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**1<sup>st</sup> International Conference on Urban Planning ICUP2016** was successfully held in Niš, Serbia on 18<sup>th</sup> and 19<sup>th</sup> November 2016. Main topics of the Conference were: *Urban theory and practice; Development and planning problems; Links between planning, building and land; Urban regeneration; Land readjustment; Interaction between the natural environment and urban areas.* Conference gathered together a large number of professors, researchers and many professionals working in practice. As a result of the Conference, Conference Book of Proceedings was published with 41 scientific papers. During the Conference, round tables were organized where all participants could discuss the current issues in the field of urban planning and design. Urban planning process was contemplated on by professionals and researchers from both theory and practice. Different points of view and topics related to urban design, planning and its implementation, urban landscape, public–private partnership and smart cities were developed and discussed.

During two days, 10 Keynote speakers from different parts of the world gave lectures which were open for all participants. Keynote speakers and their affiliations at the time of the ICUP2016 Conference included: **Dr Ali A. Alraouf**, head of Capacity Building, training, research and development unit at Ministry of Municipality and Environment (MME) Qatar; **Prof. Dr Zorica Nedović-Budić**, Professor at Chair of spatial planning in the School of Architecture, Planning and Environmental Policy at University College Dublin, Ireland; **Dr Alessandro Busa**, Center for Metropolitan Studies at the Technical University of Berlin, Germany; **Dr Hossam Samir Ibrahim**, working with municipal government of Qatar and consultation firms in Regional and Urban planning projects in Egypt, UK, Qatar, and Kingdom of Saudi Arabia; Prof. **Dr Francesco Rotondo**, Associate professor of Urban planning and design at the Polytechnic University of Bari, Italy; **Dr Cristian Suau**, funding director of STUDIO POP, Scotland; **Dr Demetrio Muñoz Gielen**, IHS Institute for Housing and Urban Development Study of the Erasmus University in Rotterdam, Netherlands; **Dr Kosta Mathéy**, lecturer at different Universities in Germany, Cuba, Algeria and Egypt; Prof. **Dr Derya Oktay**, Dean of the Faculty of Architecture at Ondokuz Mayıs University, Samsun, Turkey; and **Dr Teo Keang Sood**, Professor of Law in the Faculty of Law at the National University of Singapore.

Thanks to different experiences and to different scientific and research fields of keynote speakers and participants, Conference themes were analyzed from different points of view, which resulted in interdisciplinary and comprehensive approach of complex urban planning issues. Beside professors and researchers at the Conference, numerous professionals were present. Therefore, one of the conclusions was that cooperation between science/research and professional practice is necessary in order to adopt and implement innovative solutions and to create and plan human friendly spaces according to anthropometric scale. Niš as the “host city” of the conference was an excellent research polygon for discussion, because it represents an example of the city with complex urban structure. It includes rich heritage areas but also new developing areas, thus providing a very attractive and vibrant ambient. Thus, the next conclusion was that inherited sites and built heritage can be used as a tool for city branding and can also help to improve development by learning on past mistakes and achievements. The following conclusion found that cities must be observed as the home to all residents, which must actively participate in its development and planning process, in order to present their real needs and to stop illegal constructions. Finally, it was concluded that public-private partnerships must be encouraged and promoted because it is not possible to develop and implement projects without mutual cooperation. By developing public-private partnership it is possible to achieve community wellbeing through encouraging investors to develop public spaces and community facilities.

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## FOREWORD

It is with great pleasure that I present to you the following Proceedings of the Second International Conference on Urban Planning ICUP2018, held in Nis on November 14-17, 2018. This is the second conference organized by the Faculty of Civil Engineering and Architecture, University of Nis and Urban Planning Cluster, with the aim of bringing together scholars, researchers and students from all areas of Urban Planning. The ICUP conference explores a broad spectrum of Urban and Spatial Planning issues from both theory and practice. The main topic of this year's Conference is Nature - Urban Planning - Architecture.

These topics are discussed in more than 40 conference papers from various study areas and diverse places in the world, and therefore provide a valuable insight into contemporary urban policies and approaches. They also make good grounds for discussion at the conference and a good basis for further research. The authors are professors, researchers, PhD students and planning professionals. We are especially proud of our keynote speakers and the members of our Scientific Program Committee, who are eminent experts in their fields from all over the world.

We considered that it is very important and responsible that a group of connoisseurs gathered in order to contribute to integrate sustainable principles into urban design and fostering the principles of nature protection. The set of messages presented in this publication represents a contribution to the extremely important debate about the introduction of nature in the urban environment. Some of researches, whose results are presented in this proceeding, bring to our attention that the quality of urban life in ever-growing cities depends on the ecological principles applied in urban areas, from the symbiotic connections between green and gray surfaces and the sustainable use and renewal of natural resources. The crucial mechanisms of supporting sustainable and healthy lifestyle, principles of protection of inherited natural resources, are exposed. Historical and contemporary examples of good practice have been considered, which have improved the quality of life, both in the family micro-space of residential houses and in urban cores of the metropolis. We hope that this knowledge base will become an inspiration to professionals and public to improve the standard of living on the local as well as at the international level; to compete in treating quarters belonging to citizens, cities that develop in accordance with nature and state policies that contribute to the protection of the planet.

Urban structure is a complex and multidimensional system that is prone to change. Therefore, it requires to be closely monitored by continuous research, which brings up some entirely new issues or sheds new light on the old ones. Given the importance of the planning topics elaborated at the conference and numerous questions that are raised here, we firmly believe that it is our task to continue exploring this matter. Hence, we are proud that the ICUP conference establishes itself as a traditional manifestation of the University of Nis. I take this opportunity to thank all of the authors and co-authors of papers, reviewers, keynote speakers, members of the Scientific Program Committee, as well as teachers and associates engaged in the technical preparation of these Proceedings.

And finally, I am pleased to invite all authors from the academic and research community to participate and give their scientific and professional contributions to the future Conferences, for the benefit of all of us.



**Petar Mitkovic, PhD, Full professor**  
*Faculty of Civil Engineering and Architecture, University of Nis*  
*Chairman of the Scientific Program Committee*

***Disclaimer***

***The contents of the papers presented in this publication are subject to review, but the authors are responsible for the originality and quality of their papers.***



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## URBAN-ARCHITECTURAL ANALYSIS OF STUDENT DORMITORIES IN NIŠ

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### **ABSTRACT**

*With its University, Niš is known as a student city. For the accommodation of students, there are four pavilions that are placed in various locations. Since there is no campus, the dormitories are scattered all around the city's territory, in the near of Faculties. They were built during 60s and 70s of the last century, and since then, except for two important architectural reconstructions, not so much has been changed in the sense of urb-architectural redesign. In the framework of the project Development of student dormitories in Serbia at the beginning of the 21<sup>st</sup> century, the paper considers characteristics of these dormitories from urban and architectural point of view. It tends to investigate the current conditions and check whether they are able to satisfy all the needs of modern living and student obligations. The special emphasize is given to the analysis of greenery and open-spaces capacities.*

**Keywords:** student dormitory, urban-architectural analysis, student lifestyle

### **1. INTRODUCTION**

University of Niš has 14 Faculties in its structure. 11 Faculties are located in the City of Niš, while other 3 are in Leskovac (Faculty of Technology), Vranje (Faculty of Pedagogy) and Kruševac (Faculty of Agriculture). According to data available on official web site of the University [5], number of students in the past school year 2017/2018 was 24625, counting all levels of studies, that include basic academic, basic professional, diploma academic, specialized professional, specialized academic and doctoral academic. The total number of dormitory beds in Niš is 1120, which presents only 4.55% of the whole amount of students of the University per year.

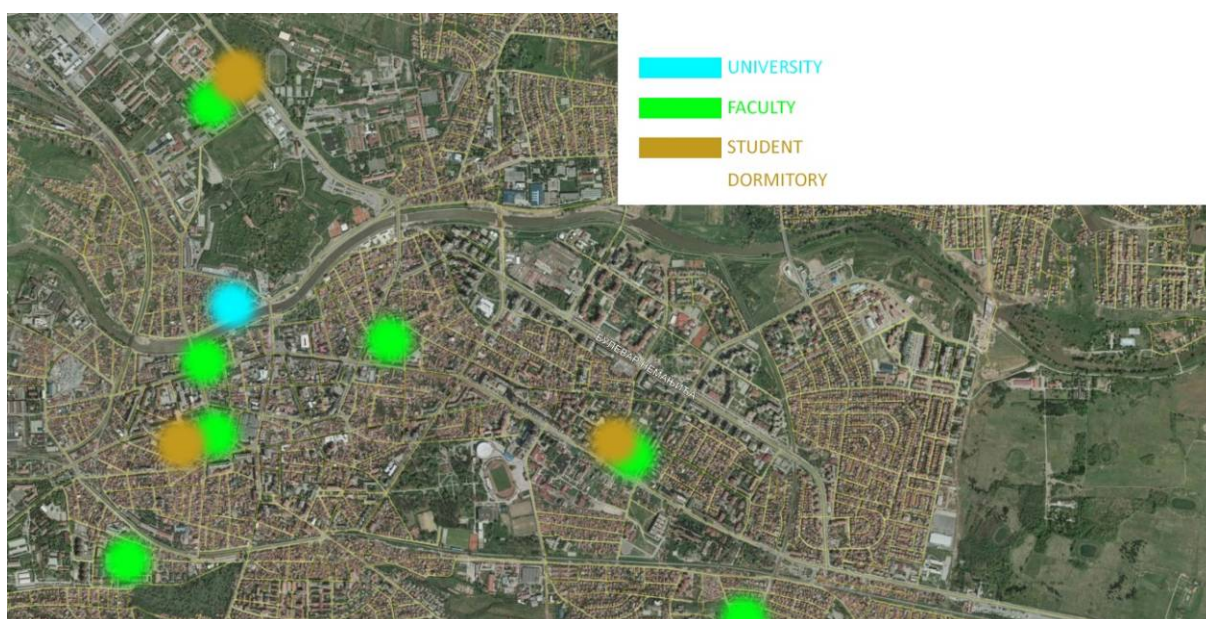
Student dormitories in the City of Niš are under the leadership of Student center, which is the company governed by the state. They are comprised of four buildings, that are not territorially unified, but are located in different parts of the city. Named after Pavilions I to IV, the buildings are divided into 3 groups: Pavilion I and II in the near of the Aleksandar the King's Square, Pavilion III near City's hospital and Pavilion IV on the open field behind the Fortress of Niš. They all were built in the beginning/middle of the second part of 20<sup>th</sup> century, according to design standards that were in use at that time. Period of their construction is known for serial and prefabricated construction, which means that similar solutions were applied in many different architectural projects of the same type (for example the Student dormitories '23. oktobar' / '23<sup>rd</sup> October' and 'Sajmište' in Novi Sad have the same ground floor plan as the Pavilion III in Niš; Pavilions I and II are conceptually 'very similar to the II pavilion of the Patris Lumumba students' dormitory of Belgrade' [3], where 'the solution for pavilion II is identical to the proposed feasibility study for students' dormitory near Pančevački most in Belgrade, the building of which has never been constructed' [3]). Those solutions were good for the time they were built, but the needs and habits of the students in the 3<sup>rd</sup> milenium have been significantly changed, espetially with the rapid progress of the technology and technics. Having in mind the fact that Serbia is a country of not very developed economy, which affects every brunch of its activity, including student housing, that in a great menner has a degree of public living, the aim of the paper is to investigate what is the current

condition of student dormitories in Niš, which are the subject of this research, from the architectural and urban point of view, and are they adequate to satisfied modern student`s life. The aspects that will be considered in the investigation are focused on functionality, appearance and available content, with the accent on open green spaces and possibilities of additional activities.

## 2. DORMITORY BUILDINGS – ANALYSIS

Pavilions I and II are located in the near of the Faculty of Economics and the Faculty of Law (Topličina street No.2). They were built in 1966 and 1969 and contain two-bed and three-bed rooms, which are characterized as the second category type of rooms. Pavilion I has 63 rooms and can facilitate 185 students, while in Pavilion II there are 54 rooms that can facilitate up to 162 students. Both buildings have computer and TV room intended for the common use of the students, as well as a spacious room for learning. [4]

Pavilion III is located in the near of the Faculty of Medicine (Velikotrnavska street No.2). It was built in 1963 and reconstructed in 1997. In 2012 was made a complete facade reconstruction, according to the highest standards of Energy efficiency. Building has 110 rooms, mostly two- and three-bed rooms, and has the capacity of 238 places. As additional content, can be found internet hall with computers and a room for learning. [4]



**Figure 1:** Location of Dormitories around territory of the city and its position towards the Faculties and the main University building

Source: gis.ni.rs, Accessed 24 Sept 2018 / authors

Pavilion IV is located in the near of the Technical Faculties. It was built in 1977, and due to destructions suffered during NATO aggression in 1999, has been completely reconstructed and adopted to modern standards. The number of students that can live in the building is 353. They are placed in 184 one- or two-bed room types of the first category, which are organized in groups – units of two to three rooms that contain common kitchen and living room. [4]

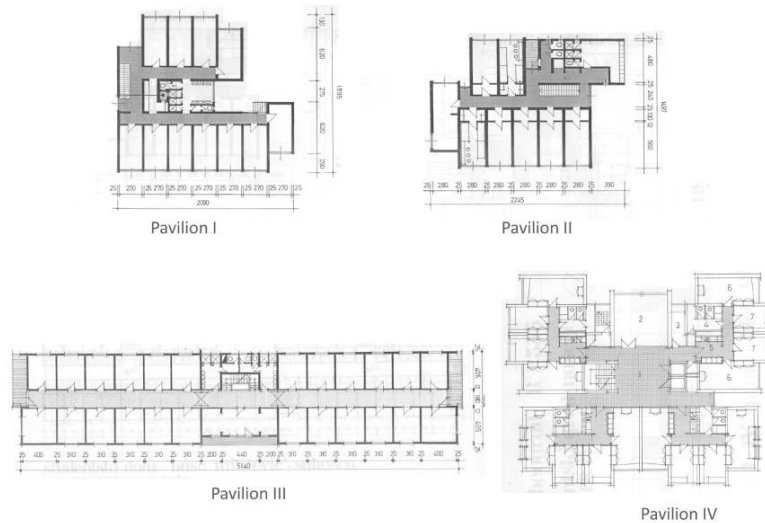
**Table 1:** Dormitory pavilions

Student dormitory	Address	Year of construction	Year of reconstruction	Number of rooms	Capacity	Number of floors above the ground	Type of rooms	Organization of rooms	Additional content
Pavilion I	Topličina street No.2	1966		63	185	6	2/3 bedroom	Single units	Computer room, TV room, Reading room
Pavilion II	Topličina street No.2	1969		54	162	6	2/3 bedroom	Single units	Computer room, TV room, Reading room
Pavilion III	Velikotrnavska street No.2	1963	1997, 2012	110	238	5	2/3 bedroom	Single units	Internet / Computer hall, Reading room
Pavilion IV	Bulevard of Nikola Tesla	1977	2001	184	535	12	1/2 bedroom	Grouped units	Reading / Drawing room
<b>Total number of rooms / places for students</b>				<b>411</b>	<b>1120</b>				

Locations of Pavilions are presented on the map in Figure 1, where can be seen their relation to the existed Faculties and main building of the University. It can be noticed their dispersion across the whole city's territory. Table 1 shows short review of main information on each dormitory building.

### 2.1. Functional analysis

Initial design of dormitories in the sense of functional organisation of student units is based on the satisfaction of minimal student needs and does not offer any greater comfort. Observing typical floors in each of the architectural projects (Figure 2), it can be seen that the rooms are lined up around or along the horizontal communication (hall). The bathrooms, showers and toilets, are shared between the students. In Pavilions I, II and III, there is one sanitary block per floor, which means that 11, 7 or 24 rooms use the same bathroom, while in Pavilion IV the situation is in a way better – a group of four rooms has its own bathroom, as well as small kitchen. Rooms are mostly intended to accommodate two or three persons and are of minimal size.



**Figure 2:** Typical floor plans of Pavilions (original designs)

Source: Cekić N. Vasilevska Lj., *The students of Niš residential capacities analysis from the points of views of urbanism and architecture*, On ecourbarchitecture students homes, monograph, Faculty of Civil Engineering and Architecture University of Niš, Niš, 2017, pp. 7–14

On typical floors, can also be noticed the lack of open spaces in rooms, such are balconies or loggias. Pavilion III contains few loggias with the access through the hall or common room. Although their area is not big, they represent important part of the space, giving the students possibility to take a fresh air or serving as a meeting point where residents can meet each other in a more relaxed atmosphere.



**Figure 3:** Typical floor plan of Pavilion IV after reconstruction

Source: Project of reconstruction by Dušan Ilić

When analysing functional content and its spatial organisation and dimensional aspect, one should have in mind the period when the dormitories were built, with the special attention paid to the political and economic framework of the time. Social occasions that ruled 60s and 70s in the last century in SFRY were strongly dedicated to the communism, which shaped almost all the domains of human life, especially the construction and architecture. Living in community was feature characteristic for the communist era, but since then, a lot has been changed. Today's Serbia and global modern tendencies require different demands. The life today is more oriented to individualism than to unity, which is also reflected to residential architecture and therefore to student habitation. That does not mean that the student should be isolated, but that he needs more privacy in a collective housing, which leads to the conclusion that dormitories in Niš need to be adopted to contemporary requirements and lifestyle. During few reconstructions made in the buildings of Student dormitories, some changes have already been made, but are definitely not enough, since they were not applied in all of the four

structures. The best improvement can be noticed in the functional reorganisation of Pavilion IV, where private bathrooms were added to each of the rooms and common spaces inside of the grouped units were converted into gathering places composed of common living room and mini kitchen (Figure 3). It is obvious that the interventions were made at the expense of the rooms' areas, but despite this, the rooms haven't lost much of the comfort, while increasing the level of privacy.

## 2.2. Aesthetic analysis

In the sense of form and aesthetics, dormitories are characterised by regular and orthogonal shapes, with dominance of straight lines, clear geometry and elements that repeat themselves. The outside appearance is in a great way reflection of the inside functional organization and the buildings' structure. Openings follow the spatial layout of the rooms. Materialisation and colorize in Pavilions I, II and III are very similar, where facades are done in conventional demit style, which is, due to its low price, very typical and frequent in the architecture of Niš, but quite unattractive and very ordinary. On the other hand, Pavilion IV to a full extent reflects the spirit of socialism and stands in its original design form. Despite the reconstructions and renovations that were done, it can be concluded, that from the aesthetics point of view, in all the Pavilions no changes have been made. In that sense, the buildings take a risk to be monotone, boring and uninteresting not only to users, but to the whole city and its image. Most of the pavilions are in the very central core of the city and therefore their role is even more important and demanding, cause they should contribute to a better appearance and the city's representation.



Figure 4: Entrances to the Pavilions (a) I and II, (b) III and (c) IV  
Source: authors' photos

The architectonic value of the dormitories is quite questionable. Here it is more about the pure purpose and less about the design. The focus of the architecture is more on the basic needs and the other aspects are pushed in the second plan or are not placed in the consideration at all. In order to become attractive and dynamic, it is required to pay better attention to the aesthetic aspect and the recommendation is that this should be taken into account if the future reconstructions will be planned. Suggestions are directed towards the possible buildings' facades remodelling, especially their main and most exposed parts, establishment of better segregation with the surroundings and giving attention to the role of the structures, knowing that they are important landmarks of the city, even they are basically nothing but the residential buildings. The fact is that their form is strongly linked to the place. The Figure 4 shows the current state of the main entrances to the buildings. Reconstructions could make them look more accentuated.

## 2.3. Green space analysis

As architectural designs of dormitories doesn't offer enough open areas inside the buildings, which was the conclusion of the chapter 2.1., it would be desirable to compensate their absence with green areas around the building. However, green areas are in the case of Pavilion I, II and III strongly conditioned by the location, which is quite densely constructed. There is not enough space to create any bigger green space or space for recreation and relaxation, except for small park. Small green areas already exist in front of those buildings. The problem is the condition in which they are: no mobilier or old and worn out mobilier that is dysfunctional (primary benches, lamps, plant pots), greenery that needs to be better kept and maintained, as well as poor paving.



Figure 5: Green areas in front of the Pavilions (a) I and II, (b) III and (c) IV  
Source: authors' photos

The situation in Pavilion IV is a little bit better, since the location is out of the central territory and the area around dormitory is due to greater spaciousness more comfortable and suitable for other contents, but the problems recorded in previous paragraph are the same, which can be seen from the photos shown in Figure 5.

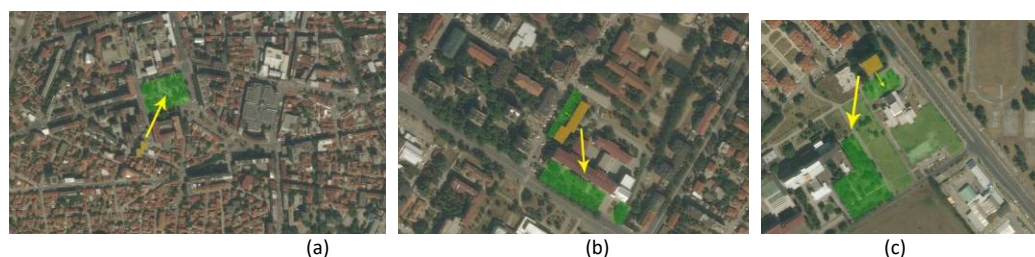


Figure 6: Green areas on micro-location of: (a) Pavilion I/II, (b) III and (c) IV  
Source: <https://www.bing.com/maps>, Accessed 27 Sept 2018 / authors

The lack of open spaces in Pavilions directs users to nearby parks, which are considered as replacement for dormitories' green areas. Figure 6 shows relations between dormitories and local parks, while Figure 7 gives the overlook of directions to the green areas on macro plan of the city. Distances vary in the range of 160 m to 1.7 km.

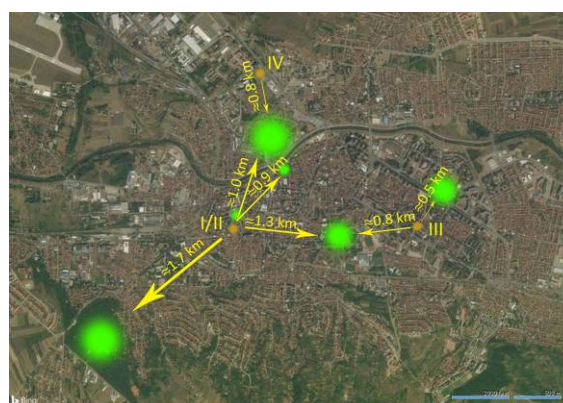


Figure 7: Gravity fields of dormitories in a search for green areas around the city  
Source: <https://www.bing.com/maps>, Accessed 27 Sept 2018 / authors

After the analysis of open space and green capacities made in each of the Pavilions, it can be concluded that they are pretty limited. First of all, arises the problem of restricted area which could be used for that purpose, which does not allow creation of additional open facilities for sport and recreation or any bigger intervention (Figure 8). Since extensions are not possible, only left solution is regeneration of existing greenery and renewal of its mobilier, in order to make it fully useful and alive.

Non-existence of the facilities for sport and recreation directly affects the quality of students' life. Leisure activities should be equal part of student routine, as are academic activities or studying. Since the offer of them is quite modest, or, to be more exact, improvised, students are left to themselves and are oriented to search other options in the city which they can afford themselves according to their personal and economical possibilities. It is obvious that improvement of the facilities and variety of functions is necessary. Unfavourable situation is that that the Pavilions are not grouped in one place, but are allocated around the city. That gives no



possibility to create one unique area in the near of the Pavilions which would unify content of that kind (for example park, walking promenade, water surface, open/closed playground, open amphitheatre and so on) and would be at disposal to all the buildings of student dormitory. It can be the solution to have one joint 'green center' located independently in the part of the city on reasonable and approximately equal distances from each of the Pavilion, which is more economical option than construction of four separate smaller areas, which due to the lack of the free surfaces, are also not acceptable potentiality.

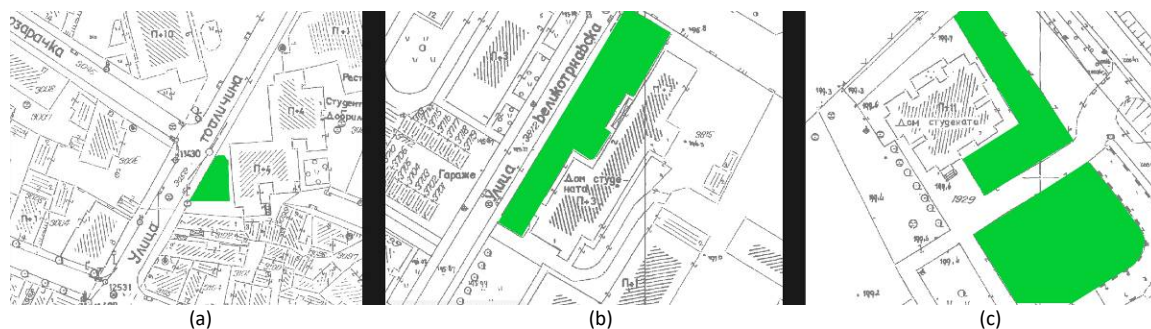


Figure 8: Green areas around the (a) Pavilions I/II, (b) Pavilion III and (c) Pavilion IV  
Source: authors' illustration

### 3. DISCUSSION AND CONCLUSION

Short research that was made through this paper aimed to give overlook of the current condition of student housing in the City of Niš, 3<sup>rd</sup> biggest city in the Republic of Serbia and an important University center of the country. Analysis of the current architectonic and urban state of the student dormitory buildings are first level to the further achievements that are necessary to be done in order to increase the quality of student life, having in mind that educational system in Serbia has been significantly changed, which reflects on the employees and students and generally on the whole institution dedicated to education: 'Conditions for creating increased professors' and students' mobility and raising the quality of education on higher level, have actualized conceptual changes in organization and mode of students' living, in a way of perceiving their real, everyday needs' [1]. Case studies of four Pavilions gave the result that buildings of student dormitories require bigger changes in a sense of, most of all, their functional organization. Units of three people, with shared bathroom facilities are overcome long ago and are not suitable for modern learning system and contemporary lifestyle. Student's need to have higher level of privacy and the possibility to live without interruptions, but to, at the same time, have possibility to gather with other students, forms the structure. Here, the biggest problem also appears in the size of the units, which is set to minimum or even under the minimum required for the certain number of users. For example, in Pavilion I, the size of three-bed unit is around 15 m<sup>2</sup> (2.70 m x 5.70 m), which is approximately 5 m<sup>2</sup> per tenant [3]. 'Worldwide experiences show that the most contemporary student apartment units are architectonically organized on the area of 18 m<sup>2</sup> to 40 m<sup>2</sup> and that in more than 90% of cases, they are of one-bedroom type. Two-bed room residential student apartments can be seen in a smaller number of student dormitories. The content of student apartment unit obligatory contains toilet, with the access from the entrance area, with living room that can have small open area: loggia or terrace. Student apartments are highly comfortable and except for bed, they are also furnished with kitchenette, wardrobes and learning zone.' [2] Reorganization of residential units could potentially decrease the capacity – the number of students in dormitories, but the intervention would significantly increase the quality of facilities and directly affect the living conditions of students. That means that new buildings are required, in order to host larger number of students. In this regard, should be mentioned a new structure that is under construction in the near of Pavilion IV, which is positive step that lead to the partial solution of the identified problem.

Apart from functional reorganization, the conclusion is that the changes are required also in the scope of aesthetic and greenery remodeling, which was considered in the 2.2. and 2.3. chapters. Both of these parts are crucial, the first maybe not for student life, but for the city, while the second directly affects the living comfort of the residents. It is necessary to reconsider the integration of the structures and environment, which puts in the foreground importance of architectural and urban planning interrelation. The lack of the green areas should be solved through reconstruction of the free spaces around the buildings which exist on sites or by considering the possibility to use the roof as an open green terrace.

Final conclusion of the research is that despite the unfavorable condition of the dormitories in Niš, there are plenty of possibilities to overcome the problems or at least to moderate negative effects that are present in today's everyday life of their residents and are caused by urb-architectural effects on them. Clear and regular structure allows for simply retouch without any complicated processes, making the reconstruction easily to be made. Additional recommendations are to take a look into wider range of architectural projects of the type, mainly those contemporary ones which proved to be successful in practice, and try to learn from their experiences and adopt new and good approaches to design applicable also in our society.

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