

第三十五期中九龍幹線通訊  
Issue No. 35 - Central Kowloon Route (CKR) Newsletter



中九龍幹線中段隧道模擬施工圖  
Simulated construction image of Central Tunnel of CKR

## 編者的話

隨著中九龍幹線第六份合約 – 中段隧道的展開，中九龍幹線建造工程正全速進行。

繼第32期通訊的「焦點」簡單介紹海底隧道建造工程後，今期將會深入講解有關選取建造方法的考慮因素及工程進度匯報。

## Words of Editor

With the commencement of the sixth CKR contract – Central Tunnel, the CKR construction is in full swing.

The "Focus" in Newsletter No. 32 briefly introduced the construction of underwater tunnel, we will further elaborate the considerations in selecting the construction methods for the underwater tunnel and its latest progress.

## 焦點

### 啟德西工程 - 海底隧道建造工程

建於九龍灣全長約370米的海底隧道段連接馬頭角及啟德發展區。海底隧道工程分為兩個階段，第一階段工程於啟德發展區對開的九龍灣建造約155米長的海底隧道，而第二階段工程則於馬頭角對開海域建造約215米長的海底隧道。

於項目勘測和初期設計階段，路政署曾探討多個替代路線方案，包括不涉及海底隧道的全陸地走線。然而，這些走線會經過土瓜灣一帶的私人樓宇，建造工程需涉及土地收回及拆卸部份私人樓宇。現時的海底隧道走線方案則不涉及土地收回及拆卸私人樓宇，而且受影響的海面範圍亦是最小，因而得以採用。

路政署亦曾考慮多個香港常用建造海底隧道方法的可行性，包括沉管式隧道、鑽挖式隧道及明挖回填式隧道，並循地理限制、對環境影響及對公眾影響等因素進行考量。最後發現建造臨時圍堰，配合明挖回填方法，是興建中九龍幹線九龍灣段海底隧道最合適、最可行及最安全的建造方法。

## Focus

### Kai Tak West Contract – Underwater Tunnel Construction Works

A section of 370m long underwater tunnel is being constructed at Kowloon Bay connecting Ma Tau Kok and the Kai Tak Development Area. The underwater tunnel will be constructed in 2 stages. Tunnel sections of approximately 155m length and 215m length will be constructed at Kowloon Bay near Kai Tak Development and Kowloon City Ferry Pier in Stage 1 and Stage 2 respectively.

During the investigation and preliminary design stage, various alternative alignments had been explored, including those inland options which do not involve underwater tunnel. However, these alignments would pass underneath private buildings in To Kwa Wan area thus involves land resumption and demolition of some private buildings. The current alignment option was adopted as the underwater tunnel scheme would not involve land resumption and demolition of private buildings, and the extent of affected marine area is minimised.

The Highways Department had also considered different alternative underwater tunnel construction methods which had been commonly used in Hong Kong e.g. Immersed Tube Tunnel (IMT), Bored Tunnel and Cut-and-Cover Tunnel. Taking into account the site constraints, environmental impacts and disturbance to the public, it is considered that the cut-and-cover method inside temporary cofferdam is the most suitable, practicable and safe method for the construction of the CKR underwater tunnel at Kowloon Bay.

\*此函件符合資格豁免於「不收取通函」標貼機制

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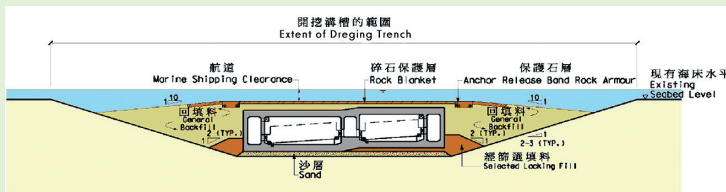
## 焦點

## Focus

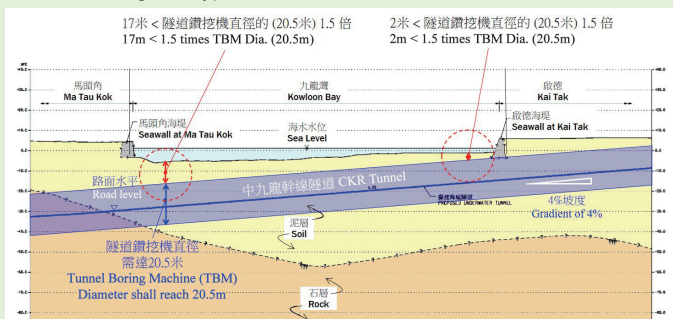
### 考慮因素

### Consideration

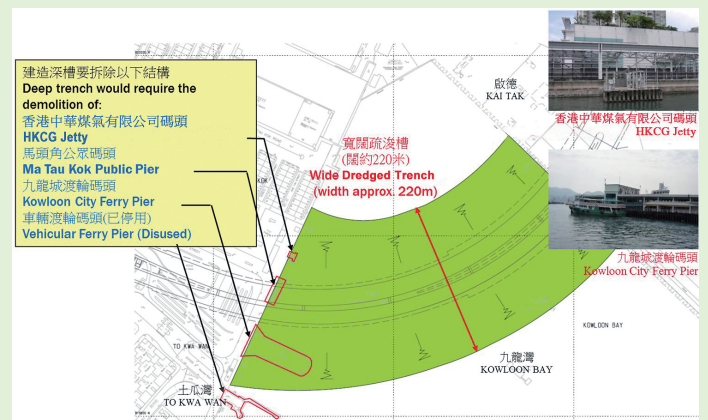
考慮因素 Consideration	沉管式隧道 (圖一及圖二) Immersed Tube Tunnel (Fig. 1 & Fig. 2)	鑽挖式隧道 (圖三) Bored Tunnel (Fig.3)	明挖回填式隧道 Cut-and-Cover Tunnel
施工要求 Construction Requirement	需疏浚海泥以放置沉管和運送隧道組件 Dredging is necessary for placing IMT components and providing sufficient draft for floating the tunnel precast units	需有足夠覆土以維持隧道內的氣壓 (現有覆土厚度只有2至17米，並不足夠維持鑽挖式隧道內的氣壓) Require sufficient soil cover for containing the air pressure inside bored tunnel (The existing soil cover is only 2 to 17m which is insufficient to contain the air pressure inside the bored tunnel.)	需建造臨時圍堰，於圍堰內以明挖回填方式建造隧道 Construct the tunnel by cut-and-cover method within a temporary cofferdam
環境影響 Environmental impacts	✗ 需在海底形成巨大的疏浚槽 (約220米闊 x 30米深)，故需移走和處理大量海泥 (現時臨時圍堰只闊約100米) Extensive amount of marine mud to be removed and disposed due to formation of large dredging trench (approx. 220m wide x 30m deep) (The width of the current temporary cofferdam is only about 100m wide)	✓ 需移走和處理相對少量海泥 Relatively less marine mud to be removed and disposed of	✓ 需建造臨時圍堰，當隧道建成後，臨時圍堰會被拆卸，並將海底回復原來狀態 Require temporary cofferdam, which will be demolished upon completion of underwater tunnel and then the seabed will be reinstated to its original condition ✓ 需移走和處理相對少量海泥 Relatively less marine mud to be removed and disposed of
對公眾影響 Disturbance to the public	✗ 需要處理大量因挖掘疏浚槽所產生的海泥，並對周邊環境及公眾造成較大影響，故此並不是最合適的方法 This will involve large amount of marine mud to be disposed due to formation of dredged trench. This method would also cause significant impacts to the surroundings and public. Hence it is considered not a suitable construction method	✓ 可維持馬頭角公眾碼頭、九龍城渡輪碼頭、香港中華煤氣有限公司碼頭、馬頭角及啟德海堤運作 Maintain operation of Ma Tai Kok Public Pier, Kowloon City Ferry Pier, HKCG Jetty as well as Ma Tau Kok and Kai Tak seawalls	✓ 分階段進行明挖回填式隧道，以維持九龍城渡輪碼頭和香港中華煤氣有限公司碼頭的運作 Construct the cut-and-cover tunnel in stages to maintain operation of Kowloon City Ferry Pier and HKCG Jetty ✗ 影響相對較少範圍的馬頭角及啟德海堤 Relatively less impacts to Ma Tau Kok and Kai Tak seawalls
技術可行性 Technical & engineering feasibility	✗ 香港中華煤氣有限公司碼頭、馬頭角公眾碼頭及九龍城渡輪碼頭 (二級歷史建築) 的運作將受重大影響 The operation of Hong Kong and China Gas Company Limited (HKCG) Jetty, Ma Tau Kok Public Pier, Kowloon City Ferry Pier (Grade II Historical Building) will be severely affected ✗ 影響較大範圍的馬頭角及啟德海堤 Affect large extent of Ma Tau Kok and Kai Tak seawalls	✗ 九龍灣海床沒有足夠覆土維持所需壓力，以支撐隧道挖掘面和防止隧道滲水，因此技術上並不可行 Technically NOT feasible due to the relatively low soil strength at Kowloon Bay seabed. The soil cover available at Kowloon Bay is also inadequate to contain the required air pressure for supporting the excavated tunnel face and preventing seepage of groundwater during construction	✓ 技術上可行的建造方法，對環境的影響及公眾的滋擾相對較少，故此為最合適、最可行及最安全的方法 Technically feasible construction method induces relatively less environmental impacts and disturbance to the public. Thus it is considered as the most suitable, practicable, and safe method
結論 Conclusion	不是合適的替代方案 Not a suitable alternative	不是合適的替代方案 Not a suitable alternative	✓ 是合適的方法 A suitable method



圖一 - 沉管式隧道的截面圖  
Fig. 1 - Typical section of Immersed Tube Tunnel



圖三 - 九龍灣可用覆土不足夠  
Fig. 3 - Inadequate soil cover at Kowloon Bay



圖二 - 被沉管式隧道的坑道所影響的結構  
Fig. 2 - Structures to be affected by trench dredging for Immersed Tube Tunnel



## 焦點

### 建造方法

位於九龍灣的海底隧道是怎樣建成？

臨時圍堰配合明挖回填方式興建海底隧道(第一階段)的詳細建造過程如下：

## Focus

### Construction Method

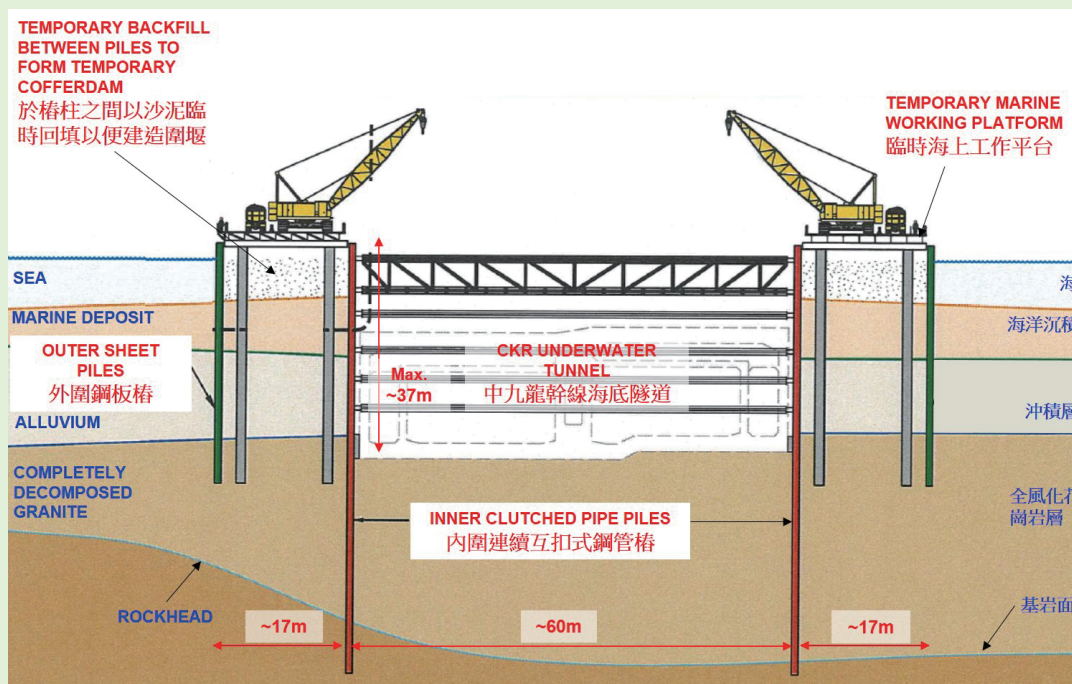
How is the underwater tunnel at Kowloon Bay constructed?

The detailed construction sequences of the underwater tunnel (Stage 1) by cut-and-cover method with temporary cofferdam are illustrated below:



以臨時圍堰配合明挖回填方式興建海底隧道的施工程序

Construction sequences of the underwater tunnel by cut-and-cover method with temporary cofferdam



臨時圍堰的截面圖

Typical section of temporary cofferdam



合約編號  
Contract No. **HY/2014/20 油麻地西工程 Yau Ma Tei West Contract**



地下箱形暗渠改道工程、園景平台及通風坑道的打樁工程正在進行中。連接路橋樑的鑽樁工程亦已展開。  
Underground box culvert diversion works, piling works for Landscaped Deck and Ventilation Adit were in progress. Construction of bored piles for connection bridges commenced.

合約編號  
Contract No. **HY/2014/08 油麻地東工程 Yau Ma Tei East Contract**



油麻地臨時母嬰健康院的內部設施建造工程及位於欣翔道工地的隧道工程正進行中。在甘肅街近上海街的工地正進行加士居道天橋地基的臨時加固工程及豎井通道建造工程。位於舊上海街 / 街市街遊樂場工地內的臨時公共圖書館暨玉器小販市場大樓的樁帽建造工程亦已展開。

Installation of internal facilities at the Yau Ma Tei Temporary Maternal and Child Health Centre and tunnel construction at Yan Cheung Road works site were in progress. Temporary underpinning of the existing Gascoigne Road Flyover foundation and construction of access shaft construction at Kansu Street works site (near Shanghai Street) were in progress. Construction of pile caps for the Temporary Public Library cum Jade Hawker Bazaar Building at the former Shanghai Street / Market Street Playground works site commenced.

油麻地  
Yau Ma Tei

油麻地通風大樓  
Yau Ma Tei Ventilation Building

合約編號  
Contract No. **HY/2014/09 何文田豎井通道工程 Ho Man Tin Access Shaft Contract**



何文田豎井通道工程已於2019年9月完成。  
Ho Man Tin Access Shaft Contract was completed in September 2019.

何文田  
Ho Man Tin

何文田通風大樓  
Ho Man Tin Ventilation Building

何文田豎井通道  
Ho Man Tin Access Shaft

合約編號  
Contract No. **HY/2018/08 中段隧道工程 Central Tunnel Contract**

最近批出的的中段隧道工程已於2019年7月12日展開，工程包括建造約2.8公里的中段隧道、兩段約33米及41米分別連接油麻地及馬頭角的明挖回填隧道，以及何文田通風大樓的樁柱和隔牆。

The recently awarded Central Tunnel contract commenced on 12 July 2019. The works comprise the construction of about 2.8km long central tunnel, two sections of approximately 33m and 41m cut-and-cover tunnels connecting Yau Ma Tei and Ma Tau Kok respectively, construction of piles and diaphragm walls for Ho Man Tin Ventilation Building.

中段隧道  
Central Tunnel

啟德通風大樓  
Kai Tak Ventilation Building

合約編號  
Contract No. **HY/2018/02 啟德東工程 Kai Tak East Contract**



啟福道行人天橋及橫跨啟德河的高架道路的預先鑽探工程已經展開。

Pre-drilling works for Kai Fuk Road footbridge and viaducts across the Kai Tak River commenced.

啟德  
Kai Tak

行政大樓  
Administration Building

九龍灣  
Kowloon Bay

合約編號  
Contract No. **HY/2014/07 啟德西工程 Kai Tak West Contract**



馬頭角 – 現正進行豎井通道工程的挖掘及橫向支撐安裝工序，以及明挖回填隧道工程的安裝鋼管樁工序  
Ma Tau Kok – Excavation & Installation of lateral support for Access Shaft and installation of pipe piles for cut-and-cover tunnel were in progress.

九龍灣 – 於鋼管樁及鋼板樁之間的回填工序已完成；現正安裝桁架支撐，以建造第一期海底隧道  
Kowloon Bay – Backfilling between pipe piles and sheet piles was completed. Installation of trussed strut for Stage 1 underwater tunnel works was in progress.

啟德 – 現正進行低於地面道路及地下行車道的挖掘及橫向支撐安裝工序  
Kai Tak – Excavation & Installation of lateral support for depressed road and underpass were in progress.

紅磡  
Hung Hom

啟德西  
Kai Tak West

啟德東  
Kai Tak East

油麻地西  
Yau Ma Tei West

油麻地東  
Yau Ma Tei East

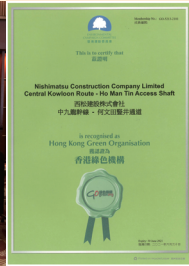


## 社區聯繫

## Community Linkage

### 喜訊

### Good News



何文田暨井通道工程團隊獲認證為「香港綠色機構」及榮獲「香港環境卓越大獎2018」－優異獎(建造業)

Ho Man Tin Access Shaft Project Team was recognized as "Hong Kong Green Organization" and received "Hong Kong Awards for Environmental Excellence 2018 – Construction Industry – Certificate of Merit".



啟德西工程團隊榮獲「香港建造商會安全主管獎」，以及明建會(香港)的「安全工程項目團隊獎2019」、「工程經理安全獎2019」和「工地安全專業人員獎2019」。

Kai Tak West Project Team received Hong Kong Construction Association "Safe Person-in-Charge Award" and the Lighthouse Club (Hong Kong) "Safe Project Team Award 2019", "Construction Manager Safety Award 2019" and "Site Safety Practitioner Award 2019".

### 社區聯絡小組

為了與各個社區持份者保持緊密聯繫，我們定期與社區聯絡小組會面。

### Community Liaison Group

Meetings with the Community Liaison Groups (CLGs) are conducted regularly so as to enhance the communication with the stakeholders from the districts.



2019年8月6日 - 「馬頭角及啟德社區聯絡小組」會面  
6 August 2019 – Meeting of "Ma Tau Kok & Kai Tak CLG"



2019年9月16日 - 「何文田社區聯絡小組」會面  
16 September 2019 – Meeting of "Ho Man Tin CLG"



2019年9月17日 - 「油麻地社區聯絡小組」會面  
17 September 2019 – Meeting of "Yau Ma Tei CLG"

### 外展 / 義工活動

中九龍幹線義工隊在過去數月參與了各項社區活動。

### Outreach / Voluntary Services

The volunteer teams participated in various outreach events in the past few months



啟德西工程團隊於2019年7月6日為小學生舉辦「小小混凝土工程師」工作坊

Kai Tak West Project Team organized "Young Concrete Engineers" Workshop for primary school pupils on 6 July 2019.



啟德西義工隊於2019年7月20日前往東龍島參與「海岸清潔運動」

Kai Tak West volunteer team participated in "Coastal Clean-up" at Tung Lung Island on 20 July 2019.



亞伯拉罕清真寺學童於2019年8月19日到訪油麻地社區聯絡中心，了解油麻地西工程。

Children of the Masjid-e-Ibrahim visited Yau Ma Tei Community Liaison Centre to learn about the Yau Ma Tei West Project on 19 August 2019.



何文田義工隊於2019年8月31日參與「東華三院」賣旗活動

Ho Man Tin volunteer team participated in Flag Day for "Tung Wah Group of Hospitals" on 31 August 2019



何文田義工隊於2019年9月10日探訪鄰舍輔導會上海總會護理安老院，與長者歡度中秋佳節

Ho Man Tin volunteer team visited NAAC Shanghai Fraternity Association Care & Attention Home for the Elderly on 10 September 2019 to celebrate Mid-Autumn Festival.



油麻地東義工隊於2019年9月11日與臨時玉器小販市場的商販共慶中秋

Yau Ma Tei East volunteer team celebrated Mid-Autumn Festival with hawkers in the Temporary Jade Hawker Bazaar on 11 September 2019.



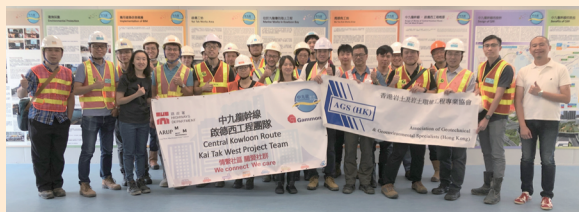
## 社區聯繫

### 工地考察

為使業界更了解中九龍幹線，多個不同的團體造訪中九龍幹線工地及社區聯絡中心。



「友·導向」職場體驗計劃的學生分別於2019年7月12日及2019年7月13日到訪馬頭角及油麻地社區聯絡中心  
Students from "Life Buddies" Job Tasting Programme visited Ma Tau Kok and Yau Ma Tei Community Liaison Centres on 12 & 13 July 2019



香港岩土及岩土環境工程專業協會於2019年7月27日參觀啟德西工程  
A site visit to Kai Tak West by the Association of Geotechnical & Geoenvironmental Specialists (Hong Kong) on 27 July 2019



上海同濟大學土木工程學院的師生於2019年8月9日參觀啟德西工程  
A site visit to Kai Tak West by the students and lecturers from College of Civil Engineering, Tongji University in Shanghai on 9 August 2019

## Community Linkage

### Site Visit

Site visits to works sites and Community Liaison Centres were conducted with different parties to enhance their awareness of CKR project.



香港公路學會青年幹事於2019年8月3日到訪油麻地東工程進行工地考察  
A site visit to Yau Ma Tei East by the Young Committee of the Hong Kong Institution of Highways and Transportation (HKIHT) on 3 August 2019



英國土木工程師學會香港分會青年部會員於2019年8月10日參觀啟德西工程  
A site visit to Kai Tak West by the members from the Institution of Civil Engineers, Hong Kong Association Graduates & Students Division (ICE HKA G&S) on 10 August 2019

## 聯絡資料

如對工程有任何疑問及意見，可透過以下方法聯絡我們

## Contact Information

Should you have any enquiries or comments on the project, please contact us via the following.

路政署 - 中九龍幹線聯絡資料

Highways Department - Central Kowloon Route Contact Information

☎ 電話 Telephone 2762 3601

🌐 網址 Website [www.ckr-hyd.hk](http://www.ckr-hyd.hk)

@ 電郵 E-mail [enquiry@ckr-hyd.hk](mailto:enquiry@ckr-hyd.hk)

油麻地西工程  
24小時熱線電話  
Yau Ma Tei West  
24-hour Hotline  
5331 5330

油麻地東工程  
24小時熱線電話  
Yau Ma Tei East  
24-hour Hotline  
9129 2027

中段隧道工程  
24小時熱線電話  
Central Tunnel  
24-hour Hotline  
6313 0900

啟德西工程  
24小時熱線電話  
Kai Tak West  
24-hour Hotline  
7100 3993

啟德東工程  
24小時熱線電話  
Kai Tak East  
24-hour Hotline  
6391 7037

也可親臨我們的社區聯絡中心

Or visit our Community Liaison Centres (CLC).

### 馬頭角社區聯絡中心 Ma Tau Kok CLC

地址：土瓜灣朗月街12號(即偉恆昌新邨偉景閣H座對面及土瓜灣驗車中心旁)  
Address: 12 Long Yuet Street, To Kwa Wan (Opposite to Wei Chien Court, Block H, Wyler Gardens and adjacent to To Kwa Wan Vehicle Examination Centre)

電話 Tel: 3793 3493  
電郵 E-mail: [pro@ckr-ktw.com](mailto:pro@ckr-ktw.com)  
傳真 Fax: 3793 3490

### 油麻地社區聯絡中心

### Yau Ma Tei CLC

地址：油麻地廟街和甘肅街交界(油麻地停車場大廈旁)  
Address: Junction of Temple Street and Kansu Street in Yau Ma Tei (next to Yau Ma Tei Carpark Building)

電話 Tel: 3594 5282  
電郵 E-mail: [enquiry@ckr-ymte.com](mailto:enquiry@ckr-ymte.com)  
傳真 Fax: 3905 9679

開放時間：星期一至五 早上9時至下午6時  
Opening hours: Monday to Friday 09:00 - 18:00

星期六 早上9時至下午1時  
Saturday 09:00 - 13:00

星期日及公眾假期 休息  
Sunday and Public Holiday Closed