



TRIPLEX CONFINIUM

O1.UAUIM 01 - CRITICAL THEORY / OPEN THEORY

Grid and border as instruments of planning and criticism in architecture v1 DRAFT

Outcome 1 Activity COURSE + practical application (as part of the course)	
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Suggested citation

This will be the citation to be used when referencing this document

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Objectives of this document

This document represents the draft version. It is generated to pitch a pedagogical methodology based on a research idea.

Who is this document for?

This document represents the draft version of one of the summer school courses. The course is meant to be a part of the final output of the curricula. This course will be adapted and completed considering the comments and contributions of the partners and the feedback from the future summer school.

Contributors

UAUIM Team

UAUIM invites also the other teams to contribute for the content of the course> specific bibliography not available in English and primary sources (archive documents and others).

Alexandru Belenyi is a practicing architect – co-founder of BAAB Architecture and Urban Planning and researcher at the Ion Mincu University of Architecture and Urbanism (UAUIM). Alexandru is interested in establishing a balance and feedback loop between his design and building activity and the research undertaken within the university. As a professional his main focus is small scale: architecture, urban planning and furniture design. As a researcher Alexandru has been looking into the history of modern architectural education and the distinction between schools that operate as laboratories and the more rigid national higher education facilities. He has also published a book (together with two other colleagues) on the state of architectural education in Romania with reference to both the evolution of the architectural school in Bucharest and to the way the idea of a university was adopted and adapted to the Romanian context. In the long run Alexandru is interested in bringing his practice closer to an educational environment and his academic activity outside the university where the actual construction and transformation processes are taking place.

Irina Băncescu (1978), Dr. Arch. is an Assistant Professor at the Department of Architecture History & Theory and Patrimony Conservation, UAUIM and also an independent architect and researcher. In 2012 she finished her PhD in architecture with the subject The issue of waterfronts. Aspects of the Romanian seaside evolution in the communist period at UAUIM. She participated in various research projects with topics such as the rehabilitation of waterfronts, the communist period's built heritage, vernacular architecture, housing in extreme poverty situations, architectural education. She edited in 2016 the book *2,14 Types of Architecture Schools* with Ina Stoian and Alexandru Belenyi. Other recent publications include: "Reclaiming a Land of Overlapping Frontiers. The Romanian Seaside until the 20th Century", *sITA* 4/2016; "Development of the Romanian Seaside under Communism. Architecture between Political and Mass Tourism in Post-War European Context", *Enchanting Views: Romanian Black Sea Tourism Planning and Architecture of the 1960s and 70s*, ed. Kalliopi Dimou, Sorin Istudor and Alina Șerban, 2015; „On Changes in the Dwelling Conditions of the Romanian Roma under Communism” (coautor Daniela Calciu), *Reading the Architecture of the Underprivileged Classes*, ed. Nnamdi Elleh, 2014 etc. She collaborated with ADN architecture office in several national and international architecture competitions that resulted in awards.



Irina Tulbure is an assistant professor at the Department of History & Theory of Architecture and Heritage Conservation of Ion Mincu University of Architecture and Urbanism, Bucharest. Her main field of interests and research is on 20 th century Romanian and Eastern European Architecture (history and heritage approach). Beside her teaching activity (seminaries and lectures), Irina has been involved in several research programs and editorial projects. Her main publication is „Arhitectură și Urbanism în România anilor 1944-1960. Constrângere și Experiment” / ”Architecture and Urban Planning in Romania between 1944-1960. Constraint and Experiment” (2016), a book based on her PhD. thesis. Currently she is involved in the Zeppelin editorial project „Istoria Acum” / ”History Now”, that aims to create a collection of case studies of 20 th century Romanian Architecture based on contemporary research instruments (primary sources, oral history, critical approach, etc.).

Cristi Borcan is a Bucharest based architect, a teaching assistant at the UAUIM Architecture Faculty in Bucharest and a co-author of civic, community, educational and cultural projects. His research is currently focused on collective modes of producing social spaces and spatial practices of commoning. He is a co-founder of studioBASAR, an architectural studio and a public space practice, that activates between practice-based research, participatory action research, community activation, co-production and co-design, urban design, live education and civic pedagogy. The practice projects won and were nominated for different architectural biennials and cultural prizes (European Prize for Urban Public Space in 2014, Social Design Circle by Curry Stone Design Prize in 2017, National Cultural Fund in 2018).

1 Aims and Scope

Problem definition

Grids are probably the most resilient urban shape employed in Western culture. But the way grids operate in the urban environment, both as a planning tool and abstract system of analysis, is sometimes hard to understand due to their apparent simplicity.

The course will approach the research area using the concepts of grids and borders both as specific elements of the territorial urbanisation plot and as instruments for critical analysis.

The significance and the spatial logic of the grid plan lays at the intersection between the urban form and the social construct. The spatial order and cultural values emerge from the nature of the grid (closed/monoculture grid versus open/resilient grid) and from the main historical typologies (the additive grid such as Cerda’s Barcelona, American cities etc. and the hierarchical grid such as the Roman settlements etc.) (Pope 1994, Sennett 2018). Moreover, a grid can be described in terms of entropy, circuitry, extent and nuance.

Grid neutrality fosters a top-down design of urban form, so that in the modern period grid-based layouts have emerged globally as a form of colonisation in different cultures. The research area is part of an internal colonisation in Europe starting from the 1700s. Orthogonal or circular grids of different complexity have been drawn in the process, therefore grids will be understood as the main spatial structure of the area, as they are the dominating pattern of urbanisation in the region.

The notion of border signifies an edge condition, characterised by various meanings, layers and distinctions. The nature of borders can widely vary: they can be visible or invisible, law or custom, closed or opened. They can also be centres not only peripheries, dividers but also unifiers. There are diverse types of borders (infrastructural, geographical, topographical, historical, architectural, social, cultural etc.) that are to be understood through their collective imaginary and their potential: a place of movement from one area to another, a meeting point, a possibility to experience the Other, a social construction for negotiating identity, for shift and focus on the perimeter/periphery rather than the centre. Borders are generated by differences (physical, legal, political, geographical, social, cultural, economic, symbolic etc.) that are varying in influence and strength, so the borders become negotiable, even pliable, productive, rich in resources and characterised by permeability and mutability.

Borders act as markers of inclusion and exclusion on different levels. It is important the distinction between the concepts of borders (permeable, interactive) and boundaries (hard, limits which separate) (Senett, 2018) and how to use them as research instruments (ex. to define the public realm, the relation between space and society, as ground for potential commons etc.), also considering the way in which the border may be, or be perceived to be a boundary / a line of exclusion (in terms of communities, ethnicity, economy, everyday life etc.).

The case of the national borders in the EU opposes characteristics as fluid and shifting versus rigid and static. In the post-war period, borders were challenged by two key phenomena: globalisation and the emergence of the EU, both making them irrelevant and replacing them with cohesive border regions. Nevertheless, the 2020 pandemic period has the importance of national borders reinforced. Therefore, one research question would be how to mediate borders through adaptation to existing contexts and growth, also considering "the border zones as laboratories for rethinking global citizenship" (Forman and Cruz, 2019: 195).

Working hypothesis

The proposed methodological approach would facilitate a critical understanding and representation of the studied territory and its hidden meanings. The course attempts to analyse the existing grids and borders and their effect on the surrounding territory. We consider that relevant and in-depth results will be obtained by expanding the investigation to the idea /concept of grid & border, considering all relevant natures, meanings layers and typologies of the two concepts.

Finally, borders will be also used as a concept for deciphering the grid's apparent simplicity. Borders will be understood not just as simple abstract lines of separation, but as complex spatial phenomena that nuance the abstract mechanics of gridded settlements.

Through the lens of these two concepts, the approach aims at a critical vision of the research area nowadays. Using criteria such as natures and typologies of the grid and border previously described, forms and meanings identified on site would be exposed by means of relevant study cases and historical aspects of the grid and the border.

Aim of the course

The pedagogical scope of the intellectual output is to accustom participants with the idea of critical analysis of urban space using abstract instruments and representations and to provide a guided research exercise. In this sense the output falls mainly within the Critical Thinking module.

Aim of the researchers/ educators

The aim of the educators is to test the proposed methodology and tools (also in connection to the other courses and modules) and subsequently evaluate the results at the summer schools in order to critically build up the content of the curricula.

The general approach of the *Triplex Confinium* program stipulates that the understanding of the territory will use several **key instruments** in further applications developed during the summer school: border - grid/network and official - unofficial. For the second pair of instruments see Output 02 and Output 03.

2 Background and rationale

Both the notions of grid and border have been studied thoroughly in the field of urban planning, architecture, art and art history, philosophy, anthropology, geography, and all fields related to spatial production. In recent times one of the most important comments regarding grids was the overwhelming control they produce on urban life. Their prescriptive nature has been understood as a facilitator of state or private control over large areas of land. Still there is a lot to be said about their potential to stimulate diversity, or, more important about the modern relation they establish between homogeneity and diversity („frozen chaos”, Koolhaas 1978) (Pope 1994). On the other hand, there has been little done to investigate their precise relation to economic development or to the process of colonisation (Aurelli, 2018).

The relevance of the research will emerge from the consideration that there is little literature regarding the small grid-based settlements and, especially, the complete lack of reference to them in the Romanian urbanism research and education. Although they exist in abundance and despite the internal colonisation of the country during the communist regime (intervention from the partners), this fundamental planning concept together with its theoretical overhang is not part of any curriculum. Its importance is hard to overestimate since understanding the classical expression of the grid is a basic requirement for understanding and assessing modernity and its consequences on the built environment and urban life. Provided that, the current situation of the Banat region creates the opportunity for an in-depth study of how the original spatial layouts have been operating throughout history, allowing the possibility to extrapolate a model for a gridded settlement in the area.

Similar themes/approaches had been tested and used by the UAUIM team in courses, seminars and urban planning master projects included in the UAUIM curricula, as well as in individual research.

3 Methodology, tools and research

The course aims to first engage students in lectures and seminal texts that deal with the origins of grid and border structures in both urban planning and art, subsequently absorbing them in field research exercises that will provide useful data for the overall research and will explore the dynamics between the notion of grid and the agency of the border concept in cracking the apparent simplicity of the grid. The particular relation between borders and grids, their dynamics, first as concepts then as instruments, will be defined throughout the research.



Grid layouts of the settlements will be represented as spatial diagrams, using a methodology for abstractization (fig 1). The clear, rational and repetitive structure of the grid will serve as a basic frame of reference for research. The study area can be retroactively conceived as a laboratory for urbanisation that allows comparison between the different settlements and the specific features of their spatial layouts. The main tool for interpreting this will be to distinguish borders within the grid. By doing so we hope to reveal the shifting geometries of life that animate the homogenous structure of the settlement plan. The identification of borders will thus be an important layer of information used to nuance and explain how the diagram of the grid operates as the relentless background of everyday life. Therefore, borders and grids are interrelated as visible territorial markings that intertwine with the invisible social fabric, the porosity of borders and grids and their relation to a centre (authority).

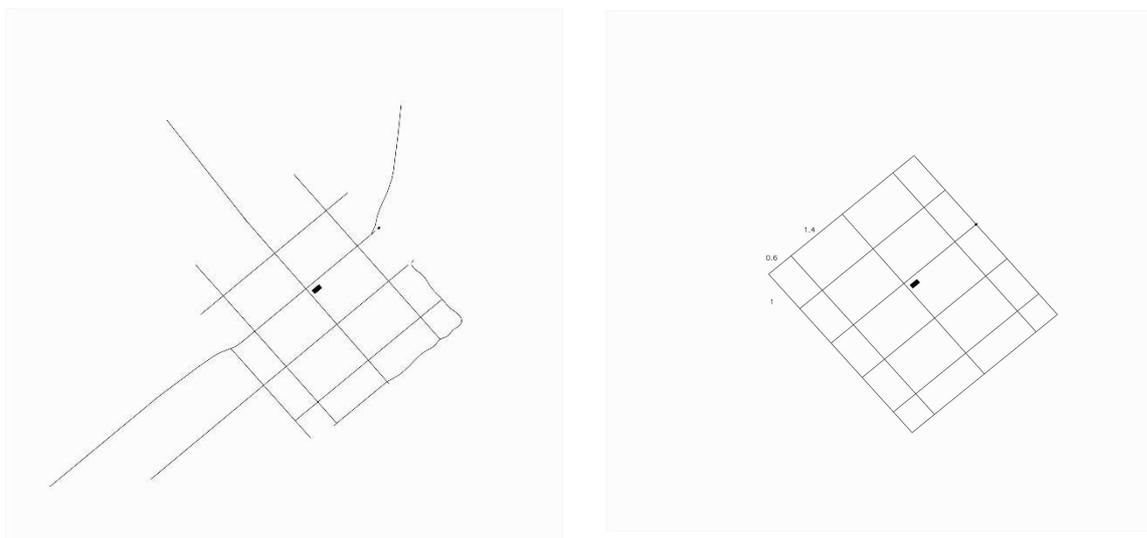


Fig. 1 - Iecea Mică, from left to right: a) abstraction step 1; b) abstraction step 2

Pedagogical tools

The course format is based on a lecture system and a practical application.

1. Lecture and seminar:

To tackle the notions of grid, lectures will bring together notions from various disciplines, exploring the origins and the utopic character of the cartesian space. Focusing on identifying specific elements of grids and borders throughout history, the lectures will also provide a starting point for understanding how closed grids have become nowadays the norm in altering the original design of the city.

The course will include a theory seminar where two selected texts (art history and urban planning) will be read and commented on extensively. The purpose of this exercise is for students to develop their critical understanding and become aware of their role in the project and as a future architect, also including contemporary macro events into the regional level (ex. the invisible grid/borders brought about by Covid-19 pandemic).

2. Participatory action research exercise: a collective model and abstract drawings representing the various conditions of grids and borders on the surveyed territory. Utopia-like scenarios might be used to highlight certain particular features of significant case studies. The participatory action



might also consist in investigating within the local communities their mental representation of the places connected to the border, highlighting its collective imaginary.

4 Expected results / Intermediate results

Course content and application represent prerequisites for the practical module (exploration module) and have a direct impact on understanding and working with the general instruments and the methodology. In the first phase (summer school) the course and application serve also as a testing ground to prove the validity of such instruments and their role in the final output (the curricula).

The course aims to build up knowledge and skills for critical thinking through the applied theory of the concepts of grid and border on the research area. Permanently connecting theory & history of the two concepts and the practice on site, grids and borders are to be approached both separately and associated, through comparative research, including a selection of relevant case studies that evolved in similar conditions or present similar features. Through the content it is expected that students will be able to increase their ability to use the proposed instruments and to represent reality in an abstract way, becoming more aware of their role as future architect-mediator and the impact of past practices on today's built environment.

This output relates directly to the Output 2 and 3, through the abstract / theoretical analysis of the grids and borders in the region during their evolution, their use as analytical tools and the deduction of their actual significance in direct connection to the urban form and the social construct. The output also focuses on the recent past and the unpredictable transformation of the present from the perspective of border and grid modifications. Moreover, increasing the students' sensibility to community-led processes is a main objective of all three outputs.

5 Next steps / Discussion

7 References

Books

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Attachments

[intermediate drafts] [Final draft]



TRIPLEX CONFINIUM

O1.UAUIM 02 - COMPARATIVE NARRATIVES OF THE RECENT PAST. Big vs minor or unknown history during socialism v0.x DRAFT

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Suggested citation

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Objectives of this document

This document represents the draft version. It is generated to pitch a pedagogical methodology. Course description (proposed for the summer school and with adjustments for the final curricula).

Who is this document for?

This document represents the draft version of the summer school course, COMPARATIVE NARRATIVES OF THE RECENT PAST (see further description). The course here described is considered to be a sample version for the final output of the program (curricula). It will be furthermore developed and adjusted according to the general approach of the final curricula.

Contributors

UAUIM Team

UAUIM invites also the other teams to contribute for the content of the course> specific bibliography not available in English and primary sources (archive documents and others).

Irina Tulbure is an assistant professor at the Department of History & Theory of Architecture and Heritage Conservation of Ion Mincu University of Architecture and Urbanism, Bucharest. Her main field of interests and research is on 20 th century Romanian and Eastern European Architecture (history and heritage approach). Beside her teaching activity (seminaries and lectures), Irina has been involved in several research programs and editorial projects. Her main publication is „Arhitectură și Urbanism în România anilor 1944-1960. Constrângere și Experiment” / ”Architecture and Urban Planning in Romania between 1944-1960. Constraint and Experiment” (2016), a book based on her PhD. thesis. Currently she is involved in the Zeppelin editorial project „Istoria Acum” / ”History Now”, that aims to create a collection of case studies of 20 th century Romanian Architecture based on contemporary research instruments (primary sources, oral history, critical approach, etc.).

Cristi Borcan is a Bucharest based architect, a teaching assistant at the UAUIM Architecture Faculty in Bucharest and a co-author of civic, community, educational and cultural projects. His research is currently focused on collective modes of producing social spaces and spatial practices of commoning. He is a co-founder of studioBASAR, an architectural studio and a public space practice, that activates between practice-based research, participatory action research, community activation, co-production and co-design, urban design, live education and civic pedagogy. The practice projects won and were nominated for different architectural biennials and cultural prizes (European Prize for Urban Public Space in 2014, Social Design Circle by Curry Stone Design Prize in 2017, National Cultural Fund in 2018).



1 Aims and Scope

Problem definition

The architectural and urban research of the recent past has usually been focusing on the overarching official narrative of the macro-features of the urban environment and large-scale phenomena, overlooking small scale and everyday uses. These "minor narratives" (Kemp-Welch, 2019) such as the details of the everyday realities and practices, that are essential for defining the present and informing the future of any place are usually attributes of socio-anthropological studies. Therefore, there is a need within the discipline of architecture and urban planning to first reveal and then to superpose official and unofficial (formal - informal) realities, the facts concerning decision-making urban planning and built environment and the multiple histories, memories and everyday life processes that produce a place.

The fracture between official visions and realities and everyday life & local needs during the communist regime is a seminal point in defining the problem.

Working hypothesis

The proposed methodological approach responds to the need to fully understand the recent past beyond the limitations of the official narrative, showcasing the silent histories that constructed a distinctive local atmosphere.

Thus, the approach responds to this need, being in line with the contemporary tendency to reevaluate and nuance historical facts, giving a voice to overlooked aspects that define the character of the place, aspects that in border areas are even more complex and volatile.

Aim of the course

The aim of the course is to establish the relevance of using comparative narratives methodology in decoding the evolution of the built environment of the recent past.

Aim of the researchers/ educators

The aim of the researchers/ educators is to offer the participants a method to critically engage the history of a place, beyond the overarching narrative produced by the official history, in order to understand the present phenomenon and plan for the future.

The general approach of the Triplex Confinium program, stipulates that the understanding of the territory will use several key instruments in further applications developed during the summer school: border - grid/network and official - unofficial. For the first pair of instruments see Output 01, CRITICAL THEORY / OPEN THEORY, Grid and border as instruments of planning and criticism in architecture.

We include in the definition of the recent past, the period dominated by the communist regime; a period of significant changes that reshaped mentalities and the built environment of South-Eastern Europe. Even if it represents an attractive theme for scholars (historical architectural and cultural approaches) it doesn't have



a particular place in the general curricula of architectural schools, being rarely approached as a defining research tool in understanding and conceiving provisions for future (buildings and territorial development projects). Therefore, the evolution of architecture during communism represents the actual content of the course and one of the course's objectives is also to provide general knowledge on this particular chronological segment and to identify the position of the local manifestations of the architecture within the larger phenomenon.

As a second objective, both content and instruments' definition are expected to be appropriated by the students and to represent prerequisites for further applications in the next modules (exploration and implementation).

2 Background and rationale

The research and connection between the built and the lived, between the urban form and the everyday experience and quality of collective life, between big and minor urban scenarios constitutes both an urgent need and a valid contemporary approach, and has been investigated usually within transdisciplinary studies (Sennett, 2018). Considering this, the approach of the course is actual and valid, also supplementing the little research done in this direction.

Similar themes/approaches had been used by the main author of the course in several courses lately included in the UAUIM curricula. Course titles: Centre Urbane Moderne 4th/5th year, Comparative Architecture 5th year. Reference key words for the courses content: Eastern European architecture during communism, Western - Eastern perspective, National Communism, Recent Architectural Heritage, Mapping eastern european post war modernity in photographic archives, Appropriation of Recent Heritage, Political involvement in architecture, Everyday life perspectives, Memory and Archives.

The Factory of Facts and Other (Unspoken) Stories. Motivated by a re-reading of Dziga Vertov's The Factory of Facts and Other Writings (1926) and by studies and researches in urbanism and culture dedicated to the professional and political practices that shaped Romania's civic centres from the 1960s to the 1980s, the exhibition The Factory of Facts and Other (Unspoken) Stories brings together a montage of visual commentaries that make up a subjective reportage on the condition of those public spaces today. The project reveals (unspoken) stories about the spaces and buildings that defined the civic centres, while at the same time reflecting on the social relevance of the interventions, as well as on the "logic" that influenced the means of negotiating and appropriating a past experience, of adapting it to the needs and phantasms of the present day.

Enchanting Views: Romanian Black Sea Tourism Planning and Architecture of the 1960s and '70s provides a first critical survey of the situation held by the Romanian Black Sea Coast project in the architectural practice of the 1960s and 70s. The assemblage of essays and photographs proposes a trans-disciplinary analysis of the modernity of the Romanian seaside, examining in a methodical and nuanced way its distinctive character.



Proposed situation. Existing situation. Ploiești Civic Centre: scale model of facts and events research project by studioBASAR. The project explored the co-existence of the imagined socialist future of Ploiești civic center and the spatial manifestations of the everyday situations and practices that people employed in the real life of the place after the fall of communism.

University Square research project by studioBASAR. The project investigated the visible and the hidden forces that shape one of the main public squares in Bucharest. By overlapping the events, the proposed projects, the everyday stories, the imagined futures and the realities that continuously construct this place, the project saw the square as a laboratory of Romanian public space.

3 Methodology, tools and research

The course format is based on a lecture system and a practical application.

Lecture

Defining „official” and „unofficial” as two main key instruments, the course aims to clarify this pair of concepts by using it as one of the methods for decoding the recent past. Hence the communist period and its architectural production will be displayed with the use of the official / unofficial perspective revealing the difficulties of understanding the history, especially in the frame of a harsh political regime characterised by centrism.

Taking into consideration the specific localization within the Triplex Confinium program, at the intersection of multiple borders of three of the former socialist states, the course will use the comparative method for displaying the content.

Collective drawing

The students will use the axonometric drawing as a collective qualitative research tool to explore the built environment of Jimbolia and its everyday uses. As a technical characteristic instrument of design, the axonometric drawings will generate new meanings and understandings through the juxtaposition of the planned urban setting and the everyday practices of people that are using it. The method will help the participants to understand and visualize the city as a complex territory of overlapped and interconnected projects and practices.

4 Expected results / Intermediate results

Course content and application represent prerequisites for the practical module (exploration module) and it has a direct impact on understanding and working with the general instruments and the methodology.

In the first phase (summer school) the course and application serve also as a testing ground to prove the validity of such instruments and their role in the final output (the curricula).

Through the content and approach of the course it is expected that students will be more aware of the impact that practices and realities of the recent past have on the built environment. They should also be



more conscious of their role as future architect-mediator and more able to negotiate between general centralized will and particular / local/ regional possibilities and interests. Moreover, increasing the students' sensibility to community-led processes is a main objective of all three outputs.

5 Next steps / Discussion

7 References

[intermediate drafts] [Final draft]

Attachments

[intermediate drafts] [Final draft]

Add any further documents, information, etc. as attachments (which may be links to other documents).

TRIPLEX CONFINIUM

O1.UBB, UPT 01- The Green Architect

Outcome 3 Activity COURSE + practical application (as part of the course)	
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Contributors

The TEAM: Norbert PETROVICI (UBB) + Tiberiu BUCȘA (UPT). The team also invites the other members of the project to contribute with content suggesting bibliography and study cases to build a use case.

Tiberiu Bucsa is a practicing architect in the studio he co-founded. He has been teaching in Oradea, Cluj and Timișoara on the 2nd, 3rd and 4th year's design studios and is a FAUT PHD student. As a practitioner he and his team have been awarded and published several times both in open competitions as for built projects. He has been active in the field of cultural projects and has co-founded Plusminus Association, madeincluj.org and Days of Architecture.

1 Aims and Scope

Problem definition

Green policies. While the total carbon emissions and the quantity of raw material consumed have decreased, the growing scientific consensus is that the trend is still upgoing, yet with a decreasing rate (Gutowski, Cooper, & Sahni, 2017; Södersten, Wood, & Wiedmann, 2020; Vadén et al., 2020). *Raw material consumption* quantifies in tones the worldwide demand for raw materials extraction generated by both consumption and investments. Green policies require an *absolute decoupling* of the economic growth measured as an increase of the Gross Domestic Product of an economy from its raw material consumption. **Relative decoupling means** that the rate of GDP growth is not correlated with the rate of raw material consumption. While the global policies captured in the *The Paris Agreement* ratified by major global player, argue that there can be *green growth*, the ecological "transition discourses" argues that there that decoupling is not possible in the condition of economic growth, therefore *degrowth* is an imperative (Escobar, 2015). Only a new set of policies that allow for economic contraction would produce a drastically decrease in material consumption (Hickel & Kallis, 2020). The proposal is a cap on raw materials at global level, in a similar manner with the greenhouse gas emissions, to prevent a change above 1.5-2° of the planetary climate in a time horizon in ten up to twenty years. The cap must follow social justice principles



and to consider who are the major global pollutants and the cumulated history of pollution. The Global North still is the most important pollutant and historically is responsible for resource depletion, emissions deposits, and ocean acidification (Hickel, 2020).

The construction sector and green policies. If capital goods are also accounted in computing the material footprint, both the industrial and service sector are important consumer of raw materials since these sectors are consumers of buildings (either plants or office) and they are using technological equipment, which employ a wide range of raw materials (Södersten et al., 2020). In fact the construction sector in 2011, the last date on which we have an assessment at global scale, were using 79,5% of total raw materials, understood as biomass, minerals, metals, and fossil fuels (Södersten et al., 2020). Therefore, a key sector for the current stringent green policies is the construction sector, and here the architect has a key role to play.

The role of the architect in greening the construction sector. On the green growth side, explicitly assumed by the European Union (European Commission, 2016), the architect has a major role to play in experimenting with new materials and concepts using the market and state nexus to further new technological innovation in building to increase the effectiveness and sustainability of using resources (greencities.eu). On the degrowth side, the drastic reduction in the material footprint needed to generate a real impact on the environment will induce employment and social instability. The architect have an important role in creating a new set of spatial commons by engaging with the new set of social protection measures needed in a de- growing economy: to reimagine new housing, plants and offices to allow for work-sharing, to strengthening the social security system by creating a new set of spatial interactions between various social categories with various complementary needs, and the demonetization of certain economic transactions to allow alternative economic spaces that are not market based (Van Den Bergh & Kallis, 2012).

Working hypothesis

Either on the green growth side, or on the degrowing side the role of the architect in designing new spaces is challenged. The current state is producing major perils for the planet, the architect role is under scrutiny.

Architecture must go green. However, this means for the discipline a firm command of major policy debates and options, that either pushes the architect toward green technology regulated by a market supervised by an entrepreneurial state, or it pushes the architect toward spatial commons that allow for non-market value creation in a partially demonetized economy.

Aim of the course

The aim of the course is to establish the relevance of the major green policies for the architectural practice.

Aim of the educators

The aim of the researchers and educators is to offer the participants a method to critically engage with the major green policies concept, measures, and institutional mechanisms, to provide the tools to put under scrutiny their own practice and, more importantly, to devise new ways to engage with space, people, and



environment. This class tackles a major concept of territory constructions: border, grid/network and official, unofficial, key instruments for the *Triplex Confinium* program. Therefore we see the class part of the Output 01, *CRITICAL THEORY / OPEN THEORY, Grid and border as instruments of planning and criticism in architecture.*

2 Background and rationale

European Green Growth. The current *European Green Deal* is a green growth policy. Market actors have been reluctant to engage in the unknown market opportunities of investing in green technologies given the uncertainties of return rates. The European Union is mitigating the market uncertainties by assuming a position that is similar to that of an “entrepreneurial state” (Mazzucato, 2018). The purpose is to reduce market frictions for green technological innovation by creating a balance between demand pull and technology push policies (Wang, Gu, Liu, Fan, & Guo, 2019). Green technologies are those that can increase the effectiveness and sustainability of using resources, and a particular salient class of resource are the renewable resources that can be used to produce energy (Dincer & Rosen, 2013). “Greening the economy” is operationalized, as mentioned, by decoupling economic growth from material consumption by a combination of *targets* and *policies* both in the climate and energy realm. For 2030 the targets include reducing 40% of the greenhouse gas emissions compared with 1990 levels, 27% share of renewable energy consumption and 27% improvement in energy efficiency. There are four major policy families used to meet the targets: cap and trade, green bonds, circular economy, and green cities.

Challenges. There are certain major concerns regarding the targets and policies to tackle climate change in the current conjunction. While through the successive phases of *The Trading Scheme* emission values have tended to decrease in almost all countries (88,8%), yet it created spatially centered *emission clusters* both at European level and at country level (Stuhlmacher, Patnaik, Streletskiy, & Taylor, 2019). Certain industrial regions tend to be able to emit more, most of them being concentrated in Germany, which continue to have the biggest yearly emissions across the last three decades (Stuhlmacher et al., 2019). In reducing the carbon emission intensity at city level, technical progress played a major role, while the industrial structure (transitioning towards a service economy or increases in productivity at sectorial level) had little effect (Zhang, Deng, Phillips, Fang, & Wang, 2020). Nonetheless, the industrial structure and the nature of urbanization mediates the efficacy of green technologies on carbon emission intensity. *The new type of urbanization* is needed for making effective green technologies:

“For cities with high carbon emissions, the government should focus on developing compact cities, increasing population density and promoting population-size and agglomeration effects as important ways to reduce CO2 emissions. For cities with low carbon emissions, economic growth and technical progress are key measures to reduce emissions. Appropriate population density and high-density urban development patterns can also reduce emissions” (Zhang et al., 2020:8).

Major differences in terms of the impact of green technologies on carbon emission and growth has been documented not only at the city level, but also at national level. Romania and Bulgaria *economic growth is decoupled from its renewable energy use* and also from the policies that have increased the share of energy in the total mix of energy sources (Marinaş, Dinu, Socol, & Socol, 2018). This is not the case for other Central and Eastern Europe like Hungary, Lithuania and Slovenia where an increasing renewable energy



consumption has a feedback loop on economic growth (Marinaş et al., 2018). The major difference consists in the type of its economic growth, Romania being specialized in labor supply on European markets by hosting on its territory outsourced manufacturing plants and, in its top four cities, outsourced business services. Drahokoupil and Fabo (2020) argue that multinational companies tend to require lower skills from its employees compared with the domestic companies, with the exception of blue collar jobs in manufacturing in labor providing economies. Economic growth in these economies apparently is not correlated with green technologies since it has low substitutability of labor for capital, the goal of the major outsourced activities is cost reduction and not an increase in productivity.

For producing and adopting new green technologies special financial instruments and institutional resources are needed specifically tailored for the specific value chains located in regional and urban areas. Some European municipalities and regions to finance its green technology research and development have, starting with 2012, have been issuing *municipal green bonds* (Almeida, 2020), while others used *municipal green loans* (Creed, Adamini, Vaze, & Boulle, 2020). As Olstad, Grahn, and Ban (2020) shows for the green bonds market and green loans the major prime mover in innovation and production are state related financial institutions, either transnational (i.e. European Investment Bank), national (i.e. Dutch State Treasury, Republic of France) or regional and municipal (i.e. Stockholms Läns Landsting). The Green City run by European Commission under the wave of the Green Deal is also feeling the gap of financing and institutional capacity building by targeting holistic approaches to deal with the whole value chain in which a city is participating and pressuring the formation of a network of cities across the continent. The private market actors, even if important in financing the green technologies, are still reluctant to take the risks as first actors.

Degrowth led policies. Big cities have a central role to play here since a cap on the biggest cities on raw material consumption and carbon emission would make a huge impact on the global scale. More precisely, a cap on the Global North cities would be necessary in order to reverse the trend on the material footprint (Hickel, 2020). The “transition discourses”, even if they come from different epistemic and political milieus, are doubting the core assumption that economic growth is a basis both for ecological integrity and social justice (Escobar, 2015). More precisely, the current three pillars understanding of sustainability is interrogated by questioning the redistributive effect of economic growth. Thomas Piketty (2014) shows forcefully that economic growth does not have the effect producing society-wide well-being, on the contrary, it produces social inequality. It takes state lead policies of taxation, market regulation and social welfare to generate human well-being. Econometric calculation based on Piketty equations show that degrowth strategies for an ecological transition generate also social inequality (Hartley, van den Bergh, & Kallis, 2020). Hartley, van den Bergh, and Kallis (2020:253), based on a literature review, suggest four type of measures that should sustain a socially just controlled contraction of the economy to assure material decoupling: (1) wealth redistribution by promoting workers ownership, (2) direct measures for decreasing returning on wealth (interest caps, rent controls, progressive taxes on incomes from wealth, Georgist land tax and resource tax), (3) indirect measures for decreasing returning on wealth (labor protection, basic income, basic services, public employment), (4) elasticity measures for decreasing returning on wealth (higher investment in sectors with low substitutability of capital for labor).

The Green Architect. (1) European Green Growth: the architect and the urbanist have moved in the forefront of the European policies as major actors called out for leading the green technology innovation in planning, construction and building design. The Green City Program (<http://greencities.eu/>) and the European Green Capital Award (ec.europa.eu/environment/europeangreencapital/) have become major funding mechanisms devised in a holistic manner to generate both institutional and technological incentives



to move away from raw resources consumption. (2) The “transitional discourses” gained a major momentum both in Europe under the name of the *Degrowth movement*, and in Latin America under the name of post-growth movements. The centre state of these movements are the concept of commons and the demonetization of value (Burger, Norgaard, & Ostrom, 2013; Graeber, 2016). The architect plays even a more important role in these movements since spaces become one of the commons that have to be redesigned to avoid toxic externalities produced under disembedded markets that redirects profits towards some particular private owners and waste towards the environment and the communities.

3 Methodology, tools and research

The course format is based on a lecture system and practical applications.

- **Lecture**

Defining the green growth and the degrowth as two main key paradigms, the course aims to clarify the role of space for green policies and, more importantly, the role of the client for the architect. Following the demand side of the architectural practice, we conceptualize the main channels for the formulation of the need for design in the two major green policies paradigms. Given the specific of the *Triples Confinium* program the aim is to make visible across the state borders the role of the market actors, communities, the administrative bureaucracies, and politicians in generating building objectives.

- **Case studies**

The students will be provided iconic case studies put forward by the European Union Green City programs and by the Degrowth Movement. They will be asked to work in groups to delineate the major actors, the mechanism of funding, the major stakeholders, the major gains and externalities for each stakeholder, the green aspect of the project, the role of the architecture, the quality of architectural outcome.

- **Social cartographic data and journal**

The students will be provided with social cartographic data on Jimbolia and the region and will have to walk the area and confront the maps with the site. The purpose is to play with the visible on the site and the visible on the map. The cartographic social information is collected by the state and a discussion on the role of the public statistical data will be provided linking it with the concept of commons. This interplay between the onsite and the maps will be written in a journal, referring back to the original meaning of the technique, of the journey that is recorded through writing.

- **Interviews on delineating the future**

The students will use interviews with inhabitants from Jimbolia to capture the hopes for a better future of the community, paying attention to their different structural position in the community: politician, employee in the public sector, employees in the private sector, entrepreneur, self-employed, contributing family workers).



- **Collective drawing**

The students will use the axonometric drawing as a collective qualitative research tool to explore possible built environments in Jimbolia under two scenarios: market-based buildings organized as private enterprises and community based buildings organized as commons. The method will help the participants to understand and visualize the city as a territory shaped by collective actions moulded through institutions that further produce landscapes. A green landscape is always local, but it has to be put in the context of its producing institutions, embedded in state practices, market forces, and global fluxes.

4 Expected results / Intermediate results

Through the content and approach of the course it is expected that students will be more aware of the impact of the architectural practices on the environment. The purpose is to question in a radical way the economic model of the architect. In any current narrative decoupling is the norm, the major question remains only whether social and environmental justice is possible based on economic growth or based on degrowth. In any current narrative the architect is called to reinvent itself and his or her profession.

The first phase (summer school) the course and application serve as a testing ground for a hands-on approach with the students in identifying the market and non-market institutions that prevail in a certain place, and the role of the state in embedding or disembedding market institutions in the community.

5 Next steps / Discussion

For a final draft of the curriculum the needs to address three issues, which are also three next steps.

- First, a review of the literature on radical practices of co-living and co-housing is needed. This literature has provided in the last decade a major reconceptualization of the spatial commons in architecture. To have a firmer grasp of the key concepts, necessary both for teaching and research, the teams must have a greater command on the successive conceptual elaboration that the cohousing movements provided the academic community.
- Second, the specific case studies used for the class have to be collected and the official descriptions, if needed, will have to be supplemented with additional background information to create proper use-cases for the students.
- Third, the specific form of the class instruments used for the summer school must be decided by the team (the interview guides, the social maps of the locality and form of the journals).

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TRIPLEX CONFINIUM

O1.UAUIM 03 - SITUATED KNOWLEDGE OF TODAY. Macro-events vs informal practices in post-socialism. v1 DRAFT

Outcome 3 Activity COURSE + practical application (as part of the course)	
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Outcome 3 Activity COURSE + practical application (as part of the course)

Name of Output / SITUATED KNOWLEDGE OF TODAY. Macro-events vs informal practices in post-socialism

Name of Output / O1.1 Critical Thinking Module, O1.2 Exploration Module 1

Suggested citation 1

Corresponding author 1

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Objectives of this document

This document represents the draft version. It is generated to pitch a pedagogical methodology based on a research idea.

Who is this document for?

This document represents the draft version of the summer school course, SITUATED KNOWLEDGE OF TODAY. Macro-events vs informal practices in post-socialism (see further description). The course here described is considered to be a sample version for the final output of the program (curricula). It will be furthermore developed and adjusted according to the general approach of the final curricula.

Contributors

UAUIM Team

UAUIM invites also the other teams to contribute for the content of the course> specific bibliography not available in English and primary sources (archive documents and others).

Born in Bucharest in 1982, **Ilinca Păun Constantinescu** earned her PhD degree in architecture in 2013. She currently practices architecture at Ideogram Studio, teaches theory of architecture at "Ion Mincu" University of Architecture and Urbanism Bucharest, and leads cultural projects within the IDEILAGRAM Association. Together with her team from IDEILAGRAM, she edited "Shrinking Cities in Romania. Orașe românești în declin" (DOM publishers&MNAC Press 2019) and realized researches and exhibitions such as: Shrinking Cities in Romania (MNAC Bucharest, 2016), On Housing (Timco Halls Timișoara, 2018, within BETA 2018), Uranus Now (MNAC, 2019, initiated by Zeppelin and D.Hasnas). Since 2012, she is leader and team member of one of the largest participatory projects ever carried out in Romania concerning post-industrial regeneration, in Petrila, Vala Jiului.

In 2021 she will be part of the team representing Romania at the Venice Architecture Biennale, as leader of the Shrinking Cities in Romania project (Fading Borders, Romania's pavillon by Poster = Shrinking Cities in Romania by IDEILAGRAM + Away by Teleleu + Mazzocchiao).

Cristi Borcan is a Bucharest based architect, a teaching assistant at the UAUIM Architecture Faculty in Bucharest and a co-author of civic, community, educational and cultural projects. His research is currently focused on collective modes of producing social spaces and spatial practices of commoning. He is a co-founder of studioBASAR, an architectural studio and a public space practice, that activates between practice-based research, participatory action research, community activation, co-production and co-design, urban design, live education and civic pedagogy. The practice projects won and were nominated for different architectural biennials and cultural prizes (European Prize for Urban Public Space in 2014, Social Design Circle by Curry Stone Design Prize in 2017, National Cultural Fund in 2018).

1 Aims and Scope

Problem definition

Opening and redefining the borders post 1989 led to profound transformations in the East-European states. Today's built environment, determined by how borders have been redefined, is undergoing complex transitions and continuous transformations. Highly dynamic and unpredictable, the urban phenomena in these areas require an integrated and transdisciplinary approach to fully comprehend it. The academic architecture programs, functioning as siloed laboratories for producing knowledge, focus mostly on the virtues of building and less on understanding the overlapping of the social, economic, demographic realities that shape with an increasing speed the urban and rural territories. Most of the time the students lack the critical apparatus to fully understand and work within the realities of today's society and thus proactively embrace the continuous change of paradigm in the field of design and planning.

Moreover, contemporary practice tends not to be necessarily oriented towards finished products (a predefined architectural product), but towards the process itself, to which one permanently refers to, updating the working method according to the new conditions and to the opinions of the community that uses the spaces in question ("Process-Led Design", "Community-Led Design" etc.).

Working hypothesis

The proposed interdisciplinary approach offers the framework and the tools to understand and work within the shifting conditions of today's built environment by providing a critical, engaged and action orientated methodology.

Aim of the course

The aim of the course is to develop a critical and engaged methodology to research and interact with the complex phenomena that shape and change the built environment today.

Aim of the researchers/ educators

The aim of the researchers/ educators is to offer the participants the instruments to understand and work with and within the dynamics and transformations that the built environment is continuously facing.

Romanian built environment has undergone drastic transformations since 1990. The political, economic and demographic macro-processes translate into a highly dynamic, unpredictable, complex and varied urban and social phenomenon that requires an integrated and transdisciplinary approach. Cities throughout the Eastern Bloc have undergone similar transformations after 1990, with certain important differences to take into account.

Embracing the capitalist society model, along with the economic opportunities opened by Romania's membership in the European Union, had other long-term consequences on the configuration of urban living—megatrends such as globalization, social and cultural atomization, social disparities and cultural diversity were expressed as polarization. Nonetheless, one needs to keep in mind that inequality and urban polarization, as well as the increasing coexistence of growth and decline, are all chief concerns of contemporary societies. In the Romanian case, the overlapping of these global trends and local factors enhances urban dynamics, making it fast and unpredictable.



However, while the macro political and economic events, as well as the global mega trends are rather easy to predict and measure, the connection between the big data statistics and the built environment is hardly being made. Sometimes the cities reacted in unexpected manners, and the informal practices and use of the built environment is a valuable indicator for further planning. Therefore, the present day defines a need to research and superpose formal and informal realities, facts concerning decision-making urban planning and built environment, with history, memory and everyday life- that are usually attributes of sociological / anthropological studies. Thus, the approach responds to this need, being in line with the contemporary tendency to reevaluate and nuance historical truth, giving a voice to overlooked aspects that define the character of the place today and shape/condition the future of it. (thus, there is a strong connection to Output 2) These issues are even more interesting to apply on a border territory, where the dynamics are even more complex and volatile. (thus, there is a strong connection to Output 1)

2 Background and rationale

The contemporary research on the built and lived reality in today's city responds to an urgent need of understanding the ever-rapidly changing environment and also uses the criteria of urban ethics or considers the concept of contingency - the shift from macro events to the informal, uncertainty, unpredictability and fast urban dynamics (Sennett, 2018; Till, 2013). Therefore, the approach of the course is up-to-date and valid, also supplementing the truly little research done in this direction.

Shrinking Cities in Romania / Orașe românești în declin, Vol. 1: Research and Analysis / O cercetare critică; Vol. 2: Responses and Interventions / Reacții și intervenții, Editor: Ilinca Păun Constantinescu, DOM publishers, Berlin & Editura MNAC, București. Gathering a large group of academics, researchers, artists, architects, urban planners and hosting several recurring events, Shrinking Cities in Romania is a pioneering initiative to raise awareness about an acute and pervasive, yet too little discussed matter, which is presented in an attractive and interactive formulation, aiming to create a positive perspective on a negative phenomenon (a phenomenon that produces both quantitative and qualitative changes at the city or neighborhood scale. Including social and cultural shrinkage, physical shrinkage, economic shrinkage, demographic shrinkage).

University Square research project by studioBASAR. The project investigated the visible and the hidden forces that shape one of the main public squares in Bucharest. By overlapping the events, the proposed projects, the everyday stories, the imagined futures and the realities that continuously construct this place, the project saw the square as a laboratory of Romanian public space.

EU-ROMA project, which explores transnational / comparative informal practices (housing and spatial-social segregation, migration) in the recent period from the ethical and social perspective, with an urban-architectural background.

On Housing. Collective Housing: In-between Product and Process, within BETA 2018, initiated and coordinated by OAR Timiș. Housing is a topic of strong interest for Romanian society at large; yet do we really understand the intricate mechanisms underlying the spaces we inhabit and the connections and disruptions that they create within the city? Given today's context in which mass housing has increasingly



become a marketing product, intensely advertised and wrapped in the most attractive packaging, ON HOUSING provides a critical perspective on to the various actors involved: administrations, developers, architects, and resident/ end-user.

3 Methodology, tools and research

The course format is based on a lecture system and a practical application.

The module is part of the Trilogy "Critical Thinking", in connection with the other modules: exploration and implementation cannot be achieved without understanding the way in which macro-phenomena lead to the present situation. Although present globally and although they are global trends, changes are felt locally and particularised according the local reality, therefore people's lives are strongly influenced.

1. Lecture

The course points to the recent macro events and megatrends and investigates the effects they had on the territorial urban form- a space in transition. Change is what makes a space alive, but can one really grasp and superpose all the aspects of change (referring to cultural values, to the built environment, to people and human interactions, to urban life, etc)? The lecture will make use of big data, discuss key events in post-communism, but also micro-manifestations of change, and explore how recent socio-cultural, economic, and demographic manifestations have an impact on the physical environment. As a conclusion, the suitable instruments for architects and urban planners to deal with these constantly changing dynamics will be discussed.

2. Participatory Action Research (PAR)

Walking interview

The students will map the spatial manifestations of the phenomena that shape the built environment and frame the everyday practices of people. By engaging locals through a walking interview method, a situated and shared knowledge about the territory will emerge through maps, drawings and collected stories.

The themes discussed in the lecture will be mirrored in the interview:

- economic- jobs before and after 1989
- demographic- periods of migration and destinations
- built environment- function of the public buildings before and after 1989; public functions in former dwellings
- socio-cultural: meeting places, everyday practices, collective imaginary

The three proposed outputs are all strongly connected and provide a complex understanding of the Romanian contemporary urban phenomenon, situated in a particular place and history. A larger aspiration would be achieving from the participant Universities a comparative analysis from these described perspectives.



4 Expected results / Intermediate results

Course content and application represent prerequisites for the practical module (exploration module) and it has a direct impact on understanding and working with the general instruments and the methodology.

In the first phase (summer school) the course and application serve also as a testing ground in order to prove the validity of such instruments and their role in the final output (the curricula).

Through the content and approach of the course it is expected that students will become professionally proactive, more aware of their role as future architect-mediator and more able to make connections between global changes and local realities.

5 Next steps / Discussion

Next steps [intermediate drafts] / Discussion [final draft]

Describe the next steps including time plan and milestones in preparing the final version of this O#A#.

7 References

[intermediate drafts] [Final draft]

Attachments

[intermediate drafts] [Final draft]

TRIPLEX CONFINIUM

O1.UPT 02 - EXPLORING AND INTERPRETING HERITAGE IN THE LANDSCAPE x draft version- proposal

Outcome 2 Activity COURSE + practical application (as part of the course)	
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[Final draft only]

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Objectives of this document

The purpose of the document is to develop a course support that discusses a methodology for exploring and understanding a territory. Starting from several types of multidisciplinary research, it is proposed to understand how a territory was formed, and develop methods to identify the relationship of the built heritage in the context of its formation in an anthropic landscape.

Who is this document for?

The document represents the working bases in the development of a course format focused in understanding the relationship between the existing built fund and the way it was formed over time, being related to the values of the natural and anthropized landscape.

Contributors

The author of this output is Bogdan Demetrescu, UPT team. The proposal and research ideas have been supported through contributions made by Mihai Danciu (UPT) and Cristian Blidariu (UPT). The ideas presented in the document have received support from the BME, UNS teams during the several project meetings held throughout 2020.

Bogdan Demetrescu graduated from the Faculty of Architecture in Timișoara in 2000 and has been teaching there ever since. Throughout the years he has been responsible for the disciplines Architectural Design 3 and 4 (2nd year /2010-2014), 7 and 8 (4th year / 2014-2020). In 2015 he defended his doctoral thesis focused on the structural salvagardation of historic city blocks. This has granted him the position of Lecturer on various Restoration and Rehabilitation disciplines within FAUTs bachelor's program. He is involved in several research projects outside the university, with a focus on sustainable conservation and interventions in the landscape. Bogdan Demetrescu teaching activity is coupled with a complementary practice within his own architectural office D PROIECT, where restoration and rehabilitation projects are further explored. During his 20 years of activity the office was awarded on several occasions with distinctions for its projects dealing either with heritage problems or complex architecture projects.

Cristian Blidariu teaches the course of Architecture Theory and coordinates the 1st year Architecture Studio within the Faculty of Architecture and Urban Planning in Timisoara. Between 2010 and 2016 he was a contributor and publisher for *Architectura 1906*, the Official Review of the Union of Architects of Romania, for which he coordinated several special issues. He has also collaborated with *Igloo* magazine. In 2017 he was one of the coordinators of the FAUT participation in the Vienna Design Week festival. As a practitioner he participated, among others, in the project of rehabilitation of the Theresia Bastion, a topic subsequently treated in the PhD thesis *Art in the postmodern city, urban regeneration and virtual space* presented within the doctoral school of the Faculty of Arts and Design in Timisoara.



1 Aims and Scope

The following proposed teaching module aims to develop a methodology of research, teaching and action focused on the relation between landscape and built heritage. As a proposed study case, one of Banat's main geographical features, its complex hydrographic system will be evaluated and observed. Hydrography plays a major role in defining the natural as well as organizational features of a territory. This is ever so more evident in the case of our study area. The Banat we now know today is the result of a complex project of land reclamation, begun in the XVII th century with the regularisation of its rivers and marshes. Its predetermined territorial planning with its new colonial settlements, roads, water connections, all determining the nature of local economies and even some experimental agricultural endeavors, were for much of the XVII th century the result of this process. Water has played an integral part in the realization of the Banat project. In this respect, any re-evaluation of the built heritage cannot be considered without grasping its spatial, cultural and economic relation with this complex system. The proposed lecture and methodology will do this by providing architects with knowledge outside their field of action while encouraging a new sensibility toward the aesthetic as well as functional importance of this very specific landscape.

PROBLEM DEFINITION

Partitioned transnational regions such as the historical Banat are experiencing a paradigm shift in terms of their reevaluation of the common historic heritage. Hydrographic basins spanning such transnational regions are a very important feature of this historic heritage. In many respects, this new attitude towards common infrastructural heritage features can be traced back to the several Eu transnational programs funded in the last two decades. In the recent past, oftentimes, when faced with more systemic conditions these strategies fail to coalesce, as contradicting national strategies or priorities were unable to produce a coherent response. One such example was observed in the response strategies that Romania and Serbia generated after the major Foeni floods, affecting both countries in the summer of 2005. Neither country was part of the EU and each followed their own strategy in dealing with this calamity. Romania's response was to regularise the Timis river banks with complex hydrotechnical works that while securing against future floods have non the less destroyed the pristine landscape. These works end abruptly at the border with Serbia, thus only moving the problems a bit further down stream. Serbia's response was prudent, and maintained the topography while salvaging the landscape. But landscape is not the only issue here. In case of the Romanian response, these new works came in direct conflict with local pathways, severing the connections between local communities and their natural resources. Water was contained and hidden from sight.

With regards to heritage conservation, the lack of organizational oversight and of clear strategies can lead, as is often observed, to a misallocation of resources and a lack of a clear and holistic gaze of the issues at hand. In this respect, as observers of the built environment architects can act as mediators and problem finders, identifying solutions where none are looking. Most of the time the problems surrounding our common cultural heritage, be it urban or rural, material or immaterial are to be observed by looking at its symbolic relevance. Are the communities themselves aware of the heritage that they inherited? Are they using it properly, with a prudent attitude towards future needs? Is this spatial heritage consumed just like any other resource, and while being so, transformed into something completely new? What about climate



change and its effects on the gradual transformation of the landscape sustaining this common heritage? All these questions and many others pose challenges to a profession (that of the architect) that is in itself in a state of crisis. Changes brought on by new technologies, ever shifting societal aspirations due to rampant individualism, the long term unsustainability of consumer culture, have placed architects, as readers/writers of this space, in a very dangerous position. This idea will be further explored in the Green Architect output developed in conjunction between the UBB and UPT teams. For the current proposed lecture however the emphasis will be placed on the re-evaluation of the relation between the historic built heritage and its natural environment, the latter being itself a product of centuries of anthropisation processes.

The built heritage in Romania, in our case that of the Banat region is in a major crisis. This status quo is determined by several factors: the lack of coherent national strategies, the accelerated evolution of degradation due to unaddressed physical obsolescence of many historical buildings, works and habitats, as well as the general lack of community interest. In addition, there has been a major lack of training of specialists in understanding the components of the cultural landscape in general. Urgent action is needed, and Architecture Schools can be in the forefront of this much needed renaissance acting on both tactical as well as strategic terms. Future architects are bound however to observe situations and conditions that oftentimes lie outside their normal field of work. It is within this intellectual and operational framework that local heritage should be understood as part of a larger system, one in which nature, topography, landscape, climate science play an equal role. To address this, the present lecture will focus its main attention on the tensions visible between the natural and the built, by using the complex hydrography of the Banat plain as a spatial resource, one that needs urgent reconsideration.

The cultural landscape of the Banat hydrographic space, composed of the Bega-Timiş-Cerna river basins, the Aranca basin or the Bega Veche river basin must be understood in the context from which it was formed- as part of the immense terraforming project started in the XVIIth century. A comprehensive understanding of its gradual evolution in all its stages can only shed more light on the top down, political decisions that have transformed The Banat region into an ideal, almost utopian region of economic development, oftentimes governed in an almost corporate fashion. The hydrographic network served as backbone of communication, sustaining agriculture and industry in all its forms and at every point throughout its history. But the Banat hydrographic space represents at the same time one of the most important resources of the regional culture, providing a specific landscape, one that offers researchers and planners new interesting perspectives for future growth.

The recovery of valuable places and heritage buildings is today, more than ever, conditioned by a holistic reevaluation of the cultural and natural landscape from within which they arise. We can no longer recover any of the many nobiliar mansions dotting the Banat plain, without an initial assessment of their historic relations to their larger context; the topography of their former properties, their relation to neighbouring agricultural land and economic resources, their current legal status. The same can be said if we are to reconsider the refurbishment of the many dendrological parks built around these mansions, many of them completely lost. It cannot be done without grasping the multiple ways through which climate change currently affects this micro-environment. An integrated discourse focused on landscape conservation is much needed. What about the restoration of few historic brick or stone bridges remaining along these river beds. Without a clear understanding of their strategic position within larger planning policies, and comunal re-evaluation as historic landmarks, the process seems futile. To sum up we can no longer talk to, and



about, local communities, and their participative actions in salvaging these vestiges of time, as long as they slowly dissolve in silence, disturbed only by the rustle of industrialized crops.

By losing their functional or symbolic importance in the tumultuous history of the XXth century that saw the partition of this region, many of the now peripheral elements of infrastructure; roads, railroads, bridges, and canals, whether patrimonial or not, are in a state of total decay. Important parts of the hydrographic are in the same state. Current developments and speculative planning strategies are bypassing its well established role as land regulator and landscape enabler. However the possibilities this system still offer, if perceived as part of a new a new planning vision for the area, one that connects the social - economic and cultural and natural factors of the landscape, are immense, and could provide a genuine revitalization for the entire area.

HYPOTHESIS

The document studies a possible reactivation of some localities in the plain area of Banat, as well as the development of new local interest poles by exploring new routes in the rural landscape. To understand these opportunities, the study of the evolution of the natural and anthropic landscape is necessary and becomes a basis in the making of a local reactivation strategy .

Territorial development and rural architecture are strongly linked with the history of hydrotechnical works and land improvements in the Banat area. The first documented works are traceable as early as the first half of the 17th century, when under the coordination of Florimund Mercy, the first regularization of the Bega riverbed was undertaken. This led to the establishment of the Association for the Regularization of the Timiș and Bega Valley in the second half of the 19th century. The agrarian reform undertaken after the partition of Banat in 1918 saw further works in each of the beneficiary countries (Romania and Serbia). These were later followed during the communist regime by a somewhat Golden Age of hydrotechnical works. From 1957-1970 the length of the river network (rivers, drainage canals, irrigation and erosion control) reached a length of 11,542 km. With the weakening of state wide agricultural policies, and regulatory bodies and institutions as a consequence of the 1989 anti-comunist revolution, the system has entered a period of disarray. Systemic failure due to lack of maintenance and planning, lack of funding, speculative land use, led to serious imbalances visible throughout the entire ecosystem .

It is needless to say that all these spatial phenomena are related to the specific policies and administrative decisions governing the studied territory throughout its history. Their impact on the quality of life and the quality of the built space, are launching today a new fertile ground for research, with a series of working hypotheses that can and will be addressed by the methodologies employed within the proposed teaching module.

RESEARCH OBJECTIVE

The research aims to develop connections between the history of the natural or anthropic landscape, with the built heritage, identifying those points of connection that make us better understand the entire ecosystem. Starting from the European Union climate action and European Green Deal we can build an open research and innovation base, applied to particular situations, specific to the Banat region where the

theoretical discourse necessary to understand all the components of this territory will be complemented by innovative methods and tools of exploration and interpretation of field data.

The regularization of the rivers courses, the remediation of swampy areas and the definition of a transport infrastructure has played an important role in the reconfiguration of a unique landscape in Romania and in the region. The objective of the research is to develop a methodology for exploring and understanding the particularities of places in relation to the whole system.

SOURCE AND RESOURCE

Investigations on the evolution of watercourses through repeated regularizations and remediation of swamps and their impact on the evolution of the territory and the type of construction are an important component in the proposed research.

Soil quality and understanding the type of remediation and erosion are connected by the evolution of the household in the region, being an important component of the ecosystem.

The natural vegetation existing in very small areas, are considered traces of a natural landscape transformed and attacked during this period by industrialized agriculture and harmful soil treatments. The few traces of this landscape can be elements of study and research in reconsidering regional theories and policies..

INNOVATION. Understanding the built heritage by referring to the existing hydrographic system and how it influences the quality of the land and the built fund. Groundwater or groundwater dynamics influence the type of approach in contemporary design

THE OBJECTIVE OF THE COURSE PROJECT

The built heritage of the Banat area is connected to the landscape and its evolution, which makes us develop a new approach to the educational process where the emphasis will be on the understanding of the whole natural system to which a built object or place is connected.

The course is based on the guidance of diplomas from FAUT, being the only time when working mechanisms can be introduced in accordance with the theories and specifics of heritage and landscape topics.

Documentation is a permanent concern because it must become a tool of maximum efficiency and responsibility for a specialist. The lack of archives, strategic documents or synthesized information makes any project dedicate too much time to this stage, which forces us to a new form of data organization. Digitizing documents and organizing a work structure is part of the course.

Exploring the territory is the main objective of this course by understanding the ecosystem in relation to architecture, being a multidisciplinary research that develops common semantics and theories, using contemporary methods and tools.

The interpretation of field data is one of the most important qualities of a specialist, being currently a major lack in the training of an architect, which can be compensated by such a course.



2 Background and rationale

Sustainable restoration of the heritage built in the natural landscape of Lunca Timișului on the segment Pădurea Macedonia - Rudna - Gad (stud. Timuș Sergiu, Maciulschi Daiana, Nica Mădălina, 2020) is a project that aims to meet the objectives set out in the previous chapter. The diploma is the only moment during our faculty when we have the didactic mechanisms to work multi and interdisciplinary.

Through this project we tested for the 4th year in a row a methodology to be developed in this course, where we started from a holistic analysis of the Luncii Timișului area in the Banat region, then the team of students to focus on the defined segment of the Macedonia Forest, the villages of Rudna, Crai Nou and Gad. In the first phase of development, the study aimed to present a territorial strategy that took into account the following aspects:

- recovery of heritage objects and their connection to existing mobility strategies at regional level;
- completing the infrastructure with a bridge connecting the three villages and developing the mobilization corridors;
- creation of a protection corridor of the Timiș River by restoring the landscape between the dams of the Timiș River;
- development of three projects as interventions in the cultural landscape, by defining three distinct themes for each student: Visiting center and cultural route, Agri - Park on the Nikolics domain, Agricultural research station in Gudenus mansion.

Other Papers, studies or documentations that have had the same theme or similar approaches:

- Diploma papers of the students from the Faculty of Architecture and Urbanism from Timisoara: Oravița 2017, Herculane Project 2018, Lugoj 2019, Sevilla 2019.
- Projects: Restoration and arrangement of the Square in Ciacova, Mihai Eminescu Theater in Oravita, Medieval Tower in Ciacova, Landscaping in the meadow of the ASTRA Museum in Sibiu, CUCA- Cartisoara Cultural Center.
- Scientific works: Identity layers in urban landscape. Restoration interventions at the Citadel Square in Ciacova, Timis Country (Rusu. R. Ciobota A., Demetrescu B. Floca A. _ Patrimonium Banaticum VIII 2018),

Some of these diplomas have already been awarded at events such: Daiana Maciulschi with Agri-Park on the Nikolics field in Rudna (Mention at the 22nd Salon of Architecture in Novi Sad, projects selected for BETA 2020) Ioana Stan (1st prize at Graduation section of Beta 2020).

3 Methodology, tools and research

The method of transmitting information has two components, the theoretical and the applied, structured on the following stages:

INTRODUCTION to contemporary theories of understanding the cultural landscape and built heritage, as well as the presentation of studies and the state of research. To be organised as a two hour lecture during the first LTT.

TERRITORIAL EXPLORATION is the most important component of this course, being based on the identification of work methodologies specific to each place, where the particularities and resources of the place are considered the basis of the research project. The immersive exploration of the territory in question will be performed in conjunction with other research topics. In this respect, working under the banners of the teaching methodologies developed for the exploration module, students and their tutors will simultaneously look at different aspects of the natural and built landscape. It is proposed that in case of this immersive experience bike's are used instead of cars, so that alternative routes of movement, especially ones used by locals are emphasised. Coupled with other research interests the immersive experience should take no longer than three days of field exploration. This phase is compulsory and of absolute necessity if a holistic comprehension of the nature of the territory is to be achieved.

The immersive experience should try to identify the areas of conflict or tension between the hydrographic landscape and other functional spatial conditions; agricultural land, built areas. These tensions will be further analysed and interpreted in a larger context. Tactical interventions should be designed during the implementation Phase. The BME team has also shown interest in this approach during the site visit organised in Jimbolia in March 2020.

ANALYSIS + INTERPRETATION. The historical study of the stages of landscape transformation involves an investigation on a well-defined area (in our case the localities Jimbolia - Comloşu Mare - Kikinda), highlighting the evolution and involution of the anthropic landscape and its role in the development of the region. The data obtained from these studies can be taken and can be the basis for predictions in the evolution of the natural and anthropic landscape. (Example; Study of how the course of a minor riverbed changes or a study to understand the dynamics of groundwater). Working methods using Field Investigation Kits by different methods: tomography, scanning, GPR, Lidar, pedology, materials analysis, etc. The analytical phase should take no more than two to three days of material editing and debates on the information gathered.

INTERVENTION STRATEGY. Proposal for an intervention strategy on the existing built fund, starting from the data provided by investigations on the natural or anthropized landscape. (Opportunities for introduction of these studies in PUGs, PUZs) The duration of the final phase is to be further discussed in preparation of the second summer school.

4 Expected results / Intermediate results

This course support is an integral part of the module for understanding and exploring the territory, being the one that analyzes quantitatively and qualitatively the relationship between the natural or anthropic landscape and the important built background in the region.

The course develops a correct attitude for architects and specialists in their professional practice, determining a greater attention and work support in the development of a rural architecture connected to the real values of the ecosystem.



The working methods will be able to be the basis of any technical documentation for the elaboration of spatial planning strategies, which can significantly contribute to the development of quality in design.

The study areas that can be launched to summer schools or application course modules:

- Jimbolia-Comloşu Mare-Kikinda;
- Ciacova - Macedonia - Rudna - Gad;
- Şag - Pădureni - Unip - Uliuc;
- Otelec - Iohanesfeld - Foeni - Cruceni - Border Guard / Ciavoş - Iaşa Tomici / Modoş;
- Periam - Sânpetru Mare - Sânnicolau Mare;

All these relate to existing or modified watercourses and are influenced by the evolution of the hydrographic system. The study can be extended to Serbia and Hungary following the course of the Mureş, Timiş-Bega, Bârzava, Caraş, Nera river basins.

The relation to a complex hydrographic system but also the particularity of each site, as well as the difference between the 3 countries, make these themes very important for a regional reset.

5 Next steps / Discussion

To prepare the final document, the following steps are required:

- preparation of the immersive experience in light of a “proposed situation in a well-defined context” This has been partially addressed during site visits in and around Jimbolia in the months of July and August. The research team has photographed several of the canals that are part of Jimbolia’s hydrographic system using aerial drones. These images are currently being compared with the hydrographic maps obtained from the archive of Hydrographic Administration of Banat. The BME team has already shown interest in the canal surrounding Jimbolia and in particular for its landscaping as well as functional role. The canal is however to be analysed in relation to its wider functional context and connections with neighbouring localities stretching beyond the border as far as Serbia.

A second topic of relevance has been identified in the clay pits on the outskirts of Jimbolia, as part of the former brickworks. While no longer part of a productive system, the clay pits provide an excellent case study for sensible design. It is a well known fact that several local administrations have sought to transform this pristine area into an AquaPark thus diminishing its natural, aesthetic and cultural heritage. The research team is considering working on alternative models of prudent reevaluation of this artificially formed natural landscape. Moreover, though their vicinity to the former brick works, the clay pits are also part of a larger urban system, one that is encompassing the Futok, workers colony- a research area considered as a case study in the UNDERSTANDING THE TERRITORY AS A SYSTEM teaching module. Last but not least the clay pits and the entire hydrographic system around Jimbolia will be compared to the similar ones visible on the Serbian side of the border in the neighbouring town of Kikinda. Historically speaking both Jimbolia and Kikinda have been part of a common economic ecosystem developed around tile and brick making

industries. In the past two decades both towns have lost this very important and traditional economic asset.

- identification of working tools. Part of this process will be done in conjunction with the UNS team based on its previous experience using digital tools for analysis and interpretation of environmental conditions. The team representing the department of Agricultural and Industrial Buildings within BME will also assist and has made their own proposals regarding the issue of land use and natural landscape. Specific roles are to be assigned during the next Transnational meeting in preparation of the LTT.
- Following the conclusions of the TM a course brief and a specific research methodology, combining work tools and ideas from FAUT, BME and UNS will be further developed.

6 References

[intermediate drafts] [Final draft]

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Rusu Raluca, R.R, Floca Alina, F.A., Ciobotă Alexandru, A.C., Demetrescu Bogdan, D.B., 2018, Peisaj și patrimoniu. Intervenții de restaurare la Piața Cetății din Ciacova, Revista Patrimonium Banaticum, ISSN 1583-4220

Attachments

[intermediate drafts] [Final draft]

Add any further documents, information, etc. as attachments (which may be links to other documents).

TRIPLEX CONFINIUM

O1.UPT03 - UNDERSTANDING THE TERRITORY AS A SYSTEM. URBANISTIC LAYER v1 DRAFT

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Objectives of this document

The document proposes a methodology for developing a course regarding the character of the territory from the perspective of usual means and instruments of urban and territorial planning.

Who is this document for?

The document will represent the foundation for an introductory course in the spatial aspects of territorial planning, from the level of a well-determined geographic region to the particular level of each settlement, with exemplification on the historical territory of the Banat region.

Contributors

The authors of this output are Mihai Danciu, (UPT). Contributions from Stefana Bădescu (UPT) and Cristian Blidariu (UPT). Further input on the proposed methodology was provided in several discussions carried out with the UAUIM team and the SUSKO team.

Mihai Danciu is a spatial planner and sustainable development activist, concerned with urban and community management. Teaching urban planning disciplines in two universities in Timișoara and being involved in projects in Jiu Valley, Timișoara and Chișinău. His practice philosophy is based on the conviction that sustainable development is only reached through a combination of bottom-up and top-down approaches.

Stefana Bădescu is assistant professor within the Faculty of Architecture and Urban Planning in Timisoara where she lectures on the History of Urban Planning. She also is also a tutor within the Second Year Design Studio where her work is focused on the relationship between housing and urban context.

Cristian Blidariu teaches the course of Architecture Theory and coordinates the 1st year Architecture Studio within the Faculty of Architecture and Urban Planning in Timisoara. Between 2010 and 2016 he was a contributor and publisher for *Architectura 1906*, the Official Review of the Union of Architects of Romania, for which he coordinated several special issues. He has also collaborated with *Igloo* magazine. In 2017 he was one of the coordinators of the FAUT participation in the Vienna Design Week festival. As a practitioner he participated, among others, in the project of rehabilitation of the Theresia Bastion, a topic subsequently treated in the PhD thesis *Art in the postmodern city, urban regeneration and virtual space* presented within the doctoral school of the Faculty of Arts and Design in Timisoara.

1 Aims and Scope

The following proposed teaching module aims to develop a methodology of research, teaching and exploration through map making and immersive observations while using a historical understanding of planning decisions. The lecture will offer students a better understanding of the main stages of growth, stagnation or degrowth, in short, the evolution of preplanned territories (in our case the Banat plain and its settlements). The time lag between the emergence of various urban planning concepts and political ideas in the world, and the time of their implementation locally will also be observed. The course also aims to



facilitate an objective understanding of a territory by analyzing the physical components that determine its structure. Upon completion, students will be able to better correlate the various components of a territory and their contribution to a higher order within a hierarchical system. Elements like plots, buildings of various programs, infrastructure works, public space, and settlements as a whole etc..) will however be seen in a new perspective, as a manifestation of a political project bound by a specific model of administration. Considering this, the course involves the joint completion of some stages introduced by the teacher, in relation to a specific area.

Problem definition

The spatial configuration of the Banat territory is the reflection of the succession of various policies, demonstrating coherence, especially over a long period of time. What impresses in the particular Central and Eastern European cultural space is the coherence in planning a stand-alone region, with distinct socio-economic relations and particular development policies. This continuous political and economic experiment was started with the colonisation of Banat by the House of Habsburgs during the XVIIIth century, after the entire region was conquered from the Ottoman Empire. Habsburg policy was swift. All Ottoman structures were demolished and in their place a new modern ideal setting was overlaid. The region was remodeled in all its aspects, its topography, its hydrographic basin bogged down in immense marshes, its settlements with their new positions and colonial layouts, roads, bridges. A region born out of economic needs following typical absolutist political ideals. This mode of development was followed in the XIXth and XXth centuries but under different political auspices. This of course would not be in itself a unique situation as several other European areas have followed similar routes. What is of particular interest is the degree in which these initial policies are visible even today, not only in the physical manifestation of the territory but in its overall economic performance. For the past three decades the entire area, and not only its titular city Timisoara, has been a powerhouse in the Romanian economy. Is this a consequence of its proximity to western markets? Does the overall organisational layout of the region play a role in this success? Even so, the distribution of wealth is not equal among the different FUAs of the regions, and while some areas are growing others are shrinking as a result of the new capitalist spatial and economic logic. It seems that again politics, or lack of any clear ones for that matter, are remodeling a spatial condition that was once designed to operate in perfect tune. Is the inherited spatial fram

Considering these, the main problem is to identify the connections between the policies dictated by Vienna, Budapest, Bucharest and their effect on the cultural territory of the historical Banat. By understanding these reasons for being, one can also understand the circumstances for which the settlement system as a whole, but also the localities in particular, have undergone over time operations of modification, alteration, extension, relocation or even removal.

Working hypothesis

Although considered a uniform, homogeneous territory, excessively controlled at least in the horizontal (plain) area, the analysis of the evolution of different planimetric typologies shows that the situation is somewhat different: although there is a high level of coherence, the current de facto situation is the result of a mixed approach. The territory has gone through distinct periods, moving from a system with a military role supported by an exploitation of soil resources by medieval methods (Turkish period) through successive planning stages benefiting from the technological advance of industrialization (related to the Austrian,

Hungarian and Romanian stages) towards a system controlled by accessibility and economic power of urban centers (related to the Romanian post-December period). The hypothesis introduced refers to the fact that the formal order of the localities cannot be interpreted as uniform, but as a result of punctual processes that overlapped various approaches.

Understanding the structural morphology of the settlements in Banat, the working hypothesis states that there are only a few cases resembling a single typology. Most of the settlements present mixed types of development, resulting after the implementation of multiple social, historical, economic and geographical factors. Most of the typologies present combinations of three or four types of morphology, with some reaching even five or six ones. The latter belong to the mountainous areas, or those with a complex type of natural environment. This variety can be observed by analysing the individual parcels and the structure of the households, confirming the complexity and diversity of the entire territory.

The hypothesis introduces references to an unevenly systematized territory, that is however a manifestation of a larger totalising governing ideology, one that was fluid in its interpretation of the various features of the topography and physical resources. At first, there are the villages in the plains, usually compact, resulting from a controlled process, according to a plan. They have firm boundaries, preserved up to the present day. In some aspects, the marketplace is replaced with the most important crossroads in the village, representing the differentiation between settlements forming a community and one that is only a human group accidentally settled in the same place. In the second place, there are the villages in hilly or mountainous areas, due to an organic process of gradual growth, with diffuse and dynamic limits which evolve over time. Some settlements are so dispersed that the built-up area cannot be determined with accuracy and the heart of the village is confused with its boundary. The whole space is the property which is administered by the community. The center is either the geometrical center of the settlement or is determined by the landform, history, an adopted model or local customs.

The Habsburg imposed a new network of settlements, totally different from the one organically developed during Ottoman rule. The only remnant features were Timișoara, as the most important urban center and Arad as a gate towards Transylvania. There was established a new territorial competition between Timișoara, Arad and Szeged, regarding culture, commerce and industry. It is important to understand the different phases in planning the entire system of settlements:

- First phase (1718-1740), recognized through the consolidation of existing villages and establishment of new ones. There are no (or not known) clear urban principles until Maria Theresa's reign. There is a spontaneous character of some of the initial colonist settlements (as in Sânpetru, Guttenbrunn - Zăbrani), as well as an intention to build new villages as Sânpetru (1724), Zădărlac, Beșenova Nouă, Peciu Nou, Deta, Kudric, Pișchia, Guttendbrunn (Zăbrani), Nermet and Vodnik (1723). The old settlements are colonised (Ciacova - area occupied by German colonists, Giarmata, Aradul Nou) - exception and urban configurations with exact geometry of street grid and lots are introduced in Deta, Peciu Nou, Beșenova, Giarmata. The Banat Mountains suffered a revitalisation of mining activities, with building techniques borrowed from the autochthonous environment (e.g. houses of reed);
- Second phase (1744-1777), during the reign of Maria Theresa, regards the process to transform Banat from a military to a civil region. One can observe the expansion of the existing settlements (Sânpetru, Pișchia, Giarmata, Recaș, Cenad, Periam, Sânnicolau, Zăbrani, Aradul Nou and others), as well as the establishment of new villages (Biled, Săcălaz, Jimbolia, Iecea Mare, Lenaheim, Neudorf, Frumușeni, Fântânele). Starting 1764, the Vienna Circular imposed control over buildings: house



position relative to the lot and the street, protected access to the house etc., house placed at the edge of the plot, perpendicular to the street, in a similar manner to the Franconian model seen in Transylvania, imposing barn separating the front and back courtyards, being flanked by the stables, a second house often present in the evolution of the residence, parallel to the first. There were, also, rules for the newly colonised settlements: rectangular form for new settlements, uniform or identical land to the old ones; usually rectangular plan of the villages (with a circular exception, Charlottenburg); central area, households, houses, materials used. Also, one observes the systematisation of some of the villages that the Habsburgs had found in the region: villages merged and made into a standard geometric form for military purposes, either by encouragement or by force.

- Third stage (1782-1787), during Joseph II, with a clear, standardised geometry in urban planning. After 1781 we find engineered projects for the houses, schools and churches built in the colonised villages
- The fourth stage of colonisation extended throughout the nineteenth century. The geometric plans dominate the plains and the important corridors of traffic, with some exceptions regarding the attention to the environment (Gărăna, Ravensca). The phase is dominated by compact households, dwellings and annexes encasing and defining an interior space which was mostly or entirely closed. The traditional rural habitation remains as a combination of older, medieval structuring and new principles.

The next stages brought significant additions, with an impact on the entire urban form, only in Timisoara and in its vicinity. The new urban structures resulted in a quality of life dependent on living in various types of neighborhoods (collective or individual housing) and the orientation of the economic components of localities as a result of the emergence or modernization of accessibility networks (road, rail). With the drawing of the border, the connectivity of the localities decreased, which is also decisive for the economic well-being of some of them. We recognize, however, an impact of new economic vectors in the development of secondary localities such as Sănnicolau Mare, Jimbolia or Caransebeș.

Why is this history important to the working hypothesis of this module? We believe that the study area offers unique opportunities for the study of these historical stages of urban development. Luckily the backward and inefficient nature of the socialist regime has inadvertently salvaged this history by not being able to transform it enough as to alter its character. As a consequence the processes were rather ones of decay than ones of growth. Transformation of the territory has been carried out mostly through agricultural reform, with the unification of all agricultural land under collective state owned enterprises (CAP). This situation has been reversed in the 90 with the reinstatement of previous property rights. Land is currently being amassed under the different banners of big local agricultural companies, headquarters of shore. To what extent is the initial planning, following agricultural production, still valid today. Are the settlements dotting this landscape still relevant to its functioning. Is the value to be found in their spatial and architectural layout, and can they be reinstated with new functional meaning? We believe that a new regional policy, rising from a clear political conviction can salvage this immense heritage, and that the response of future architects is detrimental in shaping this conviction.

Aim of the course

The aim of the course is to develop a methodology for understanding the economic performance and current euroregional viability of the different types of settlements built throughout history in the Banat plain. This will be achieved by looking at their spatial evolution using different scales of observation. At a micro level they will be analysed morphologically - with focus on the spatial relations between private space and commons, single family units (used for living, subsistence and even surplus production) and central community programs. Using a wider gaze but still a localised one, settlements will also be observed in relation to their immediate natural context, understood here as a primary economic resource and revenue generator for the said communities. In a final, larger context, they will be included within the network of regional functional urban zones, offering observations on their functional role within the economy of the region. By comparing and mapping past functions (assigned during a *one region, one state* narrative) with present day realities (confronted with a *three states, three policies*) a predictive approach might be generated in relation to the overall viability of the network of localities dotting the region as well as its transnational relevance.

Aim of the researcher/educator

The aim of the researchers/ educators is to offer knowledge and a new type of understanding of the various historical stages of territorial and urban planning decisions within the historic Banat region, while assessing their effects on contemporary planning policies. This is a new perspective that is in tune, as described in the Background and Rationale section of this document, with studies being carried out in several architecture schools throughout Europe. It is believed that the proposed methodology of exploration and theoretical framework will offer, in time, further opportunities for the partners to work on the idea of Territory as manifestation of a political project. Considering the EU's interest in developing strong transnational zones, NUTS and FUA's this will offer a solid theoretical framework for understanding the spatial urban and architectural conditions defining these differently scaled models. The target area, historical Banat, offers ample examples of various spatial conditions dealing with controlled or planned growth and degrowth, border phenomenons, land locked areas, with case studies that are relevant in the assessment of similar regions defined by post socialist realities.

2 Background and rationale

[intermediate draft]

The reconsideration of the urban project as impacted by pure political thinking, itself based on various needs of economic growth and social control of space, through the employment of various architectural morphologies, has seen a quite a renaissance in the field of urban studies during the past decade. This intellectual perspective on the political project of the city has already been described in the research of Pier Vittorio Aureli and his Berlage PhD research group between 2009 and 2013, summarized aptly in *The City as a Project* volume of collected essays. Aureli argues that, now more than ever, we need to have a political understanding of the processes and individual design decisions that have shaped our current environment. The book attempts a historical survey of the political idea behind this world building project, by looking at the decisions that architects, as enablers of state policies or cultural trends, have taken in their designs, thus modelling a somewhat predictable societal response. In this respect the area to be further

analysed, the historical Banat, is the product of just such a thinking process, a built expression of an encompassing model of political rule.

The course plan follows the information accumulated and interpreted in time, especially in the contemporary period, regarding the historical Banat area. Compared to the general nature of the information presented before, it refers to the archetypes of each urban form (previous planning patterns and implementation examples, seen here as manifestations of a political and administrative project), as well as to subsequent changes or alterations that still occur today. The course will not limit itself to a descriptive analysis of the encountered morphologies, but will produce a critical analysis of the political thought behind these spatial and formal manifestations, observing the impact of geopolitical thinking on local development throughout the last three centuries. By gliding between these historic periods, each with its own political narrative, the course will look at the geographical, social and economic constructs that present day architects have inherited as context for their own designs. In this respect a few questions can be raised. Is present day architectural discourse still bound to operate with predictability and sensibility within this heterogeneous cultural landscape? Should local architects work contextually or should they use a non referential framework of thought?

As Marcus Breitschmid observes, historically, until the dissolution of postmodern narratives, architects and planners were bound to operate within clear conceptual frameworks, defined by strong cultural, political, economic and societal beliefs. This is no longer the case in the present day non-referential world, when no clear political narrative or ideology can be thought of. The context however remains, as a vestige of these former grand scale ideologies and top down decision flows. In the ontological absence of any concrete truths is the architect and planner to define his own truths within this context? This is a question that needs pondering. Either way understanding the territory as a designed system, with functional as well as symbolic attributes becomes even more important. What is of value, what is not, how have planning decisions over time transformed each grand narrative regarding the functional meaning of this territory? Is the EU currently providing a workable plan that is valid for this type of territory? Are the national states themselves capable to offer a believable and coherent narrative? Is this narrative encompassing as former ones where, or is built incrementally out of a multitude of small scale interventions. To answer these questions, the proposed methodology reconsiders just how such planning decisions were addressed through time, as a manifestation of clear political thinking.

Taking into account its educational role, the course takes over working methods already used in the Faculty of Architecture and Urbanism in Timisoara, within the disciplines of History of Urbanism and Urbanism. Thus, there are three methods that are useful for interpreting the morphological context of the settlements in the Banat Plain.

The first method offers competence in the reading and interpretation of certain urban theories and practices starting from the Renaissance period until now. Going through different historical stages the methodology aims to shed light on the impact that certain political decisions have had on territorial development. The spatial impact of these aforementioned theories and political gestures will be tested, verified and confronted by simply overlaying their narratives on the territory in question. Is there observable correlation or not? Is the initial programming playing a role in the current status of the region. Is it helping or hindering development? Are there any observable top-down grand narratives today?

- Exercise 1, "Renaissance: the ideal city - Reconstruction of the Timisoara Fortress after the Habsburg conquest", proposes for study to third year students the current situation of the historic



district Cetate (downtown Timisoara), identifying the following elements: the fortification system built after the Habsburg conquest, the specific characteristics of the ideal city (shape in plan, bastions, gates, etc.), as well as the way in which the current urban structure integrates these elements; the regular street plot drawn inside the fortifications, highlighting the elements that counter-regulated, as well as the reasons that generated these exceptions; the network of markets in the urban space, with the identification of the functional specifics of each nucleus.

- Exercise 2, "Renaissance: colonization of the New Indies - Establishment of new settlers' settlements / restoration of existing settlements in the Banat area according to the new principles, under Habsburg administration" proposes for study to third year students the current situation of Moravița and Voiteg settlements, identifying the following elements: the regular street plot, with the highlighting of the initial street hierarchy, as well as of the subsequent changes in the urban structure; the network of markets, explaining the current use of public space; subdivision system.
- Exercise 3 proposes for study the evolution of the Fabric and Iosefin neighborhoods, developed under the Habsburg administration, with the identification of various specific elements: the boundaries of the two studied districts (Fabric and Iosefin), the drainage and sewerage works of the Bega river and the impact that these operations had on the development of the two studied districts are analyzed, highlighting the route of the navigable canals made under the Habsburg administration, position ports, the position of the foreign exchange markets, the position of the main industrial areas developed along the new canals, the construction works of the railway routes and the way in which their appearance influenced the development of the industrial sector with the highlighting of the specific elements. under the Hungarian administration, the position of the stations, the position of the production areas developed in the vicinity of the railway, the new industrial architecture programs that appeared with these transformations (water towers, factories, warehouses, etc.), particular elements of Timișoara, such as tram transport, public lighting, etc.
- The exercise continues to the contemporary period, with the observation of the impact of Camillo Sitte's theories on the downtown market system and the large-scale construction of collective housing neighborhoods during the communist period.

It proves to be a very efficient exercise, because at the end of it, the students learn to understand the Banat territory as a whole puzzle resulting in the implementation of various theories and territorial planning methods.

The second method simulates decision making processes by proposing a debate between students playing out specific roles in the settlement (governor, priest, architect, military commander, citizens' representative, trader). Each of the groups receive an initial spatial-historical conditioning, through physical, climatic and temporal elements. In this framework they will have to implement a human settlement, through the basic characteristics. At each subsequent seminar, the conditions will change, and the students will change the set built according to them. Even though it considers the evolution of settlements that are not specifically placed in Banat, the exercise proves to be useful by challenging students to make decisions in a new context, following the patterns of spatial morphology applied in various historical circumstances.



3 Methodology, tools and research

[intermediate draft]

The working methods refer to two components: the understanding of the spatial configuration and the teaching method. Thus, understanding the context involves:

1. study of bibliographic sources to understand the historical context: the four stages of pre-war colonization, followed by the periods: interwar, communist, contemporary. The bibliography considers the research of authors regarding the specific area of historical Banat, separating the methods applied in the plains to the ones applied in the hillside and mountainous area, irrespective to the border;
2. quantitative analysis by overlapping plans from successive periods: grouping of several settlements into a single, geometric one, alignment of compact old structures resulting in regular structure, reconstruction, usually on the same site, of some settlements grouped together with irregular structures, a new settlement adopting a particular geometric layout or mixed procedures;
3. qualitative, comparative, planimetry analyzes, regarding the socio-political and economic aspects that produced the plan presented above;
4. identification of archetypes and reference to colonial patterns of settlement morphology, with regards to certain specific phases of implementation;
5. identifying the particular aspects that led to the modification / alteration of the situations, considering three examples of mixed type methods.

The method of transmitting information has two components:

1. theoretical introduction: justification and reason for an urban morphology, with reference to the site, social, economic and political background;
2. practical application - an exercise upon specific examples.

Discussion around the analysis results aim to prove that most of the villages are continuous - compact, whether or not a consequence of the Austrian systematisation, with a morphology integrated in one or more of the following models: cartesian, geometric-orthogonal (as Voiteg, Moravița), circular (Charlottenburg), linear (villages close to Charlottenburg), lenticular piazza (Aradul Nou, Reșița Germană, Bocșa) and mixed plans (geometrical and free conformations - most cases, resulting in complexity and diversity).

4 Expected results / Intermediate results

[intermediate drafts]

At the end of the course, students will be able not only to describe the character of a territory according to its fundamental constituent elements, but to understand them as morphological elements of a vocabulary that is linked to political discourse. Only through this type of higher understanding can present day planning be understood as either a continuation of this political project or a negation of its principles. These observations will shed light present day interpretations of several well-defined contexts. Impacted students



will gain competence in assessing the qualitative parameters of four spatial situations: central areas (symbolic centers of local community), coherence of the urban fabric (aesthetic manifestation of cultural cohesion and common spatial ideals), liminal or border spaces seen on the outskirts of the compact built area,(traditional areas defined as commons with economic relevance) respectively locational relations within the territory (relevance in a larger landscape type understanding of territory). The expected answers are not considered to be correct or incorrect, but debated through various theoretical tools (introduced by the course coordinator or developed individually).

It is hoped that through the proposed theoretical perspective, methodology of research and critical debate stages students will develop situational awareness and competence in dealing with projects within this type of territory.

The authors recommended that the proposed methodology and theoretical support is further developed in conjunction with UAUIM's *Grid and Border as instruments of Planning and Criticism in architecture*. (01.UAUIM01). This will be done through a correlation with the Grid /Border methodology proposed by the UAUIM team with the grid being used as a reading/ writing instrument for design. These correlations will highlight the shifting patterns of land use, as well as the resilience of functional meaning and purpose, or lack of for that matter, visible in case of the various built programs and archetypal models inhabiting the grid. This in itself can offer not only a prediction on the viability of this spatial model but can develop a guideline for the Design and Implementation module. Furthermore, since the proposed lecture and its applied methodology of observation is focused only on the pre modern, and early modern era, UAUIM's *Comparative Narratives of the Recent past, (Big vs Minor History during Socialism)* will move forward the critical discourse well into the XXth century highlighting the political social and cultural transformations arising from the partition of the territory at the beginning of the XXth century. This should further highlight the power these predefined and resilient spatial structures had on collective attitudes in spite of national policies. By mapping the formal and informal, the major and minor narratives, a deeper assessment can be made not only on the impact spatial planification had on our current reality, but how this reality built of its own micronarratives is today using the inherited spatial suprastructure. These observations in themselves will be compared to the current development of Local Functional Zones, especially in relation to the border area, a topic addressed by SUSKO's geography team.

5 Next steps / Discussion

Next steps [intermediate drafts] / Discussion [final draft]

To prepare the final document, the following steps are required:

- a course brief preparation in conjunction with UAUIM and SUSKO after second Transnational, in preparation of the summer school;
- detailing of a number three study cases (localities and landscapes) in the vicinity of Jimbolia as Jimbolia will serve as the main FUA and anchor point for the case study. These have been mapped during summer of 2020 when several potential candidates have been singled out. Neighbouring communes have been scanned using drones and specific imaging has been produced. These localities will be agreed upon once the fixture of the first LTT becomes definitive, as there is still uncertainty vis a vis border crossing possibilities.



Of particular interest in this initial stage of the research is considered to be the Futok area built as a workers colony on the outskirts of Jimbolia. The area was mapped on two separate occasions with guidance from Sergiu Petru Dema, local manager of the cultural House. The area was visited in March 2020 by a joint UPT UAIM BME DEB team, with the conviction that the observed situation can offer an interesting case study regarding the planning processes implemented by top down economic drives. Several visits organised by the FAUT team followed as part of a master thesis coordinated in April, May and July 2020 by Associate Professor Cristian Blidariu, dealing with the morphological layout of public space and streetscape in the neighbourhood. The area in question is important because of its morphological particularities in regard to Jimbolia's previously planned XVII th century colonial settlement. Built in the late XIXth century as a workers colony at the initiative of the Bohm family that was running the local brick factory, the neighbourhood serves as an apt example of the economic, cultural and ethnic and transformations that have shaped local spatial realities in the past century. Although morphologically intact, both spatially and architectonically, the neighbourhood has lost all functional significance with the demise of the local brick industry. Built using a grid system the area collides nonetheless with the original grid of the historic settlement. It thus lies somewhat outside of its geography, as a spatial manifestation of the outsider. Perceived by many Jimbolian's as a ghetto on the outskirts of their town, that area is however of immense value within the cultural landscape and history of the place. Similar examples of functional loss can be observed in neighbouring colonial pre-planned villages that have themselves lost functional relevance with the advent of industrialised intensive agriculture. Looking at the effects that land unification under the banner of large transnational agricultural companies has had on local producers and overall land-distribution, FAUT's researchers have established several contacts with local entrepreneurs still resisting this trend. One particular such actor was identified in the Jakoby Family. Against all trends, the Jakoby's (an ethnic german family) have relocated themselves in Comlosu Mic. Coming from a different german village in the Banat plain, on the grounds of better soil fertility, the Jacoby's coupled this decision with the spatial opportunity that a former colonial house offered. What is interesting here is not only the economic reasoning for such a move but the almost symbolic gesture of recuperation of a valuable architectural object. The house has been transformed not only as a base of operation for the family business but also into an informal local cultural center. The house barn has received new functional symbolic attributes through its transformation in an open library for local children. (<https://hambarulcucarte.wixsite.com/blog/home?fbclid=IwAR356yGj4bZoyn5WvsH7sXW962BSWgNVaFmtdH7NEv-AKcxKLdOxyUO5mE>) A local cultural ecosystem and circular economy was thus started with the participation of the Jimbolia Press Museum. The FAUT research team wishes to further integrate these actors in the activities devised in the methodology of this teaching module. It is believed that with the participation of the Jakoby family and the Jimbolia Press Museum children of all ages might be introduced in the game type setting of the methodology. Children can participate in the research of the students observing the particular nature of their environment, its history, learn the art of map making, identify their places within this space, attaining a superior awareness of their environment. Secondly, the Jakoby's offer an interesting case study for the ways in which this territory can be re-evaluated. In this respect FAUT team proposes that UAUIM's *Comparative Narratives of the Recent Past*, use them as a case study for the informal narratives currently developing and reshaping the initial grid and encompassing spatial narrative.



- For the selected settlements the described methodology will be applied over the course of no more than three days. Ideally this will be done during a day of field trips and two days of map making and schematics.
- In accordance with the agreed LTT daily schedule an immersive “proposed situation in a well-defined context” methodology of exploration will be devised.

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[intermediate drafts] [Final draft]

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Address references you used in an alphabetical order using APA 6 style

Attachments

[intermediate drafts] [Final draft]

Add any further documents, information, etc. as attachments (which may be links to other documents).

TRIPLEX CONFINIUM

O1.SUSKO - Geographical tools in Territorial Exploration v1 DRAFT

Outcome 3 Activity COURSE + practical application (as part of the course)	
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[Final draft only]

Outcome 3 Activity COURSE + practical application (as part of the course)

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Objectives of this document

It is a pedagogical methodology for calculation and further analysis of the land cover in Functional urban areas (FUAs) by Using Urban Atlas data.

Who is this document for?

The document should be used during summer school in Jimbolia in order to teach students from different countries how to work with spatial data by using GIS tools such as Model Builder and Dissolve. It aims to develop skills for “reading” the land cover of FUA.

Contributors

Kaloyan Tsvetkov is associate professor at the department of “Social and Economic Geography” at Sofia University "St. Kliment Ohridski". In 2019 he successfully defended dissertation with the title “The transformation of urban space in socialist and post-socialist period on the example of Sofia, Bucharest and Bratislava”. In XXI century Central and Eastern European cities were changing at a rapid pace – economically, socially, politically. These changes are part of the post-socialist transition, associated with the deindustrialization process, economic reforms and changes in the urban fabric. He has been working in teams that developed strategic planning documents related to regional problems of Bulgaria and Southeastern Europe, including Municipal development plans, Regional development strategies, Integrated urban development plans.



1 Aims and Scope

World cities are increasing their population, assimilating and conquering new rural territories, they globalize and change in different aspects. The most important change is the functional one, which leads to the strengthening of the role and importance of the cities, the transformation of the urban cultural and living environment, which is reflected in a new look and purpose of the urbanized territories. These processes are taking place both globally and on the European continent. In the last three decades, global changes, political and economic transformations, the transition to a market economy, and EU integration processes have significantly changed the cities in the former socialist countries of Eastern and Central Europe. Although urban systems are relatively sustainable, their transformation is visible nowadays. Cities are the places with the greatest demographic potential, the strongest concentration of economic entities and investments, the most intensive flow of information and resources. The political and institutional changes that take place in Eastern and Central European countries are forcing the cities to adapt more quickly to the changes. By using the Model Builder tool, spatial changes can be traced and analysed. This can help show some spatial patterns of how cities are changing and help politicians and stakeholders for better city planning.

2 Background and rationale

Aldea, M. F. Petrescu. (2014). Urban growth patterns for Bucharest, Romania : analysis of Landsat imagery

Bogdan-Andrei, M. N. Constantin, G. Simion. (2015). Post-socialist urban growth of Bucharest, Romania – A change detection analysis on Landsat imagery (1984–2010)

3 Methodology, tools and research

The research begins with a review, systematization and analysis of the scientific literature related to the transformations of urban space and theories, concepts and models for urban development.

Then a short explanation of the obtained data from Urban Atlas project under the Copernicus program of the European Commission. The available data are for 2006, 2012 and 2018, respectively, and their territorial scope is under the FUA of border cities. Copernicus is a European Earth monitoring program that collects data from observation satellites, which are combined with data from observations from sensory networks on the earth's surface. Once collected, the data is processed, resulting in reliable and up-to-date information in various thematic areas. The information we use includes land use classes and changes in land cover characteristics.

After downloading the spatial data, the Dissolve (Data Management) function from Urban Atlas for the territories of the respective FUAs is applied to each of the layers. As a result of this step, layers containing the absolute area of each of the classes in all FUAs are obtained. In this way an aggregated polygon is obtained for each of the classes. At the next stage, in the GIS environment we add a column for FUA to identify which city the classes and polygons refer to. For convenience, the Modelbuilder application is used, which allows the creation, editing and managing spatial models and processes. The main benefit of its application is that it allows the automation of the process described above. An additional attribute field has been added to each of the attribute tables, containing information about the name of the city and the area



of the polygons. Using the Field calculator, we add the exact areas of each polygon class for each FUA. The Merge (Data Management) function was applied to the obtained spatial data, as a result of which a common layer was obtained, containing all classes falling within the spatial scope of the three FUAs. The attribute table of the obtained layer is the export in tabular form with the function Table to Excel (conversion), as a result of which a table in xls format with the data from the three FUAs is obtained.

4 Expected results / Intermediate results

The Urban Atlas project takes data based on satellite images and transforms them into land cover classes both for water and land areas. Land areas are divided into two subcategories: areas strongly influenced by man (1. Anthropogenic areas) and areas with insignificant or weak anthropogenic impact 2. Agricultural lands and 3. Forests and semi-natural areas. Water areas are divided into two subcategories - 4. wetlands and 5. Water bodies. The most complex are the anthropogenic areas, which are divided into 4 subcategories: 1.1. Settlements, 1.2. Industrial, commercial, public, military and private units, 1.3. Mining sites, landfills and construction sites, 1.4 Anthropogenic non-agricultural areas with vegetation.

The aim is to study the results and to trace the dynamics of the transformation of the land cover by translating the changes in the areas of the different classes of land cover. The survey period covers 2006-2018.

5 Next steps / Discussion

Next steps include further analysing of the processes and factors that contributed to this land cover transformations – economic, political, social, ecological etc.

7 References

- Aldea, M. F. Petrescu. (2014). Urban growth patterns for Bucharest, Romania : analysis of Landsat imagery
- Bogdan-Andrei, M. N. Constantin, G. Simion. (2015). Post-socialist urban growth of Bucharest, Romania – A change detection analysis on Landsat imagery (1984–2010)

TRIPLEX CONFINIUM

O1.BME - Levels of recognition - basis for future teaching methodologies v1 DRAFT

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Follow the guidelines on <https://owl.english.purdue.edu/owl/resource/560/10/>

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Objectives of this document

The purpose of this document is to help the theoretical and methodological implementation of an architectural education program. This document can be applied as a base for a hypothetical semester long course and/or a possible summer-school program in the future. Please notice that this is not yet an actual study-plan better a collection of basic know-how integrating the essence of experiences from two design departments (the Public Building Design Department and the Industrial and Agricultural Building Design Department) of the Faculty of Architecture of Budapest University of Technology and Economics.

Who is this document for?

This document is made exclusively for the Triplex Confinium project and for its collaborative partners. It is not applicable in this form as an individual study plan but can serve and understood as a basis for further developed study-plans also for an MSc Master course in architecture or as for a summer-school where the implementation of the methodology and the proposed toolkit can be checked out.

Contributors

Levente SZABÓ is an architect and a professor at the Budapest University of Technology and Economics, Faculty of Architecture, [Department of Public Building Design](#). He contributed to the design of public buildings, historic monuments, urban projects and memorial places as the owner of [Hetedik Múterem](#). He won several architectural prizes in Hungary and from abroad. He is the author of several theoretical articles, book chapters and a book. His interest focuses especially on the relationship between architecture and memory.

Zsolt VASÁROS is an architect and full professor at the Budapest University of Technology and Economics, Faculty of Architecture, [Department of Industrial and Agricultural Building Design](#). He is working on several research projects too, mainly in conflict and crisis zones, like Egypt, Syria and Mexico. His research activity focuses currently on crisis architecture. In 2000 he established his [own practice](#). Known for innovative designs and projects for museums, archaeological and natural environments. Over the almost 20 years the group of three founder-designers has become a vivid studio with 18-20 members, implementing various projects in the field of architecture, archaeology, interior design, and exhibition design.

Zoltan Major is a doctoral student at the Department of Public Building Design in Budapest. He graduated in 2014, then established the PRTZN – Partizan Architecture: Tactical Space Production for Use in 2014. The practical and theoretical activities of the group include architectural and interior design, furniture and installation design, as well as the production of public art projects and researches in the field of the built environment. He was a member of the Space Detournement Working Group. The group mainly created projects involving experts and local space-users in public spaces, aiming to detour urban and institutional spaces and re-define the ways of using them.

Gergely SÁGI is an architect and lecturer at the Budapest University of Technology and Economics, Faculty of Architecture, Department of Industrial and Agricultural Building Design. He spent a year at the ETSA

Madrid as Erasmus where during his studies he joined the design studio led by Professor José Ignacio Linazasoro.

Also, during his formation, he participated on several survey missions and field works abroad in Transylvania, Egypt, Syria and Iraq.

Now, since 2018 he is a student of the Doctoral School of Architecture of the Budapest University of Technology and Economics.

1 Aims and Scope

In this proposal an educational methodology is suggested by two departments of Faculty of Architecture, Budapest University of Technology and Economy and its application and development are presented for a new MSc program in the framework of the Triplex Confinium program. The paper presents a curriculum for one semester focusing on a design task.

According to our method, the deep understanding of the site is essential during the process of architectural design. Therefore, the design process starts with research. During this research, we collect information about the history, society, climate, economy, topography, nature, etc. of the site. We define the information as different layers of the place, which have connection and relation with each other. In order to find the starting point of the design, we have to find the connection among the layers. Because of the changing world and the various challenges, we have to continuously improve the methods of the recognition and the way of information processing. The new technologies give opportunity to develop new methods of exploration of the sites and the new requests, like climate change, are made new design questions. So, the number of the layers of place are constantly changing. We always need to find the relevant layers, which could lead to define the real problems. As a result of this method, the students understand the context of the site and can find right questions and answers of the design.

2 Background and rationale

[intermediate drafts] [Final draft]

Two departments of the Budapest University of Technology and Economics - Faculty of Architecture are participating in the TRIPLEX programme. Both are from the field of architectural design, however the different viewpoints can be an inspirational source for our future collaboration. In the following the documents show previous reference works, which help to create the new methodology of this programme. All of these projects started with research, which was the starting point of the architectural intervention.

Projects of Public Building Design Department

ABSTRACT

We are convinced that architecture has to be interpreted in a broader cultural context to understand this new situation, otherwise we will not be able to pinpoint the relevant issues and recognize the vital features of this era, let alone find the right answers.



Bio-briquette manufacturing building with locals, students and teachers Photo: Boczán Zsófia

Bio-briquette manufacturing building - Research project and construction workshop

It was a collaboration between the Public Building Design Department and the Maltese Charity Service. The location was Monor, a village close to Budapest, where many people live in the periphery of society. The aim of the project is to understand their problems and improve the living conditions. A station of the project was the construction of a Bio-briquette manufacturing building in the village by the cooperation of students, teachers and inhabitants in 2014.

The manufacturing building is made up of two annexes for drying and storage the tools and a covered outdoor space between them.

The project solved one of the most important problems of the village, the people can get cheap fuel for the winter heating in a sustainable way.



During the first site visit we made local interventions on the site. Painting the supposed border of the site plan of the monastery with light by night. Photo: Balázs Biri

Layers of a place - Design course as a crossover project based on the memory of a site

During the semester the students dealt with a special place of Badacsony (a cultural landscape in Hungary), where a pauline monastery stood in the 13th century. Nowadays just the topography suggests the original location and the possible form of the monastery. The aim of the semester was to focus on the relationship between the concept ideas and the imaginable and at the same time sensible context of the place.

In the first part the students got to know the material and immaterial layers of the place. After that they created small interventions. Through the interventions, they could understand the complexity of the place and explore crossover connections between the layers (history, topography, cultural, nature). The concepts should make the disappearing memory of the monastery understandable.

Projects of Industrial and Agricultural Building Design Department

ABSTRACT

We put our focus on innovation and research in educational methodology. All the programs we do and we did in the past ten years are to focus on extreme or at least uncommon situations where the students are able to try and widen their limits, experiencing the power of the unknown as a source of creativity.



The Time Box Pavilions by the village of Călugăreni at the day of the opening ceremony on 6th of may 2016.
Photo: Gergely Sági

Călugăreni research project – (RO)

Started in 2013 as part of a bigger international cooperation for the research of the eastern Roman Limes (within the framework of the Erasmus Programme financed Roman Limes as Cultural Landscape project) our work in the small transylvanian village of Călugăreni became one of the most long lasting and most successful research project in the recent history of our Department.

Our aim is not only the survey and documentation of the vernacular built heritage but we try to be involved in the recent development process of the village and actively take part in shaping the future of Călugăreni.

The results of our activities in the last seven years are the Time Box Pavilions (design by: Gergely Sági, built in 2015-'16), the Compass Lookout Point installations (design by: Vera Lócsei and Maté Ruga, built in 2017) and a summary book is yet to be published in this spring of 2020.



The volcanic hill of Somló. Photo: János László

Somló research project – (HU)

The picturesque and outstanding site of the volcanic mount of Somló is the smallest but one of the most important wine regions of Hungary. Our mission (as in the case was in Călugăreni) is more than the survey and documentation of the old cellars and the built heritage of the hill: our most important aim is the active participation of the development process of this micro-region.

That is why since years we propose the site as a possible venue for student projects. Within these past years countless proposals were made by our students, all of them focusing on the critical approach of this non singular, but as an ensemble valuable and quiet particular heritage. This spring of 2020 we will publish the results of our work in a summary book, which (as expected) could be also used as a kind of design guide for the future project on this site.



The mosque of New Gournah in 2018, designed by architect Hassan Fathy in the late '40-s. Photo: Zsolt Vasáros

Hassan Fathy Survey Mission – (EGY)

Since 2015 eight trips were made to Egypt (mostly to the Upper Egypt region) to research and to survey the still existing part of the heritage of Hassan Fathy. The outstanding Egyptian architect is one of the few world famous designers of the Islamic world, widely known for his life-long commitment to mud architecture.

Besides being an icon for some contemporary movements engaged by sustainable architecture, Fathy's oeuvre is surprisingly poorly-documented. Our main goal is to survey how the master's plans were really executed and to compare the existing buildings with the original plans. This way we could open new perspectives in the criticism of Fathy's oeuvre and better understand the architect's role during the construction.

The two books collecting some of our results from the last years was launched in February 2020 in Cairo.

3 Methodology, tools and research

[intermediate drafts] [Final draft]

The recognition is made in three different levels which can describe the different ways one can understand the surrounding and its meanings. These three levels are related to the level of the personal connection to the subject of the investigated context. The first in this term is the level of the research on the material nature of the subject (in our case of the architectural context), the second is the social meaning attached to the subject of the investigation and the third level is the description of the personal narrative of the task and the information obtained from the previous research itself.

As working method, we can describe these three level as the following:

- The first, the research of the material nature of the investigated context.

It is always measurable information. Here we find the surveys, the geographical context, the natural surrounding, the landscape or the built context. Everything that we can learn and understand by surveying and analysing physical data. We can use the classical methods (hand-drawn manuals and tape) or the most innovative solutions (drones, SfM, laser-scanning etc.) it will be only able to show us the physical “body” of the investigated context.

- The second, the research of the social meaning of the investigated context.

Whether it is an urban context or a single structure in the middle of nowhere, there must be a secondary (often almost hidden) narrative attached to it, which is always related to the social meaning of the subject. The social meaning can be practically anything, sometimes far from the original purpose of the structure or building. It is more often closely related to historical, cultural, religious or economical issues which one can reveal only by doing deeper, theoretical analysis. The tools we recommend to use in this level are basically the classical researchers methods: archives, bibliographical resources, interviews etc. It is now a more personal knowledge more related to the personal level, but it is still a common ground, influenced mostly by the whole society.

- The third level is the personal narrative of the investigation.

It is mostly the most questionable and most difficult to describe in a design method. However, it is the most important phase as it is the essence of the two previous levels condensed through the personality of the author itself. Every piece of knowledge obtained before in the other levels is fitted to the bigger picture by adapting them to the personal narrative of the one who made the research. It is not ever just pure recognition it is more: intuition, evaluation, critical thinking. In one word it is the first step of creating.

Our methodology is based on the systematic investigation of these three levels on different scales. These different scales could be described also as different layers of the territory and the built context. The result of every design task should be a building (or at least a structure or artefact with a certain functional approach understandable in architectural or urban context), but we consider it important to start a survey of the broader and wider surroundings or in our case, from a regional perspective, and then go closer and closer to the smaller scale of the precise architectural intervention. It is highlighted in our institutional



methodology that we invite our students to experience a previously mentioned multi-leveled, multiscaled investigation process before they start the design.

Our proposal is combined by three different levels based on the different scales of investigation and intervention. Please note, that the methodology and toolkit is related to the different levels, not to the different scales, so we can apply the same process to every different scale as we can consider that every level described before can be understood in every layer/scale.

1) The regional/general theoretical scale:

The investigation of the region and the wider theoretical context. The differences of land use, the planting of the settlements. Survey the different reasons and impacts on the development of the cultural landscape (social, economical, ethnical etc.) and their appearance in urbanism and architecture.

As a starting point we propose to the participants (students) to find the broader context of the future design task. The scale of the investigated context should be variable regarding the scale of the objective of the future design proposal. We can say if for example the objective was designing urban furniture it is quite pointless to start investigating the regional scale, but better the urban and environmental scale should be this widest context on which our proposal should have an impact and backward. Generally we should say that first of all we have to find the largest context which has to have an impact on our design and which shall be “upgraded” by the impact of the future intervention. This context can be interpreted also in theoretical terms as for example in ethnical, social, religious, economical etc. sense.

- On-site:

For the example taken from Jimbolia this contextual investigation should mean the research made on the whole Banat region, considering geographical, historical, ethnographical, religious, economical and ethincal information.

2) The settlement/directly connected contextual scale.

The investigation of the context which actually should mean a more or less direct physical connection to the subject of the future proposal. It is possible that this “physical connection” should be understood as the proposal is part of a larger, not necessarily visible but existing system of infrastructure, urban pattern, functional context etc. The difference between the regional/general context of the 1st point is that in the case of this layer the scale should have an impact on a defined group of the society. This way we can clarify the actual position of our proposal and the relevancy of that.

- On-site:

The investigation of Jimbolia’s urban structure and its surroundings. For example the survey of the remains of the former canalization system which is not in use for several decades but is still clearly visible in the structure of the settlement, it is still a barrier and a limit for the village, seen perfectly for example from the satellite images of Google Earth.



3) The one building (the personal) scale

The most detailed scale-layer is more or less analogous to the personal level recognition. In this case the subject of the investigation is just the context which is in direct physical connection with the subject of the proposal: the plot, the neighbours etc. In this scale the personality and individual narratives gain more importance as it is the case in the details of the facades or as we understand here that a house or a structure shows us yet more as an individual and not just a part of a greater mass.

- On-site:

For example in Jimbolia there are many possible solutions to that topic, however there are two different proposals considered as the most interesting by us: one is the site and remains of the former brick factory, the other is the site of the former Csekonics Castle on the fields. Both of them are mostly (or in the case of the castle totally) disappeared by the time, but on the site their existence can be noticed and should be signed. These two topics are ideals also to show and understand the importance of the layers and scales or the levels of recognition mentioned before, as they all are examples (and witnesses and victims) of how geography, history, economy, sociology etc. defines and modify architecture and urbanism.

4 Expected results / Intermediate results

The first draft is thought of as an integrated conceptual methodology made by the two design departments of BME Faculty of Architecture. We made this document trying to condense our different yet complementary experiences collected since decades in the field of architecture education to find a common ground for our future MSc course. The future objective of this paper is to help us to develop a possible program discussed several times before with the Triplex Team. In the short term it can serve as a basis for the next summer school in Jimbolia (to be held in the summer of 2021) but later on this paper is also a key document for the definite final education program as the most important conceptual statements are yet written in it.

Once we found common ground for our integrated educational methodology it will necessarily have an impact on our daily methods used for normal graduate education. We hope that this groundbreaking international and interdisciplinary way of teaching architecture will improve the skills of our participating teachers and students and this way can elevate the niveaux of the regular education of our Faculty.

We are convinced that our specific way of thinking, the joint experience of our two design departments working in different fields of architectural design and research combined with the almost 150 years of history and tradition of our Faculty is a unique knowledge. We want to share all this knowledge and experience with the Triplex Confinium with the aim to help to develop the best educational program possible for the future MSc graduation.

As we are in the very beginning of this work we are not able to precisely predict the final form of this graduation program. This condition does not allow us to establish a proper method to measure the impact of the specific skills, competences and knowledge the students obtained participating in our program instead of choosing any other regular one from the existing offer of the architectural school in our region. It is to be mentioned that we have to solve this problem within the further development period.



Finally we want to mention also that as our methodology is deeply based on the recognition and survey of the place it is key to have the local community involved in our projects in a certain way. Their involvement help us not only to discover the real problems and issues of the design task (frequently very different from what we saw for a first sight) but also we can help them to be more conscious of their responsibility in how they can shape their life-spaces and what they can do for their environments and communities.

5 Next steps / Discussion

The next step is to make a program for the summer school, which is based on the presented methodology. Till the summer school we identify the interesting place of Jimbolia and the relevant research methods. In the summer school we are planning to make a design workshop, where we can make research in the first part of camp, then based on the research phase we make architectural intervention. After the workshop we will evaluate our methods and if it is necessary we change and develop it.

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Attachments

[intermediate drafts] [Final draft]

Add any further documents, information, etc. as attachments (which may be links to other documents).



TRIPLEX CONFINIUM

O1.DEB - RECOGNITION BY SMALL SCALE INTERVENTION v1 DRAFT

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Objectives of this document

The purpose of this document is to help the preparation of the theoretical and methodological part of a new architectural education program. This document collects the methodological elements of possible courses from summer-schools programs to semester long courses. It is not yet a concrete study-plan but works as a base, a collection of usable elements developed during the projects of the Department of Architecture of University of Debrecen.

Who is this document for?

This document is made exclusively for the Triplex Confinium contest and for its collaborative partners. It is not applicable in this form as an individual study plan but can serve and understood as a basis for further developed study-plans also for an MSc Master course in architecture or as for a summer-school where the implementation of the methodology and the proposed toolkit can be checked out.

Contributors

Tamás SZENTIRMAI is an architect and associate professor. He holds a Master's degree in architecture since 2003, with a thesis awarded by the Chamber of Hungarian Architects. Beside architectural design he is involved in art projects and in research as well. He is teaching at the Department of Architecture of University of Debrecen since 2013. He is assistant lecturer and the head of apartment since 2016. His research fields are contemporary Portuguese architecture and the architecture of learning spaces.

Miklós János BOROS is a sculptor and senior lecturer. He graduated from the Hungarian University of Fine Arts in Budapest in 2005. He received a doctorate (DLA) from the PTE Arts doctoral school in 2017. He is a senior lecturer in the Department of Architecture in the University of Debrecen since 2017. In his artistic work he explores the sculptural reinterpretation of spatial optical phenomena. He teaches drawing, creative representation and design projects.

János VÁGI is an architect and senior lecturer. He holds a Master's degree in architecture since 2005, with a thesis awarded by the Chamber of Hungarian Architects. Beside architectural design he is involved in art projects and in researches as well. He is teaching at the Department of Architecture of University of Debrecen since 2020. His conceptions about space and architecture are drawn in point of view of an engagement of fine art and architecture.

1 Aims and Scope

We don't really know where we live, although it is essential not only for the creators, but also for the clients of the developments, the decision-makers and the society, because it is necessary to initiate well-founded developments.



Our region - East-Central Europe - is particularly affected by this problem, the dramatic historical changes during the last centuries have cut off its former roots and cultural heritage, and local identity has almost disappeared.

Our approach is based on the intense, organic collaboration of place analysis, deep knowledge and reflective creation. Recognition, planning and intervention do not become separate, complement each other, build on each other.

An important experience can be the attitude and different perceptions of students from different cultural and educational backgrounds, which is likely to bring more complex results.

Subjective surveys, creation-assisted cognition, and small-scale interventions can effectively complement research on analytical cognition of a place, provide a starting point for larger-scale interventions, and become an important identity-forming element for society.

2 Background and rationale

The main focus of the Department of Architecture of University of Debrecen is design approach. It is not only the field of architectural design, but fine arts too and the wide area between them. We often don't distinguish them but emphasize the fact that we are dealing with spaces. Even if the product is a building, a furniture, a land-art project or a site specific artwork. Our different backgrounds and experiences resulted in a very wide range of spatial know-how which can be useful during this programme.

Different stages of cognition practice come into play at different stages of the creative process. It is a classic, commonly used method, if getting to know the place, as a subtask, starts at the beginning of the creative process, as the starting point of the design, and then detaches from the process, it loses its meaning, it does not play more roles in the creative process. This method contributes to the cognition of the place in the primary way, it does not provide a deeper cognition experience, or only to a lesser extent, it does not lead to the local embedding of the work in any way. In the case of certain works - which need to be clarified during the research (scale, type, etc.) - there is a possibility that, in contrast to the classical method, even in several sub-processes of the work, the work gets closer to the place. dimensions that go beyond what a simple site search can result from. Of course, when setting up the methodology, it will be necessary to define well what we mean by the hidden dimension of the place, as well as what works are expected to gain local knowledge during the work. To clarify these, we use already implemented projects and actions, which, although not specifically focused on this topic, affected the field of new place-learning methods on an experimental basis.

Tatabánya project

Field-based action, space and environment game (Tatabánya, 2014)

Spatial cognition games explore the properties of space (space) such as scale, spatial proportions, characteristic materials, identities and differences of architectural environment, properties of spatial perception (light, sound, smells), spatial phenomena related to movement (traffic, movement in space), learning stories based on local knowledge and experiences (local historical layer). These are all components that can only be born in the field, from the "in situ" knowledge of the design site. Guided creative games also contribute to the mapping of local conditions, the process of getting to know the people living there

and embedding begins. The aim is to achieve the possibility of “becoming local”, through which awareness-raising is realized, which results in the acceptance of subsequent field actions, the initiative and acceptance of the group, which facilitates communication with the residents, which is the key to the success of later actions. Spatial games are determined by creativity, so their number can be infinite, but great emphasis must be placed on their preparation. For these methods, game scenarios can be created that can be used in more or less any location. Such specific game scenarios during the action in Tatabánya were the following:

"Find your point of view!"

The game is done using image capture phones. Couples "compete" with each other, the goal is to get to know the surprising views and features of the place. We know our environment from the point of view of its environment, its hidden properties less. This game draws attention to spatial, material phenomena that are hidden, or even point to mind. First, one member of the pair looks for a vantage point on the scene that they find difficult for their partner to recognize. During the search process, your attention is focused on details of space that you would probably never notice on your own. Take a photo of the found spatial location with your phone. Returning to the starting point of the game, he hands over his phone to his partner, who sets off to explore the image on the screen. The search engine also analyzes the site with focused attention. If he manages to discover the image of the image, he also takes a photo with his own device so that the two images can be compared at the starting point. Then there is a replacement.

"Description activity"

In addition to learning about local history materials, the local level, the local historical layer, always provides novelties that backfire on design. The collection of this information can be done with the tools typical of sociological surveys (interviews, questionnaires), but it can also be done in connection with space games, as often these stories are related to specific spaces. So the primary goal of the game is to collect local stories that are told by the people who live there and relate to their environment (street, square, apartment, roof, whatever). The members of the group address the passers-by individually and tell a characteristic story with them. Once all participants have returned with a story, the act of narration can begin, which can also be accompanied by play. Lessons from stories can provide valuable information.

"Motion and space"

Getting to know space motion through exercises proves to be an exciting attempt to learn space. Closed channels are released, which in many cases also reduce creativity, expand cognitive instincts, and give way to a wide range of senses. In many cases, the development of this methodology requires the assistance of a specialist in movement art and movement therapy. Its leadership role provides security, breaking down the barriers that legally affect our established operations. The essence of these practices is not based on cultivating movement, but rather on perceiving the relationship between space and man.

Field-based action aimed at getting to know the place, by an installation created to map local conditions
(Message wall, Tatabánya, 2014)

It is important to get to know the activity and composition of the local communities, so that the later experimental actions, already aimed at cooperation, can be carried out with groups that show interest. Community activities were surveyed using a playful method, through which the activity and passivity of the local community became perceptible, and community was also able to assert itself as a constructive

method. The implementation of the installation built for community building games was also associated, as it is easy to initiate a dialogue with the locals through the tools of architecture.

The task of the installation is to initiate community interactions, on the basis of which a network of social connections in the living environment can be drawn. Knowledge of the social network and activity points is a key issue in preparing for the development of a part of a settlement, for example. To do this, a “message wall” installation was created, reinterpreting an already disused, dilapidated newsstand. The dilapidated pillars of the building were wrapped around a construction site with a ribbon that transformed into a clearly visible, eye-catching, aesthetic object. The wall of the building was covered with open envelopes, each apartment of each staircase (house) could be identified with an envelope, so the housing stock was outlined. On this interface, it was possible to message anyone who lives in the area (a friend, an enemy, a girl from the next stairwell I used to see from the window, etc.). The messages, which could be texts, objects, anything, were placed by the senders in the envelope to which they wanted to send the message. By the end of the day, the envelopes they had addressed also had a good visual outline of the local community network. The action showed well the problems of the act of involvement, the fact of social exclusion, the need for community activities.

Field-based action aimed at getting to know the place, by an installation created to map community needs (Hártyafal, Tatabánya, 2014)

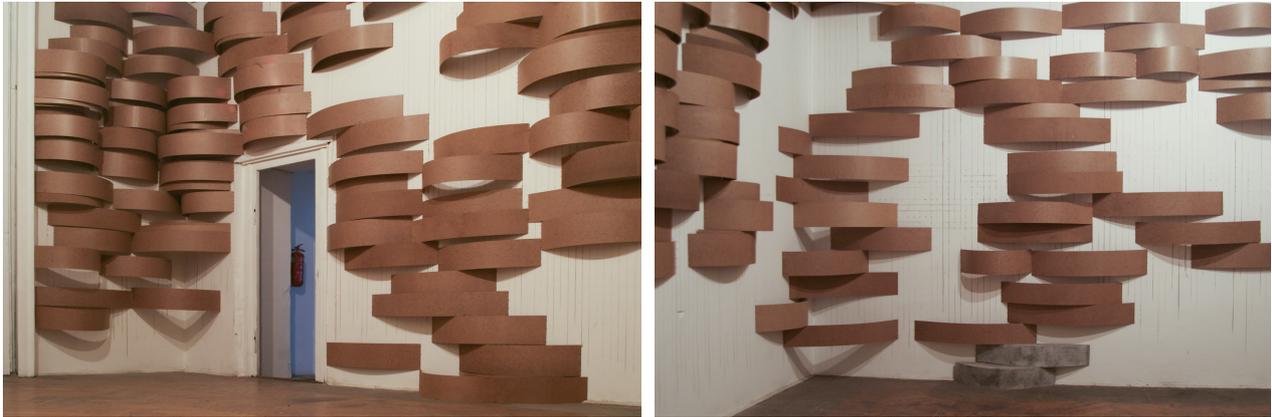
The action took place in an area compressing services in the center of a panel plant. Through the creation of an installation, the creative team sought contact with residents to map architectural needs. An so-called “membrane” wall was made in an alley-like space, which could also be considered as a means of raising awareness so that the work could interact with the locals. what is most lacking for those who live there (community garden, running track, market, etc.). During the dialogue, 400 responses were collected, visualized on the “membrane”, post-it was recorded (different responses marked with different-colored post-it), which contained information in addition to the aesthetic experience. About this, subsequent conversations could be initiated with those interested



Feszti - site specific installation (Budapest, 2009)

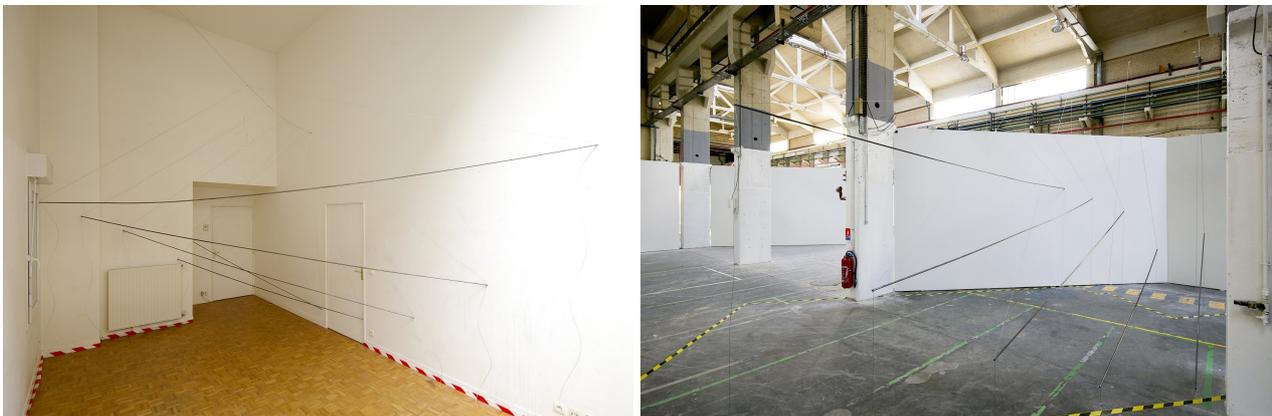
Recognition of a space can be realized by a reflective creation. We can get to know completely new details and properties of a space that is considered to be known - used every day - if we look at it as a raw material or a starting point for an artwork. The artwork begins to react, showing emphases and focal points, thus

revealing previously unknown layers of interpretation, which cannot be known with traditional survey methods.



Atelier - site specific installation (Paris, 2011)

Displaying or summoning a space elsewhere can be realized by highlighting, snatching out certain details, properties. Spatial perception can be effectively influenced by highlighting details. Architectural or artistic emphasis of one of the properties of the space allows for exciting new interpretations, it can influence the people's relationship to the place.



Tivoli workshop - site specific community recognition (Rome, 2002)

The Stalker studio in Rome, with the participation of architects, artists and other disciplines, is dealing with walking as a method of getting to know a space. Their method can be used successfully for projects that are quite short, from 1-day occasions to even multi-year projects. The premise of the one-day Tivoli workshop was that the individual actions, cognitions and interventions of the almost 30 people would eventually come together into a community cognition during the almost 20 km journey, thus the originally very subjective elements would result in an objective place interpretation. Individual interventions can be very wide-ranging: the placement of pre-made elements, on-site works, the collection and use of place



elements, the objective examination of place details, the recording of progress are all subjective actions that follow from a person's creative methodology, yet their synthesis is a good approach to objective interpretation of place.



3 Methodology, tools and research

We think of our method as a menu list, from which we can select part elements and adapt them to the specific situation, depending on the place, the number of participants, the background of them and the time available. That's how it can be adapted to several types of activities: 1-2 day long workshops, short summer schools or semester long courses as well.

According to the approaches, we expect three types of interventions:

- an activity aimed at getting to know the place
- activity reflecting on the situations found
- a complex activity that simultaneously aids cognition and also reflects and is thus able to become a process

According to the methods there are also three types of interventions:

- complex of individual works with different approaches
- community creation along a common concept
- mixed system

From the first moment of the creative process, the emphasis should be on getting to know the place as widely as possible. In order to achieve this, we want to choose a place where the creative presence is ensured, in the work itself can be realized in-situ on the site. The presence would not only focus on the time of construction (installation), the process would be accompanied by several events (actions) that would reveal the hidden dimensions of the place, promote the local embeddedness of the work according to a predetermined practice. It is absolutely necessary to continuously document the process, to analyze the steps of its realization, or to adapt it to the given conditions and unexpected reactions. Documentation can also be an element of both cognition and creation. Monitoring of creative activity would be the basis of the



research, which would then end in a methodological compilation and scenario based on the lessons learned, thus expanding the methodological menu list, the starting point for the following events.

We consider it important that cognition and works have longer-term, additional goals, and can also be an important tool for the development of the place, social embeddedness and the strengthening of cultural identity.

4 Expected results / Intermediate results

It is necessary to document all phases of the creative process that provides the core of the research, from the first steps of design, through exercises to learn about the place, to construction. The documentation and the analyzes accompanying the phases would form the basis of the methodological manual, which would serve as a guide for interventions focusing on site knowledge. It is necessary to examine the extent to which the project steps implemented in the research can be adapted to the educational tasks, even as a program of creative weeks, which are the subtasks that can be well utilized in education.

The creative work accompanying the research, which in our case is definitely related to construction activities, needs to be evaluated on the basis of several aspects. Defining aspects is part of the research, even in a way that we establish a hierarchy of expected goals based on metrics. Such aspects can be listed as follows: the degree of learning about local values in the creative process, the fullest possible mapping of the site's features (advantages, disadvantages), the degree of local involvement (activity) during construction, the number of site learning practices associated with planning and efficiency, receiving the completed installation, etc.

5 Next steps / Discussion

Our next step is to develop a detailed scenario from our methodological menu list for the summer school event already for the specific location, the participants with a known number and background, to define the preparatory work before the event, and the documentation of the event.

7 References

Attachments

[intermediate drafts] [Final draft]

Add any further documents, information, etc. as attachments (which may be links to other documents).

TRIPLEX CONFINIUM

O1.UNS - Shaping the future of architectural education through learning by making approach v1 DRAFT

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Objectives of this document

Aim of this paper is to develop pedagogical methodology based on Learning by doing (LBD) approach.

Who is this document for?

This document is intended for the team members of Triplex Confinium. This document is aiding in the development of a specific module or course for the master programme.

Contributors

Authors of this document are Vesna Stojaković, Ivana Bajšanski, Marko Jovanović, Marko Vučić, Bojan Tepavčević, TC project team from University of Novi Sad. Bojan Tepavčević defines the topic, structure and guidance for the text and sections. Vesna Stojaković did the writing and research pertaining with background and rationale text, Ivana Bajšanski worked on Methodology, Marko Vučić and Marko Jovanović worked on the Expected results section.

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in his PhD thesis which was defended in 2018. He has been a part of the research group Digital Design Center, which encapsulates similar work and approaches in contemporary architectural practice.

Marko Vučić is an architect and teaching assistant at the Department of Architecture and Urban Planning, Faculty of Technical Sciences, University of Novi Sad where he teaches courses in descriptive geometry, scale modeling and architectural representation. He holds a Master's degree in architecture since 2016 and he enrolls PhD studies since 2016. He has been a part of the research group Digital Design Center which is dedicated to developing and researching the application of recently developed technologies in the field of architecture.

1 Aims and Scope

Architecture, as many other professions, is highly influenced by technology in the past decades which provided new ways to approach traditional design problems. Constant improvement of the construction industry and communication changed the context in which the architects work. Architectural practice follows the social and technological progress and the need for the architects who work in multidisciplinary teams and participate in interactive environments rises [2]. Traditional role of architect as project managers or leaders is often replaced by networked teams, engineers and other professions [1]. One of the ways to regain the position of architect who manage the required complexity of the design process and results achievement is to support architects to become 'digital master builders' [13].

Despite the obvious changes in architectural practice demands, architectural education often completely relies on traditional design approaches [1, 17, 12]. New theoretical, computational and cognitive approaches initiated the need for adjustment of existing pedagogical models [15]. In the digital age, interest for architects who can work interdisciplinary and who are technically capable can be a positive impulse for architectural education transformation. One of the ways to educate architects is to join digital technology with the education system core rather than omitting traditional methods. Future architects can learn how to incorporate digital tools as the integral part of the design process and not just as an additional tool to the traditional way of thinking. Integration of digital tools allows design ideas to be tested and challenged in a more complex way during the design process as well as results based on performance, environment, materials or design ideas to reach more variety and more accurate validation.

This study is aimed to elaborate how to apply 'learning by doing' method in order to introduce digital technologies in architectural education. Digital technologies develop rapidly and it challenges traditional models of thinking and making. With integration of digital tools, higher levels of complexity in the terms of architectural analysis, simulations, computation and fabrication can be achieved. The hypothesis that the LBD methods can be used to improve architectural education in the terms of integration of digital tools into the design process is examined.

Aim of this document is development of modules, courses or tutorials for the workshops in the field of tech based tooling in architecture for the common master programme. The digital tools would be used in a wider design context so that students can learn how to integrate digital technologies into architectural



problem solving. LBD experience is aimed to develop interest in digital tools as a part of the creative process.

Specific importance for adjusting education towards a digital environment is that in the south east Europe education is not prone to changes. Although in the region technological education is of high quality, integration in different disciplines and multidisciplinary face obstacles due to rigid systems and lack of long term strategy and financial support. The idea for improvement is to connect experience and resources such as expertise in different areas of architectural education. This integration can popularise digital technologies in architecture in schools in the region through exchange, cooperation and joint education programs. Higher competences of the educated architects would benefit the future architects in wide architecture related practice.

Result of this intellectual output will be a set description of digital design and manufacturing techniques which can be used for shaping future architecture education and curricula development.

In this document a set of tools is developed by a team from Novi Sad as a proposition on how to integrate digital technologies into an architectural design process. Additionally tutorials or material for the workshop in the same field can be designed from the same team members. The team has experience in the field of digital technologies in architecture as well as experience in teaching, accreditation of programmes in this area, organizing workshops, exhibitions and events, the development of modules, course or tutorial for the workshop.

The team from Novi Sad aims to research and develop the application of latest technologies in the field of architecture. With the rapid expansion of digital technologies and simultaneous appropriation of industrial tools and techniques for architectural purposes, architecture has become perceivable in a way that was not possible before. Many digital tools imply structural analysis, design study and production which constantly enable new architectural structures to appear. The educators team creates new content for the students in order to raise interest in digital technologies and demonstrate its benefits.

Course module is specific because it requires a defensive kind of integration of digital tools into architectural students' projects. Format of the design output and collaboration on specific tasks initiated LBD proposition as a method expected to be flexible in content and size, adjustable to the varying previous knowledge and experience of each student and adaptable to different teaching environments.

2 Background and rationale

Some architectural schools recognize the importance of introduction of digital technologies in architecture and integration with traditional architectural education. The Institute for Advanced Architecture of Catalonia, interdisciplinary educational and research centre located in Barcelona, has several master programs ranging from Advanced Architecture, Urbanism, Future Cities and Robotic Construction, to Digital Fabrication, Sustainable Design and Self-sufficient Buildings [10]. Master in Advanced Architecture is aimed to revolutionize current architectural approaches and methods by enhancing the technical, computational and digital fabrication skills of new professionals, able to work in the architectural field, learning from



advancements from computer science, advanced manufacturing, synthetic biology, or material science and ecology [5]. Master in City & Technology is a program oriented towards redefining the analysis, planning, and design of twenty-first-century cities in which students learn digitally enhanced design, ecological and human-centered urban environments by intersecting the disciplines of urbanism and data science [7]. In collaboration with the Fab Academy [4] a multidisciplinary design course Master in Design for Emergent Futures is developed to educate students how to cope with designing for complexity, uncertainty and possibility [8]. Master in Robotics and Advanced Construction educate interdisciplinary professionals capable of facing growing need for optimised sustainable construction eco-system mainly by using novel robotic and advanced manufacturing systems [9]. The Master in Advanced Computation for Architecture & Design – is an online programme training aimed to educate a new generation of architects, engineers and designers with the skills that the industry of Architecture, Engineering and Construction (AEC) demands nowadays by focusing on the latest digital software for design simulation, analysis and optimization of digital data in architecture [6]. Architectural Association offers a post-professional graduate programme The Emergent Technologies and Design Programme is open to graduates in architecture and engineering who wish to develop skills and pursue knowledge in architectural design science that is located in new production paradigms [3]. Master programme Design + Make aims to develop advanced critical capacity in the intellectual and material processes of contemporary architecture by introducing technical skill-set and key design methodologies for the programme [20].

In the last few years more schools introduced studies in this area. At Ecole des Ponts in Paris Design by Data master programme has opened recently. Students are educated in the cross-disciplinary culture of computational design and comprehensive knowledge of cutting-edge technologies in the fields of parametric architecture, robotics, digital manufacturing and 3D printing for the construction industry.

Master in Computational Architecture and Parametric Design Optimization is now available at Sapienza University of Rome, Faculty of Engineering aims to provide students with a new digital paradigm in design and architecture, and make them able to gain practical experience on future trends of computational architecture, generative design, algorithmic analysis, design optimization, digital fabrication and smart kinetic system. Students learn how architecture can be controlled and driven by parameters. It transforms itself in response to the constant change of algorithmic functions and logics [14]. Many other schools (Politecnico di Milano, Politecnico Torino, University of Belgrade, Graz university of Technology etc.) recently incorporated courses related to digital technologies in graduate and post-graduate architecture programmes.

LBD is often present in these programmes, and it is practiced in different formats. In Master in Advanced Architecture a LBD methodology trains professionals capable to critically think out of the box and materialize novel architectural solutions for the current and future challenges related to the environment, society and to the linear and homogeneous approach in design and building [5]. The Master in Advanced Computation for Architecture & Design is an online LBD based programme, aimed to offer a broad and advanced theoretical and practical knowledge of computational design [6]. At the Emergent Technologies and Design Programme architecture and ecology are investigated through the critical intersection of computational design and fabrication and through multiple iterations through hypothesis, material and computational experimentation, robotic fabrication, and evaluation [3]. In Design + Make programme apply Learning by doing through a combining workshop in which all skills and knowledge is incorporated and design in 1:1 scale is made as a result. The programme is supported by a diverse team of experts; the programme develops design methodologies at the intersection of craft knowledge, innovative technologies



and natural materials. Students integrate emerging tools such as 3D scanning, generative modelling and robotic fabrication creating opportunities for replicating the feedback between material properties and designed form that had previously connected designer, maker, and artefact [18].

In the University of Novi Sad, Faculty of Technical Sciences specialised master course Digital techniques, design and production is opened in 2013 at the Department of Architecture. Each year the number of participants raised, with a maximum of 34 students entering the master course which proves the interest of the students to gain knowledge for the nowadays architectural industry highly influenced by new technologies. Master course is aimed to apply state-of-the-art theories and technologies in the teaching process as an upgrade of skills and knowledge gained in graduate studies of architecture or related disciplines adjusted to the practice in which the architect works in a multidisciplinary team. Integration of the digital technologies into the architectural education is the adjustment of the architects' professional competencies in accordance to recent technological developments.

In the master course Learning by Doing is approached as digital technologies are used as the integral part of the design process. Students learn how to analyse the relevant parameters, how to use it to shape the project, and how to approach the building process [18, 19]. Accordingly, education is focused on three main themes: digital techniques, digital design and digital production. Digital techniques are used for analysis, which is to introduce parametric influences (e.g. natural, climate, material, social ...) into the automated analysis of the building or urban fabric. Aim of teaching Digital design is to teach students to know when and how digital tools can improve the design decisions and how to incorporate it into the design process. Digital production in architecture engages understanding the geometry of the new, nonstandard forms since the building process is the integral part of the design process.

3 Methodology, tools and research

The methodology includes a way of research which refers to learning by doing. By using a large set of different digital (software applications) and physical tools (CNC machine, 3D printer, cutting laser) as well as failing and fixing processes, students have the opportunity to learn, solve issues, gain self-confidence in various contemporary digital technologies. Taking into account the huge possibility of different software applications for performance-based design and fabrication, students can learn how to examine one 3d model of urban area or building from an idea to final presentation. In the digital age, the performance of 3d models can be analysed in terms of its geometrical characteristics, materials, locations and use that data for wind, solar or outdoor thermal comfort simulations. After detailed analysis, the model can be prepared for various types of fabrication. Depending on the best way for fabrication, the model is firstly prepared in software application. Second stage is the connection with the machine for fabrication and the last phase is its final presentation.

Innovative aspect of our approach is in the local context. The main aim is to apply a cost-efficient approach in order to solve local issues by using local materials and data. Local construction materials of buildings considering clay, brick, straw and adequate soil on site. Among these, appropriate climate and meteorology data can be used for wind, solar and outdoor thermal comfort analysis and simulations.

4 Expected results / Intermediate results

The expected results can be observed through two related areas:

- The physical prototypes and
- The empirical data and skill sets that accompany the fabrication of physical prototypes

The physical prototype

The physical prototype stands as a confirmation of the applied methods and the design and fabrication approaches used, but at its end stage. The end stage infers all the trial and error empirical data acquired through the process of making a certain physical prototype to achieve the optimal result. Hence, learning by doing approach incorporates both of these areas seamlessly, but in order to get a better grasp on the matter, each area will be explained through a wider context.

In order to explain how the physical prototype fits as the expected result and why it is beneficial in the learning by making approach, it is important to understand the necessity of it in the grand scheme of things. The dive into the fabrication of physical prototypes, following our own experience, is usually a response to the cutting edge innovations in the area, be it through form intricacy, material application or experience of the space around it. By following the growing trends and focal points of interest, it becomes possible to stay relevant in the area. Furthermore, the inspiration derived from leading architecture teams that produce such projects aids in expanding the view in that particular area of interest. Physical prototypes provide confirmation of the ideas and concepts, as well as insight into how something works on a much larger scale, than what a mere simulation or architectural visualization can provide.

For example, the Hyperbody project, done in Delft in 2014 [16], incorporates the use of robotic hotwire cutting for making a large scale pavilion out of EPS. After familiarizing ourselves with the project, there are basically two approaches that can be taken:

- replicating the project to gain the same skills without the expansion of the area
- duplicating the resulting while exploring other methods and approaches and hence the skills

We opted for following in their footsteps using robotic hotwire cutting for making a large scale pavilion. However, the focus was placed on fabricating hexagonal tiles as opposed to quad based ones and improving the fabrication process through efficient production of tiles larger than the work area of one industrial robot [11]. So, by deriving inspiration from such a project, the number of similar approaches in the niche is enhanced and enlarged. Furthermore, the verification of the applied methods, skills and knowledge through physical prototype fabrication is performed.

The expected results:

Following the expansion of interesting niches through prototype fabrication, but also observing the Banat region, we can notice some of the key areas of overlap encompassing the three bordering countries around it. The most noticeable one is the material area, more specifically clay (and reed) and how these materials can be incorporated into interesting and innovative applications in contemporary digitally designed architecture, where some of the expected results can be seen through:

- pavilion design - stacking bricks on a vaulted structure to cover a certain area
- wall design - as extruded walls and as walls stacked by bricks
- pavement tessellation - using reconfigurable or still moulds to cast differently shaped tiles
- artistic designs - through sculptures and installations done by sculpting or sampling different shapes

Once a certain area of interest is chosen i.e. the expected result is picked, the first stage is the assessment of the required tools, skills and technology necessary for the fabrication process. At that stage, a first concept idea of the project is determined, following the available tools, skills and technology and the time required to master or upgrade what is lacking or faulty. This preliminary analysis is predicated on the team's knowledge and assumptions, where it becomes possible to explore different methods, thought processes and alternate approaches to the status quo. So learning by doing starts before the design phase of the project, which is a habit we impose on the students as well, pushing them to cast a wider net on the problem in question and not just explore specific ideas and branches, particularly at early stages.

The skill set:

Building up on the prior content, implementation of an integrated approach is desirable at early stages, given the weaved expertise areas that every architectural project is based on. Some of the areas that are mostly used are structural stability, parametric design, fabrication optimization and preparation, transportation, assembly and exploitation. Observing a project through the lens of all of these areas can provide the optimal solution that satisfies the criteria from each of them. Following the thought that architects of the future should be "digital master builders", acquiring the skill sets of these and other similar areas can seem as a daunting task.

A single designer, with a specific combination of skills from different areas can produce more innovative and unique results than a team of two or more people possessing only the skills from their own area of expertise. Opening the designer's mind to receive multiple input parameters and to tackle a myriad of problems from different areas can be overwhelming. For this reason, the tutorage of a single designer i.e. digital master builder from experts in their own field can make an amalgamation of skills worthy of handling even the toughest of challenges. This is confirmed through the experience both from teaching students within the master course and from working on our own research projects.

These skills are mostly related to understanding algorithmic approaches in design and fabrication i.e. applying the integrated approach to fabrication while using parametric design. Having the skills to predict certain behaviours such as the look a prototype will have, the assembly procedure, the stability, its performance analysis and similar simulations can offer insight into the end result, but it lack proof and verification. This integrated approach coupled with simulations and analysis represents only one side of the medallion and needs to be verified through bringing the project to life.

This is why the introduction of the intricacies related to the CNC machine and the industrial robot fabrication is desirable, if not a must. Knowing how the machine works, the limitation it has and how to work around those limitations can expand the initial integrated design basis from a novice to an expert level. Like with any architect or a designer, assembly always brings challenges into the design approach, which reconfigures and adjusts the entire design process bringing it full circle to the start point and re-evaluating certain criteria. The assembly process elevates the research to acquire data and facts that

could not have been visible without fabricating the physical prototype. It enriches the entire experience and is highly beneficial for future work.

First concept:

With all that said, the first concept for this particular case can be the first two examples in the expected result category - a brick wall and a pavilion.

A brick wall with perforated patterns, similar to prior work that has already been done (Digitally fabricated brick wall with gradient) is the easier of the two since it requires less effort and calculation. This wall uses bricks as building blocks and introduces the concept of digital tools, simulations and digital design at a basic or beginner level. In such a manner, it becomes possible for all participants to get acquainted with an integrated design approach concept and follow the project along through its entire duration with a relatively small number of parameters. Even though prior research results and methods for this type of a project rely on industrial robot fabrication, these perforated brick walls can be assembled manually as well, which can entice participants to come up with novel ideas and approaches as to how to stack, align and orient the bricks in the master design. These types of walls can be used as separation walls in semi open spaces like receptions or gardens, as well as building envelopes that ensure ventilation [21]. Novel approaches in this case can also focus on making a perforated wall only on one side, while having the wall closed off on the other, which can significantly increase its functionality as residential building envelopes as well.

A pavilion can offer much more freedom in geometry and shape generation and exploration but brings with it an increased number of parameters, problems and simulations that need to be addressed. Since this is something that can stand on its own as the basic form of a building, the participant can have a much higher level of immersion into the project, since it is something they can stand under. Existing research in the area, couples with our experience on the matter [11] can produce interesting results from those familiar with prior work and those bringing a clean plate to the brainstorming table.

First requirements:

In order to achieve such projects, the main requirement would have to be the material. In this case, we can engage local brick manufacturers or manufacturers of other clay based substances or materials. Alongside materials, the technological aspect would need to be compensated for as well, mainly in the computational department. This means high performance computers that can handle high loads of computation while using the integrated design approach. Also, technological aspects infers the implementation of fabrication machinery, such as industrial robots for brick stacking, CNC milling machines for reshaping existing bricks and CNC laser cutting for fabricating wooden frameworks for pavilion structures. The implementation of none or all of these technologies and approaches depends on the type of the design, fabrication and assembly choice.

How were/are/will be the SMART objectives attained. In what way is the subject matter and its methodology of research having an impact on the curriculum, and the specific teaching modules. How does this output relate to other similar outputs?

Specific objectives can be attained by implementing the elements that are related to the Banat area. Since clay is a material that is commonly used in this area, students can explore various brick layouts, parametric patterns related to Banat's cultural establishment. Another possibility is for students to make some kind of an impact on the public spaces, potentially by building a pavilion in scale 1:1.



Measurable objectives can be presented by delivering physical models and prototypes that are open to public view, scrutiny and criticism from the local community. Also students are benefiting the set of skills in the field of digital design, and digital fabrication, as well as historical and architectural heritage of the Banat region.

Suggested projects are attainable in the manner of material and tools procurement. Package of bricks and the perforation pattern design as entities can be related to the local manufacturers. With novel methods in design, it is possible to raise awareness for these types of approaches, and also achieve a higher level of implementation and dissemination with or without technological aid - CNC machines and industrial robots.

Realistic aspects can be observed through the use of naturally occurring material for the specific region, the manner of implementation related to brick design and ornaments, already verified through robotic application, possible even without a proper place for it (house design, cultural establishment etc.)

If we are considering the Time Bound objectives we can set specific guidelines for the entire project divided into several phases

- 1 - designing the pattern - less than a week
- 2 - material acquisition - bricks and mortar - less than a week
- 3 - groundwork preparation - depends on the size of the wall - 2 to 3 days
- 4 - bricks stacking and following instructions - around a week
- 5 - photographs and documenting - experience and notes - two days
- 6 - destruction if not possible to remain in situ - two days
- 7 - cleaning up

Considering our target group, how can we further measure the impact these skills, competences, and knowledge obtained have on their future output and attitudes toward space and the practice of architecture in general?

Target group - students

How can we measure the impact?

During the master course, students can experience their theoretical knowledge through practical engagement while being a trainee in architectural bureaus that follow contemporary world trends in architecture related to the topics of this master course. In such a manner, the students are equipped to handle everyday load that architectural bureaus deal with on a daily basis while contributing through their intricate ideas and project for the bureaus to expand their areas of interest and expertise - government involvement with subventions, grants can be beneficial and helpful - long term and short term dissemination through project visualization and existence

By the number of projects, domestic and foreign by domestic bureaus, maybe alumni, to track the number and quality of such endeavours.



By the affirmation of the local community to support unconventional projects that come as a result from these studies. In such a manner, the novel approaches are better accepted, thus more opened - surveying, informed enough, self-recognition and self-criticism based on pre-established criteria

By the amount of students that are interested in enrolling each year,

What is the impact these methodologies have on the local communities involved in the research /design process?]

Given the existence of physical prototypes, they can be left for the local community to utilize if functional in its exploitation, if artistic, they can be exhibited in local culture centres or Public Square or places of community gatherings to expand the understanding of architecture reach in contemporary architectural practice.

5 Next steps / Discussion

The final version is planned to be ready by mid-September. The next steps are preparing workshops to test Learning by doing methodology with partner schools on the project.

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Attachments