

**Legislative Council**  
**Subcommittee on Matters Relating to Railways**  
**Special meeting on 31 August 2018**

**Supplementary information on settlement monitoring data  
of the Shatin to Central Link**

At the Subcommittee meeting on 31 August 2018, the issues about ground settlement of buildings and other facilities in the vicinity of construction sites under the Shatin to Central Link (“SCL”) project have been thoroughly discussed. During the discussion, the Subcommittee requested the Corporation to provide supplementary information about settlement tilting data of buildings. The information is set out below for Members’ reference.

2. The plan for monitoring of settlement level of the buildings under the SCL project is already included as part of the monitoring and control systems as stated in LC Paper No. CB(4)1504/17-18(04). In short, qualified professionals were engaged at the design stage to conduct geological assessments, develop monitoring plans and prepare works plans for submission to relevant government departments for vetting and approval.

3. In the aforementioned plans, the tilting of buildings and structural elements is also monitored. The tilting monitoring results are correlated with the settlement readings of the building structures. Building tilting is normally caused by uneven settlement at different parts of the building structure causing additional stresses in the structural members. In accordance with the relevant Practice Notes for Authorised Persons, Registered Structural Engineers and Registered Geotechnical Engineers of the Buildings Department, building tilting triggering values are set for monitoring during construction. In general, 1:500 is used as the trigger value depending on the conditions and resilience of the buildings in question. When differential settlement is small, in other words, the tilting ratio is smaller than the trigger value (such as 1:500 or larger), the condition is considered acceptable.

4. During the peak construction period, over 420 of building tilting monitoring points have been installed under the SCL project. A stringent approach is adopted in implementing the related monitoring exercise. From the most recent monitoring data, no exceedance of the tilting limit of buildings has been recorded under the SCL project, while the tilting

ratios of relevant buildings are less than 1 in 873.

5. The most recent readings of the tilting ratios along the SCL alignment is set out in Enclosure.

6. The Corporation has always attached high priority to the safety of construction works. Stringent monitoring and control systems and measures are put in place at both the design and construction stages of the railway projects. The Corporation abides with all relevant statutory provisions, and will continue to work closely with Government regulators to ensure safety.

**MTR Corporation Limited**  
**December 2018**

**SCL- Summary of Most Recent Tilting Monitoring Results**

<b>Contract no.</b>	<b>Contract name</b>	<b>Number of tilting monitoring points</b>	<b>Trigger values of tilting readings</b>	<b>Tilting ratio recorded</b>	<b>Exceedance</b>
1109	Sung Wong Toi and To Kwa Wan Stations and Tunnels	27 For 25 buildings	1:500 (Buildings)	<1:1637	No
1121	Cross Harbour Tunnels	3 For 1 building	1:500 (Buildings)	<1:1965	No
1123	Exhibition Centre Station and Western Approach Tunnel	82 For 8 buildings	1:500 (Buildings)	<1:1123	No
1128	South Ventilation Building to Admiralty Tunnels	4 For 3 buildings	1:500 (Buildings)	<1:873	No

Remark: The number of active monitoring points changed as the construction progressed. Monitoring of some tilting points may have stopped due to a variety of reasons such as the building structure might have been redeveloped or when the tunnel excavation works-front has already completed/ progressed past the building. For Contract No. 1102, 1103, 1106, 1107, 1108, 1111, 1112, 1114 and 1122, there are no longer active tilting monitoring points of building as at November 2018. The above table shows the most recent monitoring data submitted to the relevant government departments by the Corporation. The monitoring points which have been discontinued before November 2018 are not included in the list.