

ISS GIS-BIM: beyond summer school



GISBIM
INTERNATIONAL
SUMMER SCHOOL

Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM)

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This book is the collection of contributions presented by the professors who participated in the first edition of the International Summer School (ISS) GIS-BIM for digital integrated design held online from 31 August to 11 September 2020 organized by the Department of Planning, Design, and Technology of Architecture of the Sapienza University of Rome.

An experience that has so enriched all participants, teachers and students, that the creation of this book has become a duty. The approach to the integration of GIS and BIM cannot be limited only to software and operational solutions but to the entire methodological framework. This book, which collects the contents of the ISS lessons, aims to be a first popular approach to integrated solutions between GIS and BIM starting from the methodology and arriving at the presentation of representative and significant case studies.

With this work we want to start a path of cooperation and lasting exchange with all the academic and professional realities of the world. The preparation of the subsequent editions of Winter and Summer School is already under construction, so we wanted the experience built in the first edition to become the first step on this long journey.

Forty hours of intense lessons, rich in multidisciplinary contributions by teachers with high academic and professional experience in the Digital Twin sector, a digital modeling of reality with tools and applications typical of the planning sector from the territorial to the architectural scale.

The contents of the text are the collection and reorganization of the 5 teaching modules of the ISS:

1. An Introduction to Digital Transformation of Construction Industry.
 - 1.a 4D/5D Modeling & Management workflows for Cortina's FIS Alpine World Ski Championships new downhill race track.
 - 1.b 4D/5D Modeling & Management workflows for Cortina's FIS Alpine World Ski Championships new downhill race track.
 - 1.c Common data environment(s) and digital platforms in construction sector.
 - 1.d GIS-BIM for integrated design: "integrated" meaning in the AEC history, which kind of integration between BIM and GIS, perspective and limits.
2. The integrated management of sustainable processes of requalification and recovery in the architectural and environmental heritage.
3. Geographic Information Systems and its integration with BIM methodologies. Why to integrate GIS with the BIM methodologies, tools and procedures?

4. Digital methods and tools in the construction process for an efficient project management workflow: case studies.

4.a Analysis of integrated models and applicative case studies within the digital approach for planning and programming the activities through the process phases.

5. - Performance analysis and optimization design of green buildings driven by digital technology (BIM, Rhino, etc.): lectures and hands-on exercises

- Algorithms and how they change the architectural design.
- Sustainable urban design in the digital era
- Green practices in China's building industry.

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