

# icons learning tools and materials

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KGPI - Katedra za gradbeno in prometno informatiko

Chair of Construction and Transportation Informatics





Univerza v Mariboru

Faculty of Civil Engineering,  
Transportation Engineering  
and Architecture

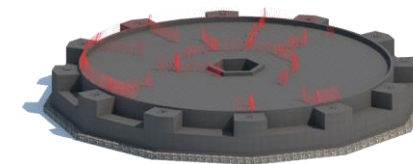
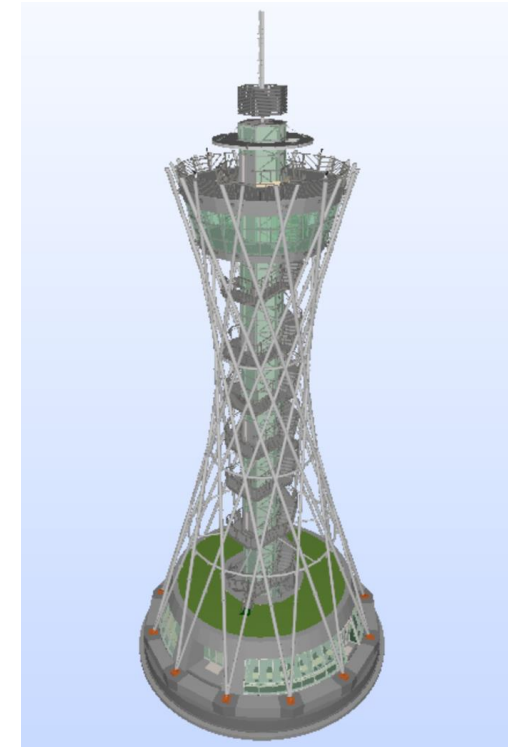
## KGPI - Katedra za gradbeno in prometno informatiko

We educate future civil and transportation engineers, and architects:

- To understand what the digitalization of the built environment is
- To apply BIM in practice

We do BIM research and application!

<https://www.fgpa.um.si/katedra-za-gradbeno-in-prometno-informatiko/>





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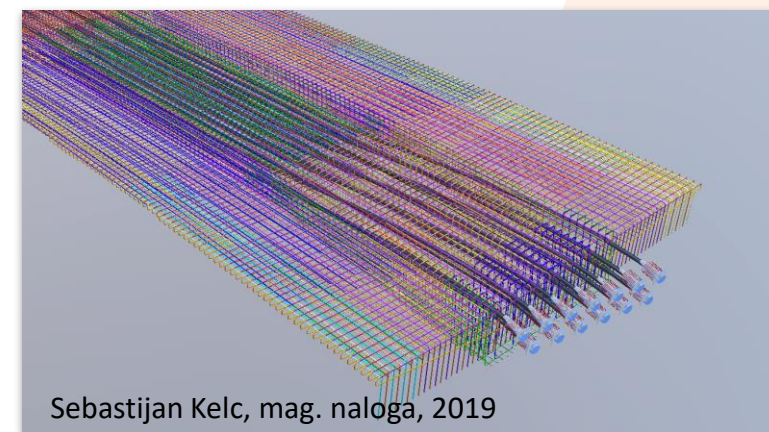
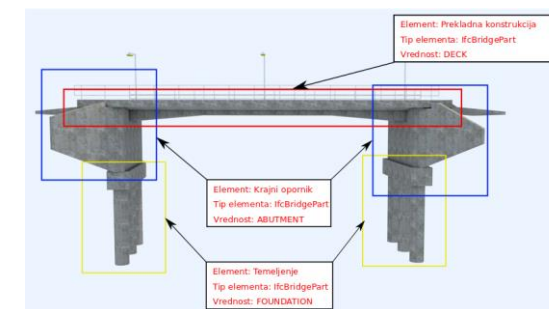
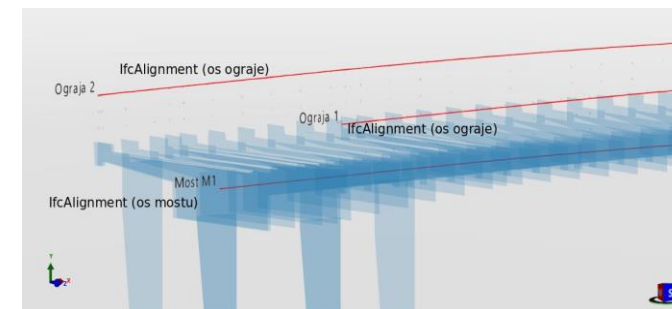
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# PLANNING AND BUILDING WITH BIM

LET'S ADOPT BIM ON CONSTRUCTION SITES TOO!



Sebastijan Kelc, mag. naloga, 2019



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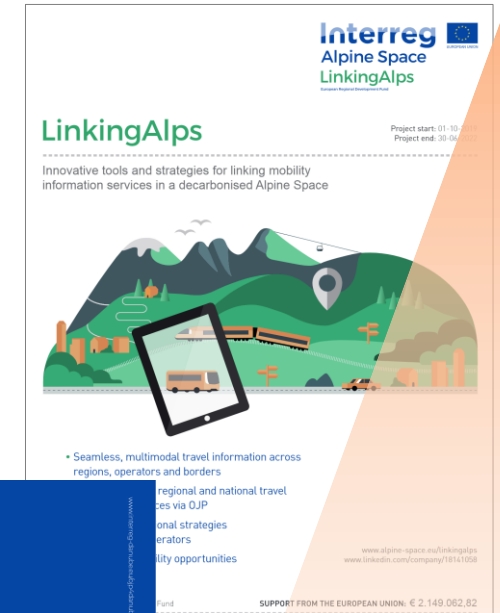
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# PLANNING AND BUILDING WITH BIM

LET'S ADOPT BIM ON CONSTRUCTION SITES TOO!



# Introduction

## Building Information Modelling

- Adopting BIM on construction sites
- Is it so challenging?
- Steps for a successful implementation



## Innovation in Construction Sites

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



Start: 01.12.2019

End: 28.02.2022



Chamber of Commerce  
and Industry of Slovenia



Faculty of Civil Engineering,  
Transportation Engineering  
and Architecture

Content  
creation and  
Review

Translation

Consultancy

## OBJECTIVES

### CREATE

- A tailor-made **training model** to translate the highly technical, complex **set of information** contained in the BIM structure, into a modality which can be **read, understood, processed** by professionals not familiar with BIM.



# Icons

## Innovation in Construction Sites

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## OBJECTIVES

- ADDRESS** • The skills gap between professionals and non-professionals involved in the operationalization of BIM.





# Innovation in Construction Sites

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## OBJECTIVES

- IMPROVE** • The job quality of the workers increasing their digital skills on BIM, consequently promoting productivity and sustainability of the construction sector in Europe.





# Icons

## Innovation in Construction Sites

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## TARGET GROUPS

- ➔ Professionals and non-professionals involved in the **operationalization** of BIM

VET providers, students and workers



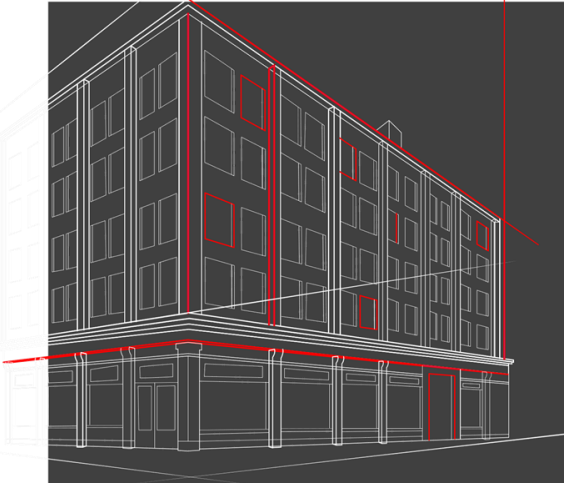
## EXPECTED RESULTS OF THE PROJECT

- Training modules supporting the introduction of BIM
- APP collecting the training modules as a pedagogical tool
- E-guide collecting all content, methods and recommendations



## EXPECTED RESULTS OF THE PROJECT

- Training modules



01

What is BIM

02 Building part of BIM

03 BIM model

04 BIM object

05 Information in BIM

06 Common Data Environment

07 Roles in BIM

08 Collaboration in BIM

09 BIM Execution Plan

Logos: SCUOLA COSTRUZIONI VICENZA, BZB, Coventry University, WESTDEUTSCHER HOCHSCHULENVERBAND, FUNDACIÓN LABORAL DE LA CONSTRUCCIÓN, IRTIC, Institut de Recerca i de Transferència de la Informació i de les Comunicacions, Gospodarska zbornica Slovenije, Co-funded by the Erasmus+ Programme of the European Union



## EXPECTED RESULTS OF THE PROJECT

- Training modules



“Compliant BIM-Oriented training course for workers 4.0 in the Construction field”

Improving skills in reading and processing technical information, in integrated project systems - Building Information Modelling.



## EXPECTED RESULTS OF THE PROJECT

- Training modules - Example



### Project participants

Construction projects are often complex and multidisciplinary with many specialized teams involved. Traditionally, construction projects encompass:

### BIM Project Participants

BIM introduces new processes, technologies and policies led to a need for specialized professionals. In reality, some of the responsibilities can be taken on by the same professional. Among these, the most common are BIM manager, coordinator and modeller.



Other BIM professionals: BIM analyst, researcher, facilitator, technician, etc.



Project manager  
Main contractor  
Site manager  
Site engineer  
Sub-contractors  
Specialists  
...

Construction team

### BIM Project

#### BIM Manager

Responsible for the wide implementation

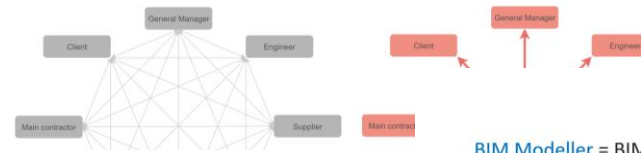
Skills: High management and communication

Responsibilities:

- Establishing the organization objectives;
- Research tools, manage licenses, overseeing implementation;
- Implementing BIM processes and workflows;
- Making sure standards are being correctly implemented;
- Improving and implementing best practices in BIM;
- Providing training;
- Attend conferences, seminars and workshops internally

### BIM concept review

Whereas in traditional projects information was shared directly from one participant to another, BIM promotes the use of a Common Data Environment for improved information flow between everyone. (That includes YOU)



### BIM Project participants

#### BIM Coordinator

Team or project BIM leader

Skills: BIM authoring tools knowledge, high communication

Responsibilities:

- Coordinating the BIM project and the team;
- Providing technical support and mentoring for the project;
- Managing the project content;
- Setting BIM protocols;
- Model management administration and maintenance;
- Coordinating and managing confidential information;

### BIM Project participants

BIM Modeller = BIM Technician

Skills: BIM software modelling expert with discipline knowledge (structural, MEP, architectural)

Responsibilities:

- Developing the model/s;
- Ensure the model is aligned with the project requirements;
- Collaborate with other disciplines (for design/model changes);
- Content creation;
- Develop/extract and coordinate documentation and content from the Common Data Environment



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2nd JUNE 2021





## EXPECTED RESULTS OF THE PROJECT

- Innovative App



- Training contents are stored and can be easily accessible by users.

1. What is BIM?
2. Building part of BIM
3. BIM model
4. BIM object
5. Information in BIM
6. Common Data Environment
7. Roles in BIM
8. Collaboration in BIM
9. BIM Execution Plan







## EXPECTED RESULTS OF THE PROJECT

- Innovative App



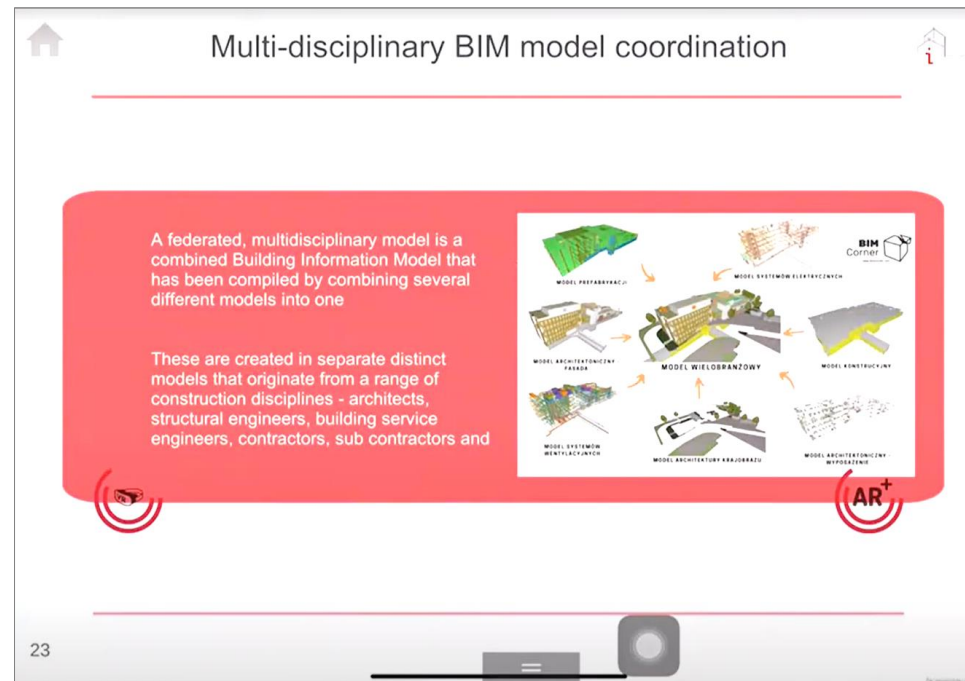
- Content will be translated in all partnership languages (English, German, Slovenian, Spanish and Italian)
- Can be used both with ANDROID and IOS devices, will be available to download, free of charge, both in the Apple Store and Play Store
- Virtual and Augmented Reality technology





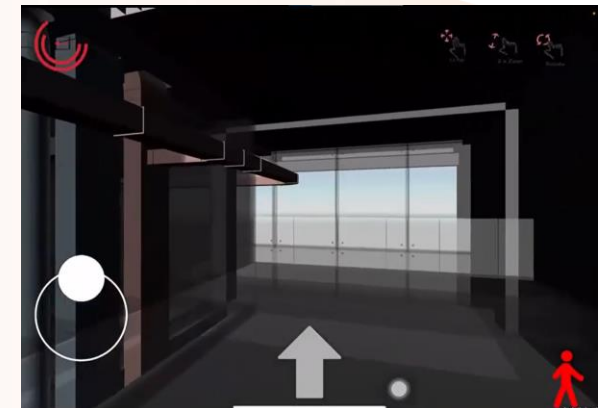
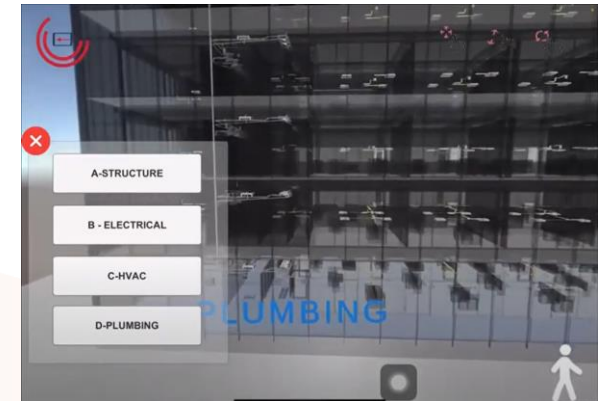
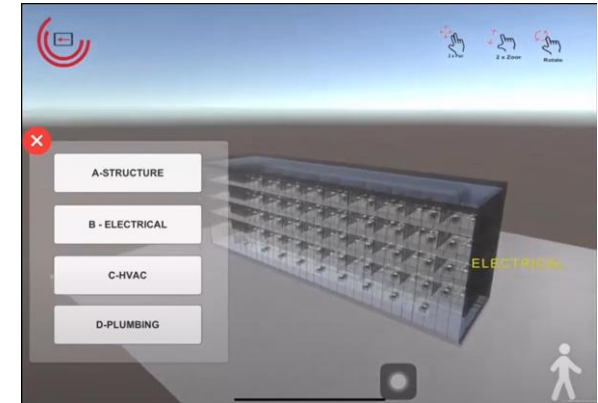
## EXPECTED RESULTS OF THE PROJECT

- Innovative App



- Virtual Reality technology

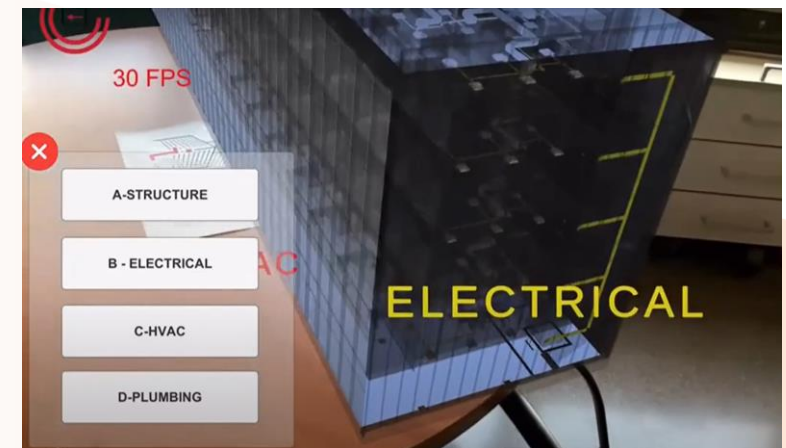
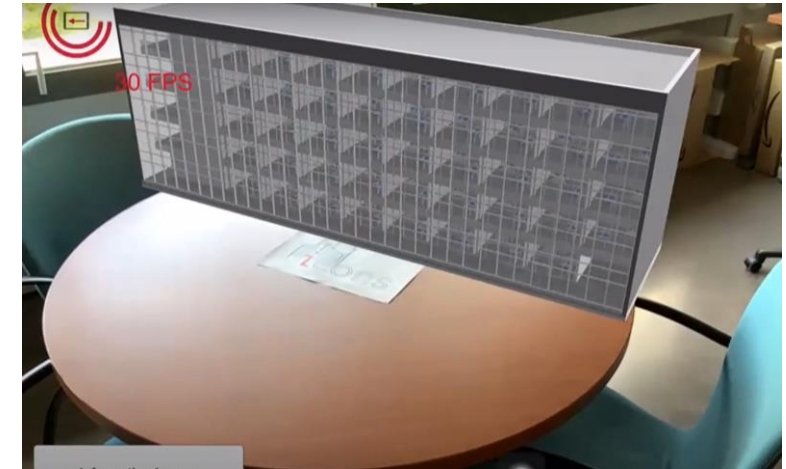
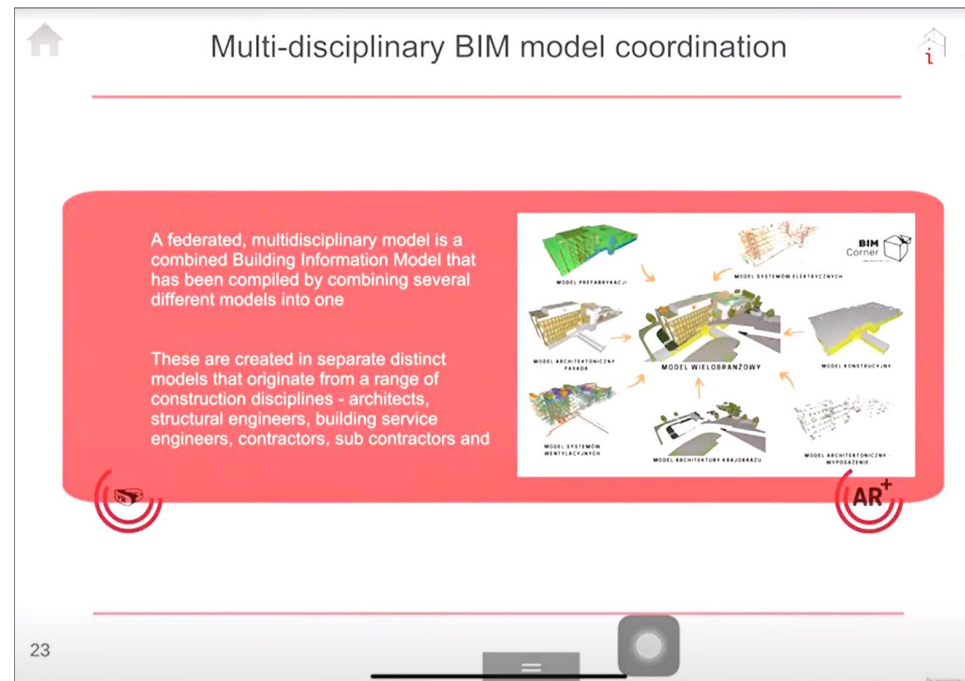
As presented in the Trainer of Trainers Icons event by Dr. Marcos Fernández – Valencia University





## EXPECTED RESULTS OF THE PROJECT

- Innovative App



- Augmented Reality technology

As presented in the Trainer of Trainers Icons event  
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## EXPECTED IMPACTS ON USERS

- Motivated workers and students
- Improved collaboration
- Best practices adoption
- Knowledge on the dedicated technology
- Training in the use of BIM tools
- Awareness on the processes used in construction projects
- Know-how aligned with the construction projects objectives



Erasmus+ project card | Erasmus+ (europa.eu)



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