



R.2.3

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

SLOVENIA Report



CCIS CCBMIS

12.10.2024



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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 a 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 needs, 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.

In Slovenia, the CCIS CCBMIS team organized two feedback events to engage industry professionals and gather input on BIM usage in the End-of-Life (EOL) phase of buildings.



Agenda of the SI Workshops - 1st WORKSHOP

20. 9. 2024 (virtual platform) - Exchange between construction/deconstruction workers and education professionals on the BIM use at EOL practices: Strengths and challenges (A.2.3.) ;

On 20.9.2024, the CCIS CCBMIS Expert Service (Slovenia) organized a workshop in the form of an informal online conversation. The interested professional public was invited to discuss the use of Building Information Modeling (BIM) and End of Life (EOL) practices, with a focus on the exchange of views regarding the strengths and challenges of BIM in facilitating sustainable deconstruction and material recovery.

At the event, we informally discussed development of green and digital skills for the use of BIM in end-of-life practices and tried to answer the key questions of the project.

The event was a great opportunity to exchange opinions, experiences, as also to present needs and find solutions. The participants contributed their views constructively and together we tried to contribute to a better understanding of the challenges and opportunities brought by digitalization in the end-of-life phase of buildings, with an emphasis on the situation in Slovenia.

Event agenda of on online event 20.9.2024:

- 13.00 – 13.10 – Introduction with a presentation of the BIM4d project, presentation of participants, and an invitation to discussion and exchange of views,
- 13.10 – 13.20 – Presentation of key questions regarding challenges and opportunities brought by digitalization in the end-of-life phase of buildings, open the discussion by identify the key dilemmas associated with the use of digitalization in the field of decommissioning in the construction industry,
- 13.20 – 13.50 – Group discussions
- 13.50 – 14.00 – Closing remarks

Profile of the participants - 1st WORKSHOP

The first event was an online workshop that brought together from our side invited professionals - experts from the construction sector. This informal online discussion focused on the strengths and challenges of BIM in facilitating sustainable deconstruction and material recovery. Participants reviewed survey results and shared their experiences, needs, and solutions. The event offered a platform for exchanging ideas and enhancing understanding of how digitalization can support EOL processes in Slovenia's construction industry. The feedback provided by participants was invaluable and has been integrated into this report to create a more comprehensive analysis.

The invitation to an informal discussion on the virtual platform was communicated in the form of a LinkedIn announcement and via direct Event email invitations. A total of 25 people were invited. 9 non-anonymous persons actively participated in the discussion.

List of participants of the CCIS online focus round table from 20.9.2024:

- Aleš Dremel ales.dremel@gzs.si; CPU www.cpu.si VET CENTER
- Petra Velkoverh petra.velkoverh@cpu.si; CPU www.cpu.si VET CENTER
- Urška Kavčič Rihar urska.kavcic-rihar@cpu.si; CPU www.cpu.si VET CENTER

- Matjaž Šajn Matjaz.Sajn@cgs-labs.com; CGS LABS d.o.o.
<https://cgs-labs.si/DESIGN>
SME COMPANY

- Andreja Rezelj Andreja.Rezelj@cgp.si; CGP d.d. www.cpu.si
CONTRACTOR SME COMPANY

- Tomaž Brzin tomaz.brzin@rem.si; REM d.o.o. <https://rem.si/o-nas/>
PRODUCER SME COMPANY

- Barbara Kunčič barbara.kuncic@cpi.si; CPI RS www.cpi.si
NAVET body

- Valentina Kuzma valentina.kuzma@gzs.si; CCIS CCBMIS www.gzs.si/zgigm

- Alenka Bea Logar Pučnik alenka.pucnik@gzs.si; CCIS CCBMIS www.gzs.si/zgigm

Participants by category:

- 3 construction workers
- 1 deconstruction workers
- 5 educational experts

In the end, the materials from the event were received by 34 external participants. Most of them are civil engineers, architects, mechanical engineers and other experienced professionals, also in the field of innovative development in the field of recyclables.



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- **CPU – VET CENTER** - The Institute for Business Education has a special place among educational institutions in Slovenia. Through its direct connection with the economy, it connects educational processes with the dynamic development of the economy. It also has the longest tradition among educational institutions in the field of adult business training and is a creative partner in various projects of CCI, Employment Service of Slovenia and reliable partners in several EU projects.
- **CGS LABS d.o.o.** is a SME company, specializing in information and environmental technologies, especially BIM software tools.
- **CGP d.d.** is contractor SME company that provides high quality building and infrastructure construction services, production, investment engineering and project management.
- **REM d.o.o.** is a medium-sized company with an important role in the production of complex modular prefabricated buildings in Europe and beyond, specialised in the design, manufacture and assembly of complex modular prefabricated buildings.
- **CPI RS** is an institute of the Republic of Slovenia for vocational education and training.
- **CCBMIS; The Chamber of Construction and Building Materials Industry of Slovenia** (CCBMIS, slov. ZGIGM) is a professional industry branch association organised within CCIS.

Content of the discussion - 1st WORKSHOP

The BIM4D project focuses on the development of skills for the use of Building Information Modeling (BIM) technology in processes involving the end-of-life phase of buildings. Evidently, there is still a lack of digitalisation in the dismantling and decommissioning phases in the countries involved in the project, which hampers the efficiency and sustainability of these processes.

Key issues for discussion:

- How can digital tools, especially BIM, improve the efficiency and sustainability of deconstruction projects?
- What stages of the process could benefit most from these technologies?
- What are the main obstacles to the introduction of digital technologies in deconstruction processes? How can we overcome them and facilitate the integration of these tools into practice?
- To what extent do digital tools in BIM design, construction and deconstruction already include the categories of sustainability and the aspect of recycling? What about the treatment of hazardous construction waste?
- What knowledge and skills are currently lacking in construction and deconstruction professionals?



- How can we improve existing educational programs to more adequately address both technical and sustainability needs?

Key themes, exchange of experiences, challenges and opportunities, participant comments:

We concluded: we are in a phase of moving beyond the why to how to move from conventional construction technologies to digitally supported technologies practices in the construction industry, which represents a challenge for all involved representatives of the design, operation, production and learning centers in the field of construction.

What are the advantages and challenges of BIM applications in the construction of buildings throughout the lifecycle?

CCIS CCBMIS, as an important stakeholder in the process of the upcoming revision of professional standards in the field of sustainability, raises dilemmas in this regard regarding the updates of existing professional standards (from 3 to 6. Educational levels) regarding the possible introduction of a new occupational standard. From the analysis of the situation based on the conducted survey, he tries to find an answer to the question, what necessary new content to include in these stages of education? What are the new skills and knowledge requirements for existing and new occupations in the transition to digital building technologies?

The European Commission is preparing a new protocol for the demolition of buildings; the requirements of the current L.2016 Protocol on selective degradation and the integration of materials from decommissioning into re-use will be further strengthened; Is it necessary to introduce material passports in deconstruction processes?

Mr. Šajn, as a representative of SiBIM and BuildingSMART Chapter organizations, comments on the results of the survey; "The awareness of the existence of BIM in the Slovenian space is encouraging, it is recognized as a useful technology. BIM comes from design, and demolition is the last, final stage in the construction process. BIM will be able to have a positive impact on the decommissioning process when the decommissioning facilities are those that have also been designed, built and managed in BIM technology; then we will have the data model and we can usefully use it for circular economy practice."

But how to approach the deconstruction of existing buildings that were not designed in BIM technology? An option is to implement sustainable decomposition using 'reverse' BIM processing by scanning objects and converting them to a BIM model, supported by AI; Of course, such a model cannot achieve the accuracy of the previously mentioned models, processed through all phases of construction, the traceability of the materials used is also lacking, and the cost aspect of this type of data processing is different. It is desirable that digital technologies enable advanced test methods, widely applicable and a systematic approach in the treatment of hazardous construction waste and toxic substances in deconstruction processes. (Mrs.Logar Pučnik, CCIS CCBMIS).

Mrs. Rezelj highlights a key dilemma from the operational practice of decommissioning; Who is charged with the costs of BIM services in the perspective of sustainable decommissioning? In the current situation, clients are unfortunately not interested in digital models, sustainable awareness is actually minimal, only according to the principle of minimal costs. In practice, for the time being, the record



sheets that they have to keep due to legislative protocols are sufficient. BIM construction technology is carried out only on company's own initiative in the case of smaller, pilot projects.

The technology of production of prefabricated objects in the company REM d.o.o. is already ripe for recycling. They have also already recycled their own building in terms of reuse for other uses. However, they do not yet have the most developed BIM technology with which to plan sustainable decommissioning at the end of the life of the buildings.

The discussion also touched on the up-to-date issue of adopting new amendments to the new Building Act, on which the CCIS CCBMIS also commented. Attendees were invited to comment on suggestions pertaining to BIM provisions. "Awareness of the importance of BIM technology is growing. Most of our proposed content is meaningfully covered in the supplements' (Mr.Šajn, as a representative of the SiBIM and BuildingSMART Chapter organizations).

Mrs. Rezelj welcomes the introduction of legally binding implementation of BIM technology in the projective. They are currently building a large Emonika project in the center of the capital, which was also not planned in BIM technology. It was not requested by the client in the design of the project. From now on, this will therefore be a legally mandatory, rather than optional, choice of the client.

Mr.Šajn: 'BIM technology brings benefits to everyone in the construction chain, especially its added value is evident from the point of view of management; An economical client should be the initiator and demand it.'

An initiative was made to the Republic Housing Fund: as a contracting authority in the public interest, it should now request project documentation in BIM technology as an example of good practice (Valentina Kuzma, CCIS CCBMIS).

Mr. Šajn invited all participants to the SiBIM meeting for contractors with a presentation of good practices of domestic and foreign contractors who use BIM. The client wanted them or not, they use BIM because they themselves have realized the added value and usefulness of BIM technology. A similar meeting for subscribers was held this spring.

Main conclusions – 1st WORKSHOP

- Main conclusions, actionable insights:

- In the perspective of deconstruction, we understand BIM as a planning approach that defines the degree of separation of construction waste at the source.
- The use of BIM advanced software tools and modeling with some already built-in AI functions in deconstruction is only possible as an upgrade of quality engineering approaches. In the case of construction and deconstruction contractors, the latter refers to both qualitative educational advancement in terms of conventional engineering knowledge and skills, as well as the competence to master digital



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technologies, solutions and services in the context of information and communication infrastructure. What is the actual prevalence of the use of these tools in our country is very difficult, almost impossible to say. The new legislative requirements regarding sustainable construction will create a fundamentally changed situation in the construction industry and redefine the priorities in the business decision-making of companies in the field of construction and deconstruction, especially in terms of conflicting real situations in construction practice, if they do not introduce BIM optimization of construction planning.

- It is important to focus on the implementation of BIM technology in all phases and to promote the added value it introduces to the construction industry and to sustainable attitude towards the environment.

At the same time, it is important to encourage manufacturers to create 'BIM building blocks' for their products as soon as possible and submit them to the Building Products Database Platform.

- In this sense, it is also inevitable to improve existing educational programs as quickly as possible, qualitatively adapt them and systematically supplement them with an updated set of knowledge, especially in the field of the use of advanced software tools and BIM modeling, which are indispensable for professional activity in the upcoming changed conditions of digitalization and green transition in the construction industry.
- The use of BIM models is an essential condition for sustainable planning of deconstruction and effective practices of recycling economics. Only with accurate documentation and the existence of construction databases can materials that can be reused and recycled effectively recorded.
- The communication of building data must continue throughout the lifetime of the building, up to decommissioning. It is of utmost importance to take into account the aspect of deconstruction already at the planning stage. In the fight against pollution and for a sustainable attitude towards environmental protection, it is important to take into account the possibilities for recycling already in the design phase of construction, as this contributes to sustainable solutions. In this perspective, the development of databases, the established records of use and the traceability of building data are therefore essential all the way back to decommissioning.
- Of particular importance for accelerating the green transition and the transition from a linear to a circular economy in the construction industry is the creation of a supportive environment for the development of innovative, scientifically research-active institutions in the field of recycling and intensive mutual cooperation between the activities of analysis, development, planning, production, construction and deconstruction.
- The workshop held in mid-September this year coincided with the launch of the Interzero Plastics Innovations, Innovation and Development (SME) competence centre in the new laboratory and business centre in the north-eastern part of



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Slovenia. Experts in this company annually check the recyclability of more than 250 types of packaging waste and develop up to 40 new recipes for use in production. The company is the first and only internationally accredited research institution specializing in the analysis and development of innovative recycled plastic materials, a leader in the development of recycled materials in Europe and part of the international group INTERZERO Holding GmbH & Co.KG. The company combines research and development activities and collaborates with many companies to efficiently recycle materials, and the recycled materials developed often exceed the quality of primary materials.

- The introduction of BIM technology in the field of deconstruction with associated development improvements, optimization of routes or collection logistics, automation of collection processes (automatic recognition of waste by scanning) and sorting of construction waste (in the process of sorting on sorting lines using computer vision algorithms and machine learning), with the inclusion of digital, AI-supported technologies, opens up numerous opportunities in the field of efficiency, capture of separate secondary raw materials, preserving primary sources of raw materials and reducing costs. This kind of quality upgrade of deconstruction - deconstruction of construction waste with the help of artificial intelligence is conditioned by appropriate preliminary engineering approaches - existing project BIM documents from the design of the construction onwards. With this, the introduction of BIM promises significant progress in the green transition of the construction industry and towards a more sustainable and efficient management of companies in the construction industry.



Agenda of the SI Workshops - 2nd WORKSHOP

The second workshop, held on 11th October 2024, served as a critical validation session for the findings from the BIM4D project. Organized by buildingSMART Slovenia in collaboration with CCIS CCBMIS, the event targeted contractors and professionals actively implementing or exploring Building Information Modeling (BIM) technologies in their operations. This in-person workshop focused on addressing the specific challenges and opportunities of integrating BIM into end-of-life (EOL) practices and deconstruction in Slovenia. Key insights from the discussions were instrumental in validating the project findings, as well as exploring practical applications and gaps in the current use of BIM for decommissioning projects.

A total of ca.40 people were actively participated in the event and also in the discussion.

Event agenda of the in-person event 11.10.2024:

9:00 - 9:10 ... Welcome address (Ksenija Marc, DRI)

9:10 - 9:30 ... State of BIM in Slovenia (Matjaž Šajn, buildingSMART Slovenia / CGS Labs)

9:30 - 9:50 ... BIM requirement in GZ-1 (Elvis Štemberger, siBIM / IBE)

9:50 - 10:10 ... Best practice presentation - Strabag (Catalin Andrei, Strabag)

10:10 - 10:30 ... Presentation of good practices - Kolektor Koling (Metod Gaber, Kolektor Koling)

10:30 - 10:50 ... Presentation of good practices - GIC GRADNJE (Tjaša Zupančič, GIC GRADNJE)

10:50 - 11:10 ... Presentation of best practices and solutions for contractors - Bexel Consulting (Veljko Janjić)

10:10 - 11:30 ... Discussion (GZS ZGIGM-CCIS CCBMIS team) and conclusions

Profile of the participants - 2nd WORKSHOP

The second feedback event, held approximately 20 days later, was an in-person validation workshop. This session took place during a larger BIM event, bringing together a broader group of stakeholders (mainly contractors-construction companies, some designers and consultants also and few public investors) to further discuss the data collected and refine the conclusions. This face-to-face workshop provided an opportunity for final consultation and more in-depth discussion of the thematic data, helping to validate and strengthen the findings of the research.

Content of the discussion - 2nd WORKSHOP

Key Discussion Points

The workshop explored several critical areas of BIM implementation, particularly in the context of Slovenia's construction industry:

1. Current BIM Adoption in Slovenia:

- Matjaž Šajn presented the current state of BIM adoption in Slovenia. While BIM is gaining momentum in the design and construction phases, its integration into deconstruction remains limited. Contractors are beginning to explore BIM for sustainable project management, but widespread adoption is still hindered by knowledge gaps and a lack of financial incentives.

2. Legal Framework and Upcoming Requirements (GZ-1):

- Elvis Štemberger provided an update on the upcoming legal requirements under the GZ-1 building law, which will mandate the use of BIM for public infrastructure projects starting in 2025. This is a significant development that could push more companies to adopt BIM across all project phases, including decommissioning.

3. Deconstruction Challenges and Contaminated Materials:

- A major part of the discussion centered on how BIM can be applied to decommissioning projects, especially in managing contaminated materials such as asbestos, lead, and polychlorinated biphenyls (PCBs). Presenters emphasized that while BIM can significantly improve project safety and efficiency by mapping out hazardous materials in existing structures, Slovenia lacks adequate data integration at this stage. This gap needs to be addressed to ensure compliance with upcoming EU regulations on hazardous material management.

4. Best Practices in Deconstruction Using BIM:

- Presentations by Catalin Andrei and Metod Gaber offered practical case studies from Strabag and Kolektor Koling, showcasing how BIM is being used to monitor costs, improve material traceability, and streamline waste management. However, they also highlighted that tracking the financial impact of deconstruction in real-time remains a challenge, as many existing BIM tools are not yet fully adapted to this use case.

5. Material Recovery and Circular Economy:

- Tjaša Zupančič emphasized the role of BIM in enabling circular economy practices, particularly through better material recovery and recycling processes. While Slovenia has made strides in implementing BIM for material tracking, there is still a great need for more comprehensive databases that can support deconstruction planning from the early design phases.



6. Technology Gaps and AI Integration:

- The discussion also touched upon the potential integration of AI into BIM workflows, particularly for scanning and reverse-engineering older buildings that were not initially designed using BIM. AI-driven tools could help generate BIM models for decommissioning projects, improving material recovery and reducing the risk of hazardous material exposure. However, the cost of such technologies remains a significant barrier.

Workshop Validation Session

The final segment of the workshop allowed participants to reflect on the project's findings and offer feedback. The consensus was that BIM, while useful, is still underutilized in Slovenia's **decommissioning sector**. The discussion validated several points from previous research:

1. **Limited Use of BIM in EOL:** Participants agreed that BIM is not yet fully integrated into decommissioning workflows, particularly for hazardous material management. There was broad agreement that more work is needed to ensure BIM can support circular economy goals.
2. **Need for More Training:** Contractors and construction professionals highlighted a need for training programs that focus specifically on using BIM for EOL practices, including cost tracking, material recovery, and the management of contaminated materials like asbestos and lead.
3. **Incentives for BIM Adoption:** Several participants noted the need for government incentives to encourage wider adoption of BIM, particularly in public projects where deconstruction and sustainable practices are mandated.
4. **BIM for Safety and Compliance:** Participants agreed that BIM can improve compliance with both EU and Slovenian regulations regarding safety and environmental sustainability, particularly as new rules on hazardous materials come into effect.



Main conclusions – 2nd WORKSHOP

The 11th October 2024 workshop served as a crucial platform for addressing real-world challenges and validating the findings of the BIM4D project. It also identified clear next steps for integrating BIM into EOL practices in Slovenia, including greater focus on contaminated materials, improved training programs, and stronger government incentives. These initiatives will be essential in advancing the digitalization of Slovenia’s construction sector and meeting EU sustainability goals.

Main Conclusions and Actionable Insights

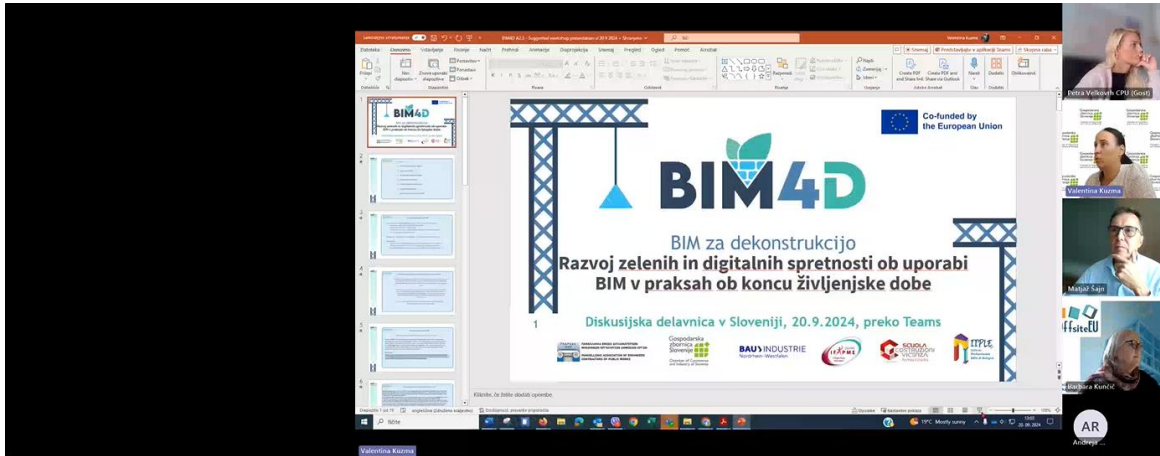
1. **Incorporation of Hazardous Materials into BIM:** There is a strong need for Slovenia to integrate data on hazardous materials—including asbestos, lead, and PCBs—into BIM models for decommissioning. This will ensure that buildings are deconstructed safely and in compliance with regulations.
2. **Expansion of Training Programs:** More specialized BIM training programs focused on deconstruction, material recovery, and hazardous material management are required to upskill the workforce.
3. **Government Support and Incentives:** The government could offer financial incentives and provide clearer guidelines to encourage the adoption of BIM in decommissioning projects.
4. **Validation Through Case Studies:** Contractors are encouraged to test and validate BIM models in smaller decommissioning projects to establish best practices and refine workflows for larger-scale use.



Photos or Screenshots

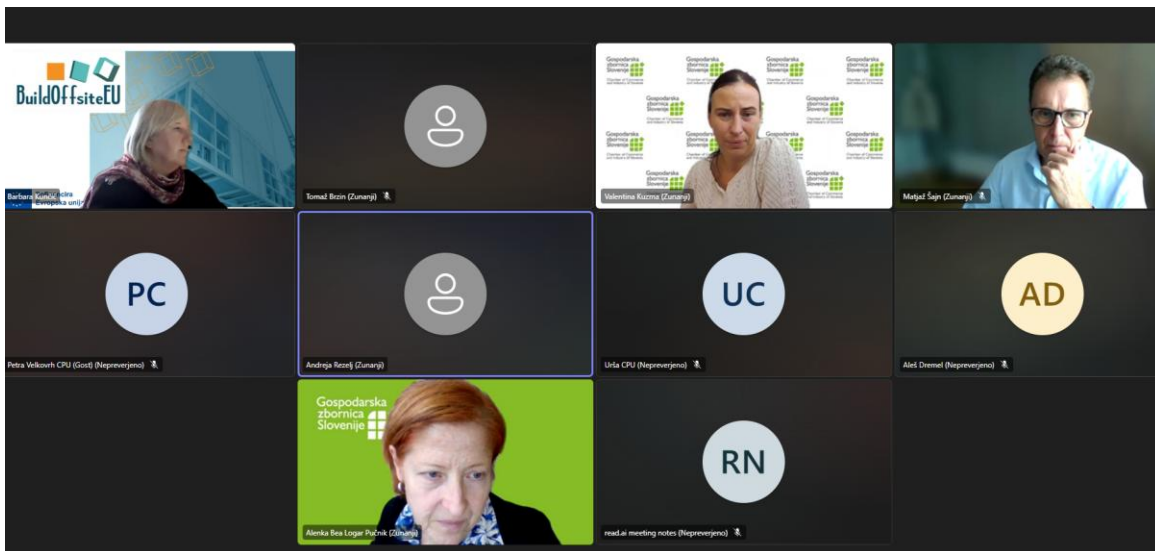
1st WORKSHOP

- **Screenshots** (workshop was conducted online - virtual workshop):
Capturing the group in discussion - screenshots of presentation slides(BIM4D & Build off Site) and the participants.



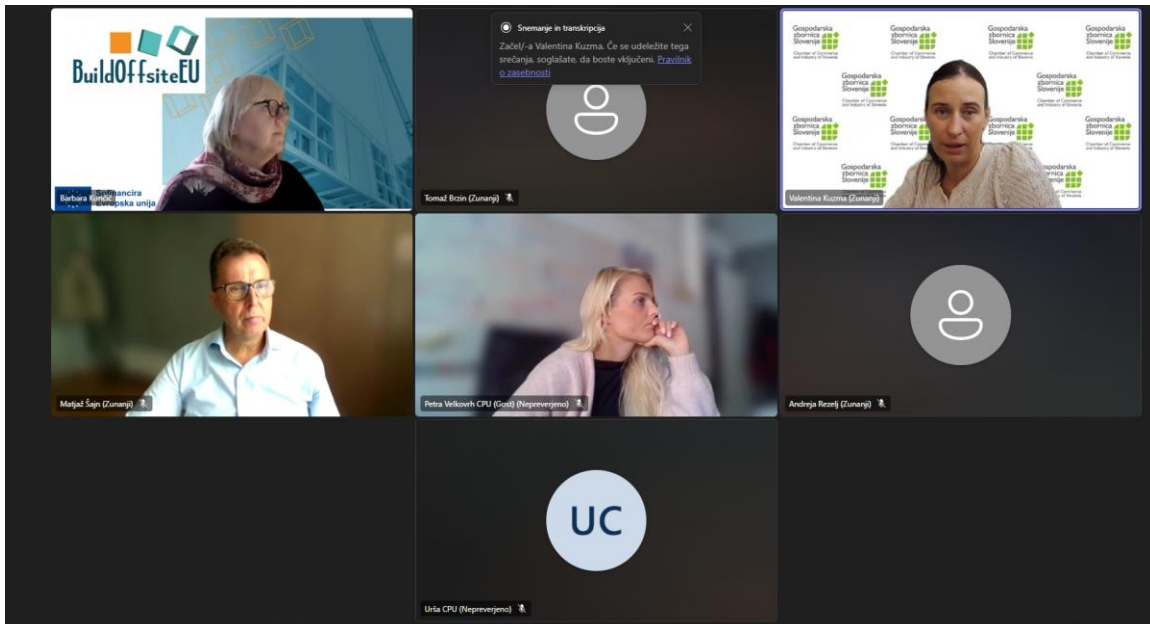
BIM4D + BUILDOFFSITEU spletni klepet z deležniki-20240920_130032-Snemanje sestanka

20. september 2024 • Valentina Kuzma • HD





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BIM4D

BIM za dekonstrukcijo

Razvoj zelenih in digitalnih spretnosti ob uporabi BIM v praksah ob koncu življenjske dobe

1 Diskusijska delavnica v Sloveniji, 20.9.2024, preko Teams

BIM Postopek modeliranja in upravljanja informacij o stavbah v njihovem življenjskem ciklu

2

7

Vir: <http://buildipedia.com/aec-pros/design-news/the-daily-life-of-building-information-modeling-bim>

BIM Gre za gradnjo pred gradnjo

2

Gradbišče

8

BIM Sporočanje podatkov o stavbi je potrebno vse do razgradnje. O dekonstrukciji razmišljajte že v fazi načrtovanja.

2

Dekonstrukcija/ razgradnja

10

BIM4D
3

11

Rušenje

Cilj je uničiti stavbo tako, da je njene sestavne dele mogoče le reciklirati in odložiti na odlagališče.

Dekonstrukcija

Cilj je razstaviti stavbo tako, da se ohrani čim več materialov in jim omogoči drugo življenje.

11 / 19

BIM4D
3

13

Dekonstrukcija

Postopek za obnovo čim večjega števila gradbenih elementov in njihovo drugo življenje

Stavba, ki jo je treba razgraditi

Inventarizacija

Demontaža

Operacije za ponovno uporabo

Stavba je vir materialov, ki jih je treba izkoristiti.

Postopki procesa dekonstrukcije vključujejo številni posredniki

Stavba za prenovo

Ponovna uporaba

Skladiščenje in prodaja

13 / 19

BIM4D

4

Potni list za materiale

Trenutno veliko odpadkov nastane zaradi pomanjkanja informacij.

Na to pomanjkanje podatkov bi se lahko odzvali tako, da bi zagotovili

potni list za vsak material

niz digitalnih podatkov, ki vsebujejo značilnosti materialov in sklopov, podatke, ki jih potrebujejo dobavitelji, oblikovalci in uporabniki,

Cilj bi bil z upoštevanjem celotne vrednostne verige zagotoviti čim večjo vrednost ter olajšati predelavo in ponovno uporabo materialov, izdelkov in sistemov, ki se uporabljajo v stavbah.



14



BIM4D

4



Poslanstvo družbe BAMB je spodbujanje krožnosti materialov. Za učinkovito predelavo gradbenih elementov je treba imeti na voljo prave informacije. Te informacije so ključne za izbiro materialov, ki jih je mogoče ponovno uporabiti.

1 kratek videoposnetek za ogled :



<https://www.youtube.com/watch?v=i6Wa0TADbDE>

15



BIM4D

7

BIM4D

Naslednji koraki projekta BIM4D

- Razvoj tečaja usposabljanja BIM4D (na voljo junija 2025)
 - Učni načrt in pedagoški priročnik
 - Spletna platforma
 - Moduli in gradiva za usposabljanje
- Razprave z zainteresiranimi stranmi iz gradbenega sektorja (jesen 2025) z namenom oblikovanja političnih priporočil o uporabi BIM za ekološki prehod (februar 2026).
- Dejavnosti razširjanja in ozaveščanja med projektom
- Bodite obveščeni na spletni strani www.bim4d.eu

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BIM4D Začetek razpravne delavnice

Tema 1	Tema 2	Tema 3
Digitalna integracija v dekonstrukcijo (v vsaki fazi procesa)	Prednosti in izzivi digitalne tehnologije pri dekonstrukciji (v vsaki fazi procesa)	Spretnosti, ki se zahtevajo v obstoječih in novih poklicih

16 / 19

2ND WORKSHOP













