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Place: AGGF

Classroom: 3a

Knowledge **FO**r Resilient so**CI**Ety

*Creating the Network of Knowledge Labs
for Sustainable and Resilient Environments*

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University of Banja Luka



Co-funded by the
Erasmus+ Programme
of the European Union



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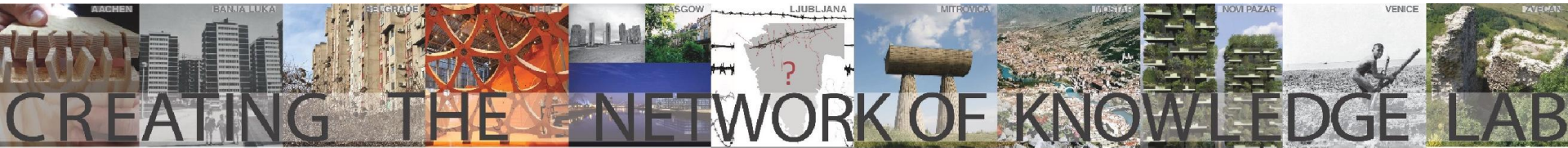


The project

Creating the Network of Knowledge Labs for Sustainable and Resilient Environments is capacity building action in the field of higher education, co-funded by the **Erasmus+ Programme** of the European Union.

KLABS is the educational platform which addresses two current and equally important challenges of urban and rural built environments in

Western Balkan – sustainability and resilience to climate change.



CREATING THE NETWORK OF KNOWLEDGE LABS

AACHEN	BANJA LUKA	BELGRADE	MITROVICA	GLASGOW	LJUBLJANA	MITROVICA	MOSTAR	NOVI PAZAR	VENICE	ZVEČAN
<p>SUSTAINABILITY</p> <p>Working in teams, Sustainability in the built environment means creating solutions to global challenges. For instance, adopt one of the 17 of the United Nations Sustainable Development Goals and create a design solution for the most pressing issue in your city. How can you use your design expertise?</p>	<p>SUSTAINABILITY</p> <p>To sustain an urban system, the design of the socio-ecological system for a city is as important as the economic, financial, and administrative systems. How can you use your design expertise to create a sustainable urban system?</p>	<p>SUSTAINABILITY</p> <p>A building is not only an architectural and engineering project, but also a social and cultural one. How can you use your design expertise to create a sustainable urban system?</p>	<p>SUSTAINABILITY</p> <p>For a building to be sustainable, energy efficiency is not enough! The main challenge of sustainable architecture is to create a building that is not only energy efficient but also socially and environmentally friendly. How can you use your design expertise to create a sustainable urban system?</p>	<p>SUSTAINABILITY</p> <p>Sustainable thinking is needed in the development of infrastructure, transportation, and urban planning. How can you use your design expertise to create a sustainable urban system?</p>	<p>SUSTAINABILITY</p> <p>Climate Change, Pollution, and Sustainability in Urban Design. How can you use your design expertise to create a sustainable urban system?</p>	<p>SUSTAINABILITY</p> <p>Sustainability and Innovation in the Built Environment. How can you use your design expertise to create a sustainable urban system?</p>	<p>SUSTAINABILITY</p> <p>Adaptive resilience in the context of urban design. How can you use your design expertise to create a sustainable urban system?</p>	<p>SUSTAINABILITY</p> <p>Adaptive resilience in the context of urban design. How can you use your design expertise to create a sustainable urban system?</p>	<p>SUSTAINABILITY</p> <p>Adaptive resilience in the context of urban design. How can you use your design expertise to create a sustainable urban system?</p>	<p>SUSTAINABILITY</p> <p>Adaptive resilience in the context of urban design. How can you use your design expertise to create a sustainable urban system?</p>
<p>RESILIENCE</p> <p>The resilience of urban systems is a key challenge in the built environment. How can you use your design expertise to create a resilient urban system?</p>	<p>RESILIENCE</p> <p>Resilience in the context of urban design. How can you use your design expertise to create a resilient urban system?</p>	<p>RESILIENCE</p> <p>Resilience in the context of urban design. How can you use your design expertise to create a resilient urban system?</p>	<p>RESILIENCE</p> <p>Resilience in the context of urban design. How can you use your design expertise to create a resilient urban system?</p>	<p>RESILIENCE</p> <p>Resilience in the context of urban design. How can you use your design expertise to create a resilient urban system?</p>	<p>RESILIENCE</p> <p>Resilience in the context of urban design. How can you use your design expertise to create a resilient urban system?</p>	<p>RESILIENCE</p> <p>Resilience in the context of urban design. How can you use your design expertise to create a resilient urban system?</p>	<p>RESILIENCE</p> <p>Resilience in the context of urban design. How can you use your design expertise to create a resilient urban system?</p>	<p>RESILIENCE</p> <p>Resilience in the context of urban design. How can you use your design expertise to create a resilient urban system?</p>	<p>RESILIENCE</p> <p>Resilience in the context of urban design. How can you use your design expertise to create a resilient urban system?</p>	<p>RESILIENCE</p> <p>Resilience in the context of urban design. How can you use your design expertise to create a resilient urban system?</p>
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- KLABS Coordinating University in Kosovska Mitrovica
- University of Ljubljana
- University of Strathclyde
- Università Iuav di Venezia
- Technische Universiteit Delft
- Rheinisch-Westfälisch Technische Hochschule Aachen
- University of Belgrade
- University of Banja Luka
- Džemal Bijedić University of Mostar
- State University of Novi Pazar
- Higher Technical School of Professional Studies in Zvečan



Second cycle study program Architecture and Urbanism

with academic title - **Master in Architecture and Urbanism (MA) – 300 ECTS**,

at the University of Banja Luka, Faculty of Architecture, Civil Engineering and Geodesy.

Establishment of the institutional centre for sustainability and resilience -

Centre for sustainability and integrative design.

Development of educational material – the state-of-the-art thematic 5 book series

Reviews of Sustainability and Resilience of the Built Environment

for Education, Research and Design.

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UNIVERZITET U BANJOJ LUCI
ARHITEKTONSKO-GRAĐEVINSKO-GEODETSKI FAKULTET

ARHITEKTURA I URBANIZAM

Jednogodišnji studijski program
drugog ciklusa (60 ECTS)

ARHITEKTURA I URBANIZAM

Akadska titula
Master arhitekture i urbanizma - 300 ECTS

Broj studenata: 20

Establishment of the institutional centre for sustainability and resilience - **Centre for sustainability and integrative design**



The Urban Café dedicated to exploring options, scenarios and strategies for Banja Luka's future development



The first academic presentation of Centre for sustainability and integrative design at the UBL

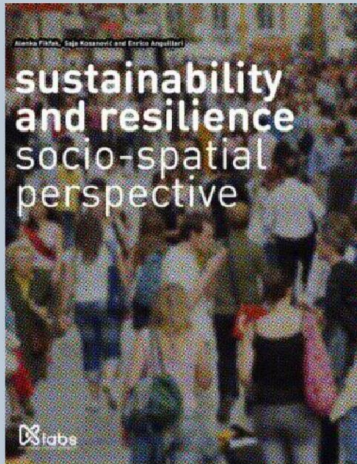
УРБАНИ КАФЕ
БАЊА ЛУКА
... 2030 ...
... 2040 ...
МЈЕСТО БИЋЕ НАКНАДНО
ДЕФИНИСАНО
Петак, 02.03.2018.
09:00-13:00

Универзитет у Бањој Луци
Факултет за архитектуру
Институт за урбанистичко-градитевну архитектуру
Институт за просторно-градитевну архитектуру

Катедра за урбанизам
Центар за одрживост и интегративни просторни дизајн
Centre for Sustainability and Integrative Spatial Design

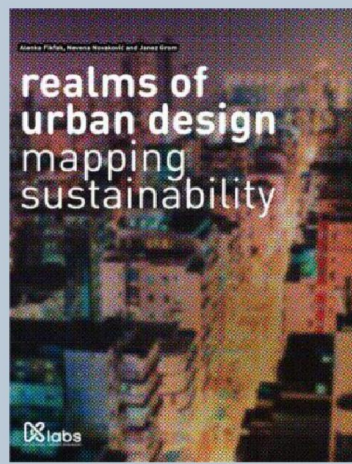
dsilabs

Својим изградњом,
Град Бања Лука,
Истраживачки центар за простор



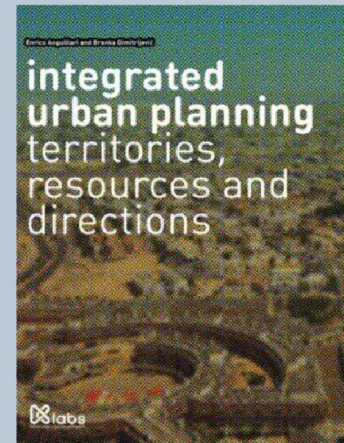
KLABS 1

sustainability and resilience:
socio-spatial perspective



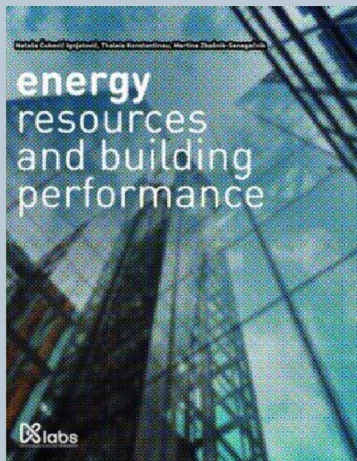
KLABS 2

realms of urban design:
mapping sustainability



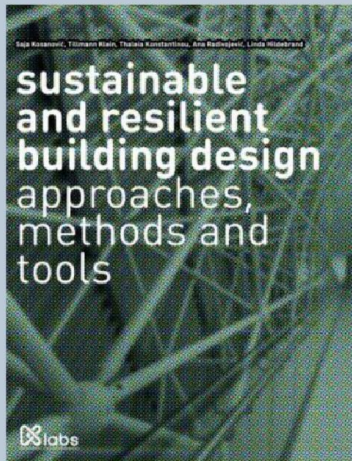
KLABS 3

integrated urban planning:
directions, resources and
territories



KLABS 4

energy: resources and building
performance



KLABS 5

sustainable and resilient
building design: approaches,
methods and tools

Reviews of Sustainability
and Resilience
of the Built Environment
for Education, Research
and Design

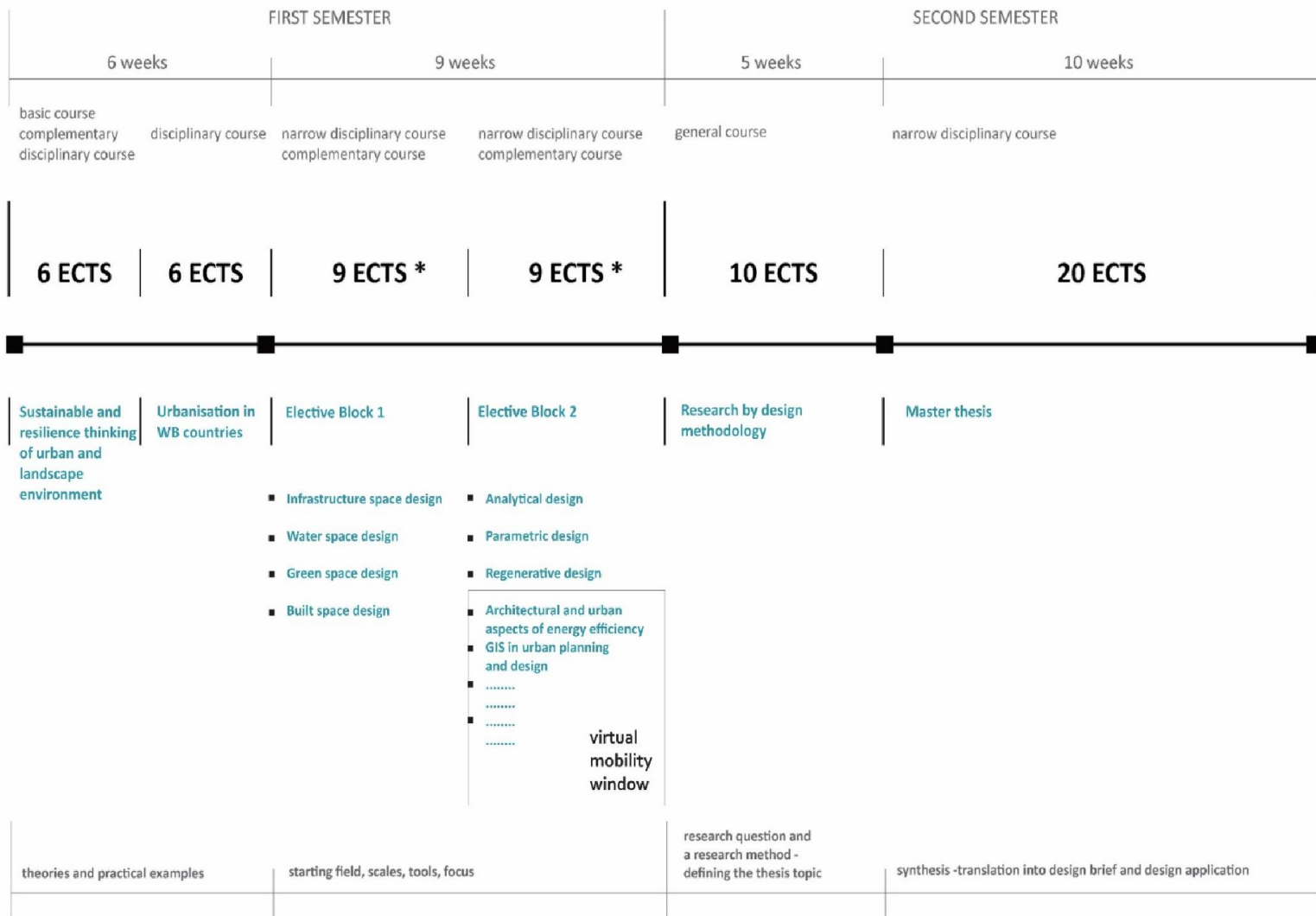
While the graduate level university **education on resilience** of built environments **is not provided**, the **topics on sustainability** within the existing programmes educating engineers and architects **are sporadically present** and that in the form of courses detached from the curriculum backbone, which consequently negatively reflects on knowledge integration and its practical application in professional work and real life situations.

Additionally, many past generations of students didn't get any university education in these two highly important fields. The lack of knowledge leaves permanent damage and contributes to the increment of environmental, but as well social and economic risks. Obsolete education represents the aggravating factor for inclusion in European dimensions of education and labour.

Emphasizing a trans-disciplinary and **trans-scalar design oriented approach**, the programme equip students with theoretical and methodological knowledge that will allow them to think, analyze and design built environment in a comprehensive manner. **This means understanding of relation between different spatial scales, social processes and natural context, as a precondition of sustainability and resilience.**

The aim of the study programme is to deliver professionals who will understand the importance of an integrated approach to planning and design and are able to cooperate with professionals from a range of disciplines of the built environment, citizens and other actors.

Also, to deliver **socially responsible professionals** who are committed to cultural sustainability and social relevance of spatial design over desire to produce high quality aesthetic.



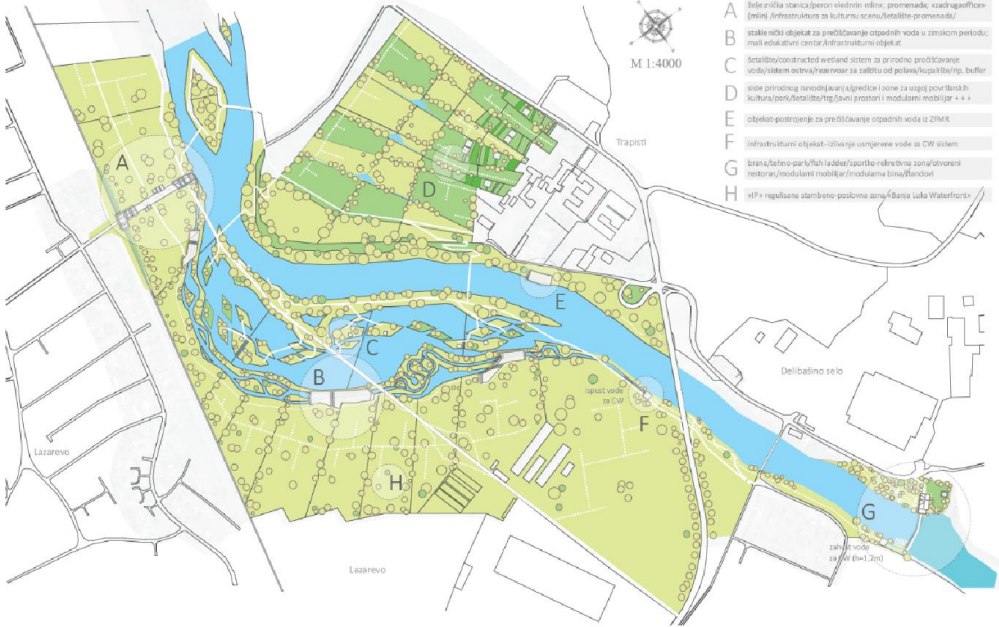
* Elective courses min 25% or 15 ECTS
 basic courses min 10%, complementary courses min 5%, general courses min 5%, disciplinary or specialist min 20%, narrow disciplinary min 20%
 close teaching - research studio work/project min 50%

The study programme is devoted to **reaffirmation of the architectural profession** in Western Balkan countries in the context of the challenges of our contemporary societies, spatial change dynamics and climate change.

The study programme is devoted to the **promotion and raising awareness of the importance of sustainability and resilience concepts** in national and local context of planning, design and rethinking architecture, cities, landscapes and territories.

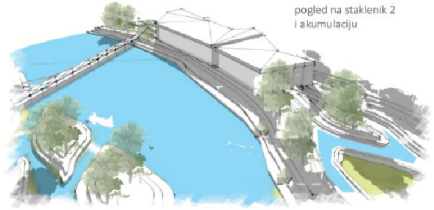
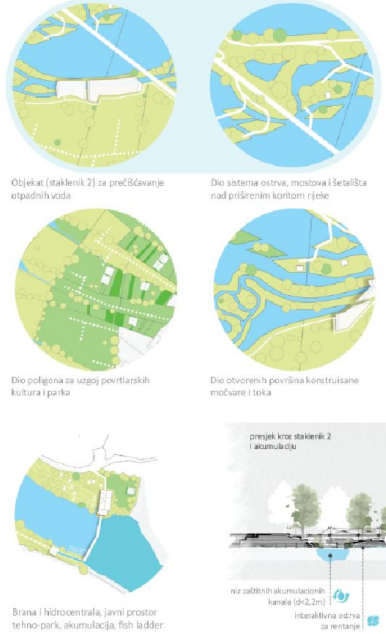
But, also to bring these concepts to more operative professional level by introducing to students a wide range of techniques and tools for spatial assessment and analyses.

Mater plan lokacije

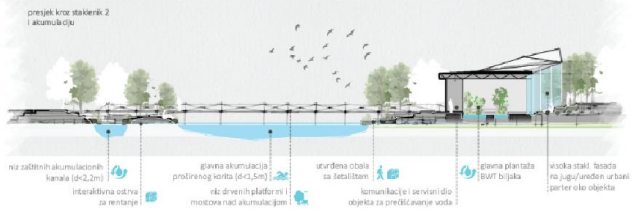


- A Telo vrtilne stariša (povremi odmor, promena, sadnja, površine (tlo) i infrastruktura za kulturnu scenu, festivalne promene)
- B stakleni objekat za prečišćavanje otpadnih voda u zimskom periodu; mali edukativni centar i infrastruktura objekat
- C Šetalište/contracted wetland sistem za prirodno prečišćavanje vode u sistem ostrva/nasloni za zaštitu od talasa/koopitativni buffer zone za prirodno navodnjavanje i regulaciju toka u usvojenoj fazi kulturno-projekcijske/različiti presjeci i modulare, mostovi i + 4
- D objekat-postrojenje za pričišćavanje otpadnih voda iz ZPMK
- E infrastruktura objekat-izlivače vanjske vode u CW sistem
- F brana/fishno park/fish ladder/parkirna i održiva zona/otvoreni restoran/modularni mobilni i modularni bina/standovi
- G Bina i naplatna stambeno-poslovna zona/Bana Luka Waterfront
- H

Novi prostori i pejzaži predgrađi



pregled na staklenik 2 i akumulaciju



pregled kroz staklenik 2 i akumulaciju

- niz zaštitnih akumulacionih kanala (0-2,2m) i interaktivna ožujna za rekreaciju
- glavna akumulacija produbnjene korita (0-4,5m) i niz živih i plavim i mostovim na akumulacijam
- stvorena obala sa šetalištem
- akumulacije i sekundarni objekti za prečišćavanje vode
- glavna platforma (BWT) bijakla
- visoka stak. fasada na jugu/uređen urbani prostor u oko objekta

Brana i hidrocentrala, javni prostor, techno-park, akumulacija, fish ladder

glavni program i1 ciklusa
 TEKSTURA I URBANIZAM
 tem: prostori i pejzaži voda

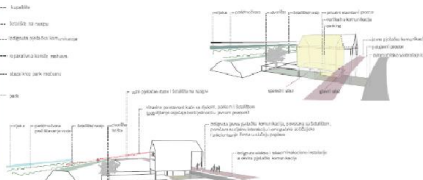
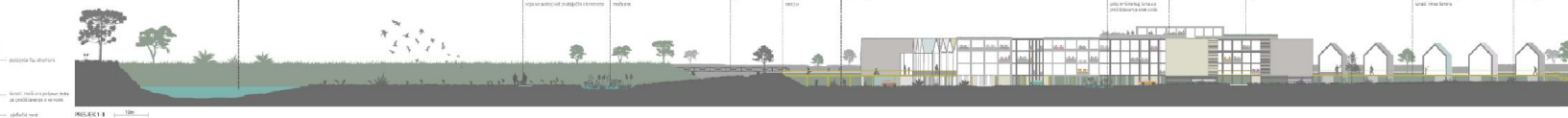
nastavnici: dr Milana Čvoro
 dr Ogrjen Šukalo

student: Babić Nemanja 08MAU/17

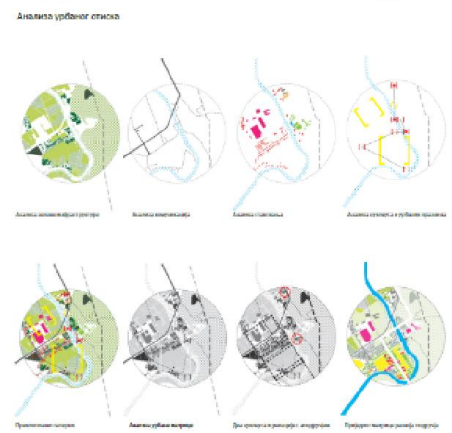
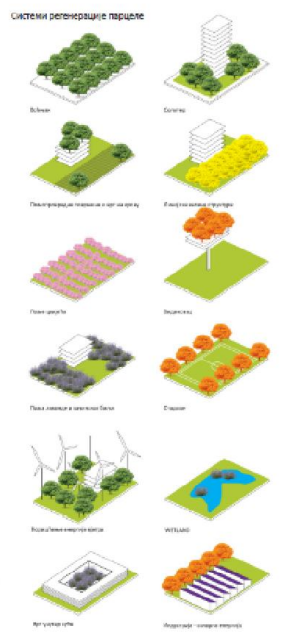
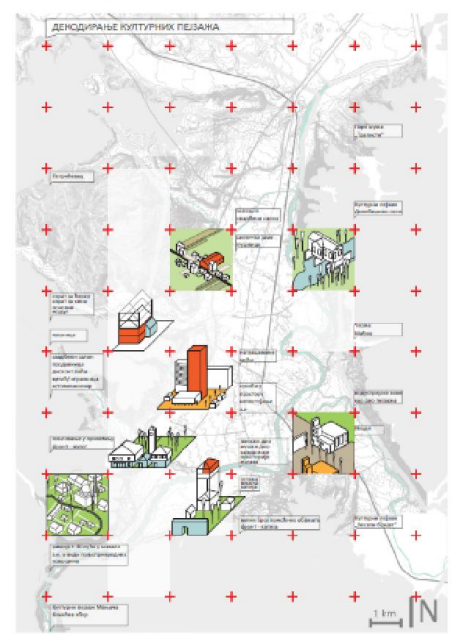


"Životni ciklus stambenog prostora"

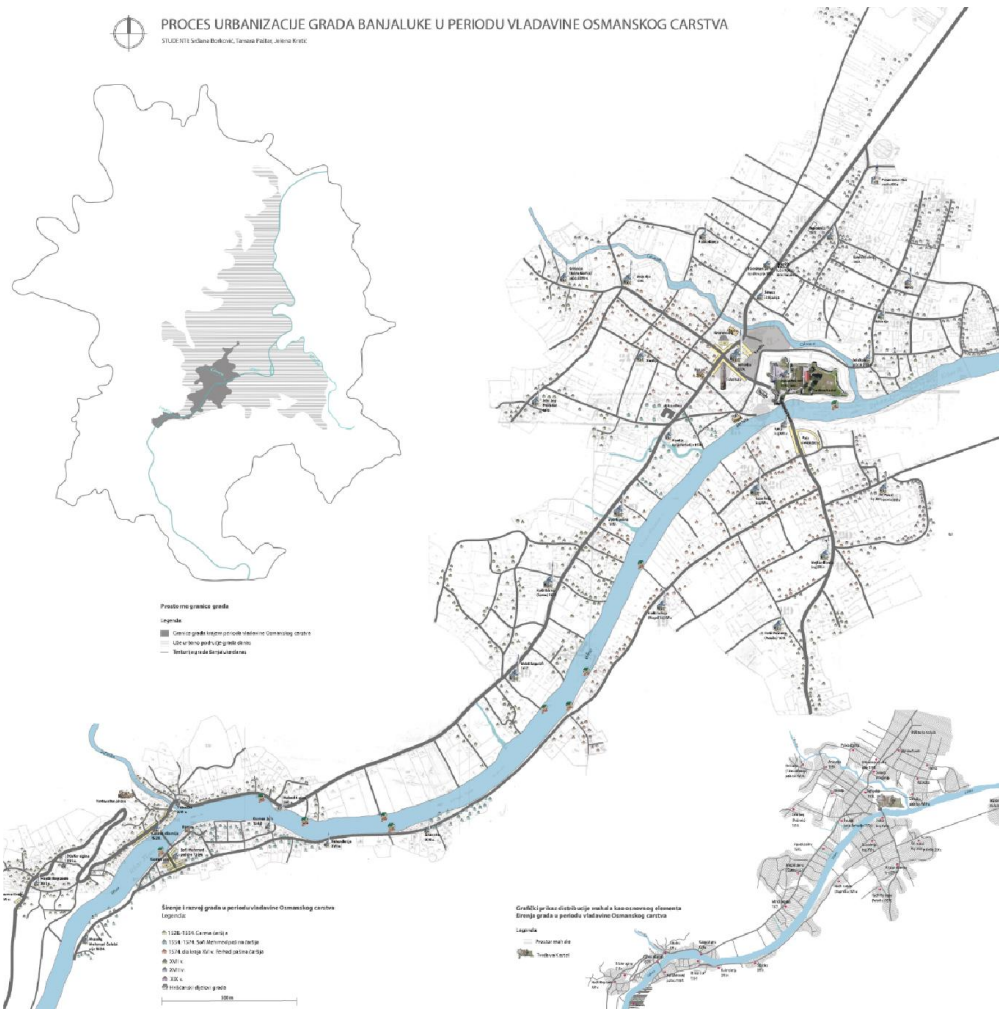
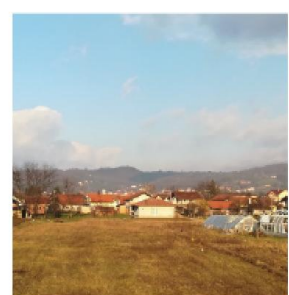
STUDENT: Babić Nemanja 08MAU/17



СИСТЕМИ РЕГЕНЕРАЦИЈЕ КУЛТУРНИХ ПЕЙЗАЖА НА ПЕРИФЕРИЈИ ГРАДА БАЊАЛУКЕ



ИМЕНА	ОПИС	ОПИС	ОПИС	ОПИС
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Thank you
for your attention
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Knowledge FOr Resilient soCiEty

