Summary of Decisions of the Structural Engineering Committee
SEC Meeting 5/2015 held on 20.7.2015

Case 22/2015

Issue: Methodology Report for Wind Tunnel Test

Recommendation: To accept the following methodology and parameters for wind tunnel test of the proposed development consist of 3 high-rise towers:

(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

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

When one of the residential towers is tested, the remaining two towers within the same development will not be removed.

(5) Wind Pressure to be adopted in design

The following in the superstructural design were proposed:

(i) For each tower of the proposed residential development, the final adopted peak design combined wind moments will not be less than 70% of the peak design wind moments 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 moments determined in the wind tunnel test are found greater than the peak design wind moments 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 shears adopted for design shall be determined from the peak design combined wind

moments 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 residential buildings to $0.15m/s^2$ should be adopted.

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

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