undergo comparative and morphological analysis based on the established set of criteria. The results of the research are used as the starting point for new conceptions and modalities in the operationalisation and the process of designing and planning.
PLANNING REGULATIONS AND CONTROL OF PLANNING SOLUTIONS

Basic elements of planning solutions which regulate future construction represent the building rules usually expressed through quantitative indicators – construction index (CI, equivalent of floor area ratio – FAR) and occupancy index (OI, equivalent of built up area ratio – BAR).

In contrast with the excessively general approach, we can find a too deterministic approach, or insufficient recognition of diversity. This problem manifests itself, for example, in the application of the building rules in Belgrade, where the analysis of the current practice shows certain trends which in time tend to become (unwritten) rules of construction, in other words, “easy to do”. They are the consequence of an unclear definition of a wide range of shaping possibilities through planning indicators on the one hand, while, on the other hand, they have emerged as a consequence of the interpretation of plans by the authorised body which issues building permits, and which additionally narrows the repertoire of forms. Planning solutions, first of all regulation, levelling, occupancy index and construction index, significantly affect the designers’ solutions, favouring, directly or indirectly, the usage of certain shapes. Insisting on the utilization of permitted urban parameters to the maximum degree by the investor leads to typified solutions in newer residential architecture.

Beside the issue of the lack of inventiveness and freedom of form, planning design and building procedures are plagued by another problem – inadequate identification and differentiation between the characteristics of urban structure, which affects the quality of the environment and potential for sustainable development. Indiscriminate interventions in space, especially due to partial building, disturb the balance between the elements that must be present in the conception of architectural and urban solutions – green areas, open spaces, relation with the street and neighbouring facilities and lots.

The analysis of detailed regulation plans adopted for the Belgrade municipality of Stari grad5 shows that several planning guidelines are not consolidated, which makes it impossible to conform with all the elements essential for the proper functioning of urban structures. If the investor’s primary request, the implementation, to a maximum degree, of permitted urban parameters pertaining to construction was realised, it is clear that it would be impossible, within the defined urban and physical frame, to deliver on the required capacity of parking space and green surfaces. An additional problem arises from the fact that in the process of the implementation of planning documents, the authorised body issuing building permits does not inspect whether the requirements for green areas are fulfilled; they only check quantitative urban indicators – construction index, occupancy index, and the number of floors. The percentage of green surfaces on the lot does not affect the process of issuing either the building or the usage permit, despite the fact that in the majority of cases the required minimum is not fulfilled.

Practice has shown that plans are usually verified to the degree necessary for their implementation. However, the most commonly present issue is the fact that the rules are either insufficiently clear, or overly restrictive. The authorised bodies controlling the plans are forced to follow the rules of construction laid down in the plans, instead of being guided by the location itself and its requirements. Additionally, practical experience suggests that instead of relying on quantitative indicators of construction index and occupancy index (which often collide), the rules should be defined based on the factual situation on the field, and that construction lines which would define borders of the buildable area on the lot should be set, which would in turn define occupancy. The height of the facility should be added to this – in accordance with the height of the cornice or the number of floors. This serves to define the building volume, all of which amounts to the introduction of the third dimension into planning and links the planning with designing and construction (Niković, 2015).6

According to Habraken, a basic question for architects and planners is the meaning of a well-built environment, i.e., “What are the criteria according to which we assess the quality of the environment?”. To accomplish that, namely, to connect different influences and qualities, control has proved to be a true operational force bringing change on the one side, whereas that very change reveals control. Participants in the designing and planning process configure the form, and the review of this process helps us find mutual priorities and values. Habraken has noticed that physical environment is structured hierarchically and that different surroundings reveal different types of hierarchy. In order to introduce control, we should apply the procedure of comparison which will reveal how hierarchies influence one another. They do not have to be congruent, but they can certainly be positioned reciprocally and relatively to one another. Where the control is centralised and belongs to a small group of people, the change is limited to large and sparse operations, and uniformity occurs. That is why in today’s change of direction toward decentralised management of space it is necessary to study relations between patterns of control and sustainability. Habraken has developed a concept of territorial depth which corresponds to the levels of hierarchy in the landscaping of physical environment (Habraken, 2009).

Even though the answer to the question “What is the goal of planning?” is, a good quality of built and living environment, there are ever more studies showing that modern planning process has neglected greater good, giving primacy to private interests and short-term planning goals. Ferenčak points out the fact that by its definition planning represents a conscious and permanent management of city space with the aim to achieve and keep good city for its people. With that in mind, he defines 15 characteristics or criteria by which to measure the concept of good city or the form of good city (or its fragments). He notices that the modern process of planning is based on official

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5 The analysis conducted within the expert study for the requirements of the Strategy of sustainable development Stari grad (2012).

6 Mrs Ljiljana Novaković, at the time Secretary at the Secretariat of Urban Planning and Construction gave speech at the panel Modern architectural practice: institutional framework and rules of construction, on 25 June 2014 in Belgrade, about her experience with plan control.
procedures with strong bureaucratic potential, while planning regulations lack elements based on which these procedures are to be implemented, and which would have a direct, practical and positive effect on achieving the status of good city. That is why he suggests that these characteristics/criteria should be incorporated into the law on planning and construction, seeing that it would be the only way to realise them in practice (Ferenčak, 2018).

Such comprehensive studies with resulting guidelines are rarely the base for regulation plans and especially for implementation. Even if they are incorporated in plans, the current practice of development does not take a holistic approach but can rather be described as a partial approach. It is necessary to develop a methodology of planning and implementation of plans where tighter collaboration between professionals involved in various phases would be provided.

CONCLUSION

The problem of the absence of the concept of form in the planning practice in Serbia affects different aspects of space. This problem is obvious both to the professionals who analyse the effects of planning, and to the users of space – through its diminished value in use. In addition to that, the value of space emerges from satisfying human needs functioning not only on technical and functional level, but also on socio-psychological and visual and aesthetic one. There are numerous examples of failed modernist creations of space as a consequence of two-dimensional planning and the absence of human scale. To that we can add the newest examples of building in Serbia which represent a consequence of urbanism dictated by investment. They are not based on the complex existing situation analysis, nor on consideration of variety planning solutions through visualisations, and they lead to the erosion of urban identity and character, often disregarding basic human need for privacy and the right to view.

This problem has been recognised internationally and the solutions are emerging with a more developed approach adopted by urban design both in theory and in practice. However, in the case of Serbia, general theory of urban design and urban morphology together with specificities of Serbian environment (e.g. urbanism dictated by investment) have to be significantly re-examined and adjusted to the context of planning. Planning and construction in Serbia exist in the institutional and legal framework which does not adequately recognize categories of urban identity, typology and character of space. These deficiencies are reflected in the planning methodology applied in the drawing up of procedural steps to bridge the gap between plans and built forms.

As special recommendations for the three phases in the planning process, it is important to develop a strategic approach to planning and to find ways to introduce informal (non-obligatory) elements and steps in the planning practice. Besides mentioned strategies of urban and sustainable development, the following is also important:

- In the first phase of the existing situation analysis it is necessary to analyse specific characteristics, typological classification and characterisation of space. In this sense, the introduction of special (preliminary, conceptual) studies and analyses of urban context are recommended (studies of existing conditions of physical structure as a part of strategies of urban development, visual and urban identity, cultural heritage protection with accent on the ambiances, etc.);
- In the second phase, i.e. in the course of defining planning solutions, it is necessary to visualise urban parameters through graphic illustrations (3D animations, visualisations). The instruments of urban design and urban-architectural competitions could be a useful step for improving methodology of planning; and
- In the third phase it is necessary to establish criteria for the control of urban form, i.e. of those aspects of space that cannot be quantified. In that sense, it is important to improve regulations and integrate theory with practice. Introducing the criteria of good city into the legal framework is of great importance, and so is developing integrative approach to protection and planning of space. In that sense, urban morphology offers a wide range of theoretical and practical contributions.

Acknowledgments

This paper is a result of the research done within the project “Sustainable spatial development of Danube area in Serbia” (TP 36036) funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

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Received September 2018; accepted in revised form December 2018.