SYDNEY – On Sunday, 29 October 2017, delegates gathered for the Calculating Floor-Areas in Skyscrapers Workshop, which was held at Rider Levett Bucknall’s office in North Sydney, the day before the launch of the 2017 CTBUH Conference.

This workshop served as an introduction to the CTBUH research project, Creating Industry-Accepted Criteria for Measuring Tall Building Floor Area, which was recently funded by ArcelorMittal. One of the goals of this workshop was to discuss the viewpoints and options of various disciplines and this was reinforced by the group of professionals that attended, which was comprised of designers, elevator consultants, material suppliers, facade consultants, academic researchers, contractors, developers of standards, etc.

Following a short meet and greet over coffee and pastries, the workshop began with an introduction from Dario Trabucco, the CTBUH Research Manager, where he briefed the delegates on the afternoon’s speakers, introduced the new CTBUH research project, and highlighted some areas where tall buildings could present challenges.

After Dario, Peter Stevenson, Founder and President of Stevenson Systems Inc., began his presentation, which focused on the challenges of creating a floor measurement standard, especially one that is accepted internationally. As a member of the Standard Setting Committee (SSC) for the International Property Measurement Standards (IPMS) Coalition, Peter was uniquely qualified to speak on the topic and he discussed some of the debates and issues that have emerged in his time assisting in creating a standard for all buildings. He also discussed how IPMS differed from existing BOMA standards and provided some case studies of buildings that his company had measured. He emphasized that when comparing local standards between different cities, like New York, London, and Singapore, floor area measurement calculations can change by over 25%. He finished by emphasizing the ultimate goal of IPMS and himself: international consistency on measuring floor area.

Next, Allen Crawford, Managing Director of Chesterton International, and Vice Chairman of the IPMS Standard Setting Committee elaborated on Peter’s presentation by explaining the conclusions that IPMS had come to in their standards. He explained their three methods of measurement (IMPS-1, 2, and 3) and believes that these standards could represent a “common language” internationally. He explained that these standards have already been adopted by some local governing bodies for property measurement, including that of Dubai.

Jean Claude Gerardy of ArcelorMittal presented next, explaining the impact that conventional structural building materials can have on floor area and their motivation for funding CTBUH in conducting this research. He argued that buildings in countries like Australia – where concrete is currently the primary and cheapest building material – could be more economically feasible if they used steel, due to the increased amount of carpet area and less obstruction to exterior views, due to a reduced column size.

Will Miranda, CTBUH Research Assistant, elaborated on this by showing some case studies of tall buildings and comparing IPMS measurements with the floor area occupied by structural columns. He showed how columns can take up 5-10% of the usable floor area and emphasized that this can be extremely significant when multiplied over 50 or 100 floors in tall buildings. He also showed some common structural technologies used in tall buildings, such as bracing and diagrids, which could present additional issues when measuring floor area.

The presentations concluded with an energetic question and answer session, which continued over another round of coffees.

Next, the delegates gathered again for a round table discussion. This discussion was spearheaded by Johannes de Jong, Executive Vice President and Founder of Elevating Studio, and Nick Ferrera and Harvey
James Helou of Rider Levett Bucknall. They shared their expertise in elevator consultancy and quantity surveying, respectively, and showed their experiences in how various decisions made by clients and designers can impact floor area calculations.

Following some heated discussions, the group agreed that one of the most important measurements needed for tall buildings is the ratio of carpet area vs. gross floor area (gross floor area is closely associated to IMPS-1 measurements). The group agreed that this ratio could help influence designers and developers to create more innovative buildings, by trying to utilize more efficient (smaller) building cores, façades, and structural elements. That being said, the group also explained that there must be buildings to compare against, as developers and designers will only strive for innovation in this sense if they can prove to have one of the most efficient buildings, especially when comparing against competitors.

The group concluded that this relied on the resources available to CTBUH, by proposing a new measurement standard to the IMPS Standard Setting Committee, which would be closely associated to carpet area, and regulating requirements for floor area information submitted on The Skyscraper Center, CTBUH’s database of tall building information. This could lay the foundation for determining what a truly efficient building – in terms of gross floor area vs. carpet area – really is and what designers should strive for.