

路政署 主要工程管理處

Major Works Project Management Office

Highways Department



中九龍 幹線
Central Kowloon Route

海濱事務委員會會議
Meeting with
Harbourfront Commission

2013 年1月7日

7 January 2013

目錄 Outline



中九龍幹線簡介 **Introduction to CKR**

九龍灣臨時填海 **Temporary Reclamation at Kowloon Bay**

交通方面理據 **Traffic Justifications**

零填海方案 **Alternatives to Reclamation**

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臨時填海的最少範圍 **Minimum Extent of Temporary Reclamation**

總結 **Conclusions**

公眾參與 **Public Engagement**

啟德交匯處 **Kai Tak Interchange**

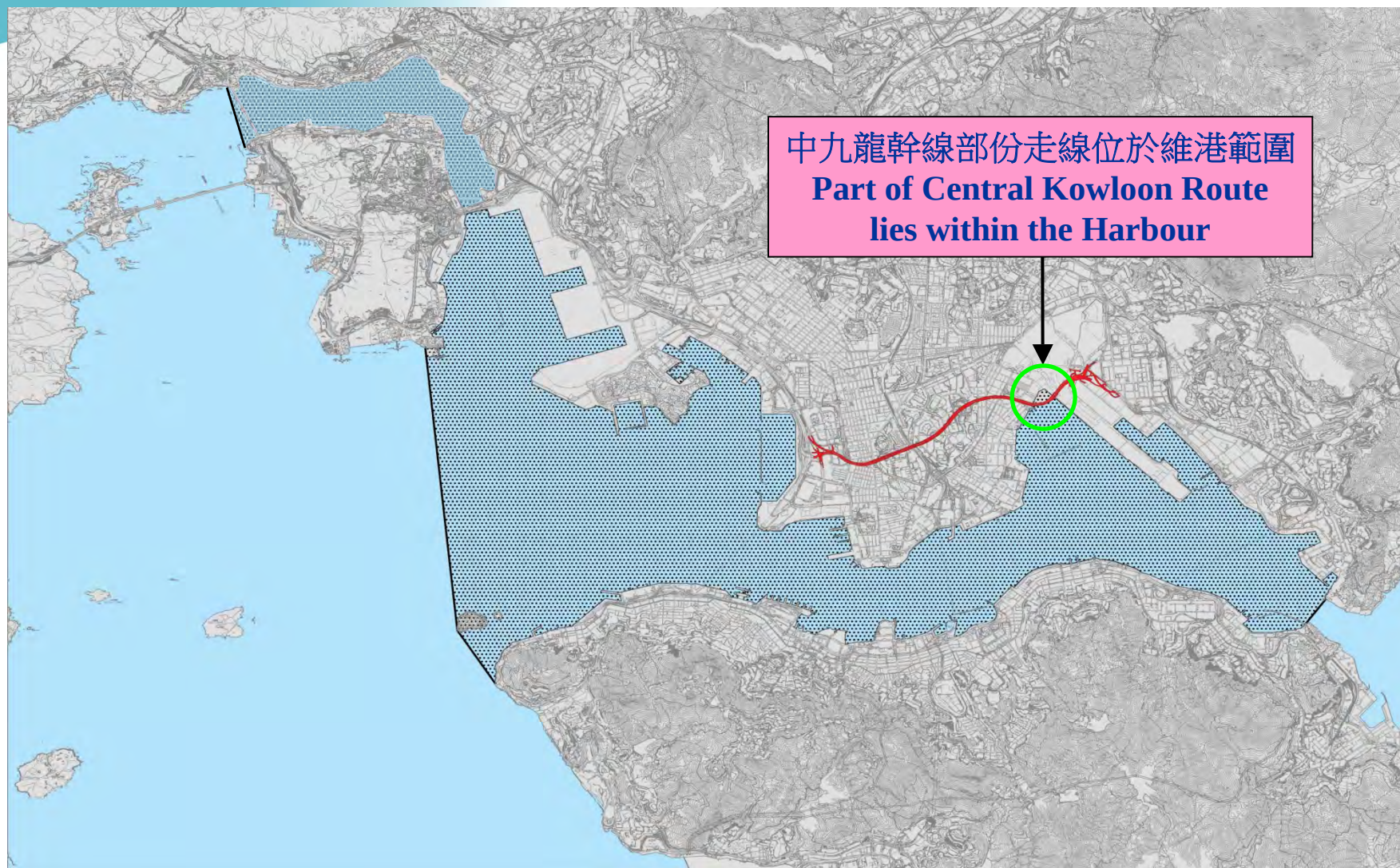
中九龍幹線簡介 Introduction to Central Kowloon Route



首選走線
Preferred Alignment

符合保護海港條例

Compliance with the Protection of the Harbour Ordinance

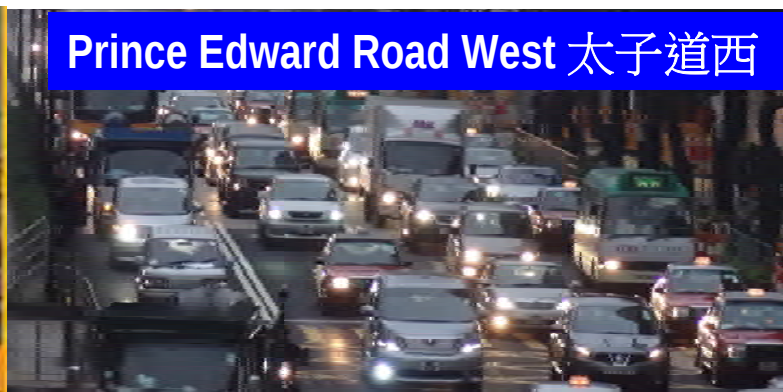


中九龍東西向主要幹線經常出現交通擠塞 Frequent Traffic Congestion at major east west links in Central Kowloon

Boundary Street 界限街



Prince Edward Road West 太子道西



Chatham Road North 漆咸道北



Argyle Street 亞皆老街



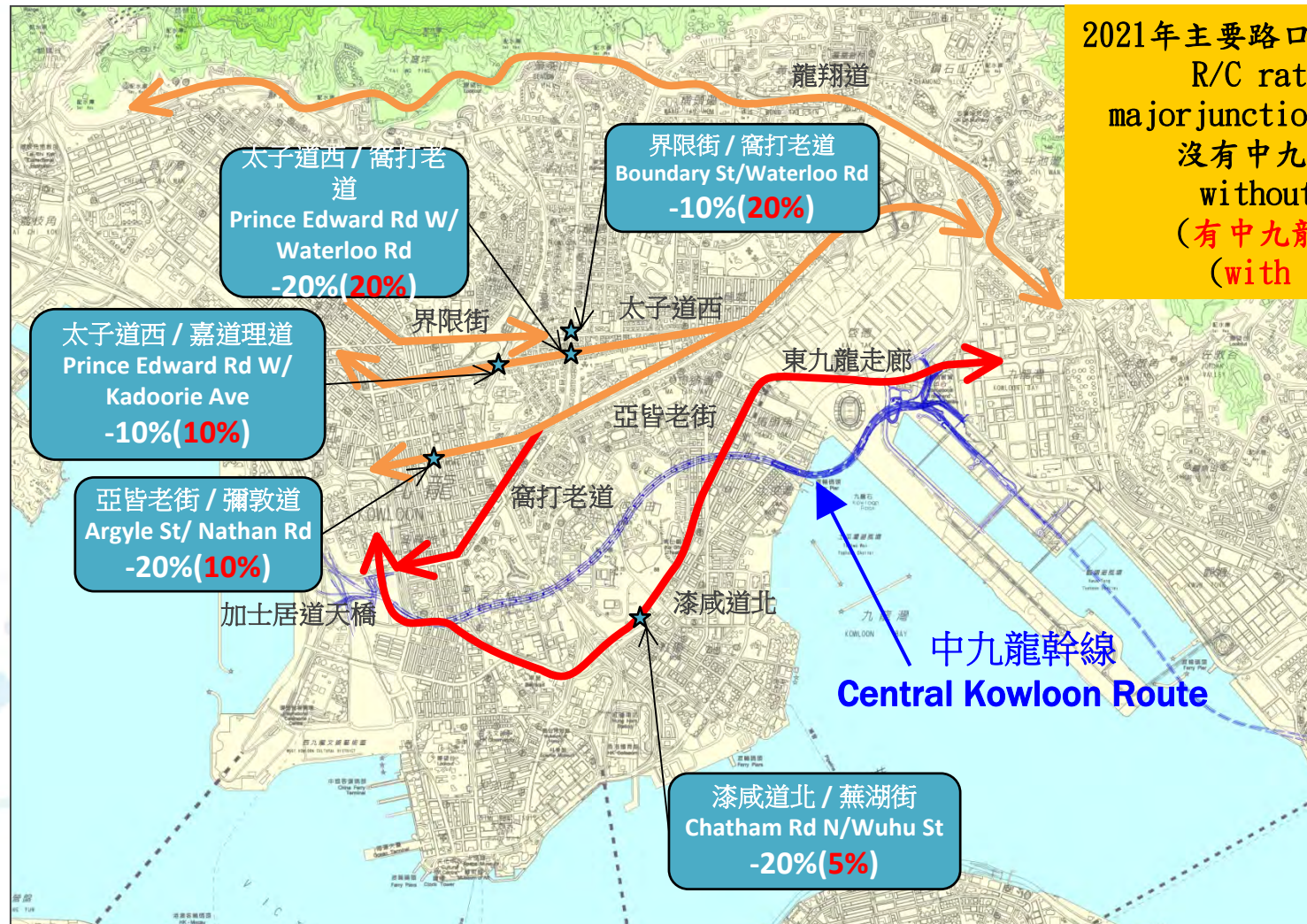
Lung Cheung Road 龍翔道



分流車輛減負荷 Traffic Diversion to Reduce Loading



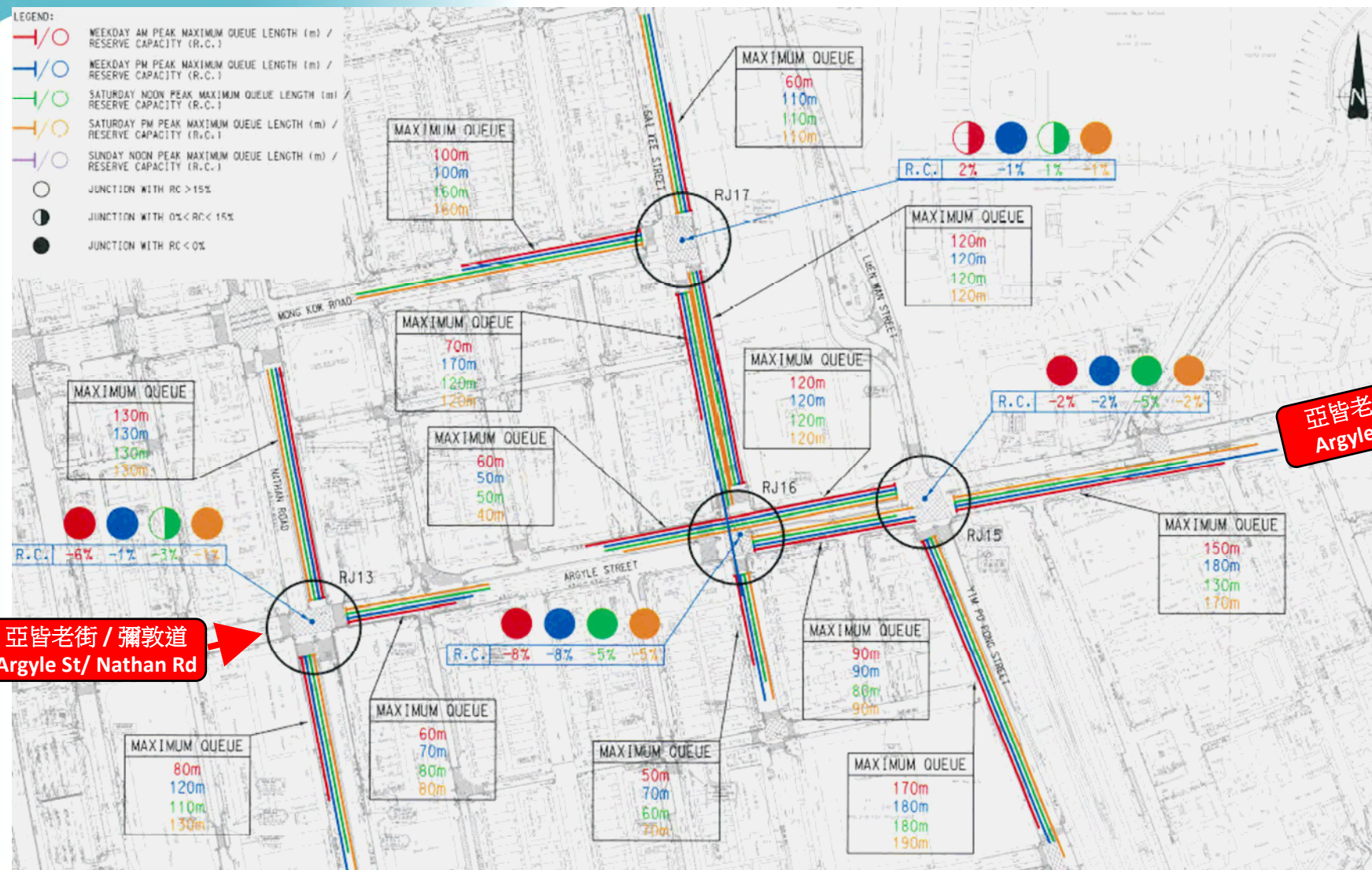
分流車輛減負荷 Traffic Diversion to Reduce Loading



2021年主要路口剩餘容車量
R/C ratio at
major junctions in 2021
沒有中九龍幹線
without CKR
(有中九龍幹線)
(with CKR)

2011年旺角主要路口車龍長度

Observed Queue Lengths at Mong Kok Major Junctions in 2011

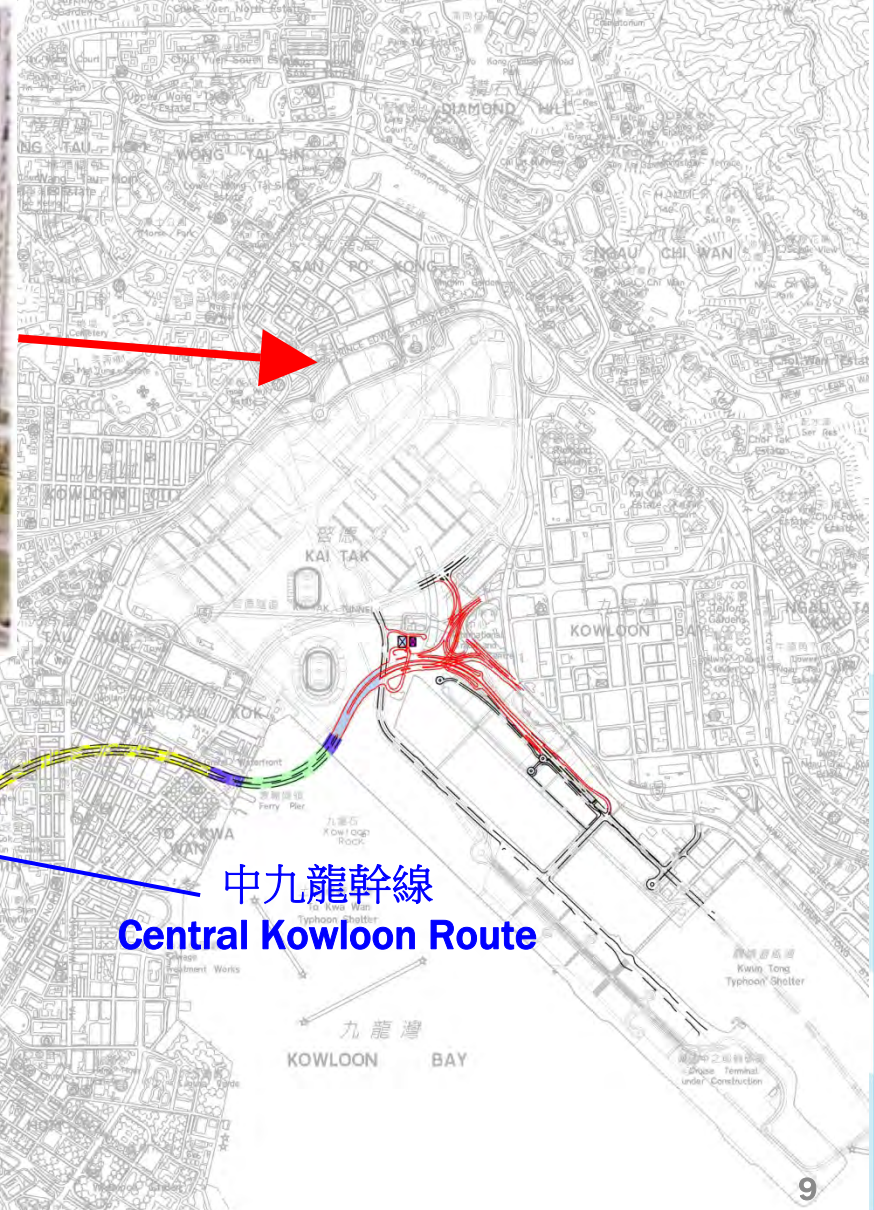


亞皆老街
Argyle St

亞皆老街 / 彌敦道
Argyle St / Nathan Rd

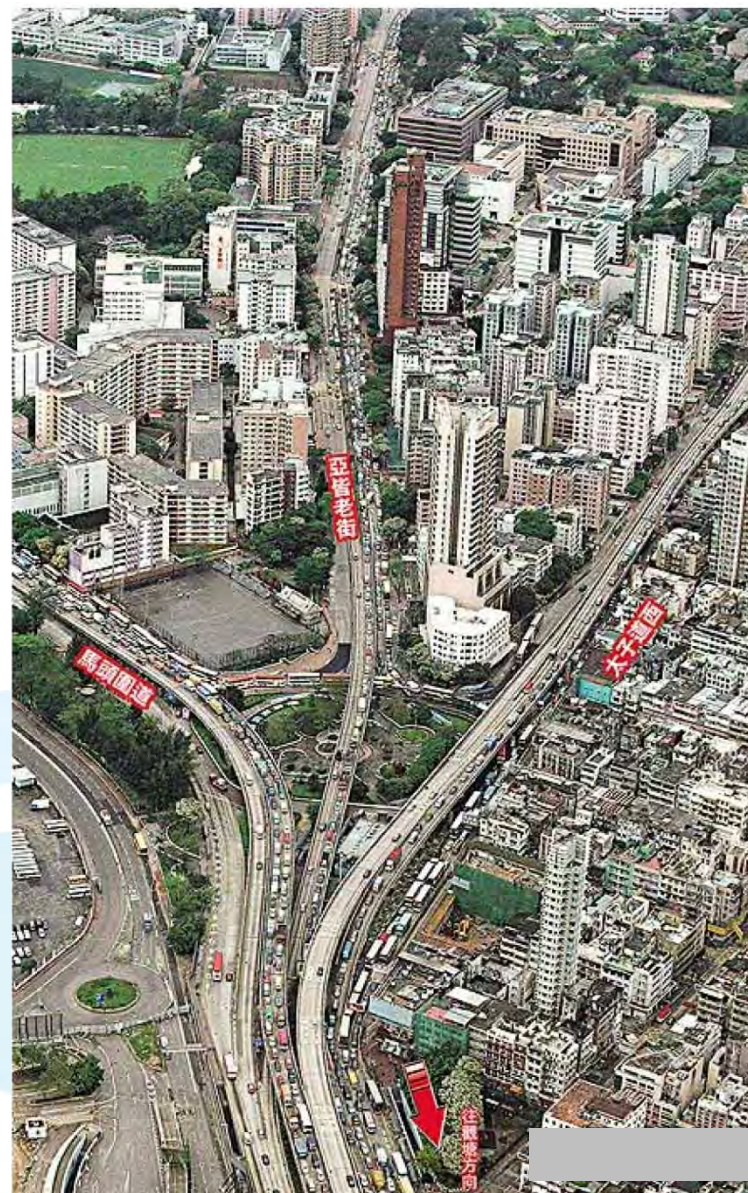
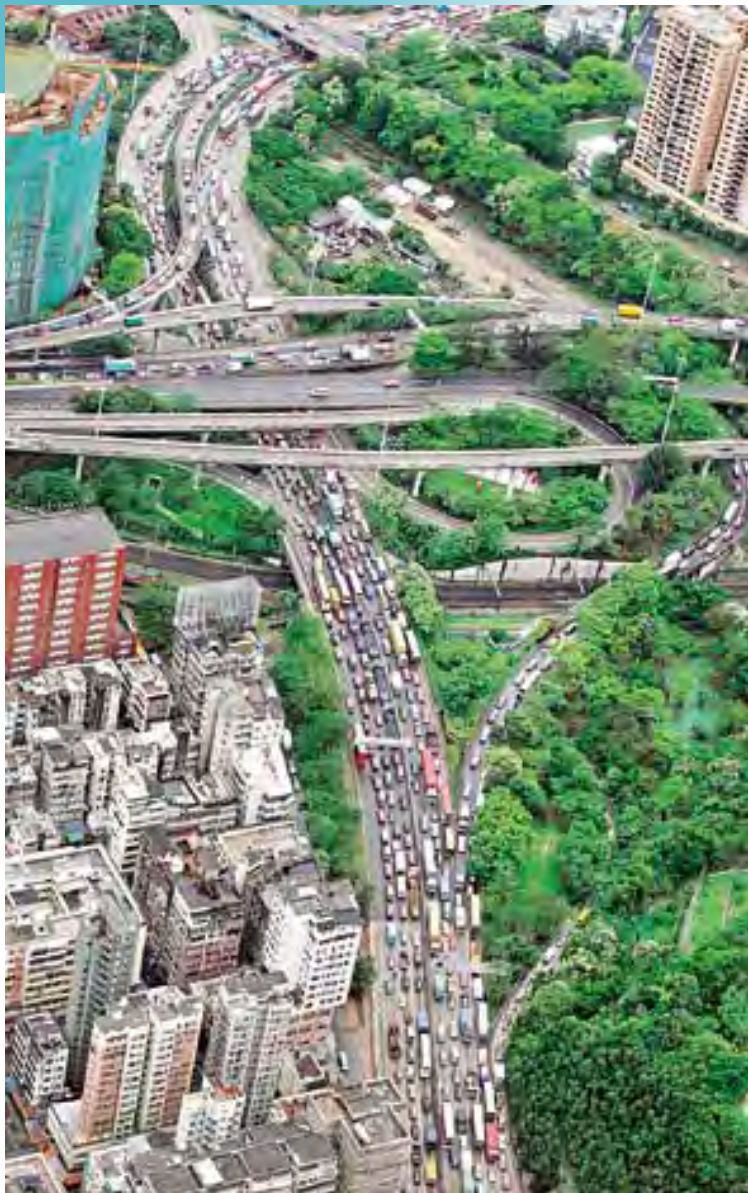
2005年5月9日太子道東嚴重交通事故

Major Incident in Prince Edward Road East on 9 May 2005



2005年5月9日太子道東嚴重交通事故

Major Incident in Prince Edward Road East on 9 May 2005



連接九龍東西道路網 Connectivity



現有東西主幹道

Existing Major
E-W Corridors

30-35 分鐘mins

(2021年若沒有中九龍幹線)

If without CKR in 2021

中九龍幹線CKR

5 分鐘 mins



油麻地交匯處
Yau Ma Tei Interchange



啟德交匯處
Kai Tak Interchange

連繫各區 四通八達

Forming a Comprehensive Traffic Network

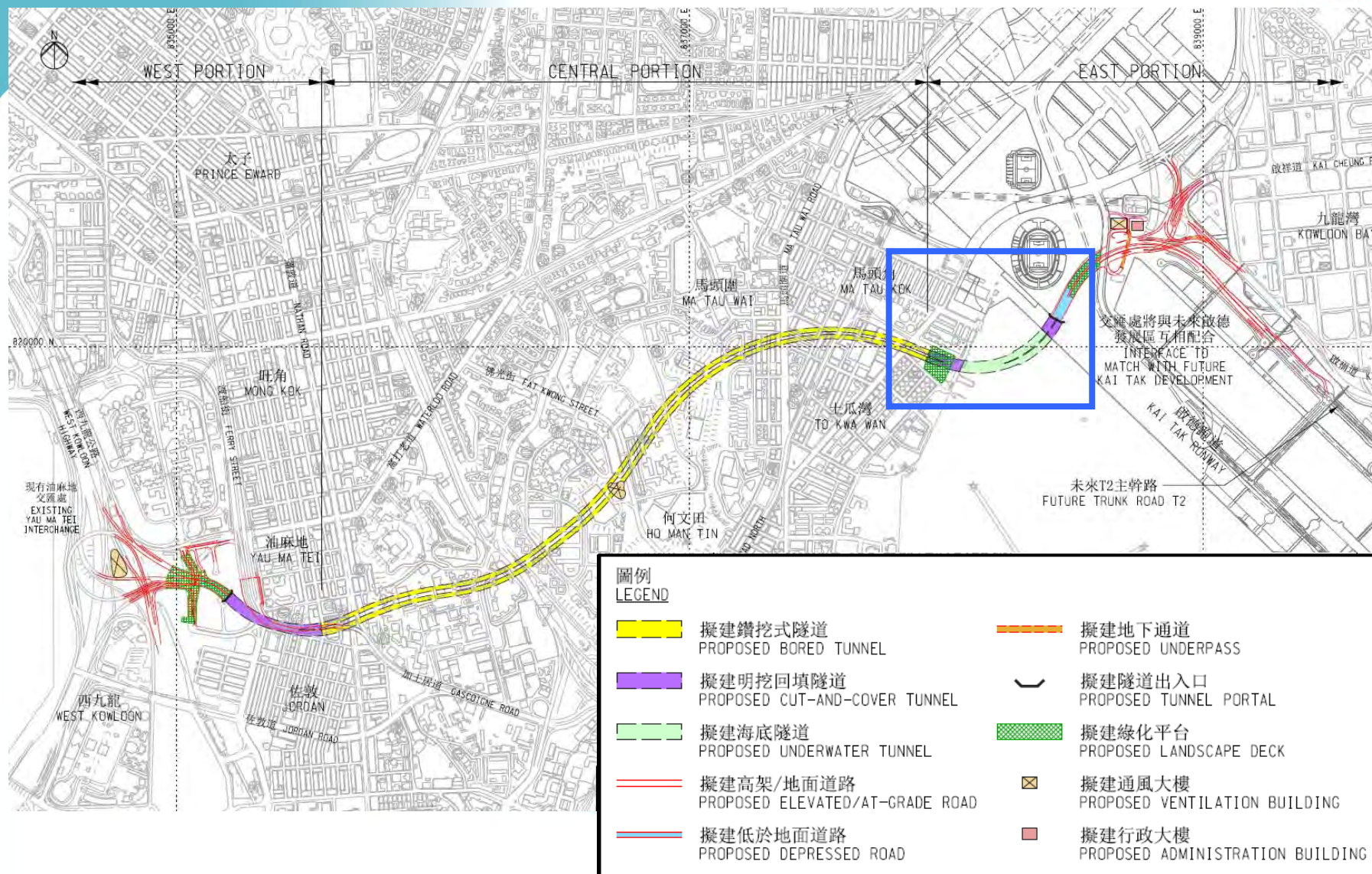


其他得益 Other Benefits



經濟效益	Economic Benefits
節省出行時間	Savings in Travel Time
節省車輛營運成本	Savings in Vehicle Operational Costs
環境效益	Environmental Benefits
減少二氧化碳，氮氧化物和可吸入懸浮粒子的排放量	Reduction in CO ₂ , NO _x and RSP emissions
社會福利	Social Benefits
方便市民出行	Increase in Passenger <u>MOBILITY</u>
改善生活和工作環境	Improving <u>LIVING</u> and <u>WORKING</u> Environment

首選走線 Preferred Alignment



已考慮的零填海方案 Alternatives to Reclamation considered



建造方法

Construction Methods

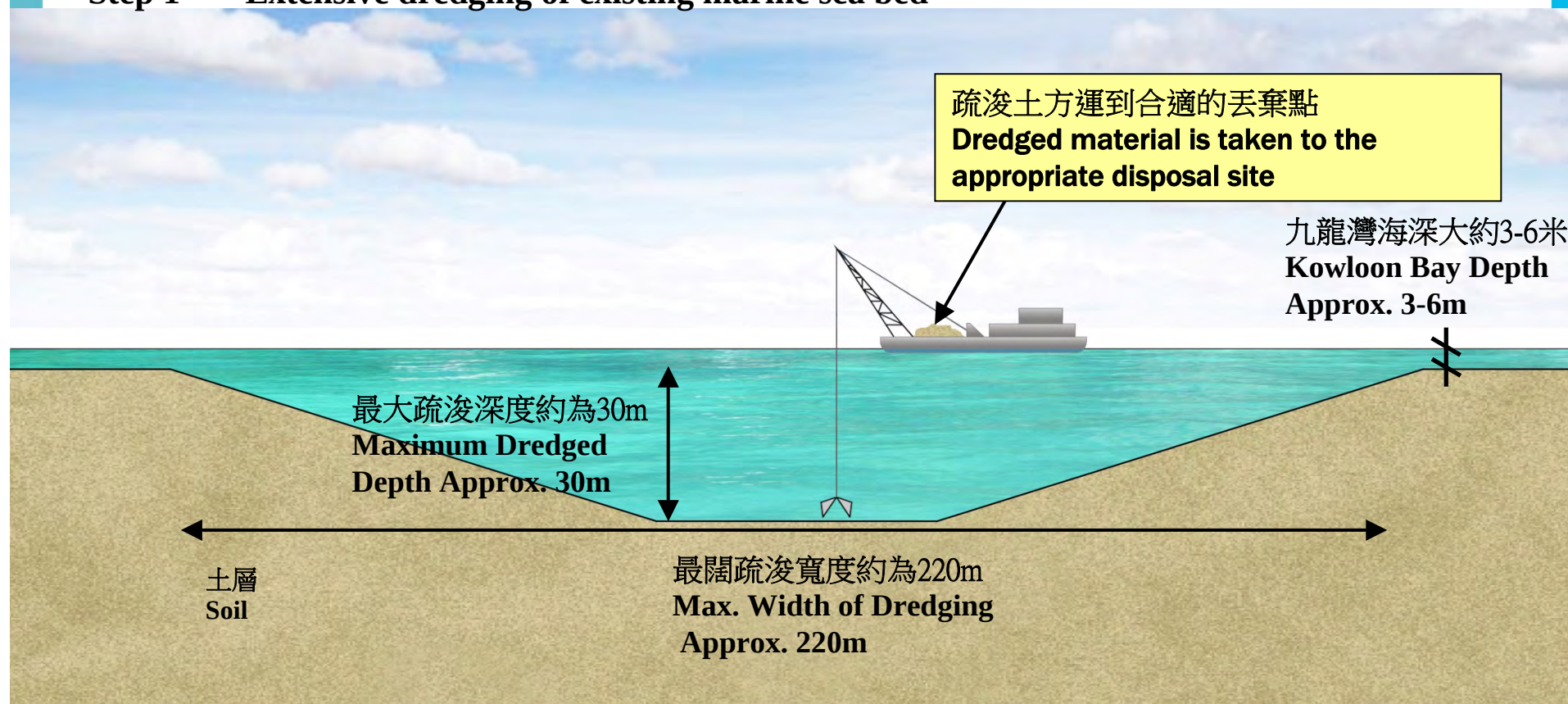
- 沉管式隧道
Immersed Tube Tunnel (IMT)
- 鑽挖隧道（隧道鑽挖機）
Bored Tunnel (Tunnel Boring Machine (TBM))

沉管式隧道的施工方案 IMT Construction Method



第一階段 - 在海床進行大面積疏浚

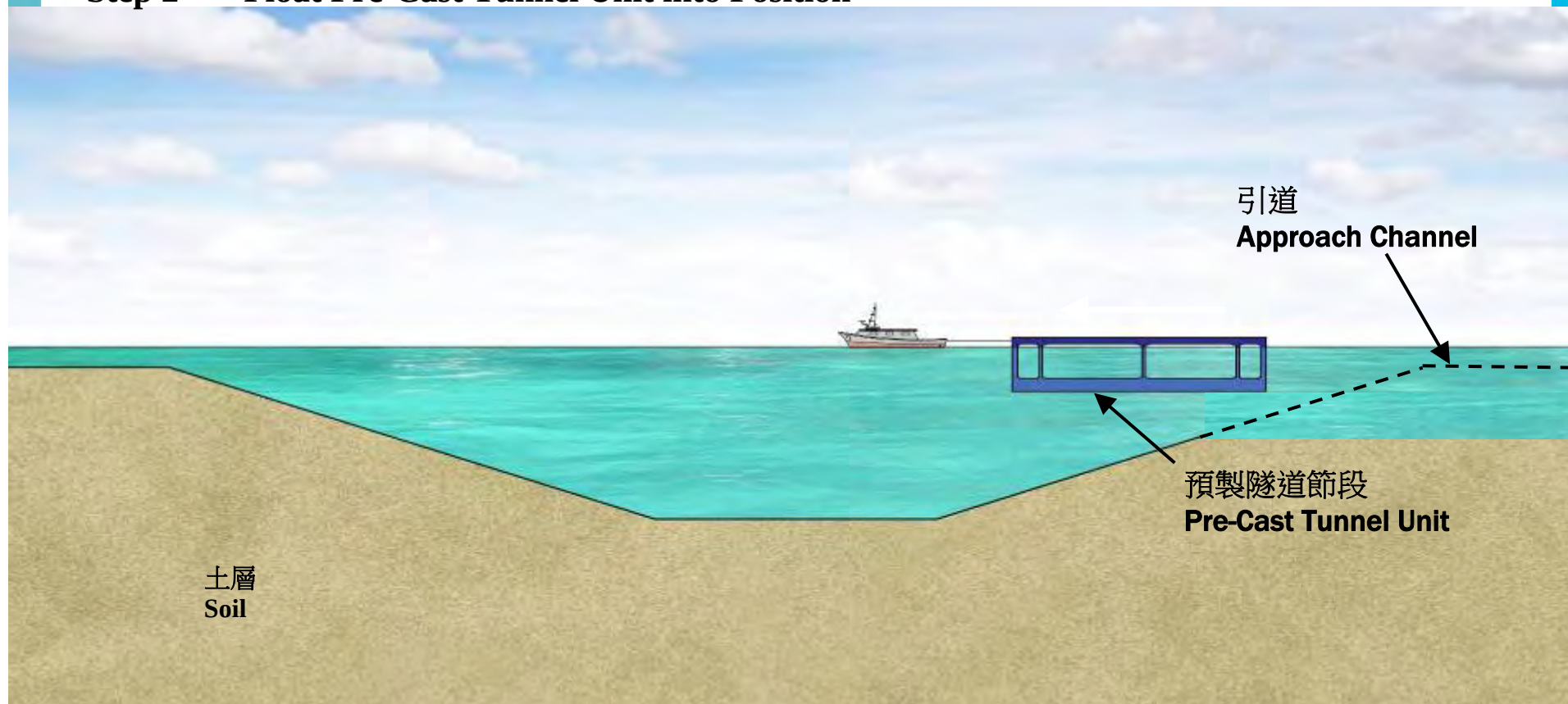
Step 1 - Extensive dredging of existing marine sea bed



沉管式隧道的施工方案 IMT Construction Method



第二階段 - 將預製隧道組件浮運到指定地點
Step 2 - Float Pre-Cast Tunnel Unit into Position

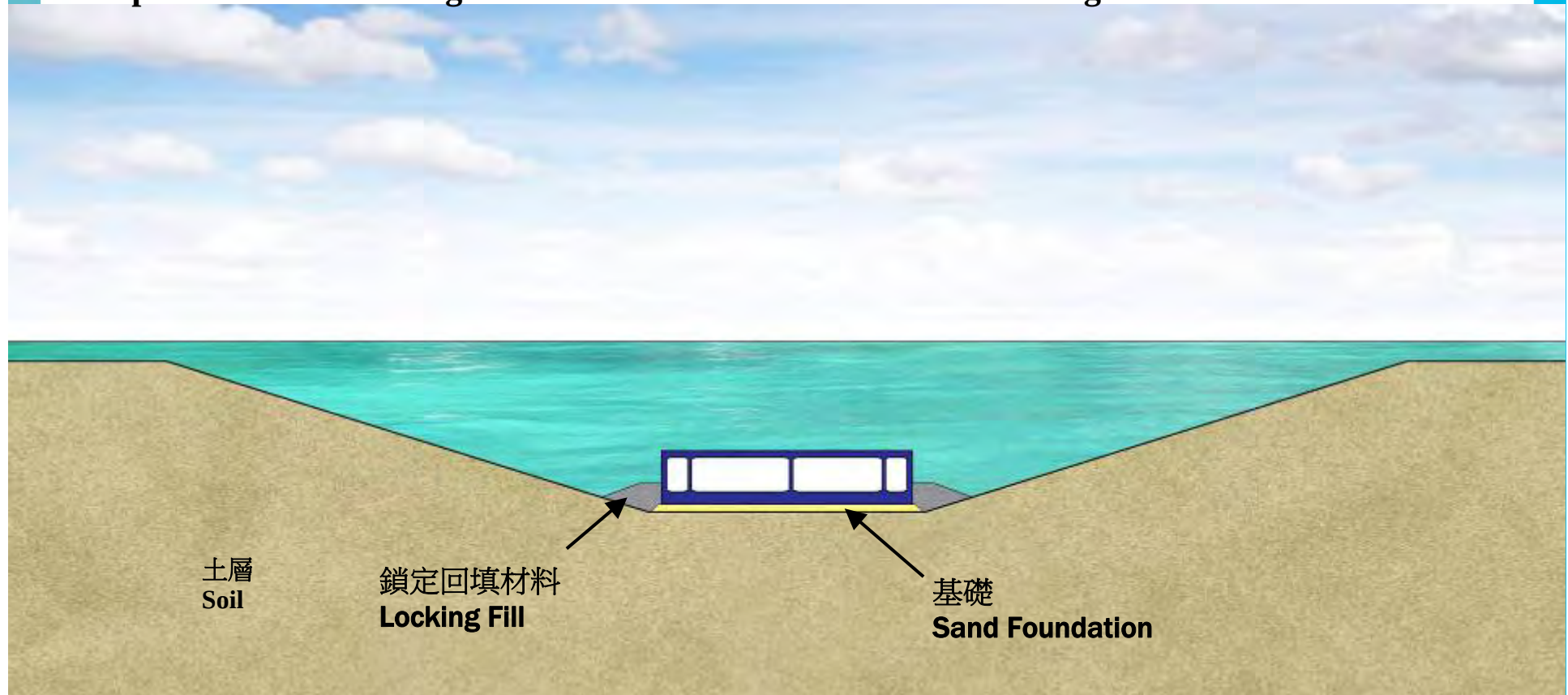


沉管式隧道的施工方案 IMT Construction Method



第三階段 - 沉放及接駁預製組件和回填鎖定

Step 3 - Sink and Merge Pre-Cast Tunnel Units and Place Locking Fill

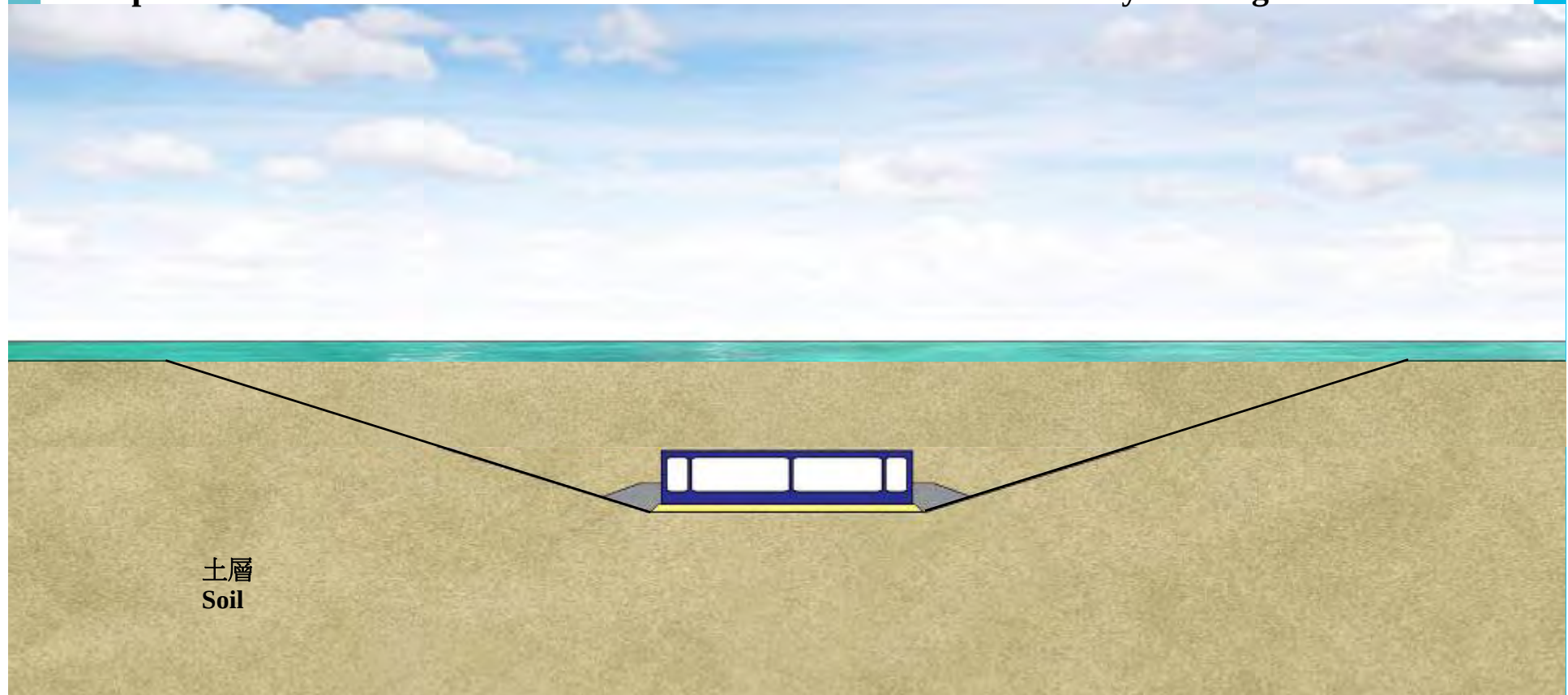


沉管式隧道的施工方案 IMT Construction Method



第四階段 - 回填把海床恢復原狀

Step 4 - Backfill Pre-Cast Units and Restore Sea Bed to as Previously Existing



土層
Soil

沉管式隧道的施工方案 IMT Construction Method



建造深槽要拆除以下結構
Deep trench would require the demolition of:

中華煤氣公司運載原材料碼頭

HKCG Gas Station Jetty

馬頭角公眾碼頭

Ma Tau Kok Public Pier

九龍城渡輪碼頭

Kowloon City Ferry Pier

車輛渡輪碼頭(已停用)

Vehicular Ferry Pier (Disused)

啟德
KAI TAK

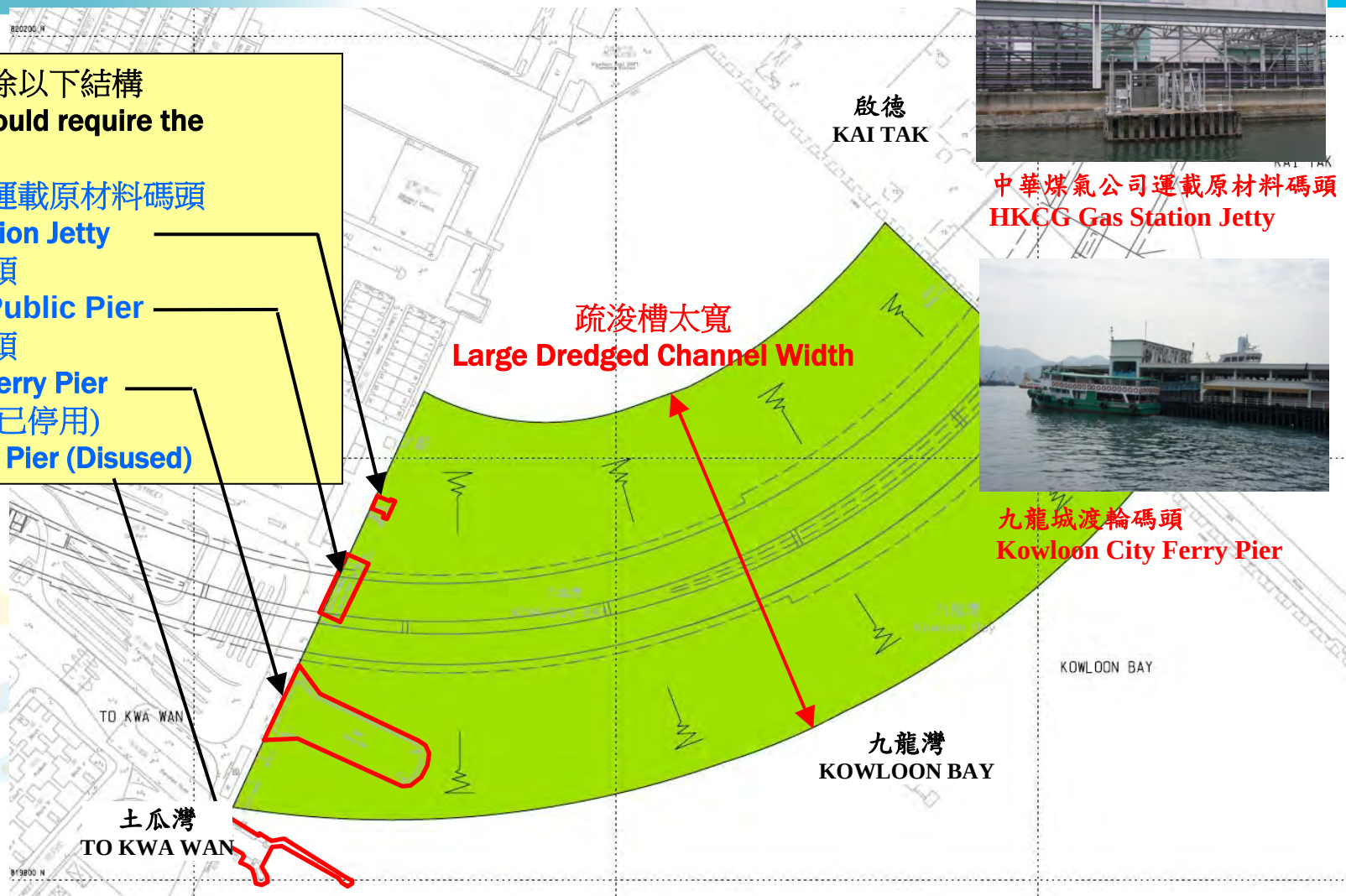


中華煤氣公司運載原材料碼頭
HKCG Gas Station Jetty

疏浚槽太寬
Large Dredged Channel Width



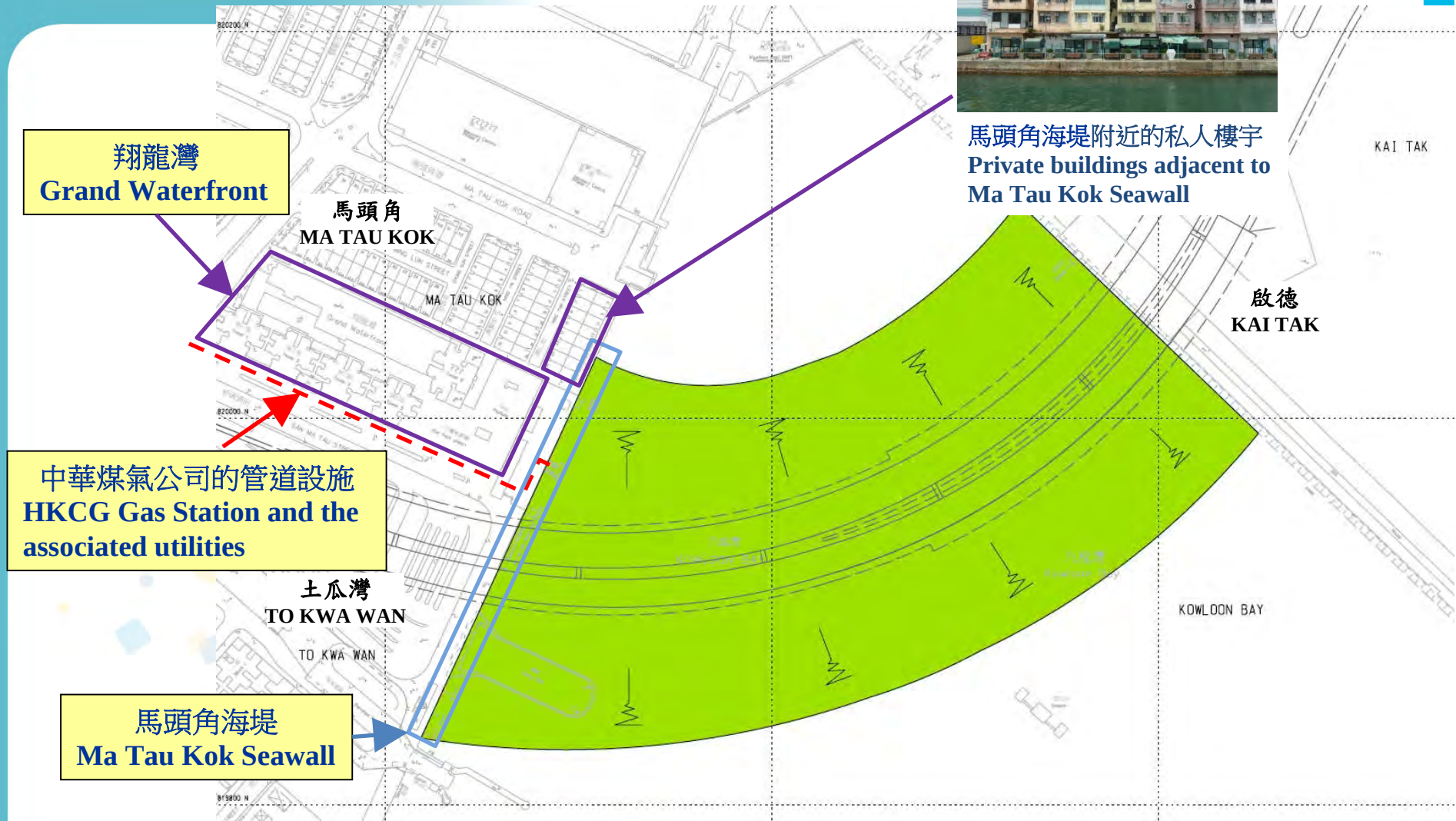
九龍城渡輪碼頭
Kowloon City Ferry Pier



沉管式隧道的施工方案 IMT Construction Method



馬頭角海堤附近的私人樓宇
Private buildings adjacent to Ma Tau Kok Seawall



沉管式隧道的施工方案 IMT Construction Method



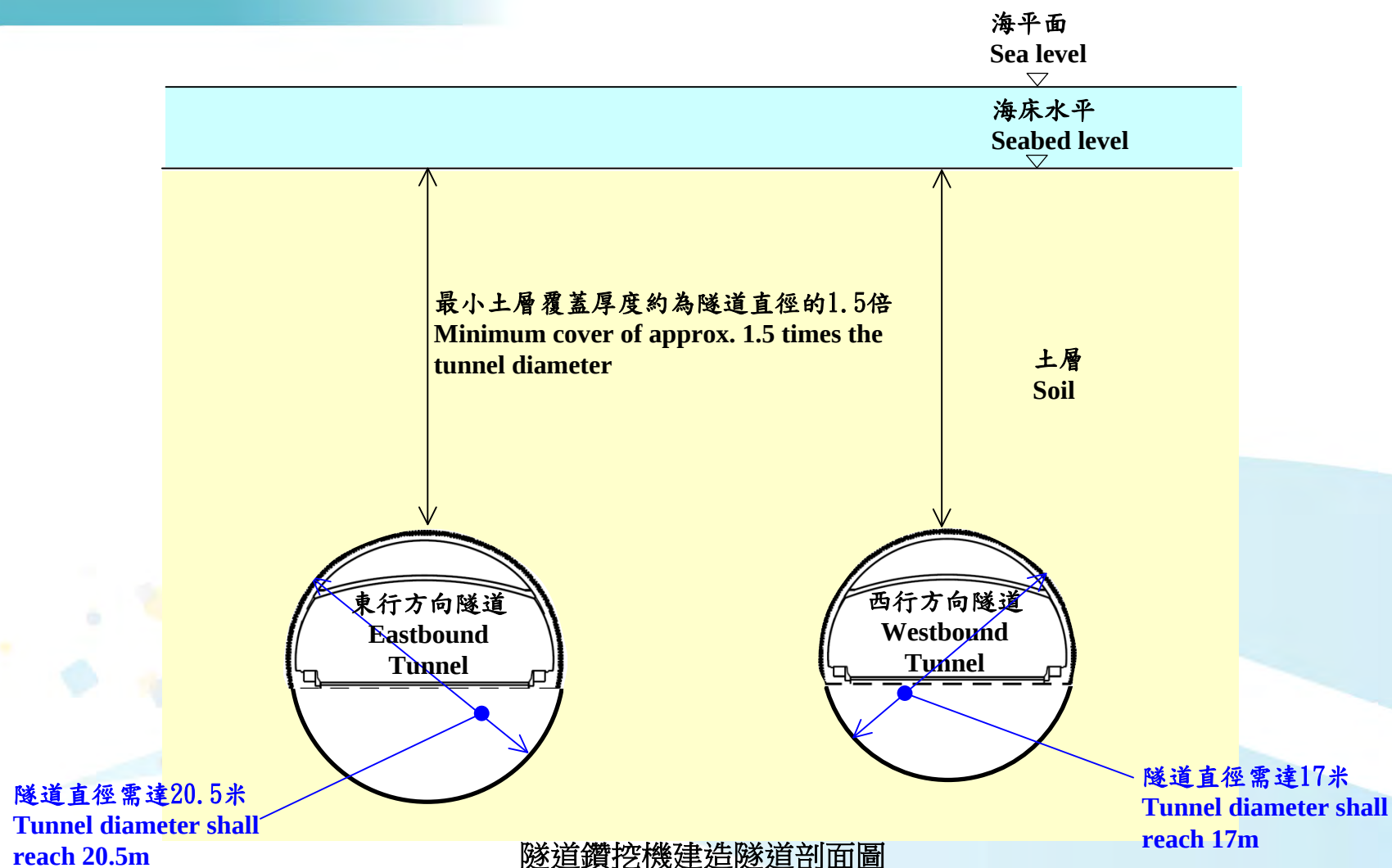
沉管式隧道方案不可行
IMT construction method is not feasible

鑽挖隧道施工方案 Bored Tunnel Construction Method



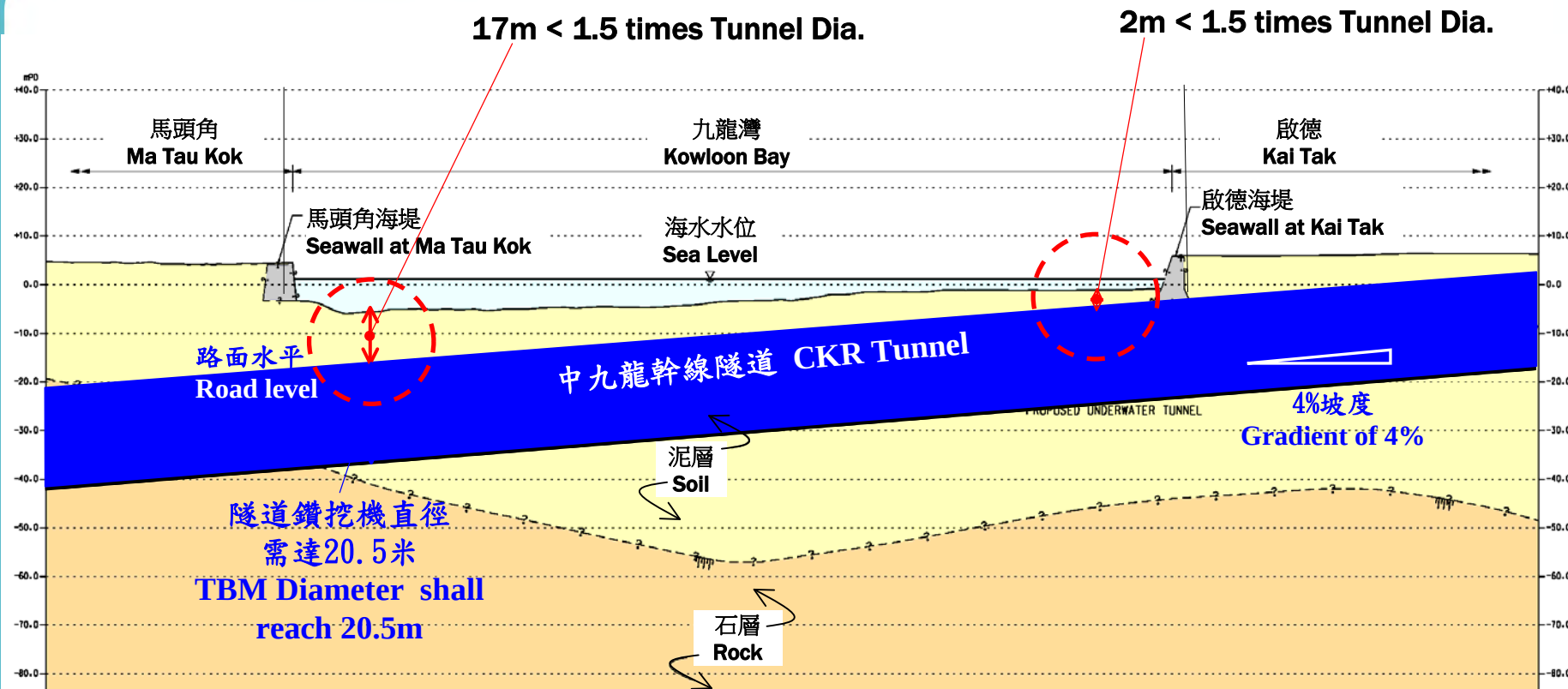
隧道鑽挖機
Tunnel Boring Machine

鑽挖隧道施工方案 Bored Tunnel Construction Method



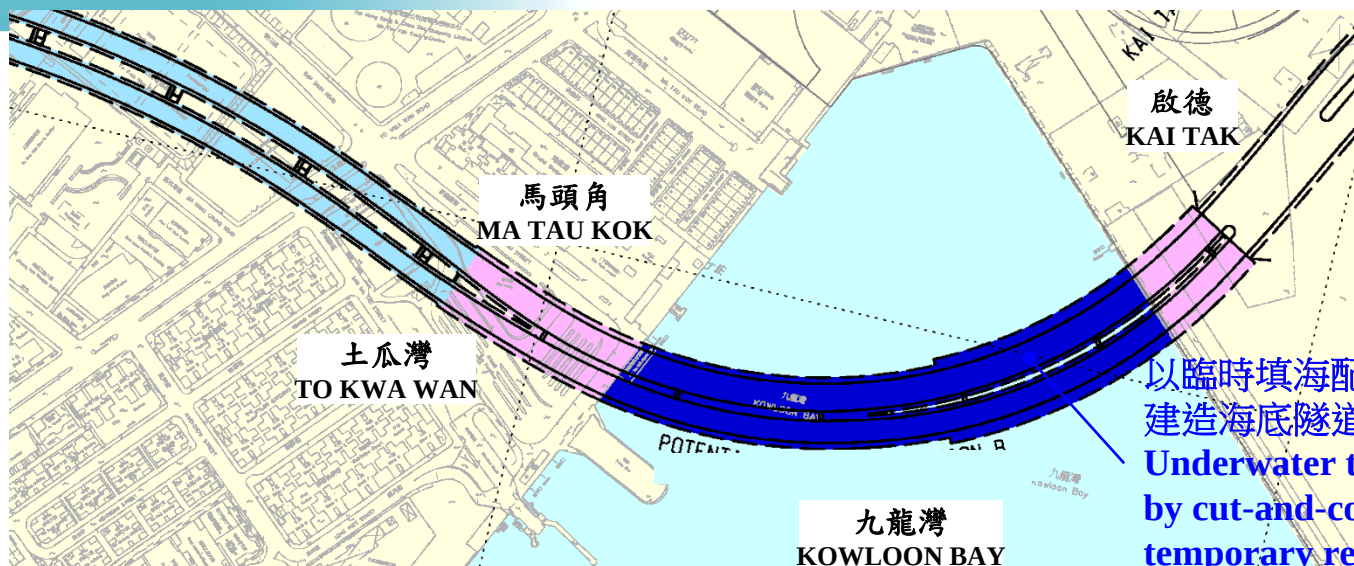
隧道鑽挖機建造隧道剖面圖
Typical Section of Bored Tunnel by TBM

鑽挖隧道施工方案 Bored Tunnel Construction Method



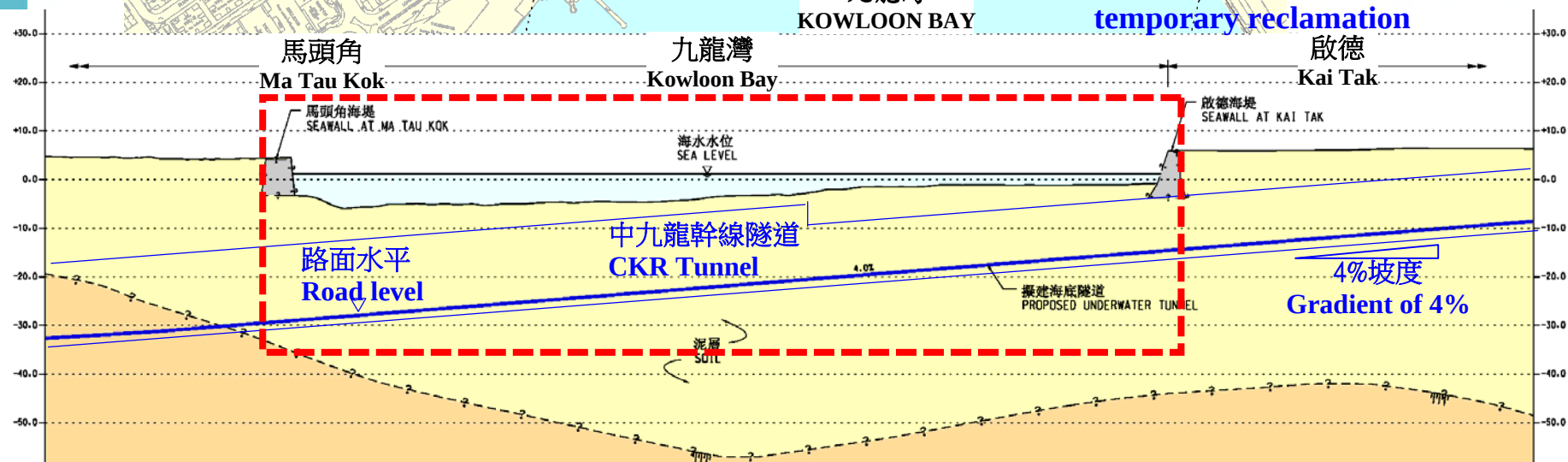
鑽挖隧道方案不可行
Bored tunnel method is not feasible

明挖回填隧道 Cut-and-Cover Tunnel



以臨時填海配合明挖回填方法
建造海底隧道

Underwater tunnel constructed
by cut-and-cover method with
temporary reclamation

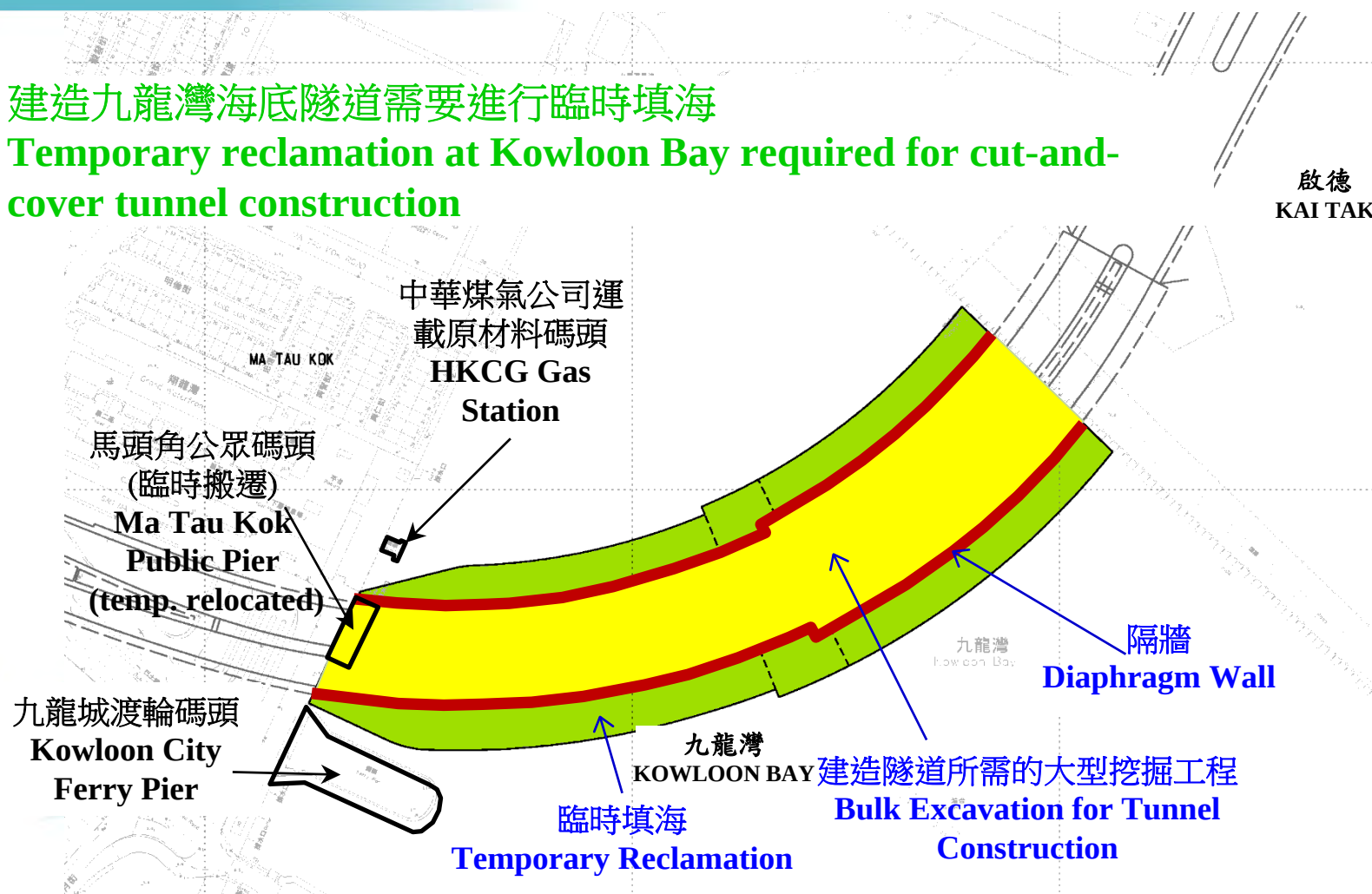


臨時填海配合明挖回填方法

Cut-and-Cover Method with Temporary Reclamation



- 建造九龍灣海底隧道需要進行臨時填海
Temporary reclamation at Kowloon Bay required for cut-and-cover tunnel construction



臨時填海配合明挖回填方法

Cut-and-Cover Method with Temporary Reclamation



參考圖片 - 利用臨時填海配合明挖回填方法的中環灣仔繞道工程

Reference photo – Temporary reclamation for cut-and-cover tunnel construction in Central-Wanchai Bypass Project

臨時填海配合明挖回填方法

Cut-and-Cover Method with Temporary Reclamation



第一階段 Step 1

建造臨時海堤並於內部回填
Install temporary seawall and fill up temporary working platform

九龍灣水深大
約3至6米
Kowloon Bay
Water Depth
Approx. 3 to 6m



臨時海堤
Temporary Seawall

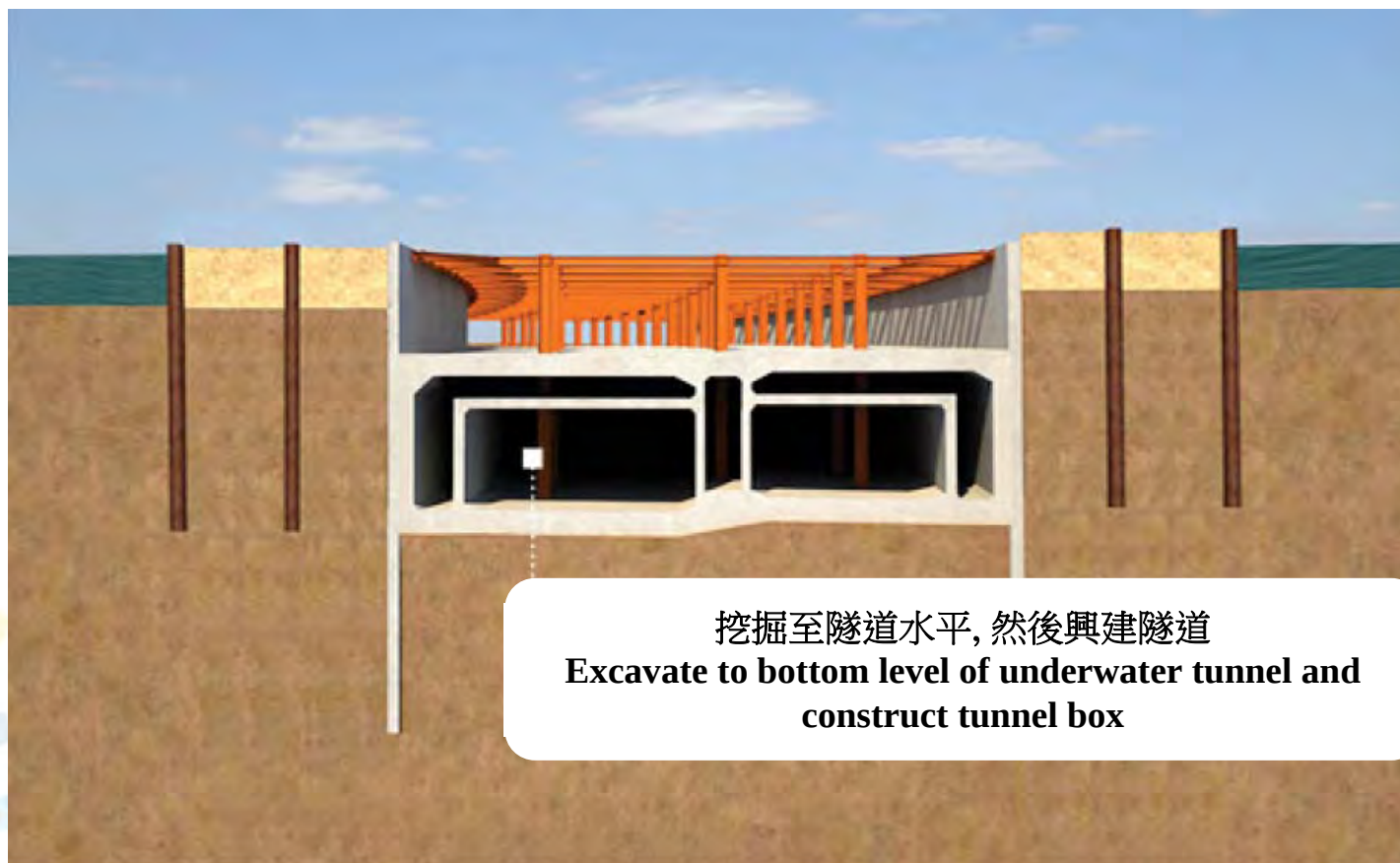
在臨時填海平台上安裝隔牆
Install diaphragm wall within temporary working platform

臨時填海配合明挖回填方法

Cut-and-Cover Method with Temporary Reclamation



第二階段 Step 2



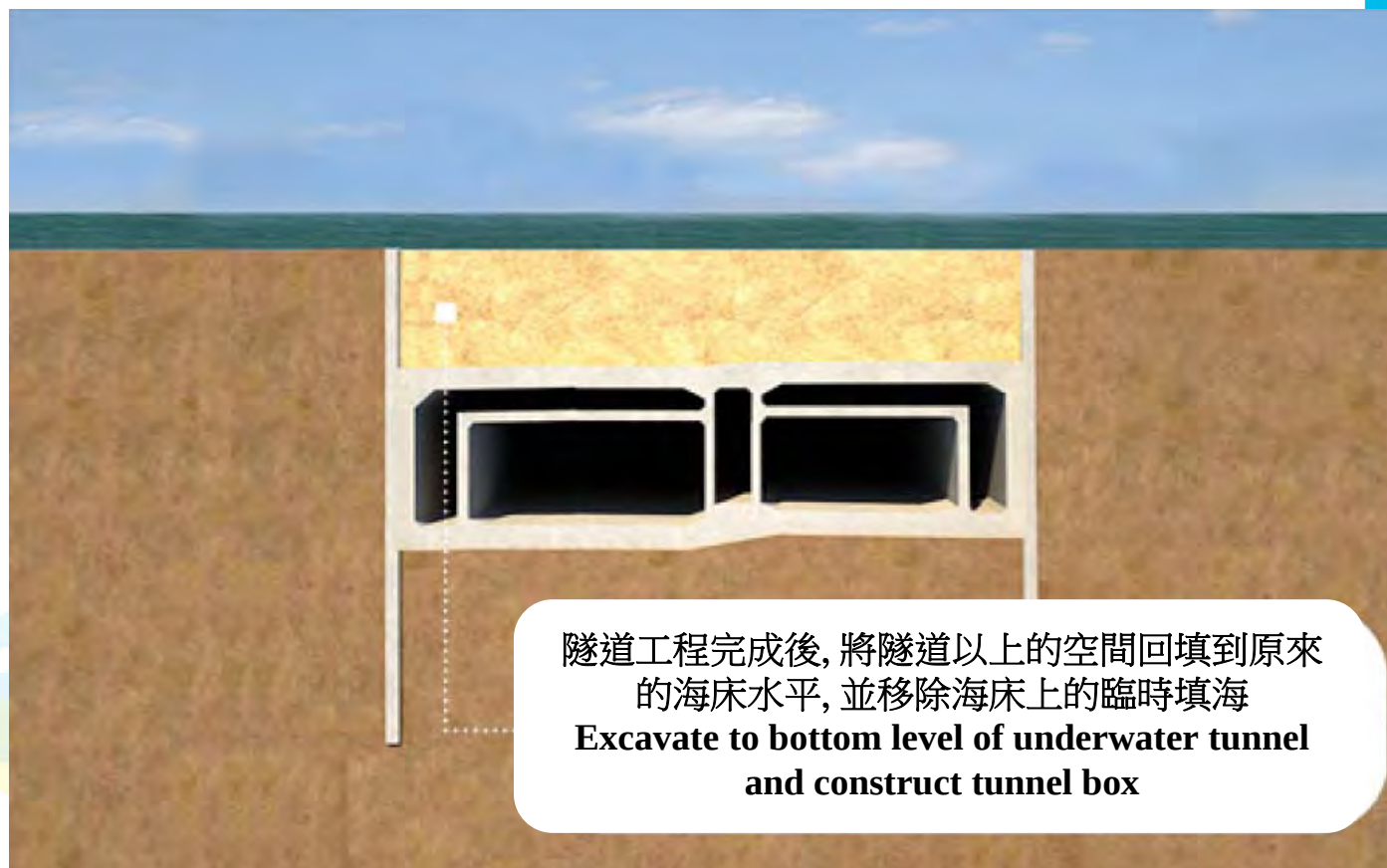
挖掘至隧道水平, 然後興建隧道
Excavate to bottom level of underwater tunnel and
construct tunnel box

臨時填海配合明挖回填方法

Cut-and-Cover Method with Temporary Reclamation



第三階段 Step 3



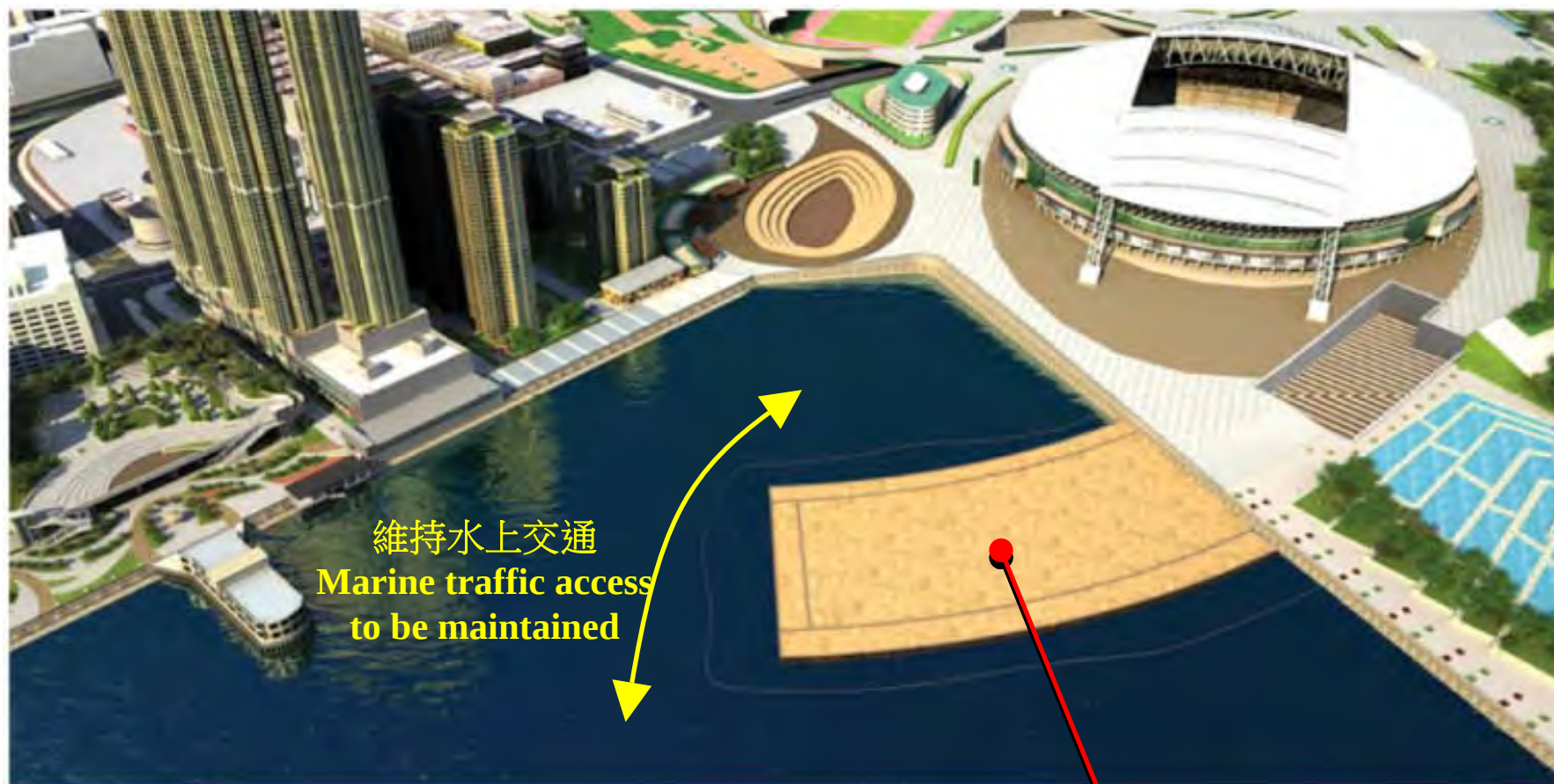
隧道工程完成後, 將隧道以上的空間回填到原來
的海床水平, 並移除海床上的臨時填海
**Excavate to bottom level of underwater tunnel
and construct tunnel box**

進行臨時填海興建海底隧道 Temporary Reclamation for Underwater Tunnel



臨時填海的施工安排（第一階段）

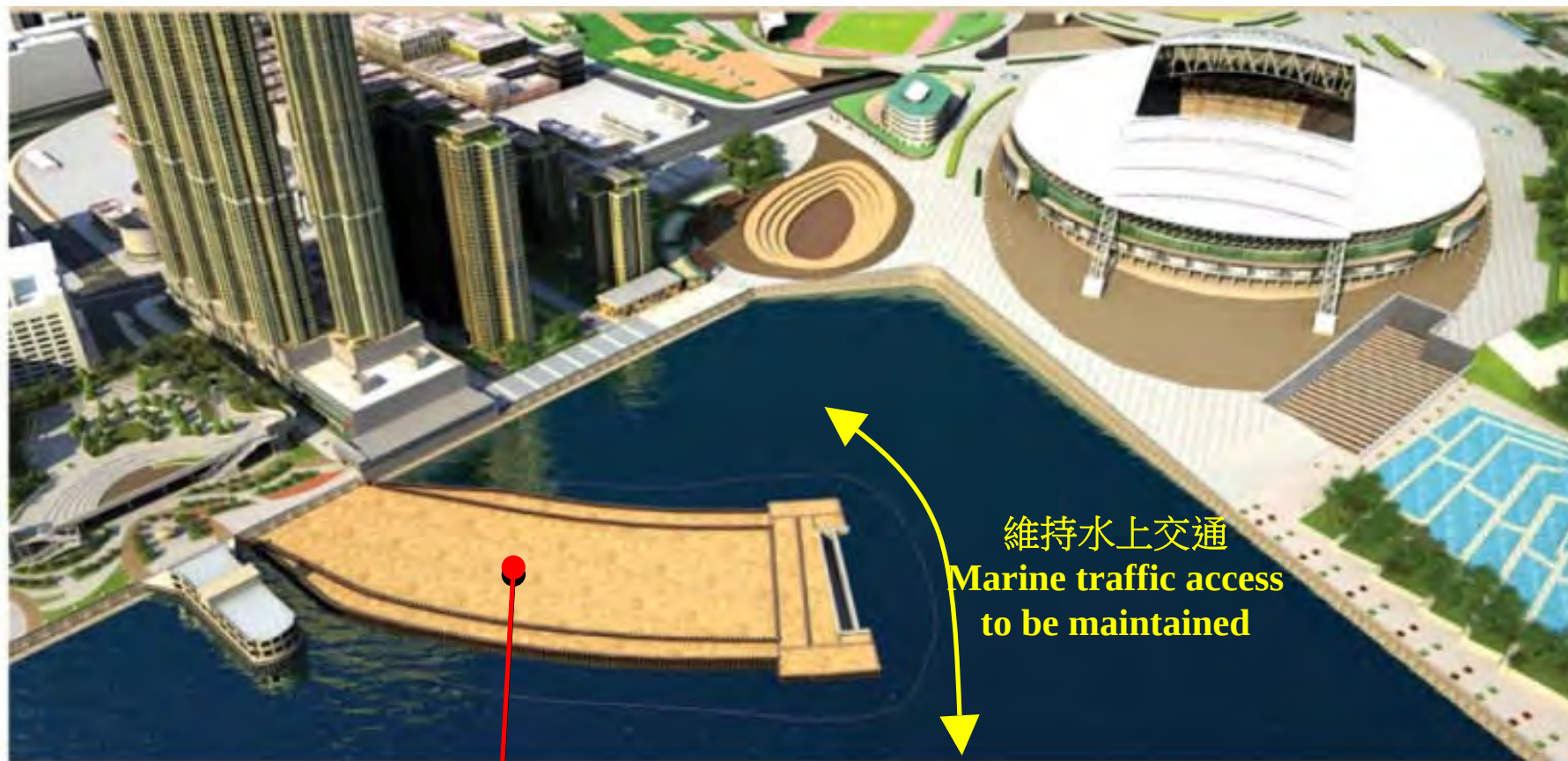
Arrangement of Temporary Reclamation (Stage 1)



維持水上交通
Marine traffic access
to be maintained

1.8公頃臨時填海，需時約26個月
Extent of Reclamation is about 1.8
hectares for approx. 26 months

臨時填海的施工安排（第二階段） Arrangement of Temporary Reclamation (Stage 2)



維持水上交通
Marine traffic access
to be maintained

2.0公頃臨時填海，需時約26個月
Extent of Reclamation is about 2.0
hectares for approx. 26 months

第二階段工程後回復九龍灣海床原貌
Reinstatement of Kowloon Bay sea bed after
Stage 2 Reclamation



最少臨時填海範圍 Minimum Extent of Temporary Reclamation



- 臨時填海範圍應包括:

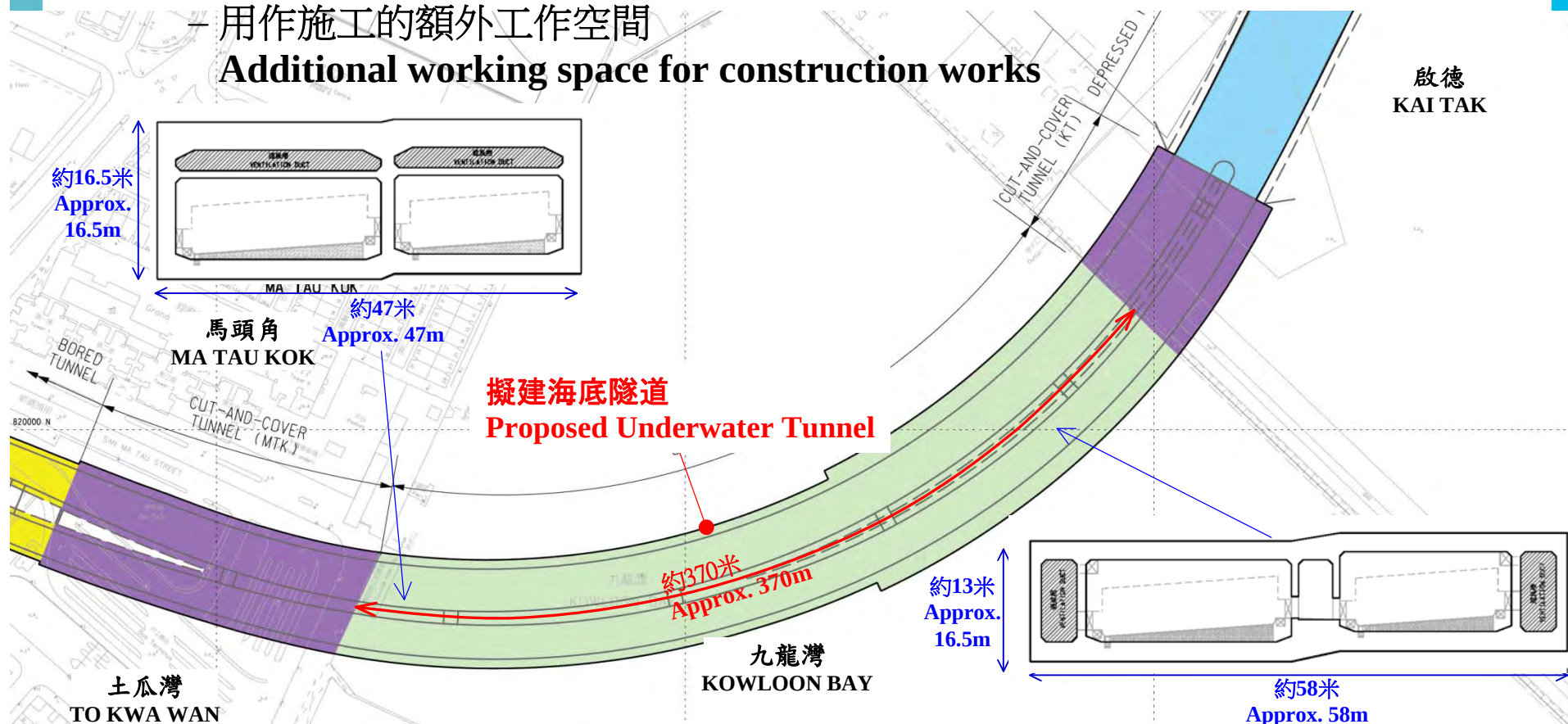
The temporary reclamation area shall cover:

- 擬建中九龍海底隧道

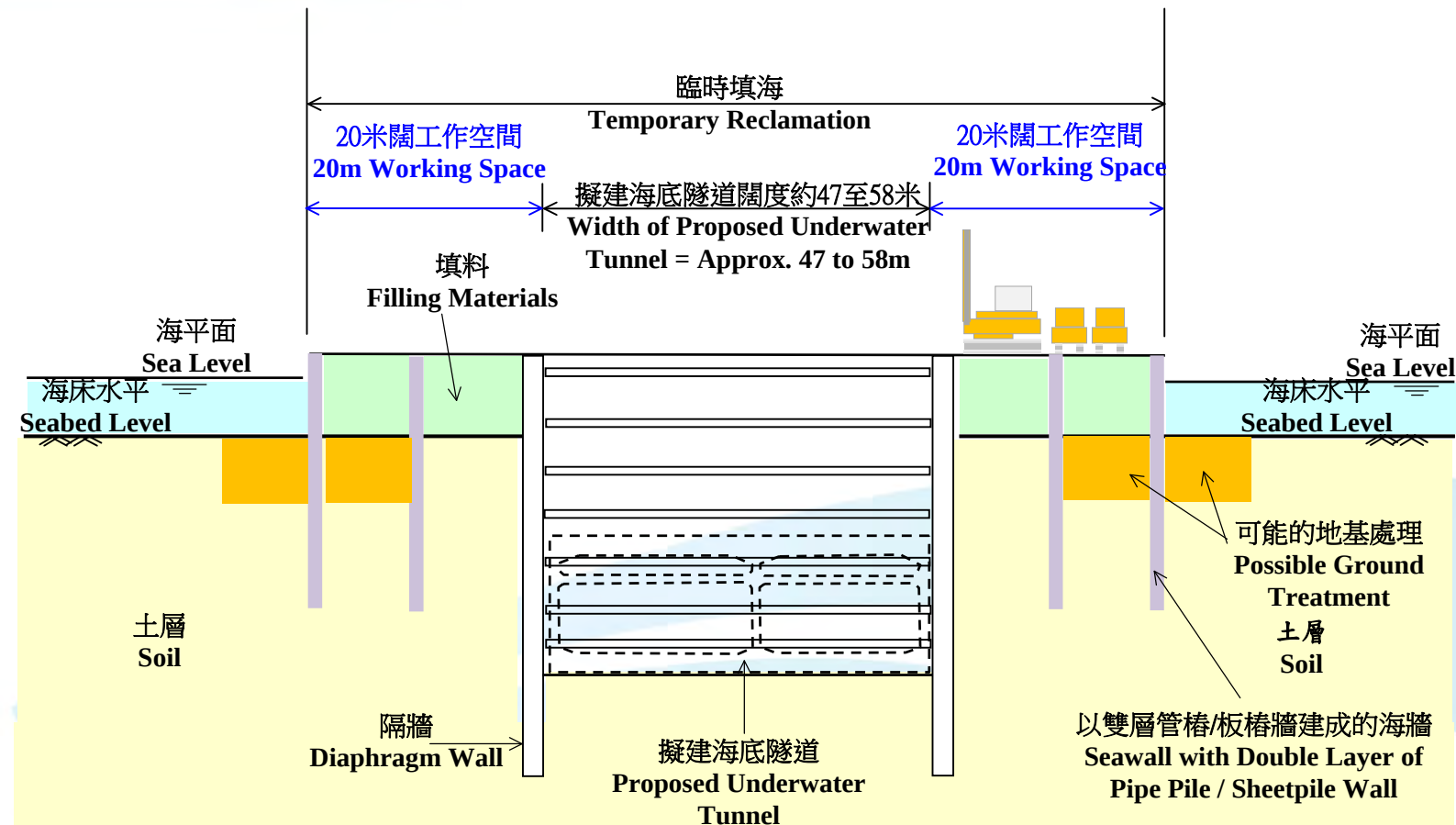
Proposed CKR underwater tunnel

- 用作施工的額外工作空間

Additional working space for construction works



最少臨時填海範圍 Minimum Extent of Temporary Reclamation



擬建填海的切面
Typical Section of Proposed Reclamation

最少臨時填海範圍

Minimum Extent of Temporary Reclamation



- 參考本港近年其他大型基建，如中環灣仔繞道在銅鑼灣對開維港水域進行臨時填海工程的經驗，將臨時填海範圍定於隧道外牆約**20米**範圍。

With reference to recent experience in Central-Wanchai Bypass (CWB) project, the extent of temporary reclamation is occupied at 20m from both sides of the tunnel wall

- **20米闊的工作空間**用作放置物料及安全操作機械設備。
The 20m width working space allows for construction plant movement and safe operation of construction works



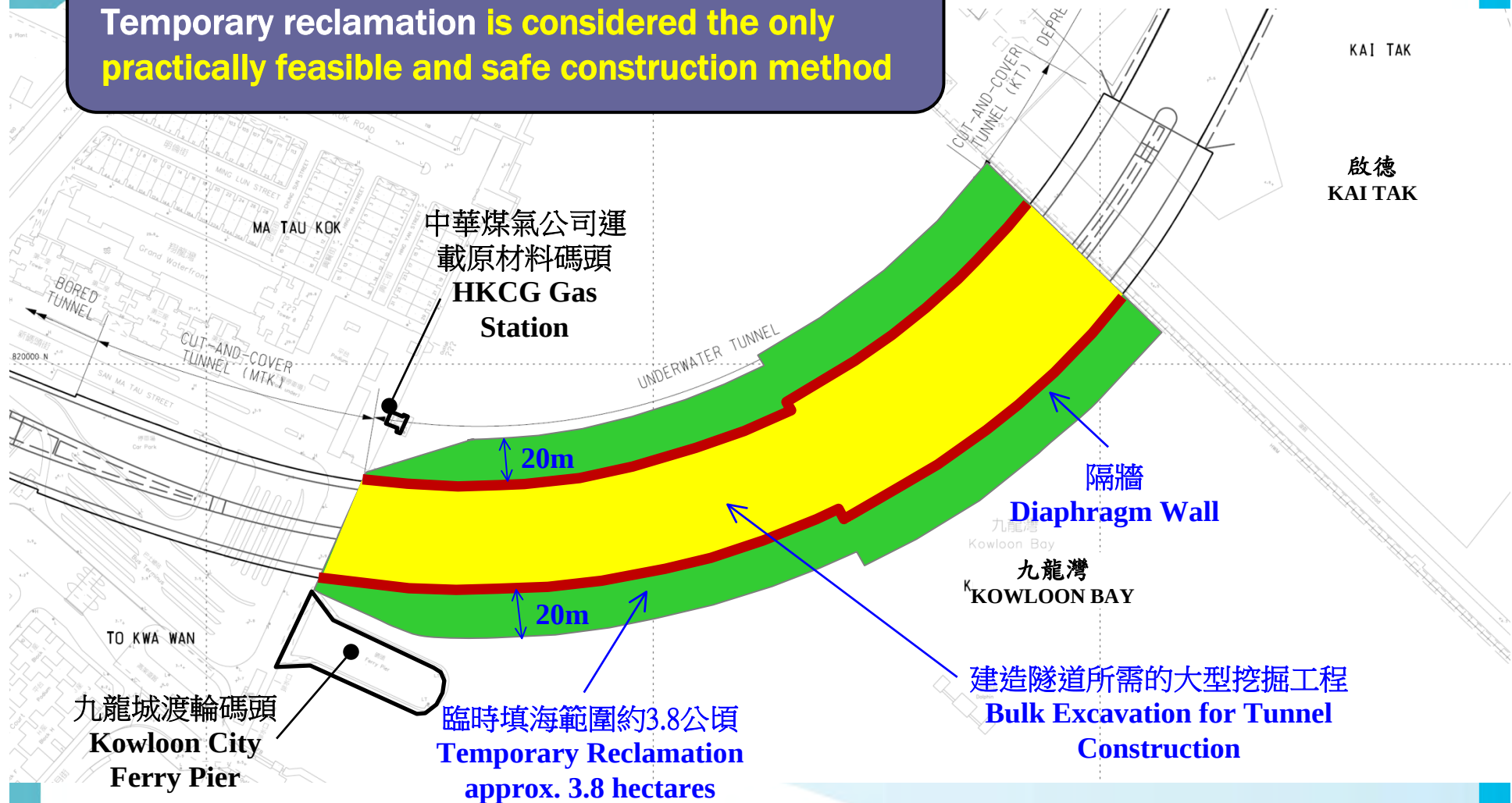
參考圖片 - 中環灣仔繞道的臨時填海

Reference photo from a recent reclamation project – CWB

最少臨時填海範圍

Minimum Extent of Temporary Reclamation

臨時填海是唯一切實可行及安全的建造方法
Temporary reclamation is considered the only practically feasible and safe construction method



獨立專家 Independent Experts



路政處委任一組獨立專家以:

- 提供專業意見服務
- 確定沒有其他可行的施工方法
- 保證建議之施工方法及臨時填海, 是技術上可行的。

HyD has appointed a team of independent experts to:

- provide professional advisory services
- confirm that no viable alternative construction method is available other than cut & cover with temporary reclamation
- ensure that the proposed construction method and temporary reclamation is technically feasible

公眾參與 Public Engagement

第一期公眾參與

就勘測及初步設計(2007 to 2009)

Phase 1 Public Engagement

Investigation and Preliminary Design

- 確定興建中九龍幹線的需要

Established the need for the
Central Kowloon Route

- 廣泛討論建議走線，並獲得普遍支持

General support on the
proposed alignment

- 大致同意重置安排

General agreement on the
reprovisioning arrangements

- 結果已向區議會及立法會匯報

The results were reported to
District Councils and the Legislative
Council

回應
公眾關注



Response to Public
Comments

第二期公眾參與

就詳細設計

Phase 2 Public Engagement

Detailed Design

- 新聞簡報會(2012年12月5日)

Media Briefing (5 December
2012)

- 諮詢區議會、立法會交通事務委員會及海濱事務委員會

Briefing to DCs, LegCo and
Harbourfront Commission

- 焦點小組會議

Focus Group Meetings

- 公眾論壇

Public Forums

- 巡迴展覽

Roving Exhibitions

九龍灣臨時填海專題討論

Public Forum for Temporary Reclamation in Kowloon Bay

日期： 2013年2月2日(星期六)

Date: 2 February 2013 (Sat)

時間： 2:30pm – 5:30pm

Time

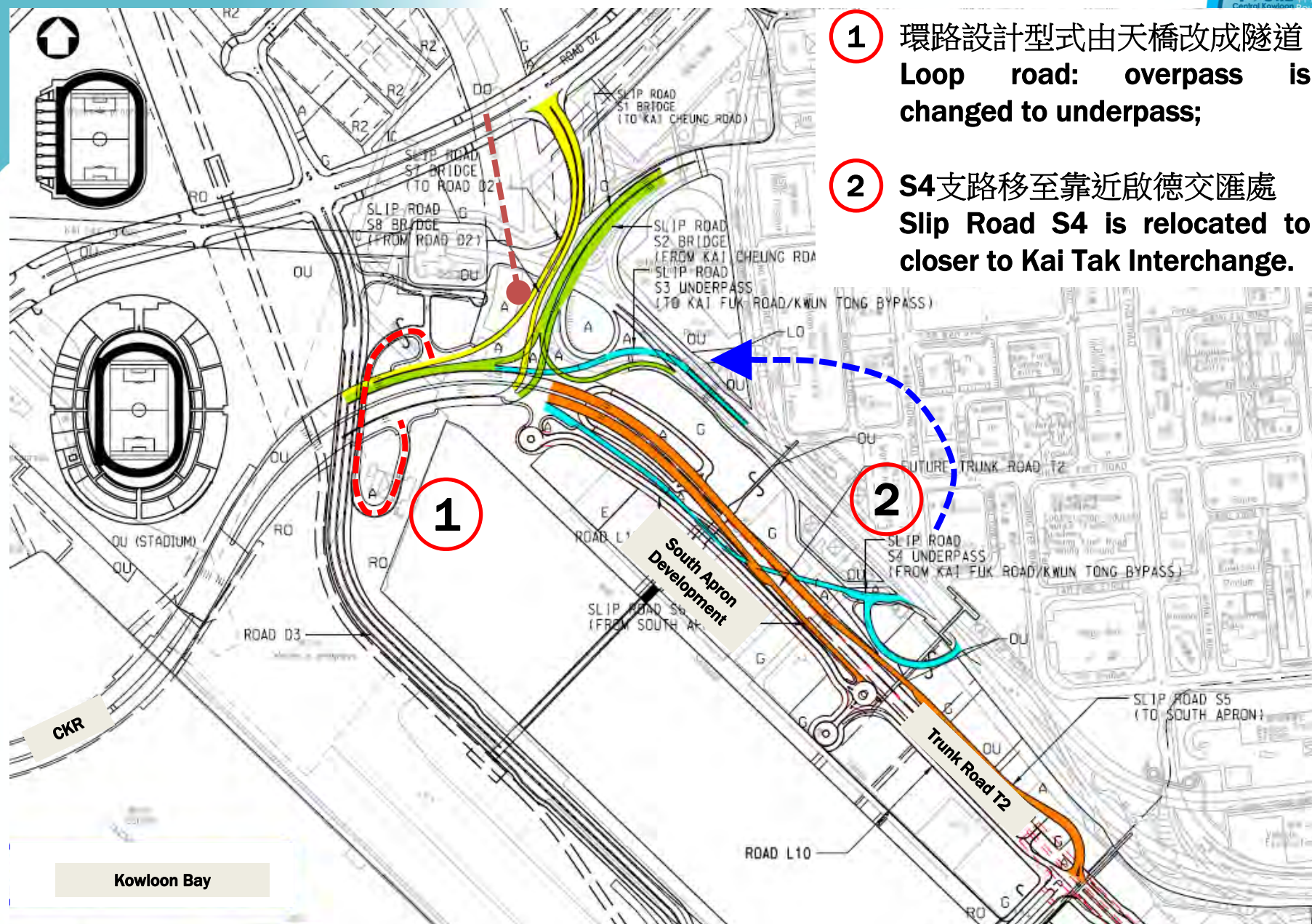
地點： 九龍塘達之路78號香港生產力促進局

Venue: Hong Kong Productivity Council, 78 Tat Chee Avenue,
Kowloon Tong

總結 Conclusions

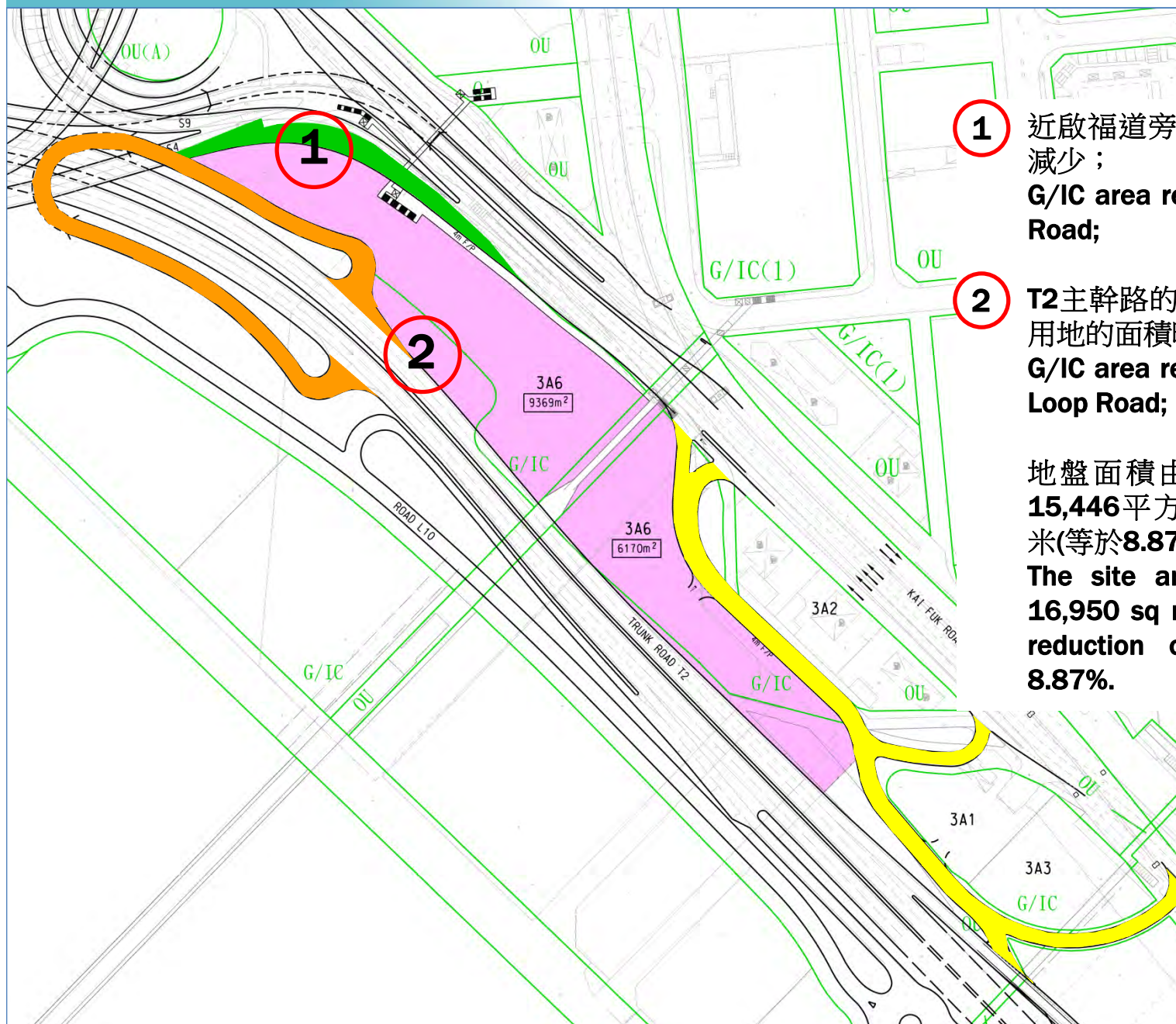
- 興建中九龍幹線是有凌駕性公眾需要的
Overriding public need for construction of Central Kowloon Route
- 沒有合理可行的零填海方案
No reasonable alternatives to reclamation
- 臨時填海範圍是最少
Minimum extent of temporary reclamation

啟德交匯處 Kai Tak Interchange



1 環路設計型式由天橋改成隧道
Loop road: overpass is changed to underpass;

2 S4支路移至靠近啟德交匯處
Slip Road S4 is relocated to closer to Kai Tak Interchange.



1 近啟福道旁的政府用地面積略為減少；
G/IC area reduced along Kai Fuk Road;

2 T2主幹路的環路遷移後政府設施用地的面積略為增加；
G/IC area released by shifting T2 Loop Road;

地盤面積由**16,950**平方米減至**15,446**平方米；相差**1,504**平方米(等於**8.87%**)。

The site area is reduced from **16,950 sq m** to **15,446 sq m**, a reduction of **1,504 sq m** by **8.87%**.







