

Case 29/2015

Issue: Methodology Report for Wind Tunnel Test

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

(1) Topographic Model

Model 1:4000

(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 500m 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, conducted by Applied Research Associates, Inc. (ARA).

(4) Possible Removal of Surrounding / Adjacent Building

8 building groups were proposed to be removed in the Proximity Model.

(5) Wind Pressure to be adopted in design

The following in the superstructure 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 moment determined in the wind tunnel test will be adopted for design;

(iii) The storey wind shears adopted for design shall be determined from the peak design combined wind moment established in accordance with sub-paragraphs (i) and (ii) above; and

(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  $0.15\text{m/s}^2$  should be adopted;

Decision:

Having noted the background information and arguments together with RSE's supervision and the following clarification/condition, members endorsed the recommendation:

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