

**Disciplinary Encounters: Merging Architecture, Urbanism and Landscape In ‘Research by Design’ Processes
A presentation of research themes and design tasks in the master course studio GROWTH 2.0
at the Faculty of Architecture, Ss. Cyril and Methodius University in Skopje**

Marija Mano Velevska, Faculty of Architecture, Ss. Cyril and Methodius University, Skopje, N. Macedonia
mano.marija@arh.ukim.edu.mk

Abstract: As its name suggests, the studio entitled ‘Growth 2.0’ investigates transformative specifics of urbanity, following the concept of *growth* as an inherent and vital feature of every city. Its various possibilities in terms of size, volume and density, are being explored not only through the built, but also through the unbuilt as equally valuable resource for the city, thus introducing the theme of *de-growth* as part of the conceptual understanding of growth.

This design studio was established with the intention to connect the disciplines of architecture and urbanism in a novel design approach that resonates the current and growing complexity in the urban environment. It implies a strategy of so-called *architectural-urbanism* that develops different tools to construct modern urban narratives through studio-projects operating between different scales. Additionally, landscape is identified as a significant part in the planning and design processes, embedded in territorial, urban and architectural domain, addressing challenges of different scales: from climate change and environmental hazards, through blue infrastructure and soil reclamation, to the performative potentials of urban gardens and greenery.

Such a design approach confirms Vitorio Gregotti’s arguments in *The Form of the Territory* (1981) for expanding the role of the architect based on three points: 1) ‘the object of architecture is no longer only identified with buildings’, 2) the architect is not solely ‘a creator of forms’, and 3) the need to acknowledge landscape construction within the competences specific to the architect.

Keywords: research by design, design studio GROWTH 2.0, architectural urbanism, landscape

1 Architectural design and architectural research

Reflecting on the title of the fourth thematic block dedicated to ‘Research by design’ within the ‘Shaping the city through architecture’ conference, one inevitably thinks of the possible relations of architectural design and architectural research. Being involved in architectural education, the author hereby takes the academic perspective associated with different modes of research and focuses on the research by design mode as being practiced in the Design studio ‘Growth 2.0’ at the Faculty of Architecture in Skopje. Nevertheless, it needs to be stressed that the relevance of research does not exclusively hold on to the scholars (professors, researchers and students), but concerns professionals in practice as well, as they are expected to create innovative and meaningful work that eventually poses and communicate knowledge and values to people and environments.

Integration of architectural research with architectural practice, not only connects different aspects of architecture and various roles of architects but is moreover needed to sustain and develop the discipline itself. This stance arises as a reaction to the current state of division, and even limitation of opportunities for architects to act, depending on whether they are part of the academic community or the professional practice. Further it separates formal education (at the university) from learning in practice (at the design office) as isolated parts in the profile of an architect, instead of viewing them as complementary knowledge.

For those reasons, architectural research needs to be introduced and practiced, in different ways, throughout the architectural studies. In that sense, the format of the design studio within architectural education has the potential to convey the academic principals and to position universities as places that not only nurse and transmit knowledge, but also as places where knowledge is being actively created and developed.

In the curriculum of the Faculty of Architecture in Skopje, the integrative studio in the last semester prior to the individual master’s thesis is recognized as an exceptional opportunity for setting up and developing research and design projects. Among several offered integrative studios, the studio titled ‘Growth 2.0’ operates as a laboratory where architectural research is carried out between disciplines (because the span of architecture is wider than a traditional understanding of science and therefore, uses theses, methods and procedures from other disciplines) in order to comprehend the complex context in which architecture is created. In this studio, architecture and urbanism interact—both with each other and with other disciplines. The two disciplines, which are indeed the core of architectural education, are based on specific methods and analyses, but do not solely focus on confirming facts or seeking an absolute truth (as in conventional understanding of science). Instead, they incorporate intuition, speculation and imagination that serve as projective tools that operate on a broader conceptual level of strategies and/or tactics depending on the task. Therefore, the projects developed in the studio are based on ideas that bridge the gap between the discourse of knowledge (understood as science) and the discourse of

practice (understood as concrete problems and tasks that are formally and spatially constructing the physical reality).

2 Design studio GROWTH 2.0

Ever since the introduction of the concept of territory in the discourses of architecture and urban development, mostly associated with Vitorio Gregotti's work in the 1960s, an international architectural debate on the territorial issues has proliferated various theses and practises. The design studio 'Growth 2.0' at the Faculty of architecture in Skopje has developed its own research and design approach that works on various scales simultaneously, thus establishing the so-called architectural urbanism domain to pose and test multiple theses for urban growth. Still, the work incorporates the key consideration pointed by Gregotti: 1) *the object of architecture (...) is no longer only identified with buildings*, 2) *the role of the architect is not solely a form-creator, but should be entrusted with the task of introducing concrete finalities into the spatial translation of functions at the start of the project's process*, and 3) *the acknowledgement that construction of a landscape is part of the competence specific to the architect* (Gregotti, 1981).

2.1 Architectural urbanism

The design studio Growth 2.0 was initially established to connect the disciplines of architecture and urbanism in a unified design approach, resonating with the increasing complexity of urban (socio-economic) situations in the built environment. In order to articulate and synchronize the arising relationships in contemporary reality, the projects in the studio operate across various scales: territorial, urban and architectural. *Architectural urbanism* thus emerges as a tactic that develops different tools for constructing contemporary urban narratives, integrating the two most important agents in the production of the built environment. As a design studio domain, it aims to signify spatial creation as a process-evolutionary-dynamics rather than a simple layering of forms, shapes and volumes (architecture) or a normative arrangement (regulatory planning) of economic flows that often oppose the production of social quality in living space (mainly concurring urbanism as a neoliberal tool). Such an approach enables transdisciplinary encounters where skills derived from the discursive practices of architecture and urbanism meet, overlap and interact creating new design approaches. In such a cross-sectoral process complex urban projects (derived from urbanism) are being linked with architecture, allowing them to be deconstructed and further reassembled in new spatial patterns that imply the social, technological, semantic and economic significance of both disciplines. Architectural urbanism thus not only generates morphological spatiality but creates a distinctive morphogenetic entity. While the first aspect of morphology treats spatial indeterminacy as a morphological character and relays on arranging spatial elements (that are traditionally defined by oppositions and differentiations – city vs. natural landscape, centre vs. periphery, old vs. new, public vs. private space, etc.), morphogenesis implies that the body of the form is created as part of a biological and temporal process where a singular element (cell) or the larger whole (tissue) create a new heterogeneous structure that is a hybrid operational territory in which various entities (and their conflicts and contradictions) are constrained to cohabitate.

This perception of the built space as a performative apparatus leads to the essence of the concept of architectural urbanism, where space is being treated as a generative process. It sees architecture and urbanism not as disciplines that produce forms and spaces, however extravagant and attractive they may appear, but as a dynamic medium - a stage where new and old behavioural matrices converge in the performance of everyday life. In essence, such processes embed the architecture of the city within the architecture of the building, and vice versa.

2.2 Growth / Degrowth

The title of the design studio, 'Growth 2.0', reflects the major theme – a conceptual frame that should be understood both as a given condition (the prevailing imperative of progress) and a necessity (operational objective) in the current reality, while also providing possibility for different interpretations, including the concept of degrowth.

Growth and degrowth are economic models that define and evaluate the level of personal and social development, as well as the quality of everyday life. In general, the term growth indicates success, progress, improvement, well-being and wealth. In that sense, growth is responsive to public promotion and can easily be linked to various social and political programs that promise a prosperous future. Thus, growth, while a generalized experience, represents what linguists call a 'cognitive frame', denoting a set of positive ideas. On the other hand, de-growth, although linguistically an antonym of growth, does not oppose the meanings implied by growth as a (social) quality. Proponents of degrowth strive for the same qualities of systemic modernity and progress as those of growth but base their ideology on reducing resource use and produced goods, advocating for new ways of

their distribution. The goal is to achieve a socially just and sustainable development, where well-being is not solely based on (possessing) material wealth but seeks new forms of satisfaction.

The concepts of growth and de-growth have a direct impact on architecture and urbanism and even more on their contribution to setting trends and shaping tendencies in modern society. The broadly established theme based on growth and de-growth allows the design task within the design studio to be conceptually framed and project-tested through numerous and diverse research aspects.

3 The role of landscape within architectural urbanism

The studio follows the concept of growth as an inherent and vital feature of every city, and explores its various possibilities in terms of size, volume and density, not only through the built, but even more through the unbuilt space to respond degrowth as part of the conceptual understanding of growth.

The acknowledgement of the unbuilt space as equally important structural element in the process of creating the narrative of contemporary urban living, is based on the understanding of the free and open space as a building asset that resists perpetual pressure of speculative building activities and a design tool that instigates qualities of space and life. In that sense, landscape has been explored in each studio session as an alternative to the basic (conventionally practiced) building forms and thus it is present in the studio projects as a vigorous urban substance. In the studio work, landscape is investigated and treated in the design process as a part of the architectural urbanism, capable to be presented and experienced in every scale of the urban life. Thereto, landscape is not understood as a mere background for buildings and programs, nor just a formal description in which the un-built is simplified and coded as low/high greenery, water flows/surfaces, parks/forests/agriculture etc. It is as morphological as morphogenetic element in the concepts for new urban conditions.

Therefore, studio projects include landscape forms and explore their performative attributes in the research and the design process, referring different studio topics that are posed each year. Some of the many possibilities are presented in the following overview of the work conducted in three particular studio sessions over the last five years.

3.1 Landscape as urban form

The design studio Growth 2.0: Narratives (2019-2020) focuses with special attention on narratives, understood as *stories crafted by individuals and groups to register and communicate their experience of the city – a fundamental source of knowledge for the architect* (Havik, 2014). Defined in their plural form, narratives play a key role in the practice of the built environment, as they acknowledge multiple and diverse experiences. In this capacity the narratives were used as basis for the design of new spatial and programmatic performances for Skopje. Concretely, the studio group studied and developed three existing narratives which have a strong conceptual and architectural presence in contemporary urban context of Skopje – brutalism, temporality and open-end-ness – and developed them through specific programs organized in six distinctive compositions for a single site. The site itself is a challenging one as it is located on the riverbank amid important landmarks and significant urban structures in the city centre, nevertheless undeveloped for decades due to the political and economic shifts. It is also marked by traces of history (remnants of earlier urban structures) as well as incomplete realization of former plans for the area. Having the idea to embrace as many as possible narratives in a vivid and potent urban space, the different proposals are brought together, through multiple iterations of connections, intersections, juxtapositions and superpositions, and eventually are united in one general concept for a new urban setting. The result is represented by a dynamic conceptual diagram, while the final project can be seen as an assemblage of multiple and different components- built and unbuilt spaces (Figure 1). Landscape is present as an active part in the urban structure and manifests itself in various forms: from the existing river and the topography of its bank, through vegetation acupuncture, to organized green areas that take form of a lawn, an urban agriculture and an urban forest. The urban forest is one of the key elements that comprise the whole, with a shape of a horseshoe that is open towards the river while embracing (figuratively and literary) all other structures: the row of high-rise buildings that conclude the series of housing towers that constitute the City Wall of Skopje (one of the major urban structures that defines Skopje inner city); the sunken promenade that extends the socially active zone of the existing City Wall structure; the streets in the sky that expand beyond the site and connect with the immediate context; the floating square as a new social condenser; and the cluster of regenerated old neighbourhood fabric.

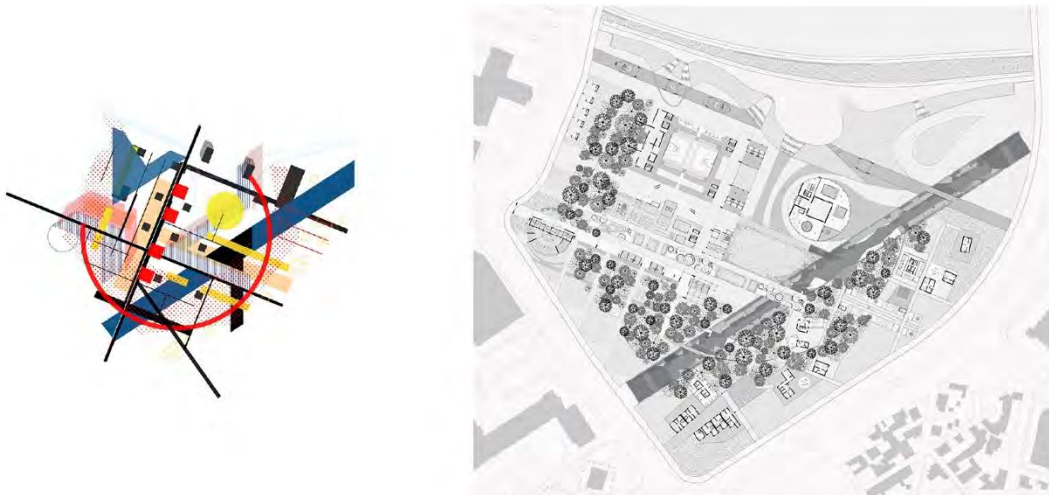


Figure 1 a conceptual diagram (left) and a situation plan (right) for the site in Skopje city centre, work of design studio Growth 2.0: Narratives, 2019-2020

On a morphological level, the forest takes the shape of the Kenzo Tange's project for the so-called Square of the Republic, proposed for the same site in the Competition entry for Reconstruction of Skopje city centre after the devastating earthquake in 1963. Although taking the role of a building block, the robust greenery of the urban forest here serves as a design element that is soft and flexible enough to interweave and absorb the other fragments of the whole, while establishing a variety of new relations and complementing each of them.

3.2 Landscape as generator of socio-spatial community

The design studio Growth 2.0: Settlement (2022-2023) investigates the notion of Settlement as simultaneously autonomous and contextual entity. The studio theme represents a research field in which students pursue the answer to two key questions: What does the contemporary concept of (urban) Settlement mean? What are the elements that build up and maintain the life within such a Settlement? From there, the studio work develops multiple complementary scenarios that combine and overlap various programs and spatial arrangements creating their own operative tactics by which this new model of urban community performs within the city.

In this studio session, the studio theme is tested on a site in the broader city center of Skopje encompassing a territory of approx. 20 hectares on the existing orchard of Rasadnik in the municipality of Kisela Voda. The site itself embodies the last vacant land inside a densely populated municipality of mostly residential urban quarters with evident lack of urban functions for providing life quality and for activating cultural production of space. Given the location's status as an exquisitely valuable biotope, the role of the natural landscape in the processes of defining the performances of contemporary Settlement represents a delicate yet crucial part of the proposed architectural and urbanistic design content.

Since the studio aim is to develop a contemporary model of Settlement embracing a wider understanding of the nature of the urban community, the research objective (scientific and discursive) intersects informational findings of the designated theoretical field and the contextual 'fractography', with the subjective (personal and experiential) positions. Accordingly, the design concepts for the new Settlement, are developed through a research process that comprehends a series of methodological tasks that drive the creation of new spatial narratives and urban scenarios. Thus, in the final design phase, seven different concepts (by seven student-teams) test different models of Settlement. Each concept is defined by essential urban parameters, such as: 1) the quantitative ones such as density and intensity of activities that correspond to establishing social relations which define the way of contemporary lifestyle, 2) the qualitative measures derived from the typo-morphological articulation, spatial composition of built and unbuilt space (as outlines, heights and volumes of the spatial structures), and 3) green areas, many being reaffirmed as productive landscape that is cohesive (socio-economic) element of the designated community. They all include landscape as a must-element, the one that preserves the identity of the site as a former orchard, although through different types of vegetation, now not a community detached entity, but the one that is capable to accommodate urban situations and meet contemporary living conditions. While one proposal densely inhabits the site with a matt-structure and incorporates many small-scale open air gardens public, some public, some private, some collective (Figure 2), another one treats the site as a productive field with floating islands of urban density and intensity (Figure 3), the third develops an inverse scenario where specified orchards are inserted within a rigorous built structure (Figure 4).



Figure 2 a settlement as a cellular reaction supporting natural life, student project by D.Stankovikj, V.Rizova, V.Miladinova, design studio Growth 2.0: Settlement, 2022-2023

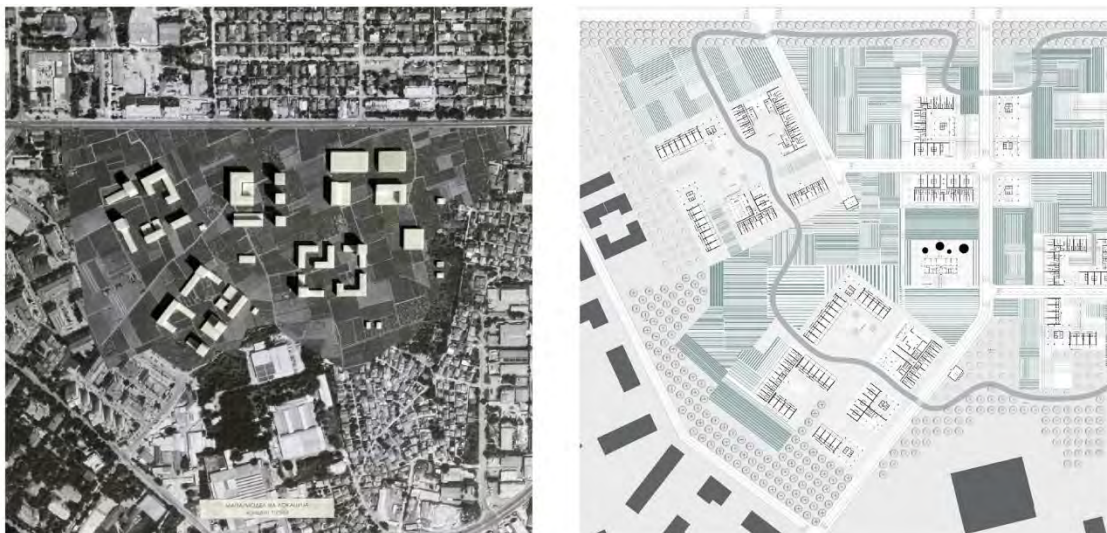


Figure 3 a settlement as an archipelago of possibilities, student project by B.Stankovska, Z.Dimitrievska, M.Donev, A.Janeski, design studio Growth 2.0: Settlement, 2022-2023

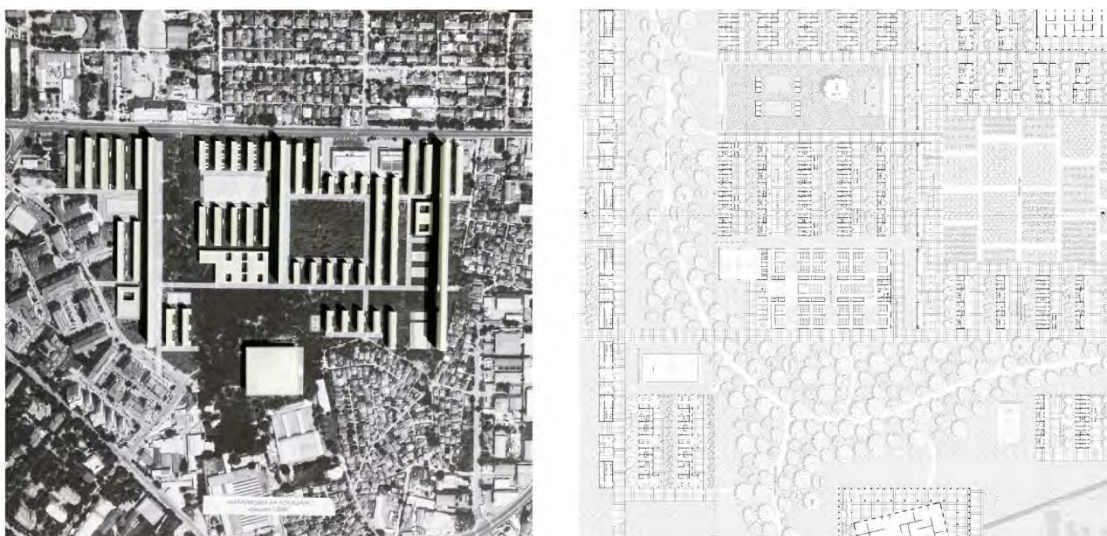


Figure 4 a settlement as a series of inhabited walls, student project by A.Risteska, I.Trajchevska, A.Tanevska, K.Srbinska, design studio Growth 2.0: Settlement, 2022-2023

3.3 landscape as performative megastructure

The design studio Growth 2.0: Insula/Island (2023-2024) investigates the specificities and the challenges for growth at the city edge. It takes interest in a territory of approx. 4km² at the north-west edge of Skopje, including: the village of Bardovci with the adjacent area of agricultural lands, the contact-zone of the archaeological site Scupi (antique predecessor town of Skopje), the urban settlement of Zlokukani, the river Lepenec, and the rapidly growing industrial zone of Vizbegovo.

The studio theme refers to the notion of the island as a geological formation, but also to its symbolic and semantic aspects as found in the history and theory of arts and architecture. The studio develops an understanding of the island not as a static and formalistically deterrent structure that contrasts with other surrounding entities, but as a part of the wider system (be it functional, ecological or social), an entity that is in a constant interaction with its context, creating dynamic spatial and programmatic relationships.

The work in the studio departs from the problem of urban sprawl of new buildings within the existent settlement that do not correspond to the existing rural life, nor contribute to creation of contemporary urban life, but merely expend the natural resources and irreversibly transform good agricultural lands. Therefore, the studio seeks scenarios that incorporate the socio-cultural potentials for growth and the performative qualities of the (natural) landscape. The result is a 'living' performative megastructure that forms a belt around the existing village of Bardovci. Notwithstanding the allegories of a wall that defines the exact borders of inside and outside territory, (figure 5), the 'living' megastructure around Bardovci works as a 'weak structure'- reinvigorating the concepts of 'weak urbanism' established by Andrea Branzi (2006).



Figure 5 performative megastructure for Bardovci village: conceptual diagram (left) and plan (right), work of design studio Growth 2.0: Insula/Island, 2023-2024

It is composed of flexible fragments that have their own autonomy, but share a responsibility to the whole, engaging landscape tools that solve ecological problems while providing contemporary 'rurban' environment, such as:

- The 'Argipelago' (Figure 6) is comprised of several housing and working communities that have each a central program but are based on agriculture economy that is practiced all around. It is strongly facilitated by the water infrastructure and mobility (connected to the remediation pools) that encompass the design and implementation of systems that manage water flow and accessibility.
- 'The eco-park' introduces temporary accommodation and informal education dispersed in a new topography constructed by landfill capping that involves covering a landfill with a layer of soil, vegetation, or synthetic materials to contain waste and prevent contamination. This process reduces the release of harmful gases and leachate into the environment. It also allows for the potential reuse of the land for parks or other green spaces. The park also includes phytoremediation pools as part of the water remediation system. Water phytoremediation uses aquatic plants to clean contaminated water bodies. These plants absorb, degrade, or contain pollutants, improving water quality. This natural and cost-effective method supports the restoration of healthy aquatic ecosystems



Figure 6 'Agripelago', student project by A.Stanoevska, A.Mitevka,J.Dimovska, design studio Growth 2.0: Insula/Island, 2023-2024

- The 'High-rising towers in the golden field' (Figure 7) not only introduces new housing, working and other urban programs, but also creates new scenic landscaped plateau. Designed by the means of agriculture, using the character of crops which is planted according to the performances of the harvesting machinery, the cultivated field not only serves for food production, but offers unique experiences as public spaces for the inhabitants.

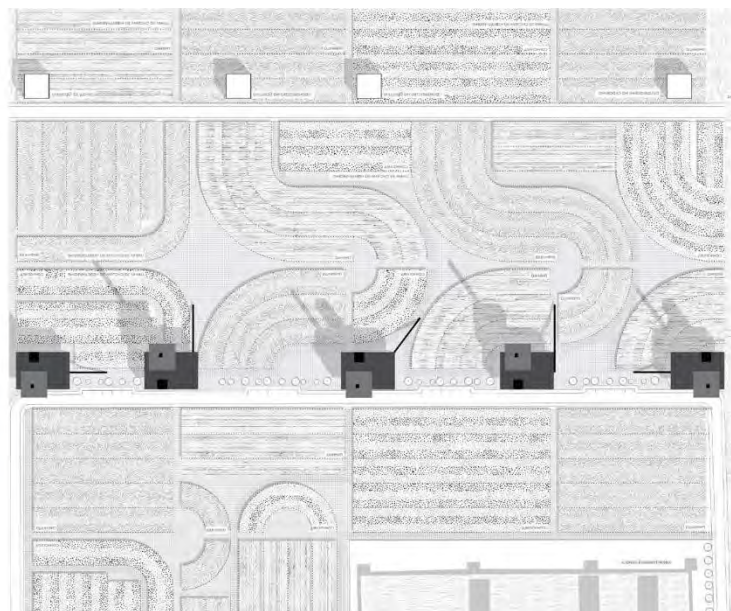


Figure 7 'High-rising in the golden field', student project by G.Gavrilovska, G.Tasevski, M. Puleski, design studio Growth 2.0: Insula/Island, 2023-2024

- The 'Cross(bread)ing' is a formal gesture of intersection of residential and industrial facilities accommodated in two perpendicular linear structures. The extension of the industry from east is articulated through green industries that not only produce goods, but also provide social and economic benefits by the means of machine landscapes. Machine-based urban agriculture incorporates technology and automation to grow food in urban environments. This includes vertical farming systems, hydroponics, and robotic planting and harvesting. These methods maximize space efficiency and can provide fresh produce year-round. Besides food production, such landscapes can be enjoyed by all types of visitors.
- The 'bio-assemblage' (Figure 8) employs various tools and techniques, such as: nature-based barrier that uses vegetation such as trees, shrubs, and grasses to reduce air pollution from the industrial facilities. These natural barriers enhance microclimates, protect soil from erosion, and improve comfort for outdoor spaces. It is accompanied by biodiversity regeneration that focuses on restoring and enhancing the variety of life in the

given area through strategic design and management. This includes planting native species, creating habitats, and maintaining ecological balance with a goal to create resilient ecosystems. The proposed concept is further supported by water infrastructure that includes wastewater treatment technology known as 'Living Machine' that turn gray water into a valuable resource. In the treatment process different plants and animals are used, in and around open and closed tanks that provide unique aesthetic appearance and pleasant space that can be related to many urban activities.

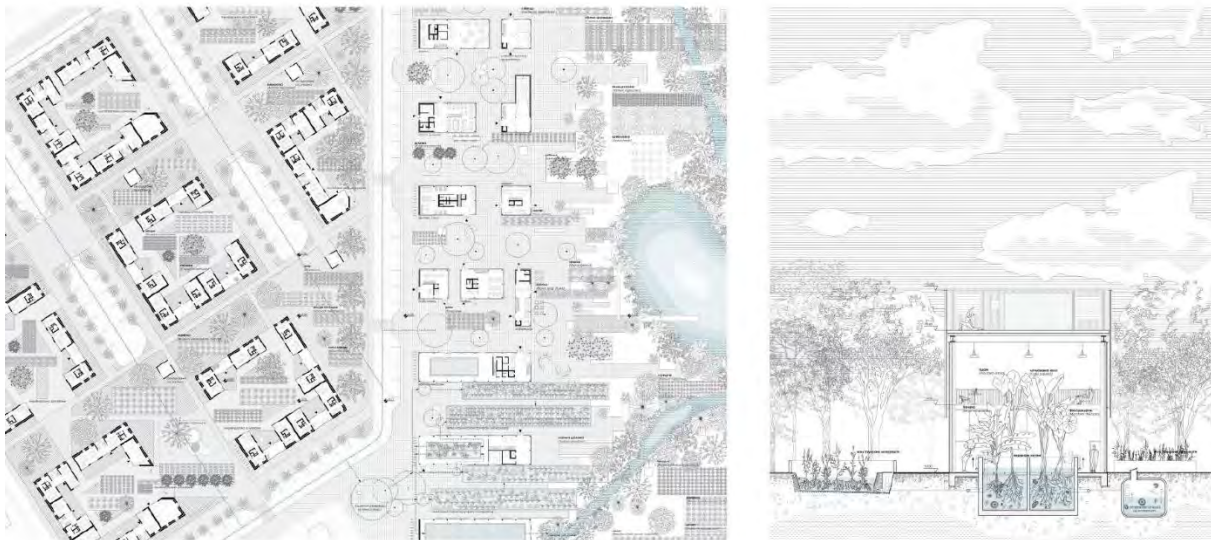


Figure 8 'Bio-assemblages', student project by M.Miteva, K.Buseva, design studio Growth 2.0: Insula/Island, 2023-2024

All mentioned fragments work within their immediate context but are mutually inter-connected and supported through the landscape referring to its form, and/or its performance. Each fragment is designed by a team of students in relentless collaboration with other studio members throughout the research and the design phases, thus ensuring that they all contribute to the general guidelines and goals. In such a collaborative learning and designing environment, a multilayered narrative is created for absorbing contemporary life in relation to the hybrid 'rurban' context of the city edge.

Conclusion

Architectural urbanism as an approach in perception and in creation within urban environments is complemented with landscape that works in all scales: territorial, urban and architectural. Therefore, on operational level, the work in the design studio Growth 2.0 oscillates between the scale of urbanism and the scale of architecture, taking an account of both, while landscape take various forms in the general role of rethinking the concept of growth. In many ways, landscape serves as amalgam that brings together the principles of spatial and programmatic assemblages. Methodologically, the design studio uses tools specific to architectural, urban and landscape design, that implies cross-disciplinary encounters, uniting theoretical and practical knowledge of each of the discourses.

After all, the main goal of the design studio 'Growth 2.0' is to prepare master students at the Faculty of Architecture in Skopje to critically approach the existing social and material reality, to encompass the inevitable emergent of the vast body of knowledge in the exiting informational era, and to transfer those observations in a proactive planning of the built environment, creating inspiring and productive urban spaces.

References

- Branzi, A. (2006). *Weak and Diffuse Modernity: The World of Projects at the beginning of the 21st Century*. Skira
 Gregotti, V (1981). *The Form of the Territory* in OASE Journal for Architecture #80 2009, NAI Publishers
 Havik, K. (2014). *Urban Literacy: Reading and Writing Architecture*. Rotterdam: nai010 Publishers