

# International Conference and Exhibition on **Satellite**

August 17-19, 2015 Houston, USA

## **Improving BIM as an architectural design tool towards sustainability through applying LEED categories on its database**

**Wael Ahmed Abonema**  
Helwan University, Egypt

Architectural design was influenced through the last century by several high-tech design tools. Last decade Building Information Model “BIM” has proved its capabilities as an effective production tool for construction industry. It helps the architect to go through the construction documents accurately and faster for building calculations, coordination between all disciplines, and to carry out the architectural drawings faster with minimum problems. Architectural design tools development is running in two directions: First, one depends on developing a helpful tool for the architect to facilitate producing complicated forms and construction problems; the second one is the implementation of artificial intelligence to solve design problems and to lead towards better building performance. This research is oriented to the second direction. In case of applying LEED categories, which describes sustainability principals into the BIM database, we will ensure that the outcome of this design tool will meet sustainability guidelines. One of the best direction of enhancing BIM as an architectural design and documentation tool is to enlarge the scope and hierarchy of its database to include LEED categories as one of the most important rating system in the world and applied in many regions. It will push architects forward towards sustainable designs and saving environmental resources based on up to date information.

### **Biography**

Wael Ahmed Abonema completed his PhD in 2009 from Polytechnic of Athens and Helwan University and Master Studies from Helwan University, Faculty of Fine Arts and Architecture department. He is the Design Director of Engineering Consultant Group. He has published more than 11 papers in reputed international conferences and journals. All his researches focused on sustainable design and enhancing architectural design tool using the artificial intelligence. In 2013, he got his Master of Business Administration (MBA) from International school of Scandinavia, Denmark. He has a European consultancy and membership in Technical Chamber of Greece (TEE).

[wael.aboneama@gmail.com](mailto:wael.aboneama@gmail.com)

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