

- 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

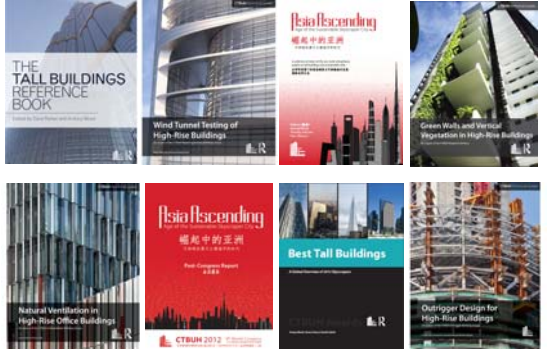
The CTBUH organizational member network includes **763,614** individuals working in **5,166** offices around the world



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

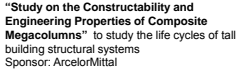
Global Research

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>

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

Rank	Building Name	Height (m)	Completion Date
1	Rajdham	334m	2012
2	Makkah Royal Clock Tower	312m	2012
3	Taj Mahal	281m	2008
4	Shanghai World Financial Center	428m	2008
5	International Commerce Centre	468m	2009
6	Petronas Towers 1 & 2	452m	2004
7	Zifeng Tower	438m	2012
8	Wuhan Tower	430m	2012
9	Wuhan Tower	430m	2012
10	63 HSBC	420m	2012

CTBUH Chapter Page

The Skyscraper Center - homepage

The Skyscraper Center - Building Page

CTBUH Member Page


Global News

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.

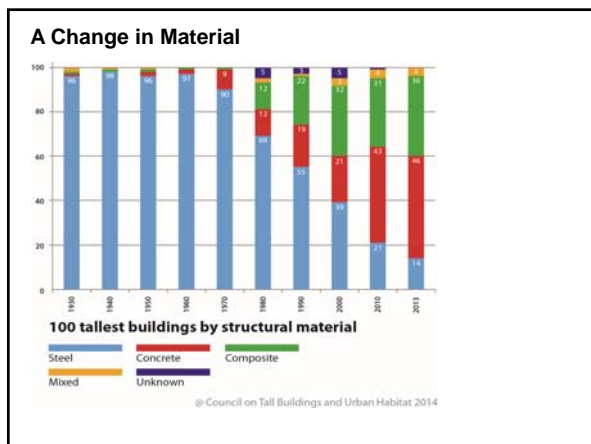
CTBUH members will receive a 10% discount on the registration fee.

CTBUH Fire and Life Safety Working Group

Target Output: Technical Guide on Refuge Floors in Tall Buildings



- Outigger Design for High-Rise Buildings
- Wind Tunnel Testing of High-Rise Buildings
- Natural Ventilation in High-Rise Office Buildings
- Green Walls and Vertical Vegetation in High-Rise Buildings

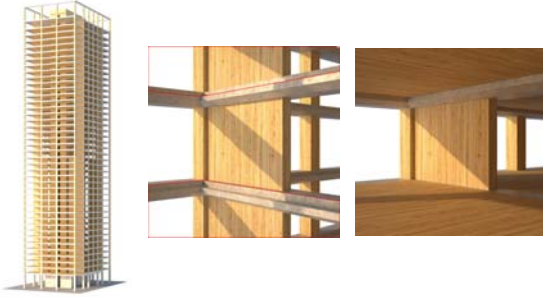


Timber Towers

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
Skidmore / 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)?

