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## **ALTERNATIVNI MODELI SAVREMENIH RURBANIH SREDINA PUTEM TRANSFORMACIJE POLJOPRIVREDNIH DVORIŠTA**

### **Rezime**

Ovo istraživanje predstavlja pokušaj da se prikaže teoretski i praktični pristup realizacije nastavnog plana u Studiju VIII/3 na Arhitektonskom fakultetu u Skoplju. Semestralna tema: Nove tipologije poljoprivrednih dvorišta u ruralnim sredinama, imala je u cilju da pruži odgovore na savremene probleme kao što su povećana potražnja vikend kuća i sve češću migraciju iz grada u selo zbog restriktivnih mera vezanih za pandemiju COVID-19. Novi trendovi u urbanim sredinama za uvođenje urbane agrikulture su paradigma koja u okolini Skoplja daje mogućnost da ruralne sredine pretrpe transformaciju poljoprivrednih dvorišta u alternativne modele rurbanih sredina.

### **Ključne reči**

Poljoprivredna dvorišta, alternativni modeli, rurbana sredina, rurbanizacija

## **ALTERNATIVE MODELS OF MODERN RURBAN ENVIRONMENTS THROUGH TRANSFORMATION OF THE AGRICULTURAL YARDS**

### **Summary**

This research is an attempt to present the theoretical and practical approach of the curriculum's realization in Studio VIII/3 of the Faculty of Architecture in Skopje. The semester topic: New typologies of agricultural yards in rural areas, aimed at providing answers to modern problems such as the growing demand for weekend houses and the increasing migration from town to village due to the restrictive measures related to the COVID-19 pandemic. The new trends in urban areas for introduction of urban agriculture is a paradigm which in the surrounding area of Skopje provides an opportunity for the rural areas to undergo a transformation of the agricultural yards into alternative models of rurban environments.

### **Key words**

Agricultural yards, alternative models, rurban environments, rurbanization

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## **1. INTRODUCTION**

New paradigm  
Urban landscape or  
Urban agriculture?

In the world of urbanism, architecture and landscape, a new paradigm is a new way of doing things that has a huge effect on living spaces. New paradigm draws its roots from the idea of a paradigm shift in science, in which technology or new findings completely change the way people think about or interact with something. In the design disciplines, the idea is the same; a whole new way of looking at living spaces and their changing. [3]

The culture of the architectural projects for the cities and the landscape can not be insensitive to these problems and it is necessary to upgrade it through the educational process.

## **2. STUDIO VIII/3**

In the study program of the integrated five – year studies of the first and second cycle in architecture at the Faculty of Architecture in Skopje, the studio is the basic core where the knowledge and skills in the field of architecture and architectural design are integrated. From I-IX semester, all architectural studios are one-semester and the students have the right to choose between several offered topics and areas.

The teaching in the Studio VIII/3 deals with the topic of agricultural buildings and the main goal is to establish continuity of knowledge and develop the design process by getting acquainted with the problems of animal breeding facilities through urban, architectural and program research from which it should, later emerge graphic presentation with a detailed conceptual architectural project.

In the process of making the architectural project, all relevant factors are analyzed: location, program contents, equipment, internal and external communications. During the design process, students should apply the established principles of shaping the space by using characteristic constructive structures that are specific to this typology of buildings. The rural environment with its specific program-spatial and social situation can also be a task where the analysis is based on the rural context.

## **3. SEMESTER THEME**

The COVID-19 pandemic that started in Macedonia at the end of February 2020 and the restrictive measures taken by our government in terms of several days of quarantine, contributed to the need for people in cities to find a way to be free even in conditions of complete confinement. Some of the people who had preconditions, own their property, sought freedom and escape from confinement in rural areas and tourist settlements. But the reality is that many people do not have their own property outside the cities and this has resulted in increased demand for houses in villages and tourist settlements.

Rurban life - as the twenty-first century approached, the information era transformed the traditional concepts of ownership and dwelling. Information workers no longer need to live in the cities to live an urban life. The entire territory is now inhabitable. For this very reason it deserves a project. Its cities. Its agriculture. Its regional parks (now green spaces in the landscape-city). [2]

With all this in mind, we decided to give the students in Studio VIII/3 in the academic year 2020/21, a semester topic: New typologies of agricultural yards in rural areas; which aimed to offer inventive conceptual solutions to this new reality.

#### **4. PROCESS OF MAKING ARCHITECTURAL PROJECTS**

The methodology for the preparation of architectural projects is conceived to take place in several interrelated phases:

1. Research of reference examples
2. Site analysis
3. Program contents and functional zoning
4. Formal and spatial articulation
5. Materialization and contextualization

The students were organized in teams of two. It is important that they themselves chose the project task and thus put themselves in the role of investors, so that they can see the situation from another perspective.

##### **4.1 RESEARCH OF REFERENCE EXAMPLES**

As a first step of introducing the students to the topic of the studio is their own research on examples of agricultural yards in rural areas, which to a greater or lesser extent address the given issues.

Such research aims to open new perspectives on the area they are faced with for the first time and to create an initial idea of the final outcome of their project, which they are expected to achieve.

Since each team of students publicly presents their research, the other teams practically receive additional information on the topic and can further use it in their project.

##### **4.2 ANALYSIS OF THE LOCATION**

The students were given a location placed in the surroundings of Skopje. The corresponding location was chosen because it is at the same time close to the city and is in close proximity to the rural area.

The site location covers an area of 15 hectares and on one side touches the river of Vardar. The students according to the number of teams they formed, had a task to propose a parcels for agricultural yards that will be similar in size and that will be in relation to the

river. From the offered concepts, all the positive sides were singled out and a common urban plan with 15 agricultural yards was developed (as many as groups were formed).

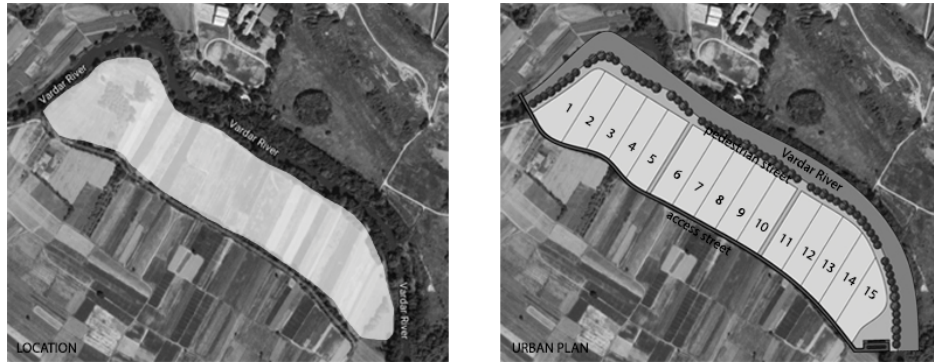


Figure 1. Site location and Urban plan

On the common urban plan, each team according to the selected project task received its own plot (agricultural yard), on which it continued to develop its project. The newly designed agricultural yards by the students should be an alternative model of modern urban environment in the surroundings of Skopje.

### 4.3 PROGRAM CONTENTS AND FUNCTIONAL ZONING

The students by their own choice defined the program contents for their agricultural yard. It is characteristic that there were different agricultural programs, among which the most common were those for breeding horses, but other barns were also present, such as raising cows, sheep, goats and chickens. There were also two teams that did not decide to raise animals. One of them decided on a winery, and the other on horticultural crops.

Examples of ecologically useful animals in a city: horses, ponies, donkeys-for local transportation and sport. Pigs – to recycle garbage and for meat. Ducks and chickens – as a source of eggs and meat. Cows – for meat. Goats – milk. Bees – honey and pollination of fruit trees. Birds – to maintain insect balance. [1]

All agricultural yards had to contain the following functional parts: residential, economic and garden part. Each team, according to the program content and the location of their plot in relation to the entire urban plan, had the task to make the most appropriate functional zoning within the agricultural yard. Particular attention was paid to the barn facilities to be correctly placed in line with the sides of the world and the dominant winds.

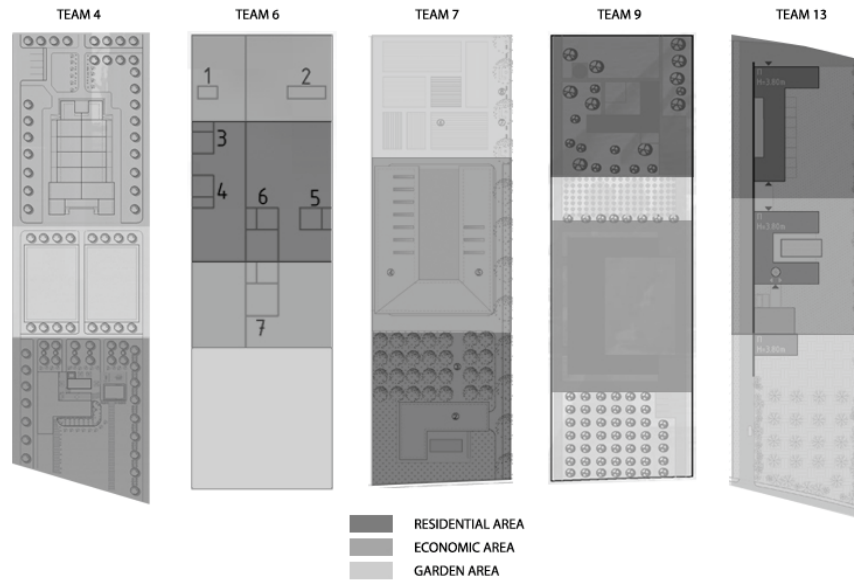


Figure 2. Different types of functional zoning

#### 4.4 FORMAL AND SPATIAL ARTICULATION

In terms of form, each team developed a different formal concept for its agricultural program. It can be said that the compact line structures were dominant, but objects in L and  $\Pi$  shape were also present.

A specific concept that arises from nature, ie the form developed with the use of the Voronoi diagram was used as an idea in the commercial garden with horticultural crops.

All the formal concepts of the agricultural program tended to be related to the residential part of the yard, so that they could form a complete spatial whole. In the end, it can be said that every agricultural yard is a fully formed formal-spatial complex, which interacts with the urban space and the landscape.

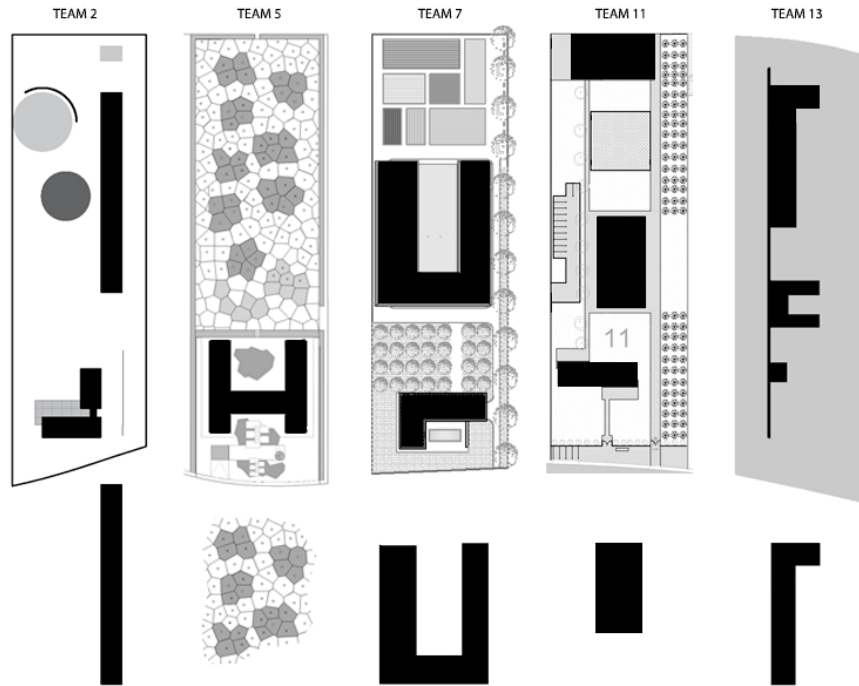


Figure 3. Different types of concepts for -agricultural program

#### 4.5 MATERIALIZATION AND CONTEXTUALIZATION

Each team in their projects elaborates in detail the barn facilities through the plan, section and elevation of a segment of the facade. This makes students aware of the materials they use and how they can achieve the desired effects.

In reference to the use of building materials, the students focus on the use of local natural materials in order for their choice to contribute to sustainable development. Hence, the use of wood in the shaping of facades was noticeable, which further emphasized the natural context of the space.

#### 5. EXAMPLES OF ALTERNATIVE MODELS OF MODERN RURBAN ENVIRONMENTS

As a final result of all student projects at the end of the semester in Studio VIII/3 is the joint urban plan that shows the possible rurbanization with which a certain group of agricultural yards get a new urban look in the form of a suburban or weekend settlement that would encourage development of the surrounding rural areas.

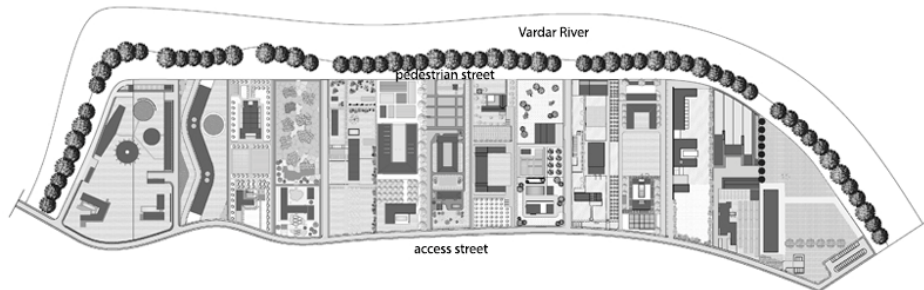


Figure 4. Urban plan – alternative models of modern rural environments

The new alternative models of rural environments, ie the modern agricultural yards, contain various program contents that can be easily upgraded and supplemented with the existing rural areas.



Figure 5. 3D architectural visualization

## 6. CONCLUSION

The projects are devices that interpret and represent a precise place. They are narrative structures that tell about contexts by crystalizing them in fascinatingly characteristic shapes that fix them into a shape of existing spacial values and relationships. What remains is to investigate, to dig, and to add value. The project can only reveal shapes that are already present in the landscape, shapes that often already contain a sense of change. [3]

Finally, through the different phases in the design process, the students were pointed out the new approaches in the process of urban-rural transformation through the example of agricultural yards. Understanding the significance of creating new concepts and alternative models of modern rurban environments is of paramount importance to students. They, as future architects, should be aware of the complexity of the problems of cities, agriculture and landscape and with great sensitivity and sensibility should at all times offer adequate solutions in the direction of sustainable development.

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## NOTE

The following students participated in Studio VIII/3:  
team 1 – Sara Gjorgjioska and Andrijana Volceska  
team 2 – Marija Krzalovska and Ivana Miteska  
team 3 – Mimoza Gastevska and Ruzica Stankovic  
team 4 – Mile Mitev and Rebeka Velkova  
team 5 – Robertina Atanasoska and Konstantina Badzakova  
team 6 – Ivana Mileva and Marijana Todevska  
team 7 – Eva Koteska and Viktorija Mojsovska  
team 8 – Maja Krstic and Ilina Trajceva  
team 9 – Elena Gavrilovska and Tamara Gencovska  
team 10 – Ana Kostova and Melanija Dimoska  
team 11 – Sara Stefanovska and Sara Kitanovska  
team 12 – Mjelma Mehmedi and Alije Bakiu  
team 13 – Katerina Malinova and Sandra Nikolovska  
team 14 – Rebeka Bozinovska and Liljana Atanasova  
team 15 – Ivana Kajretic and Stefanija Boskova