

Task Force on Kai Tak Harbourfront Development

For information
on 8 October 2013

TFKT/13/2013

Trunk Road T2- Preliminary Design

PURPOSE

This paper briefs Members on the preliminary design of the proposed Trunk Road T2 (T2).

BACKGROUND

2. T2 is a dual 2-lane trunk road of about 3 kilometres (km) long connecting the proposed Central Kowloon Route (CKR) at the west and the proposed Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) at the east. CKR, T2 and TKO-LTT will form the strategic Route 6, which is an expressway with a total length about 12.5 km stretching across the southern region of Kowloon from west Kowloon to the Tseung Kwan O New Town. The layout plan and typical cross sections of T2 are shown in **Annex A**.

PROJECT SCOPE

3. The proposed scope of works of T2 under Public Works Programme (PWP) Item No. 7785TH comprises:

- (a) a dual 2-lane trunk road of approximately 3 km in length, of which about 2.7 km is in the form of tunnel;
- (b) ventilation and administration buildings;
- (c) traffic control and surveillance system; and
- (d) associated civil, electrical, mechanical, landscaping, environmental protection and mitigation works.

4. The T2 project is currently at the preliminary design stage.

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JUSTIFICATIONS

5. The three sections of Route 6 comprising CKR, T2 and TKO-LTT are programmed for implementation in parallel. If T2 is not being provided, there will be a missing link on Route 6 with significant adverse impact on the east-west traffic in Kowloon. T2 is essential for the commissioning of CKR and TKO-LTT, otherwise the existing local roads in east Kowloon will suffer from serious congestion. Without T2, the main arteries of traffic network in east Kowloon, and the junctions where these arteries meet, will frequently be jammed. Traffic congestion in the immediate vicinity of Kai Tak will hinder accessibility of traffic into and out of the new development area and will seriously affect the pace of development within Kai Tak. This will also hamper the policy objective of energizing Kowloon East to make it a vibrant central business district in Hong Kong.

ALIGNMENT AND CONSTRUCTION METHOD

6. Under the Kai Tak Planning Review and Engineering Study conducted in 2004, T2 was proposed to be mainly in the form of tunnel fully embedded at the section underneath the Kwun Tong Typhoon Shelter and the adjoining seabed. The proposed alignment of T2 was developed after taking into account various considerations including existing and planned developments, the need to avoid permanent reclamation, the need to minimize impacts on the harbourfront environment, land and traffic, and connections to the planned road networks, etc. The statutory Kai Tak Outline Zoning Plan (OZP) incorporating the proposed alignment of the T2 was finalized through an extensive 3-stage public consultation process, and was approved in 2007 under the Town Planning Ordinance.

7. It was originally envisaged that the section of T2 tunnel underneath the Kwun Tong Typhoon Shelter and the adjoining

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seabed would be constructed by immersed tube tunnel method coupled with temporary reclamation. After reviewing the site investigation results which are recently made available and the prevailing tunnelling technology, tunnel boring machine (TBM) method is recommended for T2 construction in view of the following advantages –

- (i) no temporary reclamation will be required;
- (ii) environmental impacts on air quality, noise and water pollution and the amount of spoils to be generated will be minimised;
- (iii) impacts on the existing outfall, breakwater and seawalls along the tunnel alignment will be minimised; and
- (iv) impact on users of the Kwun Tong Typhoon Shelter will be minimised.

TUNNEL PORTAL AND VENTILATION BUILDINGS

8. The proposed western tunnel portal and western ventilation building for T2 will be located in the former South Apron. The eastern ventilation building will be sited within the tunnel section under the TKO-LTT, integrating with the eastern tunnel portal at Cha Kwo Ling. The administration building of T2 will be integrated with that of the TKO-LTT to minimise the overall footprint. Since both the eastern ventilation building and administration building will be located behind the existing green knoll at Cha Kwo Ling, the prominent green backdrop viewed from the Harbour will be largely preserved.

9. The western ventilation building will be situated next to the Kwun Tong Bypass according to the approved Kai Tak OZP. Its height and visual impact have been minimised through lowering

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all the ventilation fans and most of the plant rooms below the ground level. The top of the building is designed at +16.2mPD, which is lower than the parapet of the adjacent Kwun Tong Bypass (+18.4mPD).

10. The design intent for the western ventilation building is to use dynamic clean straight lines to blend in with the canopy structure of the adjacent Kwun Tong Bypass and to make subtle reference to the geometry of the Kai Tak runway. The folding planes of the berms and slopes surrounding the structure, with elongated profiles and sharp angles, take their shapes from jetliners which pay homage to the avionic history of the area. They also enable a smooth transition between the streamline structure and the landscaped and greening surroundings. At-grading and roofing greenings will be provided in the design. The same design concept will be applied to the two tunnel portals and the eastern ventilation building in the T2 project to achieve a coherent design. Subject to the detailed design which has yet to be carried out, the photomontages of the western tunnel portal and western ventilation building are shown in **Annex B**.

ACCESSIBILITY TO THE WATERFRONT

11. In order to enhance the accessibility between Kowloon Bay and the waterfront at the former South Apron, four landscaped elevated walkways across CKR, T2 and Hoi Bun Road were indicated on the approved Kai Tak OZP. The alignment will be subject to further study. The CKR project also proposed to reprovide a footbridge across Kai Fuk Road to replace an existing subway. Cheung Yip Street and Kai Hing Road will be enhanced to provide at-grade pedestrian connections to the waterfront. All these elevated walkways and pedestrian connections will be implemented under separate PWP items. Their locations are

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shown in **Annex C**. We will keep in view the implementation programmes for these pedestrian facilities which will need to synchronise with the pace of developments at the former South Apron and the Energizing Kowloon East initiative.

TEMPORARY WORKS AREAS

12. Temporary works areas at separate locations of the site (as shown in **Annex D**) will be required for the T2 project to provide accommodations for site staff, storage areas for construction materials and equipment, supporting facilities essential for the operation of TBM, and temporary stockpiling areas for treatment of excavated materials before backfilling, etc. Provision of temporary works areas at both ends of the site in the former South Apron and ex-Cha Kwo Ling Public Cargo Working Area will be necessary to minimize construction traffic impact on existing local roads and to shorten the construction period for the works. The requirements on temporary works areas have been optimised (such as limiting the height of stockpiling materials to about 4m) with the aim to reduce impact on the harbourfront and environment. Visual impacts during construction stage will be mitigated through beautification of site hoardings.

ENVIRONMENTAL IMPACTS

13. The Environmental Impact Assessment (EIA) for T2 has concluded that the project will not have significant adverse residual impacts on the environment after implementation of the recommended mitigation measures during construction and operational stages in terms of air quality, noise and water quality.

14. Based on the preliminary design, the current estimate is that the construction of T2 will generate a total of 1.2 million cubic

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metres (Mm³) of excavated materials. To minimise the environmental impact, on-site treatment of the excavated marine deposits will be carried out to improve the soil properties for backfilling the cut-and-cover tunnel section(s) of T2. It is expected that about 0.23Mm³ of the excavated materials can be reused within the project and that about 0.97Mm³ will be transferred to the fill bank through the temporary barging point to be provided in the former South Apron.

15. As for the landscape and visual impact, the majority of the parts of T2 will be underground on completion of the project, except for the low rise ventilation buildings and the tunnel portals which will be sensitively designed with greening and minimum height. With the landscape proposals to be developed in the detailed design stage, the residual landscape and visual impacts due to T2 are considered acceptable.

16. The EIA report for T2 was exhibited for public inspection between 24 July and 22 August 2013 with no comment received, which was subsequently approved under the EIA Ordinance on 19 September 2013.

WAY FORWARD

17. The T2 project is at the preliminary design stage. In parallel with completing the statutory procedures, we will further develop the design of the T2 project and consult Members again at the detailed design stage. Members are invited to note the latest progress of the project.

Civil Engineering and Development Department
September 2013

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Attachments

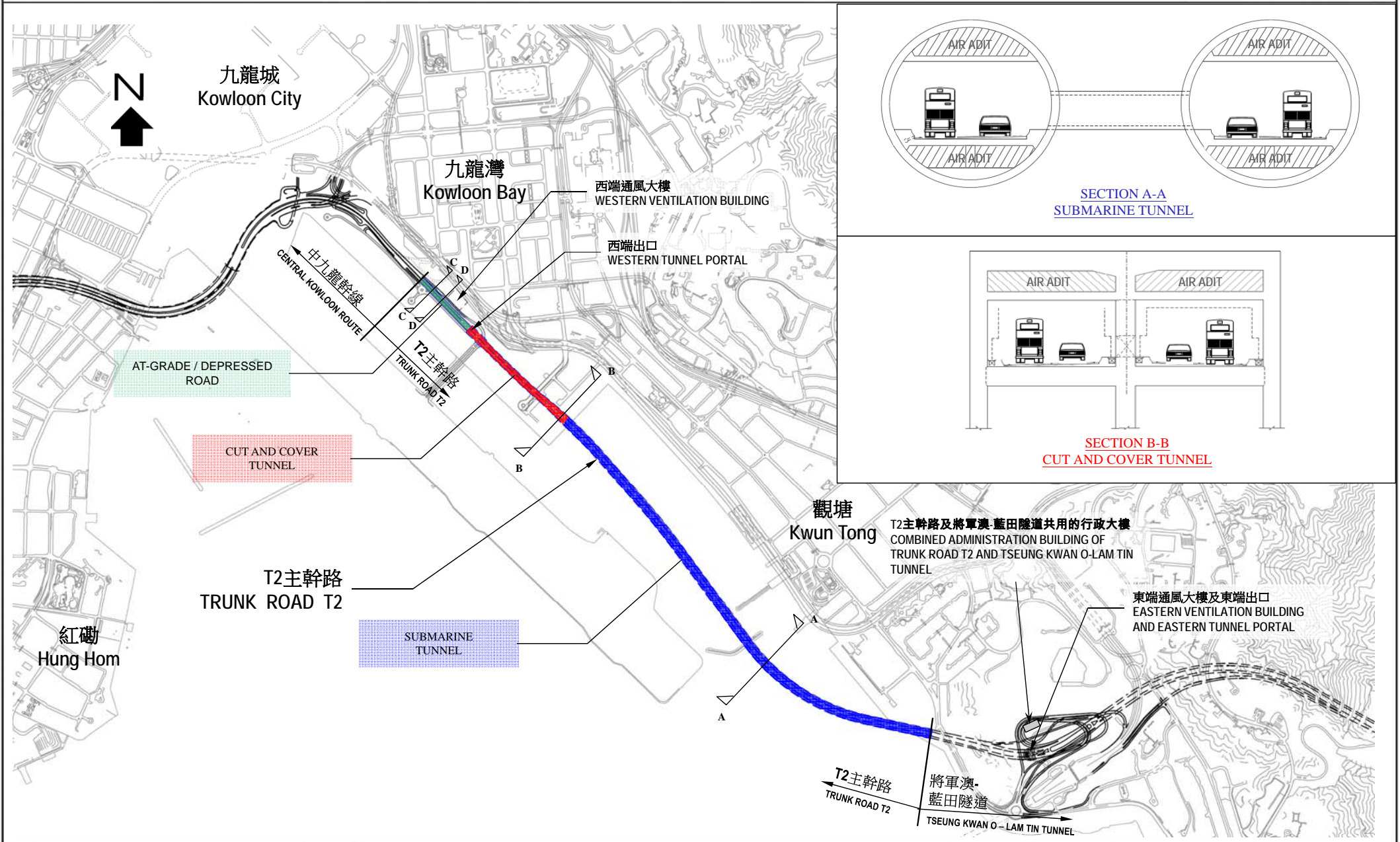
Annex A: Layout plan and typical cross sections of Trunk Road T2

Annex B: Photomontages of western tunnel portal and western ventilation building

Annex C: Accessibility to the Waterfront at the former South Apron

Annex D: Proposed temporary works areas for Trunk Road T2

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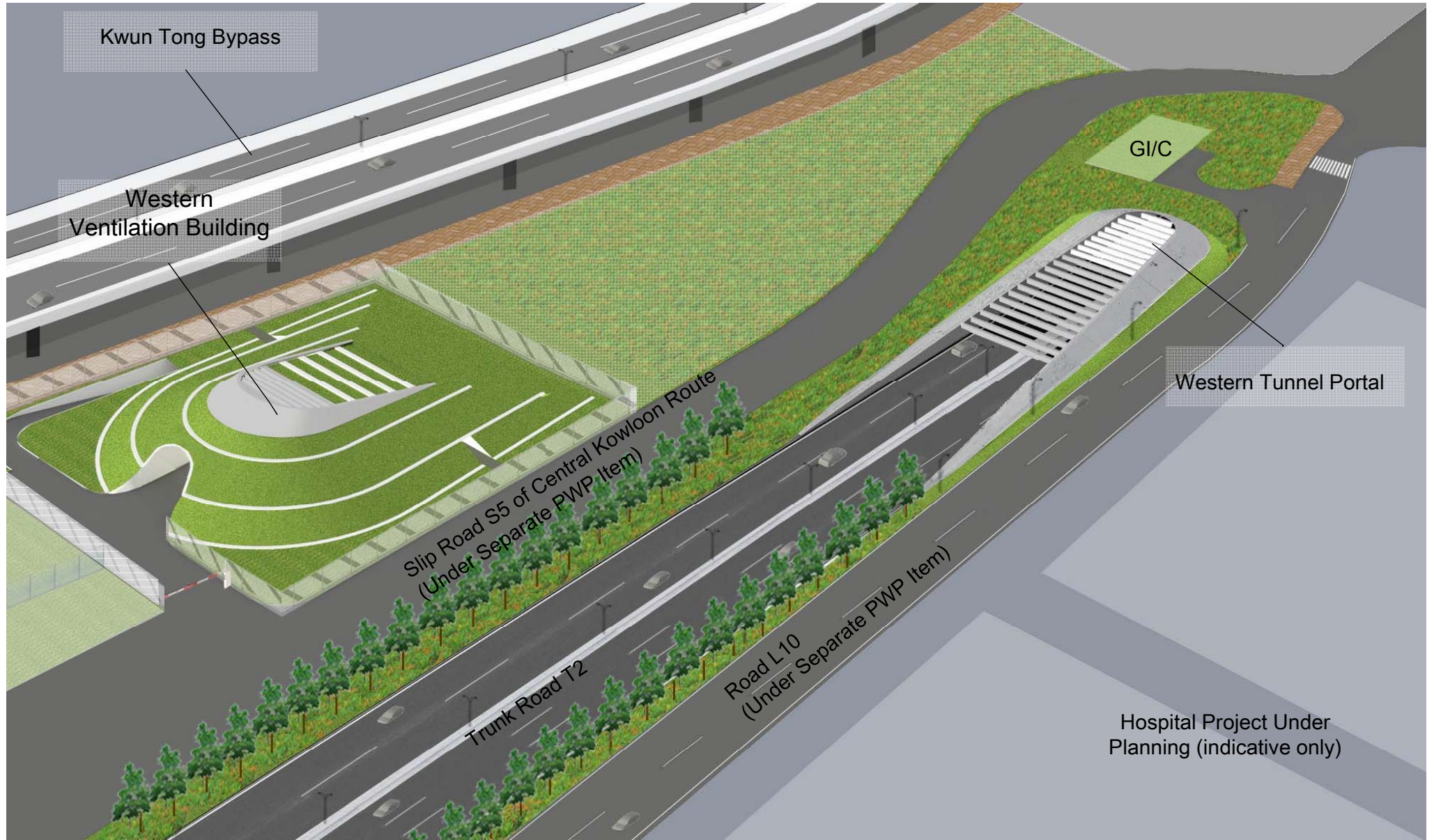


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Rev.	Description	Date

Drawing title
Annex A – Layout plan and typical cross sections of Trunk Road T2
 (Sheet 1 of 2)

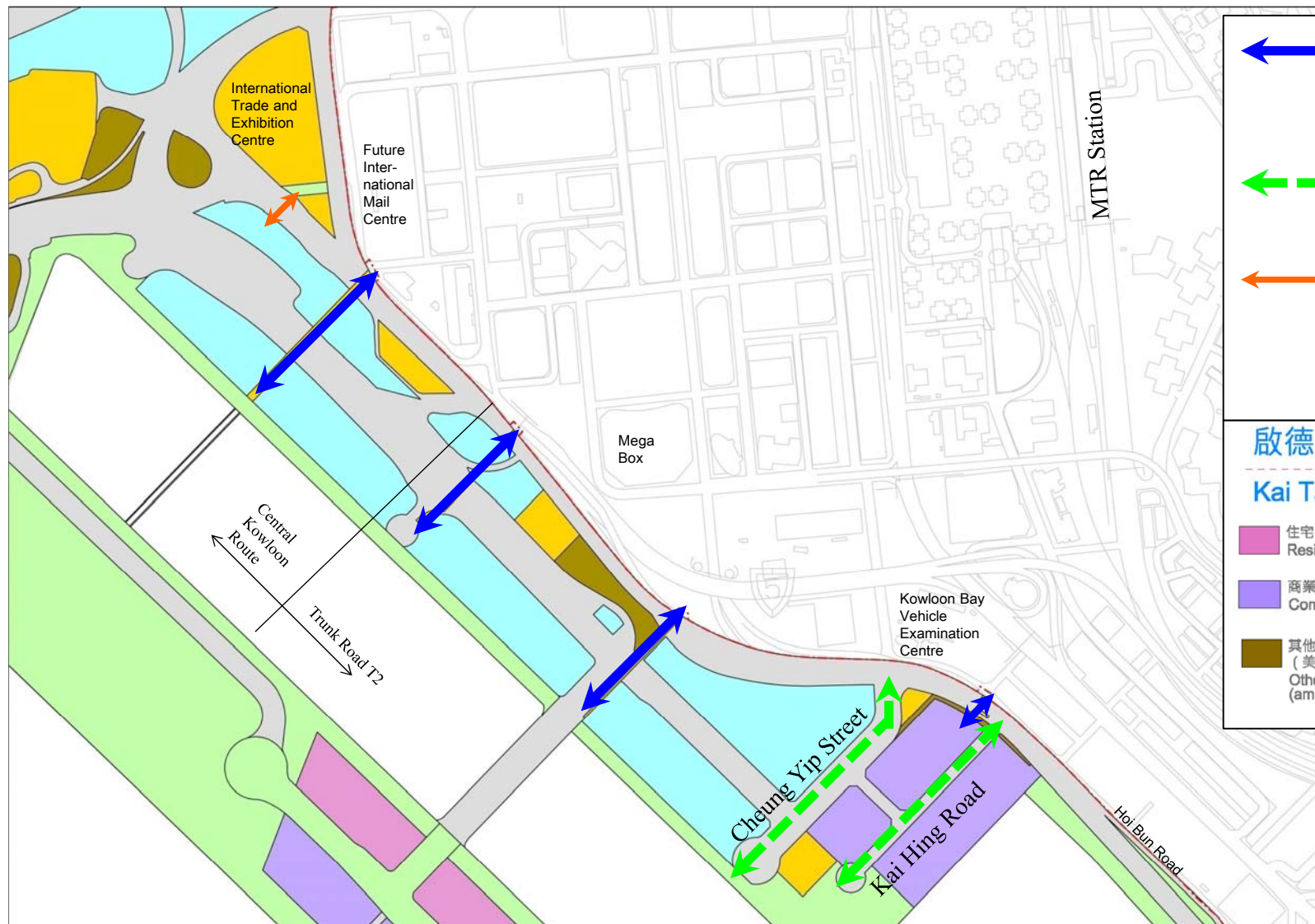
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File name					Rev.






* The landscaped area is subject to detailed design.

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Rev.		Description		Date	Drawing title	Original Size	A3	Scale	N.T.S.	Date	4 Oct 2013
					Annex B: Photomontages of western tunnel portal and western ventilation building (Sheet 1 of 2)	© Copyright reserved		File name		Drawing No.	B-001
										Rev.	



-  Landscaped elevated walkway (Under separate PWP Item)
-  At-grade pedestrian connection (Under separate PWP Item)
-  Footbridge proposed under Central Kowloon Route (Under separate PWP Item)

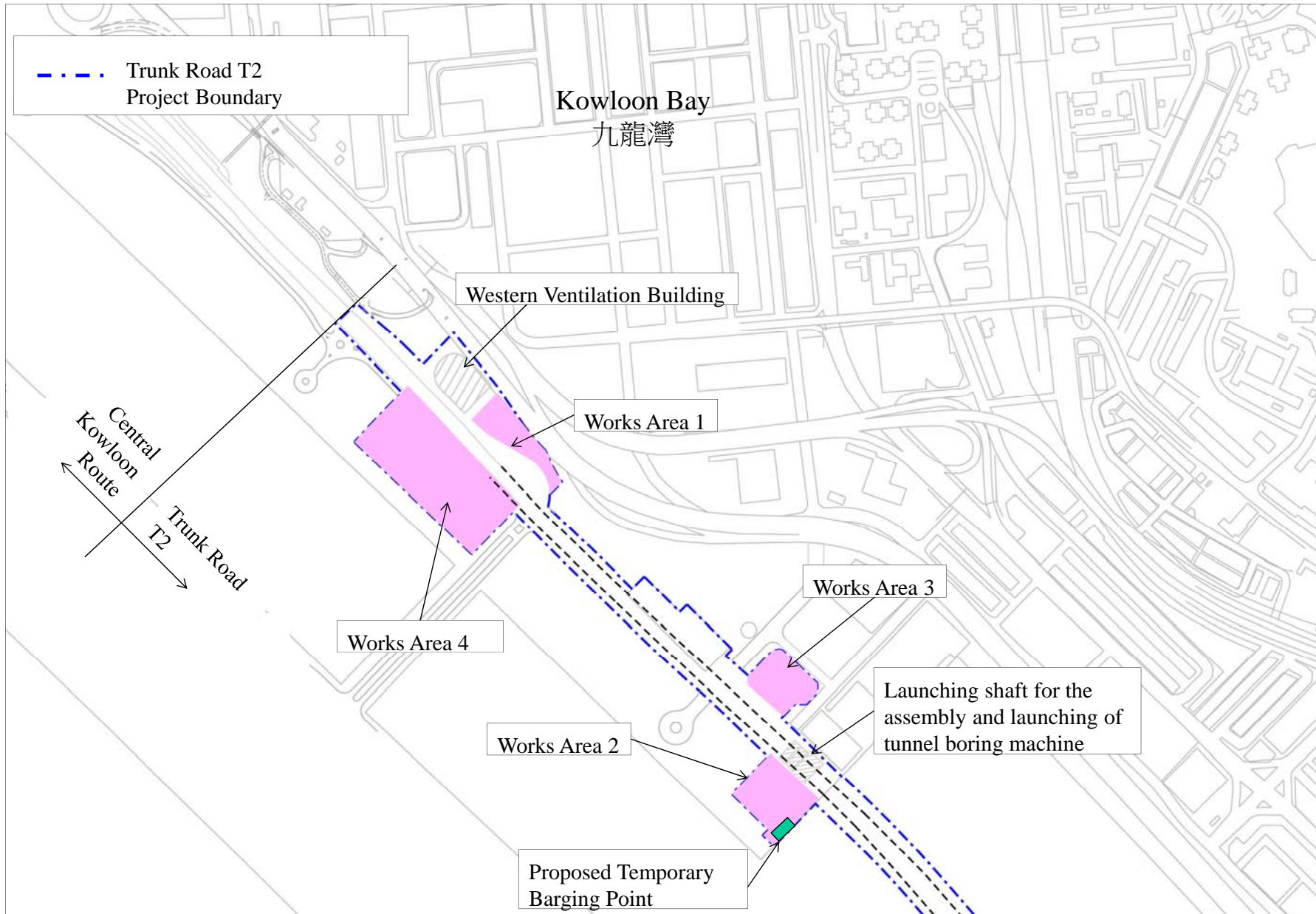
啟德土地規劃

Kai Tak Land Use Zoning

 住宅 (丙類) Residential (Group C)	 政府、機構或社區 Government, institution or community
 商業 Commercial	 休憩用地 Open space
 其他指定用途 (美化市容地帶) Other specified uses (amenity area)	 其他指定用途 Other specified uses

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Annex C: Accessibility to the Waterfront at the former South Apron							© Copyright reserved		Drawing No.		C-001		Rev.		

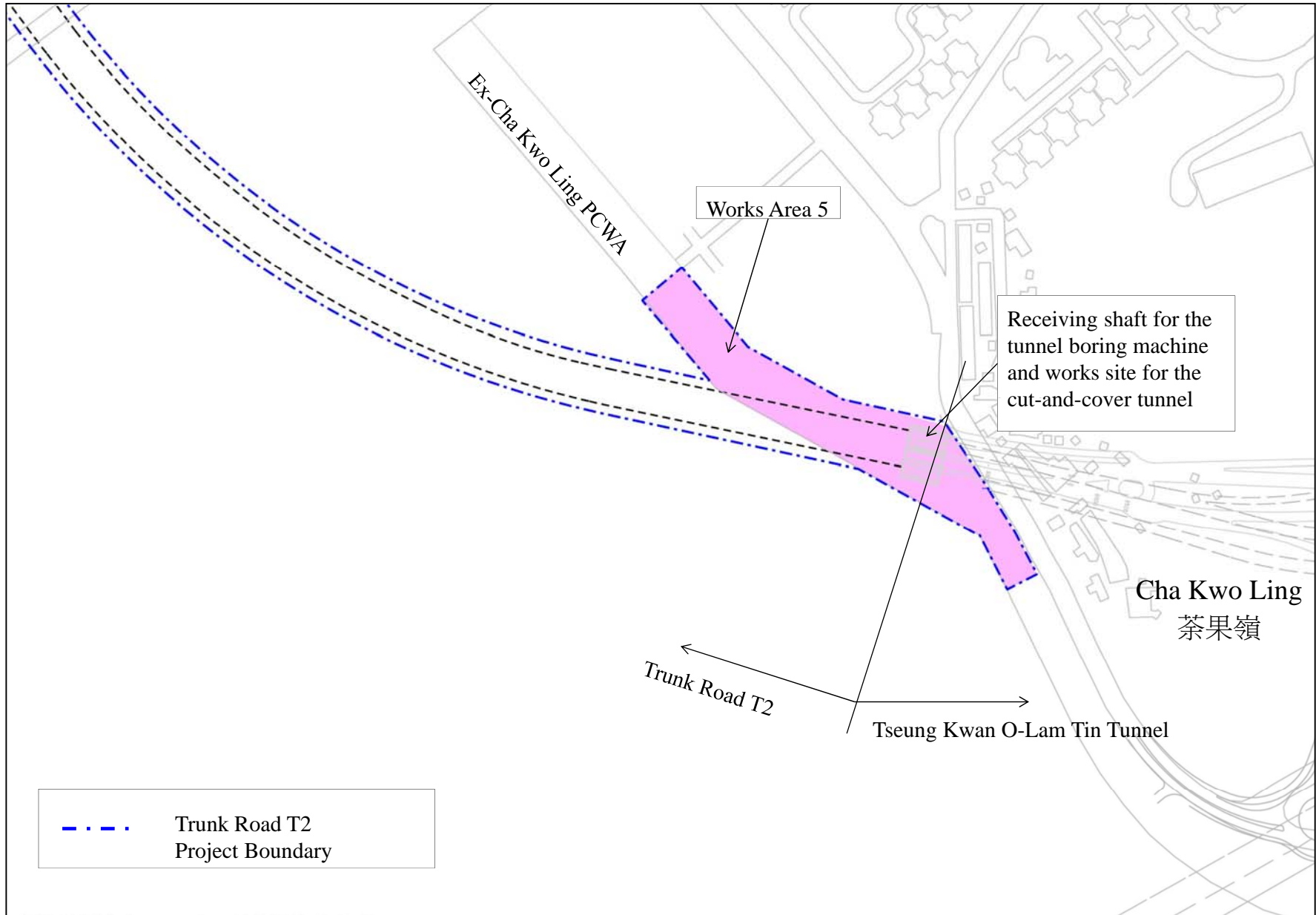


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--- Trunk Road T2
Project Boundary

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