

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 – HIGHWAYS

Transport –Footbridges and pedestrian tunnels 170TB – Braemar Hill Pedestrian Link

Members are invited to recommend to the Finance Committee the upgrading of **170TB** to Category A at estimated cost of \$682.60 million in money-of-the-day prices.

PROBLEM

We need to construct a pedestrian link to improve the accessibility of travelling between King's Road, Fortress Hill area and Braemar Hill area.

PROPOSAL

2. The Director of Highways, with the support of the Secretary for Transport and Housing, proposes to upgrade **170TB** to Category A. The estimated cost of the project is \$682.6 million in money-of-the-day (MOD) prices.

PROJECT SCOPE AND NATURE

3. The proposed scope of works under the project comprises –
- (a) construction of a pedestrian subway of approximately 40 metres in length and 4.2 metres in width connecting the lift tower at King's Road

/to

to the concourse of MTR Fortress Hill Station mentioned in item (b) below;

- (b) construction of a lift tower of approximately 33 metres in height with two lifts at King's Road connecting the underground concourse of the MTR Fortress Hill Station, the footpath at King's Road and the access road between Fortress Garden and Fortress Metro Tower on the slope;
- (c) construction of an elevated pedestrian walkway of approximately 25 metres in length and 3.7 metres in width connecting the lift tower at King's Road mentioned in item (b) above to the access road between Fortress Garden and Fortress Metro Tower;
- (d) construction of a lift tower of approximately 21 metres in height with two lifts at Fortress Hill Road, and an elevated pedestrian walkway of approximately 10 metres in length and 6.2 metres in width connecting the lift tower to Tin Hau Temple Road;
- (e) construction of an elevated pedestrian walkway of approximately 33 metres in length and 3.7 metres in width spanning across Tin Hau Temple Road, and a set of covered escalator with an associated stairlift at Tin Hau Temple Road connecting to the elevated pedestrian walkway;
- (f) conversion of sections of the existing footpath at Fortress Hill Road into carriageway for relocation of an existing bus stop;
- (g) retrofitting of covers for existing stairways and construction of covered escalators and travellers along Wan Tin Path; and
- (h) ancillary works including geotechnical, electrical and mechanical, drainage, landscaping, public lighting and utilities works, as well as construction of retaining walls and covered footpaths.

4. An artist's impression of the project is at **Enclosure 1**.

5. We plan to commence the proposed works upon obtaining funding approval from the Finance Committee (FC) of the Legislative Council. The works of items (d) to (g) and the relevant works of item (h) is estimated to be completed in around four years, while the remaining works are expected to be completed in the following two years. To commence the construction works as soon as possible, the Highways Department (HyD) initiated parallel tendering for the construction works contract in February 2021, and has reflected the returned tender price in the cost estimation of the project. We will only award the contract after obtaining funding approval from the FC.

JUSTIFICATION

6. The level difference between King's Road and Braemar Hill area is about 150 metres (i.e. about 50 storeys high). The project will mainly serve the residents in Braemar Hill area and Fortress Hill area, and provide pedestrians, especially the elderly and persons with disabilities, a safe, convenient and barrier-free route for travelling to and from uphill areas to enhance its accessibility. We forecast that there will be about 16 500 pedestrians using the proposed pedestrian link per day.

7. Currently, the two existing lifts at King's Road near Exit A of MTR Fortress Hill Station only connect King's Road to a platform of the existing stairway at the mid-height of the slope beside Fortress Garden (hereafter referred to as "the midway platform"). There is a unidirectional uphill escalator with staircase connecting the midway platform and the access road between Fortress Garden and Fortress Metro Tower. The pedestrian flow of the existing stairway exceeds about 30% of its capacity during peak hours. Pedestrians queuing up for the lifts at King's Road also congest the footpath. The proposed facilities as mentioned in items (a) to (c) of paragraph 3 will connect the concourse of MTR Fortress Hill Station, King's Road and the access road between Fortress Garden and Fortress Metro Tower. Other than helping to reduce the number of pedestrians queuing up for the lifts at King's Road, the proposed facilities will also provide barrier-free access with adequate capacity connecting Fortress Garden and Fortress Metro Tower, thus improving pedestrian walkability. Relevant pedestrian route is illustrated in **Enclosure 2**. The two existing lifts and escalator will continue to maintain their operation during the course of construction.

8. In 2016, MTR Corporation Limited (MTRCL) proposed to the Government a Collaborative Scheme to replace its original Station Improvement Scheme¹. It recommends the construction of the facilities mentioned in item (a) of paragraph 3, connecting Braemar Hill Pedestrian Link to the concourse of MTR Fortress Hill Station. The Collaborative Scheme was agreed by the Government in 2017. In comparison with the Collaborative Scheme, the original Station Improvement Scheme of the MTRCL fails to join up the access road between Fortress Garden and Fortress Metro Tower, King's Road and the concourse of MTR Fortress Hill Station. Furthermore, the operation of the existing lifts at King's Road would have to be suspended during the construction period. Therefore, the Collaborative Scheme is a more optimal solution as it can enhance the connectivity of the pedestrian network for the project without affecting the service of the existing lifts at King's Road during the construction period. The Collaborative Scheme was supported by the Planning, Works and Housing Committee (PWHC) of the Eastern District Council (EDC) at its meeting on 10 October 2017. The details of the Collaborative Scheme are illustrated in **Enclosure 3**.

9. The level difference between Fortress Hill Road and Tin Hau Temple Road is about 15 metres (i.e. about five storeys high). At present, the public can only use the existing open-air stairway of over 80 stairs located next to Tin Hau Temple Road/Fortress Hill Road Garden or walk 200 metres along the existing inclined footpath to travel between Fortress Hill Road and Tin Hau Temple Road. Barrier-free access facilities will be provided through the construction of the proposed facilities mentioned in items (d) to (e) of paragraph 3.

10. Also, pedestrians currently need to use the stairways at Wan Tin Path for travelling to and from Tin Hau Temple Road and Wai Tsui Crescent on Braemar Hill. However, the level difference between Tin Hau Temple Road and Wai Tsui Crescent is about 100 metres (i.e. about 33 storeys high), and a large portion of Wan Tin Path are staircases with no barrier-free access facilities equipped to assist pedestrians travelling uphill. Provision of the proposed facilities as mentioned in item (g) of paragraph 3 would enhance pedestrian connectivity and allow the public to travel between Fortress Hill area and Braemar Hill area more conveniently and safely. In addition, stairlifts will also be retrofitted to provide barrier-free access.

FINANCIAL IMPLICATIONS

11. In accordance with the agreement between HyD and MTRCL, the two parties will share the expenditure of the Collaborative Scheme. MTRCL will
/bear

¹ In order to provide barrier-free access facilities for MTR Fortress Hill Station, MTRCL's original Station Improvement Scheme is to demolish and rebuild the existing lift tower at King's Road and connect it to the concourse of MTR Fortress Hill Station with an underground adit.

bear an amount equal to the cost of the MTRCL's original Station Improvement Scheme plus 50% of any additional cost over and above that.

12. We estimate the capital cost of the project to be about \$682.6 million in MOD prices. The cost includes the expenditure shared between the Government and MTRCL for the Collaborative Scheme. MTRCL will follow the cost-sharing principle as mentioned in paragraph 11 above to reimburse the Government in phases during construction. The payment reimbursed by MTRCL will be returned to the Treasury. The capital cost breakdown is as follows –

	\$ million (in MOD prices)
(a) Construction of pedestrian subway connecting the lift tower at King's Road to the concourse of MTR Fortress Hill Station	92.8
(b) Construction of lift tower and lifts at King's Road	27.7
(c) Construction of elevated pedestrian walkway at King's Road	26.2
(d) Construction of lift tower, lifts, and elevated pedestrian walkway at Fortress Hill Road	39.4
(e) Construction of elevated pedestrian walkway across Tin Hau Temple Road, covered escalators and stair lifts	81.3
(f) Modification of part of the carriageways at Fortress Hill Road	49.6

/(g)

		\$ million (in MOD prices)
(g)	Retrofitting of covers for stairways, construction of covered escalators and covered travellers along Wan Tin Path ²	136.6
(h)	Implementation of ancillary works	81.2
(i)	Consultants' fees	6.8
	(i) contract administration	5.5
	(ii) management of resident site staff (RSS)	1.3
(j)	Remuneration of RSS	78.9
(k)	Contingencies	62.1
	Total	682.6

13. We propose to engage consultants to undertake the contract management and site supervision work for the project. A breakdown of the estimated consultants' fees and RSS costs by man-months is at **Enclosure 4**.

14. Subject to funding approval, we plan to phase the expenditure as follows –

Year	\$ million (in MOD prices)
2021 – 22	123.6
2022 – 23	158.6
2023 – 24	195.7

/Year

² The works of item (g) mainly comprises the retrofitting of covers for stairways of approximately 340 metres in length, construction of 10 sets of covered escalators of approximately 200 metres in aggregate length, and a set of covered travellers of 40 metres in length along Wan Tin Path.

Year	\$ million (in MOD prices)
2024 – 25	105.0
2025 – 26	51.4
2026 – 27	27.2
2027 – 28	14.6
2028 – 29	6.5
	<hr/>
	682.6
	<hr/>

15. We have derived the MOD estimates on the basis of the Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period from 2021 to 2029. We will deliver the construction works under the New Engineering Contract (NEC) form³ with provision for price adjustments.

16. We estimate the annual recurrent expenditure arising from the project to be \$15.71 million. This expenditure includes the annual recurrent expenditure shared by the Government and MTRCL for the Collaborative Scheme in accordance with the cost-sharing principle as mentioned in paragraph 11 above.

PUBLIC CONSULTATION

17. HyD consulted PWHC of EDC in 2012 and attended three public meetings organised by EDC members of North Point, Fortress Hill and Braemar Hill areas to collect the public's views and determine the preferred alignment of the project. Between 2014 and 2018, HyD consulted PWHC of EDC on the alignment and design scheme of the proposed pedestrian link on a number of occasions and attended public meeting / public forum / focus group meeting to explain in detail the design scheme and discuss with local residents their matters of concerns. After gauging the public's views, HyD had revised the design scheme of the project in order to maximise its social benefits. In June 2018, the final design scheme was presented to and endorsed by the PWHC. After the finalisation of the

/final

³ NEC is a suite of contracts developed by the Institution of Civil Engineers, United Kingdom. It is a contract form that emphasises cooperation, mutual trust and collaborative risk management between contracting parties.

final design scheme, HyD has distributed leaflets to local residents and produced a simulation video to explain the proposed alignment and design of the project.

18. At the invitation of the PWHC of EDC, HyD attended its meeting on 24 April 2020 to present the details of the project. Other than the suggestion from a few members on organizing more briefing sessions for local residents to inform them of the project's details, no other comments were received.

19. The scheme and plan of the project were gazetted under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) (the Ordinance) on 28 June and 5 July 2019 respectively. During the gazettal period, we received a total of 13 objections, which were mainly related to (a) the need for constructing four lifts at King's Road and Fortress Hill Road; (b) lack of local support for/insufficient consultation on the implementation of the project/diverging views over the alignment; (c) slope safety; and (d) concerns over privacy and security. HyD arranged meetings with the objectors to explain the objective and details of the project. Among the 13 objections, one of them was subsequently withdrawn unconditionally.

20. The project was then submitted to Chief Executive-in-Council for consideration. Having considered the 12 unresolved objections, the Chief Executive-in-Council authorized the proposed works of the project without modification under the Ordinance. The relevant authorization notice of the project was gazetted on 21 August and 28 August 2020 respectively.

21. HyD has consulted the Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS)⁴ on the project. The Committee accepted the proposed aesthetic design.

22. We consulted the Legislative Council Panel on Transport on the project on 19 February 2021. Members generally supported the project. The supplementary information requested by Members was submitted to the Panel on Transport on 19 April 2021.

/ENVIRONMENTAL

⁴ ACABAS comprises representatives of the Hong Kong Institute of Architects, the Hong Kong Institution of Engineers, the Hong Kong Institute of Planners, the Architectural Services Department, HyD, the Housing Department, the Civil Engineering and Development Department, and a representative from architecture or relevant faculty of a local academic institution. It is responsible for vetting the design of bridges and other structures associated with the public highway system, including noise barriers and enclosures, from the aesthetic and visual impact points of view.

ENVIRONMENTAL IMPLICATIONS

23. The project is not a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance (Cap. 499). It will not cause long-term environmental impact. During construction, HyD will control emission of noise and dust, and site run-off to level within established standards and guidelines. The required expenses of implementing the environmental mitigation measures have been included in the project estimate.

24. During the planning and design stages, HyD has considered the project design and refined the construction procedures with a view to reducing generation of construction waste as far as possible. In addition, HyD will require the contractor to reuse inert construction waste (e.g. use of excavated materials for backfilling) on site or in other suitable construction sites as far as possible in order to minimise the disposal of inert construction waste at public fill reception facilities⁵. HyD will encourage the contractor to maximise the recycling of or the use of recyclable inert construction waste, and the use of non-timber formwork.

25. During construction, HyD will require the contractor to submit for the Government's approval a plan setting out the waste management measures, which shall include appropriate mitigation measures to avoid, reduce, reuse and recycle inert construction waste. HyD will ensure that the day-to-day operation on site comply with the approved plan and will require the contractor to separate the inert portion from non-inert portion of construction waste on site for disposal at appropriate facilities. HyD will monitor the disposal of inert and non-inert construction waste at public fill reception facilities and landfills respectively through a trip-ticket system.

26. HyD estimates that the project will generate a total of 54 470 tonnes of construction waste. Of these, 8 350 tonnes (15.3%) of inert construction waste will be reused on site, while 44 120 tonnes (81.0%) of inert construction waste will be delivered to public fill reception facilities for subsequent reuse. The remaining 2 000 tonnes (3.7%) of non-inert construction waste will be disposed at landfills. The total cost of accommodating construction waste at public fill reception facilities and landfill sites is estimated to be about \$3,532,520 for the project (based on a unit charge rate of \$71 per tonne for disposal at public fill reception facilities and \$200 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N)).

/HERITAGE

⁵ Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N). Disposal of inert construction waste at public fill reception facilities requires a license issued by the Director of Civil Engineering and Development.

HERITAGE IMPLICATIONS

27. The project will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites or buildings, sites of archaeological interest and government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

28. The project does not require acquisition of private land.

TRAFFIC IMPLICATIONS

29. The project will not cause significant traffic impact during construction. To facilitate the construction works, HyD will implement temporary traffic arrangements (TTA) and set up a traffic management liaison group to discuss and vet the TTA. This group comprises representatives from the contractor, the Hong Kong Police Force, the Transport Department, public transport operators and other relevant government departments. HyD will specify requirements for implementing the TTA in the works contracts to minimise the traffic impact during construction. HyD will also display publicity boards on site, providing details of the TTA and the anticipated completion date of individual sections of works. In addition, HyD will set up a telephone hotline for public enquiries or complaints.

BACKGROUND

30. The Government established in 2009 an assessment mechanism to conduct initial screening and detailed scoring for hillside escalator links and elevator systems (HEL) proposals received then. After completion of the assessment and prioritisation of the proposals, the Government decided to take forward 18 HEL proposals. This project is among one of them.

31. We upgraded the project to Category B in September 2011, and a feasibility study on alignment was carried out in July 2012. The cost of the feasibility study is about \$1.0 million, funded by block allocation **Subhead 6100TX** “Highway works, studies and investigations for items in Category D of the Public Works Programme”. The feasibility study has been completed.

32. We engaged a consultant to undertake the investigation and preliminary design works in June 2015. The cost of the consultancy study is about \$6.2 million, funded by block allocation **Subhead 6100TX** “Highway works, /studies

studies and investigations for items in Category D of the Public Works Programme”. The consultancy study has been completed.

33. We engaged a consultant to undertake the detailed design work in January 2019, cost of which is about \$11.0 million. It is funded by block allocation **Subhead 6100TX** “Highway works, studies and investigations for items in Category D of the Public Works Programme”. The detailed design of the project has been substantially completed.

34. Of the 203 trees within the project boundary, 114 trees will be retained. The project will involve the removal of 89 trees by felling. All trees to be felled are not important trees ⁶. HyD will incorporate planting proposals into the project, including the compensatory planting of 120 new trees.

35. We estimate that the project will create about 190 jobs (150 for labourers and 40 for professional or technical staff), providing a total employment of about 5 700 man-months.

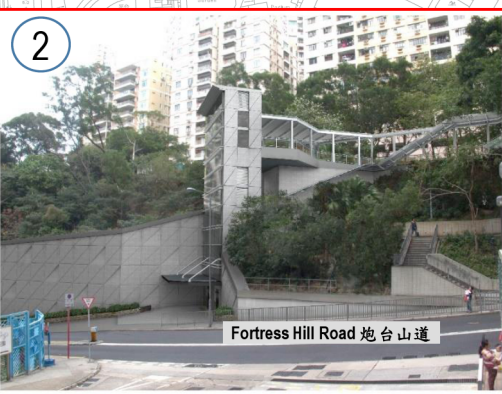
36. We invited tenders for the proposed works in February 2021. After assessing the returned tender prices for the contract, we have updated the project estimate. We consider that the latest estimate, which is 11.0% less than our earlier estimate as stated in Panel paper (LC Paper No. CB(4)510/20-21(03)), has reflected the prevailing market situation and the latest estimate should be adequate to deliver the proposed works.

Transport and Housing Bureau
Highways Department
April 2021

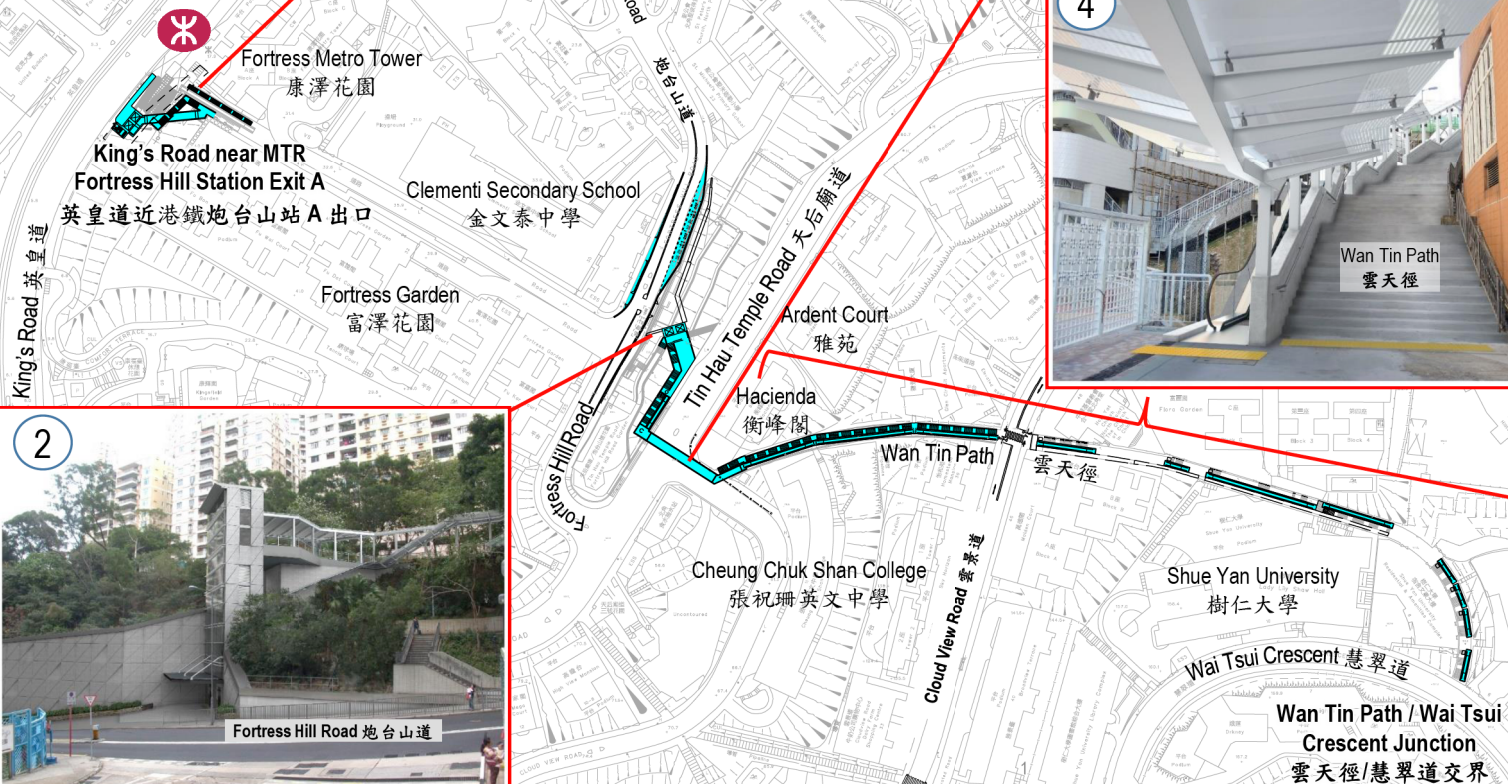
⁶ “Important tree” refers to trees set out in the Register of Old and Valuable Trees, or any other tree that meets one or more of the following criteria –

- (a) trees of 100 years old or above;
- (b) trees of cultural, historical or memorable significance e.g. Fung Shui tree, tree as landmark of monastery or heritage monument, and trees in memory of an important person or event;
- (c) trees of precious or rare species;
- (d) trees of outstanding forms (taking account of overall tree sizes, shape and any special feature), e.g. trees with curtain like aerial roots, trees growing in unusual habitat (e.g. old stone retaining walls); or
- (e) trees with trunk diameter equal to or exceeding 1.0 metre (measured at 1.3 metres above ground level), or with height/canopy spread of or exceeding 25 metres.

WP Aug 2017



Enclosure 1 附件1



圖則名稱 drawing title

工務計劃項目第6170TB號
寶馬山行人通道系統 - 構思圖
PWP ITEM NO. 6170TB
BRAEMAR HILL PEDESTRIAN LINK - ARTIST'S IMPRESSION

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比例 scale **A4** 圖則編號 drawing no.

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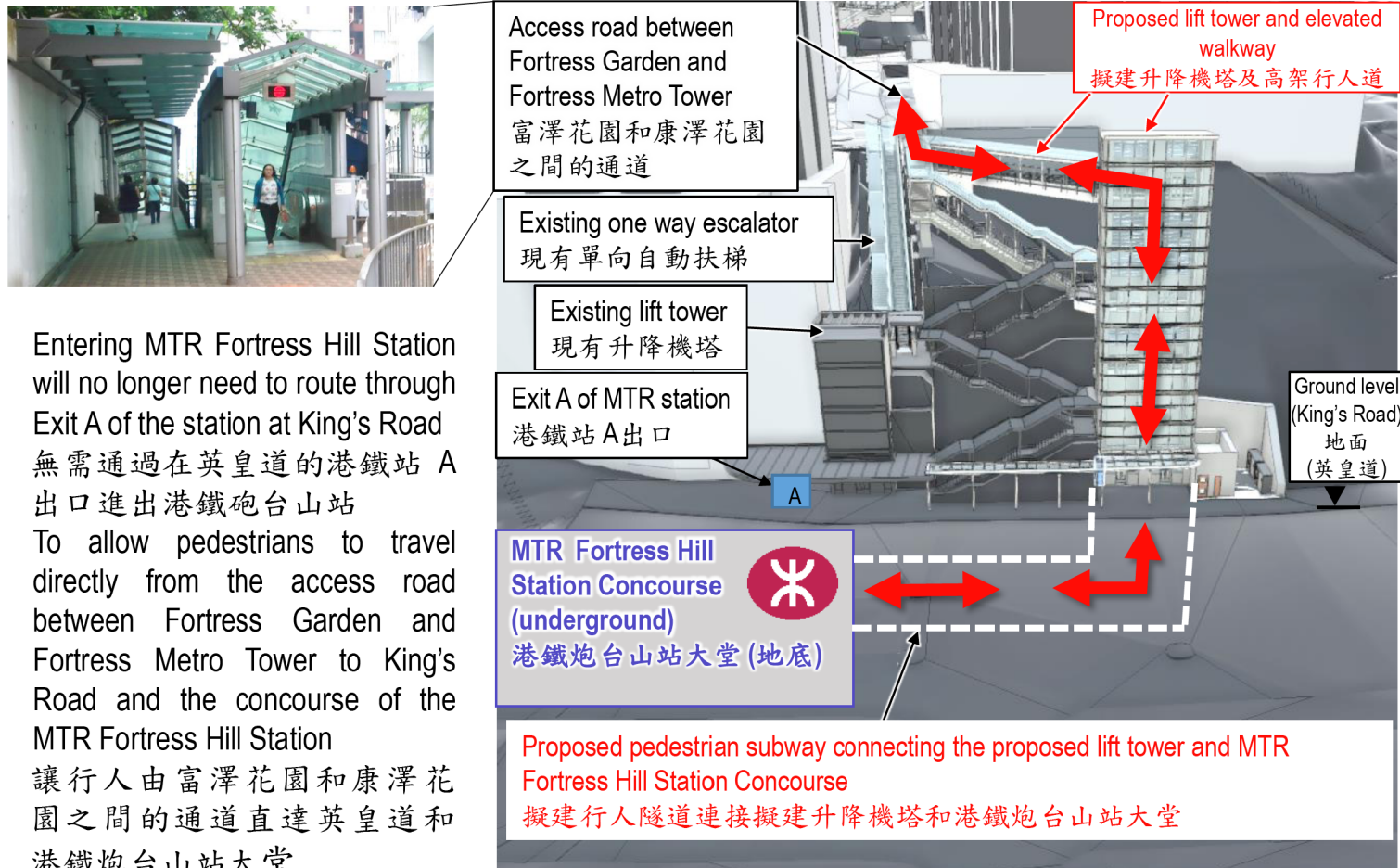
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WORKS DIVISION



HIGHWAYS
DEPARTMENT
HONG KONG
路 香
政 港
署

Proposed Pedestrian Subway Connecting Proposed Lift Tower and MTR Fortress Hill Station Concourse
 擬建行人隧道連接擬建升降機塔和港鐵炮台山站大堂

Enclosure 2
 附件2



- Entering MTR Fortress Hill Station will no longer need to route through Exit A of the station at King's Road
無需通過在英皇道的港鐵站 A 出口進出港鐵炮台山站
- To allow pedestrians to travel directly from the access road between Fortress Garden and Fortress Metro Tower to King's Road and the concourse of the MTR Fortress Hill Station
讓行人由富澤花園和康澤花園之間的通道直達英皇道和港鐵炮台山站大堂

圖則名稱 drawing title

工務計劃項目第6170TB號
 寶馬山行人通道系統
 PWP ITEM NO. 6170TB
 BRAEMAR HILL PEDESTRIAN LINK

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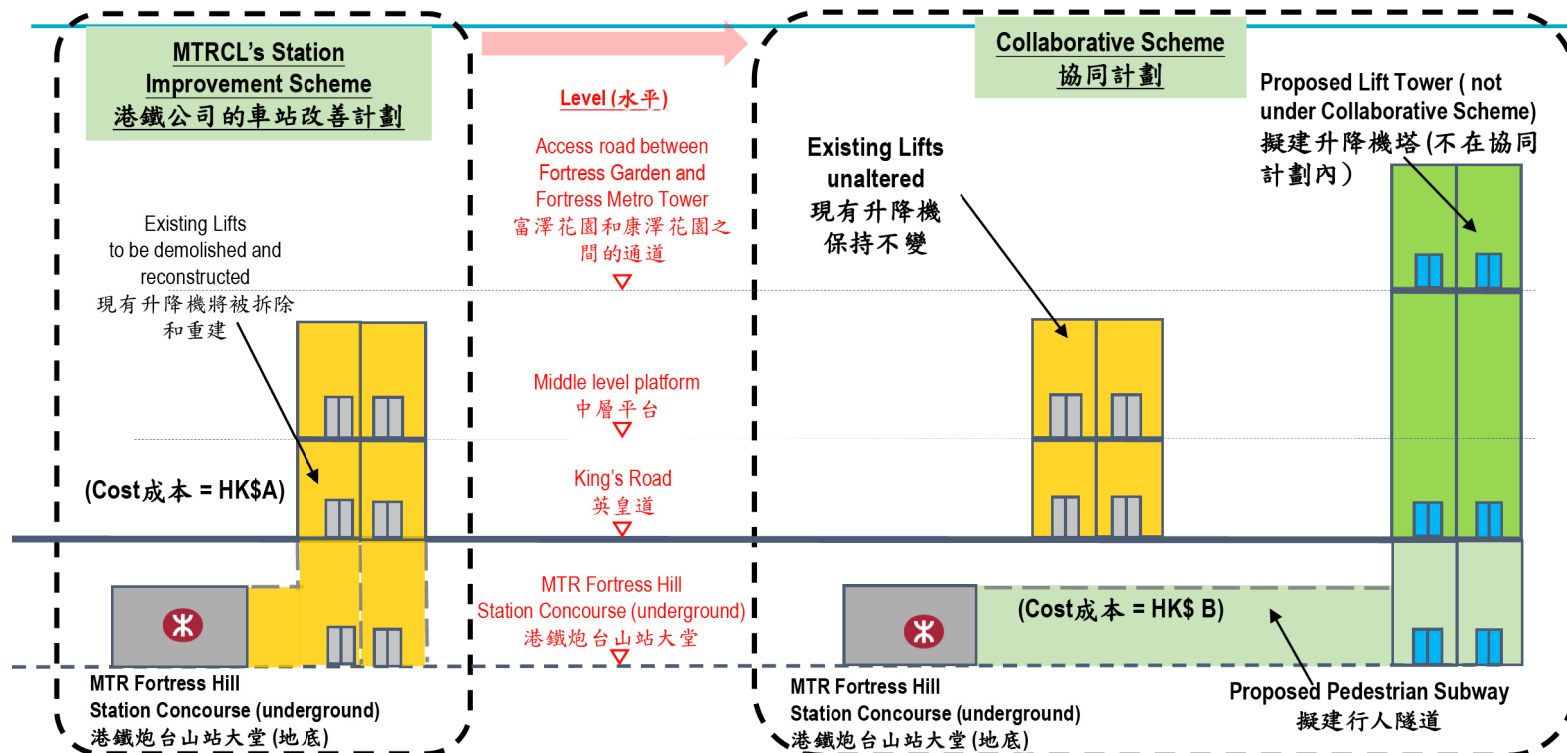
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HIGHWAYS 路 香
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 HONG KONG 署

Collaborative Scheme 協同計劃

Enclosure 3 附件3



	MTRCL's expenditure 港鐵公司支出		HyD's expenditure 路政署支出	
MTRCL's Station Improvement Scheme 港鐵公司的車站改善計劃	HK\$A	HK\$87.0 million	Nil	
Collaborative Scheme 協同計劃	$HK\$[(B)-(A)]/2+(A)$	HK\$89.9 million	$HK\$[(B)-(A)]/2$	HK\$2.9 million

圖則名稱 drawing title

工務計劃項目第6170TB號
寶馬山行人通道系統
PWP ITEM NO. 6170TB
BRAEMAR HILL PEDESTRIAN LINK

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170TB – Braemar Hill Pedestrian Link**Breakdown of the estimates for consultants' fees and resident site staff costs
(in September 2020 prices)**

			Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a)	Consultants' fee for contract administration (Note 2)	Professional	—	—	—	3.8
		Technical	—	—	—	0.9
		Sub-total				4.7#
(b)	Resident site staff (RSS) costs (Note 3)	Professional	253	38	1.6	34.8
		Technical	728	14	1.6	35.2
		Sub-total				70.0
	Comprising –					
(i)	Consultants' fees for management of RSS					1.2#
(ii)	Remuneration of RSS					68.8#
Total						74.7

* MPS = Master Pay Scale

Notes

1. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of RSS supplied by the consultants (as at now, MPS salary point 38 = \$85,870 per month and MPS salary point 14 = \$30,235 per month).
2. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of **170TB**. The construction phase of the assignment will only be executed subject to Finance Committee's approval to upgrade **170TB** to Category A.
3. The actual man-months and actual costs will be only be known after completion of the construction works.

Remarks

The figures in this enclosure are shown in constant prices to correlate with the MPS salary point of the same year. The figures marked with # are shown in money-of-the-day prices in paragraph 12.