Introduction

This first Conference on Automation and Innovation in Construction (CIA2019) aimed to be a reference forum for scientific discussion of technological developments in the field of innovation on automation in the construction industry.

The conference started with several examples of BIM applications to different uses in the construction sector, from design to rehabilitation and maintenance, examples of robotics applied to constructions inspection have been shown, new methodologies and approaches to support decisions or the use of augmented reality and additive manufacturing in construction have been presented, namely, an example of application to space construction. The conference has also focused on the new materials or new uses in the construction of innovative materials, towing the sector to a more sustainable future and better use of resources. Special attention was also given to the use of different technologies to characterize the building environment and to use that knowledge to preserve it.

The present proceedings intend to lead the reader to a reflection about the redefinition of the Construction 4.0 concept, from the Construction 4.0 definition by the European Construction Industry Federation to the digital transformation inherent of Architectural, Engineering, and Construction Industry, showing that the clue is not about technologies but how to use technologies. It will be important to think about the changes in the construction management, from the traditional planning to the future agile project management and the future evolution to the agile construction project management.

Most than a showcase of the state of the art of automation and innovation in the construction sector this conference was a reflection on the future of the construction sector.

The editors would like to give a last word to thanks all the authors and participants that make this first Conference on Automation and Innovation in Construction a success and to all the partners and sponsors that make real this first CIAC.

Finally, the editors would like to thank to the Penn State team in the NASA 3D Printed Mars Habitat Challenge.

Florindo Gaspar
Hugo Rodrigues
Paulo Fernandes
Artur Mateus