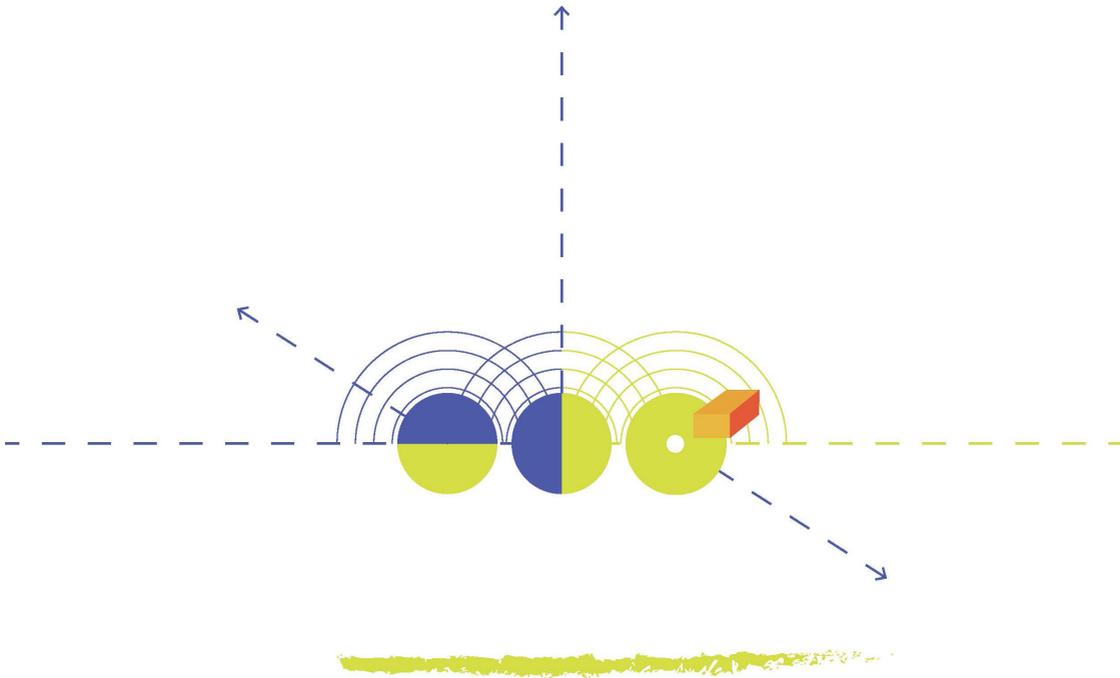




The Project is funded  
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# ECOBUILT Workshop ***Teaching Eco-friendly Architecture***

26-27 October 2022 // *Microsoft Teams*

# ECOBUILT

## Eco-friendly Built Environment

### **Project Impressum:**

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#### **Funding Programme:**

Erasmus + Programme of the European Union

#### **Action:**

Erasmus Mundus Design Measures

#### **Call:**

ERASMUS-EDU-2021-EMJM-DESIGN

#### **Funding Period:**

February 2022 - April 2023

#### **Coordinating HEI:**

Riga Technical University (Latvia)

#### **Partner HEIs:**

University of Belgrade, Faculty of Architecture (Serbia)

University of Genoa (Italy)



Consortium members  
 ■ Lead, ▲ ● Partners

- Riga
- Genova
- ▲ Belgrade



# ECOBUILT Workshop

## **Teaching Eco-friendly Architecture**

26-27 October 2022 // *Microsoft Teams*

### Agenda:

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**DAY 1 // October 26**

*16-18 CET Time*

**TEACHING PRACTICES /  
PRESENTATIONS**

**16.00-16.15**

**Intro to ECOBUILT**

Dr. Ana Nikezić, University of Belgrade

**16.15-16.35**

**Using Serious Games in Architecture Studies to Promote Understanding of Interactions in Urban Development Processes**

Dr. Edgars Bondars, Riga Technical University

**16.35-16.50 Q&A**

**16.50-17.10**

**Sustainable Architecture Design with BIM & BEM**

Dr. Renata Morbiducci, Università degli Studi di Genova

**17.10-17.25 Q&A**

**17.25-17.45**

**From Fundamentals to Experimentation:**

**Insights for Design of Eco-friendly Built Environment from UB-FA**

Dr. Jelena Ristić Trajković, University of Belgrade - Faculty of Architecture

**17.45-18.00 Q&A**

ECOBUILT Workshop on Teaching Eco-friendly Architecture aims to gather teachers and researchers who will share best teaching practices in the collaborative format which will include presentation of teaching practices and virtual round table on teaching statements.

The aim of ECOBUILT Workshop is to identify new T&L practices and skills, as well as new approaches to higher education in the field of eco-friendly built environment through challenging four tracks:

green architecture, urban design, landscape design and restoration design.

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## **DAY 2 // October 27**

*16-18 CET Time*

## **TEACHING STATEMENTS / VIRTUAL ROUND TABLE**

**16.00-16.20**

**Statements Track 1: Green Architecture**

**16.20-16.40**

**Statements Track 2: Urban Design**

**16.40-17.00**

**Statements Track 3: Landscape Design**

**17.00-17.20**

**Statements Track 4: Renovation Design**

**17.20-18.00**

**Joint Discussion: Q&A in chat for public**

Moderator: Dr. Ana Nikezić, University of Belgrade

### **Round Table Participant:**

Maja Đolić, University of Belgrade - Faculty of Technology and Metallurgy

Jelena Ristić Trajković, University of Belgrade - Faculty of Architecture

Vittorio Pizzigoni, University of Genoa - Department of Architecture and Design

Christiano Lepratti, University of Genoa - Department of Architecture and Design

Dana Belakova, Riga Technical University

Alma Ulme, Riga Technical University

# Using Serious Games in Architecture Studies to Promote Understanding of Interactions in Urban Development Processes

Edgars Bondars, Assistant Professor and Researcher  
Faculty of Architecture at Riga Technical University

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Architecture is often about working within a specific project, but any local solution needs to be developed within a broader context, so **understanding the broader context** is an integral part of an architect's professional competencies. This applies both to the architectural and artistic conception of a building based on its historical and architectural spatial context and to **understanding the global context of environmental problems** in developing local solutions for environmental protection as well.

One of the methods that help students to understand the broader context of different urban development processes is the use of **serious games in the study process**. Therefore, RTU Faculty of Architecture (RTU FA) uses serious games in the study process, providing students with an insight into the complex interactions between different players influencing urban development. One of these games simulates urban planning and development processes using computer software, with student teams taking on different roles - municipality, developers, industrialists. During the game, students learn about the urban planning system and the impact of decisions on the development of a city, including demographic, economic indicators, and carbon footprint. The second game, in which RTU AF is also participating in the development project and whose prototype has already been tested with students, is designed as a board game, and explicitly aims to raise awareness of energy transition processes. During the game, students simulate the **transition of an abstract city to more environmentally friendly forms of energy production** through the roles of different players in the energy market.

The use of games in the learning process makes students think intensively about the interactions between real urban actors and **understand how different activities in the urban environment affect the city's energy and CO2 emissions**. It also allows architecture students to work together with students from other faculties, including economists, to broaden their horizons.



**Edgars Bondars**  
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Assistant professor and researcher at the Faculty of Architecture at Riga Technical University. Professional degree of Architect (2008), Master of Architecture (2009), Doctor of Architecture (2013) on the theme "Design of Spatial Environment in the Context of Bioclimatic Factors". Research fields: bioclimatic design, energy and eco-efficiency in architecture. As assistant, researcher, or manager participates in research projects, author of scientific and professional publications. Supervisor of bachelor and master theses. Co-founder and member of the board of architectural office RR.ES Ltd. (since 2006), designer and author of architectural projects and sketch proposals.

# Sustainable Architecture Design with BIM & BEM

Renata Morbiducci, Full Professor  
Università degli Studi di Genova

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The term sustainable design of architecture includes multiple meanings, and multiple aspects of the complexity of the project which need to work together. We can interpretate the writings of V. Olgyay in 1963, where he says that sustainable means **“working with the forces of nature, not against them, and exploit their potential to create better living conditions”**. Therefore Università degli Studi di Genova has a class called “Sustainable architecture”, held by Renata Morbiducci, together with the group of Technical Architecture, works to teach how to exploit the **potential of digitalization in a sustainable construction design process**. In this context students divided into groups, develop under the guidance of teachers a sustainable project of the architecture of a building object that each year will be chosen according to the construction characteristics, the intended use, the peculiarities of the building envelope that you want to investigate in detail.



**Università  
di Genova**

**Renata Morbiducci**  
renata.morbiducci@unige.it

Renata Morbiducci - Professor, Architectural Engineering - Tenured Associate Professor, Architectural Engineering - Ph.D., Structural Engineering - Member of the RINGO No-Gov. Delegation COP-UNFCCC - Scientific Coordinator of International and National Projects - Author of more than 80 Publications - Cofounder of the "Sustainable Design and Construction" Editorial Series, GUP - Member of the Doctoral Research School of Architecture (University of Genoa) - Teacher for PhD, Master and Bachelor for International and National Universities and External Organizations - BuildTech Founder, Spin-off at the University of Genoa.

# From Fundamentals to Experimentation: Insights for Design of Eco-friendly Built Environment from UB-FA

Jelena Ristić Trajković, Associate Professor  
University of Belgrade - Faculty of Architecture

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Through 170 years of tradition, the University of Belgrade - Faculty of Architecture (UB-FA) has continuously strengthened its influence in the development, providing and dissemination of architectural knowledge within the region. It has a **complex and very open, integrated approach to education through different spatial scales, typologies and study formats**, relying at the same time on technical and technological sciences, arts and humanities, and social sciences.

This presentation will open perspectives and challenges of architectural education at UB-FA regarding the specific focus on relevant ECOBUILT topics, design methodologies and competencies. Considering the main specificities and formats of education at UB-FA the presentation will discuss these issues from three different perspectives of students' engagement: 1) Learning by design – Design studio, 2) Specialization - Elective courses, and 3) Extracurricular activities. The presentation will introduce examples of student works and activities from different study levels and study programmes, as well as various extracurricular activities in cooperation with wider audience and institutions, which have focus on a multifaceted design action that offers a powerful mechanism for **achieving eco-friendly spatial configurations and sustainable environment-behavior relations**. The eco-friendly design strategy is reflected in the approach in which architecture is part of a complex interactive system, linked to the broader contextual framework and harmonized with nature, climate, heritage, culture and social values.

Presented examples will show that the knowledge offered to students at UB-FA range from theoretical discourses, and applied and performing arts-related courses and approaches, to those related to a better understanding and utilisation of building technologies, design methodologies and strategies. However, regardless of the wideness and importance of the presented approaches and topics, it is obvious that presented initiatives and curriculums are positioned punctuated within different study programmes and levels, which apparently enables **logical hierarchy, continuity and systematization in knowledge providing**. Accordingly, we need a systemic approach and study programme that deepens relevant topics and competencies for the design of eco-friendly built environments in a continuous and comprehensive way.

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**Jelena Ristić Trajković**  
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Dr. Jelena Ristić Trajković an Associate Professor at the University of Belgrade - Faculty of Architecture and at the University of Arts in Belgrade - Faculty of Applied Arts. She holds Ph.D. degree in Architecture within the field of Architectural Design and Contemporary Architecture (2016). Her academic and professional engagement is primarily focused on the topics of socially responsible and critical architectural practice, with main research interests that include cultural and ecological aspects of design, the relationship between space and health, environment-behavior theories in design, and a design methodology in terms of sustainability and resilience.



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