Cyclone-Glazing Project in Hong Kong: Meetings with Designers and Façade Consultants

June 11 – 15, 2018

HONG KONG – CTBUH Research Division attended meetings with façade consultants and architects during its trip in Hong Kong for the research project on Cyclone Glazing and Façade Resilience for the Asia-Pacific Region.

First, they discussed about the role of the professional figures of the designer and of the façade consultant operating in the Hong Kong market, highlighting the differences with other jurisdictions investigated in the past months of research activities. Furthermore, various existing building façade solutions were debated and performances related with typhoon and strong wind resistance were shared with Angela Mejorin, involved in the research project since January 2017.

During the meeting at Meinhardt the growth in the recladding processes in Hong Kong was evidenced, especially for commercial buildings. Nigel Lo, Principal Façade Consultant, and Gabriel Kan, Principal Façade Engineer, shared their experience and showed technical solutions adopted in the past and in the newest buildings. Their project for the Hong Kong Children Hospital (formerly known as Centre of Excellence in Pediatrics) was discussed, also because it will be included in the technical publication ‘Strong Winds- and Cyclone-Resistant Façades: the Best Practices’.

They talked also about the local superstition of the creation of ‘X’s with tape before a typhoon comes in both private houses and public buildings. In Hong Kong this is still considered as the best practices in order to prevent glass breakage and people injury due to flying debris impact on the glazed envelopes.
A meeting at FRONT was organized and attended also by Malvinder Singh Rooprai from Trosifol, the research sponsor representative. The study conducted by the CTBUH and presented in the II Issue of the 2018 CTBUH Journal was shared with the meeting participants. This was the occasion for entering into the discussion of the best practices when it comes for strong winds-resistant curtain walls in the contemporary construction in Hong Kong, with Martin Riese, Principal, and Lizette Mcneill, Associate. An argument highlighted by the façade consultants operating in Hong Kong seems to be the conservative approach of the current code requirements and the lack of communication on specific topics with the public institutions. They would love to be able to organize easiest meetings with the building authorities in order to share their design approach. As an effect, the designers have to be conservative in order to follow the code, but they still do not have mandatory requirements for specific performances related with typhoon disaster event like wind-borne debris impact simulation and the consequent positive and negative pressure cycling withstanding, according to ASTM standard procedure. As a result, when a category 8 or higher typhoon occurs, the building envelopes frequently fails due to glass breakage when hit by wind-borne debris or due to water penetration.

Meeting at FRONT. From right to left: L. Mcneill, M. Riese, M. S. Rooprai, A. Mejorin
Farrells: the Kowloon area architectural model. From right to left: S. Krummeck, A. Mejorin

CTBUH met Farrels in order to collect information about existing buildings in Hong Kong. Stefan Krummeck, the Director, gave an overview on the on going or recently completed projects in the region. Also at Farrels, the professionals shared their personal experiences in typhoon events and one identified problem for the building failure is the lack of control in opening windows. In strong wind condition these open windows let the internal objects fall down and the rain come in. Benjamin Lau, Director, and Rachel Chow, Project Director, joined the meeting and shared the technical solutions for the façades of some on-going projects, as the M+. A 94.4 m tall tower will host the necessary facilities for the museum and this part of the complex will be used as a screen in order to let the people participate to activities organized by the museum.

A meeting at Inhabit was organized with Dickson Wong. He already provided interesting information about Hong Kong buildings in which he get involved in the design process for the building case study section of the publication. Projects signed by his firm will be included at least for the Australian section. In Australia, the cyclone-prone regions (Cand D) building envelopes have to be tested through a missile impact test. This is a mandatory regulation which is not existing yet in Hong Kong, even if many professionals are aware about the existence of standard test methods for flying debris in typhoon events simulation. In this occasion, he shared his experience in the façade consultancy, especially related with the Hong Kong Building Department approval process. Dickson Wong confirmed that is currently very common to have a Façade Engineer who is a Separate Registered Structural Engineer (RSE).

Attendees:

Rachel Chow
Stefan Krummeck
Benjamin Lau
Lizette Mcneill
Martin Riese

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<td>Dickson Wong</td>
<td>Inhabit Group</td>
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<td>Nigel Lo</td>
<td>Meinhardt Façade Technology</td>
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<td>Gabriel Kan</td>
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<td>Malvinder Singh Rooprai</td>
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