

# Cyclone-Glazing and Façade Resistance for the Asia-Pacific Region

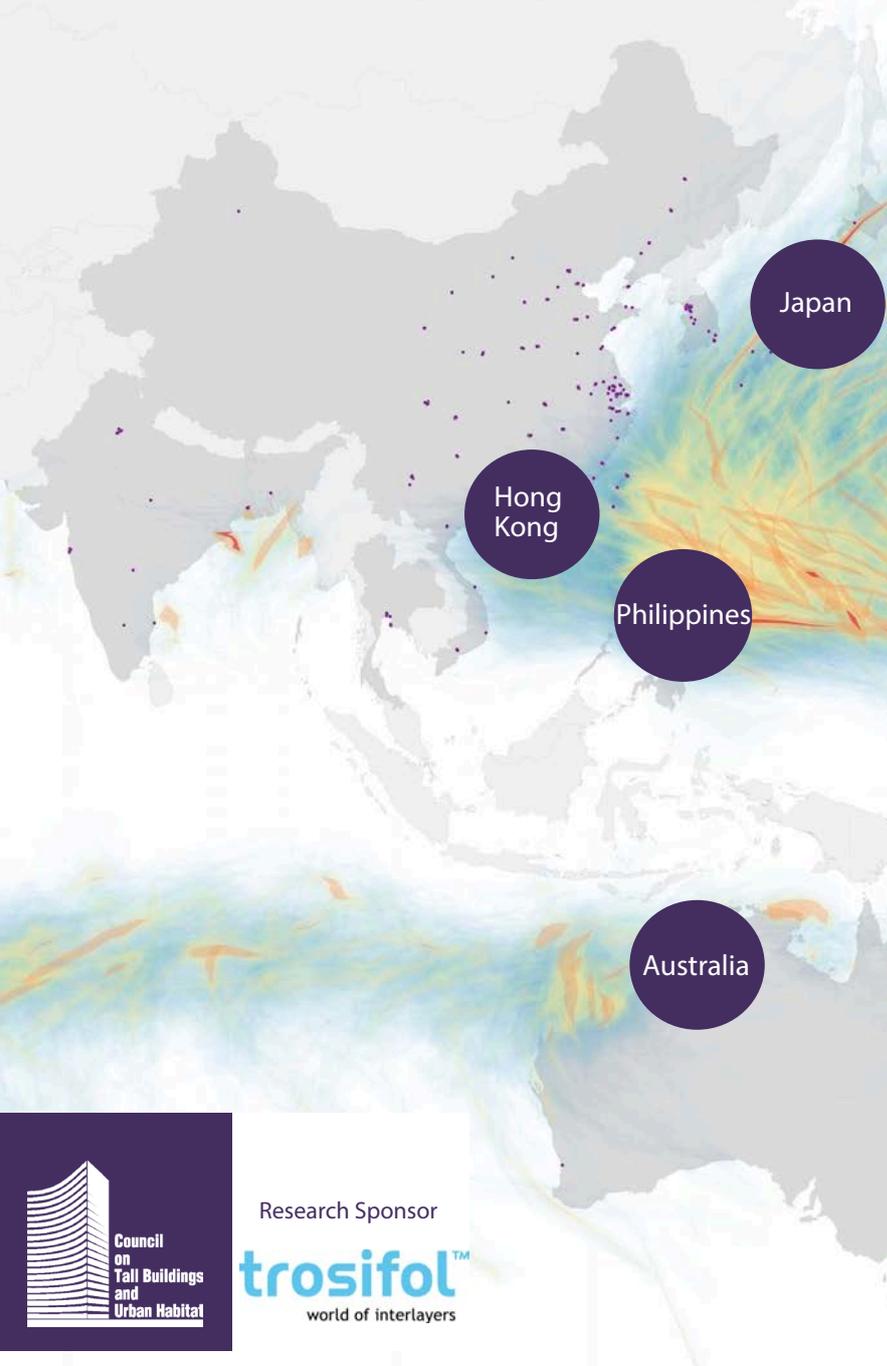
**CTBUH**  
Research Project



## Second Stage of the Research Project - Current Problems and Existing Solutions for:

CTBUH is on the forefront of promoting the development of **more resilient tall buildings and more secure cities.**

The proposed research project will continue the dialogue between the scientific community and industry leaders, which has already begun with Stage 1 of the research project.



Design  
Construction  
Installation  
Post-Event Inspection  
of **Cyclone Resistant Façades**

### 4 Asia-Pacific Countries:

Australia  
Hong Kong  
Japan  
Philippines

### 2 Case Studies Typology:

NEW cyclone-resistant façades  
Façades that experienced a RETROFIT

### With the Support of Professionals Operating in the Asia-Pacific Region:

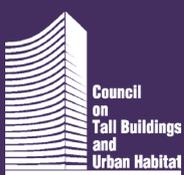
Developers  
Building managers  
Façade associations  
Insurance companies  
Façade contractors  
Façade designers

### 12 Months for:

Selection of case studies  
Meetings with experts  
Cyclone-resistant façade solutions study

### Final Output:

Technical Publication according to the best practice that have been adopted in the examined countries and worldwide when it comes for cyclone-resistant façade solutions.



Research Sponsor

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# Cyclone-Glazing and Façade Resistance for the Asia-Pacific Region

Second Stage of the Research Project - Current Problems and Existing Solutions for the **Design, Construction, Installation, Post-Event Inspection** of Cyclone Resistant Façades

The **ultimate objective** of the second stage of the research is to:

- Identify current solutions for curtain walls in selected cyclone-prone countries - Australia, Hong Kong, Japan, the Philippines
- Identify the solutions in the **case studies** are compliant to meet local/client requirements for cyclone proofing
- Create a **Technical Publication**, which presents the selected case-studies

## Research Methodology for Stage 2

*The research will be presented in two progressive phases.*

### 1) Phase 1: State-of-the-Art Technologies and Case Studies

- a) Identification of cyclone-resistant case studies and classification of technologies used

*Information on cyclone-resistant buildings will be gathered to identify the building solutions used to meet standard requirements. The selected case studies will be sought out predominantly in the countries most advanced in cyclone-resistance technologies: Florida and Australia.*

- b) Identification of case studies and collection of information

*A list of under-construction buildings in Australia, Hong Kong, Japan and the Philippines, as well as existing buildings that are going to experience/have not undergone a façade retrofit, will be carried out, specifically examining their safety performance. Moreover, a review of case studies that have already undergone a retrofit could serve as a point of reference for future building renovations.*

*This phase of the research will be carried out in conjunction with a panel of international experts, developers, and building managers appointed by CTBUH. Design information for every identified building will be collected.*

- c) Interviews with experts involved in case studies

*What are the current standards in curtain wall design and the most innovative materials that are being utilized at this time? Identification of the solutions are compliant to meet local requirements will be compared to the past solutions to understand and identify exactly where major technical advancements have occurred.*

- d) Comparison of existing possibilities – case studies – for new cyclone-resistant curtain walls and for façade renovation

*Though the collection of case studies, which are under construction or which have undergone a façade retrofit process, CTBUH aims to identify the best adopted solutions in terms of:*

- Feasibility of adoption for existing projects (technical and cost sustainability)
- Economic viability of cyclone-proof solutions on new buildings in each country

- e) Building site inspections after disaster event (possible only after a cyclone event)

*In the case of a disaster event that affects one of the case studies, the CTBUH team will go on-site and will conduct specific technical surveys on the façade's performance.*

### 2) Phase 2: Strengths of Case Studies, Technical Publication and Report Dissemination

#### Technical Publication

*Based on the existing possibilities identified in Phase 1 (c), the strengths of the case-studies will be highlighted and the schemes of these curtain wall solutions will be collected, which will help understand what the implications and benefits of new technologies for the buildings.*

*The research will focus on the analysis of the existing best practices (codes, standards, and curtain wall solutions) using cyclone-resistant façade technologies. The ultimate objective of the second stage of the research project is to produce a technical publication for the design of cyclone-resistant facades on new or existing buildings. This will be used as a preliminary guide for industries and professionals in the design and renovation of curtain walls. This document will present comprehensive research results on the discipline, based off of available databases, codes, design best practices, solutions found in case studies, etc.*

*A research report, illustrating the developed process, results, and conclusions, will be prepared for international dissemination.*

*An abridged version of this document could also be published/promoted through the CTBUH Journal.*

*The best practices will be collected, in order to form a practical example when it comes for design and test of cyclone-proof façades. It will be disseminated to all professionals, building owners, building occupants, etc., interested in the advancements in the current curtain wall industry and the effect on the performance of existing and new buildings.*