

Buildings Department's follow-up actions regarding the Pavilia Farm on top of Tai Wai Station

Arising from the incident where the concrete strength of some reinforced concrete structures in Phase III of the Pavilia Farm, a private development project on top of Tai Wai Station (namely Tower 1 and Tower 8 of the residential towers of the Pavilia Farm) was found to be lower than the specified grade strength as shown on the building plans approved by the Buildings Department (BD), the BD has earlier requested the responsible persons for the development project to conduct additional testing and to submit a report for the remaining five residential towers of the same development (namely Tower 2 and Tower 3 of Phase I, and Tower 5, Tower 6 and Tower 7 of Phase II) where the superstructure works had been completed. The BD has completed examining the relevant test results and various follow-up recommendations lately.

A spokesman of the BD said today (December 20) that the department required the responsible persons for the development project to conduct additional testing on the reinforced concrete columns and walls of five towers, including taking additional concrete core samples at specified locations for conducting compressive strength tests. The results showed that all test results of the samples collected at the towers of Phase II (namely Tower 5, Tower 6 and Tower 7) fully met the required standards. As regards the towers of Phase I (namely Tower 2 and Tower 3), the test results showed that the concrete strength of a very small portion of samples (approximately 5 per cent) was lower than the specified grade strength as shown on the building plans approved by the BD.

The spokesman said that the two towers of Phase I of the development do not show obvious structural danger. The BD required the registered building professionals and registered contractors responsible for the development project to propose follow-up works for Phase I, and had today approved the relevant strengthening works and granted the consent for the commencement of the said works. The responsible persons of the development project anticipated that the relevant works could be completed in a few months' time.

The spokesman emphasised that all building works should be carried out in accordance with the approved plans and the Buildings Ordinance (BO), and that the BD would only issue an occupation permit for the subject development project upon satisfactory completion of all works (including the aforementioned strengthening works).

Arising from the incidents where the concrete used in some structural elements in Phase I and Phase III was lower than the specified grade strength as shown on the building plans approved by the BD, the BD requested the

registered building professionals and registered contractors to submit incident reports. Meanwhile, the BD has initiated an investigation into the incidents to identify if any person(s) had contravened the BO. Since the investigation is underway, the department is not in a position to comment on the matter at this stage. Based on the result of the investigation, the department will take appropriate follow-up actions pursuant to the BO.

While the reasons causing the incident at Phase I and Phase III are being investigated, to allay public concerns and further strengthen the quality monitoring of works involving reinforced concrete structures with a view to obtaining as early as practicable information on concrete strength, the BD will impose additional requirements when granting new consents to the commencement of building works. These additional requirements include:

1. For superstructure works of private buildings, in addition to the current requirement on casting concrete cube samples whenever the concrete is delivered to a site for use and conducting compressive strength tests of such samples on the 28th day after they were cast, the department will require additional regular rebound hammer tests (RHT) be conducted during the construction of structural works.
2. The proposed additional RHT should be conducted on the concrete structures on the seventh day after such structures were cast, and will cover various main structural elements including columns, load-bearing walls, transfer plates, transfer beams, etc, in order to ascertain earlier the concrete strength of these structural elements at critical locations. Such test records should be properly kept by the relevant building professionals for the BD's audits. In case irregularities on concrete strength or quality were identified, the relevant registered building professionals should proactively notify and submit a report to the BD within 14 days upon confirming the incident.

The BD is drafting a relevant practice note on the implementation details of the above new measure and targets to implement it in the first quarter of next year.

Moreover, the BD is also actively considering introduction of embedded sensors, allowing their use as an alternative for complying with the additional RHT requirement by the industry. The sensors will estimate the strength of the concrete through real-time measurement of the temperature change of the concrete. This technology is being tried out in some private projects and public works projects. Based on the relevant experience and data, the BD plans to further explore the technology with the industry and provide detailed guidelines early next year.