



CIB NEWS ARTICLE

International Council for Research and Innovation
in Building and Construction

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Around the Task Groups and Working Commissions

TG50-W014 Workshop on Tall Buildings and Fire,

Atlanta, Georgia, USA, 28-29 September 2006



Introduction

The CIB Commission on Fire (W014) and Task Group on Tall Building (TG50) are developing work plans and activities for the next several years. These two working groups have collaborated in past meetings and conferences to develop strategies for performance in tall buildings related to the safety of tall buildings and fire issues. This has led to the discussion of collaborations or possible mergers of these groups to work on important issues related to fire and tall buildings, also taking into considerations of the recommendations by The National Institute of Standards and Technology (NIST) in the World Trade Centre Investigation report released recently.

About The Workshop

A workshop called The Symposium on Tall Buildings & Fire took place on 28-29th September 2006 in conjunction with the CIB Board meetings in Atlanta, Georgia USA. The workshop was hosted by Georgia Institute of Technology and led by Assoc. Prof Dr. Faridah Shafii (TG50) and Mr. Richard Bukowski (W014), in their capacity as coordinators to the respective groups.

The workshop, organized to explore topics of current, international efforts where W014 and TG50 might serve a useful role in coordination, also served as a platform for participants to propose works or activities relevant to the subjects in discussion. The one and a half day workshop comprised four sessions: Design Fires, Structural Response to Fire, Egress and Access



and Risks of Building performance with Height. A summary of the discussions per session and copies of the PPT presentation are included in a full meeting report that can be downloaded [here](#).

The event attracted about 40 participants from leading organizations including USA, Japan, Canada, Finland, Taipei, France, Israel, Sweden, Netherlands, South Africa and Turkey.

Conclusions

Design Fires

There appears to be insufficient coordination for work on design fires between ISO TC92, NFPA, and SFPE. Major studies are required on how to take into account the distribution of fire loads because natural (simulated) fire is different from standard test fires and real fires. Future works should develop systematic methods for establishing appropriate design fires suitable for regulation.

Structural Response to Fire

To advance the Prediction of Structural Response to Fire: beyond ISO 834 and ASTM E119 studies should include matters related to applied protection for steel (field applied and intumescent), assessing the performance of connections, and measuring the high temperature properties of materials.

Egress and Access in Tall Buildings

The integration of protected elevators with stairways to provide much faster evacuation will improve access and egress of tall buildings. The subject of human behavior, as one of the critical factors affecting egress needs to be considered in future design of egress systems.

Risks of Building Performance with Height

The increased risk of building performance with height to occupants and fire services must be taken seriously. Considerations on how these performance levels might be specified in design guidelines/regulations should be studied.

Research should also consider the functionality of buildings and predictability of their performance in emergency. Collaborating with regulators will make the research effective to the policy makers and construction industry.

Future Perspectives for W014

In conclusion, CIB should reach out to the policy makers to bring the work together. Being the most relevant international cooperation in building and construction, CIB should develop effective design

measures as this is the missing link in the design community to develop buildings that are safe.

Updated CIB W014 Work Programme

The conclusions from this Workshop have resulted in the following updated W014 Work Programme:

For the medium future the commission's Work Program is has the following main objectives:

- Current, international activities to address methods for identifying design fires for performance evaluation are only partially coordinated. Against this background CIB W014 will reach out to ISO TC92, NFPA, and SFPE with an offer to facilitate needed cooperation in identifying characteristic fire loads along with their statistical distributions, translation of these fire loads to rates of heat release and yield fractions, and criteria for the establishment of appropriate design level fire events suitable for use in regulation.
- W014 will continue to promote the need for studies of phenomena related to structural response to fire not sufficiently understood to result in reasonable predictive uncertainties. These include the performance of connections, applied fire protective materials, and high temperature thermal properties.
- W014 will promote a fundamental rethinking of egress systems design and performance assessment such that design can move from a metric of capacity to one of flow and time.
- W104 will work to engage international building regulators in the management of risk from fire and other hazards in buildings. Initial activities will focus on the Inter-jurisdictional Regulatory Collaboration Committee (IRCC) as the organization representing those building regulators who are operating, or are in the process of implementing, a performance-based regulatory system.

Based upon above medium term program objectives, the following activities are planned to take place in the immediate future:

- Organize a workshop to bring together the groups working on design fires to identify issues and a coordinated path forward.
- Present a proposed work plan at the next meeting of the Structures in Fire (SIF) working group to develop needed support. Schedule dependent on SIF schedule.
- Work with NIST on its planned International Workshop on Egress to be held in April 2008.
- Introduce discussions with IRCC to assess levels of interest in all hazards mitigation planning.

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