EDITORIAL: SPECIAL ISSUE ON CAAD AND INNOVATION

Dr Bhzad Sidawi, associate Professor, College of Architecture and Planning, University of Dammam, KSA
Email: Bsidawi@ud.edu.sa

Dr Neveen Hamza
Lecturer in Architecture, School of Architecture, Planning and Landscape, Newcastle University, UK
Email: neveen.hamza@newcastle.ac.uk

1. INTRODUCTION

The concepts and applications of Computer Aided Architectural Design (CAAD) have a predominant presence and impact on architectural design innovation and creativity. ASCAAD, in its 6th international conference, invited the learnt society of academics, researchers and professionals to debate the ubiquitous emerging role of CAAD in underpinning innovative design thinking processes and research in design education. The conference theme covered the following issues:

- Computational research in design pedagogy and in practice

- Intelligent agents, generative and parametric design

- Building Information Modeling and Computer-supported design collaboration

- Ubiquitous computing and interactive environments

- Urban/ City/ regional planning and digital Modeling

- Digital tools in design and construction

- Mass customization

Selected papers have been updated in this publication to reflect the constant quest to balance architectural thinking with operative techniques. It is well acknowledged that the advent of computation and information technology had profoundly altered architectural thinking. Design software and numerical fabrication have recast the role of form giving and shaping environments in architecture and opened up unprecedented opportunities of investigation and links with other scientific domains such as biomimcry, parametric design and modeling of urban and building environments. In this issue authors suggest a continuum between architectural analytical thinking and CAAD systems. Looking at the collaboration between authors of various backgrounds also strengthens this narrative that architecture is expanding beyond its traditional enquiry into historical and theoretical aspects into the world of multi-desciplinarity. It is evident from the diverse publications that CAAD is

designed and utilized to expand the architectural pedagogy and practice into initiating and opening up the exploratory grounds of creation and productivity in design.

Sidawi and Hamza (2012) suggest methods of incorporating intelligent and open sourced digital repositories to enhance the incorporation of precedents knowledge. This would help users to gain a critical mass of knowledge that would underpin informed design decisions.

Yu et al (2012) have a situated function-behavior-structure (FBS) model that is capable to reflect the characteristics of parametric design. We propose to apply the results of the protocol analysis in identifying design behavior patterns and those derived from the two levels of parametric design activities.

Timothy (2012) looks at enabling the implementation of parametric modeling and use of digital fabrication in the production and making of architecture. This would help the users to understand the CAD technique or parameters for modeling, translate for CAM production and deal with real world constraints of materials, time and tectonics.

Ibrahim et al (2012) suggest the introduction and implementation of a grammatical thinking approach. This was applied to a cohort of volunteers in the first year who demonstrated the use of shape grammar languages to creating and analyzing narratives of design concepts.

Von Mammen and Taron (2012) implement multi-agent system that models complex biological systems. They argue that this helps users to explore the connection between architecture and natural environment and envisioning biomimetic code as Architecture, Architecture as nature, and nature as codified milieu.

Simone and Antonio (2012) present the construction of a general representation template of user-actor (i.e. agent), easy to implement and flexible enough to structure the large amount of data affecting human behavior and interaction with the built environment. They push the debate on agent based simulation of buildings use to predict and evaluate future building responses to future user intentions.

Finally, the editors would like to thank the chief editor of the ITCON journal for giving them the opportunity to publish these papers in the ITCON journal.

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