Co-funded by the European Union

Funded by: Erasmus+ KA2 – VET
Project Agreement Number: 2023-1-EL01-KA220-VET-000158810

R2.3
Exchange between construction/deconstruction workers and education professionals on the BIM use at EOL practices: Strengths and challenges

ITALY Report

SCUOLA COSTRUZIONI VICENZA ANDREA PALLADIO

25.09.2024

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the State Scholarships Foundation (IKY). Neither the European Union nor the granting authority can be held responsible for them.

Funded by: Erasmus+ KA2 – VET
Project Agreement Number: 2023-1-EL01-KA220-VET-000158810

Table of contents

Introduction

Building Information Modelling (BIM) is an innovative and transformative technology in the construction industry, offering a 3D digital representation of the physical and functional characteristics of buildings and infrastructure. BIM facilitates improved collaboration, efficiency, and sustainability throughout the lifecycle of a project, from design and construction to operation and maintenance.

Europe has been at the forefront of BIM adoption, with varying degrees of implementation and maturity across countries. The Directive 2014/24/EU on public procurement, adopted by the European Union in 2014, plays a pivotal role in promoting the use of BIM across Europe. This directive encourages member states to consider digital tools, such as BIM, for public works contracts. The aim is to enhance efficiency, transparency, and innovation in public procurement processes.

A.2.1 has provided detailed research to conform a report on the current status of BIM uses providing an overview of the status of BIM in Belgium, Germany, Greece, Italy, and Slovenia, the countries that are represented in the BIM4D consortium. The second part of the research has been devoted to the use of BIM for deconstruction considering various elements: theoretical perspectives, benefits, current skills need, challenges, relating policies and links with sustainable waste management.

A.2.2 - Needs assessment on current skills needs of the use of BIM at EOL practices has been implemented via a survey to understand the skills required for effectively using Building Information Modeling (BIM) in the deconstruction phase of construction projects and detect skills needs to design the training within the BIM4D project. The survey has been addressed to professionals and companies who use BIM in their regular work or who have knowledge of the topic or who consider BIM an opportunity for their company.

A.2.3 - Exchange between construction/deconstruction workers and education professionals on the BIM use at EOL practices: Strengths and challenges has been implemented via workshops designed to foster exchange between construction, deconstruction workers, and education professionals regarding the use of Building Information Modeling (BIM) in End of Life (EOL) practices. The focus is on discussing the strengths and challenges of BIM in facilitating sustainable deconstruction and material recovery. A workshop has been conducted in each participating country of the BIM consortium (Belgium, Germany, Greece, Italy, and Slovenia) with construction workers, deconstruction workers and educational experts.

Agenda of the Workshop

Provide the

- **Workshop date:** 25.09.2024
- **Location** : SCUOLA COSTRUZIONI VICENZAANDREA PALLADIO
  Viale Cricoli 57 – 36100 Vicenza (VI)
  Face to face event

- **Timeframe:** 17:00 – 19:00

17:00 Participant's welcome & registration

17:10 Workshop's objective and agenda introduction

17:20 BIM4D project presentation

17:40 Discussion in plenary on topics:

Digital integration in the deconstruction process

Strength and challenges of digital technology in deconstruction

18:30 Coffee break

18:40 Discussion in plenary on topic

Ability & skills needed to digitalize deconstruction process

Gathering participants' opinions

19:00 Workshop survey & conclusion of the workshop

Profile of the participants

Participants involved in the workshop:

- **Number of participants:** Total of 15 participants + 2 SCVAP staff members

Breakdown of professional roles:

- 03 Deconstruction / excavator operator
- 04 Construction workers
- 03 Construction / deconstruction technicians
- 02 Construction / deconstruction surveyors
- 01 Engineer
- 02 Educational experts
- 02 SCVAP Educational expert & staff members

Content of the discussion

Topics covered and key points raised during the workshop discussions:

- **Key themes:**

The main topics in which we have focused are:

- What is BIM and how could be implemented in the deconstruction practices,
- How BIM may facilitate comprehensive tracking of materials throughout the construction and deconstruction phases, enhancing sustainability by promoting efficient resource use.
- Challenges that Italy face in deconstruction since the complexity of existing structures and the archeological value of the buildings.
- Differences between renovation, redevelopment, and modernizing structures, as well as how digital processes could be integrated effectively into these activities

- **Exchange of experiences:** In plenary it emerged that the companies in which the participants are working do not have construction sites that require the use of BIM. Participants that already started to use BIM, did on a voluntary basis but complained about the lack of clear rules and standards, making digital collaboration complicated. Regarding deconstruction phase, it emerged that the quality and typology of materials found in buildings make the difference in the deconstruction phases, at the moment it is simpler and less expensive to demolish rather than recycle or reuse.

- **Challenges and opportunities:** In the comparison phase, many opportunities have been highlighted in the use of digital applications in construction, for example the reduction of variations during construction, thus minimizing errors, and cutting costs due to improvisation, moreover, simplify the construction process and phases. Major obstacles and barriers to implementation include management costs, the time and expense of training, a lack of IT skills, and the risk of speculation, which could drive up costs.

- **Participant comments:** points emerged were very interesting:
  Need to increase training courses on the topic
  Having an open-source application to reduce the cost,
  Start changing the way buildings are designed, starting from a focus on longevity and deconstruction to lower long-term costs.

Main conclusions

- **Main conclusions:** A lot of interest has been shown toward the topic of BIM and its use in deconstructions phase, all participants agree it is necessary to develop training sessions to go deeper into the topic, but they assess it is necessary starting to work with clear rules and unified standards and this for all categories involved in the construction process of a building.

- **Actionable insights:**

  Develop training courses on:

  Use of BIM
  How to design focusing on deconstruction process
  Re-use, recycle and research of building materials

Photos or Screenshots

- **Photos of the participants and the workshop environment:**