Boosting digital and green skills for a resilient and sustainable Western Balkan society

UNIVERZA V LJUBLJANI

UL role in SKILL2SUSTAIN

KICK-OFF

University of Ljubljana

Date: 5 May 2025
Place: Novi Sad

Co-funded by the European Union

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Research, education and knowledge transfer

History: 1919 (established)

- 5 member faculties
- cca 1000 students
- temporary funding

Present: 2025

- 23 faculties and 3 academies of arts
- cca 40.000 students
- income > 500 mio EUR

Study fields: Universal knowledge

- Art, Fine Arts,
- Natural Science,
- Technology and Engineering,
- Social Sciences, Humanities,
- Medicine, Health Sciences, Sport

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UL in SKILL2SUSTAIN Digital & Green Education (DGE)

Work Package 1: Project Management

- Establish Framework and Procedures
- Organize Meetings and Manage Activities

Work Package 6: Quality Assurance and Monitoring

- Develop QA, Polls for activities, Organize coaching
- Conduct peer review of new learning material

Work Package 7: Dissemination and Exploitation

- Help to develop plan and promote SKILL2SUSTAIN
- Organise SKILL2SUSTAIN Symposium
- Publish the Special Issue

Work Package 2: Enhancing DGU in Academia

- State-of-the-Art Analysis of DGU
- Organise Study Visits
- Formulate Digital and Green Initiative

Work Package 4: Improving Capacities DGU

- Transfer knowledge, experience and skills
- Develop new and modernize study programmes
- Design certified LLL programmes
- Develop new blended learning material

Work Package 5: Boosting Digital and Green Skills

- Deliver of new or modified programmes
- Evaluate the 1st cohorts' progress and satisfaction

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UL: Faculty of Civil and Geodetic Engineering

1st Cycle (Bachelor):

- **Academic Study Programmes:**
  - Civil Engineering BA
  - Geodesy and Geoinformatics BA
  - Water Science and Environmental Engineering BA
- **Professional Study Programmes:**
  - Construction Management BA
  - Geodetic Engineering and Real Estate Management BA
  - Built Environment
  - Environmental Protection

2nd Cycle (Master):

- Civil Engineering MA with specializations:
  - Structural Engineering
  - Geo & Hydrotechnics
  - Infrastructural Engineering
  - **Building Information Modellng - BIM A+**
- Building Science MA
- Water Science and Environmental Engineering MA
- Geodesy and Geoinformatics MA
- Spatial Planning MA

3rd Cycle (PhD):

- **Built Environment**

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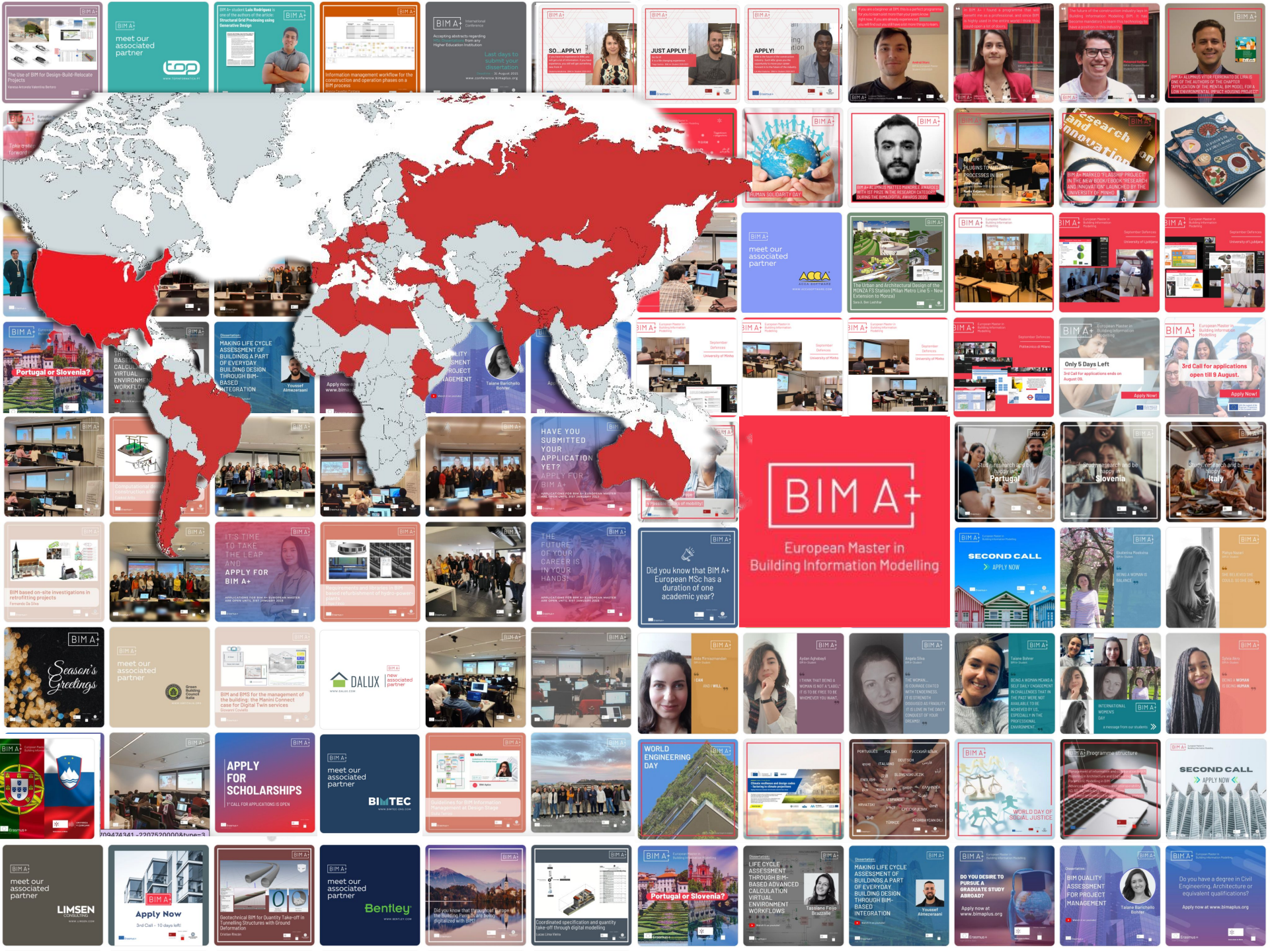

skill2sustain

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Professional certification

3.6 Basic Learning Outcome (Overview)

1 Understand what BIM is, why it is needed, and recognise its specific terminology.

1.1 Define the drivers that have led to BIM;

1.2 Define BIM;

1.3 Identify & define key BIM terminology;

1.4 Define BIM maturity levels;

1.5 Define what constitutes an Information Model.

2 Recognise the advantages of BIM compared to traditional project delivery.

2.1 Know why collaborative and new ways of working are required;

2.2 Identify the effects of poor information management on projects;

2.3 Identify the standards developed to mitigate poor information;

2.4 Identify the benefits of BIM to construction professionals;

2.5 Identify the benefits of BIM adoption to clients and facility management.

3 Understand the project information development cycle (and its key terms); specifically how project information is specified, produced, exchanged, and maintained.

3.1 Know why employers need to clearly define their requirements (EIR);

3.2 Know why the supply chain needs to agree a plan to execute BIM on the project (BEP);

3.3 Know why consistent exchanges of information are required;

3.4 Identify the key elements and benefits of using a collaborative exchange platform (CDE);

3.5 Know why clearly defined information management responsibilities are required;

3.6 Know why assessing potential supply chain members before appointment is required.

4 Recognise the need for open and interoperable solutions.

4.1 Define the buildingSMART community;

4.2 Define openBIM and its benefits compared to using proprietary products and systems;

4.3 Know what IFC is and its benefits;

4.4 Know what MVDs are and their benefits;

4.5 Know what IDMs are and their benefits;

4.6 Know what the bSDD is and its benefits;

4.7 Know what BCF is and its benefits.

5 Identify an organisation's capability in working with BIM.

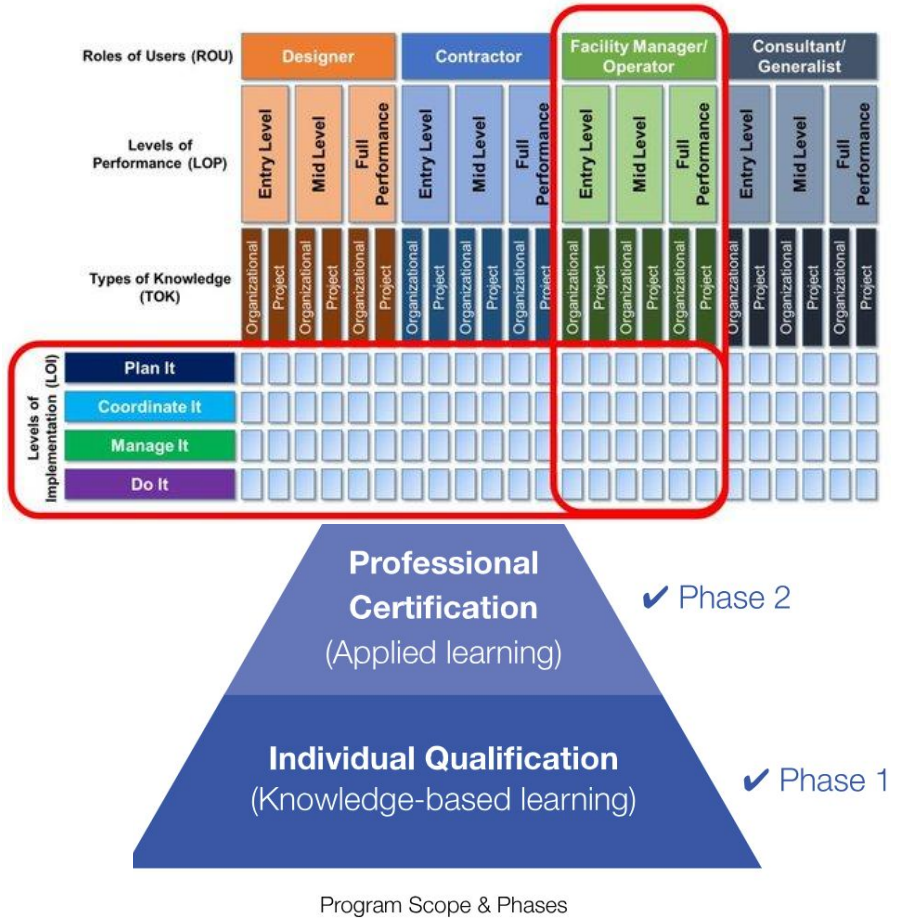
5.1 Understand the potential benefits for a company in adopting BIM;

5.2 Understand the factors that define an organisation's level of BIM Maturity;

5.3 Know why BIM adoption needs to align to organisational goals;

5.4 Identify the benefits and challenges to BIM adoption;

5.5 Know what the data security implications are for adopting BIM.



Program Scope & Phases

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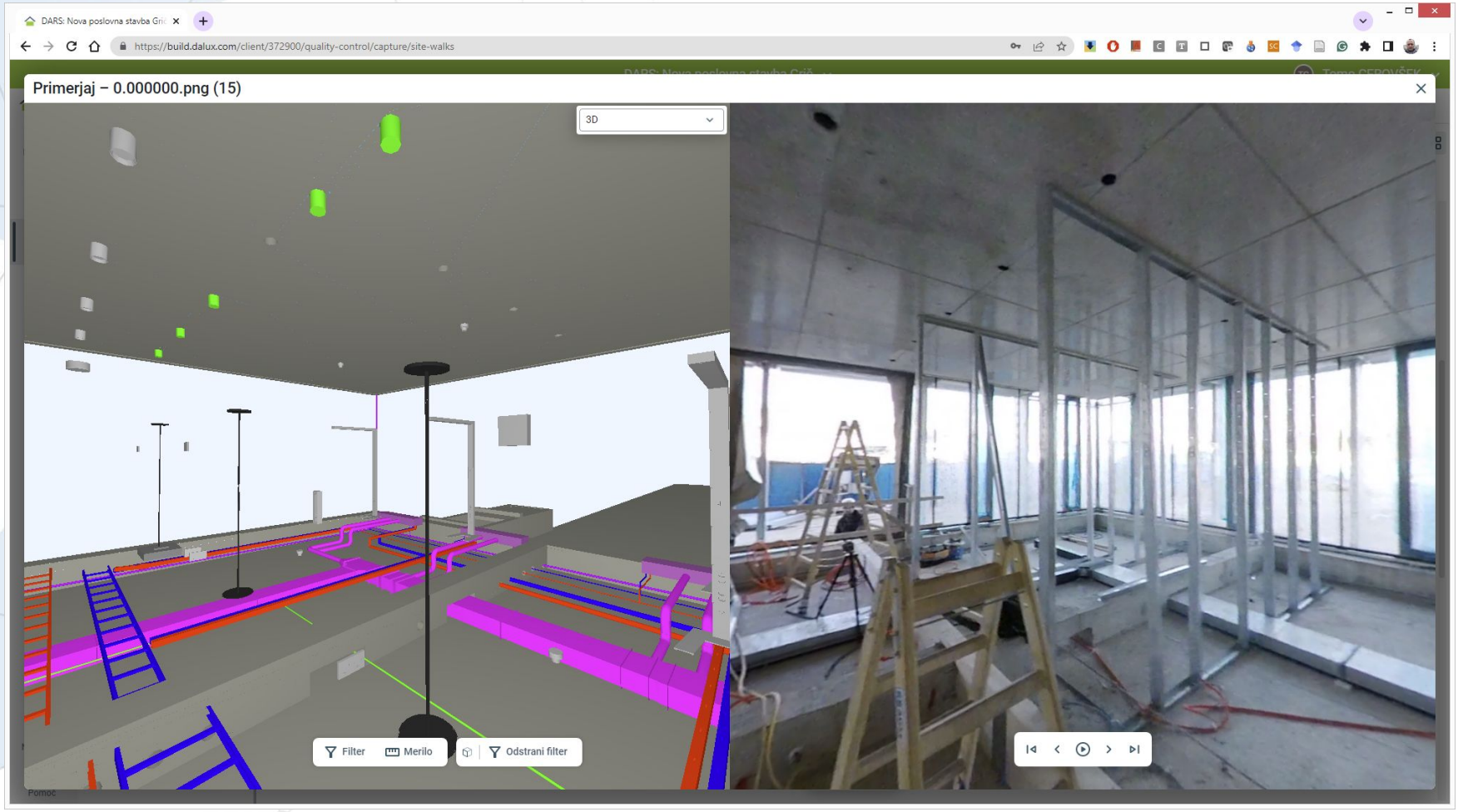
Digitalization on the construction site



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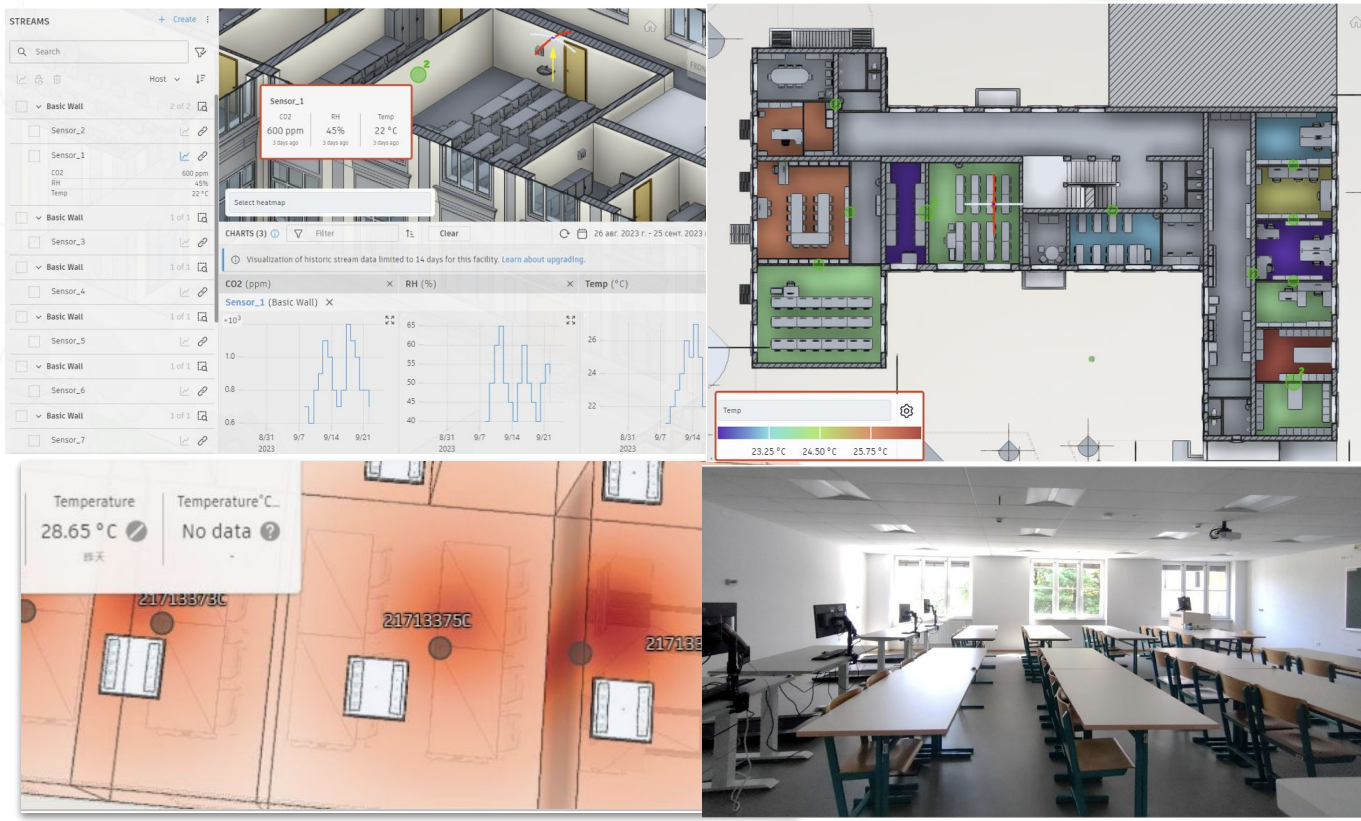
BIM and DT in Digital and Green Education

- **Monitoring and analysis:** Sensors, IoT integrated with BIM based digital twins can help to monitor and analyze data to make improvements
- **Optimization and efficiency:** BIM, AI and machine learning can optimize energy consumption in buildings
- **Renewable energy integration:** BIM can facilitate the integration of renewable sources in design and reduce energy through optimized performance..
- **Circular economy solutions:** BIM helps to track materials throughout lifecycle, promote 3R, and support new circular models.
- **Citizen engagement:** Digital platforms and BIM tools can raise awareness, encourage sustainable behavior, and empower citizens to participate in built environment



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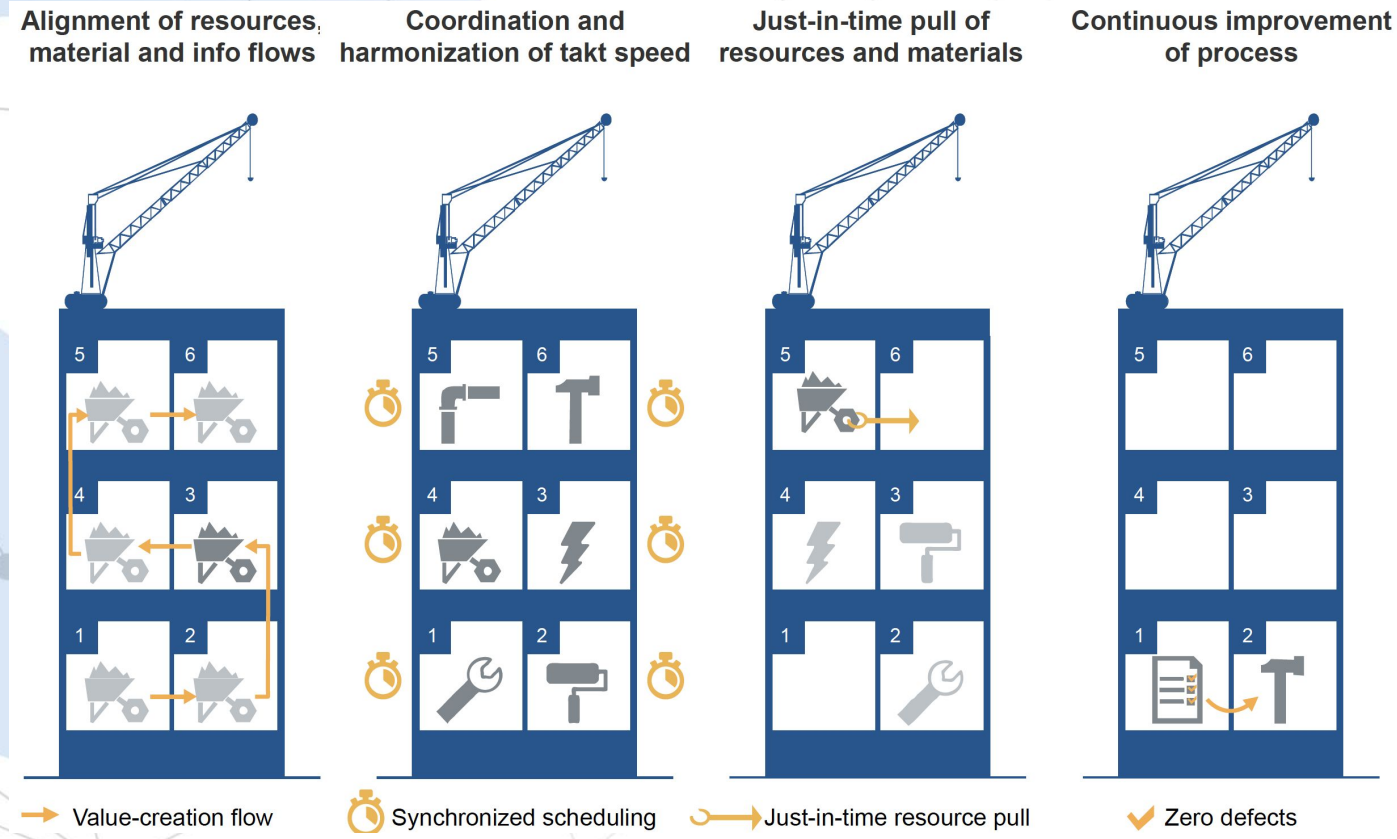
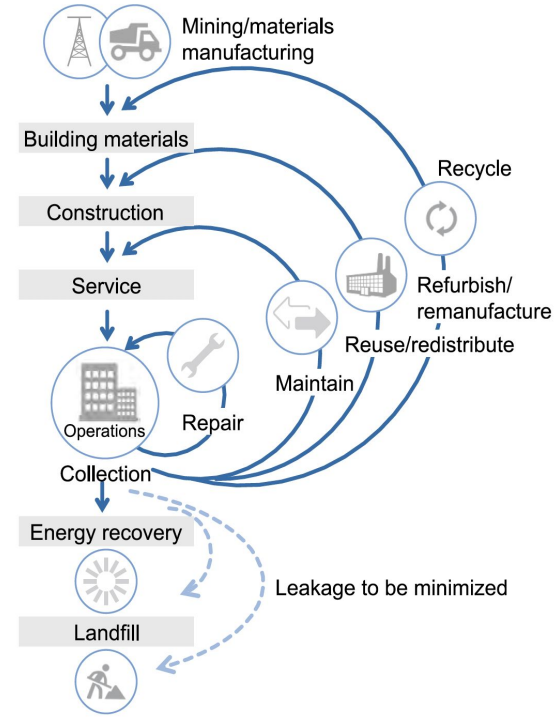
Process improvement – Lean, Waste & Circular





Source: Ellen MacArthur Foundation; World Economic Forum; The Boston Consulting Group

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Thank you
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