

BIM-integration in education

BIM-ICE Final Seminar 8.9.2022

Senior Lecturer Timo Lehtoviita, LAB University of Applied Sciences

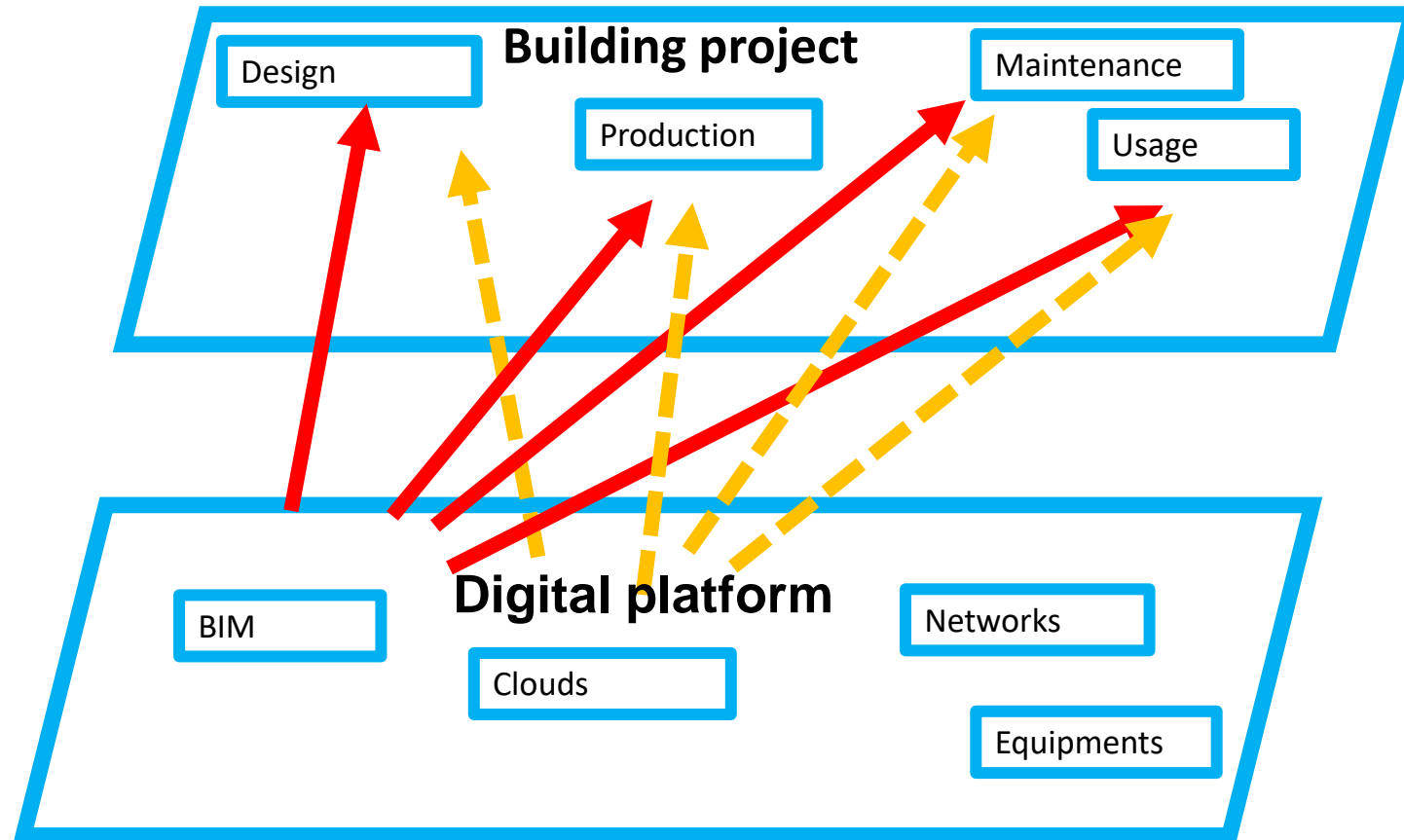


BIM-Integration in Higher and Continuing Education

Co-funded by
the European Union

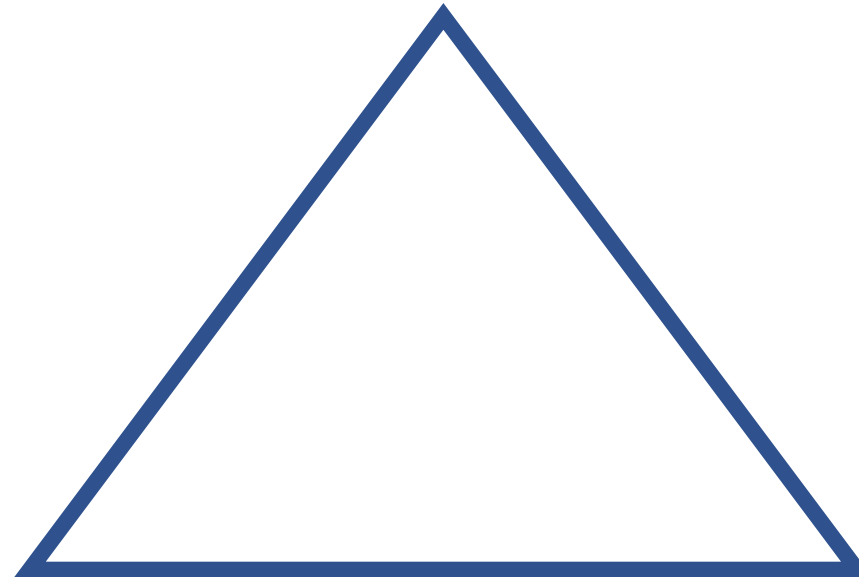


In universities we need to follow development of BIM. That is one the main part of digital platform. Students and professionals need to have competences to use that platform to support main tasks in civil and construction engineering. That's why we have BIM-ICE project.



MODELS

What information ?



INTERFACE

Data transfer,
IFC...

*How to get
information ?*

USE

Analysis
Calculations ...

How to use ?

Original idea of the figure: Jiri Hietanen, 2005. *Tietomallit ja rakennusten suunnittelu. Filosofinen selvitys tieto- ja viestintätekniikan mahdollisuuksista.* Rakennustieto Oy, Helsinki.

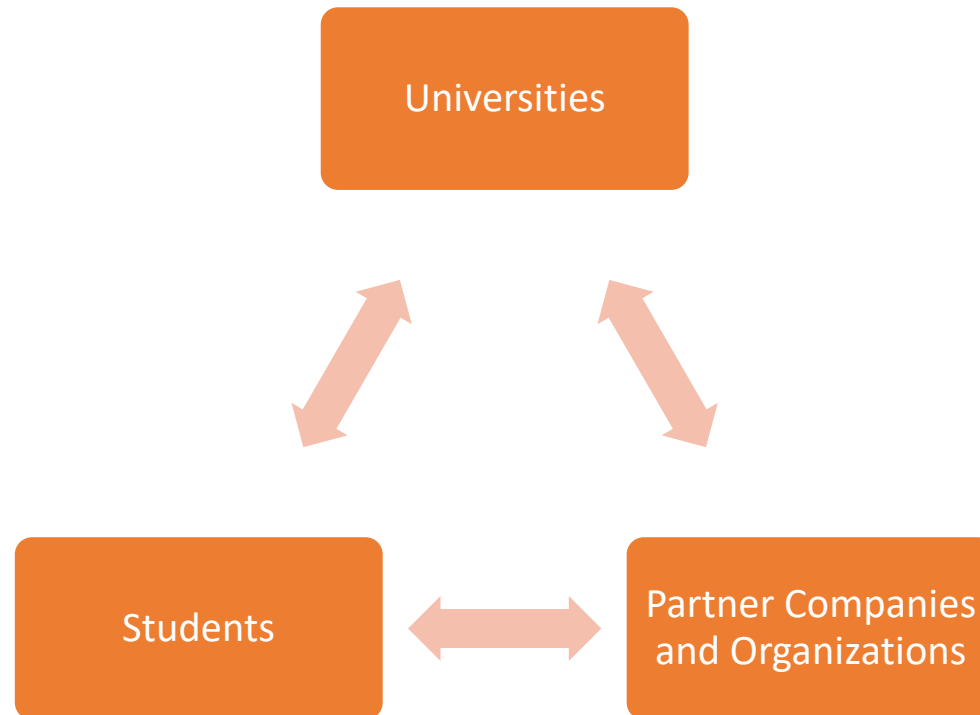
BIM-Integration in Higher and Continuing Education

Co-funded by
the European Union



BIM education and training for three different groups

- Students
- Professionals
- University staff



STUDENTS



BIM-Integration in Higher and Continuing Education

Co-funded by
the European Union



Main steps /Learning path of BIM in LAB /students

FINAL THESIS can be the last STEP
Development, implement, future

OPEN BIM

Basic BIM-course:
Basic understanding and tools

1. year

Professional studies:
Using BIM in different tasks

- design
- Site management
- cost analysis
- time tables etc...

2.-3. years

Project work:

- How to use BIM in different phases of the project
- Information management tools and Cloud services

3.-4. years

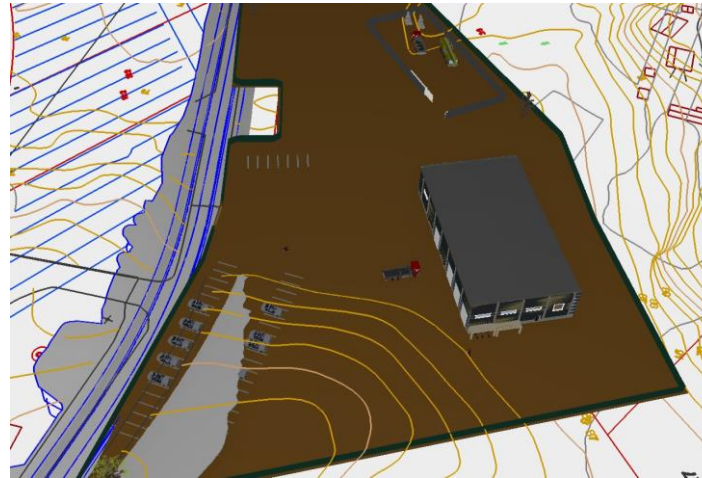
Research and Development Projects supports learning and development of BIM

BIM Summer School

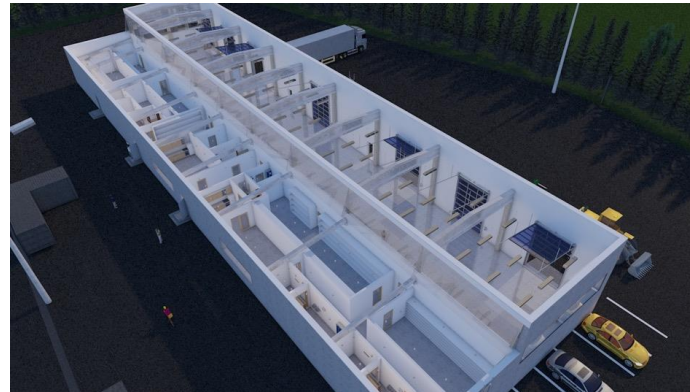
DIGITAL LEARNING PLATFORM: Software, virtual reality, augmented reality, computers, mobile systems, laserscanners etc...

BIM project work 5 cu

- **MAIN GOAL** : How to use openBIM in different phases of a building project
- **Group work**, every group has their own project
- **Students have different roles**: Client, Project manager Architectural design, structural design, MEP design, BIM coordinator
- **CDE-platform** is used
- **BIM is used in different use cases**: Cost analysis, Carbon footprint calculations, combined model. VR, AR
- **Tools** : Archicad, Revit, Tekla Structures, Solibri, Tridify, Trimble Connect, Site vision, Hololens
- **Infra connection**
- **Common BIM Requirements 2012** are used



Picture: Tuomas Nummela, LAB project work student



Picture: Jussi Lommi, LAB project work student



Photo: Tuomas Keränen, LAB UAS



Photo: Jarno Rautiainen, LAB UAS

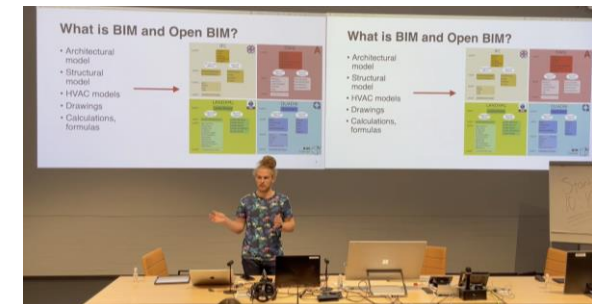


BIM Civil Engineering Summer school

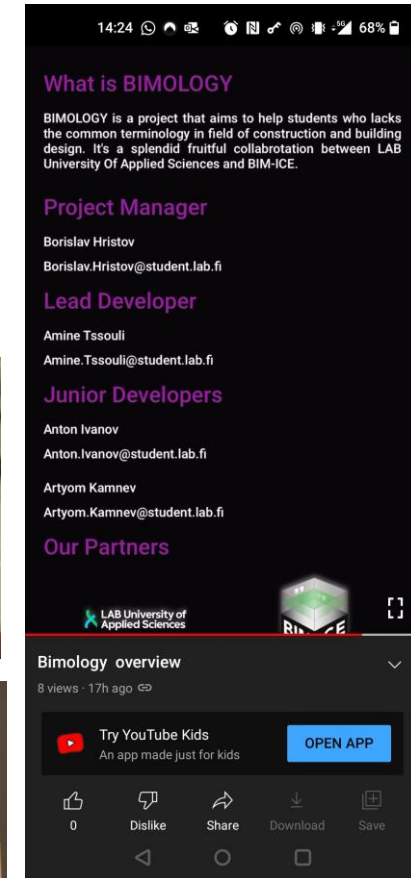
- Students will get extra boost about BIM
- New and more deep BIM- competences will help them to get good jobs
- The idea is to work like real design and development projects
- Co-operation with LAB IT summer school
- Feedback has been very good



Picture:Lumiere Mwila, LAB UAS



Photos: Lumiere Mwila, LAB UAS



Picture:Borislav Hristov LAB UAS



Co-funded by the European Union



PROFESSIONALS

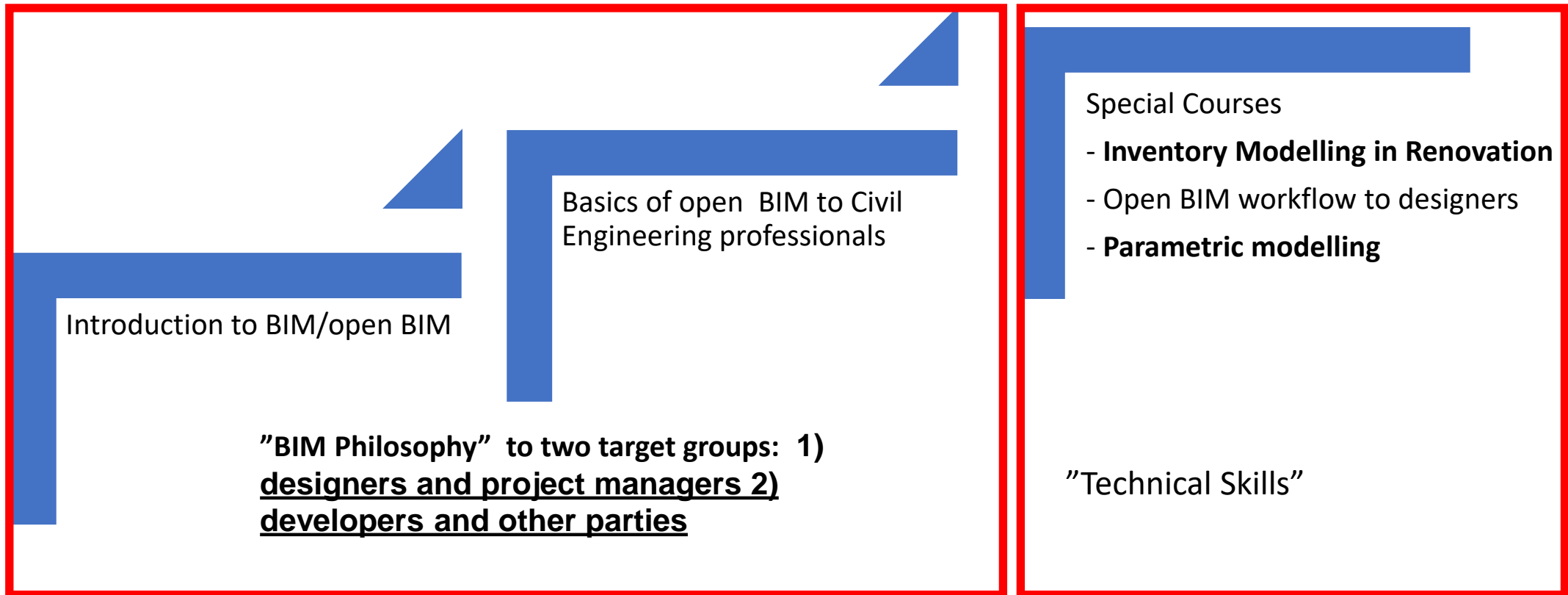


BIM-Integration in Higher and Continuing Education

Co-funded by
the European Union



BIM-ICE learning path of BIM to professionals /LAB



BIM-Integration in Higher and Continuing Education

Co-funded by
the European Union



BIM-philosophy-course

- **Part one to everyone INTRODUCTION TO BIM and OPEN BIM** : What is BIM and openBIM, BIM as a part of digitalization of built environment, how to use models in house projects and infra projects. Basics of city modelling.
- **Part two to civil engineering professionals BASICS OF OPEN BIM** : Basic definitions of BIM, openBIM workflow, national guidelines of BIM, introduction to standards of BIM, basic use cases of BIM. How to handle BIM based civil engineerin project. Future steps.



UNIVERSITY STAFF



BIM-Integration in Higher and Continuing Education

Co-funded by
the European Union



Education and training to university staff

- Basics of BIM to everyone
- BIM Standards basic course
- BIM software short courses



CONCLUSIONS



BIM-Integration in Higher and Continuing Education

Co-funded by
the European Union



Conclusions

- Basic understanding of BIM is needed first as a first step in all three groups !
- New learning materials can be used in all three groups
- Our LAB BIM-team has got plenty of new ideas and competence for future
- New challenges are waiting... new standards...new laws..
- Co-operation with universities, companies and BIM developers is very important

