Opening-up investigation in second stage of holistic assessment strategy for Hung Hom Station Extension under Shatin to Central Link Project

â€‹The Government received a proposal on March 8 from the MTR Corporation Limited (MTRCL) for the enhanced Phased Array Ultrasonic Test (PAUT). After discussions with the Government, the MTRCL submitted the final proposal on March 13. The Government accepted the proposal today (March 14), and the opening-up investigation in the second stage of the holistic assessment strategy for Hung Hom Station Extension under Shatin to Central Link (SCL) Project continues.

According to the holistic assessment strategy of the MTRCL regarding the platform slabs and diaphragm walls of the Hung Hom Station Extension under the SCL Project accepted by the Government on December 5, 2018, the MTRCL proceeded to commence the relevant work on December 10, 2018. The purposes of opening up the concrete are:

1. Physical investigations will be carried out at locations with gaps in the construction documentation, so as to verify the as-constructed condition of the connections between the platform slabs and diaphragm walls; and
2. In view of the allegations on the cutting-short of steel bars, the MTRCL needs to open up certain connections between the platform slabs and diaphragm walls for detailed inspection, and to conduct non-destructive tests (PAUT) to determine the embedded length of the threaded steel bar inside the coupler.

The opening up works of the holistic assessment strategy stage 2 started on December 10, 2018 and are still in progress. A large deviation was observed between the embedded length measured using PAUT up to January 29, 2019, as well as the direct measurement after cutting the rebar with the coupler connected. The Government immediately requested the MTRCL to investigate the root causes of such a deviation.

The MTRCL and its technical team have conducted a detailed investigation of the incident, and carried out an in-depth study and enhanced the PAUT in order to improve its accuracy and reliability. The MTRCL also conducted validation on the enhanced PAUT. During the investigation and validation process, the Expert Adviser Team of the Transport and Housing Bureau, the expert team from the University of Hong Kong, the Highways Department and the Buildings Department provided comments to the MTRCL.

The enhanced PAUT has been repeatedly trialed and validated in

laboratories and on-site by the MTRCL. The results of validation reveal that, compared with the enhanced PAUT results, all the direct measurements of the embedded length of the threaded steel bar inside the coupler fall within the 3 millimetres' allowable tolerance of PAUT results. In view of the above results, the Government accepted the proposal from the MTRCL to continue with the use of the non-destructive test in the stage 2 investigation with a view to minimising damage to the structure.

The Government acknowledged that the MTRCL would resume testing on March 15 using the enhanced PAUT on the exposed (including previously tested and yet-to-be-tested) couplers. The Government will continue to closely monitor the investigation works. The on-site test results will be verified by the laboratory the next day, and the verified test results will be announced in a timely manner on the Highways Department's website for the SCL project for public reference (www.hyd.gov.hk/en/road_and_railway/railway_projects/scl/index.html).