

5<sup>th</sup> ISUFitaly International Conference  
Rome, 19-22 February 2020

# PROCEEDINGS

edited by  
G. Strappa, P. Carloti, M. Ieva  
with the collaboration of  
F. D. De Rosa, A. Pusceddu



## URBAN SUBSTRATA & CITY REGENERATION

Morphological legacies and design tools

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Morphological legacies and design tools



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# Presentation

## **URBAN SUBSTRATA & CITY REGENERATION** **Morphological legacies and design tools**

The fifth Isufitaly Conference will focus on the notion of the substratum in its various aspects.

First, the typological one, as a set of rules inherited from the built landscape that allow reading and conscious transformation. We cannot reduce, of course, the complexity and richness of our ancient heritage to universal interpretational patterns that classify types and processes in a kind of taxonomy of the Ancient (that is true for any built environment). Instead, the identification of a few common criteria that allow us to interpret these phenomena through an architect's eyes, tracing the many outcomes back to the general rationales that produce them, can prove useful to morphological studies.

Then, the physical shape of the historical layer, which in many ancient cities has determined the structure of the current settlements. Substratum is, from this point of view, the part beneath the current built landscape that has no longer a function but still contribute to the form of new fabric. It is the prolific layer that gives rise to multiple organisms. We could then consider a 'substratum' as the composition of elements that once belonged to a built fabric or architectural organism. 'Substratum' despite having lost both their relationship of necessity that bound them together (their purpose and original organicity), and the continuity between the different phases of change and development, still transfer specific characters to the buildings originated by them.

Finally, the intangible aspect, the heritage of projects, experiences, and researches that constitute the working legacy on which current study can be based.

The notion of substratum could be, therefore, more than a specific issue, a way of seeing the built reality useful to the contemporary project.

The term not only includes the ideas of rooting and transmission; it also refers to the means, the tools we can use to reach the essence of the form, of its universal being. This universality, a quality that the actual building did not possess, constitutes a fertile abstraction: a reading as well as a project, how we give a new unity to the multiple and scattered forms of the remains we have inherited.

Furthermore, another theme, which is complementary to the substrata one, is that of urban regeneration. It is a topic extensively investigated by urban research which, in this context, could be reconsidered differently and innovatively.

In continuity with the previous Isufitaly meetings, the theme of the conference proposes a debate on the topics of the urban form transformation at different scales, in the light of our cultural heritage understood as a design tool.

The conference will take place at Palazzo Mattei di Giove, built on the ancient remains of the Teatrum Balbi, in one of the Rome areas where the relationship between the present city and the ancient substratum is more evident, even in its contradictions (the Porticus Octaviae, the Teatrum Marcelli, the archaeological area of Largo Argentina).

# Organization

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## Urban morphology education in Serbia: Origin, genesis and new tendencies

Vladan Djokić<sup>1</sup>, Milica Milojević<sup>2</sup>, Aleksandra Djordjević<sup>3</sup>, Mladen Pešić<sup>4</sup>  
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Keywords: *urban morphology, education, Serbia, teaching urban morphology*

### Abstract

*The origin of urban morphology education goes back to the beginning of the 1970s and a period of radical education reforms at the Faculty of Architecture in Belgrade, where urban environment became the main interdisciplinary topic. The importance of urban form has been since emphasized by planners, architects and politicians in various planning documents, symposiums and as such, became an essential segment of the architectural education. The subjects such as Contemporary architecture and form of the city, Urban environment and urbanization, Urban technic and composition and City environment were an important segment of the education for many years. This tradition was strengthened even more in newest accreditation, due to the individual contribution of academics who introduced new courses such as Urban Morphology and Urban Typology and Morphology. Having in mind recent contribution of researchers to emphasize the challenges of teaching urban morphology, this paper aims to enlighten the origin and genesis of the education of urban morphology at the Faculty of Architecture, University of Belgrade and to shed the light on new tendencies and means of teaching in present days. The paper will analyze syllabus of the courses, teaching methodology and present examples of student's projects on three different levels and courses: ex cathedra on the bachelor level, practical implementation of theoretical notions in studio design on master level and research-based work on the PhD level.*

## Introduction

The main objective of this paper is to describe the way urban morphology was, is and can be taught in an academic setting at Faculty of Architecture in Belgrade, while at the same time to position the urban morphology as a discipline within contemporary spatial development. Having in mind urban morphology's status as an interdisciplinary field of knowledge, this research explores ways to share, discuss and produce this knowledge within the disciplines of architecture and urbanism. This research will be structured in two parts. The first part will show the general history of architectural education in Serbia and later on the origins of teaching urban morphology within the Faculty of Architecture in Belgrade. At the same time, research will portray the broader academic context and role of urban morphology as a tool and knowledge with which to introduce future professionals that will intervene in space. In this part, historical development and transformation of academic courses regarding urban morphology are explained within the academic institution of the Faculty of Architecture in Belgrade.

The second part presents specific case studies regarding the processes of producing and sharing particular concepts, tools and methods of urban morphology in the academic curricula for students to better understand the logic and characteristics of built environment. In this part, a critical review would be provided of three courses: (1) *Urban Morphology*; (2) *Design Studio 06* and (3) *Research Seminar – Urbanism: Urban morphology and Typology* that were developed as courses on Faculty of Architecture in Belgrade. This paper will present issues regarding the innovative and creative ways of teaching and discussing the subject of urban morphology in university education on the level of Bachelor, Master Studies and PhD studies.

## History of architectural education In Serbia

The Faculty of Architecture, University of Belgrade, is an educational institution with a long tradition associated with the practice of educating architects in Serbia that extends to the middle of the 19th century. With its various forms and types of organization, it has been established "as an attractive environment for development, promotion and dissemination of architectural knowledge" (Lazović & Mako, 2016, p. XVI). At this point, architectural education in Serbia has a tradition of more than 170 years, starting in 1846 with the foundation of "Indžinirska škola" by the decree of Prince Alexander Karadjordjevic, that among five subjects included Architecture in its curricula. Later on, the first Civil Engineering and Architecture course was established within the Department of Philosophy at the first Lyceum in Belgrade, which in 1863 grew into the Great School within which the Faculty of Engineering was founded. It is within this Faculty that the separated Department for Architecture was established in 1897. The transition of the Great school to the University occurred in 1905, with five University members including the Faculty of Engineering with its Architectural department. At the beginning of the 20th century architectural education in Serbia was under the influence of the first generation of architects educated in Serbia, as they started to work as teaching assistants and later on as professors at the school. During this period, Study Programme evolved according to principles of European schools of that time (Lazović & Mako, 2016, p. XVII). Previously, professors at the school were educated in Germany, Austria and France, thus incorporating the principles of those schools to the curriculum of Belgrade school. In 1931 the Architectural department gained its own building where the Faculty is situated today. In the period after the Second World War, the Department of Architecture at one time exceeded its organizational capacity due to a large number of students and the evolved curricula that led to the formation of independent Faculty within the University in 1948 (Lazović & Mako, 2016). Since that moment, several changes took place in the methodology of architectural education and organization of the school and structure of the curricula. The most important changes in Study Programme took place in the 1960s when Atelier system (design based curriculum) was established, and in 1970s when the concept of New School was introduced, including courses from social and humanistic fields along with the introduction of postgraduate courses. The New School, which was promoted in 1970,<sup>1</sup> was based on a trimester system, which promoted the "direct and continuous

relationship of students and teachers" (Anon., 1998, p. 16). What is specific for this period and the school is that the study themes and courses were based on the relationship between architecture and the environment, and the so-called environmental aspect was introduced in the school curricula. The studies lasted four years, of which the first two were of a general character, while the third and fourth had the choice between the two orientations. Duration of the studies changed over the time from 4 to 5 years, and today it consists of two levels that were introduced in 2006<sup>2</sup>: Undergraduate or Bachelor Level (3 years) and Graduate or Master Level (2 years) and most recently the programme of Integrated academic studies of Architecture (5 years) was also introduced along with several different Master level courses (2 years). Present-day Faculty of Architecture is "dynamic institution committed to the continual development of the architectural profession" (Lazović & Mako, 2016, p. 16) with the Study Programme "comprised of social sciences, humanities, technical and technological, artistic and philosophical aspects" (Lazović & Mako, 2016, p. 16).

### History of teaching urban morphology

It is not entirely clear when exactly the first mention of the subject of urban morphology was officially introduced to the formal Study programme at the Faculty of Architecture. Over time, individual professors have made more significant or slighter changes in curricula that were in connection with the teaching of urbanism, urban design or urban planning in general. By researching the Book of courses from the beginning of the 1950s until nowadays it could be observed that there is constant change in the way the educational processes of architect were implemented. Although the global interest on the subject of urban morphology and urban form grew from the 1980s onwards, in the context of Faculty of Architecture in Belgrade, it could be traced to the beginning of the 1970s within the courses of Urban Environment and Urbanology that were part of Study Programme within the New School that started in the beginning of the 1970s. Urban Environment course was positioned in the first year of studies (1 trimester) and it had eight classes per week by professor Bogdan Bogdanović. As stated in the course curricula, the aim of course is to explore urban phenomena by "choosing one case (Case study), in order to examine complex natural and historical factors in the creation of the urban environment, and to examine the emergence and development of city morphology" (Anon., 1972). Bogdan Bogdanović also held the course of Urbanology that was positioned on all years of study, varying course curricula depending on the level of study. Also, Bogdanovic held a course Urbanology – Reconstruction and typology of urban structures that likewise was dealing in one part with the question and history of the city and urban form. Branislav Mirković and his course Technic of Urbanism and elements of Traffic were part of the syllabus in the second year. During the 1980s after the end of New School, courses evolved and changed their names, aims and methodology so at some point Urban environment and urbanization (prof. Borko Novaković) course was established on the first year of study, with aim to provide "simultaneous guidance of deductive and inductive ways of introducing into the most complex phenomena of urbanity should enable students to develop: (a) cognitive, (b) methodological and (c) self-educational process in the broadest field of architecture understood in terms of city building." (Anon., 1985, p. 11) Urban Technic (prof. Dimitrije Mladanović) was a course in the second year of studies during the 1980s, with goal to "acquaint the student with the basic technical and design-compositional elements most commonly used in urban design." (Anon., 1985, p. 13). Since 2006, Urban Environment and urbanization has changed its name to Built Environment (prof. Zoran Nikezić) and Urban Technic changed its name to Urban technic and Composition (prof. Dimitrije Mladenovic and prof. Petar Arsic) and later on became Urban Design of City (prof. Aleksandra Đukić and prof. Dragana Bazik). Both courses were held in the first year. Along with these courses since the 1980s professor Ranko Radović has been teaching a course regarding Contemporary architecture and urbanism, with an emphasis on the history of architecture and urban form.

Different approaches were undertaken during the years at the Faculty of Architecture in order to promote general understanding of urban morphology, but until 2014 the-

re was not a single course that was dealing with the specific questions of urban form and urban morphology. In that period, after the reform and accreditation of the School programme new courses were developed in order to deal with the relevance of urban morphology as a field of study, and the ways on how it can add value to the understanding of the way city is being shaped, and the reasons why one should care about urban morphology both on local and global context. In the following part of the paper three courses dealing with urban morphology as a concept, methodology and tool in dealing with spatial question will be examined – *Urban Morphology*, *Design Studio 06*, and *Research Seminar – Urbanism: Urban morphology and Typology*.

## URBAN MORPHOLOGY COURSE

### Position of the course in the Study Programme at the Faculty of Architecture

The Urban Morphology is the course in the first year of Undergraduate studies (US) and Integrated academic studies (IS) of Architecture. Course is established in 2014, and it is led by professor Vladan Djokić. The course belongs to the group of obligatory courses with 3 ECTS credits. Classes are organized in the amphitheatre for 250 US students and 60 IS students (310 students in total). Due to a large number of undergraduate students and the planned 3 hours of active teaching per week, classes are organized in the form of one hour ex-cathedra lectures and two hours of interactive teaching.

### *Structure and forms of teaching*

Lectures are organized thematically into three parts following the basic structure of the course book *Urban morphology - City and town square* (Djokić, 2004). In the first part of the semester, students are introduced to the basic elements of urban morphology (on the example of city and city square). In the second part they are introduced to the methodology of morphological researches, while in the third part they are introduced to the (local context) conditions for the emergence and transformation of cities and squares in Serbia. Interactive teaching is performed after one class (45 minutes) of ex-cathedra lectures and it is organized into two parts.

The first part engages students to work as a team in presenting or showing examples of city squares from Serbia based on the textbook *Typology of the City Square in Serbia* (Djokić, 2009). Each student is given in advance one of the morphological characteristics of the city and public square that he should display as part of a joint presentation. After the presentations, the participants in the class (teacher and assistant) provide comments and suggestions and moderate the discussion. The discussion is the final part of the first phase of interactive teaching and it is focused on comparing the presented case studies and examples. This section of the teaching insists on comparing examples for two reasons - the first one is understanding the comparative method and the second reason is developing a comprehension culture and building the discussion on scientific facts.

The second part involves the individual work of the student in the form of a croquis drawing, that is, an Illustrated Glossary of Urban Morphology, based on which the student's activity in the lecture is noted and the basic understanding of the topic and critical concept explained in the lecture is tested. The illustrated glossary is a collection / compendium of croquis drawings (10 in total) that is designed to encourage students to follow lectures and to obtain the minimum required knowledge for the test (colloquium) based on such notes. A short croquis drawing task is in the form of a quick examination of an understanding of a term that is based on an illustration of a given term. The student response is in the form of a sketch, a freehand drawing because the drawing is a "letter" and a tool for thinking, understanding and remembering. The main objective of this assignment is to adopt new terminology in the field of urban morphology in a way that engages the visual-spatial intelligence or visual cognitive abilities required in the architectural profession - (especially: perception, attention, memory, visual and spatial processing).

These different teaching activities are interrelated and conditioned, so engaging teachers and associates to coordinate activities is as important as engaging students. In the first class, the professor teaches the course material according to thematic units, introducing new concepts with general meaning and specific meaning in the field of urban



morphology. The second class is reserved for the croquis drawing task. In this part, one term is introduced, which is presented and illustrated in the first class through a lecture. In the second class, two case studies of squares in Serbia are presented and based on the criteria of typological classification, the similarities and differences of squares are discussed and the topic from the previous ex-cathedral lecture is emphasized through this process. The graphical representation of the squares, the selection of information and the structure of verbal presentation are evaluated through this part of the class. According to a predefined schedule, activity dynamics are enabled. The lecture is followed by all the participants of the course in order to answer the final task, and four groups of 7 students (28 students per class) actively participate in the presentation, while all the students are invited to contribute to the discussion.

#### *Realization of teaching*

Two teachers and one associate participate in the teaching process in that way that one teacher is lecturing ex-cathedra and the other teacher is moderating the interactive part of the class. The role of the associate is important because he / she attends the first part of the class and actively participates in the second part of the class. The role of teachers and associates in interactive teaching is to clarify and approximate the course material through comments, and to point out the application of acquired knowledge in architecture studies. The activities are aimed at understanding and adopting the terminology and graphic language of urban morphology. Developing interest in the phenomenon of the town square, and the specifics of that phenomenon in the local context. Linking the morphological characteristics of the square and the city, and finally reviewing the morphogenesis of the square and civic culture.

#### *Required, additional and recommended literature*

Required literature is in the field of urban morphology and includes two books by Professor Vladan Djokic, and additional literature is a textbook by Professor Zoran Nikezic. In addition to the literature in the Serbian language, students are also recommended books in English (such as *Urban Form*, *Town Spaces*, *The Image of the City*, *The City Shaped*). On the basis of the mandatory literature, theoretical knowledge is tested, and on the basis of additional literature students expand the terminology in the field of the built environment, while the recommended literature is offered as a basis for developing interest in researching the morphology of the city. In addition to the theoretical research of both typological and historico-geographical approaches, the book *City and Town Square* (Djokic, 2004) contains examples of cities and squares from the world (mainly the American and European continents) and in the book *City Square in Serbia* (Djokic 2009) extensive graphic material of typo morphological research. In the first book, the graphical appendices accompany the text and illustrate the text, and in the second book the graphic appendices are "text for themselves" - the language of presentation and analysis of urban form. Interactive teaching is based on developing the ability to "read" a second book whereby engaging teachers and associates is geared toward approaching drawing as a basic and significant cognition technique at all levels of architecture studies. During the interactive course, students receive short instructions on how to read the textbook.

As part of the course, guest lectures by eminent speakers from the field are organized (Ivor Samuels "Anglophone Urban Morphology – from explanation to prescription: UM as Dialogue between Cognitive and Normative in different contexts" in 2017 and What use is Urban Morphology ? in 2019 and for 2020, a lecture by Vitor Oliveira is planned). Guest lectures are open to all students and teachers of architecture, which is a kind of opportunity to broaden the interest in this field and to learn about the specific approaches and methodologies presented by the lecturers.

#### **URBAN MORPHOLOGY COURSE**

A Design Studio course, which is positioned in the 5th year of Integrated studies, is always site-specific and contextually based. Within studio, urban morphology, both as a

theoretical framework and practical tool is used, for site-specific design and context-sensitive researches. Within the Design studio, the teaching process is organized in that way that it is intensely devoted to foster individual approaches of students and culture of communication, both verbal and visual. In this process, teaching methodology is oriented towards developing technics of communication in order to present ideas and contemporary designs to the professional and general public.

The course consists of three independent parts – Seminar, Workshop and Design Studio. Each mentor within the course can organize it according to his own methods. According to this, for ten years within the of the leading author of the paper, a specific methodological approach was developed.

The course is structures as follows:

The seminar is run through the semester parallel with Workshop and Design Studio. The workshop is always organized at the beginning of the semester as a week-long study trip (site visit, contact with the local community, field work etc...) and at the end of the semester in the form of the exhibition on the site. Workshop results are used as inputs for the Design Studio, deciding the theme, programme and character of the future spatial interventions. The main result of Seminar is the verbalization of student's individual ideas and research tactics that they developed on Design Studio. Design Studio is emphasizing the role of the research. In this process divergent thinking in order to generate various individual themes and spatial interventions is promoted. At the same time, critical thinking is fostered as a way of self-evaluation at the end and during the design process. During the Workshop, Seminar is organized in the form of presentations and guided tours by local experts.

During the course, individual results are produced for each part of it (Design Studio, Seminar and Workshop) and are evaluated in the form of exam. After the completion of the formal part of the semester, exhibition and publication of student semester works are produced, as a selection of results from Seminar, Workshop and Design Studio and as an outcome of coordinated activities and team work. Publication content consists of illustrations of design work adapted to the book layout, themes derived from the workshop and written explanation of the research. Parallel to this, the exhibition is conceived in the process of adapting the design to the agreed poster format, along with using inspiration from seminar work and exhibition techniques verified during the workshop. Each student receives an individual grade, which in addition to evaluating individual stages of work, is also based on assessing progress in developing a personal research sensibility that was recognized at the beginning of the semester.

The evaluation criteria are based on the consistency of the research and the project. There are four intersecting points in the evaluation process. The first one is the evaluation of the workshop, which is organized during the 1st week of the semester. At this stage, the decision regarding the topic, character and programme of the intervention are evaluated. The second point of intersection is the First Colloquium, organized in the 7th week of teaching when the students present the concept design (in the scale of 1:1000). Here, the correlation of the proposed concept and research or topic is evaluated. After the colloquium, students complete their design focused on the requirements of the site. The third point is the Second Colloquium when the students present design project (in the scale of 1:500), and it is organized in 13th week of teaching. In the period from the second Colloquium to the exam term, students work on presentation and elaboration of the project in accordance with their individual topics.

#### **RESEARCH SEMINAR – URBANISM: URBAN MORPHOLOGY AND TYPOLOGY**

This Seminar objectives are focus to introduction to the research problem leading to the PhD thesis - the improvement of scientific competences and academic skills, alignment of the topic with contemporary directions of development of the discipline in the world, promotion of the multidisciplinary approach to contemporary topics dealing with the phenomena of morphology and typology of urban spaces.

Regarding the learning outcomes seminar allows students to acquire the neces-



sary critical knowledge and intellectual competences with which they will be able to independently solve theoretical problems in their area. Using the latest knowledge on morphological characteristics of urban space, students are introduced to the thematic research leading to the PhD thesis; they develop critical thinking and the ability to communicate at a professional level.

Classes at the seminar are focused on the understanding of the phenomena of morphology and typology of the city, as well as on a number of processes that accompany their development and transformation. Morphological characteristics of urban areas and their interdependence with functional characteristics, as well as their cultural context, are the subject of complex considerations, while students are enabled to identify and define their own interests in a given subject area. The overall phenomenon of the structure of a city is observed morphogenetically or within the historical continuity of its creation, development and change through time.

Independent research consists of the making of theoretical assumptions and their practical verification on a specific polygon. Theoretical assumptions are typological and morphological rules which establish principles and guidelines for urban planning and architectural compositional solution of a selected polygon. The selected polygon is a spatially functional unit which has the characteristics of unity and which includes different morphological and typological elements of built structures and open spaces.

### Conclusion

During the previous six years, 6 generations of Bachelor students have completed the course of *Urban Morphology* (approximately 1700 people), two generations of Master students have completed the course *Design Studio 06u* (34 people), and six generations of PhD students have completed the *Research Seminar – Urbanism: Urban morphology and Typology* (18 people). Based on the results achieved, the techniques and content of the interactive teaching are reviewed annually. Experience so far has shown that small but constant changes in teaching process are necessary in order to interact with new generations and achieve the expected student activity. The personal interest and teamwork of the participants in the teaching so far has resulted in teaching aids: textbook, illustrated glossary and a practicum is planned this year to help the students to acquire and systematize the acquired knowledge in this subject / prepare the exam based on linking the content of lectures and interactive teaching.

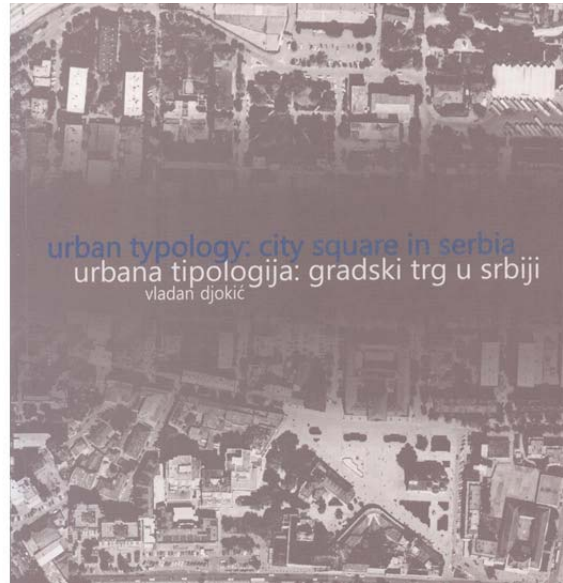


Figure 1.

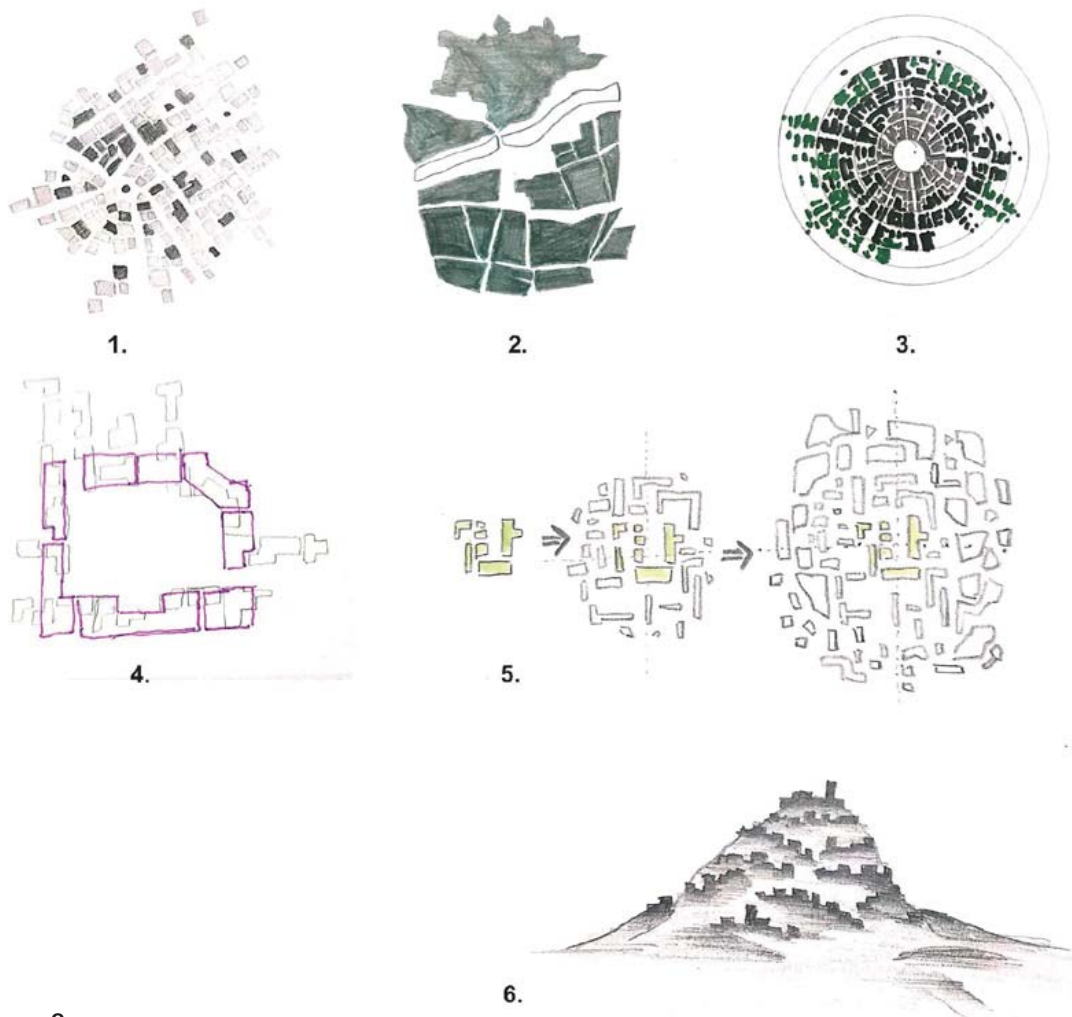


Figure 2.



Figure 3.



Figure 4.

## Footnotes

<sup>1</sup>New School was active between 1971 and 1974. For more information see (Фолић, 2017).

<sup>2</sup>In 2003 through international TEMPUS framework, many fundamental changes were introduced into the Faculty Study Programme within the project entitled "The Reform of the Study Programme of the Faculty of Architecture of the University of Belgrade. It is through this Programme that the integration of the Faculty of Architecture into the "European Area of Higher Education" as enabled. Programme has been operating since 2006. (Anon., 2006)

## Caption

Fig.1 - Fig.2 - Illustrated Glossary (croquis drawings)

1. Urban structure, student: Tijana Žišić; 2. Urban structure, student: Teodora Simonović; 3. Monocentric morphogenic processes, student: Una Korica; 4. Morphogenesis - Moderate transformation, student: Ninoslav Markovic; 5. Monocentric morphogenic processes, student: Jovana Stefanović; 6. Privileged position of the city, student: Daliborka Dabić

Fig.3 - Selected work from Master course, student: Tamara Koneska

Fig.4 - Selected work from PhD course, student: Aleksandra Đorđević

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