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Subcommittee on Matters Relating to Railways  
Panel on Transport  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong  
(Attn.: Ms Sophie LAU)

[Fax no.: 2523 9187]

23 July 2018

Dear Ms LAU,

**Subsistence of viaduct piers at Yuen Long Station of West Rail line**

Your letter dated 17 July 2018, enclosing the letter from Hon. KWONG Chun-yu dated 22 June 2018 on the captioned was received. Hon. KWONG has raised an oral question on the subject to the Secretary for Transport and Housing at the Legislative Council meeting on 11 July 2018. The reply from the Secretary is attached for Members' reference.

Yours sincerely,

(Veronica TSE)  
For Secretary for Transport and Housing

(Translation)

**LEGCO QUESTION No. 1**

(Oral Reply)

Asked by: Hon KWONG Chun-yu Date of Meeting: 11 July 2018

Replied by: Secretary for Transport  
and Housing

**Question:**

Last month, the media uncovered that the MTR Corporation Limited (“MTRCL”) had discovered in 2013 that two viaduct piers of the Yuen Long section of West Rail Line showed subsidence of up to 20 millimetres, allegedly due to the construction works nearby. MTRCL had forthwith informed the Buildings Department (“BD”) but had not made public the incident. In this connection, will the Government inform this Council:

- (1) of the relevant government departments and policy bureaux which BD had informed after learning of the incident of the subsidence of the viaduct piers; the follow-up actions taken by such departments and bureaux, and the reasons for not making public the incident;
- (2) given that BD and MTRCL had learnt of the incident of the subsidence of the viaduct piers as early as in 2013, why the remedial works did not commence until last year; and
- (3) of the mechanism in place for dealing with similar railway works problems in future?

**Reply:**

President,

Regarding the various parts of the question, the following is my consolidated reply in consultation with the Development Bureau.

The Government has always accorded top priority to railway safety and has put in place a stringent regulatory system. The Electrical and Mechanical Services Department (EMSD) regulates and monitors the safe operation of the railway system according to the Mass Transit Railway Ordinance and its subsidiary regulations. The Buildings Department (BD) regulates the planning, design and construction of buildings and associated works on private land to prescribe building safety standards according to the Buildings Ordinance (BO).

To safeguard the safety of railway structures, construction works located within the railway protection area as stipulated under Schedule 5 of the BO should comply with a more stringent set of standards. BD would require the registered building professionals to monitor the effect arising from the building works to the adjacent railway structures according to the requirements set out in the BO and its subsidiary regulations, and the issued "Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers" (PNAP). Comments and agreement of the MTR Corporation Limited (MTRCL) have to be sought for the plans of the proposed works and the monitoring proposal. The registered building professionals are also required to inform MTRCL direct before the commencement of any building works to enable the formulation of appropriate monitoring plan.

As for MTRCL, its dedicated railway protection team will monitor the status of various railway facilities in accordance with a set of stringent railway protection measures and procedures, including regular machinery inspection of railway structures to ensure that the track is always maintained in a safe and good condition. The contractor responsible for the building works will also be required to set up additional monitoring checkpoints at appropriate locations to assist MTRCL to monitor the situation. If there are any defects, MTRCL will immediately notify the relevant persons. Moreover, MTRCL maintenance team has been conducting annual inspections of the viaducts in accordance with the rigorous railway infrastructure and asset maintenance and repair systems, inspecting the bridges and piers in details to ensure their structural safety.

As to the present case involving settlement of the viaduct piers of Yuen Long Station, after MTRCL and BD were informed about the slight settlement of the two viaducts piers in mid-2012, jointly with the Geotechnical Engineer Office (GEO) under the Civil Engineering and Development Department, they met with the registered building professionals responsible for the piling works for the development project, representatives of the developer and the registered contractors (RC), requiring them to increase the frequency of measuring the settlement monitoring checkpoints and to regularly report to BD, GEO and MTRCL on the readings of the settlement monitoring checkpoints and changes of settlement levels of the monitoring checkpoints, so as to be informed promptly of the settlement situation and take necessary follow-up action. In addition, the Registered Structural Engineer (RSE) responsible for the development project also submitted a revised plan including remedial measures to BD so as to minimise the effect of piling works on the two viaduct piers. After consulting GEO and MTRCL, such revised plan was approved.

Although the settlements has not exceeded the maximum tolerable settlement limit of 20 millimetres<sup>1</sup>(mm) which is stipulated in the PNAP, upon the request of MTRCL, the developer of the development project voluntarily suspended the piling works in September 2013, and the situation has remained so until present. After the suspension of the piling works at the site concerned, BD has continued to closely monitor the changes of the settlement levels, and has requested the RC to continue to monitor settlement readings of the monitoring checkpoints, and submit settlement records. During the period, MTRCL has also been closely monitoring the structure of the viaduct piers and the tracks, and confirmed that railway safety has not been affected by the settlement of the two viaduct piers.

At the same time, to further strengthen the relevant railway facilities, MTRCL submitted a proposal for the preventive underpinning works for the two concrete columns to BD in October 2014. It was accepted by BD in June 2015. As the underpinning works concern the structure of the railway facilities, and involve complicated procedures, MTRCL commissioned an independent consultant to assist in examining the

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<sup>1</sup> In order to safeguard the structural safety and integrity of railway facilities, piling works carried out within the railway protection area should comply with a set of standards which is more stringent than that for piling works outside the railway protection area. For example, the relevant PNAP stipulates that piling works should not cause more than 20 mm settlements to the railway structures (The settlement standard of not exceeding 25 mm to other structures/buildings is adopted for piling works conducted outside the railway protection area.)

implementation details of the underpinning works to ensure that the works will not affect railway safety and services, and minimise the impact to nearby residents. The underpinning works commenced in September 2017 and are expected to be completed by the end of this year.

I would like to stress that this case has not affected railway safety. BD, EMSD and MTRCL have worked in accordance with the abovementioned mechanism to effectively monitor the safe operation of the railway system, and the building works within the railway protection area. That said, in response to this incident, various government departments (including BD and EMSD) and MTRCL will review the communication and information dissemination arrangements of similar incidents in order to enhance transparency. We have reviewed information on projects within the railway protection area. According to the MTRCL, there are 64 projects under settlement monitoring within the railway protection area, of which 54 involves construction works in the vicinity of the heavy rail, 8 involves construction works in the vicinity of light rail. There have been 2 cases of suspension of works due to settlement, one concerns the viaduct pier of Yuen Long Station and the other concerns the platform of Ting Wing Stop of the light rail. The future communication and information dissemination arrangements aims to enhance transparency. Thank you, President.