

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 – HIGHWAYS

Transport – Footbridges and pedestrian tunnels

185TB – Lift and Pedestrian Walkway System between Tai Wo Hau Road and Wo Tong Tsui Street, Kwai Chung

Members are invited to recommend to the Finance Committee the upgrading of **185TB** to Category A at an estimated cost of \$249.4 million in money-of-the-day prices.

PROBLEM

We need to construct a lift and pedestrian walkway system between Tai Wo Hau Road and Wo Tong Tsui Street, Kwai Chung to enhance the accessibility between Tai Wo Hau Road and Wo Tong Tsui Street.

PROPOSAL

2. The Director of Highways proposes, with the support of the Secretary for Transport and Housing, to upgrade **185TB** (the Project) to Category A at an estimated cost of \$249.4 million in money-of-the-day (MOD) prices.

/ PROJECT

PROJECT SCOPE AND NATURE

3. The proposed scope of works under the Project includes –
- (a) construction of a covered inclined lift system of about 40 metres in length with 2 inclined lifts connecting Tai Wo Hau Road and Wo Tong Tsui Street; and
 - (b) ancillary works including associated geotechnical, road, drainage, utilities, landscaping, public lighting, and electrical and mechanical (E&M) works, etc.
4. A layout plan and artist's impression of the Project are at Enclosure 1.
5. Subject to funding approval of the Finance Committee (FC) in the fourth quarter of 2017, the Highways Department (HyD) plans to commence the construction of advance works for underground utilities diversion in the second quarter of 2018 and the main works in the fourth quarter of 2018 for completion in the fourth quarter of 2021.

JUSTIFICATIONS

6. At present, residents in the vicinity of Tai Wo Hau Road and Wo Tong Tsui Street mainly rely on a staircase of about 120 steps for travelling between Tai Wo Hau Road (near Kwai Chung Estate) and Wo Tong Tsui Street (near Kwong Fai Circuit).
7. There are many residential buildings, schools as well as care and attention homes for the elderly in the vicinity of Tai Wo Hau Road and Wo Tong Tsui Street. The area currently has a population of about 40 000 residents (including about 4 000 elderly). We plan to implement the Project for the convenience of the public (in particular the elderly and the disabled) for travelling between Tai Wo Hau Road and Wo Tong Tsui Street, and to promote walking as an alternative to other means of transport.

8. A lift system with two inclined lifts will be constructed under the Project so as to provide a comfortable, convenient, safe, environmentally friendly and barrier-free pedestrian facility to the locals, facilitating the elderly and those in need to travel up and down the slope between Tai Wo Hau Road and Wo Tong Tsui Street. We expect that the usage rate of the proposed lift system will be about 8 600 pedestrian trips per day.

FINANCIAL IMPLICATIONS

9. We estimate the capital cost of the proposed Project to be \$249.4 million in MOD prices, with the breakdown as follows –

		\$ million	
(a)	Inclined lift system	80.2	
	(i) Structure and foundation	64.6	
	(ii) 2 lifts and associated E&M works	15.6	
(b)	Geotechnical works	49.2	
(c)	Associated road, drainage, utilities, landscaping, public lighting works, etc.	29.0	
(d)	Consultants' fee for	4.3	
	(i) contract administration	3.2	
	(ii) management of resident site staff (RSS)	1.1	
(e)	Remuneration of RSS	22.4	
(f)	Contingencies	18.4	
	Subtotal	203.5	(in September 2017 prices)
(g)	Provision for price adjustment	45.9	
	Total	249.4	(in MOD prices)

10. The HyD proposes to engage consultants to provide services for contract management of the proposed Project. A breakdown of the estimated consultants' fees and RSS costs by man-months is at Enclosure 2.

11. Subject to funding approval, we will phase the expenditure as follows
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Year	\$ million (Sept 2017)	Price adjustment factor	\$ million (MOD)
2018 – 19	8.8	1.05125	9.3
2019 – 20	30.1	1.10907	33.4
2020 – 21	46.3	1.17007	54.2
2021 – 22	48.4	1.23003	59.5
2022 – 23	35.8	1.29154	46.2
2023 – 24	24.8	1.35611	33.6
2024 – 25	9.3	1.41883	13.2
	<hr/> 203.5 <hr/>		<hr/> 249.4 <hr/>

12. We have derived the MOD estimates on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period 2018 to 2025. The contract will provide for price adjustments.

13. We estimate the annual recurrent expenditure arising from the proposed Project to be \$4.71 million.

PUBLIC CONSULTATION

14. The Government established in 2009 a set of objective and transparent scoring criteria for assessing proposals for hillside escalator links and elevator systems (hillside escalator links) to determine the priority for conducting preliminary technical feasibility studies for the 20 proposals received at that time. In this regard, the Government consulted the Legislative Council (LegCo) Panel on Transport in May 2009. Upon completion of the assessment, the results were reported to the Panel on Transport in February 2010. Two proposals were screened out initially, and 18 others were ranked. The Government indicated at the time that preliminary technical feasibility studies for the proposals ranked top ten in the assessment would be conducted by batches, and that the remaining proposals would be followed up after the smooth implementation of the top ten proposals. Later on, after reviewing the manpower resources, the HyD completed the preliminary technical feasibility studies for the proposals ranked 11th and 12th. The Project is ranked 11th. The current progress of the above-mentioned 18 proposals is at Enclosure 3.

15. The HyD consulted the Traffic and Transport Committee of Kwai Tsing District Council on the proposed Project on 1 September 2016. The Committee expressed its support for the implementation of the proposed Project and looked forward to the early commencement of the construction.

16. The plan and scheme of the proposed Project was gazetted on 2 and 9 December 2016 under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) (the Ordinance). No objection was received during the statutory period. The proposed Project was subsequently authorised under the Ordinance.

17. The HyD has consulted the Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS) ¹ on the aesthetic design of the lift system of the proposed Project. The Committee accepted the proposed aesthetic design.

18. We consulted the LegCo Panel on Transport on the proposed Project on 21 April 2017. Members generally supported the proposed Project.

ENVIRONMENTAL IMPLICATIONS

19. The proposed 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. The HyD will control construction noise, dust and site run-off nuisances to levels within established standards and guidelines through the implementation of appropriate mitigation measures. The expenses required for implementing the environmental mitigation measures have been included in the project estimates.

/ 20.

¹ ACABAS, comprising representatives of the Hong Kong Institute of Architects, the Hong Kong Institution of Engineers, the Hong Kong Institute of Planners, the Architectural Services Department, the HyD, the Housing Department, the Civil Engineering and Development Department, and an academic institution to be invited by the Chairman of ACABAS (such as an architectural faculty from a local institution), is responsible for vetting the design of bridges and other structures associated with the highway system, including noise barriers and enclosures, from the aesthetic and visual impact points of view.

20. At the planning and design stages, the HyD has considered optimizing the alignment of the proposed Project, reducing the size of the foundations of the structures and adjusting the method of construction to reduce the generation of construction waste as far as possible. In addition, the HyD will require the contractor to reuse inert construction waste (e.g. 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 facilities². The HyD will also require the contractor to maximise the use of recycled or recyclable inert construction waste, as well as encourage the use of non-timber formwork to further minimise the generation of construction waste.

21. At the construction stage, the HyD will require the contractor to submit for the Government's approval a plan setting out the waste management measures, which will include appropriate mitigation measures to avoid, reduce, reuse and recycle inert construction waste. The HyD will ensure that the day-to-day operations on site comply with the approved plan. The HyD will require the contractor to separate inert construction waste from non-inert construction waste on site to facilitate their transportation to appropriate facilities for disposal. The HyD will control the disposal of inert construction waste and non-inert construction waste at public fill reception facilities and landfills respectively for disposal through a trip-ticket system.

22. The HyD estimates that the proposed Project will generate in total 12 540 tonnes of construction waste. Of these, we will reuse 1 900 tonnes (15.2%) of inert construction waste on site and deliver 10 200 tonnes (81.3%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, we will dispose of the remaining 440 tonnes (3.5%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be about \$810,000 for the Project (the amount is based on a unit cost 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**

² 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 in public fill reception facilities requires a license issued by the Director of Civil Engineering and Development.

HERITAGE IMPLICATIONS

23. The proposed 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

24. The proposed Project does not require land resumption.

TRAFFIC IMPLICATIONS

25. The HyD has conducted traffic impact assessment for the proposed Project, covering the traffic impact during construction period. According to the assessment findings, with the implementation of appropriate temporary traffic arrangements (TTA), the Project during its construction stage will not cause significant impact on the local traffic network in the area concerned. To facilitate the related construction works, the HyD will implement TTA and set up a traffic management liaison group to assess the effectiveness of the TTA. This group comprises representatives from the contractor, the Police Force, the Transport Department and other concerned government departments. The HyD will specify requirements for implementing the TTA into the works contracts to minimise the traffic impacts during construction. The HyD will also display publicity boards on site, giving details of the TTA and the anticipated completion dates of individual sections of works. In addition, the HyD will set up a telephone hotline for public enquiries or complaints.

BACKGROUND INFORMATION

26. We upgraded the proposed Project to Category B in September 2014. We engaged an engineering consultant to undertake the preliminary design, investigation and ground investigation works in August 2015. The total cost of the above consultancy service and investigation works is about \$2.2 million, funded by block allocation **Subhead 6100TX** "Highway works, studies and investigations for items in Category D of the Public Works Programme". These consultancy service and investigation works have been completed.

27. In order to expedite the progress of the proposed Project, we engaged an engineering consultant in June 2017 to undertake the detailed design. The estimated cost for the detailed design services in the said consultancy is about \$4.9 million, and will be funded by **Subhead 6100TX** "Highway works, studies and investigations for items in Category D of the Public Works Programme".

28. In order to make way for the proposed facilities and strengthen the slopes nearby, the proposed Project will require removal of about 62 trees. According to established guidelines, tree preservation and removal proposal will be submitted to the Lands Department for approval. All trees to be removed are not important trees³. The HyD will incorporate planting proposals into the proposed Project, including the compensatory planting of about 62 new trees.

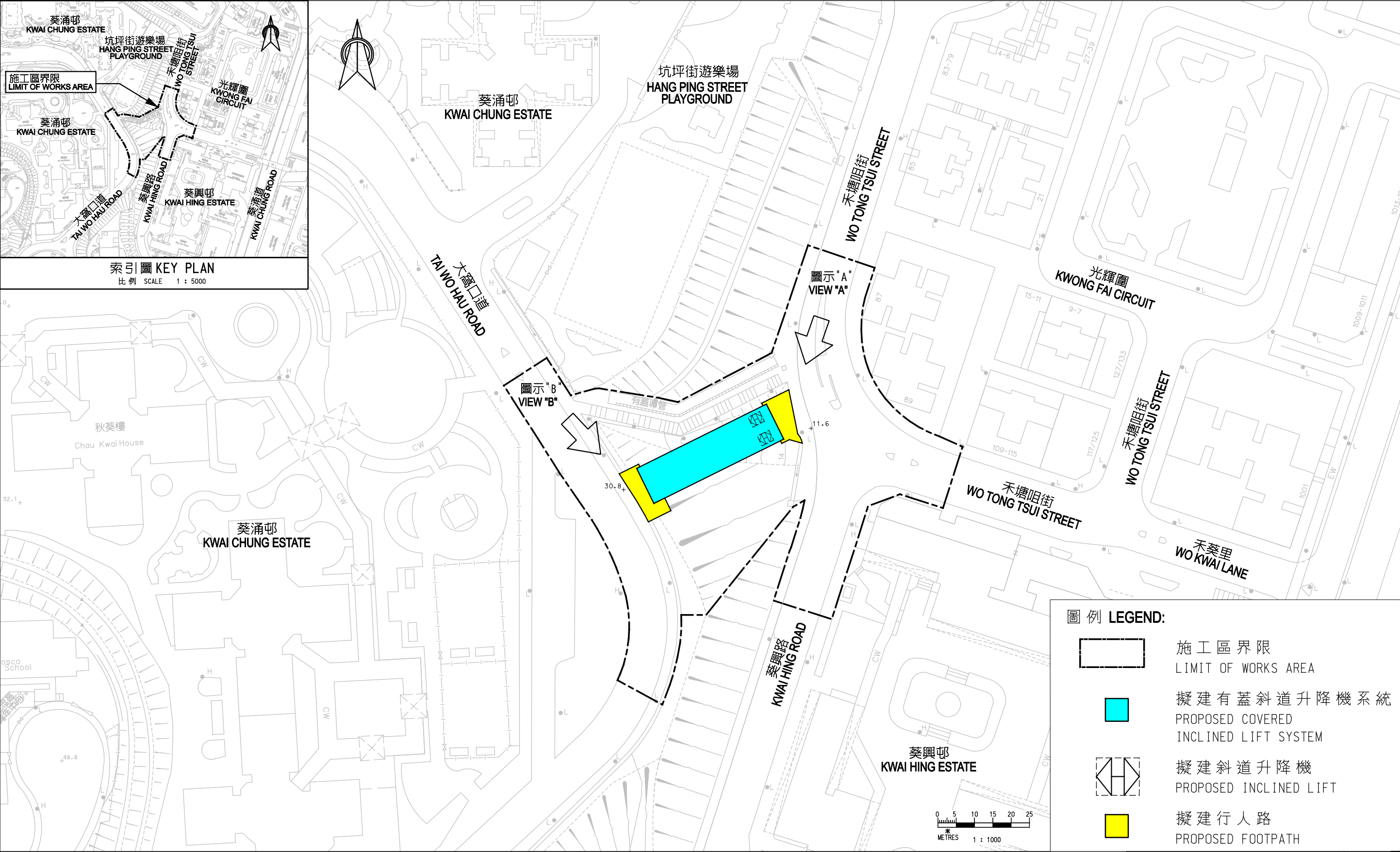
29. We estimate that the proposed Project will create 80 jobs (15 for professional/technical staff and 65 for labourers), providing a total employment of 2 600 man-months.

30. We submitted PWSC(2017-18)8 in May 2017 to invite Members to recommend to the FC the upgrading of **185TB** to Category A. The paper was not discussed by the PWSC during the 2016-17 legislative session. This paper supersedes PWSC(2017-18)8 with updates on the works programme and phasing of expenditure.

Transport and Housing Bureau
Highways Department
October 2017

³ "Important trees" refer to trees in the Register of Old and Valuable Trees, or any other trees that meet 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 trees, trees as landmark of monastery or heritage monument, and trees in memory of important persons or events;
- (c) trees of precious or rare species;
- (d) trees of outstanding forms (taking account of overall tree sizes, shapes and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitats; or
- (e) trees with trunk diameter equal or exceeding 1.0 metre (m) (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.



圖則名稱 DRAWING TITLE 工務計劃項目第185TB號 葵涌大窩口道至禾塘咀街升降機及行人通道系統 - 平面圖 PWP ITEM NO. 185TB LIFT AND PEDESTRIAN WALKWAY SYSTEM BETWEEN TAI WO HAU ROAD AND WO TONG TSUI STREET, KWAI CHUNG - LAYOUT PLAN	圖號 DRAWING NO. CE75/TPP/WTTS/001	比例 SCALE 1:1000 or AS SHOWN
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	 路政署 Highways Department	



圖示 "A"
VIEW "A"



圖示 "B"
VIEW "B"

圖則名稱 DRAWING TITLE

工務計劃項目第185TB號
葵涌大窩口道至禾塘咀街升降機及行人通道系統
- 擬建升降機系統構思圖

PWP ITEM NO. 185TB
LIFT AND PEDESTRIAN WALKWAY SYSTEM BETWEEN TAI WO HAU ROAD AND WO TONG TSUI STREET, KWAI CHUNG
- ARTIST'S IMPRESSION OF PROPOSED LIFT SYSTEM

圖號 DRAWING NO.
CE75/TPP/WTTS/002

比例 SCALE
不適用
N/A

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路政署
Highways Department

**185TB – Lift and Pedestrian Walkway System between Tai Wo Hau Road
and Wo Tong Tsui Street, Kwai Chung**

**Breakdown of the estimates for consultants' fees and resident site staff costs
(in September 2017 prices)**

			Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$million)
(a)	Consultants' fee for contract administration (Note 2)	Professional	–	–	–	2.6
		Technical	–	–	–	0.6
					Sub-total	3.2
(b)	Resident site staff (RSS) costs (Note 3)	Professional	57	38	1.6	7.2
		Technical	371	14	1.6	16.3
					Sub-total	23.5
	Comprising -					
	(i) Consultants' fees for management of RSS				1.1	
	(ii) Remuneration of RSS				22.4	
					Total	26.7

* 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 (subject to Finance Committee (FC)'s approval, MPS salary point 38 = \$78,775 per month and MPS salary point 14 = \$27,485 per month).
2. The consultants' staff cost for contract administration is calculated in accordance with the consultancy agreement for the design and construction of the **185TB**. The construction phase of the assignment will only be executed subject to FC's approval to upgrade **185TB** to Category A.
3. The actual man-months and actual costs will be ascertained after completion of the construction works.

Progress of the proposals of the hillside escalator links and elevator systems

Rank	Proposal	Progress of Project
1	Pedestrian Link at Tsz Wan Shan	The pedestrian link is implemented under the Shatin to Central Link project. The construction works commenced in July 2012. As at August 2017, 14 out of the 15 facilities under this pedestrian link have already been completed and opened for public use. Regarding the one remaining facility, the target completion date is the fourth quarter of 2017.
2	Braemar Hill Pedestrian Link	<p>The preliminary technical feasibility study has been completed. The HyD has engaged consultants to carry out the investigation and preliminary design.</p> <p>The HyD consulted and obtained the support from the Planning, Works and Housing Committee of the Eastern District Council on the design scheme in September 2016 and in October 2017. The HyD is currently making preparation for the gazetting of the works.</p>
3	Lift and Pedestrian Walkway System at Cheung Hang Estate, Tsing Yi	The Government obtained funding approval from the LegCo in May 2016. The construction works commenced in February 2017 and are expected to be completed in mid-2019.
4	Escalator Link and Pedestrian Walkway System at Pound Lane	<p>The preliminary technical feasibility study has been completed. The HyD has engaged consultants to carry out the investigation and preliminary design.</p> <p>The HyD consulted the Central and Western District Council (C&WDC) and held a public forum on the refined proposal in 2015. After collating and analysing the comments received, the HyD plans to brief the C&WDC on the project progress later.</p>
5	Lift and Pedestrian Walkway System between Kwai Shing Circuit and Hing Shing Road	The Government obtained funding approval from the LegCo in May 2016. The construction works commenced in June 2017 and are expected to be completed in 2020.
6	Lift and Pedestrian Walkway System between Castle Peak Road and Kung Yip Street	<p>The preliminary technical feasibility study has been completed. The HyD has engaged consultants to carry out the investigation and preliminary design.</p> <p>The HyD consulted and obtained the support from the Traffic and Transport Committee of the Kwai Tsing District Council on the design scheme in April 2016. The Government gazetted the works under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) in August 2017.</p>

Rank	Proposal	Progress of Project
7	Lift and Pedestrian Walkway System between Lai Cho Road and Wah Yiu Road	The preliminary technical feasibility study has been completed. The HyD has engaged consultants to carry out the investigation and preliminary design.
8	Pedestrian Link near Chuk Yuen North Estate	<p>The preliminary technical feasibility study has been completed. The HyD has engaged consultants to carry out the investigation and preliminary design.</p> <p>The HyD consulted and obtained the support from the Traffic and Transport Committee of the Wong Tai Sin District Council on the preliminary design in July 2016. The HyD is currently following up on the suggestions and views regarding the design of the project raised by relevant stakeholders and is making preparation for the gazetting of the works.</p>
9	Lift and Pedestrian Walkway System at Waterloo Hill	The Government obtained funding approval from the LegCo in May 2016. The construction works commenced in December 2016 and are expected to be completed in mid-2019.
10	Lift and Pedestrian Walkway System between Lai King Hill Road and Lai Cho Road	It is revealed in the preliminary technical feasibility study that the project involves two dangerous private slopes. The HyD will revisit this proposal after the parties concerned have completed repairing the dangerous slopes.
11	Lift and Pedestrian Walkway System between Tai Wo Hau Road and Wo Tong Tsui Street	<p>The preliminary technical feasibility study has been completed. The HyD has engaged consultants to carry out the investigation and preliminary design, and such works have been completed.</p> <p>The HyD consulted and obtained the support from the Traffic and Transport Committee of the Kwai Tsing District Council on the preliminary design in September 2016.</p> <p>The Government published the notice of authorization to propose to execute the works under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) in February 2017.</p> <p>The HyD engaged a consultant to carry out the detailed design in June 2017 and the relevant works are in progress.</p> <p>The Government consulted and obtained support from the LegCo Panel on Transport on the proposal on 21 April 2017. Since the funding approval could not be obtained in the 2016/17 legislative year, the Government will strive to seek funding approval from LegCo in the 2017/18 legislative year to take forward the construction works.</p>

Rank	Proposal	Progress of Project
12	Lift and Pedestrian Walkway System at Luen On Street	<p>The preliminary technical feasibility study has been completed. The HyD has engaged consultants to carry out the investigation and preliminary design.</p> <p>The consultants are studying the alignment and preliminary design scheme for reducing land acquisition and minimising environmental impacts.</p>
13	Yuet Wah Street Pedestrian Linkage	To complement the Kwun Tong Town Centre Redevelopment, the Civil Engineering and Development Department commenced construction for this project in April 2013. The Linkage has been completed and opened for public use since October 2015.
14 (same ranking)	Escalator Link System between Hong Sing Garden and Po Hong Road	This proposal will be followed up after the smooth implementation of the higher-ranking proposals.
14 (same ranking)	Lift and Pedestrian Walkway System between Lai King Hill Road and Princess Margaret Hospital	The Hospital Authority commenced works in November 2015. The works have been completed and the facility has been opened for public use since January 2017.
16	Lift and Pedestrian Walkway System between Saddle Ridge Garden and Sai Sha Road	This proposal will be followed up after the smooth implementation of the higher-ranking proposals.
17	Lift and Pedestrian Walkway System between Hing Shing Road and Tai Wo Hau Road	This proposal will be followed up after the smooth implementation of the higher-ranking proposals.
18	Escalator Link System between Sha Tin Sui Wo Court and MTR Fo Tan Station	This proposal will be followed up after the smooth implementation of the higher-ranking proposals.