

# NEW FRONTIERS OF CONSTRUCTION MANAGEMENT WORKSHOP 24

RAVENNA – ITALY

7-8 NOVEMBER 2024

## DETAILED PROGRAMME

### Thursday 7th of November 2024 – day one:

9.00 registrazione dei partecipanti / registration open

9.30 saluti delle autorità / welcome address

**Head of the Department of Architecture - University of Bologna**

Fabrizio Apollonio

**Director of first & second Cycle Degrees in Building Construction Engineering – University of Bologna**

Alessandro Marzani

**Workshop Presentation**

Kalle Kähkönen / Marco Bragadin / Emlyn Witt

### 9.45 – 13.00 : workshop 1<sup>st</sup> session

9.45 - 10.15 **Keynote:**

**How to gain quantum leap for the supply chain integration in construction?**

Kalle Kähkönen

*10.15-11.30 Artificial Intelligence & Digitalization of building processes: moderator Emlyn Witt*

**Optimizing Urban Energy Efficiency through a Machine Learning-Driven Framework: A Case Study in Reykjavik**

Andrea Giuseppe di Stefano, Alessandro Aliprandi, Riccardo Viganò, Matteo Ruta, Gabriele Masera, Simi Hoque

**An information ontology for construction projects quantification**

Davide Simeone

**Leveraging Blockchain and Smart Contracts for a New Frontier in Asset Management**

Valentina Villa, Chiaia Bernardino, Luca Gioberti, Necati Catbas, Marco Domaneschi

**The Digital Construction Site: Applications and Case Studies of Virtual and Augmented Reality**

Valentina Dell'Infante

**A Digital Approach for Effective Asset Management of Tunnel Infrastructure**

Valentina Villa, Bernardino Chiaia, Paola Alice Rosa Cavallaro

**Leveraging AI for construction project performance predictions**

Fulvio Re Cecconi, Ania Khodabakhshian

**Virtual reality applied to road construction sites: Designing and testing a virtual learning environment**

Vittorio Paris, Matteo Rigamonti, Davide Prati, Giuseppe Ruscica

*Artificial Intelligence & Digitalization of building processes: workshop discussion and public debate*

11.30 – 11.45 : short break

*11.45-13.00 Building Information Modelling & Built Heritage: moderator Marco Bragadin*

**Historic BIM and Artificial Intelligence: perspectives on a frontier rooted in the legacy of the past**

Simone Garagnani

**IFC as a Bridging Element in BIM/GIS Integration for Sustainable Management of Disused Railway Civil Engineering Assets**

Manuel Garramone, Marco Scaioni

**SQL relational database usage for integration between BIM models and Quantity take-off platforms**

Beatrice Maria Toldo, Alessandro Modolo, Carlo Zanchetta, Bernhard Simon Bock

**BIM based seismic vulnerability and energy efficiency assessment: implementation in a RC school building**

Giorgia Marcellino, Giacomo Piredda, Carlo Zanchetta, Francesca Da Porto

**Integrating HBIM and Information Ontologies for enhanced management of layered archaeological sites**

Cassia De Lian Cui, Stefano Corsi, Davide Simeone, Antonio Fioravanti, Edoardo Currà

**Integrating BIM and IoT for Smart Management of Multifunctional Buildings**

Stefano Cascone, Giuliana Parisi, Rosa Caponetto

**Enhancing BIM with Bayes Point Machine from Early Design Phases for HVAC Maintenance-oriented Design**

Edoardo De Santis, Francesco Livio Rossini

*Building Information Modelling & Built Heritage: workshop discussion and public debate*

13.00 lunch break (invited speakers)

14.00 – 18.00 : workshop II<sup>^</sup> session

14.00-14.30 **Keynote:**

**Limits and potentialities of digitalization in the construction sector**

Angelo Ciribini

14.30-15.15 *Project Management & Lean Construction: moderator Kalle Kahkonen*

**Standardized Cost Data – Based Enhanced Construction Project Management**

Jacopo Cassandro, Antonio Farina, Claudio Mirarchi, Chiara Gatto, Alberto Pavan

**Process Scheduling application based on Web Ontology Language representation of the IFC schema**

Davide Avogaro, Michele Berlato, Carlo Zanchetta

**Common Data Environment (CDE) in the Public Sector: State of the Art of Leading Products in the Italian Market and Comparison with Regulatory Demands**

Silvia Mastrolembo Ventura, Kavita Raj, Francesco Bombasaro, Mario Monaco, Mario C. Dejacco, Angelo L.C. Ciribini

**Resource-based Takt Time Evaluation of Construction operations: case study**

Gianna Mastroberardino, Marco Alvise Bragadin

*Project Management & Lean Construction: workshop discussion and public debate*

15.15-16.00 *Construction Site Design and Off-site Construction: moderator Lavinia Tagliabue*

**Features of product configurator for industrialised house building**

Laura Kauppinen, Petteri Annunen, Harri Haapasalo

**Off-site Industrialized Systems for Building Renovation: Implementing Plug and Play Facades in the Construction Process**

Grazia Marrone, Masip Vilà, David Rafols Ribas, Irene; Traini, Rocco;

**Strategies for off-site construction in developing a climate neutral city**

Guido Callegari, Alessandro Barra, Tiziano Uriel Monteu Cotto, Paolo Simeone

**Off-site Technologies for the Building Envelope: Mapping Practices and Innovations of Cold-Formed Steel-Based Systems**

Grazia Marrone

*Construction Site Design and Off-site Construction: workshop discussion and public debate*

16.00 - 16.15 : short break

16.15- 17.00 *Environment, Quality and Safety: moderator Marie-Lise Pannier.*

**Analysis of near miss accident in a construction company**

Giulia De Cet, Arianna Toson, Rossana Paparella, Chiara Vianello, Daniela Boso

**Knowledge graph-based Digital Twins for automatic Bayesian Networks generation**

Arsenii Kirillov, Alessandro Carbonari, Alberto Giretti

**Redefining Asset Management practices to support the digital transition of large universities**

Daniele Accardo, Paola Gasbarri, Silvia Meschini, Lavinia Chiara Tagliabue, Giuseppe Martino Di Giuda

**Towards the digitization of safety documents on construction sites: analysis of a case study in Italy**

Giulia De Cet, Davide Fraccaro, Rossana Paparella, Chiara Vianello, Daniela Boso

*Environment, Quality and Safety: workshop discussion and public debate*

17.00-17.30 **Final Keynote:**

**BIM-enabled learning**

Emlyn Witt

17.30 pm: discussion and public debate for closure

20.30 *Social dinner / cena sociale (invited speakers)*

**Friday 8th of November 2024 - day two:**

*9.00am: registration open*

*9.30 – 13.15: workshop III<sup>A</sup> session*

**9.30-10.00 Keynote:**

**Application and Reliability of Life Cycle Assessment in the Construction sector**

Marie-Lise Pannier

*10.00- 11.00 Circular Economy, Low carbon and nature friendly Building Site Design (I). Moderator Kalle Kahkonen*

**ITER Project: Experimentation on ecological and recyclable raw earth plasters**

Giada Giuffrida, Rosa Caponetto, Renata Rapisarda

**Conceptual Model for Integrating Circular Economy into the Building Permits Process**

Kaleem Ullah, Emlyn Witt

**Environmental impact evaluation of building regeneration alternatives in the Preliminary Design Stage**

Marco Alvise Bragadin, Mattia Calistri and Giorgia Predari

**A Novel Design Approach for enhancing Material Circularity in Urban Development**

Michele Versaci, Francesco Pittau, Gabriele Masera

**Wood Plastic Composite: recycle and reuse**

Sara Lanzoni, Luca Guardigli

**Risks in Transitioning to a Circular Economy in the Construction Sector**

Emlyn Witt

*Circular Economy, Low carbon and nature friendly Building Site Design I: workshop discussion and public debate*

*11.00 am – 11.15 am: short break*

**11.15-11.45 Keynote:**

**International Cost Engineering Council and Italian Total Cost Management Association (AICE)**

Emanuele Banchi

*11.45- 12.45 Circular Economy, Low carbon and nature friendly Building Site Design (II). Moderator Emlyn Witt*

**Economic development and energy transition**

Gianluca di Castri

**Toward carbon neutral architecture: the potential of timber building system for zero CO<sub>2</sub>e emissions**

Giacomo Di Ruocco, Teresa Trezza

**The Essential Role of Social Value in Construction**

Paola Alice Rosa Cavallaro, Valentina Villa

**Evaluation criteria to assess Italian post-WWII high-rise houses and guide preservation, renovation and demolition policies: the case of Udine's condominiums.**

Lorenzo Modena, Anna Frangipane

**3D printing of new circular construction products**

Chiara Marchionni, Marianna Rotilio, Federica Cucchiella

*Circular Economy, Low carbon and nature friendly Building Site Design II: workshop discussion and public debate*

12.45 – 13.15 **Keynote closure:**

**Low carbon deep renovation construction projects**

Annarita Ferrante

13.15 **Best paper award and workshop closure**

*13.30 lunch (invited speakers)*