

2026 Aug 13- Aug 21: **International Online Summer School on Digitalisation of Built Environment**

This international online summer school provides an interdisciplinary introduction to the digitalisation of the built environment, addressing technical, societal, ethical, and business dimensions.

Participants will explore how digital technologies, data-driven methods, and AI are transforming buildings systems, and how these developments contribute to more sustainable and intelligent built environments.

The programme combines lectures, hands-on sessions, and interactive group work, offering both conceptual understanding and practical skills.

Target Audience

- PhD students
- Master's students (advanced level)
- Early-career researchers
- Professionals in digitalisation, built environment, and related fields

Intended Learning Outcomes. After completing the summer school, participants obtained initial insights to:

- Understand key concepts and challenges in the digitalisation of the built environment
- Apply data-driven and AI-based methods (e.g., digital twins, occupant modelling, anomaly detection)
- Gain hands-on experience with Python-based tools for data analysis and system modelling
- Assess ethical, societal, and human-centric aspects of digital technologies
- Integrate technical, societal, and business perspectives in complex real-world applications

Module (all online). One module: 2h lecture + 15min break +2h group work

- 8:15-12:30 AM module
- Lunch break (75min)
- 13:45-18:00 PM module

Registration

- Participation is free of charge
- Registration will open on April 6 – June 20?
- Participants can sign up for individual modules or the full programme

Certification: A participation certificate can be obtained from the organizers for accreditation in the education program at their home institution.

Programme:

Aug 13: (Thu)

- 13:30-13:45: Welcome, information & organisation, Qianwen & Tobias
- PM "Smart microgrids for sustainable buildings," Qianwen Xu

Aug 14: (Fr)

- AM "Technology as a tool not a solution - Facilities Management example," Carmel Margret Lindkvist, NTNU
- PM "Buildings as energy storage hubs for flexible sector coupling," Saman Nimali Gunasekara

Aug 17: (Mo)

- AM "Data driven simulation for control or anomaly detection in smart buildings," Magnus Jansson
- PM "Integration of AI-based data driven Occupant Prediction Model with Digital Twins," Farzin Golzar

Aug 18 (Tue):

- AM "Sustainability challenges and opportunities of digitalization in buildings," Tove Malmqvist Stigell
- PM "Value sensitive design for ethically informed and socially sustainable technology development," Barbro Fröding

Aug 19 (Wed):

- AM module Session 1 and PM module Session 2 on "Introduction to open-source interactive energy management toolbox "batem," Stephane Ploix INP Grenoble Institute of Technology, France
 - o Students individually work per session on one lecture and workshop from lecture 1-10 : <https://gricad-gitlab.univ-grenoble-alpes.fr/batem/tutorials>
 - o Stephane Ploix provides study support

Aug 20 (Thu):

- AM "Digital Maturity and Data-Driven Decision-Making," Agnieszka Zalejska Jonsson
- PM "Digital transformation in business networks," Malena Havenvid

Aug 21 (Fr):

- AM “Privacy-preserving synthetic data for smart buildings” Tobias Oechtering

12:30-12:45 Closing, Tobias & Qianwen

Organizer:

Dig-IT Lab, TF Internationalisation, Qianwen Xu and Tobias Oechtering