

Minutes
TC 9.12 TALL BUILDINGS
Location: Tampa Hybrid Meeting (L3 Howard JW Marriott)
Sunday, June 25, 2023, 12:00 to 1:30 PM EDT

1. CALL TO ORDER AND TC 9.12 SCOPE (Duncan Phillips)
 - a. The meeting was called to order by Chair Phillips at 12:05 EDT
 - b. TC 9.12 is concerned with the function, operation, energy, and human safety for buildings in excess of 300 feet in height. Also included is the determination of requirements related to hydraulics, airflow, infiltration, thermal insulation, water vapor retarders, environmental control, fire and smoke control, and maintenance
 - ❖ Discussion started about revising the scope and mission statement of TC 9.12.
 - ❖ Revising the scope and mission statement to be on the agenda of the next meeting in Tampa.
2. INTRODUCTIONS (Duncan Phillips)
 - a. Chair Phillips asked attendees for introductions. There were 15 attendees in person and 4 attendees online. Quorum was established with 7 of 9 voting members present. This meeting was conducted in a hybrid fashion with about four-fifths of the participants in person.
3. CHAIR'S COMMENTS AND CODE OF ETHICS COMMITMENT (PHILLIPS)
 - a. "Commitment to the ASHRAE Code of Ethics – In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity, and respect for others, and we shall avoid all real or perceived conflicts of interest. See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>)
 - b. Roland C comments about research costs raised. The level of funding available that RAC can approve rose for the first time in 10 years. Workstatements must have a list of potential bidders.
4. LIAISON REPORTS (Duncan Phillips / Brad Cochran)
 - a. Brad Cochran. ASHRAE is pushing for YEA members. They can get free registration to their first ASHRAE conference.
 - b. Name of ASHRAE committee looking at integrating with ISI codes changed to GTIC (global technical international committee). ASHRAE wants to initially work with ISO 205, ISO 163, ISO 36, ISO 142 standards. Some are interested in cleanrooms, but no action yet.
 - c. General note: for Wi-Fi in the Marriott Waterfront building, the Marriott public Wi-Fi is better if the ASHRAE Wi-Fi is weak.
 - d. Duncan's comments: For each technical committee, ASHRAE wants more diversity on where members are located and what they do (consulting, manufacturing, academia, etc...). They want voting members to be diverse. Our TC9.12 demographics include 1 Fire Protection engineer, 2 engineering consulting firms, 2 wind engineering firms, and 1 retired.
 - e. After each meeting, the Chair assembles responses to a TC activity form. Duncan's summarize the activity form: we are good on all the metrics except the timing of the minutes and agenda scores on our dashboard.

- f. Title and scope. There is a need to check we are doing what we should. Recommendation is that we look at CTBUH and update to that for our scope. At the last meeting Peter Simmonds requested change. The part lists a purpose is in FAQ. Duncan listed them.
- ❖ Luke Leung had comments about enthalpy and energy impact. He said that we can add “environmental impact”. Broaden the “energy impact” to include “environmental impact” for 7 dimensions.
 - ❖ Dennis brought up the concept about context in location and aspect ratio (skinny vs fatter building) and technology. CTBUH has definitions in their heights: Tall, Supertall, and Megatall. Four Megatall buildings are on earth now (Burj Khalifa, Shanghai Tower, Merdeka 118, and Makkah Royal Clock Tower). Initially 300 feet was used as the definition of a tall building because of fire protection and fire break zones. The 300 feet threshold had nothing to do with stack effect as that has changed now. Mark and Dennis reminisced about the start of the committee.
 - ❖ **ACTION:** We will have a conversation before the Chicago meeting. Two aspects:
 - i. One is to add environmental impacts.
 - ii. Two is about if we need to define differences in height.
 - ❖ We will organize a meeting that will be open to the committee.
- g. Duncan noted he was sitting in on an SSPC meeting earlier on the weekend which was discussing international standards integration.
- ❖ This committee was spending time discussing changes to other codes. ASHRAE wants to recommend changes to other countries standard/codes.

5. APPROVAL OF LAST MEETING MINUTES

- a. Motion to approve minutes the Atlanta with amendment to date. Dennis motion. Mark Fly 2nd motion. No objections to approving these minutes. John Carter abstains. 6-0-1.

6. SUBCOMMITTEE REPORTS

- a. Handbook Chair (Duncan, Mehdi not present)
- ❖ TC4.3 is updating their comments about stack effect. Duncan working with them so both their section and our section align.
 - ❖ Brad: The application handbook is getting too big. They want to either pair it down or make it into 2 volumes. Five or six people in the room use the paper copy. One online long term member uses a physical copy. Some loan their physical handbooks to junior engineers. Rick H donates his old copies. Ron George made comment about keeping old versions for legal reasons. Luke commented about using ChatGPT to find old versions. Duncan is concerned about ChatGPT fibbing. The PDFs of older versions should remain online. Ron George does not like leasing option. Duncan: let AC know that we should have past versions available. John Carter: it would be a disservice to not publish them. We will need a new handbook chair soon per Dennis.
- b. Program Chair (Frank Kohout)
- ❖ We are proposing a special track for tall building in Chicago. Goal to propose 4 submissions. We have had two virtual meetings since our Atlanta meeting:

one on April 13th and another on May 30th. The deadline for seminar programs is Aug 2nd. We have 8-9 proposal topics.

- i. "Effect of Wind on Building Pressurization in Tall Buildings." Fundamentals & Applications seminar track. 90-minute seminar. The chair is Suzan. The proposed presenters are Mehdi, Luke and Duncan.
- ii. "Electrification of Tall Buildings for Decarbonization and Future Proofing." Decarbonization seminar track. 90-minute seminar. Chair is Rick H. Presenters are Chris Colasanti (heat pumps and energy storage), Mehdi (electrification) and Luke (decarbonization). The idea of working on buildings in history is discussed. Mehdi would talk about electrification strategies. Chris C practices in NYC about thermal storage in large buildings. Whole life carbon in tall building. Rick requested abstract for these. Rick's abstracts to meet decarbonization goals.
 - a. Ron George talked about Conclave on tall buildings in India. He does piping/hydronics and plumbing. He passed out a printout of a past slide deck from a past presentation. Discussion ensued whether piping and plumbing should be included handbook. Consensus was that the handbooks do or should include piping and plumbing. Ron was talking about HPWH and storage.
 - b. Another proposal decarbonization of tall buildings. Luke's is being rolled into this program.
- iii. "Integration of HVAC Systems Design into a Tall Buildings." HVAC&R Systems and Equipment seminar track. 90-minute seminar. Presenters are Mehdi, Suzan and Duncan. No chair initially, but Scott Peach volunteered.
- iv. "Local Codes and the Use of Curtain Walls in Tall Buildings." Fundamentals and Applications. (Note: the exact title and topics that will be covered in this seminar will be determined based on the outcomes from Forum #5 at the Tampa conference – "Special Design Challenges for Large and Tall Multi-Family Buildings" - which is scheduled for Wednesday June 28 from 9:45 – 10:45 EDT. Note that this Forum has been sponsored by TC 9.1 and co-sponsored by TC 9.12)
- v. "Air Related Impacts to Physiology and Health in Tall Buildings." Comfort, Indoor Environmental Quality, and Energy Efficiency. 60-minute seminar. Chair is David Norris. Presenters are Mehdi (latest technology) and Luke (post pandemic impact on tall buildings). (May seek co-sponsorship from TC 2.1 - Physiology and Human Environment).
- vi. "IAQ and Artificial Intelligence in Tall Buildings." HVAC&R Controls. 90 minute seminar. Chair is David Norris. Presenters are Mehdi, Chris Colasanti, and Cyclone. (Need to follow up on this)
- vii. "Case Studies of WELL in Tall Buildings." Comfort, Indoor Environmental Quality, and Energy Efficiency. 60 or possibly 90 minute seminar. Chair is Frank. Presenters are Mehdi, Duncan (Joel Good or someone from RWDI) and Frank (Someone from Cyclone) (Requires further

development). Duncan can point people in this direction. Some buildings are being WELL certified, but no case studies. China has the tallest WELL certified building. Luke and his co-worker are not able to speak about it.

- viii. “An Owners and Users Perspective of Tall Buildings.” Fundamentals and Applications. 60 minute panel. Chair is Frank. Would include up to four panelists – two have already committed. This would be more of a panel discussion. Frank has two panelists: someone from Willis Tower and a building manager of a 60 story building. Frank could get more panelists. Goal: what it’s like to own and operate tall buildings. Ron George talked about developers flipping cheap systems in tall buildings. Frank wants to focus on developers that want to keep their building.
- ❖ Frank to Brad: goal to create a mini track. Duncan mentioned that we could partner with TC9.6 about high rise hospitals. Luke said that Northwestern hospital in Chicago is a high rise. Ron George said that Saudi Arabia has university is a high rise.
- ❖ Scott Peach: expectation is to have a lot of submissions and ASHRAE will make a mini-track by picking and choosing.
- ❖ Dennis shared about a topic of solar and wind energy role in tall buildings. What to do with code requirements for a certain percentage of solar panels on roof required. Idea of co-sponsorship with TC9.1. Is TC9.1 interested? Dennis is program chair for TC9.1. Vertical wind turbines were discussed. Joke about wind turbines in parking lot or side of building that don’t turn.
- ❖ Duncan: some program topic chairs need to submit names. Duncan encouraged everyone to please keep going. No motion but he encouraged people to keep going. Frank and Duncan released the sub-committee chairs to just go. Everyone agrees on the topics, and they are all good.
- ❖ Frank asked if meeting minutes of program should be on basecamp. Yes, Duncan, they should be on basecamp. Basement useful, but email is more direct.
- ❖ Luke brought up the topic of holistic carbon and embodied carbon. LCA lifestyle of a building in different countries. 30 year in USA. 60 year in Japan. Denmark is 50 years. How do you do calculate LCA for tall building? Burj Khalifa was designed for 100 years per contract.
- ❖ Dennis asked Luke about things to discuss at the upcoming forum on Wednesday. Luke posed the question of how to do design diversity for RR exhaust, dryer exhaust in conjunction with varying wind speeds outside the building. Duncan also posed questions on the performance of ERVs in such a scenario.
- ❖ Kim Clawson online brought up residential building conversions. Themes of buildings with larger floor plates and issue with demand for occupancy were examples to consider. Many tall buildings have been converted from commercial /office to a residential tower or converted to other occupancies. Duncan stated that it would be an excellent topic for future. Kim said that we

should try to fit into Chicago program. Duncan asked Kim, "Can you chair it? Kim jokingly said, "maybe, will you let an architect chair an ASHRAE program committee?" Floor plate, ceiling height, and how HVAC can fit could be themes of some of the presentations. Dennis asserted that Kim you could be a speaker. Many in the public are stressed by this issue. John Carter posed the question, "If gut a building, is it a new building or do you have to take the skin off?" Kim C and John C continued collaboration.

- c. Research Chair (Scott Peach)
 - ❖ Unfortunately, no inquiries in the past six months.
 - ❖ Deadline to submit for Chicago is August 2nd.
 - ❖ Scott Peach should be a voting member next time.
 - d. Webmaster (Lisa Ng)
 - ❖ She uploads the minutes and agenda when available.
 - ❖ Basecamp is there, but not used as much by our TC.
 - e. Membership (Duncan Phillips)
 - ❖ Three rolling off: Philips, Carter, and Fly rolling off after next summer meeting in 2024. He proposes that Scott Peach and David Norris as voting members. Jeremy Smith is recommended to be a voting member. Jeremy has been a CM for about 3 years.
 - ❖ Next meeting, we can talk about ppl rolling on in 2025.
7. New Business (Duncan Phillips)
- a. This meeting time seems to work.
 - ❖ Dennis: this is not the first time for this "new" meeting time. We used to do this time for much of the TC's past.
8. ADJOURN (Phillips)
- a. Next meeting in Chicago on Sunday January 21st from 12:00 PM (noon) until 1:30-2 PM (EST)
 - b. Motion to adjourn by Dennis and seconded by Lisa Ng. No objections.
 - c. Microphone has been scratchy (John). Audrey said the microphone was good.
 - d. Duncan: David to bring it next time.
 - e. Adjourned at 1:28pm.

MEETING ATTENDANCE (Roster as of 6/19/23 with guests)

Full Name	Position	Email	Present	Online	Voting	YEA	INT'L
Mr Duncan A Phillips	Chair	duncan.a.phillips@gmail.com	x		x		
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Mr David Norris	Secretary	dwn2103@gmail.com	x				
Mr Francis J Kohout	Program Subcom Chair	frank.kohout@outlook.com	x		x		
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