Building Information Modelling (BIM) is a digital representation of physical and functional characteristics of a facility. A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life cycle (see BIM Standard at [www.nationalbimstandard.org/faq.php](http://www.nationalbimstandard.org/faq.php)). The growing implementation of BIM has brought many benefits to building design and construction planning, and has been found potential tool for promoting safety throughout a building’s life cycle. The webinar highlights innovative applications of BIM in design, planning and on the construction site in support of Construction Safety and Health.

**When**

May 7, 2014  
13:00 PM CET  
07:00 in New York, USA and 19:00 in Singapore

For free attendance of this event please register [here](#).

**Webinar Convenor**

Dr Michael Behm, CSP, East Carolina University, USA  
Michael is Associate Professor of Occupational Safety and Assistant Director of the Center for Sustainability. He is a member of the US’s NIOSH Construction Sector Research and Prevention through Design Councils. In 2011, he was a Research Fellow with the Singapore National Parks Board to study safe design of urban greener systems. He is Joint Coordinator of CIB Working Commission W099 on Safety and Health in Construction.

Michael Behm,  
Email: behmm@ecu.edu  
Tel: +1.252.328.9674 and +1.252.341.3689

**Topic 1 - BIM and Design for Lifecycle Safety**

The need for designing for safety is being recognized by a growing number of governmental agencies, owners, constructors, engineers, and architects. Design for Safety or Construction Hazard Prevention through Design demands workers safety in construction, operation and maintenance, and decommissioning being considered and addressed through design. The
challenge is that the lifecycle phases involve various parameters of which some are difficult to codify for designers. For example, the temporary systems and processes for an evolving structure during construction are different from the aspects of operating or maintaining a completed structure. Thus, the design process involves different sets of rules and various stakeholders’ input for each lifecycle phase, which will require different types of BIM support tools to support the design process. We will provide an overview of perspectives of designers and constructors and examine the differences and key parameters of potential BIM tools.

The Innovation Report on BIM and Design for Lifecycle Safety can be downloaded here.

Expert: Dr Kihong Ku, Philadelphia University, USA

Kihong is Assistant Professor in Architecture. He focuses on construction health and safety from the viewpoint of designers. Emphasizing the impact of emerging design technologies and value for integration, Dr. Ku has conducted research funded by the US NIOSH. He has examined construction hazard prevention through design, design for safety, and frameworks for building information modelling (BIM) to support hazard identification and analysis. He is the press officer of CIB Working Commission W096 on Architectural Management.

Topic 2 - BIM promoting construction site safety – Industry examples

The most obvious benefit from using BIM in general, and for safety as well, is the visual nature of three-dimensional plans, which facilitates the identification of the hazards, various discussions and communication to employees, as well as provides totally new possibilities for proactive planning of safety. 4D construction planning is a growing trend, and a breakthrough, making it possible to plan and visualize site status at various moments of time including the needed temporary safety equipment. BIM-based safety planning is not common at field yet. Examples show BIM-based 3D site layout and safety plans, fall protection plans, 4D construction work order planning and visualizations including safety, and use of BIM for site communication.

The Innovation Report on BIM promoting construction site safety – Industry examples can be downloaded here.

Expert: Kristiina Sulankivi, VTT Technical Research Centre of Finland

Kristiina is Research Scientist. Her expertise is in utilization of BIM in building construction projects, one special area being BIM & Safety. She has developed use of BIM for occupational site safety in several sequential research and development projects in cooperation with her VTT colleagues, industry partners and other research institutes. Her primary research methods have included hands-on modelling testing, demonstrations, and pilot testing in real on-going construction projects, using BIM-based software most commonly used in Finland. She is VTT’s representative in CIB Working Commission W099 Safety and Health in Construction.

Topic 3 – BIM in support of Determining Productivity and Safety Index

Productivity has been accorded top priority in the current growth strategy for Singapore’s economy. However, the construction industry in Singapore, as in most other countries, is well known for not being able to keep pace with the technological advancements. One of the major causes of this inefficiency can be attributed to the productivity lost from workplace incidents. The importance of safety for higher productivity becomes evident. The current national focus on productivity and safety enhancement, as well as information and communications technology (ICT) applications at the highest levels provides the opportunity to investigate the potential which an understanding of the relationship between the two project performance criteria offers for enhancing productivity and safety performance on construction projects. As the application of BIM becomes a compulsory requirement in Singapore construction, its potential should be maximised. It is pertinent to consider how Building Information Modelling (BIM) can provide the platform for integrating the performance criteria on a construction project.

The Innovation Report on BIM in support of Determining Productivity and Safety Index can be downloaded here.
Expert: Dr Evelyn, Ai-Lin TEO, National University of Singapore

Evelyn is Associate Professor at the Department of Building. She has been appointed by the General Engineering and Safety Standards Committee to be the Technical Committee on Workplace Safety and Health since 2008. She has invented the BIM QTO system (patented system) and has won an excellent paper award in 2007 for the 'Deployment Framework to promote the Adoption of Automated Quantities Taking-off System'. Dr Teo is active in participating in BIM and Safety research projects both locally and internationally as researcher and consultant.

CIB Innovation Webinars

This Webinar on Using BIM to Enhance Construction Safety and Health, is part of a series of CIB Pilot Innovation Webinars that take place in May - June 2014.

Provisional or Final Programmes of these Webinars, free downloadable Innovation Report and possibilities for free Registration for forthcoming webinars plus the Innovation Videos and the integral Webinar Recordings from past webinars can be accessed:
- for users of an i-Pad: via downloading the app "CIB Journal" from the app-store (search by: cib)
- for those who do not have an i-Pad: via the section "Innovation” of the CIB Website at:
  http://www.cibworld.nl/site/innovation.html