

Title: Experimental and numerical investigation of wind load distribution characteristics on tall buildings with irregular plan shape

Duration: April 2024 to September 2025

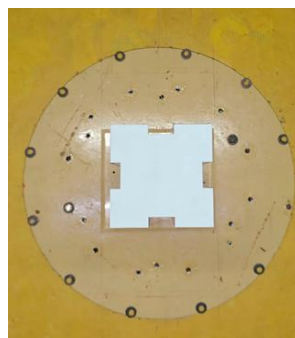
Deliverables: Preliminary design guidelines for tall irregular shaped building subjected to wind loads

Significant Achievements:

- Quantitative assessment of the effect of varying vertical groove sizes on wind pressure coefficients of tall buildings with a 1:1 plan ratio across multiple aspect ratios.
- Validation of the developed computational fluid dynamics-based numerical model through systematic comparison with experimental wind tunnel data.
- Formulation of preliminary design guidelines for tall buildings with irregular plan shape subjected to wind loads.



(a)



(b)

Figure 1: View of 1:1:7 model with plan modification in wind tunnel.

Team: N Ramya (Principal Investigator)

Date: 25/06/2026