

Translation

For Information

January 2018

**Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways**

**Progress and Financial Situation of the
Construction of the Hong Kong Section of the
Guangzhou-Shenzhen-Hong Kong Express Rail Link**

(Quarterly Report for the Period ending 31 December 2017)

INTRODUCTION

This paper aims to brief Members on the major works progress and financial situation of the construction of the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link (“XRL”) and the relevant monitoring work carried out by the Highways Department (“HyD”) for the period ending 31 December 2017.

BACKGROUND

2. At the meeting of the Subcommittee on Matters Relating to Railways (“RSC”) under the Legislative Council (“LegCo”) Panel on Transport in April 2010, Members agreed that reports on progress update and financial situation of the construction of the Hong Kong section of the XRL should be submitted at six-month intervals. To enhance the reporting to the LegCo on the progress update and financial situation of the construction of the Hong Kong section of the XRL, such reports have been submitted to the RSC at quarterly intervals since the fourth quarter of 2014.

3. This paper, which is appended with the progress report (**Annex**) of the MTR Corporation Limited (“MTRCL”), reports on the major works progress, indicators and financial situation for the fourth quarter of 2017 (i.e. from 1 October to 31 December 2017).

PROGRESS UPDATE OF THE PROJECT

4. The HyD, with the assistance of its Monitoring and Verification (“M&V”) Consultant, continued to monitor systematically the implementation of the works on the Hong Kong section of the XRL by the MTRCL under its monitoring mechanism and took appropriate follow-up actions. Such mechanism includes meetings at various levels (such as meetings of the Project Supervision Committee chaired by the Director of Highways, Project Coordination Meetings chaired by an Assistant Director of the HyD, Contract Review Meetings (“CRMs”) chaired by the HyD’s Chief Engineer) and regular site inspections.

5. Since the third quarter in 2015, the Government has been monitoring the progress of the remaining works of the XRL project against the revised commissioning target of the third quarter of 2018.

6. As stated in the MTRCL’s progress report, the overall progress of the Hong Kong section of the XRL was 98.6% as at the end of December 2017, which was ahead of the planned progress of 95.6% based on the target of commissioning in the third quarter of 2018. According to assessment by the HyD of the Programme to Complete submitted by the MTRCL against the commissioning target of the third quarter of 2018, the most critical parts of the entire XRL project remain to be the construction of West Kowloon Station (“WKS”), including the works for port area facilities, and those for Architectural Builder’s Works and Finishes (“ABWF”), building services (“BS”) and electrical and mechanical (“E&M”) systems, as well as the works related to fire services equipment, the progress of which is the most critical and requires continual and close coordination and monitoring. The testing and commissioning (“T&C”) of the whole railway system, including the integrated T&C for connection to the high-speed rail network of the Mainland, was progressing steadily since the commencement in July 2017. In addition, the MTRCL plans to commence the trial operation for the XRL project in the second quarter of 2018. Preparatory works are being actively undertaken. We are also closely liaising with the Mainland authorities and railway operators at different levels. The progress of the relevant works is set out below.

(a) Construction of West Kowloon Station

7. The works on the External Wall System (“EWS”) at Station Entrance Building (“SEB”) were substantially completed. The works for ABWF, E&M and BS systems on various floor levels of the WKS are now in full swing. The associated works, including false ceiling installation, finishes works, tile flooring and screeding works, and installation of immigration counters, in the respective clearance area and back of house area of the Hong Kong and Mainland port areas are continually proceeding as scheduled. Relevant construction teams have also gained access to the port areas to commence installation of clearance facilities.

8. The underpass at the junction of Austin Road West and Lin Cheung Road in the vicinity of the WKS is being open for public use in stages. Stage 1 (including part of the first level of the underpass on Austin Road West and the loop road near MTR Kowloon Station) was open to public in September 2017. Stage 2 (a section of the underpass connecting Austin Road West and Lin Cheung Road and part of loop road of Austin Road West near MTR Austin Station) was also open in December 2017. The MTRCL envisages that the remaining road facilities (including the remaining sections of Lin Cheung Road and Austin Road West together with the underpass as well as the loop road near MTR Kowloon Station on Lin Cheung Road) can be open by the first quarter of 2018 in stages, so as to enhance the road network in the vicinity of the WKS. In addition, the construction of seven footbridges and two subways connecting the WKS and adjacent areas is being completed gradually. Upon the opening of these facilities, an efficient pedestrian link will be provided for the connection of the WKS.

9. The construction of the WKS involves numerous contractors of different types and trades as well as the testing and commissioning personnel working at the same location, including BS works, ABWF works, E&M works, and testing and commissioning etc. A large number of workers and machinery are involved in the process. As such, proper management and coordination are required so that different types of works can be carried out in an orderly and smooth manner. The HyD will closely monitor the MTRCL’s works in conjunction with its M&V Consultant and coordinate with relevant departments for the subsequent installation of equipment.

(b) Fire Services Installations and Inspections

10. The works on E&M systems and BS systems at the tunnel sections, Shek Kong Stabling Sidings (“SSS”) and various ventilation buildings had been substantially completed. At the WKS (including the Mainland port area), despite some improvements in the progress of fire services equipment installation works, there was still risk of slippage which might have impact on the subsequent fire services inspections. The HyD will continue urging the MTRCL to strengthen the manpower deployment and supervision for the works. The fire services inspection has commenced on most levels and station platform of the WKS. The Fire Services Department has also arranged sufficient manpower to meet the needs of fire services inspection. The installation of other E&M systems was substantially completed and the systems are now under tests. The HyD will continue strengthening the coordination and monitoring works in this regard.

11. The tests for fire services installation in all ventilation buildings and ancillary buildings were completed. In particular, the fire services installation in six ventilation buildings passed the inspections with fire certificates obtained. The Phase III fire services inspection at the SSS is in progress and is targeted for completion by the first quarter of 2018. The fire services inspection on the tunnel section from Mongkok West Ventilation Building (“MKV”) to Shenzhen-Hong Kong Boundary was also completed. The remaining fire services inspection for tunnel section from MKV to the track fan area at the WKS is targeted for completion in the first quarter of 2018. The fire services inspection for the whole tunnel environmental control system would commence in early 2018.

(c) Electrical and Mechanical Systems Installation

12. The Main Control System for the Hong Kong section of the XRL was connected to respective control systems in the Mainland with interface tests amongst these systems were completed. The remaining equipment at the WKS is being installed and tested. Installation of the signalling and communication systems at the WKS was completed substantially.

13. All lifts in ventilation buildings and ancillary buildings were tested

with “Use Permits” obtained from the Electrical and Mechanical Services Department. The installation of lifts and escalators at the WKS was in its final stage, and the application process for “Use Permits” is in progress and will be completed by the first quarter of 2018.

14. For ticketing system, the installation works for all automatic ticket vending machines at the WKS were completed. Installation of passenger ticket gates, ticket sales facilities and the associated tests are progressing in tandem.

(d) XRL Trains

15. The various types of tests for all nine sets of XRL trains, including the reliability runs tests, were completed.

(e) Integrated Testing and Commissioning

16. With the completion of civil works, E&M systems and integrated T&C, and in view of the subsequent commencement of trial operation in the second quarter of 2018, the project is moving towards the target for commissioning by the third quarter of 2018. To prepare for the trial operation, all railway related systems including trains, trainborne signalling system, trackworks, overhead lines, power supplies, communications, trackside signalling system and the Operations Control Centre have passed all necessary tests. In addition, the data verification and safety related tests for different models of train from the Mainland are being conducted in order to meet the operational needs when the XRL commences operation.

**Transport and Housing Bureau
Highways Department
January 2018**

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**Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways**

**Progress and Financial Situation of the
Construction of the Hong Kong Section of the
Guangzhou-Shenzhen-Hong Kong Express Rail Link**

(Report for the period between 1 October and 31 December 2017)

INTRODUCTION

This paper presents the construction progress of the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link (“XRL”) project up to 31 December 2017.

BACKGROUND

2. The progress reported below is based on the target of completing the XRL project to allow for passenger service in the third quarter of 2018 (“2018 Schedule for Completion”). This paper outlines major works progress, key performance indicators (“KPIs”), as well as financial status for the period between 1 October and 31 December 2017.

MAJOR WORKS PROGRESS OF THE XRL PROJECT

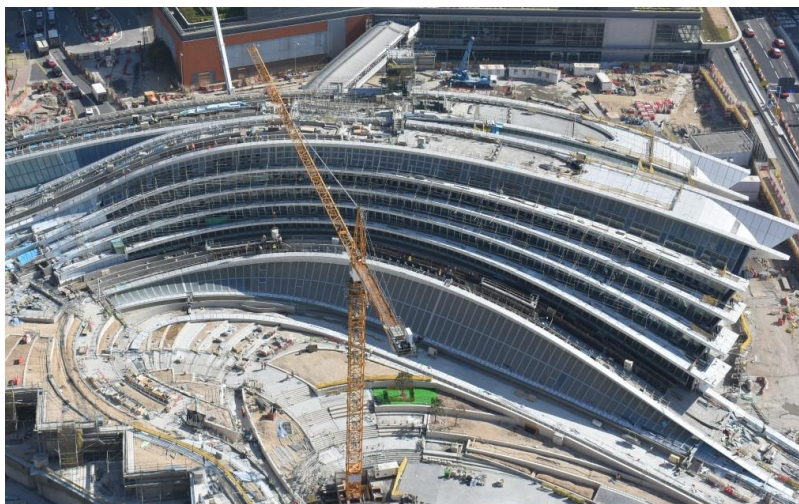
(I) Overall Progress of the Construction Works

3. As at 31 December 2017, the overall progress of the XRL project was 98.6%¹ complete against the planned progress of 95.6% according to the 2018 Schedule for Completion. The remaining works at the West Kowloon Station (“the Station”) together with electrical & mechanical (“E&M”) installation and testing & commissioning (“T&C”) are well in progress. Although MTR has not yet been appointed as operator, to assist with the timely opening of the XRL in the third quarter of 2018, we have also kicked off the relevant preparation works for the future operations.

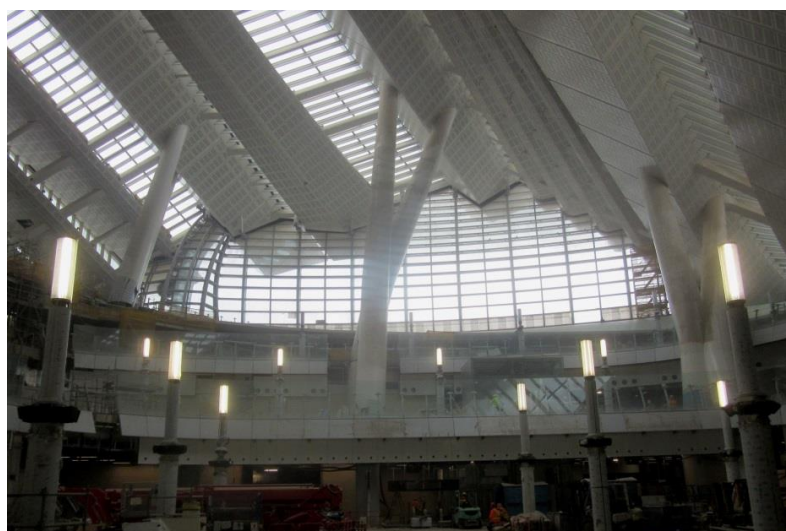
¹ Sum of all weighted percentages completed of all major contracts.

(II) Major Progress of the Construction of the West Kowloon Station

4. The construction of the Station Entrance Building (“SEB”) has come to its final stage. Installation of internal and external aluminum cladding has been substantially completed. The temporary scaffolds in the SEB have been dismantled, which enabled the Architectural Builders’ Works and Finishes (“ABWF”) and building services works to progress in full swing. The above mentioned works are targeted for completion in the first quarter of 2018.



West elevation of the Station Entrance Building



Installation of internal cladding panels at West Kowloon Station has been substantially completed

5. ABWF and building services works have been progressing at all levels of the Station, including the taxi drop-off area at Level B1, as well as the taxi pick-up area and parking facility at Level B2.



Taxi drop-off area at Level B1 of the West Kowloon Station

6. For the Customs, Immigration and Quarantine (“CIQ”) areas of both Hong Kong and the Mainland at Level B2 and B3, works under the purview of the Corporation including ABWF and building services works are making good progress. Hence, users of the areas may have access to the areas progressively for their follow-on installation works. Such follow-on installation works in the CIQ areas are the responsibilities of the respective users.

7. The construction of the West Kowloon Station Bus Terminus (“Bus Terminus”) located at the north of the Station continues, with E&M installation, ABWF works, waterproofing, drainage and paving works progressing in the main area of the Bus Terminus. 30 parking spaces for non-franchised buses will be provided at the northern side of the Bus Terminus, while loading and unloading bay for non-franchised buses will be located next to the eastern side of the Station. The detailed public transport arrangements in the vicinity of the Station are being formulated by the Transport Department in consultation with the District Councils concerned.



The West Kowloon Station Bus Terminus is being constructed

8. In addition to the reinstated Jordan Road footbridge, the construction of seven footbridges connecting the Station with adjacent areas is progressing. At the western side of the Station, there are three footbridges connected to Kowloon Station and nearby locations. Two footbridges at the eastern side of the Station are connected to Austin Station. One footbridge at the northern side of the Station and across the Jordan Road footbridge is connected to the future Bus Terminus, while at the eastern side of the Bus Terminus, there is another footbridge connected to Man Cheong Street. Other than footbridges, two subways are also being constructed connecting the Station with Lin Cheung Road footpath and Austin Station respectively.



One of the footbridges at the western side of the Station connecting to Kowloon Station and nearby locations



One of the footbridges at the eastern side of the Station connecting to Austin Station

9. Stage 2 opening of the Lin Cheung Road / Austin Road West Underpass, including the lowest level at Lin Cheung Road, the first level of Lin Cheung Road southbound north to Jordan Road as well as the at-grade East Loop Road, has been implemented in December 2017. The remaining sections of the Underpass will be opened in the first quarter of 2018.



Stage 2 opening of the Lin Cheung Road / Austin Road West Underpass has been implemented

(III) XRL Trains, E&M and Signalling Systems

10. Works under various E&M contracts are in progress with the overall completion rate at 96.9% as at the end of December 2017.

11. Reliability run of all nine sets high-speed train for the XRL project (“XRL trains”) has been completed with sufficient mileage accumulated before trial operations.

12. Different high-speed train models to be used for services under the management of China Railway Corporation which will be operating in the Hong Kong section are required to be tested for compatibility. Tests such as gauging, emergency brake, coupling, pull-out rescue, etc. have been conducted for a number of train models.

13. For the signalling system, third party independent testing has been carried out by the China Academy of Railway Sciences. Compatibility test between the signalling system in the Hong Kong section and trainborne signalling equipment of various high-speed train models from the Mainland has also been conducted. It is expected that all the tests for signalling system will be completed in the first quarter of 2018 along with the whole line end-to-end test.

14. Inspection of the building services in all the Ventilation Buildings (“VBs”) and ancillary buildings along the tunnel sections has been conducted by

the Fire Services Department (“FSD”). Six buildings have obtained fire certificates. The final phase of FSD inspection at Shek Kong Stabling Sidings, as well as inspection of the tunnel ventilation system and the remaining trackside auxiliaries along the tunnel sections from Mongkok West VB to the Station is expected to be conducted in the first quarter of 2018.

15. Main Control System (“MCS”) in the Hong Kong section has been connected to the corresponding control systems in the Mainland section and interface testing has been substantially completed. The installation and testing for the MCS in the Station is progressing.

16. Coverage of radio signals for FSD and Hong Kong Police Force has been extended to all tunnel sections and VBs. Passenger Mobile Communication network was also covered in the entire tunnel sections and the connection test for the Mobile Network Operators is underway. Installation and testing for other radio communication equipment at the Station is in progress.

17. All Automatic Ticketing Machines have been installed at the Station. Installation and T&C for the ticket gates and other ticketing equipment are being carried out progressively. The ticketing system at the Station has been fully integrated with the Hong Kong Seat Pool Server in order to enable the testing for seat reservation and ticket selling functions which is expected to be completed by the second quarter of 2018.

18. At the Station, E&M contractors have been given access to all areas for E&M installation under Contracts 810A, 810B and 811B. Building services of the Station were 96.9% complete compared to the planned target of 82.4%.

19. There is a total of 148 lifts to be installed in various locations including the Station and VBs etc. Out of the 144 lift shafts which have been made available for installation, 60 lifts have obtained Use Permits. At the Station, installation of 122 lifts has commenced, among which 98 lifts have already gone through the initial functional (Stage 1) testing. All 71 escalators at the Station have been installed, of which 46 escalators have gone through initial Stage 1 testing. Installation and testing for the rest of the lifts and escalators is targeted for completion in the first quarter of 2018.

20. Installation of the Environmental Control System at the Station North, Level B2 and below at the central area of the Station has been substantially completed, while installation works in the remaining areas including Level B1 and above are continuing. Air conditioning for Level B2 and below is ready for use.

21. The power supply system installation is progressing in full swing. Cable laying work at the whole Station was about 90% complete. Lighting at the

majority of the Front-of-House areas has been switched on.

22. Installation of fire services equipment at Level B2 and below at the central area of the Station has been substantially completed. The sump pumps at the Station South and Station North areas are being tested and commissioned.

23. FSD inspection is progressing at the majority of areas of the Station and is targeted for completion by the first quarter of 2018, while inspection for alternation and additional works due to co-location arrangements is targeted for completion by the second quarter of 2018.

(IV) Construction Challenges

(a) West Kowloon Station

24. Works at and overall readiness of the Mainland CIQ areas remains on the critical path although the overall works progress under the purview of the Corporation was in line with the programme. The Corporation will continue to liaise closely with the Mainland authorities through the Government on equipment and system installation by users of the Mainland CIQ areas.

(b) Labour Issues

25. As at the end of December 2017, a daily average of 6,349 construction workers and technical / professional staff members were employed for the works.

(V) Preparation and Interface Works

26. With progressive completion of civil and E&M works, the Project is progressively migrating from its construction stage to pre-operations stage. The Project team is working diligently to complete the remaining works, T&C and inspection so as to achieve the target of handing over the assets and the facilities to the Operations team for trial operations to commence in the second quarter of 2018.

(VI) Updated Financial Situation of the XRL project

27. As at 31 December 2017, the cumulative expenditure for the awarded contracts was \$68.8 billion.

28. The Corporation will continue to closely monitor the costs and progress of the XRL project. Details of the financial situation of the project are shown in Annex 2.

Annex 1 - KPIs of Major Works Progress

Summary of the Construction Progress of the XRL Project

Works Commencement Date	26 January 2010
Target Completion Date	Q3 2018
Works Progress	Overall completion progress: 98.6% [as at end December 2017]

Progress of Key Civil Works Contracts

Cumulative progress of contracts for the Station construction:

Contract No.	Concrete structural works	Station excavation works
	End December 2017	End December 2017
810A	99.8% (98.4%)	100% (100%)
810B	100% (100%)	100% (100%)

Percentage in brackets is the planned progress of the Q3 2018 Schedule for Completion

Cumulative progress of contracts for tunnel construction:

Contract No.	Actual progress	Planned progress*
	End December 2017	End December 2017
811A	100%	100%
811B	98.8%	92.7%
820	100%	100%
821	100%	100%
822	100%	100%
823A	100%	100%
823B	100%	99.9%
824	100%	99.9%
825	100%	100%
826	100%	100%

** Percentage is the planned progress of the Q3 2018 Schedule for Completion*

Cumulative progress of E&M works:

E&M Works Progress	Actual progress	Planned progress*
	End December 2017	End December 2017
Station Building Services	96.9%	82.4%
Track Laid	100%	100%
Overall installation	96.4%	84.5%
Overall E&M	96.9%	89.0%

** Percentage is the planned progress of the Q3 2018 Schedule for Completion*

Annex 2 - Financial Expenditure

Expenditure report ending 31 December 2017

Table 1 – Situation of Expenditure

	Awarded contract sum for the contracts (\$ million)	Cumulative expenditure (\$ million)
Railway Tunnels	22,550.4	30,824.5
Station	14,742.0	27,273.5
E&M Works	8,429.4	10,706.2
Total	45,721.8	68,804.2

Table 2 – Situation of substantiated claims

	Claims resolved			Claims unresolved		
	Number	Amount claimed originally* (\$ million)	Amount awarded [#] (\$ million)	Number	Amount claimed* (\$ million)	Interim award (\$ million)
Railway Tunnels	158	4,806	2,465	424	7,667	2,244
Station	129	10,066	6,285	279	1,675	744
E&M Works	7	841	586	93	4,594	1,491
Total	294	15,713	9,336	796	13,936	4,479

*Amount stated in the contractor's detailed claim report.

[#] The amount awarded means the payment for claims resolved.

As at 31 December 2017, the Corporation had received 1,090 substantiated claims and the amount claimed in total was approximately \$29.6 billion, representing 64.8% of the awarded contract sum for the contracts. The Corporation has been discussing the details of the claims with the contractors concerned, and would thoroughly assess the amount claimed. The Corporation would process each claim in a prudent manner, and the contractors would have to provide sufficient justifications and information. As at 31 December 2017, 294 cases were resolved and about \$9,336 million was awarded, representing about 20.4% of the awarded contract sum for the contracts. Subject to the needs of individual works and progress of the relevant assessment and discussion, interim awards amounting to about \$4,479 million have been made for some cases.