

Case 22/2017

Issue: Methodology Report for Wind Tunnel Test

Recommendation: To accept the following methodology and parameters proposed for wind tunnel test of the proposed development:

- (1) Topographic Model
Model scale: 1: 4,000
- (2) Proximity Model
 - (i) Model scale: 1: 400
 - (ii) Extent of model: all known existing and proposed surrounding buildings and structures within a radius of 500 m from the subject site will be modeled.
- (3) Wind Climate Study Results
Directional characteristics of typhoons affecting HK based on a Monte Carlo simulation of storms passing within 250km of HK.
- (4) Possible removal of adjacent buildings that could provide significant shelter
Twenty-two (22) building groups were proposed to be removed in the Proximity Model.
- (5) Wind Loads Adopted in Superstructure Design
The following in superstructural design were proposed:
 - (i) The finally adopted peak design combined wind moment will not be less than 70% of the peak design wind moment based on code calculation as derived from the design values given in the Code of Practice on Wind Effects in Hong Kong 2004 (the Wind Code).
 - (ii) If the peak design combined wind moment determined in the wind tunnel test is found greater than the peak design wind moment based on code calculation as derived from the design values given in the Wind code, the peak design wind moments determined in the wind tunnel test will be adopted for design.
 - (iii) The storey wind shear adopted for design shall be determined from the peak design combined wind moment established in accordance with sub-paragraphs (i) and (ii) above.
 - (iv) The peak building acceleration assessment on human comfort under wind loads shall be in accordance with the Code of Practice for Structural Use of Concrete 2013 clause 7.3.2. Limiting maximum peak acceleration at the top occupied floor of the

residential tower to 0.15m/s^2 should be adopted.

- (v) The RSE will apply Occupation Permit (OP) for the proposed development after completion of the construction of all the two high-rise towers. If the actual number of towers to be constructed is lesser, the RSE will conduct another wind tunnel test to verify whether the original wind tunnel test results used in the structural design of the high-rise towers are still applicable prior to the Temporary Occupation Permit (TOP) application.

Decision: Having noted the background information and arguments together with RSE's supervision arrangement, members endorsed the recommendation.