



National Fire Protection Association

1 Batterymarch Park, Quincy, MA 02169-7471
Phone: 617-770-3000 • Fax: 617-770-0700 • www.nfpa.org

MEETING AGENDA
High Rise Building Safety Advisory Committee

Teleconference/Web Meeting
October 9, 2014

1. **Call to Order.** Call the meeting to order by Chair, Jim Quiter, at 1:00 pm EDT on Thursday, October 9, 2014.
2. **Introduction of Attendees.** For a current committee roster. **See pg. 02.**
3. **Review of Agenda.**
4. **Approval of Minutes.** Approve the minutes of the 2014 May 13-14 meeting. **See pg. 03.**
5. **Status of NFPA 1/101/5000 and next revision schedule.**
6. **Residential EAP Guide.**
7. **Update on standard for professional practices for facility fire safety planning and fire safety directors.**
8. **Future HRBSAC Action Items and Updates.**
9. **New Business.**
10. **Next Meeting.**
11. **Adjournment.**

Address List No Phone

09/29/2014
Kristin Bigda
HRB-TAC

High Rise Building Safety Advisory Committee

James R. Quiter Chair Arup 560 Mission Street, Floor 7 San Francisco, CA 94105 Safety to Life Correlating Committee	SE 9/30/2004 HRB-TAC	Geoff Craighead Principal Universal Protection Service 1551 North Tustin Avenue, Suite 650 Santa Ana, CA 92705	SE 7/19/2005 HRB-TAC
Jon D. Magnusson Principal Magnusson Klemencic Associates 1301 Fifth Avenue, Suite 3200 Seattle, WA 98101-2699 National Council of Structural Engineers Assns.	SE 9/30/2004 HRB-TAC	John P. Miller Principal Los Angeles City Fire Department Battalion 17 "A" Platoon 200 North Main Street Los Angeles, CA 90012	L 4/22/2005 HRB-TAC
Jack J. Murphy Principal Fire Safety Directors Association of Greater New York 236 Overlook Avenue Leonia, NJ 07605-1519 Fire Safety Directors Association of Greater New York	U 9/30/2004 HRB-TAC	Jake Pauls Principal Jake Pauls Consulting Services 255 Glenlake Avenue, Suite 2207 Toronto, ON M6P 1G2 Canada American Public Health Association	C 9/30/2004 HRB-TAC
Sally Regenhard Principal The Skyscraper Safety Campaign 131 East 237 Street PO Box 70 Woodlawn, NY 10470 Alternate: Charles R. Jennings	C 9/30/2004 HRB-TAC	James P. Shea Principal Brookfield Multiplex Europe 23 Hanover Square London, W1S 1JB United Kingdom	U 3/1/2011 HRB-TAC
William A. Stewart Principal 873 Whitney Drive Mississauga, ON L4Y 1E6 Canada Metropolitan Fire Chiefs-IAFC/NFPA	E 3/19/2007 HRB-TAC	Peter A. Weismantle Principal Adrian Smith + Gordon Gill Architecture LLP Director of Supertall Building Technology 111 West Monroe, Suite 2300 Chicago, IL 60603-4017 Council on Tall Buildings & Urban Habitat	SE 03/06/2014 HRB-TAC
Charles R. Jennings Alternate John Jay College of Criminal Justice City University of New York 229 Nelson Avenue Peekskill, NY 10566 The Skyscraper Safety Campaign Principal: Sally Regenhard	C 12/1/2006 HRB-TAC	Kristin Bigda Staff Liaison National Fire Protection Association 1 Batterymarch Park Quincy, MA 02169-7471	6/29/2007 HRB-TAC



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MEETING MINUTES
High Rise Building Safety Advisory Committee

Renaissance Blackstone Chicago
May 13-14, 2014
Chicago, IL

1. **Call to Order.** The meeting was called to order by Acting Chair, Geoff Craighead, at 8:00 am CST on Tuesday, May 13, 2014 at the Renaissance Blackstone Chicago, Chicago, IL. Chair, Jim Quiter, was not in attendance due to travel delays.

2. **Introduction of Attendees.**

The following members were in attendance.

NAME	REPRESENTING
Kristin Bigda, Staff Liaison	NFPA
Geoff Craighead, Principal	Universal Protection Service
Jon D. Magnusson, Principal	Magnusson Klemencic Associates
John P. Miller, Principal	Los Angeles City Fire Department
Jack J. Murphy, Principal	Fire Safety Directors Association of Greater New York
Jake Pauls, Principal	Jake Pauls Consulting Services – Rep. American Public Health Association
William A. Stewart, Principal	Metropolitan Fire chiefs – IAFC/NFPA
Peter A. Weismantle, Principal	Adrian Smith + Gordon Gill Architecture LLP

The following guests were in attendance.

NAME	REPRESENTING
Daniel Safarik	Council on Tall Buildings & Urban Habitat
Robert Solomon, NFPA Staff	NFPA

The following Principal members were not in attendance.

NAME	REPRESENTING
James R. Quiter, Chair	Arup
Sally Regenhard, Principal	The Skyscraper Safety Campaign
James P. Shea, Principal	Brookfield Multiplex Europe

3. **Approval of Minutes.** The minutes of the 2014 February 14 meeting were approved as distributed with no modifications.
4. **CTBUH Presentation.** Daniel Safarik, staff and editor at the Council on Tall Buildings and Urban Habitat attended the meeting and gave a presentation to the group regarding the current and future work of the Council. **See attachment A.**
5. **NFPA 101/5000 NITMAMs.** Two NITMAMs were received on material originally developed by the HRBSAC committee: one for NFPA 101 and one for NFPA 5000 regarding the text on stair monitoring equipment. A copy of the NITMAMs can be viewed in the motions committee report at www.nfpa.org/101next or www.nfpa.org/5000next. Jake Pauls and Jack Murphy are planning to be in attendance at the NFPA Technical Meeting in Las Vegas in June.
6. **New HRBSAC Website Update/Reminder.** A reminder that all committee documents can now be found at www.nfpa.org/highrise.com. General NFPA high-rise safety information as well as the EAP Guide can be found at www.nfpa.org/highrise.
7. **EAP Guide.** K. Bigda discussed the number of web hits to the EAP guide for office buildings. There have been a total of 1,173 clicks on the document since it was posted to the NFPA website in February. The committee discussed additional ways to 'market' the document including the following means: promote to NFPA regional directors, print paper copies for the NFPA booth, SFPE tech talk, communication with various organizations. K. Bigda will put together a few slides summarizing the document and distribute to the committee for their use.
8. **New Business.** Development of Residential EAP Guide: An outline and beginning of a draft for an EAP Guide for apartment buildings was developed. W. Stewart, J. Murphy, and J. Miller will contact various cities to request references for sample EAPs or EAP guides and K. Bigda will distribute to the committee. A draft developed by W. Stewart, J. Murphy, and J. Miller will be circulated to the committee for review by July 15th with a review of the draft due 4-6 weeks after receipt of the draft. J. Pauls will assist in updating the section on human behavior.
9. **Future HRBSAC Action Items.**

- Elevators: A building in Austin may be using elevators for occupant evacuation. K. Bigda will work with R. Solomon and others to look into a possible case study of the elevator use.
- Other: The committee is urged to continue to think about emerging issues in high-rise building construction and safety where the committee may play a role in future work.

10. **Next Meeting.** The next meeting of the committee will be a teleconference/web meeting sometime in the fall. A meeting date poll will be sent out over the summer to confirm dates.


11. **Adjournment.** The meeting was adjourned by Acting Chair, Geoff Craighead, at 11:45 a.m. on Wednesday, May 14, 2014.

Meeting Minutes Prepared By:

A handwritten signature in black ink that reads "Kristin Bigda". The signature is written in a cursive, flowing style.


Kristin Bigda, NFPA Staff

ATTACHMENT A




Update on CTBUH Activities

Daniel Safarik
 CTBUH Editor / NFPA HRBSAC Meeting
 May 2014




Council on Tall Buildings and Urban Habitat



Founded in 1969

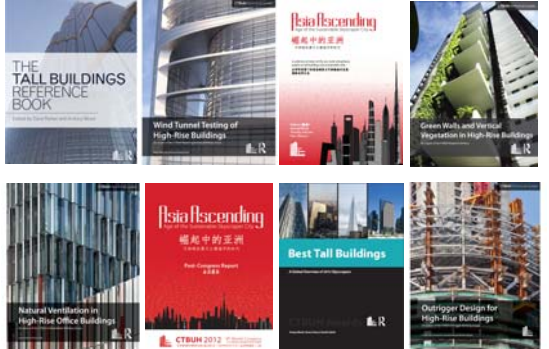
The CTBUH organizational member network includes **763,614** individuals working in **5,166** offices around the world



Council on Tall Buildings and Urban Habitat


What The CTBUH Does

CTBUH Publications



CTBUH Annual Awards Book

<http://books.ctbuh.org>



CTBUH Quarterly Journal



2010 Issue II (2010年第 二期)
 2012 Issue III (2012年第 三期)
 2013 Issue I (2013年第 一期)
 2013 Issue II (2013年第 二期)

Technical Guides

Outrigger Design for High-Rise Buildings

Natural Ventilation in High-Rise Office Buildings

Events

<http://books.ctbuh.org>

The Council organizes a number of significant events each year. These include: world congresses and conferences attended by some of the world's most influential architects, engineers and developers; annual tall building awards; technical tours of tall buildings around the world, and various meetings and seminars.

World Congresses/Conferences

<http://conferences.ctbuh.org>

There have been 9 World Congresses and 86 regional Conferences since 1969. Some examples are shown below:

Selected Past World Congresses/Conferences Speakers

HE Mohamed Ali Alabbar, William F. Baker, HRH Prince Charles, Charles Correa, Mayor Richard Daley, Jeanne Gang, Gerald D. Hines, Steven Holl, Christoph Ingenhoven, Fazlur Khan, Eugene Kohn, Daniel Libeskind, Cesar Pelli, John Portman, Jr., Leslie Robertson, Paul Rudolf, Larry Silverstein, Adrian Smith, Werner Sobek, Carol Willis, Ken Yeang

Annual Awards Dinner

<http://awards.ctbuh.org>

CTBUH Awards: Best Tall Buildings & Innovation Awards

2013 Best Tall Building Asia & Australasia: CCTV Headquarters, Beijing

2013 Tall Building Innovation Award: BROAD Group, China

2012 Best Tall Building Americas: Absolute World Towers by Chinese Architects

2011 Best Tall Building Asia & Australasia: Guangzhou IFC Towards

Best Tall Buildings

CTBUH Awards Book Publication

CTBUH Working Groups


Outrigger Design for High-Rise Buildings

CTBUH Research


Global Research

Tall Buildings & Population Study & Poster

Technical Research



Study of the energy-saving effectiveness of green wall façade systems, funded by Wanger Institute for Sustainable Energy Research (WISER)



"Study on the Constructability and Engineering Properties of Composite Megacolumns" to study the life cycles of tall building structural systems
 Sponsor: ArcelorMittal

"A Whole Life Cycle Assessment of the Sustainable Aspects of Structural Systems in Tall Buildings" to study the life cycles of tall building structural systems
 Sponsor: ArcelorMittal

Height Criteria / World's Tallest

<http://criteria.ctbuh.org>

Rank	Building Name	Height (m)	Completion Date
1	King Abdul Aziz International Airport	304.0	2011
2	Abraj Al-Basmal Tower	300.0	2012
3	Shanghai World Financial Center	428.0	2008
4	International Commerce Centre	444.0	2010
5	Petronas Towers 1 & 2	451.9	2004
6	Zifeng Tower	450.0	2012
7	Wuhan Tower	450.0	2012
8	Wuhan Tower	450.0	2012
9	Wuhan Tower	450.0	2012
10	Wuhan Tower	450.0	2012

World's ten tallest buildings according to Height to Architectural Top (as of August 2012)

CTBUH Chapter Page

The Skyscraper Center - homepage

The Skyscraper Center - Building Page

CTBUH Member Page

Global News


www.ctbuh.org

CTBUH Asia Headquarters | 亚洲总部

CTBUH 2014 International Conference, Shanghai

CTBUH Fire and Life Safety Working Group

Recently re-energized by new leadership



<p>Chair: Simon Lay Director of Fire Engineering AECOM Manchester UK</p>	<p>Vice-Chair: Daniel O'Connor Chief Technical Officer AON FPE Chicago US</p>	<p>Vice-Chair: Russ Timpson CEO HorizonScan Canterbury UK</p>
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CTBUH Fire and Life Safety Working Group

Simon Lay joined AECOM in January 2012 as their Director of Fire Engineering. Before joining AECOM, Simon worked at WS,P where he led the growth and development of their Fire Engineering team for 10 years. His considerable energy, technical expertise and strategic business development has been fundamental to establishing teams as credible providers of fire engineering services on a global scale.

Daniel O'Connor is the Chief Technical Officer of Aon Fire Protection Engineering Corporation (Aon FPE). Mr. O'Connor is a member of five [NFPA](#) Technical Committees that include NFPA 72, National Fire Alarm & Signaling Code, and is the immediate past Chair of the NFPA 101 Technical Committee on Healthcare Occupancies. He has been involved in numerous tall building projects during his career including the Trump Tower in Chicago, the proposed 610 meter(2000 feet) Chicago Spire, and the 112 story Doha Convention Center and Tower.

Russ Timpson is the CEO of Horizonscan, his experience includes International Fire Strategy for BAA, Head of Safety for Virgin Atlantic and the development of business continuity plans for several Multi-National companies. Timpson is the secretary of the Tall Buildings Fire Safety Network. His specialization is the facilitation of crisis simulation exercises.

CTBUH Fire and Life Safety Working Group



2nd International Conference on Tall Buildings Fire Safety - Call for Papers

Date:
June 17-20, 2014

Location:
University of Greenwich, London


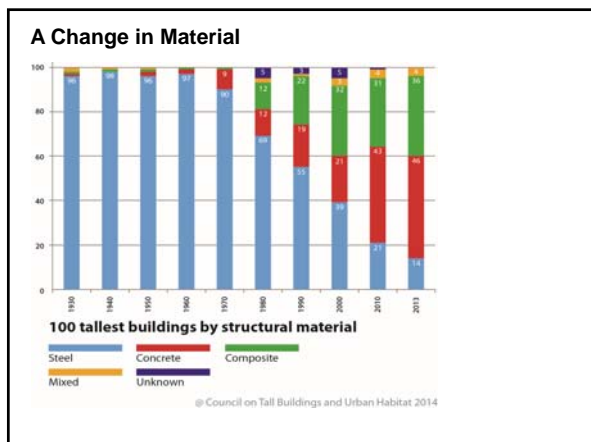
Organizer: The Tall Buildings Fire Safety Networking Group

Details:
In the recent past there have been a number of notable fires in Tall Buildings and these have resulted in a number of occupant and firefighters fatalities. The insurance industry is also grappling with the challenge of valuing losses from Tall Building fires as part of premium calculations. The use of lifts for fire evacuations continues to cause debate and controversy amongst fire engineers. These and many other subjects will be covered in the conference.

CTBUH members will receive a 10% discount on the registration fee.

CTBUH Fire and Life Safety Working Group

Target Output: Technical Guide on Refuge Floors in Tall Buildings

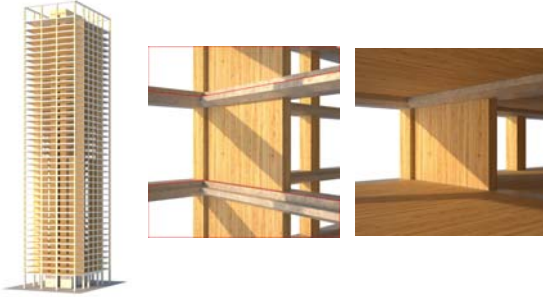



Timber Towers

Michael Green Architecture, Vancouver, BC CAN, 2014



Timber Towers
 SOM Theoretical Rebuild of DeWitt Chestnut Apartments – in Wood, 2013




Timber Towers
 Stadthaus, London: Waugh Thistleton, 2009




Timber Towers

The Treet, Bergen, Norway (just approved) HSB 2023 – Vasterbroplan, Stockholm, Sweden (proposed)




What is Pre-Fabrication? What is Modular?



Prefabricated Curtain Wall Panels Complete Fit-Out Units

Bathroom Pods Structural Components


Early Tall Modular Examples



1967. Habitat 67, Montreal
 Moshe Safdie

1972. Tokyo
 Nakagin Capsule Tower,
 Kisho Kurokawa

Current Modular Examples



Leadenhall, London
 Rogers, Stirk Harbour + Partners

Current Modular Examples

Atlantic Yards B2, New York
SkidP / Arup / Forest City

Current Modular Examples

T30, Changsha, China
Broad Group

Current Modular Examples: The World's Next Tallest?

Sky City J220, Changsha, China
Broad Group

Current Modular Examples

T36, Changsha, China
Broad Group

Modular: Benefits

- Efficiency / Speed** – Less time spent on site / Less "wet trades"
- Safety** – Controlled assembly environment ; work that would be done at height is done on the ground instead
- Quality Control** – No weather conditions to interfere with assembly, no rotting, rusting, theft, etc.
- Environmental** – Less construction waste , on-site and across entire process
- Logistics** – Fewer overlapping trades and less coordination
- Follow-on projects** – Pre-fabrication across numerous projects at once? Learning from one project carried into the next, etc.

Modular: Challenges

- Labor** – Many trade unions are unfamiliar, suspicious or opposed to prefab – fewer, lower-skilled jobs?
- Lack of Manufacturers** – Few choices to produce at scale, thus limited pricing leverage; Pioneers mostly joint-venture or self-build
- Logistics** – Traffic, trucking coordination; possibility of damage during transportation
- Safety** – Seismic / wind resistance unproven at supertall / megatall height; Stacked modules still need lateral bracing. Fire codes not optimized?
- Aesthetics** – How to seem less "boxy," product-like?
- Relation to "Place"** – How to create site-specific design responses, that relate to the physical, environmental and cultural aspects of the site (anti-homogenization)?

