Summary of Decisions of the Structural Engineering Committee
SEC 16/2011 held on 03.11.2011

(a) Case 16/2011

Issue:

(1) Two Trial Piles (TP-M1 and TP-M2) of mini-piles with post-pressurized grout in CDG to take vertical load
(2) Use of 47mm dia. DYWIDAG threadbar in trial pile

Recommendation:

(1) To accept the design principle of mini-piles (323mm diameter) with pressurized grout in CDG to enhance shaft friction for resisting the vertical load, subject to satisfactory verification by static loading tests on two trial piles complying with the acceptance criteria stipulated in paragraph 5 and the following criteria/conditions:
    (a) The ultimate shaft grouted friction in CDG shall not exceed 4.8 x N with a maximum limit of SPT "N" value of 50 (i.e. 240kPa);
    (b) A factor of safety of 3 will be adopted for calculating the allowable shaft friction;
    (c) A detailed quality assurance proposal on grouting works shall be submitted. It shall specify the measures adopted in controlling the grout pressure, volume and time;
    (d) For each grout mix one sample of grout shall be provided from each 10 batches of grout, or every 10 m^3 from the amount of grout produced in a day, whichever is the smaller, to determine the crushing strength of the grout. Samples shall be provided not more than 1 hour after the grout has been mixed;
    (e) Working piles will be load-tested to 2 times of the working pile capacity for performance test; and
    (f) A performance review report of trial pile tests shall be submitted to the satisfaction of the Building Authority upon completion of the tests.
(2) To accept the use of 47mm diameter DYWIDAG threadbars without bends connected with mechanical splice joints as rebars in trial piles only.

Decision:

Noting RSE's justifications and after making reference to previous cases, members endorsed the recommendations.