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Research paper

DIY ACTIVITIES ON MULTI-FAMILY APARTMENT BUILDINGS IN NIŠ, SERBIA: BEAUTIFICATION OR DEGRADATION?

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Abstract

Housing is not only a physical structure, but also a process that has an important function in the lives of individuals. Do-it-yourself (DIY) concept in multi-family residential architecture involves apartment users conceptualizing, planning and executing a range of activities related to functional, structural, energy, aesthetic, or other home improvements. Apartments that have been improved by their residents have a greater use value because they express their specific needs. Such housing gives residents a stronger sense of belonging. Alterations of the apartments do not necessarily mean dissatisfaction of the occupants. Instead, it could show how people would like to make their home unique. This paper uses the case of Niš, Serbia to analyze patterns of home-related DIY activities in multi-family housing architecture. By observing the exterior of multi-family apartment buildings throughout the city of Niš, different forms and levels of DIY activities of the occupants were identified, from the smallest, visual and aesthetic ones to the more significant ones, which included more complex functional alterations. They were classified into eight groups: balcony/loggia glazing, creating a private open space, construction of a canopy, opening the entrance from public area, window replacement, installing sun shading, installing safety protection on windows and private open spaces, and painting activities on the façade. Although it is undeniable that the originality of architectural design is diminished by involving users in architectural shaping and aesthetics, the residential environment gains a personal touch. On the other hand, too many individual interventions can lead to the so-called visual pollution, which is reflected in the devastation and degradation of the architectural environment. To avoid significant changes and degradation of the appearance of an apartment building during the use phase and to protect the architect's original idea and design, certain regulatory and technical guidelines and restrictions should be introduced. Also, for most DIY interventions on a building, if users want to implement one, they could be offered a unique model, thus keeping the change in the appearance of the building under control.

Key words: *Do-it-yourself Activity, Multi-family Apartment Building, Originality, Individualization, Visual Pollution*

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1. INTRODUCTION

The do-it-yourself (DIY) concept in multi-family residential architecture involves a wide range of activities related to functional, structural, energy, aesthetic, or other apartment modifications that users undertake for the purpose of some type and form of apartment improvement. The user of an apartment in a multi-family residential building is usually not known in advance, so it is impossible for each housing unit to fully meet all the demands, needs and aesthetic preferences of future users. Designing according to the principles of flexibility can be an adequate answer to this problem, although it primarily focuses on the functional aspect of the arrangement of the apartment and rarely includes visual-aesthetic aspect.

Reaching for DIY activities on the apartment can be a consequence of the desire for some kind of home improvements, especially considering that DIY tasks are frequently less expensive than hiring a professional. However, they do not necessarily mean that the users were dissatisfied with the quality of their housing unit but can also be the result of the need to express creativity and originality, as well as personal satisfaction [1]. DIY tasks could include leisure activities at home that are craft-oriented, the most obvious rewards of which are enjoyment and a sense of pride, but the concepts of thrift and saving are also associated with DIY, making it an activity undertaken out of economic necessity or savings [2].

Any alterations that residents make to the external appearance of the apartment can contribute to achieving a certain degree of personalization and individualization, and it can also be said that the residential environment thereby acquires its own personal touch. However, the user's action on the architectural form of the residential building undermines the originality of the architect's design. Thus, on the one hand, there is a violation of the geometric and aesthetic harmony defined by the design, and on the other hand, an increase in the viability and suitability of the environment for users [3]. Insufficient control of space personalization can lead to extremely pronounced personal preferences of the residents. Such interventions in the outdoor space also open up the problem of aesthetic or visual pollution [4], that is, the inappropriate and unsatisfactory appearance of the residential environment. This category is difficult to precisely define or measure, but it should certainly be expected since multi-family residential building houses many users with different needs, educational levels, acquired habits, financial capabilities, aesthetic criteria, etc.

2. OBJECTIVE AND METHOD OF THE RESEARCH

This paper deals with the analysis of forms and patterns of home-related DIY activities that can be observed on the exterior of multi-family residential buildings in the city of Niš, Serbia. For the purposes of this research, DIY activities include a series of measures that apartment users undertake on their own or with the help of professional teams, bypassing the original architectural design, i.e. disrupting the original appearance of the building. By observing the exterior of multi-family apartment buildings throughout the city, different forms and levels of DIY activities of the occupants were identified. They cover a wide range from the smallest, visual and aesthetic changes to more significant ones, including more complex functional alterations. They were classified into eight groups: balcony/loggia glazing, creating a private open space, construction of a canopy over a private open area, opening the

entrance from public area, window replacement, installing sun shading, installing safety protection on windows and private open spaces, and painting activities on the façade.

The user's motives (goals pursued) that led to resorting to these DIY activities are classified into three categories: functional improvement of the apartment, structural and energy improvement of the apartment and aesthetic improvement of the external appearance of the apartment. On the other hand, the applied DIY measures affected the buildings according to certain aspects, also classified into three groups – functional aspect, structural energy aspect and aesthetic aspect – with the fact that the user's motives and goals for applying a certain measure and the effects of that intervention do not necessarily fall into the same category. So, for example, the user's desire may be to functionally improve the configuration of the apartment, but as it is also evident on the facade of the building, the effect of such an intervention also falls into the category of changes in the aesthetic appearance of the building.

3. RESULTS

DIY activities, most common on the exterior of multi-family residential buildings in the territory of the city of Niš, were for the purposes of this research classified into eight groups of different levels and scope of interventions. The motives and goals of the users for engaging in certain DIY activities were diverse, and the final effects of the applied measures affected different aspects of the building. Both the goals and effects of DIY measures were classified into three categories. Table 1 gives an overview of the most common DIY activities observed on apartment buildings in Niš, to which of the listed categories the goals of the application of the measure belong, as well as to which of the listed categories the effects of the application of the measure belong.

Table 1. Overview of the most applied DIY activities in apartment buildings in Niš

	Functional aspect		Structural-energy aspect		Aesthetic aspect	
	goals	effects	goals	effects	goals	effects
Balcony/loggia glazing	X	X	X	X		X
Creating a private open space	X	X				X
Construction of a canopy	X	X		X		X
Opening a new entrance from public area	X	X		X		X
Window replacement			X	X		X
Installing sun shading	X	X	X	X		X
Installing safety protection	X	X			X	X
Painting activities on the façade					X	X

3.1. Balcony/Loggia Glazing

Loggias and balconies are the most dominant form of private open areas of residential units in multi-family residential buildings, and their role is multiple. These spaces not only physically expand the apartment, but also complement it functionally and can be suitable for various outdoor activities – dining, resting, children's play, sunbathing, socializing, studying, growing plants, etc. They refine the apartment, increase its use value and improve its quality.

Glazing balconies and loggias involves closing them with transparent elements that can be partially or completely opened. The newly formed space of the apartment can be heated or unheated. In the first case, this space can be transformed into a new, separate room (bedroom, living room, dining room, kitchen, etc.) or it can be added to the room with which the loggia/balcony had a functional connection. If the glazed loggia/balcony is not heated, its purpose remains mostly the same as before glazing, with the difference that it becomes protected from external influences such as heat, noise, wind and dust. In both cases, the glazing of the balcony/loggia changes the thermal properties of the facade envelope of the building [5]. Glazing of the open areas of the apartment, which is carried out as a DIY measure, without the existence of regulatory and technical guidelines and restrictions, can lead to a violation of the originality and recognition of the facades. This is especially evident when the building has many differently glazed open areas of the apartments (application of different glazing systems, different design of partitions, different materialization, different profile color, different glass color, etc.), which seriously disturbs the original harmony and aesthetics of the building. The application of this DIY measure concerns the functional aspect, as well as the structural/energy and aesthetic aspects of the building. (Figure 1)

Figure 1. Examples of glazing loggias and balconies in apartment buildings in Niš, source: B. Stoiljković

3.2. Creating a Private Open Space

To satisfy the primordial human need for access to light, air and sunlight, open areas in the form of loggias, balconies, terraces, etc. are envisaged in multi-family housing, representing compensation for yards of single-family houses. Such spaces are often at the top of the priorities of those who choose an apartment. Unfortunately, in the domestic conditions of modern multi-family housing, despite the wishes and demands of users, private open spaces are a category that is often subject to strict economic restrictions. So, many apartments, regardless of their size and configuration, were designed and built without associated open spaces. The subsequent construction of open areas in the form of balconies implies the application of more serious design, structural and building measures and such interventions affect the functional, structural and aesthetic aspect of the building. Also, there have been cases of apartments characterized by direct contact between private and public area area (such as, for example, apartments on the ground floor, apartments next to a flat roof), so that the associated open space is formed on part of the adjacent public area. Although unregulated in terms of ownership (such subsequently added space is not registered as part of the area of the residential unit), the fact is that by creating an accompanied open area, the quality and use

value of the apartment is significantly improved. An open-air space was created where people can stay and engage in outdoor activities. In addition, creating areas with quality greenery can also contribute to the aesthetic appearance of the entire building. (Figure 2)

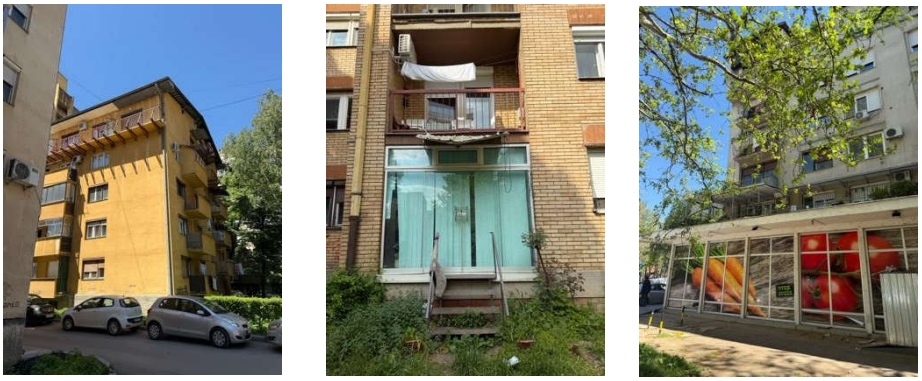

Figure 2. Examples of creating private open spaces in apartment buildings in Niš, source: B. Stoiljković

3.3. Construction of a Canopy over a Private Open Area

The open areas of a dwelling play a vital role in fulfilling various functional, ecological and aesthetic functions. These functions are influenced, among other things, by the different preferences and needs of the occupants [6]. If balconies and loggias are changed, the facades of buildings will be visually altered or even degraded, temporarily or permanently. It is a fact that a covered private open area has a higher utility value than one that is not – the canopy protects users from atmospheric precipitation and excessive sun exposure, protects against dust, and increases privacy. Therefore, it is not surprising that the users need to additionally "protect" their open areas with the subsequent construction of the canopy, if this was not envisaged by the original design. Newly installed canopies are mostly made of light materials – sheet metal, plastic, glass – placed over a light metal or wooden structure and often act as temporary structures of low aesthetic value. It is even very common that the design and materials used for a canopy do not contribute to the primary purpose of such a structure. Also, there have been cases of closing such balconies after the construction of the canopy, with glazed partitions or sun shading elements, which additionally makes the original building façade cluttered. Unfortunately, such interventions very often greatly reduce the aesthetic quality of the building. (Figure 3)

Figure 3. Examples of construction of canopies over private open areas in apartment buildings in Niš, source: B. Stoiljković

3.4. Opening a New Entrance from a Public Area

Unlike a multi-family housing building where there is one entrance to the building, while the entrances to all units are through common, semi-public spaces, family houses have individual entrances, which is considered a great advantage. Moreover, the entrance to the family house is usually visible from inside the house, which has an exceptional psychological advantage because it allows the resident to see the visitor before he appears at the door, and thus prepare for a possible meeting with him, which is usually not possible in multi-family housing buildings [7]. Although separate entrances in apartment buildings can easily be provided to the apartments on the ground floor, due to the proximity of the public area, the usual design schemes for apartment buildings in Niš do not include this. Although rare, practice shows that users of ground floor apartments can see this advantage of the apartment's position and, with subsequent intervention, ensure access to their apartment from the public area. The case of opening a new entrance is much more common when the apartment on the ground floor or a part of it was converted into a business, commercial or service facility, so it is desirable that such an entrance be visible and accessible from the public area for functional and economic reasons. In both cases, the applied measure significantly changes the original appearance of the facades. (Figure 4)

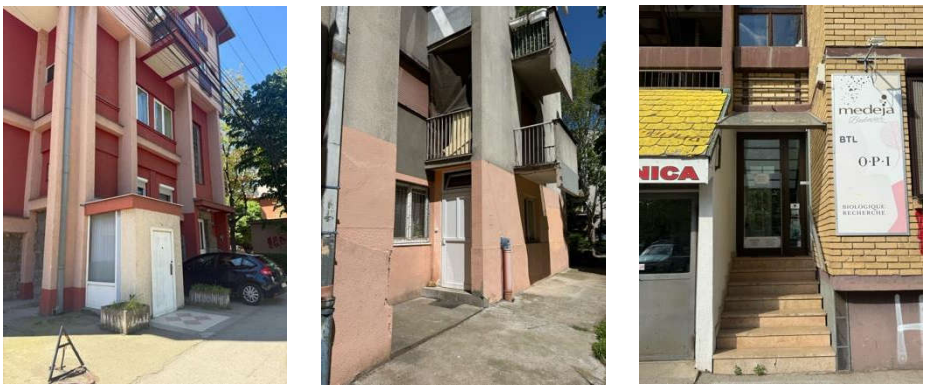

Figure 4. Examples of opening a new entrance from public area in apartment buildings in Niš, source: B. Stoiljković

3.5. Window Replacement

Replacing windows and balcony doors in apartments is a measure that is applied to improve energy efficiency in buildings. The residents undertake it mainly in older apartment buildings where the existing windows are of poor quality or worn out to reduce energy consumption, but also to improve the overall comfort, especially thermal, contributing in this way to a creation of a healthier place [8]. The quality and performances of new windows will depend on the profile material, profile system, type of glass, window fittings, window schedule, etc. However, what has the biggest impact on the appearance of the building is the design of the new windows. It is not a rare case that the new window schedule differs from the existing one, and even that the position, shape, and dimensions of the new windows differ, which significantly impairs the original appearance of the building. Also, examples can be seen where the material and color of the new windows profile are different compared to the original. Like many other DIY interventions, this one is not subject to regulatory control and restrictions, so after applying this measure to different units of the same building, a facade with extremely pronounced personal preferences of the residents can be obtained. (Figure 5)

Figure 5. Examples of window replacements in apartment buildings in Niš, source: B. Stoiljković

3.6. Installing Sun Shading

Installing sun shading devices over windows, loggias or balconies are one of the most common DIY measures that can be seen on apartment buildings in Niš. Solar shading systems influence daylight levels in a building and the view to the exterior environment; they also reduce solar gains and modify thermal exchanges through the glazed building envelope. Therefore, shadings affect the building energy use for lighting, heating and cooling, and the occupants' visual and thermal comfort [9]. Sun shading on the windows of older apartment buildings in the form of fabric curtains, which had completely lost their shading properties over time, needed to be replaced. On the other hand, the installation of sun shading is not always a standard measure even in recently built apartment buildings, so the residents resort to various home-made activities in this regard. Thus, all over the city, you can see the most diverse forms of applied sun shading measures on the facades of multi-storey residential buildings. When we talk about shading devices placed over windows, they are mostly different models of roller shutters, of different materials and colors. Less commonly, other types of installed shading devices can be seen, such as fixed or movable bris-soleils. Sun shading installed on balconies or loggias can be roller shutters, fixed or movable fabric awnings, straw or bamboo blinds, but also various knocked together structures. Similar to other DIY activities on facades, the implementation of this measure can lead to clutter on the facades and visual pollution. (Figure 6)

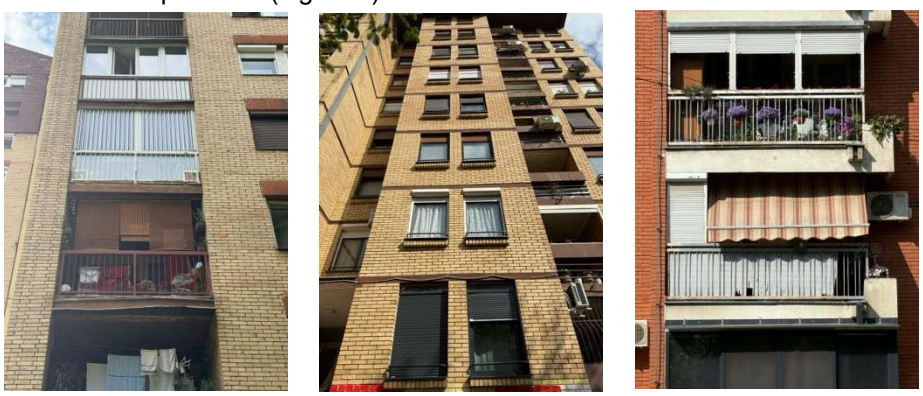

Figure 6. Examples of installing sun shading in apartment buildings in Niš, source: B. Stoiljković

3.7. Installing safety protection on window and open areas

Apartments on the ground floor of buildings are often considered less safe due to their proximity to the ground. This is especially emphasized in those parts of the building that are oriented towards quieter, more secluded or less frequented public open spaces. Users of such apartments often resort to installing some kind of barrier over windows or on loggias and balconies, to protect their property and belongings from external threats. On the other hand, households with small children living on higher floors also resort to this measure, in order to protect their youngest from falling from a height. A metal grille attached to a wall is the most used safety protection device on apartment buildings. However, these grilles can pose a problem – as a visual element on the facade of a building, due to the obstruction of the view of the surroundings, and especially if they are located at an emergency exit [10]. Protective grilles are generally made of steel, aluminum or iron. While ensuring safety is an undeniable benefit of installing grilles, the impact of implementing this measure on the exterior appearance of a building is questionable, especially when different grille designs are applied to a building. Regarding the obstruction of evacuation routes, the use of movable grilles could be a solution. (Figure 7)

Figure 7. Examples of installing safety protection on window and open areas in apartment buildings in Niš, source: B. Stoiljković

3.8. Painting activities on the façades

The human need for home is not only a need for physical protection, but also a demand for identification with a specific space. As a multi-family housing building contains a larger number of units, the apartment loses its spatial and visual identity and becomes part of a system of the same or similar units, and the identification of residents with the apartment becomes difficult. When a person can contribute to the formation and creation of a given space through their activities, they have the opportunity to become attached to it and consider it their own [11]. Viewed in this context, the exterior wall – the facade – becomes a rich and complex field for the possibility of satisfying various human needs. The simplest and most effective element of identification on buildings is the application of color. Color is perceived on facades before some other elements (material, texture, decoration...) and significantly contributes to the achievement of visual identity. Residents sometimes apply this measure on the part of the facade that belongs to their apartment, and most often on the part that is accessible to them, namely loggias and balconies. Such unsystematic use of paint on the

facade generally does not enhance the beauty of the building, and if applied by a large number of users, it can easily lead to clutter. (Figure 8)

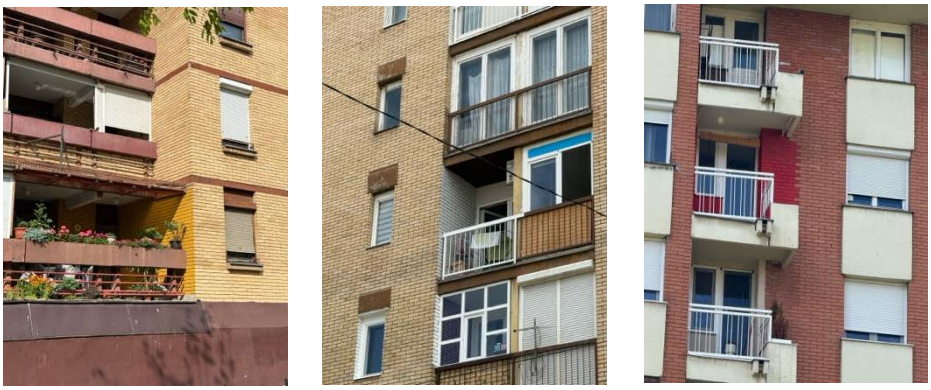

Figure 8. Examples of painting activities on the façades in apartment buildings in Niš, source: B. Stoiljković

4. CONCLUSIONS

DIY activities in multi-family housing occur when apartment users decorate, modify, build, maintain, or repair any part of their home themselves. DIY projects can range from very small, quick and relatively inexpensive one-off interventions and repairs to more significant structural, functional and aesthetic changes that usually involve a lot of time, high costs and skills. Users' motives for resorting to DIY measures can be described as functional, structural/energy and aesthetic. Whichever motif it belongs to, if its effects are visible on the exterior of the building, they affect the aesthetics and appearance of the building. Although such interventions can contribute to easier identification of users with their dwelling and give residents a stronger sense of belonging, in many cases they can make the facade cluttered, deteriorated, disfigured and certainly far from the designer's original idea.

Bearing in mind the most common DIY measures taken by the residents, and in order to prevent potential disruption and spoil of the facade and aesthetics of the building, some conclusions and design guidelines can be drawn. Regarding the loggia/balcony glazing, especially in places with adverse external influences (wind, noise, dust), this can be envisaged by the design, so that all loggia/balcony glazing on the building is identical. In that case, it should be possible to open the loggia/balcony completely, so that users can use them as a truly open area. Furthermore, the users could be offered a design for the open area glazing, so that if they opt for that measure, the effects on the facade would be controlled. Having a private open area is one of the most important qualities of the apartment, its envisagement by the design should not be called into question at all; the open surface has an essential role in realizing various functional and ecological functions. To make the use value of private open space more significant, it is desirable to design it so that it is covered, with sun shading devices, and to ensure privacy. Moreover, sun shading devices are a necessity on all windows oriented towards the sun's rays. In addition, the windows on the lower floors could have uniform safety protection in those parts of the building where it is necessary, with the possibility of their removal if they are on the evacuation routes. Also, as for other subsequent interventions on the building, the users could be offered a unique model if they decide for this measure themselves. Regarding the visual recognition of residential units on the facades, it is possible to envisage the visual separation of individual units, a

certain level and form of their independence, so that they can be recognized and that their users can identify with them, thus realizing the right to be different from other users.

In general, in order to avoid that an apartment building significantly changes its appearance during the use phase, certain regulatory and technical guidelines and restrictions should be introduced and the architect's original idea and design should be protected.

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