ARCHITECTURAL DRAWING IN THE PROCESS OF VISUAL RESEARCH: THE NEW SCHOOL CONCEPT OF THE REPRESENTATION OF SPACE

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The viewpoint of architect Đorđe Petrović on drawing as a research process, driven by his work at the Faculty of Architecture, University of Belgrade within the field of architectural drawing, is to be taken as a starting point for the analysis of the process of visual representation of architectural space in this paper. The analysis is primarily focused on the relevant period from the beginning of the seventies, when the concept of the *New School* was formed, and Petrović introduced the concepts of *visual research* and *visual communications* to the curriculum, in his reassessment of the role of architectural drawings as a purely technical and information resource. The basic methodological question concerns the interpretation of the concept of *visual research*, conducted within the reformed curriculum, as well as its position in the then socio-cultural context and in relation to the actual practice of the time and the period that preceded it. Looking at the drawing as a powerful means of representations of space, the paper discusses architectural discourse determined by architectural drawing as the product of social and theoretical practice, similar to the hypothesis of Henri Lefebvre, presented in his work *The Production of Space.*

Key words: architectural drawing, visual research, visual communications, New School (of architecture), representations of space.

INTRODUCTION

The system of the *New School* of architecture was created by the process of structural changes in the teaching program at the Faculty of Architecture, University of Belgrade, in the early seventies of the twentieth century. Although the reform involved radical shifts of the entire teaching program, where some courses were integrated, but most were considerably abridged, one of the consequent changes occurred in the field of research of architectural drawing. It may be noted that until the said period, architectural drawing was studied as a technical skill and necessary craft for each architect, what an architectural drawing basically is – a way for architects "to present a shape that they want to build" (Vitruvije, 2006: 12). However, in the *New School* period, the study of architectural drawing took on a more complex notation, whereby a drawing was regarded as an integral part of the research process. Studied in *Visual Research* and *Visual Communications* courses, whose teaching program was conceived and directed by Prof. Đorđe Petrović, the drawing

became the basis of considerations of architectural space. Therefore, the main object of the research is architectural drawing as a means of communication and representation, while the research question refers to the process of study and interpretation of the function of drawing in the context of higher education at the Faculty of Architecture in Belgrade, with special reference to the period of the reformed lectures after 1970, when the said changes are observed and implemented in this field.

Basically, the work is divided into two parts, both different in their structure and methodological approach to research. [1] The first part refers to a historical overview and scientific analysis of the developments in architectural drawing within the teaching program for architecture at the University of Belgrade. In this historical review, the concept of the teaching program for the *Architectural Drawing* course is analyzed. The concept was implemented after 1959, when the subject was taken over by Đorđe Petrović. After this period, innovations in the teaching program can be analyzed and they will achieve their final recognition and shaping in the reformed teaching program of the *New*

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Figure 1. Architectural forms of different historical epochs; students' works, 1960s
(Source: Office for Visual Communication Archives, UBAF)

School; [2] The second part is analytically focused on the theoretical interpretation of the teaching concepts on the *Visual Communications* and *Visual Research* courses in the environment of the *New School*, and in relation to the practices of that time. The dominant practices of the sixties and seventies, when it comes to architectural drawing, can be seen in the futuristic and Utopian projects designed in order to criticize Modernism, because in the decades following the Second World War "it reinterpreted its goals, striving to form a physical environment that would meet the emotional and material needs of people" (Blagojević, 2007: 175). Bearing in mind that through these Utopian drawings, Henri Lefebvre's[2] idea of the production and representation of space, determined by social relations can be easily observed (Soja, 1996: 42), the aim was to explore to which extent Petrović's interpretation of the role of architectural drawings was similar to Lefebvre's theses.

CLASSES OF ARCHITECTURAL DRAWING AT THE FACULTY OF ARCHITECTURE, BELGRADE, FROM 1959 TO 1970

Although there had been a long tradition of studying drawing within Belgrade higher education in the field of architecture, before the 1960s, drawing was perceived only as a technical skill and necessity (Krstić, 1951; Petrović, 1996). After Professor Branko Krstić left the Faculty, from the academic year 1959/60, the course *Architectural Drawing* was entrusted to architects Branislav Milenković and Đorđe Petrović, then young assistant professors.[3] As already mentioned, during this period Petrović implemented many changes, which were reflected in innovative graphical analyses and in the research of unique architectural elements and shapes of various historical epochs and civilizations. Moreover, all graphical representations included a variety of geometric analyses, such as anthropometric, modular or proportion systems, which gave the entire process of making a drawing an analytical and research character

(Figure 1). This concept introduced by Petrović was the result of his scientific and research activities in the domain of folk architecture and the theory of proportions.[4]

During this period, almost each academic year brought changes and innovations in the research of architectural drawing. This trend is observed on the basis of renaming the course title *Architectural Drawing and Forms* in 1966, which, according to Petrović was a necessity so that the name of the course "conformed to the essence of long-term changes" (Petrović, 1965: 5). This change is seen as a significant moment in the development of teaching architectural drawing, as well as in the interpretation of the role of drawing in the educational process at the Faculty of Architecture, University of Belgrade. Unlike the previous practice, when drawing was just a technical means of expression, now his research character took its shape. By the official adoption of the new course name, in which the term *forms* became institutionalized in the context of the term *architectural drawing*, a gradual introduction of the drawing of reduced geometric shapes and abstract compositions into the teaching process took place (Figure 2). This was considered by Petrović as one of the grounds for creative research based on architectural drawing (Petrović, 1972c: 7).

Although this concept had its complete formulation in the reformed curriculum of the New School, it is important to emphasize that the changes that would represent the fundamental basis for the development of the field of architectural drawing within the reform in the seventies could be felt in the second part of the sixties. The characteristic of this period was, precisely, the growing presence of reduced and more geometrical forms, which conceptually proceeded from earlier graphic representations of architectural forms from the history of architecture. This tendency primarily stemmed from the architectural practice of the period, as

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[2] Henri Lefebvre (1901-1991), French philosopher and sociologist of neo marxist orientation. He felt that the space is a social product and he is also the first to use the term 'right to the city'.

[3] They led the course until 1964 together, when Milenković was transferred to the *Design Department* and accepted the course *Elements (the basics) of Design*, while Petrović continued to independently manage and create the curriculum for *Architectural Drawing* (Petrović, 1996: 98).

[4] Before Đorđe Petrović became a teacher on the course *Architectural Drawing*, he was assistant to professor Aleksandar Deroko on the *National Architecture* course, therefore their habilitation work was in the field of national architecture – *National architecture: bay windows and chardaks (1955).* His interest in the field of folk architecture, Petrović summed up in the study of theories and the system of proportioning, resulting in a published study *Theorists of Proportions* in 1967, and a doctoral dissertation on the topic *Arshine: dimensional, proportional and meteorological analysis by arshine of the elements of the structural wooden skeletal system (half-timbered) in the Serbian folk architecture of the nineteenth century,* defended in 1971.
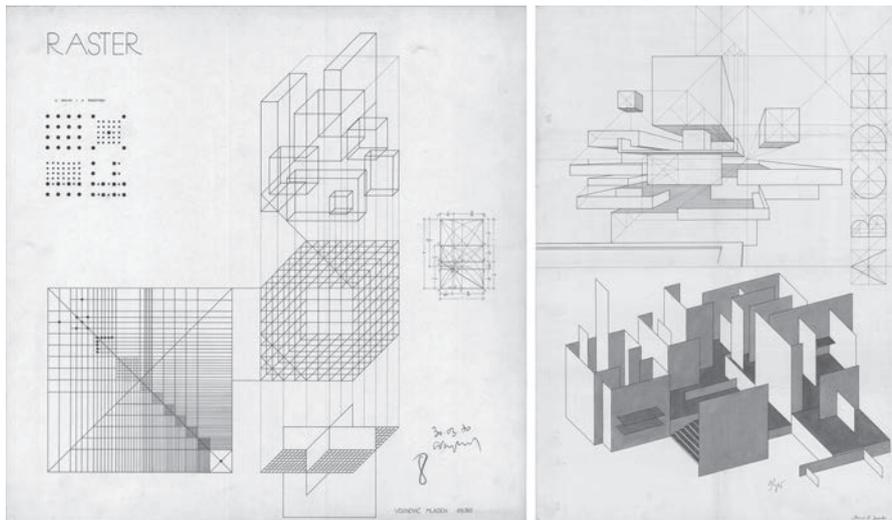
Figure 2. Abstract and reduced forms; students' works, 1970
(Source: Office for Visual Communication Archives, UBAF)

well as from methodological, educational and theoretical concepts within the domain of architectural form, space and environment, which will be discussed in the next part of this paper.

NEW SCHOOL CONCEPT AND THE POSITION OF ARCHITECTURAL DRAWING WITHIN THE REFORMED CURRICULUM

The context of the creation of the *New School* arose from the social and political circumstances in the world, which also had their strong echo in the former Yugoslavia. Under the influence of these changes, as well as rapid technological and economic development, accompanied by student protests in 1968, a favorable environment for the reform of the society and university education in general was created (Mladenović, 2008: 179). The *New School*, officially established in 1970, promoted "the concept of an optimized, intensive teaching program during a three-term system, based on the direct and continuous relationship between students and lecturers" (Savić, 2006: 16). Four-year studies were divided into two cycles, the first two years were general for all students (*cycle I*) and in the next two years (*cycle II*) they could make a choice between: the designing sector and urban planning sector. The aim was to systematically make the teaching program less demanding in order to avoid earlier problems related to the excessive workload for students, when only those who were most gifted and most persistent managed to complete their studies within the time foreseen by the curriculum (Bošković, 1996: 53). According to Bogdan Bogdanović, the creator of the reformed School and at the same time its dean, "the Faculty has substantially changed the character of its interests and joined a group of the most modern schools in the world, which are no longer only concerned with the study of the complex craft of architecture, municipal and composition problems of urban planning, but they focus themselves to strictly scientific research and systematization of the environment" (Bogdanović, 1971: 2). The lectures took place in smaller groups – boxes, with the support of their mentors, which entirely fit into the humanized picture of an entire education system in which "the *New School* became

a part of the new social reality, with which it opened a dialogue and did not represent the reality unto itself" (Folić, 2012: 22). In the environment of a new methodological approach to teaching, full attention was directed to students and their needs, and each student had at their disposal their own work place, and every teacher was completely available to students at any time.

It is important to emphasize that Đorđe Petrović, due to his pro-reform orientation, as well as his integrated experimental and theoretical tendencies in the process of research, "represented one of the dominant figures in the School in the early seventies" (Mladenović, 2008: 181) and took an active part in its conception. In a multi-disciplinary context, the teaching in the field of architectural drawing, under the leadership of Petrović, experienced rapid expansion. All innovations regarding the teaching program and its methodology, which were permanently introduced in the previous decade, were even more comprehensively developed and improved during the *New School* period. The teaching was structured within two courses: in the first year the *Visual Communications* course was in the first and second trimester, while second-year students attended the *Visual Research* course during all three trimesters of the academic year. Within these courses, Petrović "managed to build a very specific and advanced visual concept in the field of architectural drawing, which, from an aesthetic point of view, leant toward the world's current trends in design, as well as the specifics of Bogdanovic's local visual paradigm" (Mladenović, 2008: 181). In the formation of the programming framework for the *Visual Research* and *Visual Communications* courses, the teaching programs were reduced on purpose and the teaching units were simplified, so that students could devote more time to practical research, and confirm the research at a theoretical and scientific level.

VISUAL COMMUNICATIONS AND *VISUAL RESEARCH*: INTERPRETATION OF THE CONCEPT OF SYNTHESIZED AND MULTIDISCIPLINARY RESEARCH

The courses – *Visual Communications* and *Visual Research* represented a specific educational platform through which the students acquainted themselves with the area of

architectural drawing, technical modalities of the creation of architectural drawings, and also with its research settings that allow you to experience "space as a form of visual communication" (Anonim, 1971: 57). Although the courses had separate curricula, they aimed towards the same continuous unity, which was studied throughout the entire first study cycle (except in the third trimester). Therefore, there will not be any rigid demarcation between the concepts of *Visual Communications* and *Visual Research* in this paper, and the framework of teaching programs shall be considered as a single database which produced a thesis on architectural drawing as a process of visual research on the representations of space (Lefebvre, 1991).

Interpretation of the role of architectural drawing in the context of visual communications concept

This part of the research is focused on the interpretation and analysis of the role of architectural drawings in the context of the concept of visual communications, with the aim of its determination within Lefebvre's interpretation of the representations of space. Moreover, when it comes to architectural drawing, the analyses in this paper are mostly based on Đorđe Petrović's standpoints, which are presented in his work *Visual Communications* (1972b).

It has already been stated that in the period of the *New School* architectural drawing was not perceived only as a technical means of project representation, but also as a way of exploring the visual characteristics of a given space. However, apart from this innovation, which was specific for the period of reformed teaching, it should be emphasized that in the process of studying architectural drawing, full attention was paid to the analysis of the position of drawing in a broader social context. Visual communications were aimed at directing students to understand etymological and semiotic values of architectural drawings. Although this subject matter directly bordered with certain philosophical discourse, which certainly was in accordance with the *New School* concept and its humanistic profile, it was an inevitable part of the educational process based on which a correlation between an architectural drawing, as a communication gesture, and the environment was established. In order to understand the share and importance of visual communications and graphic representations in the context of the living environment, it is necessary to recognize its instruments. This is where the importance of visual communications, which are a direct product of the human heterogeneous environment, comes to the fore. Petrović defines them as follows:

> [Visual communications] include broad areas of human communication and mass visual culture in mutual indivisibility, overlapping and combining images, signs, symbols and letters. It is the totality of our visual environment or set of all urban and natural forms or objects, three-dimensional, two-dimensional, multi-colored or monochrome, static, dynamic or kinetic in different levels of existential space of human environment, that is, its mass media. (Petrović, 1972b: 7)

The complex notion of human environment is implied from this interpretation of visual communications, which leaves space for a multi-layered understanding of space as a complex system of visual communications. This point of view, in a certain way, coincides with Lefebvre's thesis on (social) space as a product of more diverse social factors, or practices. This is even further confirmed in the context of the space of visual communications, because it serves as a tool of thought and of action, which are unique products of social space (Lefebvre, 1991: 26). Moreover, the *space of visual communications*, as a specific synthesis of cognitive processes, can have its *abstract* frames, having in mind that, as Lefebvre points out, "epistemological thought constructs an abstract space" (Lefebvre, 1991: 24).

By observing architectural drawing, and drawing in general, as an inseparable part of every great civilization, and its changes in different epochs, as well as its adaptations to technological and cultural frameworks, Petrović comes to his modern position that is integrated into the overall system of visual communications. "The role of visual communications in architecture in only one part has a task to, besides the other things, develop aesthetic sense in the scientific field of chorography, that is, to study and analyze the representations of spatial ideas, in addition to codified projection systems and architectural signs, symbols and letters" (Petrović, 1972b: 8). Herein, Petrović uses the term *chorography*, which is in some ways similar to the process of creating a drawing, and in general it is the representation of space at one level. This process Petrović interprets as "the phenomenon of optical and physiological perception of space, so the thoughtfulness of the forms that arise in the imagination of the builder are reflected. It is preceded by the study and analysis, and it is the relation [of architects, builders] towards a program, form organization, set and space or the human environment and more narrow environment" (Petrović, 1972b: 15). The importance of integrated observation of the process of creating architectural drawing in the context of visual communications has its own advantages in terms of developing creative abilities, including sensory sensitivity, the ability of abstraction, synthesis and transformation, the originality of individual expression and the ability to coherently organize experience based on interaction. A complex understanding of architectural drawing, and, most importantly, its determination as a means of the representation of space, can be seen in Petrović's extensive, explanation:

> [Architectural drawing] represents (...) Architectural drawing is built in a planimetric manner and it has material meaning (...) Architectural drawing is symbolic, it speaks, it is architectural handwriting. It is the first visual experiment of a builder, indivisible from the personality and measurable. It is always volumetrically dimensional. It is continuously present in research, studying, organization and realization [production] of architectural space. Architectural drawing is primarily utilitarian and constructed (...) Architectural drawing also has a *research character* because its purpose and intent are strictly determined. (...) it must represent a conceived form in reality, true to scale, precisely. (...) architectural drawing permeates even technical or scientific related areas. As a rule, it is modified according to the established canons, current symbols, it expresses the style of the epoch, and it can never be irregular. This drawing provides architecture with a primary feature to *present*, represent and document or make schemes, to displays it graphically. (Petrović, 1972b: 16-17)

These exposed viewpoints directly indicate the representative power of a drawing, which opens the way for the critical analysis of space, which it *represents*, or *produces*. "We may be sure that representations of space have a practical impact, that they intervene in and modify spatial *textures* which are informed by effective knowledge and ideology. Representations of space must therefore have a substantial role and a specific influence in the production of space" (Lefebvre, 1991: 42). Therefore, the whole process of visual research involves not only its visual patterns, but a wide range of theoretical aspects that are generated by such visual expression.

The drawings of the London group *Archigram* definitely represent one form of such visual experience, whose representative character by far surpassed their hypothetical, spatial context. Their projects 'the Plug in City' and 'the Walking City' are some of the most important and the most publicized conceptual projects from that period, and as such represent a powerful means of representation of social space (Figure 3 and 4). For Arhigram "the drawing was never intended to be a window through which the world of tomorrow could be viewed" (Webb, 1999: 1), nor the future of architecture, but just a way of "injecting noise into the system" (Frempton, 2004: 280). For them, the architectural drawing was more than a completed building because it was a unique way of propaganda (Greene, 1999: 3).

This is exactly why these tendencies and can be viewed through the drawings of Utopian projects from the sixties and the seventies, which were subversively oriented towards post-war modernist practice. Such examples are the projects of *The Situationist International* and the French group *Utopie*, Italian *Superstudio*, then Buckminster Fuller, as well as the modular projects of Japanese *the Metabolists*.

Architectural drawing in the context of visual research and its analogy with present practices

In this segment of the paper, architectural drawing as a result of the process of visual exploration is analyzed. The main objective is to establish critical analogies with the practices of that period, which were, as already indicated, based on the drawings of Utopian visions. It is important to emphasize that the *Visual Research* and *Visual Communications* courses
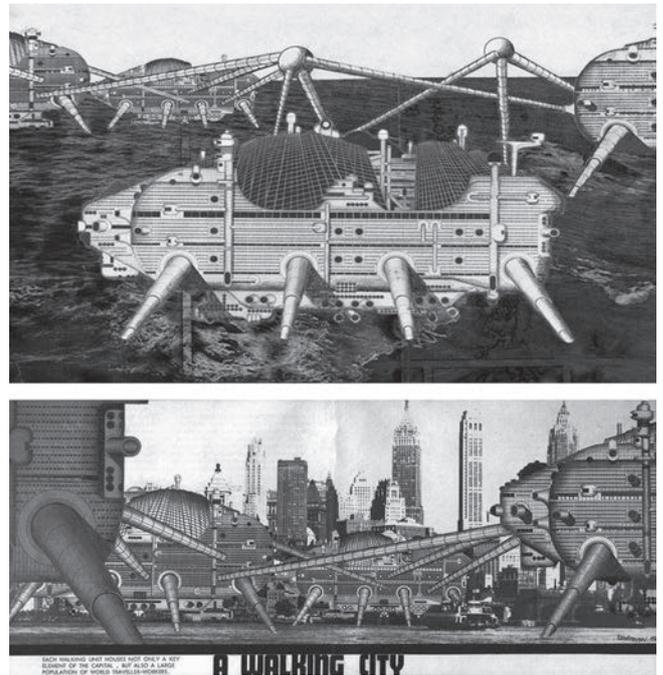

Figure 3. Walking City; Ron Herron (Archigram), 1964-70
(Source: pinterest.com)

did not generate drawings that might be aesthetically and visually expressive like the works of *Archigram* or graphically detailed like the drawings of *Metabolists* for the projects of certain megastructures. Two aspects that had influence could be identified. The first relates to the fact that the courses belonged to the field of architectural drawing, and therefore there were no thematic units that would imply a detailed breakdown of a certain design brief; the other aspect has already been mentioned, and it is reflected in the conscious reduction of tasks, with the aim of enabling detailed analysis of the solutions reached and research into as many experimental variations as possible. However, regardless of the primarily visual and formal distinction, in this segment of the paper aims to examine the thesis of conceptual and theoretical analogy between the program base for the *Visual research* course and the already mentioned Utopian practices of that period. The basic standpoints are based on the theoretical and experimental
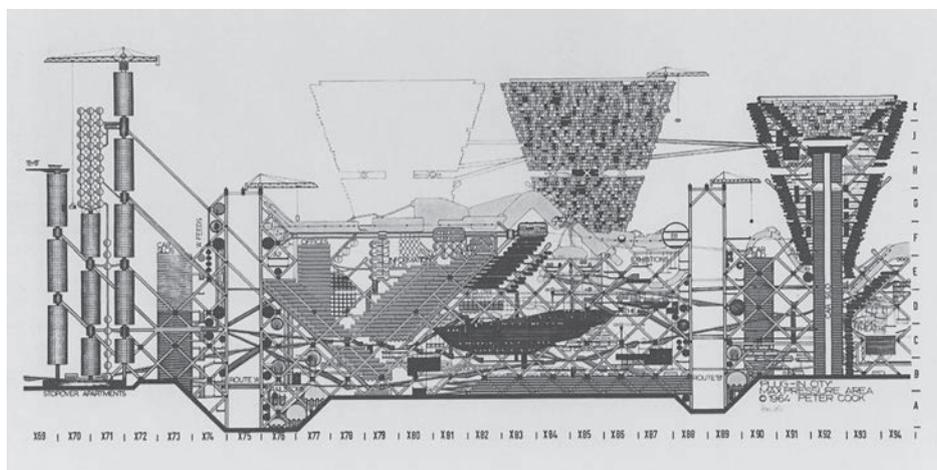

Figure 4. Plug in City; Peter Cook (Archigram), 1964
(Source: pinterest.com)

assumptions that Đorđe Petrović introduced in his book *Visual Exploration of Human Environment and Urban Design* (1972a), which was also the course textbook. In order to emphasize the importance of visual research in the then reformed environment, in the introductory part of the publication, in the text under the heading *The Explanation to Students of the New School*, Petrović stated the following:

In the broad field of visual communications, processes and research methods are observed in various aspects and their interaction with the superiority of intellectual approach. VISUAL RESEARCH is the flow of activities accessible to contemporary study, suitable to achieve connections with different optical structures that support the development of creative abilities in the organization of the visual experience and originality of individual expression. Three-dimensional visual experience allows, among other things, the very idea of a form of environment, analysis, organization or synthesis of the level of architectural space and its interaction (Petrović, 1972a: 6).

In this brief explanation, not only is the concept of the Course perceived, but also the principles of the *New School* structuring, which were, as previously seen, based on a multidisciplinary approach to research, and the relationship between a man and the environment. It is the *man – environment* determinant that was crucial in the formulation of the program for the *Visual Research* course. The entire teaching program was based on the visual research of polyhedral cell systems, which Petrović defines as a "more complex and more intellectual type of spatial order" (ibid.: 35). Choosing the basic construction unit – a polyhedron, and with its modular multiplication, complex spatial compositions were the result. This approach in the research was very suitable for creating architectural forms, which could, but did not necessarily have to, make an associative connection with the real architectural space. The potential of the process can be observed in the fact that these "forms of research are in constant confrontation of imagination and technical and structural characteristics of the system. (...) Such visual experiments reveal new, up to that point unforeseeable possibilities of different ways of combining and arranging basic system cells into individual groups" (ibid.: 37).

Petrović partly found the grounds for his views on the cell system and its continuous change in time, as well as the potential in the process of urban development, in Richard Thomas' work, presented in the publication *Three-Dimensional Design: A Cellular Approach*. By analyzing these cognitions in the context of current technologies, Petrović stated the following:

The significance of a cell in the environment system appears as the cell design principle and construction in developed areas of the world and penetrates into everyday use in big cities, or it will happen in the near future for the following reasons: the development of information, rational construction techniques, use of materials, city design, computers, etc. It seems that, according to Thomas, preliminary research favors the idea of four-dimensional urban clusters that are planned to expand in three dimensions, and they change in time – the fourth dimension. (Petrović, 1972a: 36).

Clusters, as defined by Thomas, are nothing but modules, representing main potential of variability in cell systems. The variability of these structures and their various alternative solutions are the benefits that can be inhibited through the drawing itself and used in a creative process. Đorđe Petrović completed his knowledge of cell systems with Lawrence Anderson's thesis, presenting them in his article *Anderson's Theory of Modular Approach*. In this article, Petrović pointed out that "these new elements [modules], although pre-planned, allow full flexibility of future forms. All previous considerations point to some basic principles for the creation of new modular approaches, not only in building design, but also in designing human environment" (Petrović, 1971: 49). Stressing the importance of modularity mentioned by Anderson, Petrović underlines its importance "as a means of visual discipline for the organization of industrial processes and for giving space certain features that would be retained under new conditions. Thus the idea of the module becomes alive again and the focus is on the fact that it allows for growth and changes" (ibid.: 49).
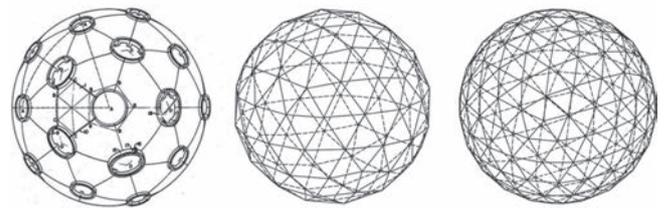

Figure 5. Pneumatic dome over Manhattan; Buckminster Fuller, 1967 (Source: pinterest.com)

It is clear that in the modular setting a drawing is recognized as a way of exploring the visual attributes of the human environment. If we go back to Lefebvre's space manufacturing, it is certain that we can make a symbolic parallel with his thesis on the representations of space that are alive and volatile (Lefebvre, 1991: 42), which is a unique feature of the modular principle in the process of space design. Also, it can be seen that this method of structuring space can be directly compared with the Utopian visions of Archigram, as well as the projects of Metabolists or Buckminster Fuller. Their projects are urban mega-structures that essentially have one compositional cell multiplied according to the modular system. One of Fuller's most important utopian
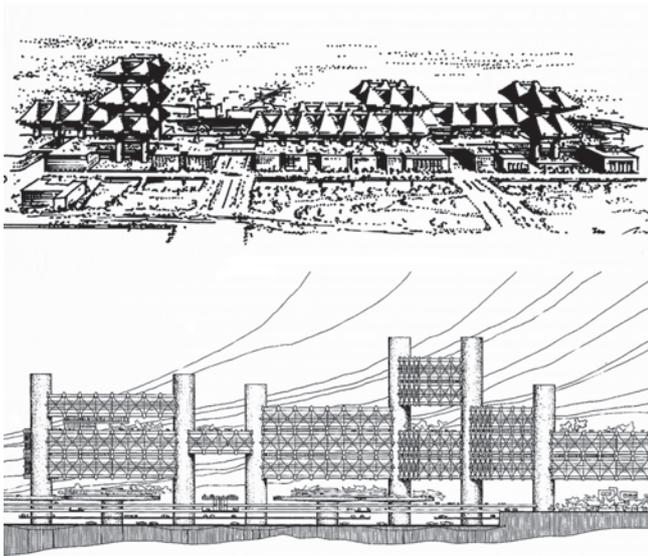
Figure 6. Clusters in the Air; Arata Isozaki, 1964
(Source: pinterest.com)

projects is the 'Pneumatic dome over Manhattan', and it was just conceived as a huge structural dome that should ecologically protect the center of New York (Figure 5). On the other hand, Japanese architects Metabolists, faced with the problem of overpopulation and guided by the desire to create an authentic national identity since theirs had been compromised by the destruction of the Second World War, designed the project 'plug-in' mega-structures, which are in terms of their concept close to the projects of Archigram (Ross, 1978: 55). Characterized by its variability, Japanese mega-structures secured that much needed "flexibility of the new society" (Lin, 2010: 92). Although some of the projects by Metabolists were implemented, most of them remained at the level of Utopian drawings and models, and one of the most authentic is certainly Arata Isozaki's project 'Clusters in the Air' (Figure 6). Accordingly, there is a clear parallel between these practices and the structured compositions in *Visual Research* course because such forms, which are essentially reduced and abstract, were the basis for the creative and visual research of space through architectural drawings, according to Petrović (1972c: 7).

However, in terms of the representations of space, drawings that are done in the course do not have a precisely determined profile, although they are designed with a tendency to form *alive* and *variable* structures. For further understanding of this viewpoint, Lefebvre's thesis relating to the critical analysis of space through its *formants* can be helpful, where, among other things, we recognize *visual formant*, which assumes that "space has no social existence independently of an intense, aggressive and repressive visualization" (Lefebvre, 1991: 286). Although representations of space have a very important role in the production of space, in case of drawings created in *Visual Research* course – this epilogue is missing, because they are not generated by direct ideological and repressive context. However, it can be concluded that these drawings could ultimately establish a correlation with mental space, keeping in mind that Petrović's theoretical assumptions are compatible with the ideas of the representations of social space that can be observed in the drawings of the above

mentioned Utopian projects. Finally, we should not forget the fact that the drawings in the *Visual Research* course were created for the visual review of architectural sets, which were primarily of research character (Figure 7). In such a constellation, the aesthetic and form purity of a drawing and its reduction to the immanent features of space become understandable (Figure 8).
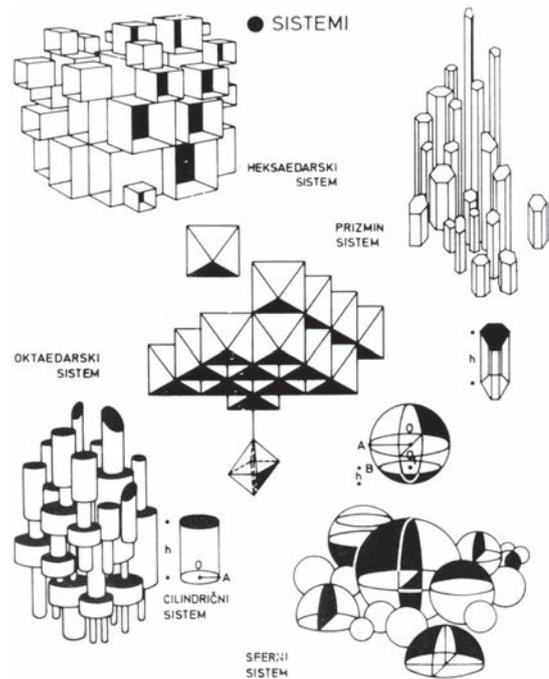

Figure 7. Concept of polyhedral cellular systems; Đorđe Petrović, 1972
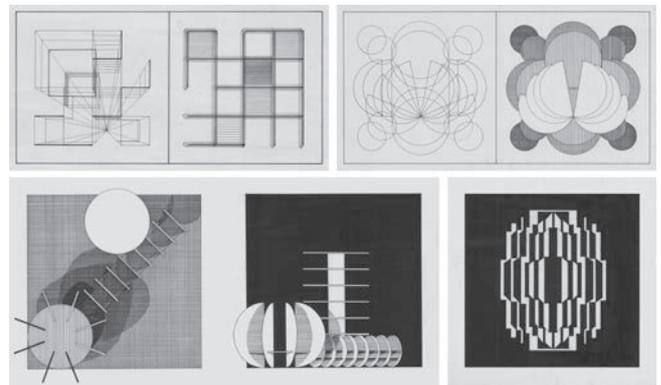*(Source: Đorđe Petrović, 1972)*

Figure 8. Visual research of spaces; students' works, 1972
(Source: Office for Visual Communication Archives, UBAF)

FINAL REMARKS AND CONCLUSION

The concept of the *New School* was applied until 1973, after which this educational platform was abandoned (including the 1972/73 academic year). "Being too liberal for the state education system and the social-political situation, this study concept did not survive the test of time" (Savić, 2006: 16). The same fate befell *Visual research* and *Visual Communications*. Also, in the same period, before the end of 1974, Đorđe Petrović left the Faculty and went to Canada, where he continued with his theoretical and artistic work.
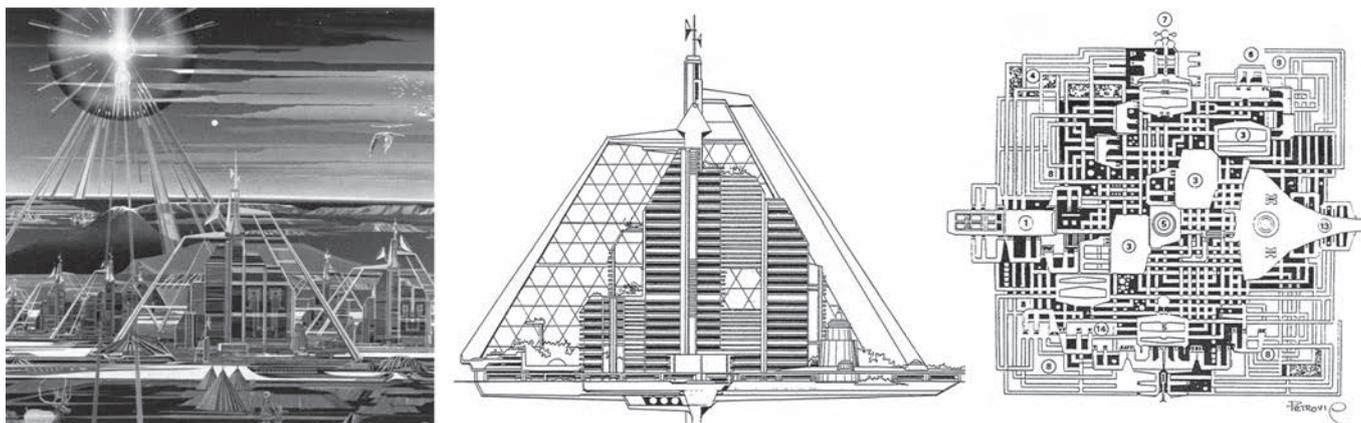
Figure 9. Nordopolis I; Đorđe Petrović, 1986
(Source: Private collection of the Petrović family)

During the eighties, he was focused on the conceptual design of futuristic cities – *Nord 2002*[5], in the inaccessible vastness of the Canadian north (Figure 9 and 10), and he also devoted himself to drawing and painting futuristic cosmic environments. This unique futuristic architecture, as a radical shift of Petrović's practice, but also a kind of analogy with his earlier theoretical work, represents a significant thematic framework for further research.

Although the *New School* period lasted for a very short time, for just three years, a number of structural changes were introduced in this period within the teaching program of architectural drawing. Drawing was not regarded only as a technical means for plan representation, but it became an integral part of the research process in the field of architectural creation. It can be concluded that the result of such tendencies was the overall social context, which incorporated advanced technologies in the field of architecture and the increasing use of modular elements, as well as a modern educational concept, involving the multidisciplinary character of lectures focused on the relationship between architecture and the environment. In this environment, drawing became a powerful tool for the representations of space, which could have its own social reflections. The Utopian and futuristic projects of that period indicated that architectural drawing can have a special role in the process of the representation of social space. This standpoint is primarily important due to the formation of a modern theoretical platform focused on architectural drawing and the visual representation of the practice of architectural creativity.

Today, in the era of digital communications and mass media, the standpoint which determines a drawing as "an end in itself, as a fully realized, self-sufficient work of architecture" prevails (Kipnis, 2001: 12). In this context, it is completely "clear that the road to high quality architectural practice leads through critical alternatives, debates, research and theoretical consideration, that is, through diverse and non-manipulative discourse in all areas of architectural operations" (Blagojević, 2009: 18). Architectural drawing

has certainly become inevitable discourse within the representations of theoretical and practical work in the field of architecture.
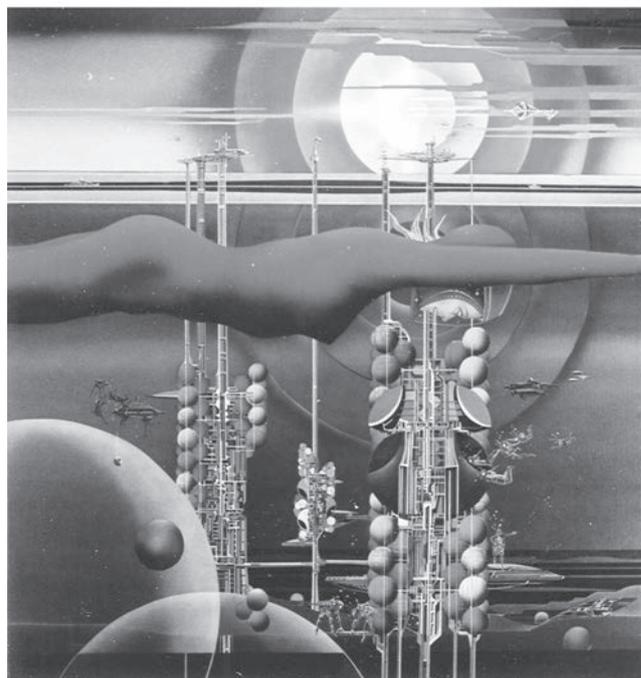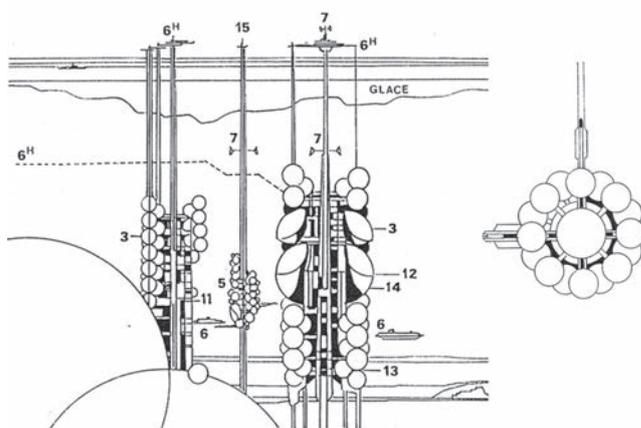

Figure 10. Sub-Marinopolis; Đorđe Petrović, 1986
(Source: Private collection of the Petrović family)

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[5] Conceptual project *Nord 2002* included 12 models of micro-habitats: *Nordopolis I, Nordopolis II, Igloopolis, Hydrogenopolis, Oceanopolis, Sub-Marinopolis, Arcticopolis, Cosmic Base of CSA (Canadian Space Agency), Trening center of CSA, Atlanticopolis, Inuitopolis, Cosmopolis.*

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