

FINAL MULTIPLIER EVENT IN BIM-LCA PROJECT

Maria Pop



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FINAL MULTIPLIER EVENT IN BIM-LCA PROJECT

Cluj-Napoca, Romania

04th of June 2024,
Aula Tertia, Baritiu no 25

AGENDA

Tuesday 04 JUNE, 2024

TIME

TITLE OF THE PRESENTATION

SPEAKER

10:00AM-10:20AM

Introduction in BIM-LCA project

Maria Pop

10:20AM-10:40AM

ReUse of the structures

Cristina Campian

10:40AM-11:00AM

LCA in Lighting

Dorin Beu

11:00AM-11:20AM

LCA analysis of a roof mounted PV system:
A Romanian case study

Tania Rus

11:20PM-12:00PM



COFFE BREAK



12:00PM-12:20PM

Open BIM solutions

Cristian Mojolic

12:20PM-12:40PM

BIM model of a building structure

Mihai Senila

12:40PM-14:00PM

WEBAPP DEVELOPEMNT. IC TOOLS. Evozon

Mihaela Ardelean

14:00PM-14:10PM

CLOSING CEREMONY

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An Innovative circular economy training based on BIM and LCA technologies



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Introduction

The general aim of this project is to build skills for future construction actors, provide higher education for students, so that they can become drivers of change for the construction sector towards a sustainable construction model that uses natural and recycled materials, reducing the environmental impact and thus meeting the objectives of EU directives and member countries' emissions plans.

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Our Team



Andreea Onea
Student



Dorin Beu
Associate professor



Cristina Campian
Professor



Mihai Senila
Lecturer



Tania Rus
Lecturer



Maria Pop
Lecturer



Cristian Mojolic
Lecturer



Blanka Simon
Student



Mihai Dragomir
Lecturer

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Main objective

- ▶ Development of contents and the educational program of one course on sustainable building and Construction and Demotion (C & D) waste management, based on joint case studies carried out by students from different universities collaborating together
 - The main objective goes totally in line with the horizontal priority “Environment and fight against climate change”. Apart from the academic training, all throughout the project, raising awareness recommendations will be given to project participants: eco-tips for a more sustainable lifestyle, and sustainable options for travel whenever possible
- ▶ Development of a web app that calculates and show two possible future scenarios in the construction sector of several countries. The first scenario corresponds to the situation without improving the building model, and the second scenario in which the improvement occurs.



Timeline

Case studies
and
State of the art
review

Course
curriculum and
Teaching
Material

ICT TOOLS
WEBBAP

Awareness,
valorisation and
sustainability

We find
ourselves at
this particular
stage



Case study and state of the art review

Case study developed by UTCN team with bachelor and master degree students

Incorporating digital tools:

- TEKLA STRUCTURES BIM
 - IDEA STATICA
 - LCA – One Click
- ARD roads and infrastructure
 - Cype
 - Revit



Teaching materials

USE OF TIMBER AS BUILDING MATERIAL

IDEA REVIT software workflow tutorial

PASSIVE AND BIOCLIMATIC BUILDINGS

Concrete with reduced CO2 emissions, including geopolymers concrete and calcium sulflaminated cement

Utilization of phase change materials to reduce the energy consumption of buildings and improve the thermal comfort

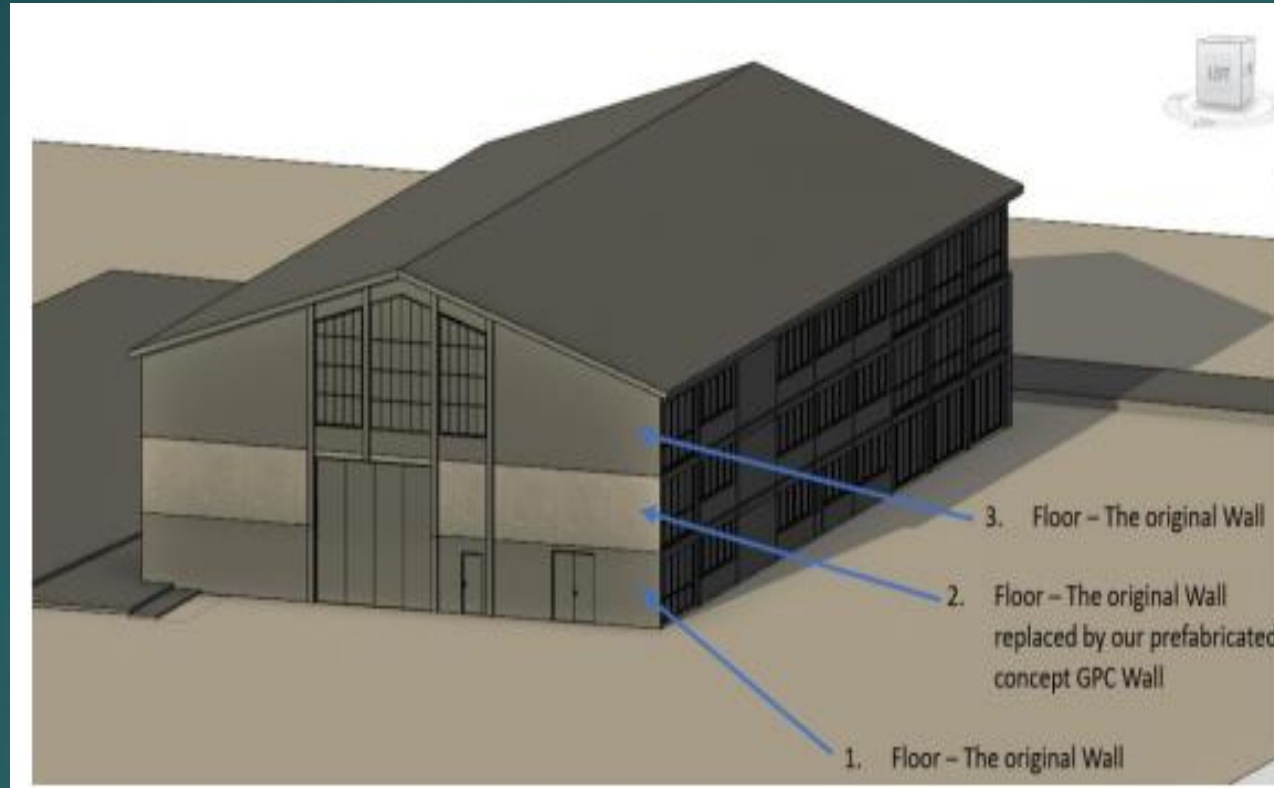
CIRCULAR ECONOMY AND RECYCLED MATERIALS

CLIMATE CHANGE MITIGATION AND ADAPTATION



Teaching materials

The analyzed structure developed in BIM and LCA analysis



ICTOOLS WEBAPP



- Development of a web app that calculates and show two possible future scenarios in the construction sector of three countries
- The first scenario corresponds to the situation without improving the building model, and in the second scenario when the improvement occurs
- The application will show results about use of energy, waste production and greenhouse gas emissions in the two scenarios

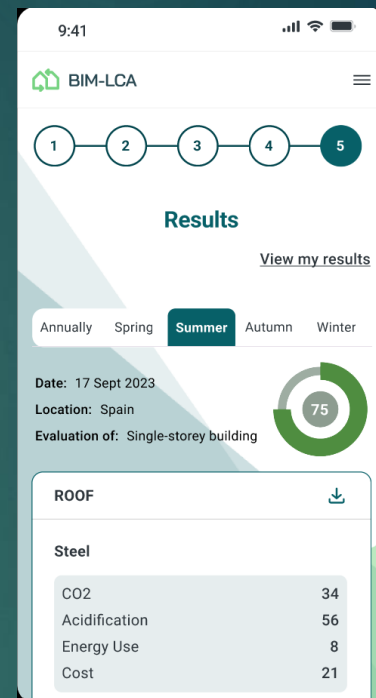
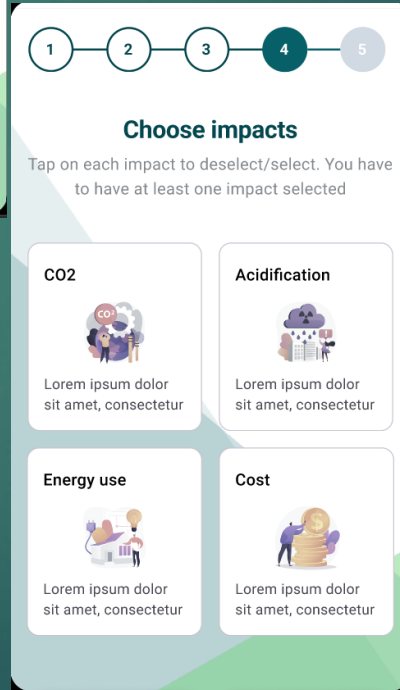
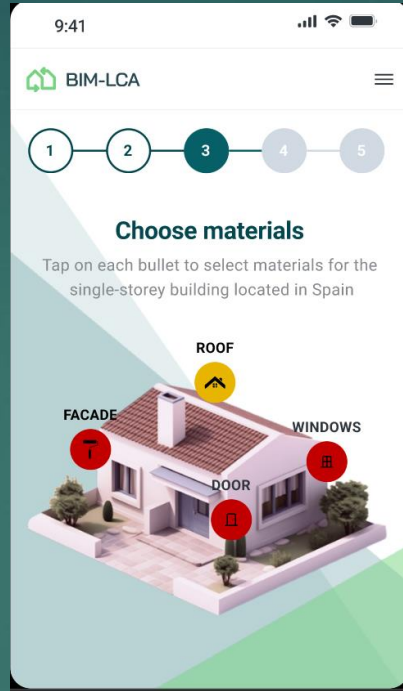
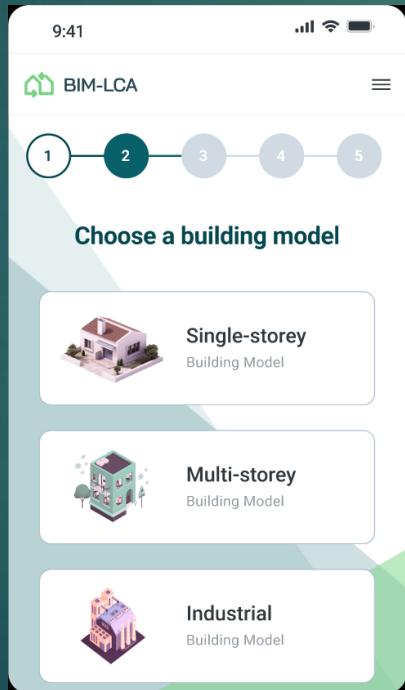
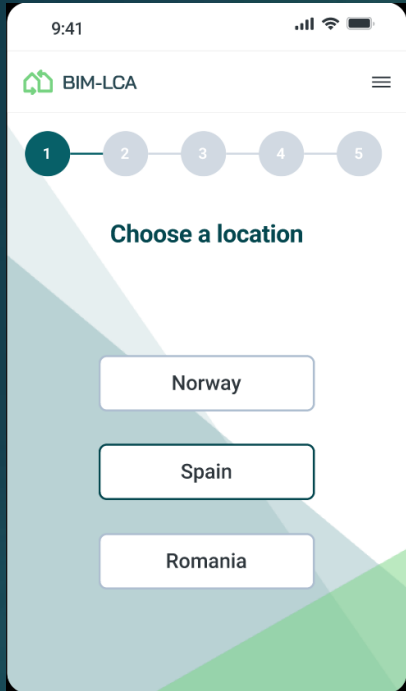
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ICTOOLS WEBAPP



Meetings and learning activities



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CONCLUSIONS

- Students' digital skills will improve due to the BIM (Building Information Modelling) methodology and Open LCA (life cycle assessment) software used along the project
- Students develop various digitalization skills through the use of programs and the interoperability among different types of software
- The application will obtain data from studies on growth trends in the construction activity, from databases of construction products and from studies about material and product lifecycle analysis LCA



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