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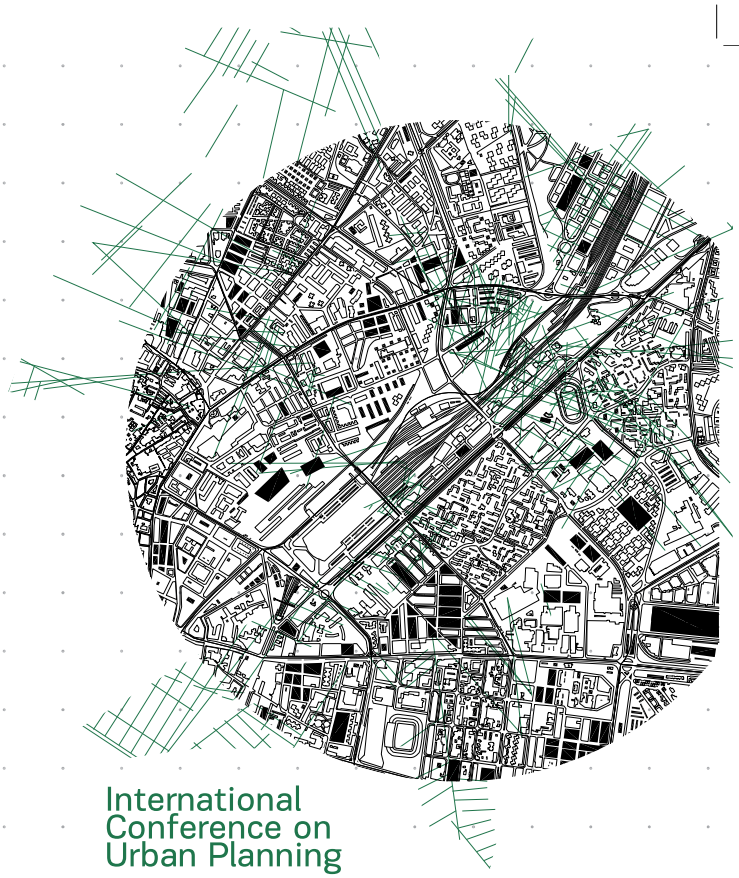

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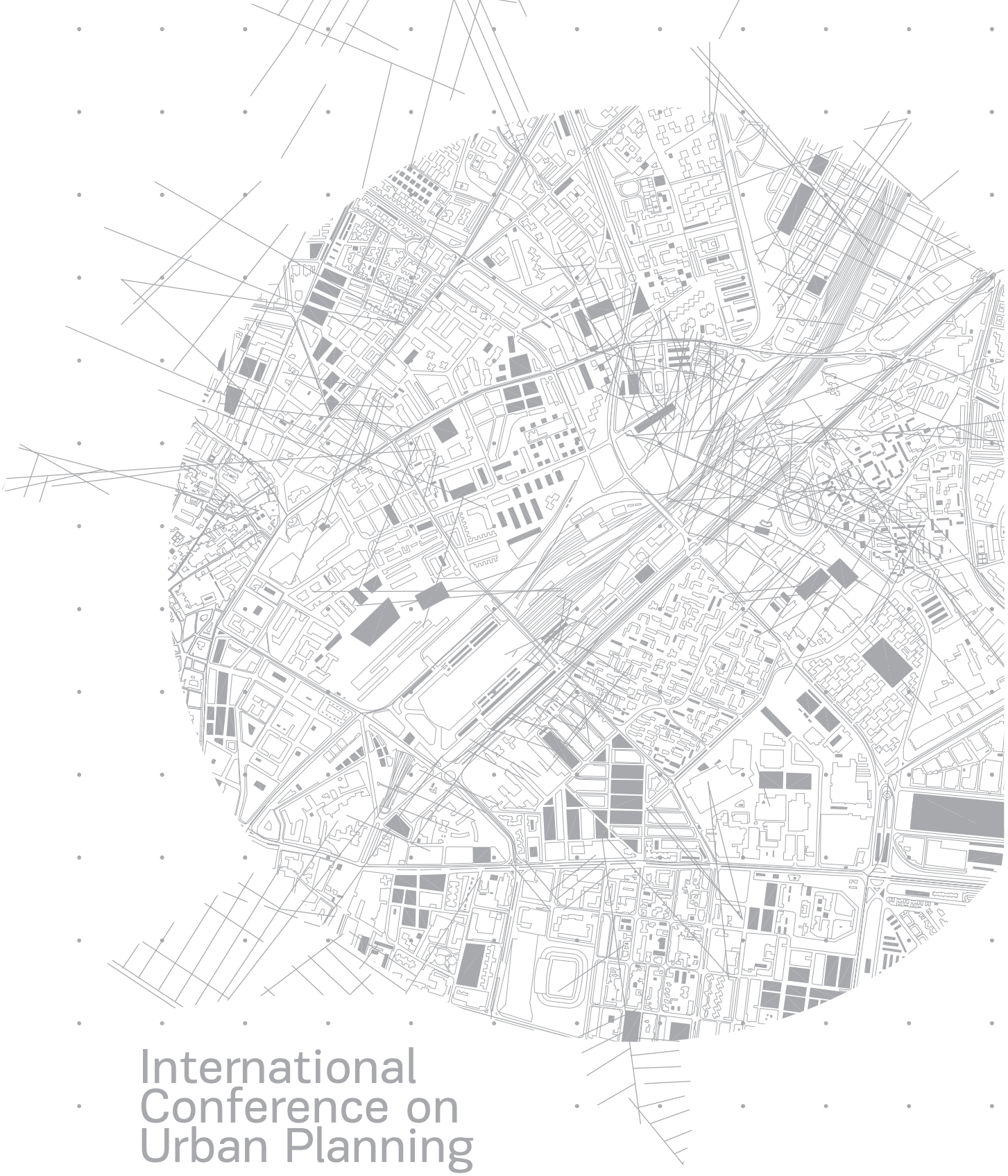

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International Conference on Urban Planning
ISSN 2738-0548

4th International Conference on Urban Planning - **ICUP2022**

Publisher
Faculty of Civil Engineering and Architecture, University of Nis
For Publisher
Dean
Slaviša Trajković, PhD

Editor
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Text formatting, prepress and cover
Milan Brzaković
Vojislav Nikolić

ISBN 978-86-88601-74-0
Circulation
50 copies
Printing
Grafika Galeb Nis

4th International Conference on Urban Planning - **ICUP2022**

Organized by
Urban Planning Cluster, Nis

Sub-organizers
Faculty of Civil Engineering and Architecture, University of Nis
Faculty of Sciences and Mathematics, University of Nis
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RETHINKING THE PRIVATE OPEN SPACE OF GROUND FLOOR UNITS IN MULTI-FAMILY HOUSING DEVELOPMENTS IN THE CITY OF NIS, SERBIA

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ABSTRACT

The provision of private open space is one of the basic factor of residential quality. With the global spread of COVID-19 pandemic in the world, and stay-at home attitude, private open space showed to be essential for daily-life quality and residents' wellbeing, since it downsizes the negative aspect of social distancing, remote working/learning and situations like lockdown or quarantine.

Gardens are seen as the private open area with the highest degree of spatial comfort, and urban planners and architect worldwide strive to develop models that will provide multifamily housing with private gardens. While in the west and northern Europe the significant amount of multifamily housing developments are conceptualized in a way to provide garden-like-apartments on the ground floor level (by joining a part of the surrounding terrain to the unit area, in order to form larger and landscaped private open space) local urban and architectural practice do not recognize potential of the proximity to the terrain when designing ground floor apartments. Quite contrary, in domestic circumstances focused is to overcome the negative aspect of ground floor living, by setting back the unit from the near-terrain environment. The absence or reduction of ground floor private open space isolates the apartment unit from the surroundings. What's the reason for such distinguish perspectives? Do the cultural differences play the key role or is it up to the legislative framework? These are some of the questions to be answered in the paper.

Keywords: ground floor apartments, garden-like apartments, multifamily housing, private open space, private gardens

1. INTRODUCTION

One of the vital advantages of family housing is the existence of a private yard, which is commonly the main reason why people prefer house over an apartment unit. Nevertheless, in order to create sustainable housing in urban areas (due to the limited spatial resources) new developments are more and more oriented towards multi-family residential models. As these models are increasingly developed "in height", there is almost a complete absence of the relationship between the apartment and the surrounding terrain – the only certain connection is present in terms of enabling access to the residential unit (Stoiljkovic et al, 2015).

In order to partially compensate this lack of multi-family housing, contemporary developments of this type include the provision of private open space (in a form of balconies, loggias, roof terraces and etc.) which ensure apartments with access to the natural environment and provide an alternative to the yard. Although it is impossible to provide apartments with a private open space that will have all of the advantages that the yard of a family house has (especially from the aspect of size) with adequate design and landscaping it is possible to

create a high-quality alternative (Levit and Levit, 2010; Stoiljkovic et al, 2015). Since only the ground floor level has direct connection to the terrain, special attention is devoted to the development of private open space of the units situated on this level. Due to the proximity of the natural environment, there is a possibility of developing a garden-like apartments – with a kind of private yard, by adding a part of the land to the residential unit at the expense of the surrounding terrain. Such approach do not only ensure an open space of larger dimensions, but also the access to the exterior landscaped ground, with lush greenery and in the proximity of facilities in common courtyard. This way, housing quality of the units situated on the ground floor level (usually considered lower than on the upper floors) significantly improves.

Although there are no restrictions of the application of garden-like ground floor private open space, the most effective ones have proven to be in low-rise housing schemes (up to 4 or 5 floors) in suburban settings (Levit and Levit, 2010; Milanovic & Vasilevska, 2018). When it comes to the issue of density, even a high-density values are appropriate. However regarding the occupancy rates, low to medium occupancy results in a higher percentage of green open space, on which expense a private garden of the ground floor units can be organized. Open blocks, surrounded with significant amount of green open areas and closed or semi-closed blocks are favourable settings for development of the garden-like private open space. Regarding the street scape, traffic lines and parking areas should be drawn from the buildings with green walkways, in order to create adequate ambient in which private open space can be interpolated.

This paper deals with the garden-like private open space of the ground floor units, with an emphasis on design, legal and cultural issues and ownership status.

2. ADVANTAGES OF PRIVATE GARDENS

In physical sense the private garden should act as a functional outdoor extension of living space. However, in broader sense, a garden is not just a unit's addition. A garden is a place to be, a place for productive work, a place to retreat, a place to care for growing things, to exert creativity, as well as a place that develops over time, that one can own and control (Fransis, 1990). In order to design quality garden-like private open space of the ground floor apartment's researches and experience from the urban planning and architectural practice show that the successful solutions are those with balance in several aspects.

The positive effects of having access to the garden and views of nature from the home are reflected in the improvement of physical and mental health and wellbeing (Gros and Lane, 2007). Green and landscaped surrounding prevents noise and air pollution and provide healthier living environment in which residents can rest, work, play or engage in recreation (Palme et al, 2020). In childhood the garden functions as an escape through the provision of additional space, while adults value the seclusion and distraction from reality that absorption in the garden offers (Coolen and Meesters, 2012). A chance to spend some time outdoors in natural setting helps to reduce stress and daily life struggles. Engagement in gardening leads to the greater level of satisfaction (Kaplan, 1973).

In current pandemic situation implementation of a garden-like private open space on the ground floor level represents adequate respond to the health concerns and shift in daily life routines. More frequent and longer staying at home is made easier through the possibility to reside in alternative, outdoor space (Capolongo et al, 2020; Megahed and Ghone, 2020; Zarabi et al, 2020). Although private open space of the units primarily serve to supplement the housing function, these spaces can greatly contribute to the socialization of the tenants. They helps to overcome isolation and alienation, caused by social distancing, and ensure social interaction in the naturally open air, on the necessary physical distance, either with household visitors or with the neighbours from the immediate surroundings.

Garden, which forms part of the unit's environment, is not only a site for interaction (with nature or with people) and the psychological processes associated with this, but also for expression of personal needs and individuality (Anthony, 1997). Contribution of nature have a large effects on residents' relationship with the place of living (Bernadini and Irvin, 2007). Findings show that home garden plays an important role in defining and expressing self-identity and enables residents to express their personality (Freeman et al, 2012).

Adding a part of the terrain to the ground floor apartment, in addition to positive effects on the lives of tenants, has a positive effect on the overall quality of a residential environment. In situations when there isn't defined model for the maintaining of common open areas in multi-family housing, which reflects in the neglecting of such spaces (such as in Serbia) private gardens on the ground floor can make a great contribution to the environmental quality. By adding a part of the surrounding land to the apartment on the ground floor,

the care for the green area is passed to the residents of that unit. This way the plot is enriched with landscaped greenery, which contributes to the overall layout of the site.

As an extension of living space, a kind of 'outdoor room', private gardens can promote security of the area. Their position allows easier visual surveillance of the surrounding area, which reflects in higher security. However, the issue of privacy and safety of the units need to be fulfilled.

3. GUIDELINES TO DESIGN GARDEN-LIKE PRIVATE OPEN SPACE OF THE GROUND FLOOR APARTMENTS

By adding a part of the terrain to the unit located on ground floor, a larger and landscaped private open space can be created, which promotes housing quality and unit's ambient. In order for private gardens to be a useful extension of the interior space, design of 'broad' connection between living room and the open space is required, which makes them functionally linked and creates the whole. Design of the garden-like private open space provides greater opportunities for outdoor activities, especially for elderly, household with small children and people with disabilities – as they are generally more accessible. For families with small children they extend the lifestyle choices available in the apartment by facilitating activities such as outdoor playing, hobbies, gardening and even home business. When it comes to the size of garden-like private open space the minimum with is 3m, optimal 5m (without the additional green tampon) and the area of 15m² is required.

Regarding their position, these spaces should be oriented toward the more natural setting, preferable internal semi-public or public space, with small as possible vistas on the roads and transport, in order to reduce the pollution, filling of overcrowding and public exposition (Milanovic and Vasilevska, 2018). When this is not the case, private open spaces of the ground floor units can be designed as enclosed gardens. Even in such concepts, their use value can remarkably be increased, as opposed to the loggias or balconies of the upper floor units in multi-family housing developments.

Although proximity of the common land multiplies the value of garden-like open spaces, their organization needs to satisfy certain criteria of privacy and safety. Privacy refers to the ability of these spaces to host households' activities outside, without exposing them to the non-household members. Therefore, spatial resources of unit', which surround the terrain, should be dually utilized. Beside as an apartment functional extension it should form a kind of buffer zone, to provide a higher degree of intimacy and security. It should enable isolation and undisturbed simultaneous stay of all household members and perform of different activities without unnecessary exposure. The best solutions ensures the balance of the need for privacy with the surveillance. Well-designed private open space of the ground floor units obtain adequate comfort regarding user privacy, with the control of visual connections to the surroundings and interaction with neighbours, but without blocking the vistas to the environment. This is achieved by forming a buffer layer of low or medium greenery, in a width of 1 to 1.5m (ADGLV, 2021). Accentuated by greenery, private gardens of the ground floor units are physically and visually separated and isolated from views and noise from the surrounding area (Milanovic and Vasilevska, 2018).

According to their position, garden-like private open spaces of the ground floor units can be divided in two main categories.

Private open space facing the inner courtyard. In the cases where immediate connection to the surrounding land is enabled, the greatest potential of the ground floor units' outdoor space is used when they are situated on the same level as the terrain. In settings where units are facing the inner courtyard, the surrounding area has a semi-public, in some cases even semi-private character. Such circumstances greatly contribute to the visual connection and the openness of garden-style open space to the environment.

In such setting, it is not necessary to form any significant physical barriers. It is possible to design only a green buffer zone, which has a role to ensure the necessary spatial distance of common areas from the space which belongs to the housing unit. Greenery can be landscaped as lawn, flower or shrub bushes or even small trees. If fencing is applied, the physical structure is low to medium height, often transparent (Figure 1).

Figure 1: Possible solutions for spatial organization of garden-like private open space facing the inner courtyard

***Private open space facing the street*.** Although the greatest potential of the surrounding terrain is used in cases where gardens of the residential unit are constructed at the level of the terrain, in cases when units are facing the street this setting can greatly violate necessary level of privacy and security.

The problem can be overcome by applying certain design measures. Denivelation of a ground floor level, by lifting the unit above the street view level, can compensate this problem. It should be raised up to no more than 1.2m in relation to the terrain (Figure 2, example a) and screened with green buffer zone (with the width between 1 and 1.5m). Also partial or complete fencing of private open space can be applied (Figure 2, example b).

a) denivelation of the ground floor level b) partial or complete fencing of private open areas

Figure 2: Possible solutions for spatial organization of garden-like private open space facing the street

4. DEVELOPMENT OF THE GARDEN-LIKE PRIVATE OPEN SPACES FOR THE GROUND FLOOR APARTMENTS IN LOCAL CONTEXT

Although contemporary international practice show an increasing tendency towards the development of garden-style apartments on the ground floor level, in Serbia there is a completely opposite trend. The spatial potential of the available land surrounding the apartment unit is unutilized. Linking the unit with the terrain is not considered at all. In local circumstances the proximity to the terrain is seen as disadvantage. In the majority of multi-family housing developments private open spaces of the ground floor apartments are gone under reduction or even total absence.

In local practice apartments situated on the ground floor level are characterized as low-quality and undesirable for many households. Quite contrary to western countries, where precisely due to the “possession of the own piece of land and access to the nature” ground floor apartments are of a higher value (compared to the same apartments on upper floors).

Figure 3: Reduction of ground floor private open space in domestic practice – new residential developments in the city of Nis, Serbia

4.1 Obstacles in designing garden-like private open spaces

In local context safety and privacy requirements of the ground floor apartments are often unfulfilled. Mentality and cultural habits can be related to such outcomes. However, the main reason for such distinguish approaches could be found in planning regulation, economic and cultural differences. In the continuation of the paper a brief overview of local circumstances that affect the development of garden-style apartments will be presented.

Design issues. The planning regulation and domestic urban and architectural practice significantly contribute to the low environmental values of the ground floor units and associated private open space.

Observed from the currently applicable regulation for multi-family housing construction, there is no clear definition regarding the treatment of free, unbuilt land on the plot. In current urban planning documents, the formal treatment has given to the parking and common outdoor area. The parking is normatively defined, and can be developed as enclosed garages or in a form of parking lots. Besides parking, the minimum 10% of total plot area is defined for common use. Percent of green, unpaved areas are not defined as mandatory in local regulation. As a result, in the majority of recent multi-family housing developments, total absence of green areas is recorded. Organized common areas are usually only the paved walkways that surrounds the building and the wider parts on the position of entrances. Such spatial arrangement caused that ground floor units do not have any green barrier with a common ground, which reflects in a very low ambient quality, with no access to the natural environment.

Ambient value is also reduced by the treatment of the streetscape. Regardless the scale of a development, the way a street looks and feels – its proportions, views of house fronts, play of light and shade – all effect the value of a street. In current local urban planning practice street profiles are constructed as very narrow and without any green areas.

In such circumstances, development of garden-like private open spaces on the expense of the surrounding terrain do not gain the ground floor units any additional value.

Ownership status. A significant barrier in applying western concept of garden-style apartment is the ownership status of the free, unbuilt land on the plot. The undeveloped land around the building is owned by all of the tenants from the building. From a legal point of view, residents from the ground floor apartments could claim the right to use the common land as unit's spatial extension only if approved by all of the tenants. The ownership could be obtained only in cases when this area is calculated in the total floor. This situation reflects on the increase of occupancy rate and decrease the gross building area, which discourage investors to develop such kind of multifamily concepts.

There were few situations when investors sold the part of the unbuilt land. Namely, in the local practice the parking space is sold separately from the unit for which is planed (both parking space in the garage or on the land). This, not legal, neither illegal situation regarding parking could be transfer on the treatment of private gardens in multifamily housing developments. This way the ownership of the garden itself would be separate from the unit ownership.

4.2. Rare cases of garden-like private open spaces in the city of Nis, Serbia

Regardless the obstacles that affect development of garden-like private open space of ground floor units, modest efforts are made in order to change the common perspective. Some newly developed multi-family housing blocks and few cases of recent ground floor apartment's reconstruction show that there is an evident need for such multi-family housing concept.

In the case of *Immoreal multi-family housing complex*, ground floor units facing open inner courtyard, gain the larger private open areas (10-15m^2) bordered by split-level, massive concrete planters, planted with various greenery. The ground floor is elevated 80cm from the terrain. Private garden-like open space has direct connection with the common ground through the private staircase. In all of the cases a presence of physical barrier between private outdoor space and common area is recorded.

Figure 4: Garden-like private open spaces in the housing block Immoreal, Duvaniste, Nis, Serbia

In the case of *Zeleznicka kolonija multifamily housing block*, some of the ground floor units have gone under recent reconstruction (Figure 3). Initially, buildings were constructed with a larger balcony on the ground floor, 1.2m elevated from the terrain. Undergoing reconstruction, in some units, residents made alteration of the balcony by opening them more toward green surroundings. Direct connection to the surrounding terrain is made through the addition of private staircase, which connects the unit's balcony with the surrounding green area. In some cases a part of the terrain is added, forming an outdoor extension – a kind of private garden. In areas where private outdoor spaces are facing the parking, residents landscaped the terrain in the proximity of the units, creating more comfortable environment. In all of the reconstructed, garden-like units, a presence of the physical barriers between private outdoor space and common area is recorded.

Figure 4: Alteration of the ground floor private open spaces in the housing block of Zeleznicka kolonija, Palilula, Nis, Serbia

5. CONCLUSION

Due to the necessary sustainability in urban planning and tendency toward compact cities, family housing is more frequently replaced with modern multi-family housing models. One of the transitional multi-family concept implies the implementation of garden-like open space for the units situated on the ground floor level. Such residential concept gain positive aspects of both housing models – provision of private garden, in the liveable neighbourhood, in the vicinity of the common facilities. In developed countries, garden-style apartments are seen as one with the highest comfort and they are on high demand.

Opposite to the contemporary western practice, in newly national and local multi-family housing developments, garden-like apartments on the ground floor have received no attention. A significant barrier in applying such concept is the applicable regulation for the urban planning and construction of multi-family housing, as well as undefined ownership status of the potential gardens. However, it seems that the main reason lies in the poor urban planning and architectural practice. New residential developments are situated in the setting with poor urban organization, with no street scape layering and often accompanied by the absence of common and green areas on the plot – which results in severe and monotonous ambient. The basis of such conclusion is linked with the few recorded garden-style outdoor space of the ground floor units. In all of the cases where this concept is applied, buildings are situated in more natural environment, with peaceful and safe ambient. Consequently, the residents showed tendency toward opening the units and connecting them to the immediate surroundings.

In local context, when it comes to the design of private open areas of the ground floor units, the analysed cases showed social and cultural influence on the spatial organization. The garden-like private open spaces should be design 1) above terrain level, 2) with adequate ambient comfort and 3) with fencing – physical barrier that would provide higher degree of user privacy, control of the intensity of interaction with neighbours and appropriate level of security.

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