

**For Information**

**Legislative Council Panel on Transport**

**143TB – Improvement to pedestrian subway system  
at Kwai Fuk Road roundabout**

**PURPOSE**

This paper informs Members of our proposal to upgrade **143TB**, Improvement to pedestrian subway system at Kwai Fuk Road roundabout, to Category A in order to carry out the proposed construction works.

**PROJECT SCOPE AND NATURE**

2. The scope of **143TB** comprises –
- (a) construction of a 50-metre (m) long covered passageway barrel;
  - (b) construction of a new northern leg of a 100-m long and 6.5-m wide subway barrel with two stairway/lift exits at Kwai Fong Mass Transit Railway (MTR) Station and Kwai Tsing Theatre; and a stairway exit at the northern section of Kwai Fuk Road;
  - (c) construction of the eastern and southern legs of the subway, which are subway barrels with 40-m long, 4-m wide and 50-m long, 5-m wide respectively, with two stairway/lift exits;
  - (d) demolition of the existing northern leg of the subway;

- (e) modification of the 30-m long and 4-m wide eastern portion of the existing western leg of the subway; and renovation of the 35-m long and 4-m wide western portion;
- (f) construction of an about 50-m long single one-lane road connecting the Kwai Fuk Road roundabout (The Roundabout) to Hing Ning Road;
- (g) realignment of approximately 110m of Kwai Yan Road; and
- (h) associated works including road and drainage, landscaping, water main diversion , provision of covers to footpath and the reprovision of an existing pump house.

— A layout plan and cross sections of the proposed works are at the **Enclosure**.

3. Subject to funding approval, we will commence the construction works in February 2007 for completion in May 2009.

## **JUSTIFICATION**

4. Kwai Chung is a district composed of mainly industrial and residential developments in its outskirts and has a mix of commercial, residential and education developments in its centre. A public transport interchange<sup>1</sup> (the Interchange) is located at the centre of Kwai Chung. The Roundabout is situated at the immediate southwest of the Interchange and serves as a major connection between the centre and the outer areas of Kwai Chung.

### **Improvement of pedestrian subway system**

5. The existing subway is the only grade-separated pedestrian crossing facility at the Roundabout with two legs connecting the northern section of Kwai Fuk Road to Container Port Road. Pedestrians from all other

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<sup>1</sup> The public transport interchange comprises the bus /public light bus/taxi terminus underneath New Kwai Fong Garden and Kwai Fong MTR Station as well as the public light bus terminus alongside Hing Ning Road.

directions of the Roundabout have to gain access through the existing at-grade crossings, which span across two traffic lanes, to the Interchange.

6. With the opening of the Kwai Tsing Theatre in 1999, the usage of the subway and at-grade pedestrian crossings has gone up significantly. According to a survey conducted by the Transport Department in March 2006, both the existing subway and at-grade crossing facilities are heavily patronised. The two-way hourly pedestrian flows during peak hours are as follows –

<b>Direction to/from the Roundabout</b>	<b>Pedestrian Flow per Hour</b>
North	4 500
West	3 000
South	1 100
East	600

7. The Roundabout is currently being used by heavy long vehicles frequently, making up 23% of its traffic. The frequent presence of heavy long vehicles has caused sightline obstruction to pedestrians. The swinging movement of the vehicle body when negotiating the curve at the exit of the Roundabout and the relative high speed of these vehicles have caused great difficulty for pedestrians to cross the two traffic lanes at the existing at-grade crossings at Kwai Yi Road and Kwai Fuk Road. Since 1 January 2001, five accidents have taken place at that location causing five injuries.

8. To enhance pedestrian safety, we need to provide a grade-separated pedestrian crossing system in the form of a subway at the Roundabout. In this connection, we will construct a new northern leg with an extension to connect to the Interchange and then demolish the existing northern leg of the subway. We will also construct two extra legs to replace the existing at-grade crossings in the vicinity of the Roundabout and receive pedestrians from the east and south directions. We will modify the eastern portion of the existing western leg and refurbish the remaining western portion of the subway to match the prevailing standard for aesthetic appearance.

9. In connection with the subway improvement, four lifts will be installed to facilitate access by people with disabilities. We will also

reprovide the pump house for the discharge of surface runoff to prevent flooding in the subway. Adequate lighting will be installed in the subway barrels and all the at-grade pedestrian crossings in the vicinity of the Roundabout will be closed upon the completion of the improvement works. We will landscape the locality with sculptures and a multitude of greenery to brighten up the environment.

### **Construction of a new road and local realignment of Kwai Yan Road**

10. At present, the vehicular traffic heading to the Interchange from the Roundabout has to make a detour of about 600 m via Kwai Yi Road, Kwai Foo Road and Kwai Yan Road, or Hing Ning Road. Traffic queues are observed at the two signalised crossings at Kwai Yi Road and Kwai Yan Road and at the Kwai Yi Road approach to Kwai Foo Road. In addition, the on-street loading and unloading activities of public transport in front of Kwai Fong MTR Station, which tail back from the Interchange to Kwai Yi Road, have impeded the through traffic. Considerable delays have been caused to the vehicular traffic along the 600m long route.

11. To improve traffic circulation along the route, we propose to construct a new road to directly connect the Roundabout with Hing Ning Road. We propose to realign 110m of Kwai Yan Road in order to provide adequate space for the construction of the new road.

### **FINANCIAL IMPLICATIONS**

12. The latest estimate of this project is \$57.7 million in money-of-the-day (MOD) prices with breakdown as follows –

	<b>\$ million</b>
(a) Subway	40.5
(i) civil works	33.2
(ii) electrical and mechanical (E&M) works	6.1
(iii) pump house reprovision	1.2

	<b>\$ million</b>	
(b) Road and drainage, landscape and watermain diversion works	9.5	
(c) Electrical and Mechanical Services Trading Fund (EMSTF) charges <sup>2</sup>	1.1	
(d) Contingencies	5.2	
	Sub-total	56.3 (in September 2006 prices)
(e) Provision for price adjustment	1.4	
	Total	57.7 (in MOD prices)

## **PUBLIC CONSULTATION**

13. We consulted the Traffic and Transport Committee of the Kwai Tsing District Council (the Committee) on 26 April 2002. Members supported the project. We consulted the Committee again by circulation of an information paper on 17 October 2005. Members supported the early implementation of the project.

14. We gazetted the proposed works under the Roads (Works, Use and Compensation) Ordinance (the Ordinance) on 24 February 2006 and received one objection. The objector opined that there was little demand for the proposed eastern and southern legs of the subway and suggested extending the subway from the Roundabout by about 300 m to the sitting out area underneath the flyover of Tsuen Wan Road so that pedestrians could cross the two junctions of Kwai Fung Crescent and Container Port Road safely. The Administration explained to the objector that the existing crossings at the junctions concerned were adequate and safe for pedestrian use from traffic point of view and there was no traffic need for the subway

<sup>2</sup> Since the establishment on 1 August 1996 under the Trading Fund Ordinance, the EMSTF charges government departments for design and technical consultancy services for E&M installations provided by the Electrical and Mechanical Services Department. The services rendered for this project include carrying out the design on all E&M installations and providing technical advice to the Government on all E&M works and their impacts on the project from maintenance and general operation points of view.

extension proposed by him. We also explained to the objector that the proposed eastern and southern legs would be integral parts of the subway. The concerned legs form part of a complete system of the grade-separated facilities to enhance pedestrian safety by replacing the existing at-grade crossings in the vicinity of the Roundabout. The objector was also concerned about the pedestrian flow during the renovation of the western leg of the subway. We assured the objector that the proposed renovation works, involving the refurbishment of walls and floor tiles, would be carried out in stages during off-peak hours to minimise the inconvenience to the public. Notwithstanding our explanations, the objector did not withdraw his objection.

15. Having considered the unresolved objection, the Chief Executive-in-Council authorised the project under the Ordinance on 31 October 2006 and the notice of authorisation was gazetted on 17 November 2006.

## **ENVIRONMENTAL IMPLICATIONS**

16. The project is not a designated project under the Environmental Impact Assessment Ordinance and will not cause long-term environmental impact. We will implement suitable mitigation measures to control short-term environmental impacts during the construction stage. These measures will include watering of the site, provision of wheel-washing facilities, covering of materials on trucks, use of silenced construction plant, and the provision of mobile noise barriers.

17. We have considered measures in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. We will renovate but not demolish the western portion of the existing western leg of the Subway. We will require the contractor to reuse the suitable excavated materials and demolition materials as filling materials on site as far as possible, in order to minimise their disposal to public fill reception facilities<sup>3</sup>. We will encourage the contractor to maximise the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimise the generation of construction waste.

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<sup>3</sup> Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

18. We will also require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to minimise, reduce, reuse and recycle C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. We will control the disposal of public fill and C&D waste to designated public fill reception facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

19. We estimate that the project will generate about 24,900 tonnes of C&D materials. Of these, we will reuse about 15,100 tonnes (61%) on site, deliver about 8,600 tonnes (34%) to public fill reception facilities and dispose of about 1,200 tonnes (5%) at landfills. The total cost for accommodating these materials at public fill reception facilities and landfill sites is estimated to be \$382,200 for this project (based on an unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne<sup>4</sup> at landfills).

20. The proposed works will involve the removal of 65 trees including one to be felled and 64 to be transplanted. All trees to be removed are not important trees<sup>5</sup>. We will incorporate planting proposals as part of the project, including estimated quantities of 99 trees, 43,000 shrubs and 55 square metres of grassed area.

## LAND ACQUISITION

21. The proposed works do not require any land acquisition.

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<sup>4</sup> This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m<sup>3</sup>), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

<sup>5</sup> “Important trees” refer to trees in the Register of Old and Valuable Trees, and any other trees that meet one or more of the following criteria –

- (a) trees over 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 event;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (take account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0-m (measured at 1.0-m above ground level).

## **THE WAY FORWARD**

22. We intend to submit the project to the Public Works Sub-Committee and Finance Committee of the Legislative Council on 19 December 2006 and 12 January 2007 respectively for upgrading the project to Category A. Subject to funding approval, we plan to start construction works in February 2007 for completion in May 2009.

## **ADVICE SOUGHT**

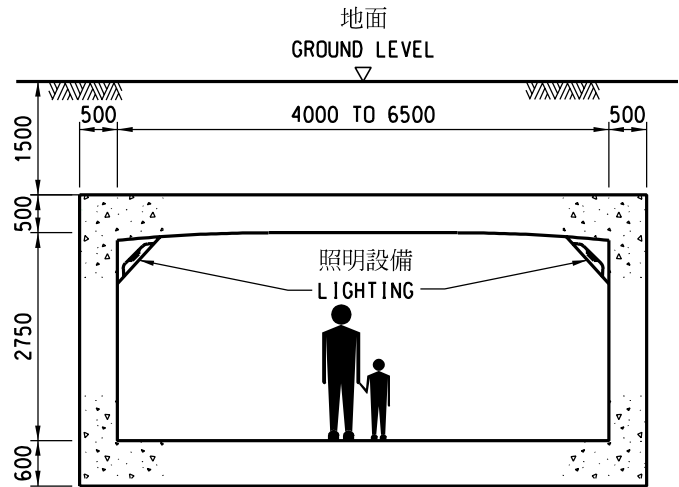
23. Members are invited to note the contents of this paper.

Environment, Transport and Works Bureau  
November 2006

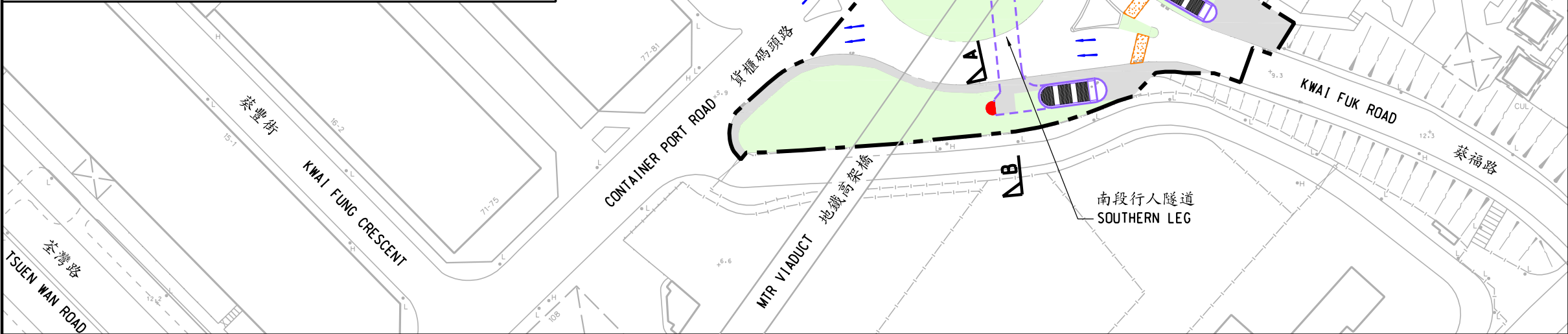




位置圖 LOCATION PLAN  
比例 SCALE 1 : 15000



行人隧道典型橫切面  
TYPICAL CROSS SECTION OF THE PEDESTRIAN SUBWAY  
比例 SCALE 1 : 100



NOTES: 註釋

1. 全部以毫米為量度單位。  
ALL DIMENSIONS ARE IN MILLIMETRES.

LEGEND : 圖例

- 施工區界限  
LIMIT OF WORKS AREA
- 擬拆除的現有行人隧道構件及泵房  
PROPOSED DEMOLITION OF THE EXISTING SUBWAY BARREL AND PUMP HOUSE
- 擬建設有混凝土上蓋的行人通道構件  
PROPOSED PASSAGEWAY BARREL WITH CONCRETE COVER
- 擬建設有強化玻璃上蓋的行人通道構件  
PROPOSED PASSAGEWAY BARREL WITH TEMPERED GLASS COVER
- 擬建地下行人隧道構件  
PROPOSED SUBWAY BARREL
- 將予翻新的現有行人隧道構件  
EXISTING SUBWAY BARREL TO BE RENOVATED
- 擬建升降機  
PROPOSED LIFT
- 擬建有蓋樓梯  
PROPOSED COVERED STAIRCASE
- 擬建行車道  
PROPOSED CARRIAGEWAY
- 行車線數  
NUMBER OF TRAFFIC LANE
- 擬修改的道路路線  
PROPOSED ROAD REALIGNMENT
- 擬建行人路/現有行人路將予重建  
PROPOSED FOOTPATH/EXISTING FOOTPATH TO BE RECONSTRUCTED
- 擬加建在行人路的上蓋  
PROPOSED COVER ON FOOTPATH
- 擬封閉的現有行人過路處  
EXISTING AT-GRADE PEDESTRIAN CROSSING TO BE CLOSED
- 擬建園境區  
PROPOSED LANDSCAPED AREA
- 擬建斜坡  
PROPOSED SLOPE
- 擬建泵房  
PROPOSED PUMP HOUSE
- 現有鐘樓  
EXISTING CLOCK TOWER

drawing title 圖則名稱

工務計劃項目第143TB號  
葵福路迴旋處行人隧道系統改善工程  
總平面圖

PWP ITEM No. 143TB

IMPROVEMENT TO PEDESTRIAN SUBWAY SYSTEM AT KWAI FUK ROAD ROUNDABOUT  
GENERAL LAYOUT

designed 設計

K. M. WU

date 日期

14.2.2006

drawn 繪圖

W. M. LEUNG

date 日期

14.2.2006

approved 核准

W. K. KWAN

date 日期

14.2.2006

office 辦事處

工程 部

WORKS DIVISION

drawing no. 圖號

HWD6143TB-SP0001

scale 比例

1 : 1250  
OR  
AS SHOWN

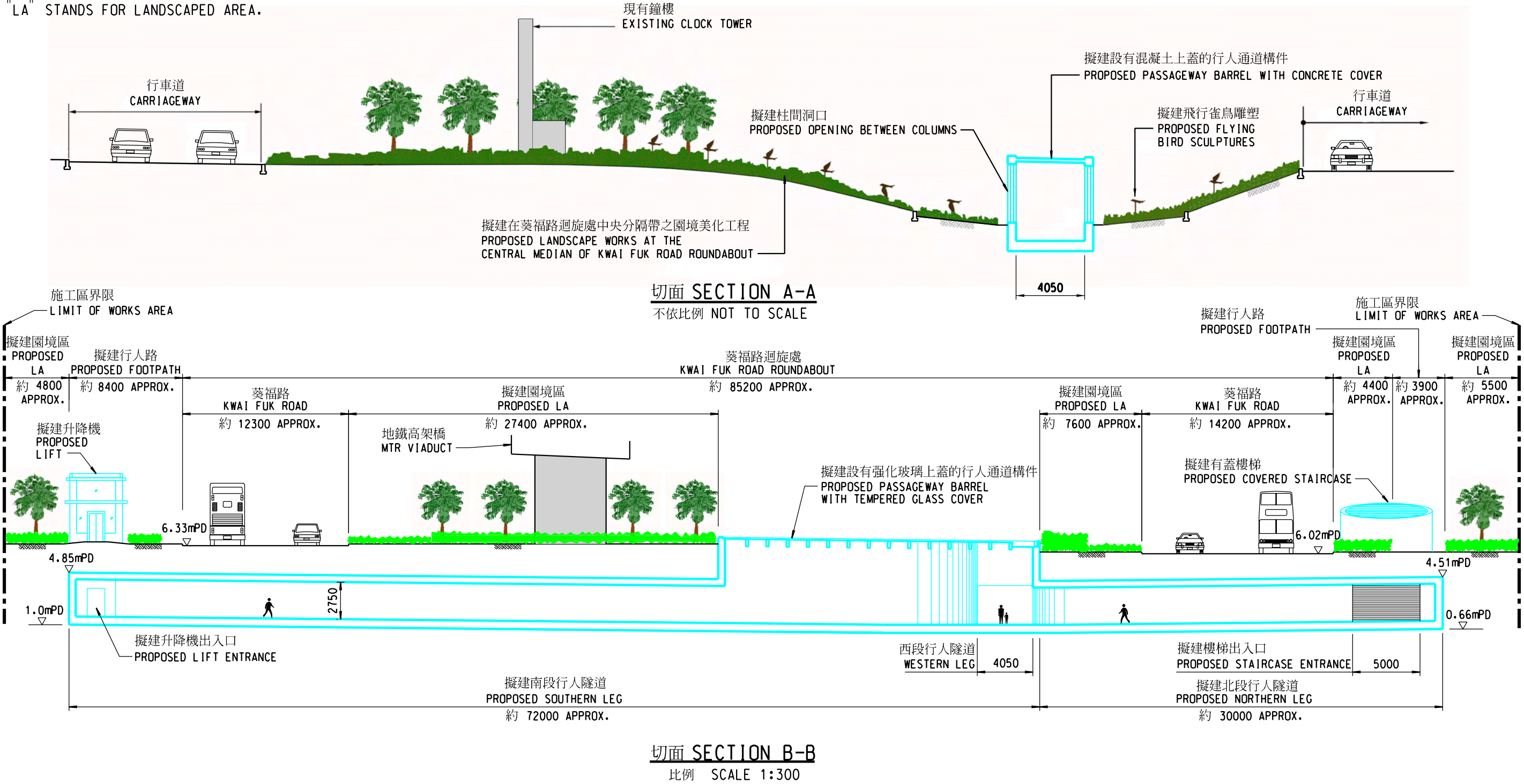
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HIGHWAYS  
DEPARTMENT  
HONG KONG

路 港  
政 署

- NOTES: 註釋
- 1. 全部以毫米為量度單位。  
ALL DIMENSIONS ARE IN MILLIMETRES.
  - 2. 所有水平均以米為單位並在香港主水平基準上。  
ALL LEVELS ARE IN METRES ABOVE H.K.P.D.
  - 3. "LA"代表園境區。  
"LA" STANDS FOR LANDSCAPED AREA.



drawing title 圖則名稱 工務計劃項目第143TB號 葵福路迴旋處行人隧道系統改善工程 橫切面 PWP ITEM No. 143TB IMPROVEMENT TO PEDESTRIAN SUBWAY SYSTEM AT KWAI FUK ROAD ROUNDABOUT CROSS SECTIONS	designed 設計 K. M. WU	date 日期 14.2.2006	drawing no. 圖號 HWD6143TB-SP0002	scale 比例 AS SHOWN
	drawn 繪圖 W. M. LEUNG	date 日期 14.2.2006	版權所有 COPYRIGHT RESERVED	
	approved 核准 W. K. KWAN	date 日期 14.2.2006	HIGHWAYS DEPARTMENT 路政署 HONG KONG 香港	
	office 辦事處 工程部 WORKS DIVISION			