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## Achieving the Basic Sustainable Qualities in New Housing in Post-Socialist Serbia: Regulation vs. Case-Studies

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### Abstract

In a period of post-socialist transformation, unexpected and sudden socio-economic changes in society have deeply reflected into urban space. Their influence has been specially observed in the most common spatial elements, such as housing. Thus, the housing has proved to be an evident example of both positive and negative characteristics of post-socialist transformation in urbanism and architecture.

The regulation of housing in Serbia has been postponed compared with other post-socialist countries. A few different guidelines for housing design existed in socialist Serbia, but they were overcome in transition period, in early 1990s.

Furthermore, the official evaluation of current housing is still an underdeveloped field, regarding to various factors. The differences and deficiencies between housing regulation and related statistic data are among the most noticeable. The implication of such state can be overviewed through housing construction in situ; the quality of new housing projects varies greatly, even by basic characteristics, such as housing area, number of rooms or accessibility to natural lighting.

The methodology is critical analysis of existing regulations of housing in Serbia, through the official Act of conditions and normative for the designing of housing buildings and flats, adopted in 2012. The differences and deficiencies between regulation and statistics were the starting-point to define criteria. The relevant case studies were checked through them. The expected contribution of the paper is providing the set of recommendations and guidelines for the improvement of evaluation process of the basic elements of new housing in Serbia as well as other countries with similar background.

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## 1. Introduction

Post-socialist transition in Central and Eastern Europe has proved to be a “great experiment” in the recent history. Sudden and comprehensive changes in the social, economic and the political structure of post-socialist societies have not had similar role-models across the World<sup>1</sup>. This unique position has exposed these societies to the processes of democratization, post-industrialization and globalization<sup>2</sup>. As a consequence of these intensive influences, space in post-socialist countries has also been profoundly changed<sup>3</sup>.

Being a very complex and the spaciouly the most demanding urban function<sup>4</sup>, housing is a good example of transformations in post-socialist space. Socio-economic changes in housing sector have deeply influenced to new spatial characteristics of housing, i.e. they have formed new urban and architectural patterns in housing<sup>3</sup>. Nevertheless, the entire post-socialist space has not been a monolithic<sup>1, 3</sup>. Accordingly, post-socialist housing has significantly varied between different countries and regions. Even more, different housing policies have played an important role in the creation of several sub-types of post-socialist cities<sup>5</sup>.

This stance is also true for housing in post-socialist Serbia, which has formed specific characteristics during the last 25 years of transition. The harsh post-socialist transition of Serbia, influenced with the Yugoslavian wars and international isolation, has postponed housing transformation and made Serbian housing very distinctive<sup>4</sup>. The absence of real housing policy and strategy and the inadequate legislative framework of housing<sup>6</sup> have indirectly positioned market as the main factor of housing “development”. Furthermore, new conditions of capitalist economy made all guidelines for housing design from socialist period obsolete even in the early 1990s. This situation has caused many spatial challenges in housing sector in the last two decades.

The influence of “very liberal” market in post-socialist Serbia is especially noticeable in the case of newly-built housing. Generally, everyday media often informs about new housing projects and, especially, about more problematic cases. Nevertheless, housing sector is still professionally and scientifically poorly-analyzed field. This is particularly true in the physical aspect of housing, which is always more connected with local conditions<sup>7</sup>. New, post-socialist legislation and regulation documents have been enacted in the last few years and hence they still have limited influence. Furthermore, there is also an obstacle between official legislation and regulation of housing and relevant statistical evaluation. In fact, official statistics in Serbia differently considers and collects many parameters of housing standards. This is noticeable even in the case of basic characteristics, such as housing area, number of rooms or accessibility to natural lighting. In accordance to this observation, it is very hard to scientifically evaluate the quality of new housing in Serbia.

This paper tries to clarify this issue. The aim of the paper is to overcome the gap between regulation and statistical information in Serbian housing through the setting of the links common for both sides. It uses the methodology given by the official Act of conditions and normative for the designing of housing buildings and flats, which was enacted in 2012. This act is especially dedicated to improve the architectural conditions of new housing in Serbia. Before it, the critical analysis of existing regulations of housing and related statistical data in Serbia is presented. The differences and deficiencies between regulation and statistics are the starting-point to define criteria for the second step. These criteria will be checked in two cases of new multi-family housing in Belgrade. The first one is referred as the best practice; the second one is a typical example of mass-production of post-socialist housing. Expected results are important for the formation of relevant recommendations and guidelines for housing design. Their importance is to improve the evaluation process of the basic elements of new housing in Serbia as well as other countries with similar background.

## 2. Housing design in socialist and post-socialist societies

The socio-economic dichotomy of housing in post-socialist societies refers to the evident shift of state role in housing from strong support in socialist period to the neglect of housing as well as the other social elements of urban policy<sup>8</sup>. During social period, housing was positioned very high among important social needs for proletariat. Due to socialist ideology, ruling system tried to minimize the influence of housing market and private ownership, ignoring economic aspect of housing, i.e. housing as a commodity<sup>4</sup>. State was the main actor in housing sector and, especially, in the sector of the provision of new housing for fast-growing urban population. By some estimation, 3-5% of the gross domestic product of socialist countries went to the sector for housing provision/construction and it

was one of their major consumptivesubventions<sup>9</sup>. The maintenance in housing affairs was divided between state and local level. For example, the definition of basic housing standards (e.g. housing parameters per person) was usually in the hand of local experts<sup>10</sup>. Nevertheless, the entire system was very centralized the most of countries<sup>11</sup>. Finally, some very powerful state bodies, such as army, played important role in housing sector in the major cities.

The mentioned ideological necessity for new and decent housing and rapid urbanization inevitably introduced industrialization and strict standardization in housing sector in the last decades of socialism<sup>10</sup>. The main “results” of mentioned strong housing supply through state provision were new housing estates at the edge of urban areas. They consisted of mass-produced and pre-fabricated-panel residential buildings, surrounded by green spaces<sup>10</sup>. Housing units inside them were strictly standardized and pretty schematic.

However, the neglect of economic aspect of housing has faced as a big obstacle after the change of political and economic systems in Central and Eastern Europe. With the fall of communist regimes in 1990, newly-emerged market economy brought deep changes in a few years. The most important of them is certainly the retreat of state from housing sector<sup>12</sup>. The main consequences have been privatization of flats, the restitution of nationalized housing stock and the decentralization of housing policy<sup>4</sup>. It seems that privatization has been the most common and the most influential consequence due to its numbers. Immediately after the fall, the share of publicly owned flats in most post-socialist countries reduced to very small or, in some cases, negligible percentage. This was more visible in Southeastern Europe – the share of publicly owned flats in the entire housing stock in Romania and Albania is less than 2% today<sup>4, 13</sup>. In contrary, restitution process has been more active in Central-eastern Europe, with bigger contingent of older housing stock, built before the 1950s. The older districts in the main cities in these countries have been particularly affected by restitution<sup>14</sup>. Then, the governance over housing was transferred from state level to local level. This transfer of competence has also caused different challenges, but real results will be visible in future.

The aforementioned processes in housing sector in post-socialist countries have profoundly reflected to the issue of housing design in both urban and architectural aspect. Globalization and market economy have created a better housing environment for different residential choices. The variety of housing options, such as penthouses, high-rise condominiums, walk-up garden apartments, terraced houses, and single-family residences in suburbia, have appeared on market in the last two decades<sup>10</sup>. But, these options have been mostly attached with rich social class and affluent urban districts and neighborhoods. In the case of middle and working class, living conditions have been deteriorated since the fall of communism. New housing has been their necessity. Therefore, the price of housing has been more important than the design of housing and residential areas. Furthermore, there has been a lack of regulation and other documents related to housing design. Therefore, better design standards, which respect local identity and context, have been proved to be a need in post-socialist cities<sup>15</sup>.

### **3. Housing design in socialist and post-socialist Serbia**

Modern-day Serbia was one of the republics of the former socialist Yugoslavia, which had pretty different system than the other countries in socialist Europe. It was more open to West<sup>14</sup> and more liberal<sup>14</sup>. This approach was also noticeable in housing sector. For example, quasi-housing market, shaped in the form of solidarity funds for housing construction, was introduced in Yugoslavia in the 1960s<sup>4</sup>. Then, the former Yugoslavia was the only decentralized socialist country, which enabled the transfer of power to republican and local level. Therefore, housing norms and standards were enacted at these levels. They touched both urban and architectural aspects and dealt with different questions, “from minimum residential and green space allotted per person to types of plumbing fixtures required in housing projects and acted as normative framework with which local plans had to comply”<sup>11</sup>. Moreover, the country enabled private incentive in housing – the share of so-called flats with tenant right<sup>16</sup> was not so high like the other socialist countries<sup>4</sup>. Consequently, new housing stock was pretty heterogeneous by design and with better quality.

Despite identified advantages, decentralization and liberalization in the former Yugoslavia also produced some inconsistencies and problems. The most noticeable of them was certainly the illegal construction of single-family houses in suburban areas of the main cities in less developed republics. Belgrade suburbs are a good example of this process. The cause for illegal constructions was related to the weakness of state bodies to afford enough housing for urban population, which had increasing rapidly during socialist era<sup>8, 17</sup>. Nevertheless, the scope of this process has been pretty mixed – although many illegal houses were built in good shape and acceptable “simple” design and with

qualitative materials, the urban design of illegal settlements (lack of basic infrastructure and services, fuzzy urban fabric and transport network) has proved oneself as a huge problem for future development.

The 1990s, the decade which started with the collapse of the socialist Yugoslavia, were very difficult for the entire Yugoslavian space due to wartime and overall crisis. In the case of Serbia, this decade was known as a „blocked transformation“<sup>4</sup>. State withdrew from housing sector soon, giving open space for newly-emerged market economy, which acted both legally and illegally. Actually, fuelled with refugee influx and very liberal and uncontrolled property market, illegal housing construction “blossomed” in the 1990s<sup>17</sup>. To illustrate – about half of new housing construction in Belgrade was illegal in 1997<sup>10</sup>. The situation with illegal sector has been improved in the last 15 years, but the problems of legal sector are still evident. Weak local authorities are still subordinated to private investors, who try to maximize resources regarding building plots. This can be especially said for new multi-family housing, which prevailed in urban areas today<sup>18</sup>. Here, the maximization of building parameters triggers well-known design norms and standards. This phenomenon is named as an “investors’ urbanism”<sup>8</sup> with very negative connotation in public. Moreover, it is also negatively viewed by urban-related Serbian experts<sup>19</sup>.

### 3.1. Regulation relating the design of new housing in Serbia

One of the reasons for the relatively bad state of housing design in Serbia is certainly inadequate post-socialist housing policy and legislation. The first of all, Serbia had very the conservative law on housing during more than two decades. This main law in this sector was enacted in 1992<sup>20</sup>, enabling the affordable mass-privatization of previously publicly-owned housing stock<sup>4</sup>. But, the law was unfit for situation in situ by many matters and it had 15 amendments since the enactment. Thus, it was considered as obsolete even in the early 2000s<sup>4, 17</sup>. Radically new law on housing was recently, so it is still early to see how it will be implemented.

More concrete albeit more focused legislation act is the law on social housing. It was enacted in 2009 and accompanied with relevant national strategy on social housing with action plan in 2012. The law deals mostly with financial and social side of housing<sup>21</sup>, leaving spatial aspect of housing for the strategy. Even in these documents, only basic design parameters of housing are given – minimal size of flats per number of persons<sup>22</sup>. The elements of urban design of related residential areas with social housing are not mentioned.

The Act of the general rules of parceling, regulations and construction is not a basic document for housing sector, but it is important for urban design of residential areas. It proposed the main parameters for residential zones of high, medium and low density in urban and rural areas<sup>23</sup>. Different urban parameters are proposed for each zone – permitted floor area ratio and the permitted coverage of building plot, the minimal width and size of building plot, etc. Nevertheless, some more sophisticated rules for a “good urbanism” for residential areas, such as the relation to local centers and housing or rules for open public and green spaces in these areas, are not proposed. This act is also new – it was enacted in 2015, replacing the previous one from 2011. It is a binding act, which is an important improvement to the “old” act, which could be omitted according its article No 2<sup>24</sup>.

The last act relevant for housing sector is the Act on Conditions and Normative for the Design of Housing Buildings and Units, enacted in 2012. This act covers the matter of architectural design, but also indirectly influence to urban design on “micro-urban” level<sup>25</sup>. This includes the standards and norms for collective spaces in multi-family buildings, housing units and rooms, installation and construction materials. The most important and thereby the most elaborated elements in the act are: minimal dimensions and size of rooms and total housing area and minimal accessibility to natural lighting. The first selected criterion for this research is the minimal size of housing units/flats, which indirectly includes the size of rooms:

Table 1. Minimal parameters for housing area and the number of rooms (RF – room flat)

Parameter	Studio	1-RF	1.5-RF	2-RF	2.5-RF	3.0-RF	3.5-RF	4.0-RF	4.5-RF
minimal housing area (in m <sup>2</sup> )	26	30	40	48	56	64	77	86	97

The second criterion is the minimal accessibility to natural lighting per room (excepting technical rooms), which depends on the height of that naturally lighted room by the act. Knowing that the minimum for this height is 2.5 m, the critical accessibility to natural lighting of directly and indirectly lighted spaces is 7.5 m.

### 3.2. Statistical data relating the design of new housing in Serbia

The problem with the last act is that official statistical data is not customized to it. The relevant document is the book “Dwellings for Permanent Habitation according to the Number of Rooms and the Floor Space” from the last national census in 2011. The problems of customization can be identified in following rules<sup>26</sup>:

- The division of housing units was made according to the useful floor space of a dwelling by the book instead of the number of room by the act. Furthermore, 9 formed categories by the book differ sharply from the categories of housing areas/flats formed in relation to the number of rooms by the act;
- The minimal size of the room by the book is just 4 m<sup>2</sup>, which is minimal size for room with bed. This is more relevant standard for “Third World” countries that to present-day Serbia. The act proposed the minimal size for different kinds of rooms. The minimum for living rooms is 16 m<sup>2</sup>. The most critical case is a bedroom for one person – min. 7 m<sup>2</sup>, which is almost twice in size than the minimal room by the book.
- The book does not differentiate studio and 1-room flats, which is certainly problem with new housing, where small flats dominate.

### 4. Two examples of new housing in Serbia

The problem of inadequate statistical evaluation of housing design in Serbia limits the general professional evaluation of quality of new housing design at both national and local level. This research proposes the other way, which is connected with the analysis of the best practice and mass-production in housing through two selected parameters as key criteria.

The selected cases are the recent multi-family projects. Multi-family housing is selected due to it is more related to market and thus more problematic in post-socialist Serbia. This type is prevalent among newly-built housing in the recent years. Furthermore, both examples are the same type of building; they in the form of big quadrangular block with inner yard. Finally, both projects are from Belgrade, which size and the position of a capital have made more pressure to housing market than in the case of other Serbian cities. This means that Belgrade cases are usually more extreme than other ones and they are hereby more illustrative for this research.

#### 4.1. The example of the best practice in housing

The first example is the building for the Belgrade University employees in the Block No. 32 in New Belgrade<sup>27</sup>. The building was completed in 2008. Authors of the projects were Prof. Branislav Mitrović and Marina Šibalić. Being financed by state agencies, it is one of rare examples of state-supported housing construction in post-socialist Serbia. This unusual position prevented the influence from market and thereby enabled authors to take care about the overall design of the building. Therefore, authors tried to fulfill all well-known features of qualitative design.



Fig.1. Building in Block No 32 - northern façade (source: Google Earth); Fig. 2. Building in Block No 32 - inner yard (archives of B. Mitrović); Fig.3. Building in Block No 32 – typical floor scheme (archives of B. Mitrović)

The building has six floors, which are almost the same. Typical floor consists of 20 “classic” flats and 4 “halves” of duplex flats at the edges of the building, developed further in several types (Table 2). The overall results regarding the first criterion (the size of the flat) is pretty good – all flats (100%) are above the minimal size of the flat proposed by the Act.

Table 2. The building in the Block No. 32: Typology of the flats with their surface

Type of flat	Number per floor	Total number	Surface	Min. parameter	Correct
Studio	2	12	33 m <sup>2</sup>	26 m <sup>2</sup>	√
2-room flat	8	48	62 m <sup>2</sup>	48 m <sup>2</sup>	√
2.5-room flat	2	12	70 m <sup>2</sup>	56 m <sup>2</sup>	√
3-room flat	6	36	72 m <sup>2</sup>	64 m <sup>2</sup>	√
3.5-room duplex flat	2*	12	84 m <sup>2</sup>	77 m <sup>2</sup>	√
4-room flat	2	12	90 m <sup>2</sup>	86 m <sup>2</sup>	√

The second criterion (accessibility to natural lighting per room) is generally more challenging to check. 82% of flats in the building get enough natural light in all rooms. Actually, this is a problem in 24 2-room flats. These flats are located next to duplex flats, i.e. in the most sheltered parts of the structure. The problem is not so conspicuous, because it is only related to kitchens, which are more than 7.5 meters far away from the nearest source of natural lightening. Living rooms and bedrooms of these flats are properly lightened.

#### 4.2. The example of mass-production of new housing

The second example is the housing complex “Dunavske terase” (eng. *Danube Terraces*) in Karaburma quarter in eastern Belgrade. The building was completed in 2015. Authors of the projects are not mentioned at the official website of the project<sup>28</sup>. As a typical example of market-led housing project, this complex of 13 sections with separate entrances covers the most of the plot and it has quite narrow inner yards. The problem with the yard is even more observable if it known that almost half of the flats are exclusively oriented to it.



Fig. 4. Dunavske terase – typical section with 6 flats (source: www.dunavsketerase.rs); Fig. 5. Dunavske terase – street view (source: Google Earth); Fig.6. Dunavske terase – half of flats are oriented to problematic inner yard (source: www.nekretnine.rs)

Table 3. Housing complex “Dunavske terase”: Typology of the flats with their surface

Type of flat	Number per floor	Total number	Surface	Min. parameter	Correct
2-room flat	20	140	46 m <sup>2</sup>	48 m <sup>2</sup>	X
2.5-room flat	10	70	46 m <sup>2</sup>	56 m <sup>2</sup>	X
3-room flat	40	280	61 m <sup>2</sup>	64 m <sup>2</sup>	X
3.5-room flat	8	56	78 m <sup>2</sup>	77 m <sup>2</sup>	√

All sections have 7 floors, which are pretty similar. Each section has 6 flats per floor, giving 546 flats in the entire complex. Five northern and five southern sections are the same (Fig 4). Three other sections on eastern and western side are different due to position. The overall results regarding the first criterion (the size of the flat) is pretty bad – the most of the flats (90%) are under the minimal size of the flat proposed by the Act.

The issue of natural lightening is even more problematic, because 33% of all flats have one “bedroom” without natural lightening (even indirect), which is certainly unworthy for decent living conditions. Second, 46% of flats have one bedroom oriented exclusively to 3-meter wide skylight, which can be used just for ventilation. Then, half of the flats are exclusively oriented to pretty narrow and fully paved inner yard without any kind of greenery. At the end, just 21% of all flats have acceptable natural lightening in all rooms. All of them are those flats positioned on the corners of the complex. Therefore, they are oriented to two sides that enable their proper natural lightening.

## 5. Conclusions

Although post-socialist transformation in cities in Central and Eastern Europe is not a novelty today, housing sector in these cities still faces challenges caused by it. Newly-emerged property market is still the main factor that shapes urban and architectural design in new housing projects. This is more noticeable in South-eastern Europe, where the market is more liberal and with less control by competent authorities and professional bodies.

The analysis of the cases of the recent multi-family housing project in Belgrade properly illustrates the situation in housing design in Serbia as one of the countries in South-eastern Europe. Presented results of the analysis are very different by selected cases. The first case (the building in the Block No 32) is a generally positive example that respects two chosen criteria by 82% analyzed units/flats. In contrast, the second case (“Dunavske terase” complex) can be marked as negative, because only 10% of flats fulfill both criteria.

Then, it is also evident that the criterion related to natural lightening is more problematic, because both examples have the flats with inadequately lightened rooms and deviations of the proposed values are bigger. In the first case, it is identified only in the case of kitchens, which can be described as acceptable. Nevertheless, the second example shows many serious design defects, because the appearance of “bedrooms” without any source natural lightening is observable in more than 1/3 of all flats. Actually, 4/5 of flats can be marked as problematic by this criterion.

The results for the second and newer example should be considered as an alarm for better implementation of the Act on Conditions and Normative for the Design of Housing Buildings and Units. “Dunavske terase” complex was built after the official enactment of this act, which clearly proves the problems with its implementation. Furthermore, both criteria are developed on very common and easier-for-check parameters from the act. Thus, it is very questionable which results would be found if other, more sophisticated characteristics will be chosen.

It is also evident that the difference between the quality of two analyzed examples correlate with the issue of investment. The first example was the investment of public sector which consequently has preserved the conditions for qualitative design. In the second case, the conditions of liberal market and weak governmental structures have not prevented the project that triggers not only acceptable level of design, but also calls in question basic elements of decent life, such as natural lightening for a bedroom.

Therefore, some recommendations and guidelines should be formed to improve current situation. Primarily, it is doubtful is the situation in Serbia ready for so detailed regulation document such as the Act on conditions and normative for the design of housing buildings and units. Perhaps the division between more and less important elements of the acts should be made. The first ones would be obligatory and second ones would be recommendable till the moment when the situation in the country will be ready for accept them.

Then, this kind of the act, which has very clear connection with physical/spatial world, should be followed with “soft documents” which will present the best practice case studies, guidelines, realized examples, etc. They will be dedicated to public, in the purpose of its “education”. Somehow, they will be “tutorials” for broad audience, which is far from the field of architecture and urbanism.

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