Cyclone-Glazing Research Presented at the 2017 CTBUH Conference

October 31, 2017

SYDNEY – The ongoing research project, Cyclone-Glazing and Façade Resilience for the Asia-Pacific Region, was presented at the CTBUH 2017 Conference on October 31 in Sydney, Australia.

Jennifer Schneider, Structural and Security Glazing Segment Manager of Trosifol, the research sponsor, presented on Day 2 of the conference in session 6E, which was dedicated exclusively to “Façades”.

Schneider’s presentation, entitled “Cyclone-Resistant Curtain Walls for the Resiliency of Buildings & Cities”, focused on the best practices when it comes for glazed building envelopes that are resistant to cyclone events. She concentrated on the current technical achievements and on the potential impact if a building envelope were to fail during a cyclone event. Furthermore, she shared the findings of the CTBUH research project.

The façade represents the primary barrier to protect a building and its occupants from external threats, in addition to controlling a building’s internal climate and lighting. Damage to glazed enclosures, caused by windborne debris during a tropical cyclone, also represents a significant contributor to the post-event recovery costs. Australia (1975, following Cyclone Tracy) and the US (1994, following Hurricane Andrew) were the first developers of codes and standards requirements for typhoon prone regions. Currently, the ASCE 7, the primary building code in the US, indicates that the ASTM E1886 and ASTM E1996 standard requirements dictate the glazed envelope systems performance for building in cyclone-prone locations. Depending on the wind zone and on the level of protection of the building, an impact test and a cyclic static pressure differential loading test both have to be carried out on the façade.

Jennifer presented the attendees the results of two assessments conducted in Florida after Hurricane Wilma (2006), which concluded that no damage was observed in buildings constructed under the most recent building code. The building’s success served as verification for window, curtain wall and sliding glass doors tested under the current impact and pressure cycling tests.

Then, the presentation showed the Australia/New Zealand Standard requirements for façades in cyclone-prone location. Jennifer highlighted the differences in these requirements and those in the US, which is primarily differences in the highest speeds for the large missile impact test and the missing of the cyclic pressure testing.