

Workshop 3D Modeling & BIM. New Frontiers - Workshop 3D Modeling & BIM. Nuove Frontiere

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Events

Workshop on 3D Modeling & BIM. New Frontiers

Massimiliano Lo Turco

The 3D *Modeling & BIM* Workshop has come to its fourth edition; this year, it is dedicated to the theme of 'New Frontiers'. As on previous occasions, the event was hosted by the Sapienza Università di Roma at the Valle Giulia headquarters on the 18th and 19th of April 2018 [1].

'New Frontiers' is the subtitle of the fourth edition of this event (fig. 1). The organizers record with satisfaction the constant growth of the event both in terms of quantity –starting from the number of contributions and members– and quality. Although the first aspect is important, the second aspect is more interesting to dwell on; looking through the type and quality of contributions, one gets the impression of entering a largely unexplored territory that is potentially rich in innovative ideas. However, it also has its pitfalls [Bianchini 2018, p. 12]. This is Carlo Bianchini's viewpoint. He is Director of the Department of History, Design and Restoration of Architecture at the Sapienza Università di Roma. He is also the host of the event.

As highlighted in one of the contributions proposed by Antonella di Luggo, the workshop, of which Tommaso Empler is the scientific responsible, "is an important time for reflection and an opportunity of dis-

cussion for researchers from different universities and it demonstrates that the scientific teaching sector of Drawing gives a lot of theoretical and operational analysis accompanying sector studies, both for the project of new buildings and for the survey and documentation of existing heritage" [Di Luggo 2018, p. 36]. Students, professors and professionals from all over Italy were compared through thirty-one contributions to the proceedings, edited by Tommaso Empler, Fabio Quici and Graziano Mario Valenti [Empler, Quici, Valenti 2018], within three working sessions: an introductory session dedicated to '3D Modeling & BIM' (with three contributions), one titled *BIM for the Construction Industry* (seven contributions), the second *BIM for the Enhancement and Management of Existing Heritage* (eleven contributions) and, finally, the last on the theme *3D Modeling* (ten contributions expressed).

The subdivision of the sessions underlines how the theme of modeling –the geometric and the informative one and that of the two together– constitutes the living and active support for the construction industry and for the valorisation and management of the existing heritage, with different specifications.

Looking at the variety of themes and the quantity of contributions proposed, which has grown from year to year and has been subjected to a double blind review, Graziano Mario Valenti, in his speech, invites us to reflect on the enlargement of the main themes to the more specialized ones through the frequency of specific keywords, excluding the most common and fundamental ones, such as the terms BIM, HBIM, 3D modeling, VR, AR, and Interoperability. The authors seem to have brought out, with greater awareness of their centrality, new keywords –sometimes drawing on similar fields of study– which, as a whole, shows an acceleration in the critical capacity to address the general theme of information modeling. This will help identify its critical issues and, hopefully, shape it with innovative and optimized features. Valenti especially refers to keywords, such as Level of Reliability (LoR), Model checking, Combine modeling, Algorithm-aided design, Complexity, Design analysis and the very remarkable Dataset. [Valenti 2018, p. 14]. Valenti concludes by affirming how the overcoming of the operative paradigm of the digital, which is used as a mere instrument of automation of old methodologies (efficiency) in

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Fig. 1. 3D Modeling & BIM Workshop. New Frontiers. (Program cover).

favour of the digital and understood as an aid for the definition of new processes (effectiveness), appears increasingly marked (fig. 2).

As Carlo Bianchini observes in his presentation, the main question intervening on the existing (“the question of questions”) is “how should an H-BIM model be structured in operational terms?” He emphasises a very specific question, that of the Level of Reliability (LOR) of a geometric information model and, more generally, of its construction process:

“The coding of a set of common and shared parameters makes it possible, finally, to achieve a synthetic numeric evaluation of the LOR, a sort of ‘score’ for the model. In this framework, the Level of Reliability may perhaps represent a relevant methodological step forward to

‘customize’ BIM systems in order to make them more compatible with BCH issues—in other words, to encourage, support and implement the consolidated approaches that imply the gradual and deep knowledge of artefacts as a precondition for their conservation and enhancement” [Bianchini, Nicastro 2018, p. 46]. Therefore, he focusses on diversity in the articulation of the keywords, themes and application at different scales, looking at accessibility to information and interoperability not as mere computer facts, but as availability, freedom of access and certification. In terms of the opportunity provided by the workshop, the number 2 of the journal *D^o. Building Information Modeling, Data & Semantics* (published by DEI Tipografia del Genio Civile, Rome) reports the most in-

teresting contributions received and selected by the Scientific Committee this year. At the end of June 2018, a call was launched for the third issue of *Shape grammar & procedural modelling for the humanized space*, aimed at case studies and research or application examples concerning original solutions dedicated to the design of the new and the survey of the existing. The call also concerns each type of visual representation produced through the processing of datasets.

The purpose of the call is to identify a significant selection of original ideas, experiments and real applications, in order to provide a panorama of the state of the art in creativity in the construction of complex models through customized procedures of digital processing. Just the

Fig. 2. Synesthesia between augmented reality and 3D printing for the enhancement of cultural heritage: an example set up in the corridors of the Valle Giulia headquarters during the workshop days, depicting the entrance of the carriages into Maxentius' circus (author of the installation Andrea Rastelli; photograph by Alexandra Fusinetti).



meaning of complexity, associated with models and processes, also referring to the deepest etymological meaning of inclusiveness, declined

in the most varied activities to embrace as many disciplines/skills/professionality as possible, is always recognizable among the themes of

the greatest scientific interest, cultural and operational interests exposed during the days organized by the Roman school.

Notes

[1] The workshop was held under the patronage of UID (Unione Italiana per il Disegno), ANCE Roma (Associazione Nazionale Costruttori Edili) and ACER (Associazione Costruttori Edili di Roma e Provincia).

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