Summary of Decisions of the Structural Engineer
SEC 06/2013 held on 27.5.2013

(a) Case 06/2013

Issue: Use of glass fiber reinforced polymer (GFRP) bars with crimping connector and connection stud as soil nails for temporary pipe pile wall and open cut slope

Recommendation: To accept the use of glass fiber reinforced polymer (GFRP) bars (40 mm dia.) with crimping connector and connection stud as soil nails for pipe pile wall and open cut slope with design life of not more than 1.5 years to facilitate cut-and-cover tunnel construction subject to the following conditions:

(1) The GFRP bars shall be tested to ensure that the manufacture's guaranteed ultimate tensile strength and shear strength should not be less than 460N/mm^2 and 115N/mm^2 for 40mm diameter bar. The mechanical properties of all bars shall be in compliance with the relevant ACI and ASTM standards.

(2) The GFRP bars together with their crimping connector and connection stud shall be tested by HOKLAS accredited laboratories to establish that the connections shall achieve "bar-break" failure, which requires failure occurring in the GFRP bars away from the connectors.

Decision: Noting RSE's justification, members endorsed the recommendation.