10 major infrastructure projects for Hong Kong's economic growth undertaken in the 2007-2008 Policy Address announced by Chief Executive of HKSAR in early October 2007

The Highlights

Presentation by Raymond Wong
City University of Hong Kong
December 2011

2007-08 Policy Address

A New Direction for Hong Kong

- Promoting community development through revitalisation
- Promoting social harmony by helping people to help themselves

Some background about Hong Kong's infrastructure development since 1950s

1950 -1965 Recovery about WW2

1st generation of public houses (resettlement estates), basic road network enhancement, development of satellite towns (Tsuen Wan, Kwun Tong, Chaiwan)

1970 -1980 Uplifting ground work to meet modern needs

target at international finance centre, container port, 1st generation of highway and railway (MTR) network, large scale public housing

1990 - 2005 Kicking off large scale strategic developments

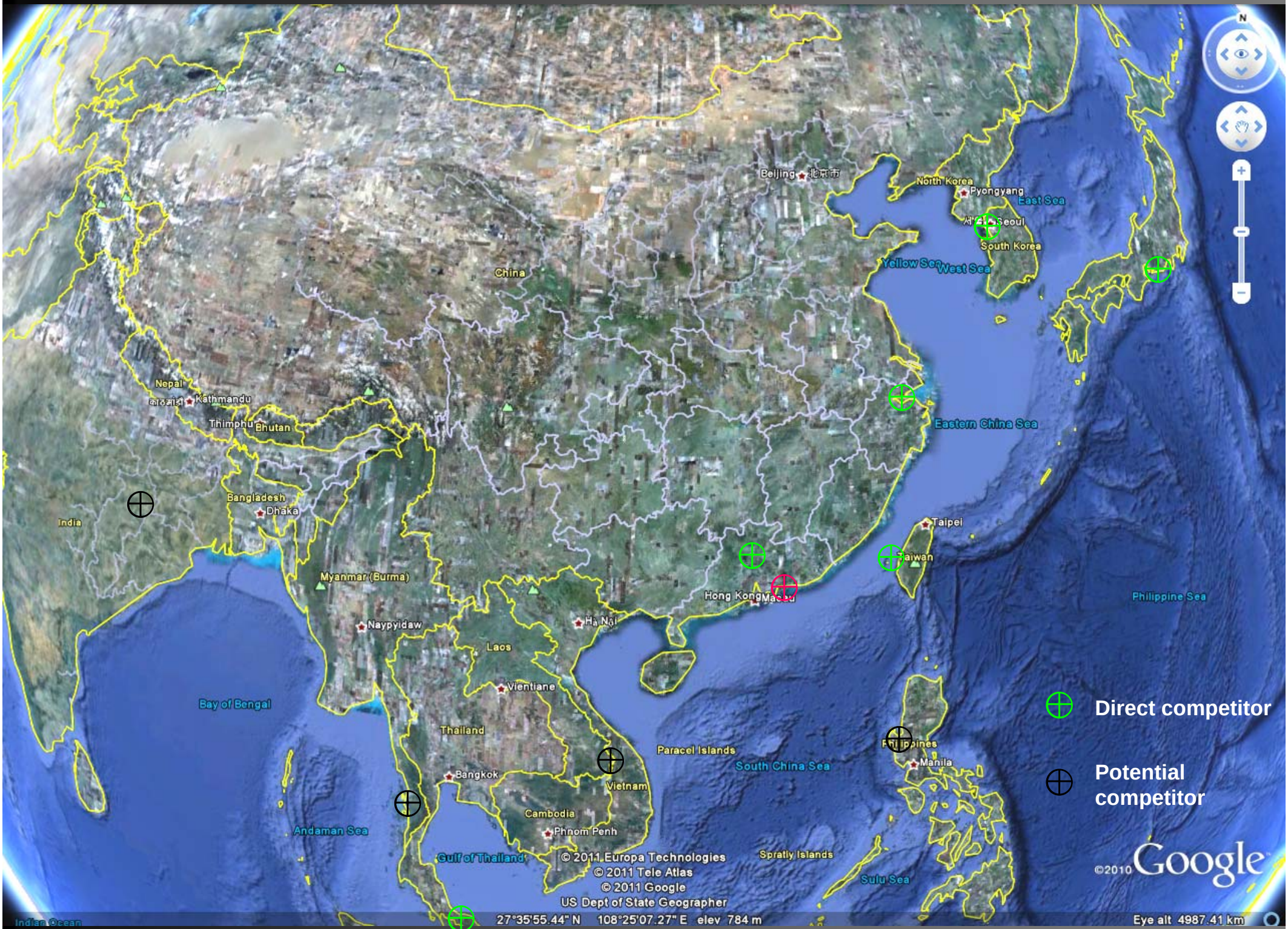
new airport and the associated projects, implementation of strategic railway and highway development scheme, other strategic project including Cyberport, Disney Theme Park, port development, land formation projects etc.

Formation of the Shatin New Town in the late 1970s

Formation of the Shatin New Town in the late 1970s

Shatin in 2000

Formation of Tuen Mun New Town in the early 1980s


Direct competitor
Potential competitor
Beijing
North Korea
Pyongyang
East Sea
Seoul
South Korea
Yellow Sea
West Sea
China
Eastern China Sea
Nepal
Kathmandu
Thimphu
Bhutan
Bangladesh
Dhaka
India
Taipei
Taiwan
Hong Kong
Philippine Sea
Myanmar (Burma)
Naypyidaw
Ha Noi
Laos
Vientiane
Bay of Bengal
Thailand
Paracel Islands
South China Sea
Philippines
Manila
Bangkok
Vietnam
Cambodia
Phnom Penh
Andaman Sea
Gulf of Thailand
Spratly Islands
Sulu Sea
Indian Ocean
© 2011 Europa Technologies
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© 2011 Google
US Dept of State Geographer
27°35'55.44" N 108°25'07.27" E elev 784 m
©2010 Google
Eye alt 4987.41 km


Guangzhou 广州市
Foshan 佛山市
Dongguan 东莞市
Huizhou 惠州市
Shunde 顺德区
Jiangmen 江门市
Zhongshan 中山市
Shenzhen 深圳市
Tai Po
Hong Kong
Tuen Mun
Zhujiang River Estuary
Chek Lap Kok
Kwun Tong
Hong Kong
Zhuhai 珠海市
Macau
Macau
Coloane
Macau
Wailinding Dao
Hengqin Dao
45 km
© 2011 Europa Technologies
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22°37'40.36" N 113°45'05.07" E elev -2 m
©2010 Google
Eye alt 152.84 km

Ten Major Infrastructure Projects to Boost Our Economy

Preamble

To [redacted] n the region, Hong Kong needs to accelerate our infrastructure development. To boost our economy in the next five years, we will accord higher priority to the development of industries that already enjoy a competitive advantage. Our aim is to maintain Hong Kong's status as an international centre of financial services, trade and shipping, as well as to develop on fronts such as financial services, logistics, tourism and information services.

The economic benefits brought about by accelerated infrastructure development are apparent. In the 1970s and 1990s, various large-scale infrastructure projects provided the momentum for Hong Kong to develop into a cosmopolitan city. Cross-boundary projects which strengthen our linkage with the Mainland and the region will further enhance Hong Kong's competitiveness on a global scale. Embarking on major infrastructure developments also creates ample employment opportunities and boosts our Gross Domestic Product.

In promoting economic development, our top priority is to consolidate Hong Kong's status as an international centre of financial services, trade and shipping. With the ardent support of the [redacted] we are confident of achieving this goal. The commencement of various infrastructure projects will also reinforce Hong Kong's leading position in tourism, creative industries, logistics as well as aviation and maritime services.

The 10 major infrastructure projects

Transportation Infrastructure

1. West Island Line and South Island Line
2. Sha Tin to Central Link
3. Tuen Mun Western Bypass & Tuen Mun-Chek Lap Kok Link

Cross-boundary Infrastructure Projects

4. Guangzhou-Shenzhen-Hong Kong Express Rail Link
5. HK-Zhuhai-Macao Bridge
6. HK-Shenzhen Airport Co-operation
7. HK-Shenzhen Joint Development of Lok Ma Chau Loop

New Urban Development Areas

8. West Kowloon Cultural District
9. Kai Tak Development Plan
10. New Development Areas

Transportation Infrastructure

Other than the coming projects as targeted in the 2007 Policy Address, a significant number of highway and railway projects were completed in the 2000s. These included the Route 8, Route 5, Castle Peak Road Extension, Deep Bay Link, the Shenzhen-Hong Kong Western Corridor, and other large-scale road improvement projects.

Railway projects being completed during the period include the West Rail, Tseung Kwan O Extension Line, Ma On Shan Line, East Rail Extension Line, Lok Ma Chau Line and the Kowloon Southern Link.

In the following slides it gives a brief review of the infrastructure projects being completed before the announcing of the recent 10 Major Infrastructure projects in 2007.

10 Airport Core Projects in 1990s for the construction of the new airport at Chek Lap Kok

Construction of new airport at Chek Lap Lok

Construction of the Chek Lap Lok airport

Construction of the Chek Lap Lok airport

Development of North Lantau

Tsing Ma Bridge as a major part of the Airport Core Project

The Ma Wan Viaduct – the linking section between the Tsing Ma and Kap Shui Mun Bridge

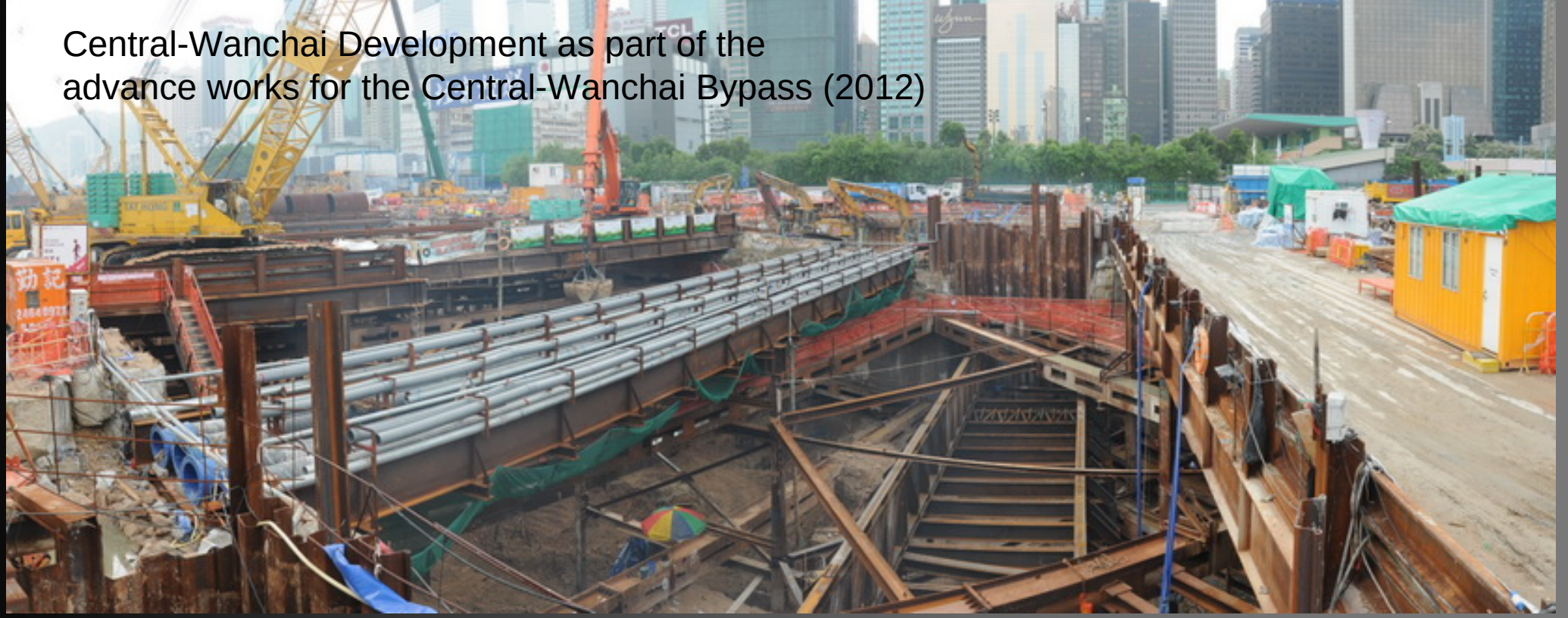
Central Reclamation in 1995

In fact, reclamation activities in Victoria Harbour almost without stop even after the 1990s. The few slides that followed show some of the reclamations forming part of Hong Kong's recent infrastructure developments

Central-Wanchai Reclamation in 2010

Central-Wanchai Reclamation in 2010

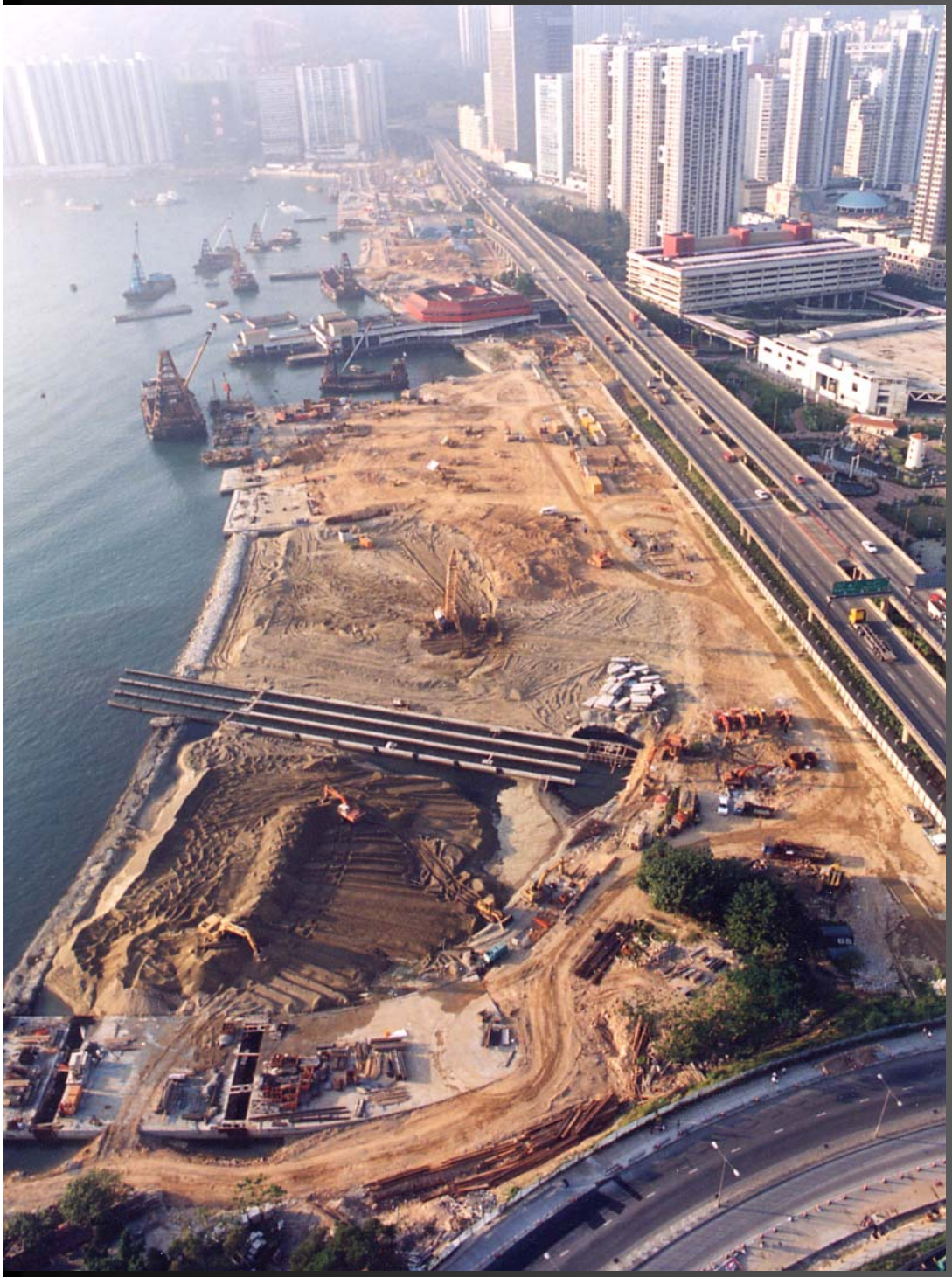
Central-Wanchai Development as part of the advance works for the Central-Wanchai Bypass (2012)



Central-Wanchai Development as part of the advance works for the Central-Wanchai Bypass (2012)

Central-Wanchai Development as part of the advance works for the Central-Wanchai Bypass (2012)

Construction
of West Rail



Construction of West Rail

Construction of West Rail

Container Terminal No 7 and 8 completed for operation in late 1990s
(photo taken in mid 2007)

Construction of Container Terminal 9

荔枝角高架路

• 自尖山隧道沿螺蝶谷而下至呈祥道一段，高度差距近180m，原是水塘排水及護林區的半處女地帶。在新建一條闊近40m的高架道路前，需作大規模的土地平整，自山谷中開出一段長500m、平均闊70m的地帶，其中包括多幅山坡的開削，作日後興建高架路之用。而且，還需開闢沿上而下的臨時施工道路，工程才能全面展開。(圖左上)

• 在同一谷段內，需要建造一組大型跌級式排水明渠，切面約5m x 8m，作為洩洪及水塘排水之用。(圖下)

• 全長近1,400m的三線相向高架路平均離地面15m，其本身已是一龐然大物，建造時大致採用預製箱梁件吊裝而成，吊裝時

此工程包括興建自尖山隧道出口大致沿螺蝶谷而下至三號幹線荔灣交匯處的一組長約1,400m的高架道路，和在呈祥道/青山公路及荔灣交匯處，接入區內的接引道路。

此段工程有以下數個具代表性的施工特點：

採用兩台長110m吊重100噸級的吊裝機組。高架橋平均跨度約60m，橋柱主要為"T"形墩形，在橫跨交匯口間加設有籠門架式的柱組，以容納地面交通。(左頁圖右上)

• 在呈祥道與青山公路交界處設有東西、南北行接引道路與高架路接駁，因地處高勢及沿呈祥道空間狹小，接引道路需削去部分山坡而過，在保持公路行車無間斷的形勢下施工，其困難可以想像。(圖左上)

• 在三號幹線荔灣交匯處亦設有一組接入道，因此段高架橋需接入另一段跨越三號幹線(西九龍快速公路)及機場快線的橋組，離地面近25m，層疊交錯，甚為壯觀。(圖右上及下)

Route 8 from Shatin to Tsing Yi

昂船州大橋

昂船州大橋設計屬於斜拉橋，主橋橋跨為1018m， 每邊由一高298m上窄下闊錐形(tapered)的主橋塔所承托，並透過224條鋼索組分成8個截面自橋塔向下拉緊橋身。鋼索組自每個橋塔分4個截面向橋面前後左右伸出，牢固在橋面的接承點上。因橋位於葵涌貨櫃港唯一入口，所以橋面離海平高達73.5m(青馬大橋為62m)，可容全球最大的貨櫃船通航。

• 大橋橋塔其一特點是上截牢固斜拉纜索的塔身為一不銹鋼外皮，內包強力鋼筋混凝土，組成承力結構的一部分。(圖左上)

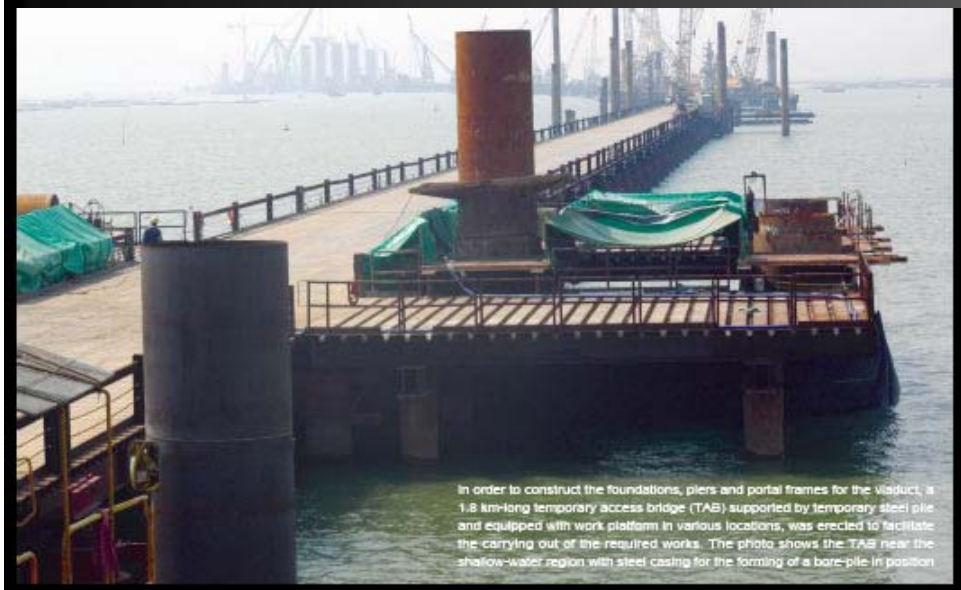
• 大橋橋面為鋼構件，闊約53m、高3.5m，平均重600噸。每個構件由上、下行車道從中加入承樑而成(twin box girder)。構件在河北省山海關市作初期製嵌，後運至廣東東莞作後期加工，最後用躉船運送到大橋現場水域，用裝置於橋面之兩組吊機提昇至橋面位置進行安裝。(左頁圖右上、下及左頁圖左上)

• 大橋兩端的副橋也是一組難度極高的工程。副橋接入主橋位置離地面平均68m，為四個跨段組成，每個跨段約70m，由"T"式單塔式柱座所承托，並採用大型台架支撐用分段現場澆製方式建造。由於工作高度及每個跨段重量極大，分段澆製期間每段的護吋加固安排，及穩定橋面結構的穩定等措施，均構成極大的施工困難。(圖左下及右下)

主橋東、西兩端為副橋，每邊由平均65m高的"T"形橋托所支撐，橋面用現場澆製加應力方式建造，橋身另一作用是為從主橋斜拉纜索產生的反應拉力提供對衡。副橋每邊分成四個跨段，跨距平均70m。

此段工程有以下數個具代表性的施工特點：

The Stonecutters Bridge and the approach linkages for Route 8 at Lai Chi Kok



In order to construct the foundations, piers and portal frames for the viaduct, a 1.8 km-long temporary access bridge (TAB) supported by temporary steel pile and equipped with work platform in various locations, was erected to facilitate the carrying out of the required works. The photo shows the TAB near the shallow-water region with steel casing for the forming of a bore-pile in position

HK-Shenzhen Western Corridor

Photo Essay by Raymond Wong Wai-man

Viewing towards Ngau Hom Shek (牛頸角) from one of the work station with the supporting temporary steel piles on the underside of the access roadway clearly seen. Since Deep Bay is environmentally sensitive, silt-screen was erected (photo centre) during the bore-pile forming process in order to avoid the pollution of the seawater by silt and mud

Close up view of a sheet-pile cofferdam at its formation level. The pile heads were exposed ready for the forming of the pile cap for the portal pier

Close-up view of a work station where a portal frame situated. All the equipments can be seen in working position for the forming of a bore-pile cluster

Viewing from the landside, the entire access roadway with most of the piers for the portal frames being completed. Part of the viaduct sections constructed with the help of launching gantries can be seen in various locations

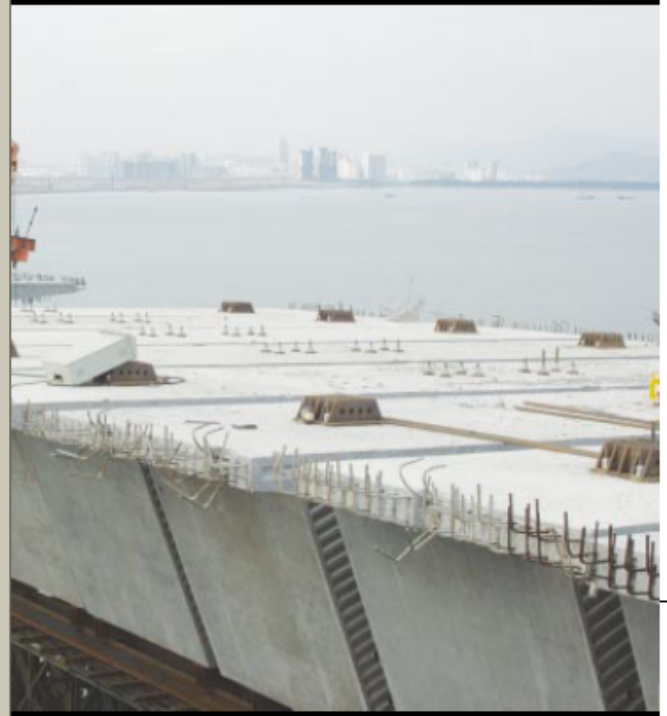
The first section of the portal pier ascending from the cap ready for the placing of the formwork for the onward pier section

The erection of the first set of launching gantry as seen in October 2004. The first span of viaduct formed in advance by balanced-cantilever method, was used as the work station to support the installation of the gantry

Launching gantry as viewed from sea-level under its operating condition. Note the team of servicing support formed by barges and other work boats stationed around the gantry to assist in the viaduct installation

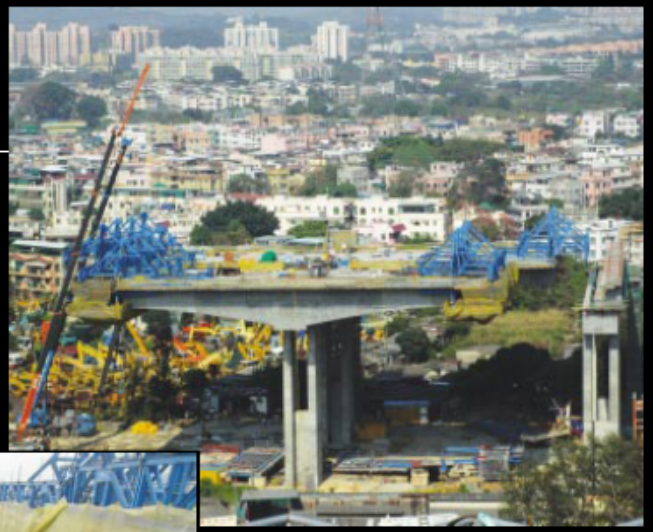
The construction setting of the China counterpart as seen from the northern tip of bridge toward China side

Viaduct and bridge structure basically completed as seen in late 2006. The temporary access bridge on the underside of the viaduct would soon be dismantled



Close up on the segment installation detail under the practice on China side. Similar lifting frame was also employed at the same time with the in-situ installation with precast segment placed onto falsework (temporary platform) for final connecting onto pier heads (photo left)

The final section of viaduct joining the Northern and Southern Sections of Deep Bay Link as view from the side. Just slightly outside the boundary of this photo, the elevated track of West Rail is on the left and Castle Peak Road is on the right, with a separating distance of about 250 m



Close up of a section of the viaduct constructed in balanced-cantilever arrangement using sets of girder-mounted traveling formwork on both ends. The village houses around Yick Yuen Chuen forms an impacting background showing the fragile nature of the project environment

From the viaduct viewing downward seeing a train rushing through the elevated track of West Rail. The gantry in blue on each side is the travelling formwork system used to cast the box-section deck of the viaduct in-situ

Panoramic view seeing the viaduct approaching the elevated track of West Rail from Yick Yuen Chuen and Ching Tsuen Wai before the crossing over. The portal frame on the right side is the joining section between the Northern and Southern Sections of Deep Bay Link

The completed viaduct section running above the West Rail as seen in early 2007

Partially completed viaduct as viewed from an elevated position on the platform of a launching gantry before Tsing Chuen Wai with the track of West Rail running crossing in the middle of photo

佐敦道隧道坑穴的開挖情況。右邊可見承托於擋土樁架上臨時搭建的單道。圖中的高架行人橋，有三組橋柱在隧道走線範圍內，開挖時需要作加固或臨時的保護

從高處所見位於佐敦區文昌街西面(右圖)及西九龍快速公路油麻地交匯處邊旁(上圖)的隧道開挖前期工作佈局

佐敦道行人橋開挖期間露出的橋柱，正等待稍後進行的加固工作

位於佐敦文昌街對出一組受影響需要加固和永久承托的來水管道

位於欽頌道自油麻地引出的大型排洪渠受隧道開挖影響需要分段進行改道及重鋪，以便隧道從其下而過

從佐敦道行人橋下望的一段隧道坑道。此段因在西九龍填海期間為一個策位置，地下設施密佈，所以在開挖時對設施所作的改動及重鋪安排，是工作的重點之一

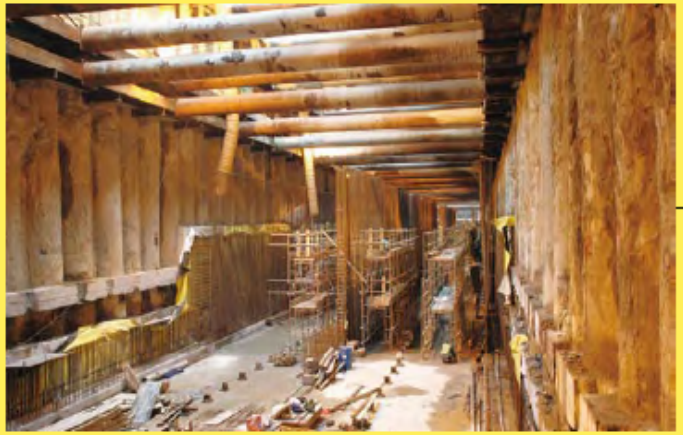
Kowloon Southern Link jointing the East and the West Rail

2001年從高空所見的西九龍快速公路大角咀交匯口及匯入奧運站方向的接入道（圖左）。圖中位於西鐵預留接駁旁的地塊，就是九龍南環線接入南昌站的終端

位於西九龍快速公路大角咀交匯處的南環線接入井口開挖及建造隧道管道的施工情景

在明挖坑道內所見的一個工作環境較特殊的情景。此坑道位於櫻桃街與連接道交界，西欲地鐵奧運站。坑道中之護土支撐為大口徑圓柱樁或鋼管樁。圖中左邊凹入的空間為櫻桃街地下通道(underpass)之底部，其間正進行橫越其底部的挖掘工作

在隧道坑道內完成挖掘後，坑底會分段鋪上一層厚1至1.5m由鋼筋混凝土所建之底墊層，完成後再用大板塊形式之橫板建隧道管壁及頂板。圖中可見由鋼管組成的坑道邊橫橫撐，形成足夠的工作高度及空間，以便隧道管道的建造



在接近柯士甸站之隧道管道因路軌與車站月台交接的轉軌安排，部分隧道需容納一管雙軌的佈局，以至管道切面更為廣闊。圖中為西九龍近海泓道的一段，可見在這種狹小的空間下工作的局限和施工安排

建造隧道管壁所用大板塊形式模板之施工特寫

建造隧道管頂板之施工特寫

The 10 Major Infrastructure Projects

-Transportation Infrastructure

South Island Line

Population including Southern and Western HK is about 0.32m. There is a strong demand to provide a new metro line to serve the District.

The Executive Council has given the approval to the MTR Corporation Limited for the construction of the South Island Line. Construction of the 7 Km rail line will start in 2011 and cost more than $7 billion.

Other data regarding Western Island Line:

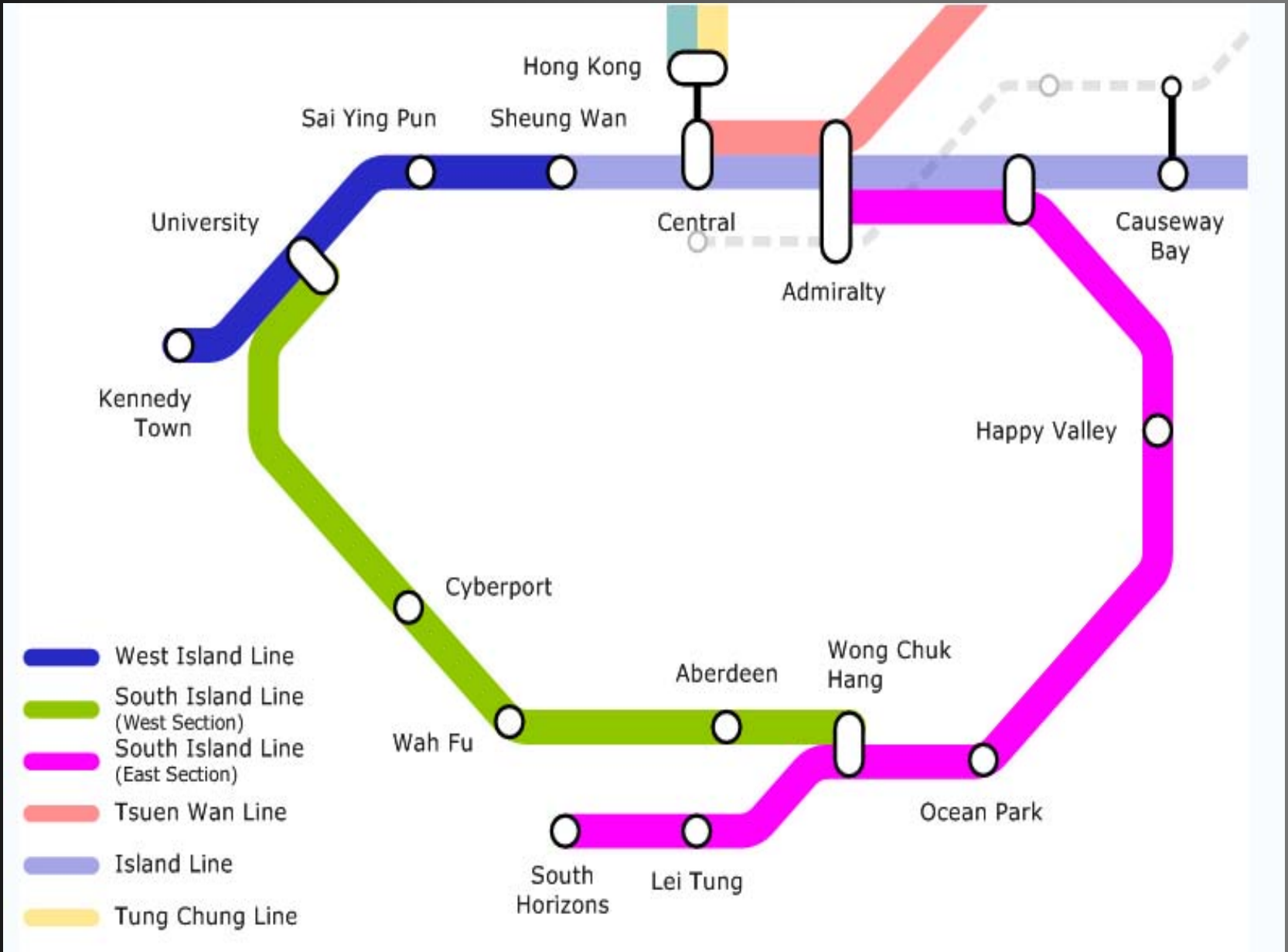
Obtain approval from government – October 2007

Expect time to obtain the final authorization under Railway Ordinance and other legislation procedure – early 2010

Commence detail design – 2009-2011

Commencement of construction – 2010

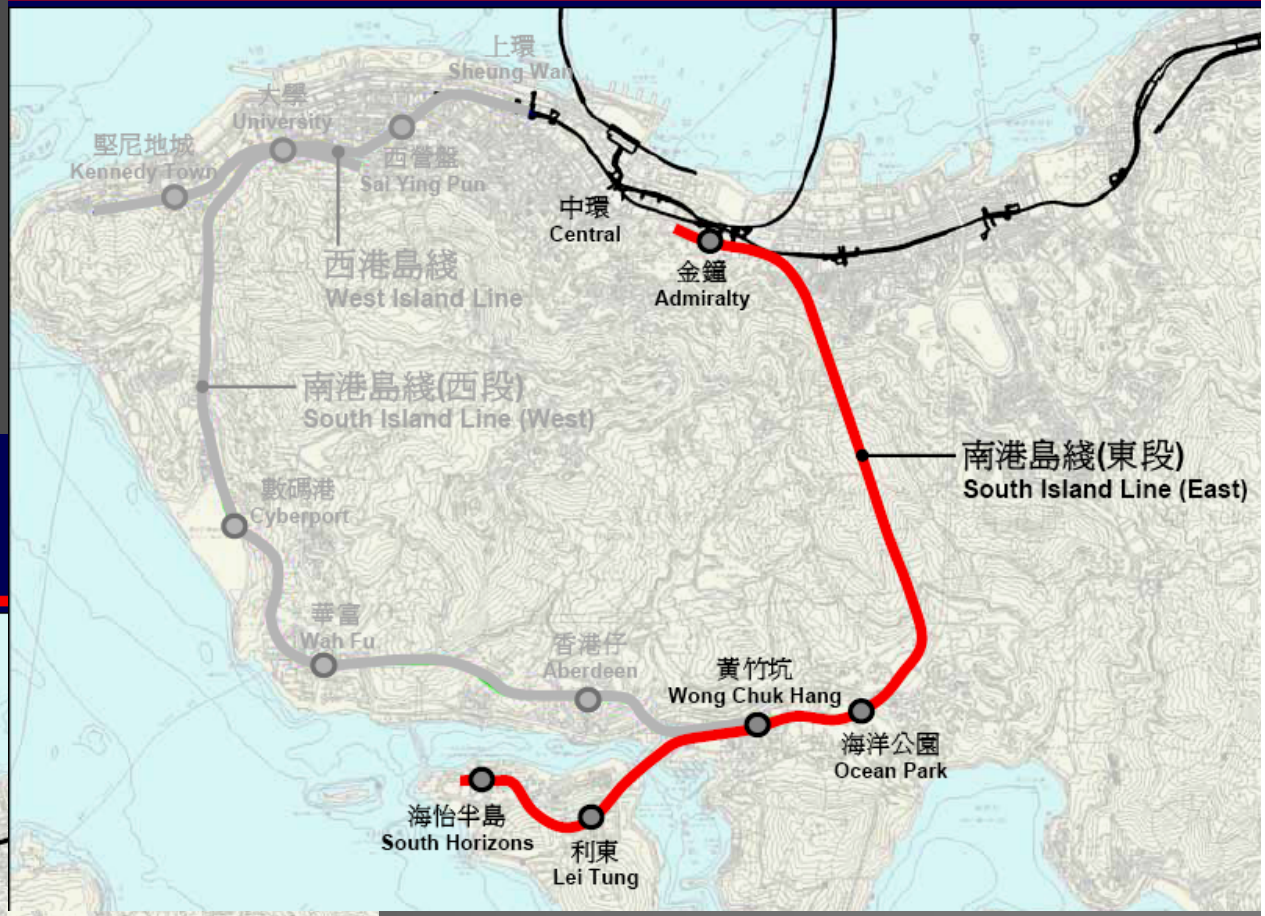
Completion for operation – late 2014



MTR West Island Line and South Island Line

(2005 proposal with Happy Valley Station)

South Island Line (East)



南港島綫(西段)
South Island Line (West)

South Island Line (East) – Indicative Alignment


Lei Tung
Ocean Park
South
Horizons


Wong Chuk Hang
(Interchanging) Station
Lei Tung Station
South Horizons Station
Aberdeen Station
Wah Fu Station
Cyberport Station
Sai Ying Pun Station
University Station
Kennedy Station
S Island Line West
S Island Line South


LIEBHERR
HS 885
320
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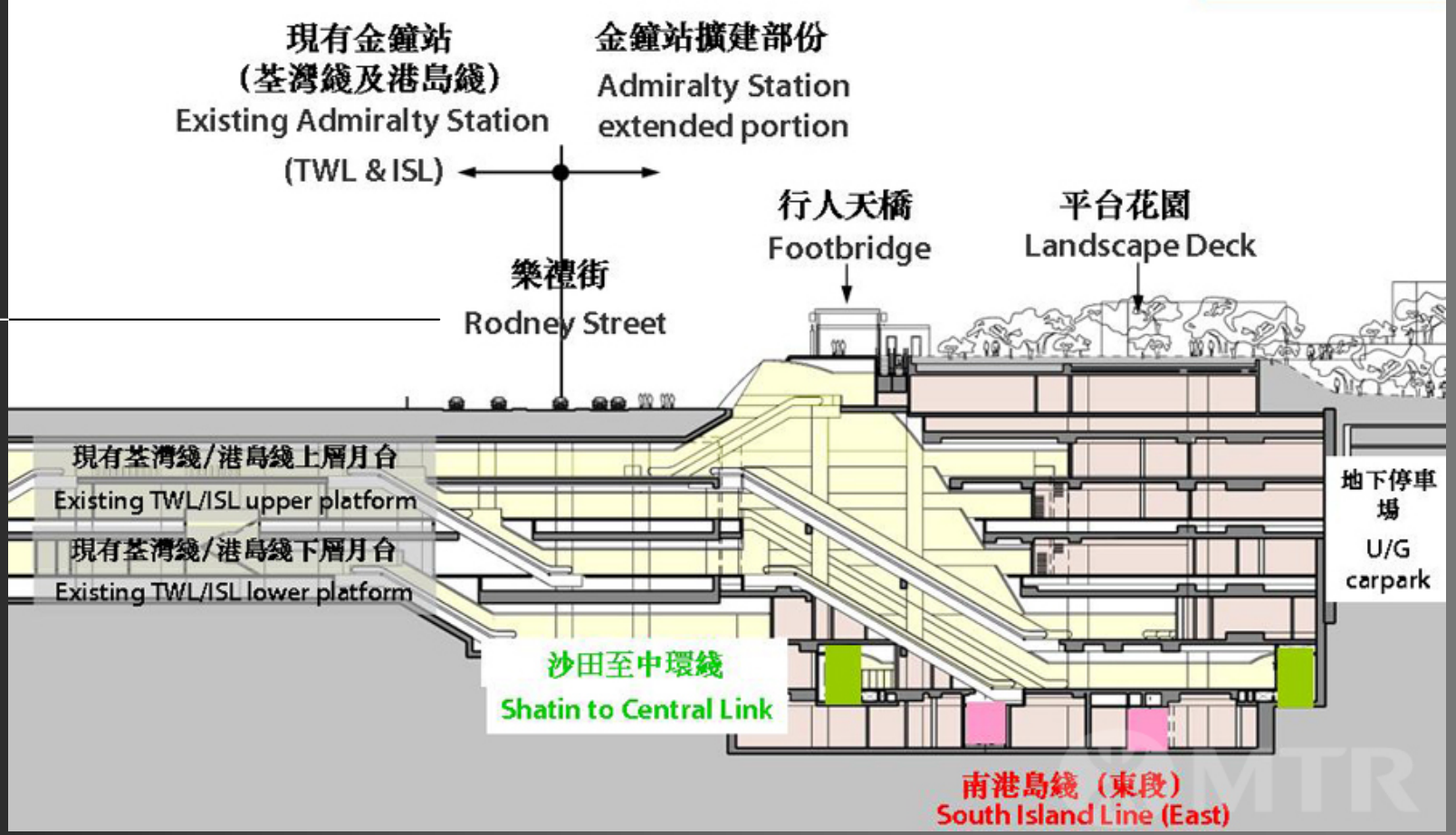
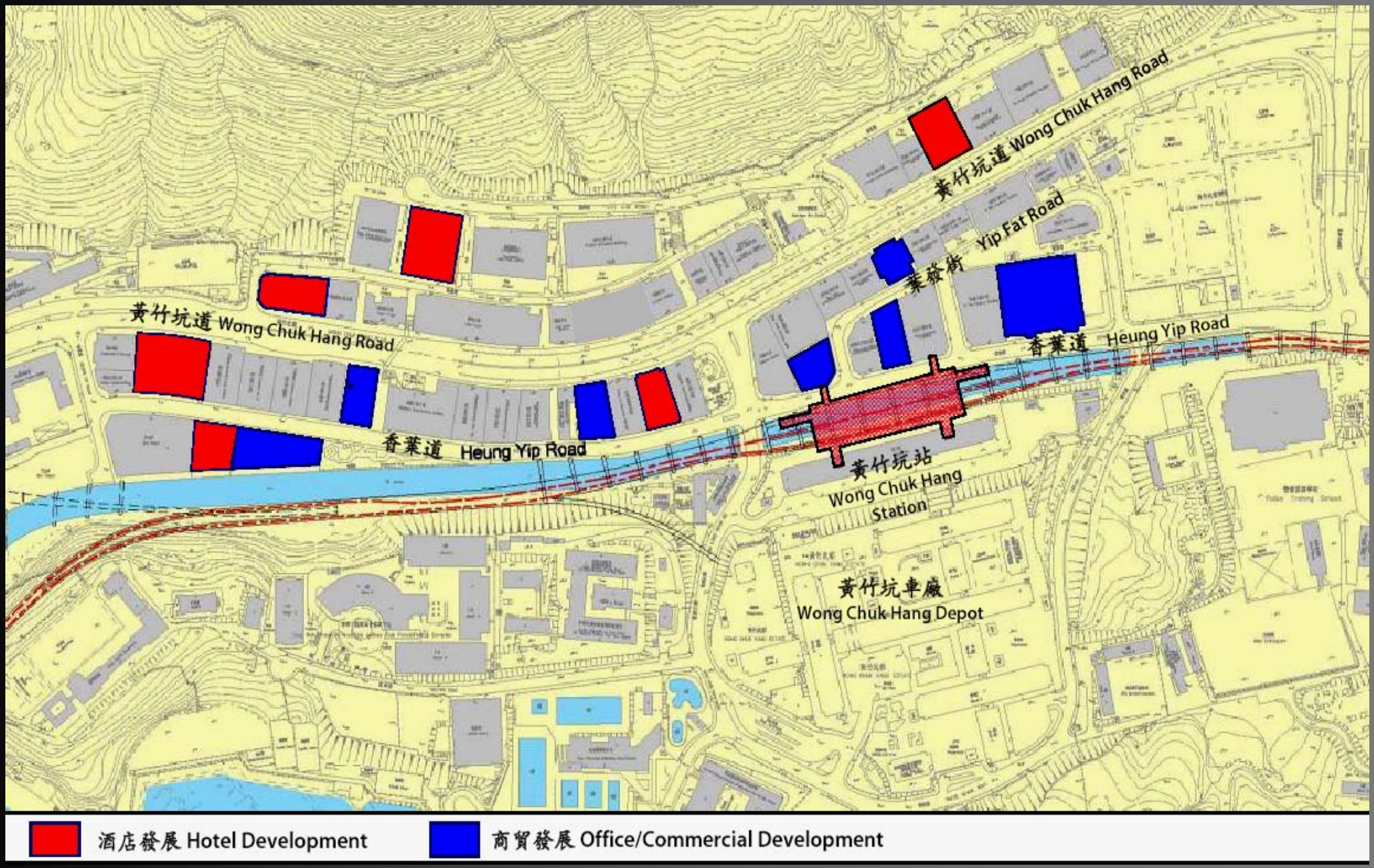
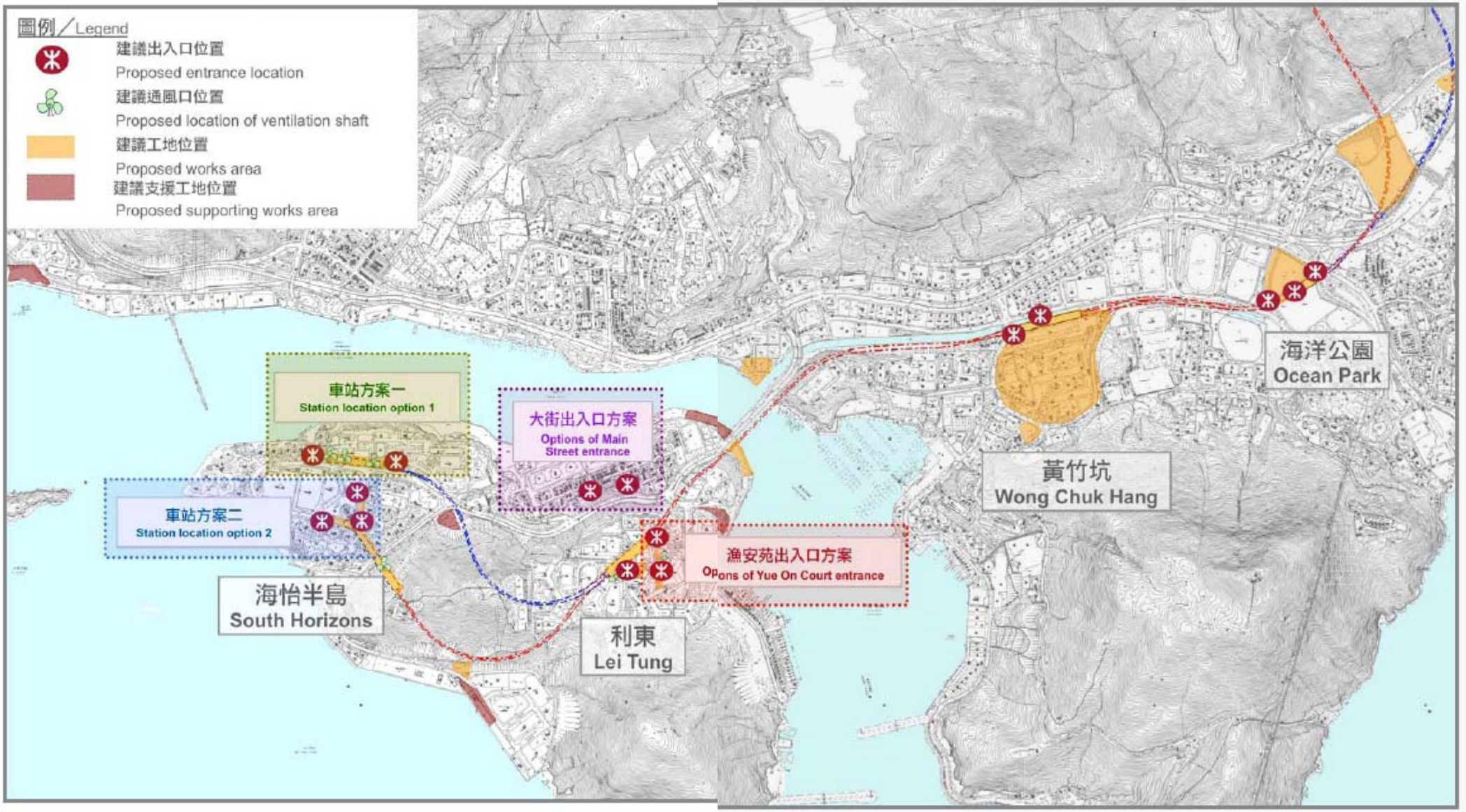
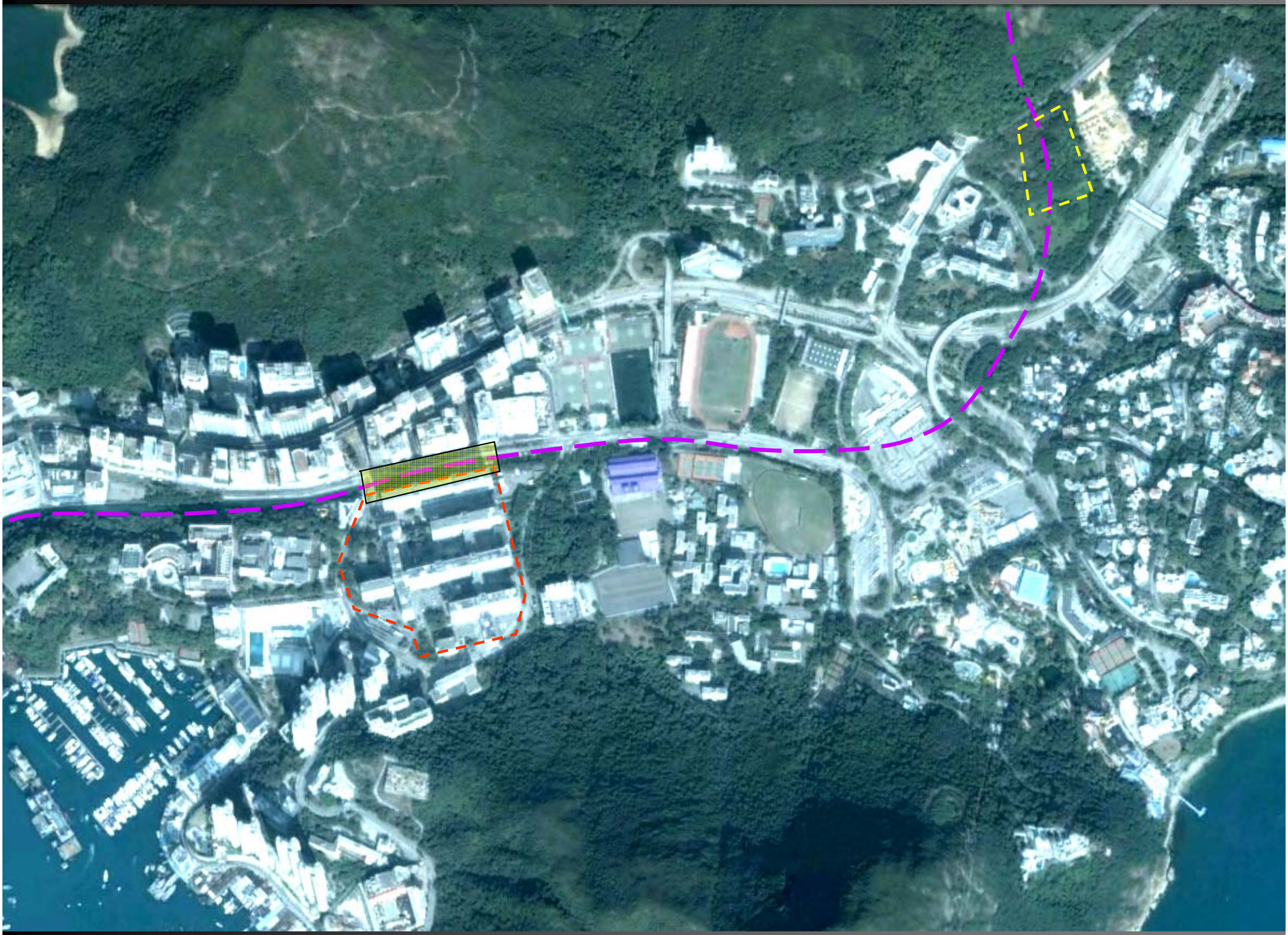

現有金鐘站
(荃灣綫及港島綫)
Existing Admiralty Station
(TWL & ISL)
金鐘站擴建部份
Admiralty Station
extended portion
行人天橋
Footbridge
平台花園
Landscape Deck
樂禮街
Rodney Street
現有荃灣綫/港島綫上層月台
Existing TWL/ISL upper platform
現有荃灣綫/港島綫下層月台
Existing TWL/ISL lower platform
地下停車場
U/G carpark
沙田至中環綫
Shatin to Central Link
南港島綫（東段）
South Island Line (East)

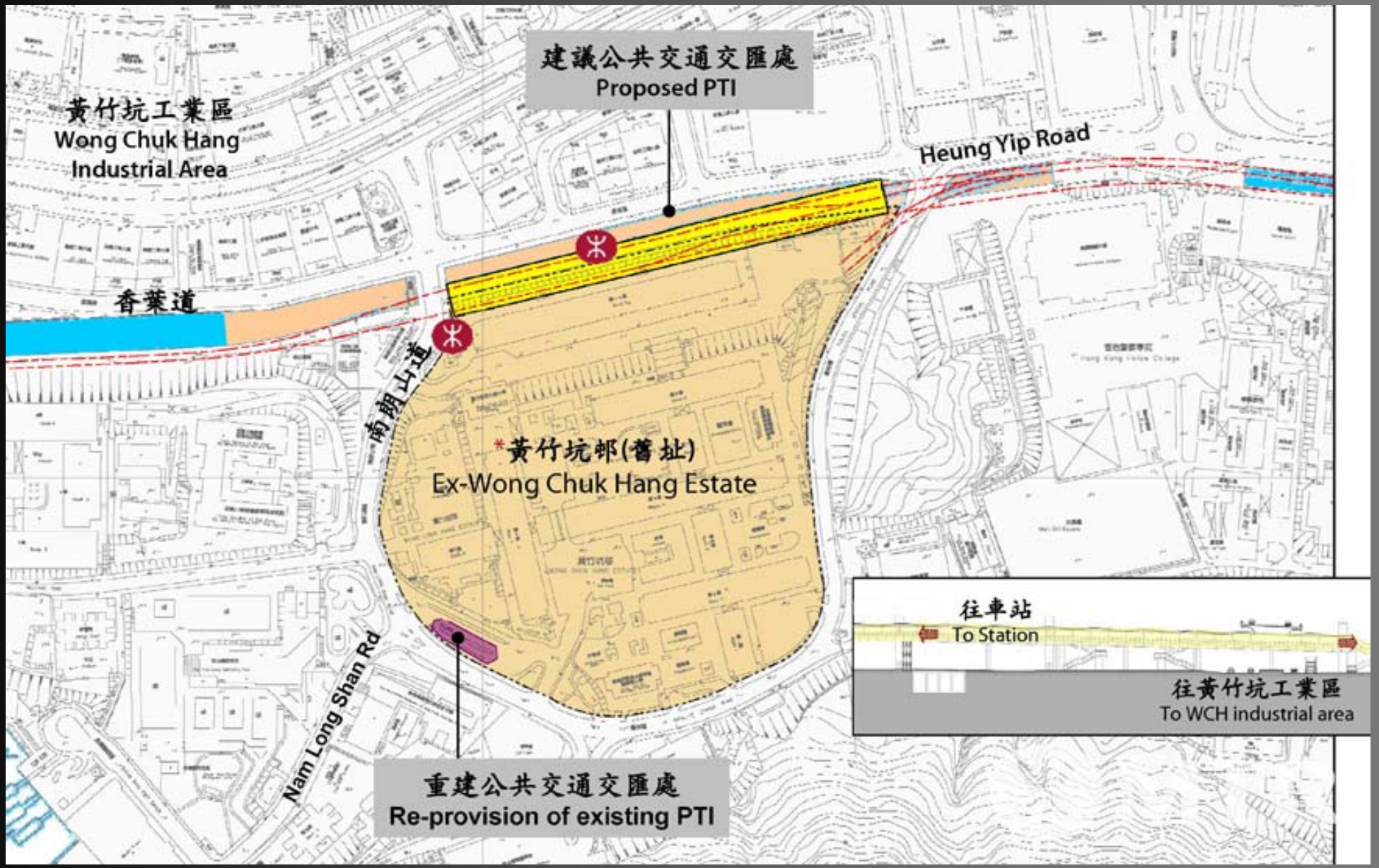
Approx. alignment of elevated rail track at Wong Chuk Hang

Alignment of South Island Line at Wong Chuk Hang



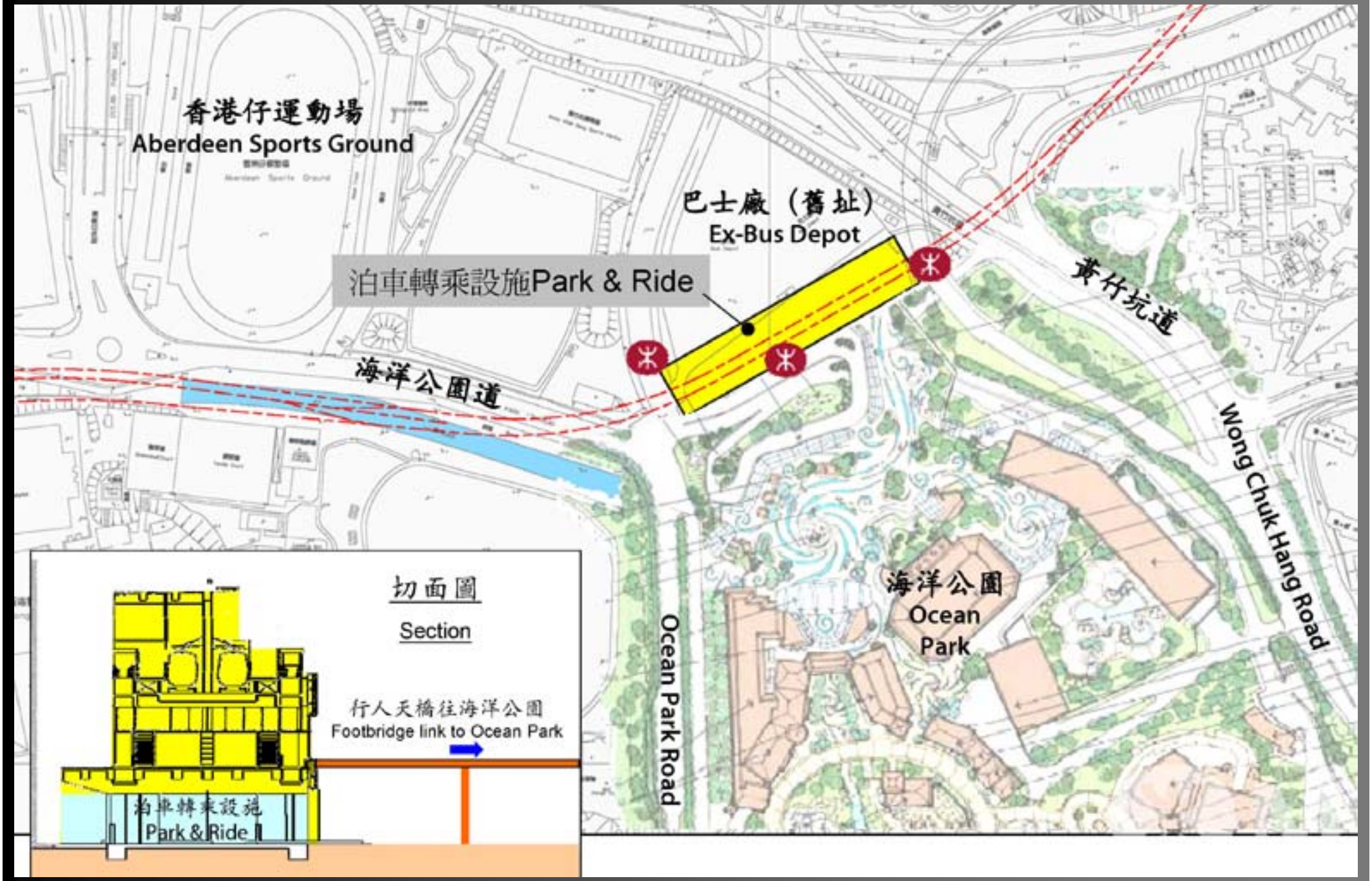

圖例／Legend
建議出入口位置
Proposed entrance location
建議通風口位置
Proposed location of ventilation shaft
建議工地位置
Proposed works area
建議支援工地位置
Proposed supporting works area
車站方案一
Station location option 1
車站方案二
Station location option 2
大街出入口方案
Options of Main Street entrance
漁安苑出入口方案
Options of Yue On Court entrance
海怡半島
South Horizons
利東
Lei Tung
黃竹坑
Wong Chuk Hang
海洋公園
Ocean Park




建議公共交通交匯處
Proposed PTI
黃竹坑工業區
Wong Chuk Hang
Industrial Area
Heung Yip Road
香葉道
南朗山道
*黃竹坑邨(舊址)
Ex-Wong Chuk Hang Estate
往車站
To Station
往黃竹坑工業區
To WCH industrial area
Nam Long Shan Rd
重建公共交通交匯處
Re-provision of existing PTI


Apleichau Main Street
鴨脷洲大街
Ap Lei Chau Bridge Road
漁安苑
Yue On
Estate
利東
Lei Tung
利東邨
Tung Estate


鴨脷洲邨
Ap Lei Chau Estate
海怡路
Horizons Drive
海怡半島
South Horizons
Lee Nam Road
利南道


香港仔運動場
Aberdeen Sports Ground
巴士廠（舊址）
Ex-Bus Depot
泊車轉乘設施Park & Ride
海洋公園道
黃竹坑道
Wong Chuk Hang Road
Ocean Park Road
海洋公園
Ocean
Park
切面圖
Section
行人天橋往海洋公園
Footbridge link to Ocean Park
泊車轉乘設施
Park & Ride

金鐘站

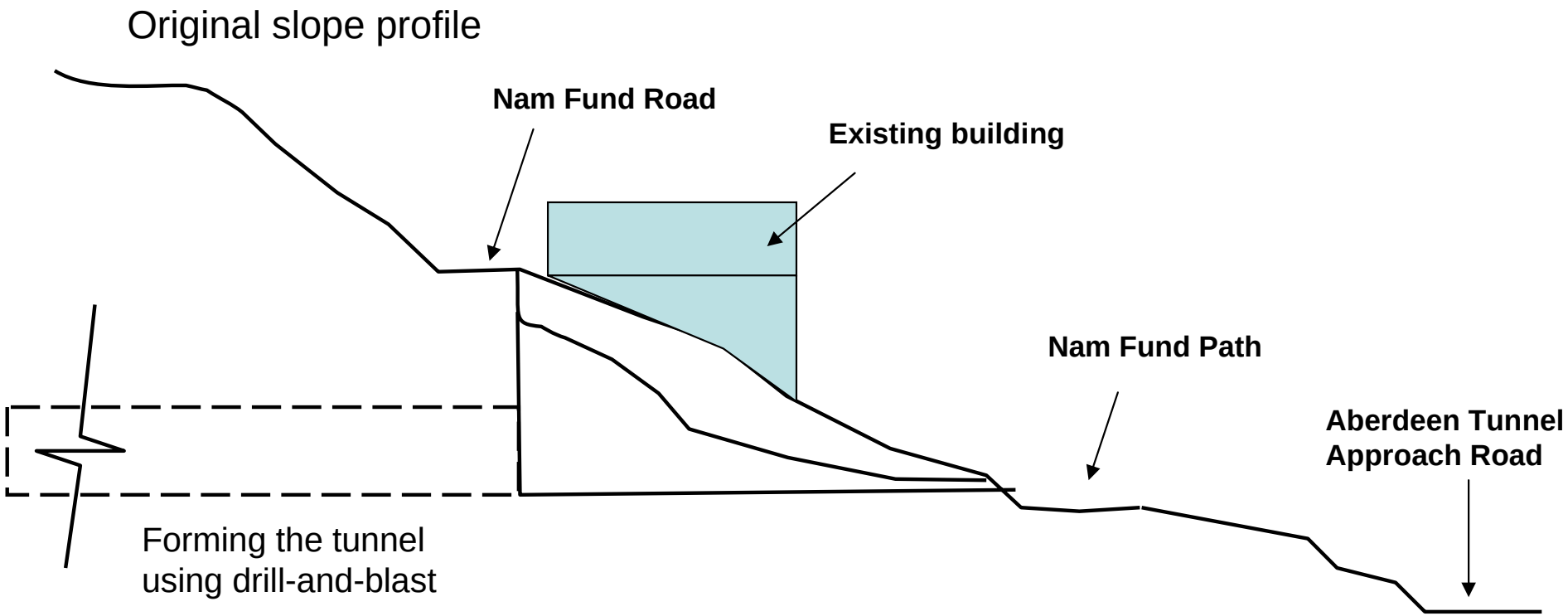
黃竹坑站

現貌

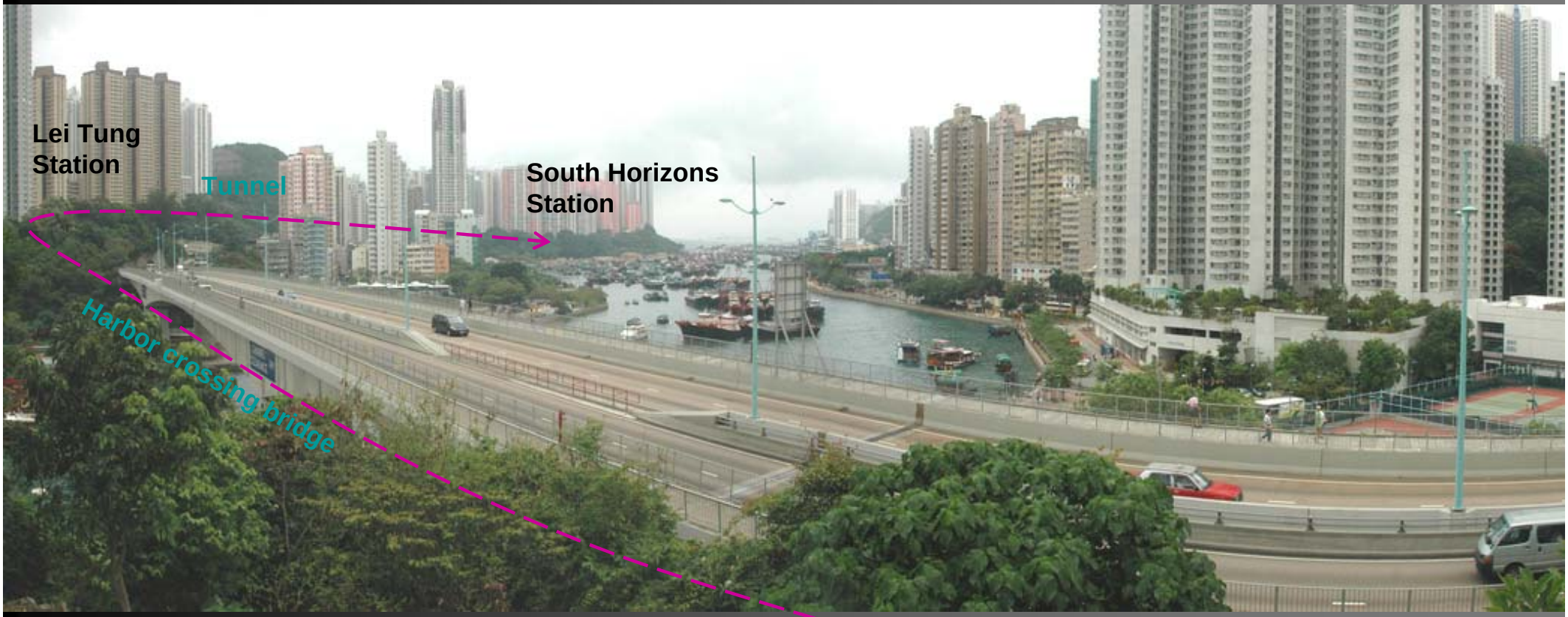
新貌

Urban environment of HK Southern district


Tunnel portal underneath
Nam Fung Road



Formation of the tunnel portal underneath Nam Fung Road


Lei Tung Station
Tunnel
South Horizons Station
Harbor crossing bridge
Approx. alignment of rail track
Elevated track
Track heading from Wong Chuk Hang Station


CHANNEL
CLEARANCE 14M

The forming of a tunnel portal as an advance work for large-size tunnel is often overlooked by outsiders. It may involves million cubic metre of cutting and slope stabilization works. Without which, the carrying out of the tunneling works no matter using what method, can hardly proceed.

This photo shows the formation of tunnel portal for the Nam Wan Tunnel of Route 8

The formation of tunnel portal for the Nam Wan Tunnel

Formation of tunnel portal for Tai Lam Tunnel of Route 3, Ting Kau

Formation of tunnel portal for
Tai Lam Tunnel (TW side), West Rail

Special features of the South Island Line project

- No reclamation required
- Medium capacity system with 3 to 6-car train
- Facilitate tourism development such as for Ocean Park, Aberdeen Waterfront, Fish Market and Cyper Centre
- Enhance urban renewal process – Southern HK is a slow development district since 1980s due to insufficient transportation link.
- Funding by granting the rights for property development to MTR

West Island Line

Background

For the over 200,000 population working and living in the Western District of Hong Kong, only buses and mini-buses are served as means of public transport. It is particularly inconvenient for commuters who are suffering from the frequent traffic jam during peak hours. As a result, residents of the Western District, members of the Central &Western District Council and the Legislative Council have urged strongly for the construction of the West Island Line.

In response to this, the Government decided to proceed with detailed planning and preparations for the West Island Line in June 2005. The MTR Corporation submitted an updated proposal for the West Island Line to the Government in August 2006, setting out the detailed scope, cost and implementation program for the project for government's review.

After a detail study of the scheme as well as conducting a number of consultation to incorporate public views, in October 2007, the Government invited MTRC to proceed with further planning and detailed design of the West Island Line.

In May 2009, the Executive Council endorsed the funding arrangement of the MTR West Island Line (WIL) Project. With that endorsement, funding approval was obtained from the Legislative Council on 3 July 2009 which signified the official commencement of this US$2 billion project.

Highlights of the West Island Line Projects:

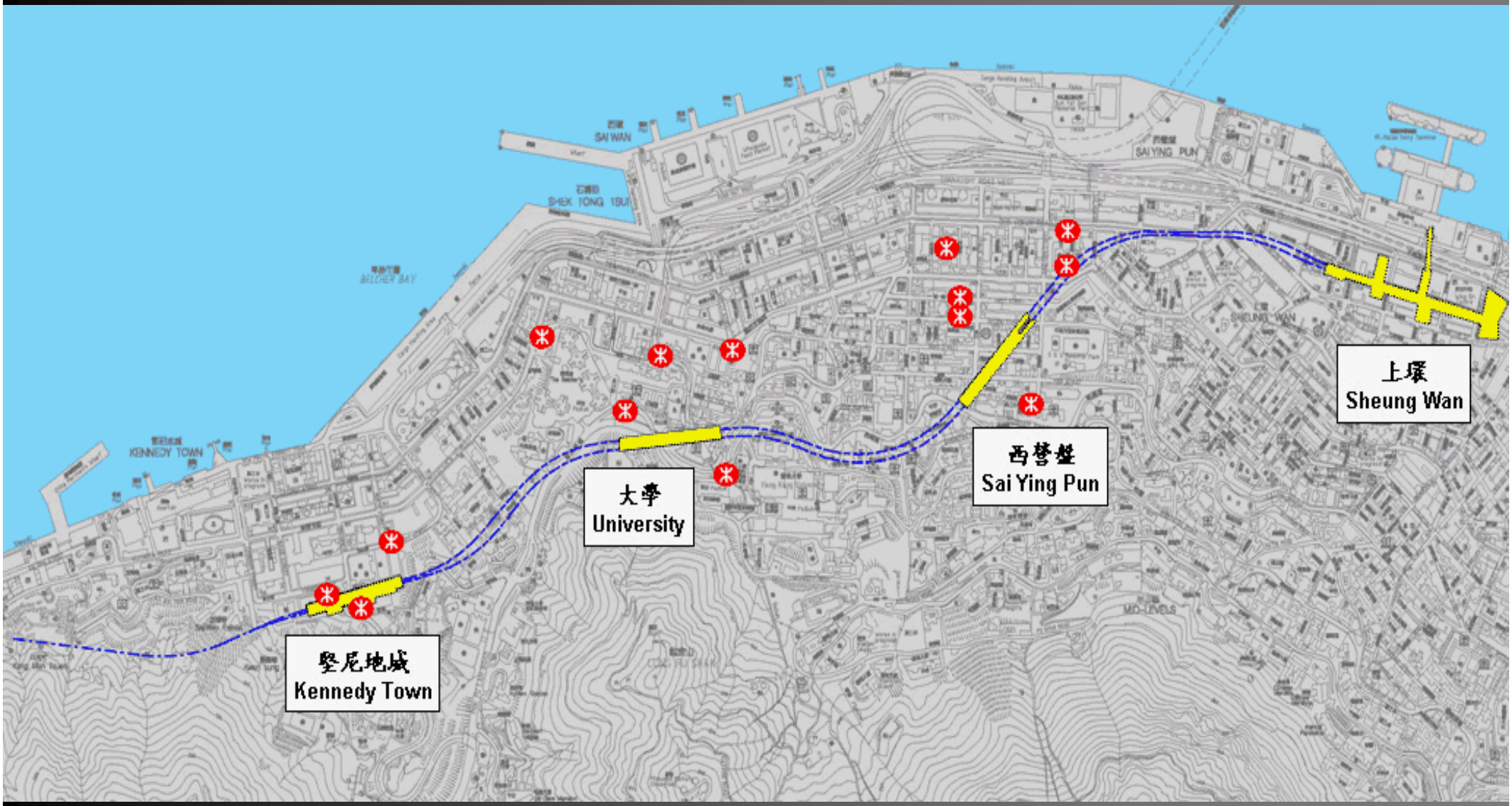
Design features

The 3.5km track for the mass transit railway is running underground with 3 buried stations.

The alignment will merge into the existing 15km-Island Line with further provision for future extension to the 12km-South Island Line.

Along the alignment of the line it covers a population of 0.2 million. In order to improve the public flow, a series of pedestrian subway system with an escalator network will be provided especially for users on elevated uphill levels.

In order to acquire very limited land for station entrances and other operation accesses, a number of existing public facilities are to be relocated (including a swimming pool and a community centre). New facilities will be constructed at the same time to replace such existing services before their removal.



MTR West Island Line alignment

The Western District of Hong Kong from satellite map

West Island Line runs across the densely populated areas of Western District on the Hong Kong Island. It is so designed that over 90% of the residents can access to the new railway stations on foot when the line being completed.

Future connection of the South Island Line (at the rear of Victoria Peak)

Existing Island Line

The approximate alignment of the West Island Line

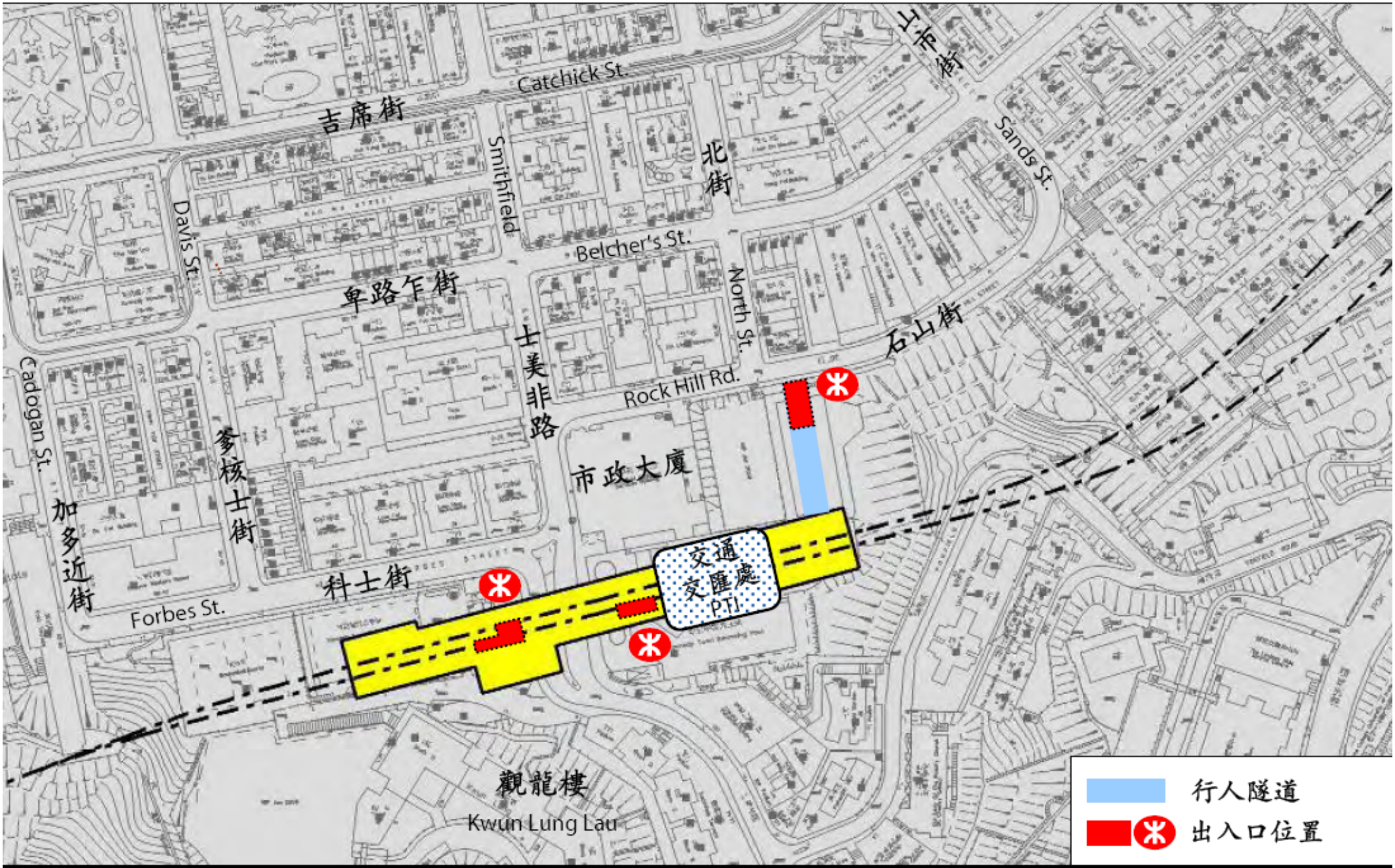
The approximate location of the underground stations (from left to right, the connecting station, Sai Ying Pun, University and Kennedy Town stations)

Typical urban environment where the West Island Line cutting through

Typical urban environment where the West Island Line cutting through

Urban environment of
HK Western district

Kennedy Town Station



The playground and swimming pool as seen in 2008 before their removal for the construction of the Kennedy Town Station


Tunnel coming from University Station

Swimming pool being removed and handed over for construction works in early 2011

Previous playground becomes the work site using semi open-cut method to construct the underground station. The working ground is only a deck platform supported by temporary post to maximize disturbance to the neighborhood as well as serving as a work platform

Temporary platform deck

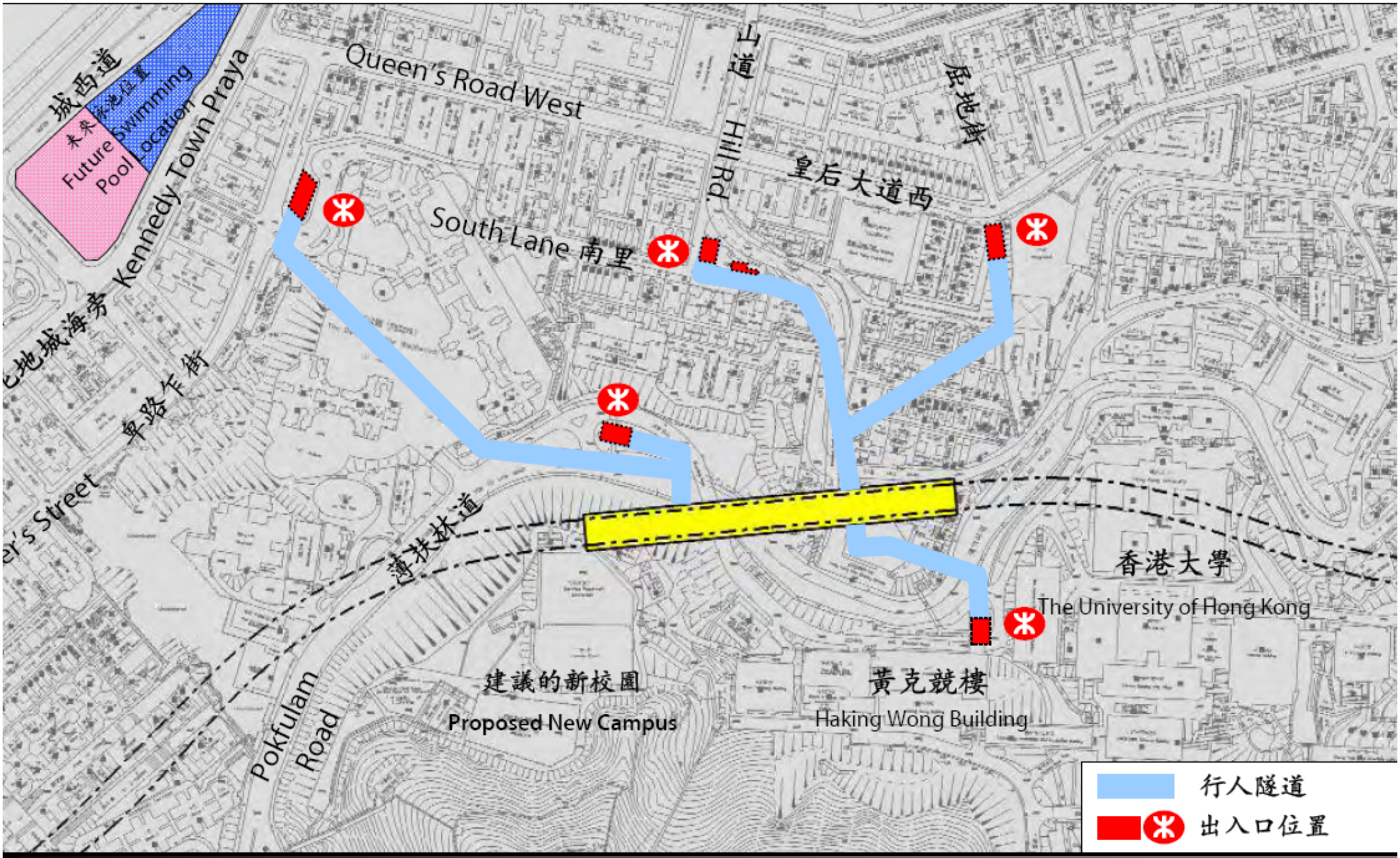
Congested urban environment in close proximity of the working site

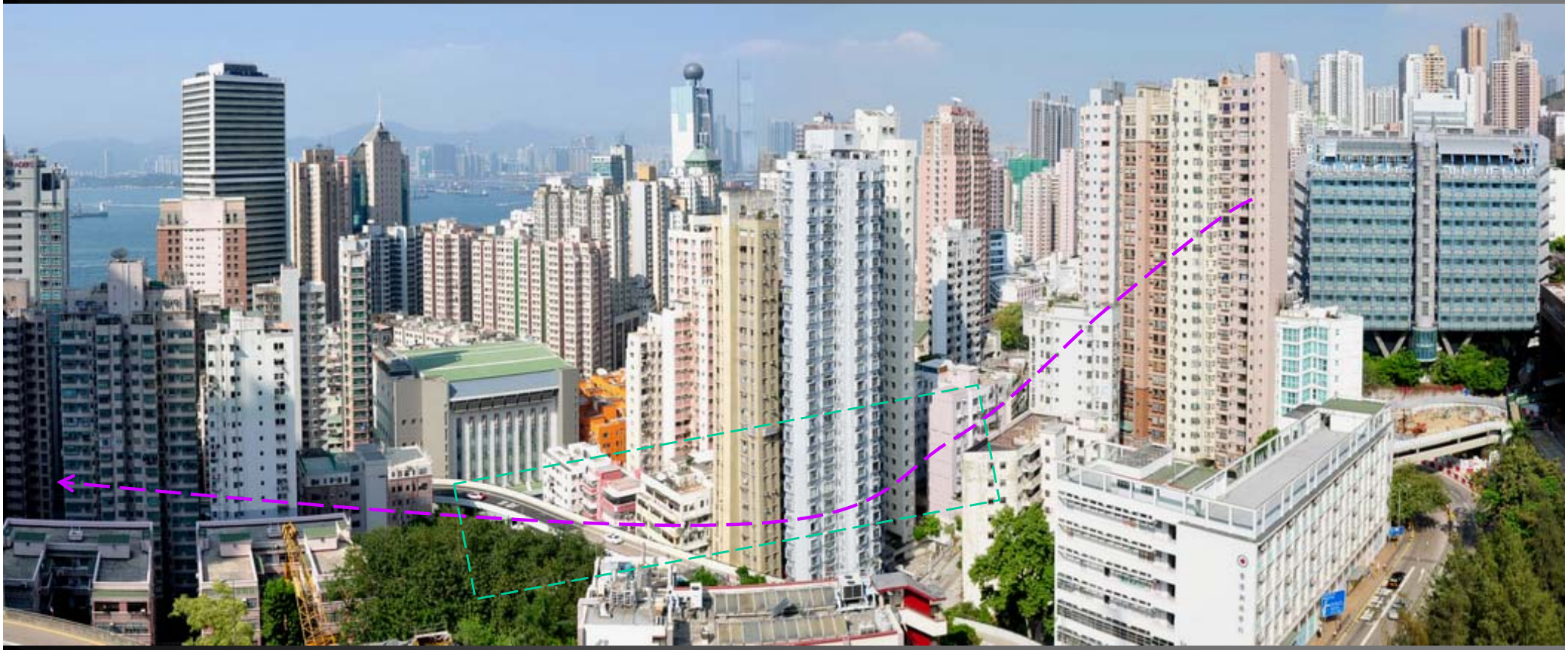
Overview of the station portion on the previous swimming pool site

Physical constraints of the site includes a significant amount of slope stabilization before the carrying out of work in full scale.

Kennedy Town Station, early 2012 - View of the working deck with the access opening and the excavation works underneath in progress

University Station

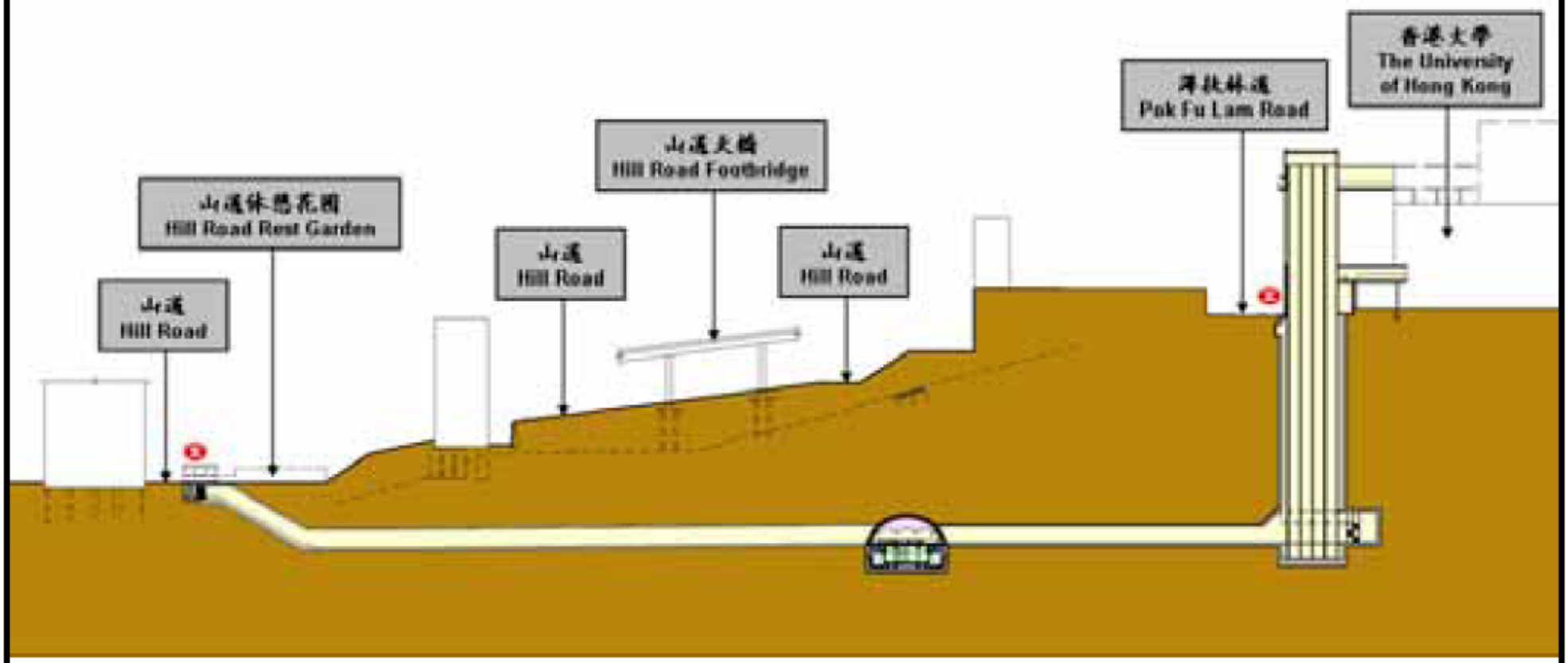




Approx. location of the University Station

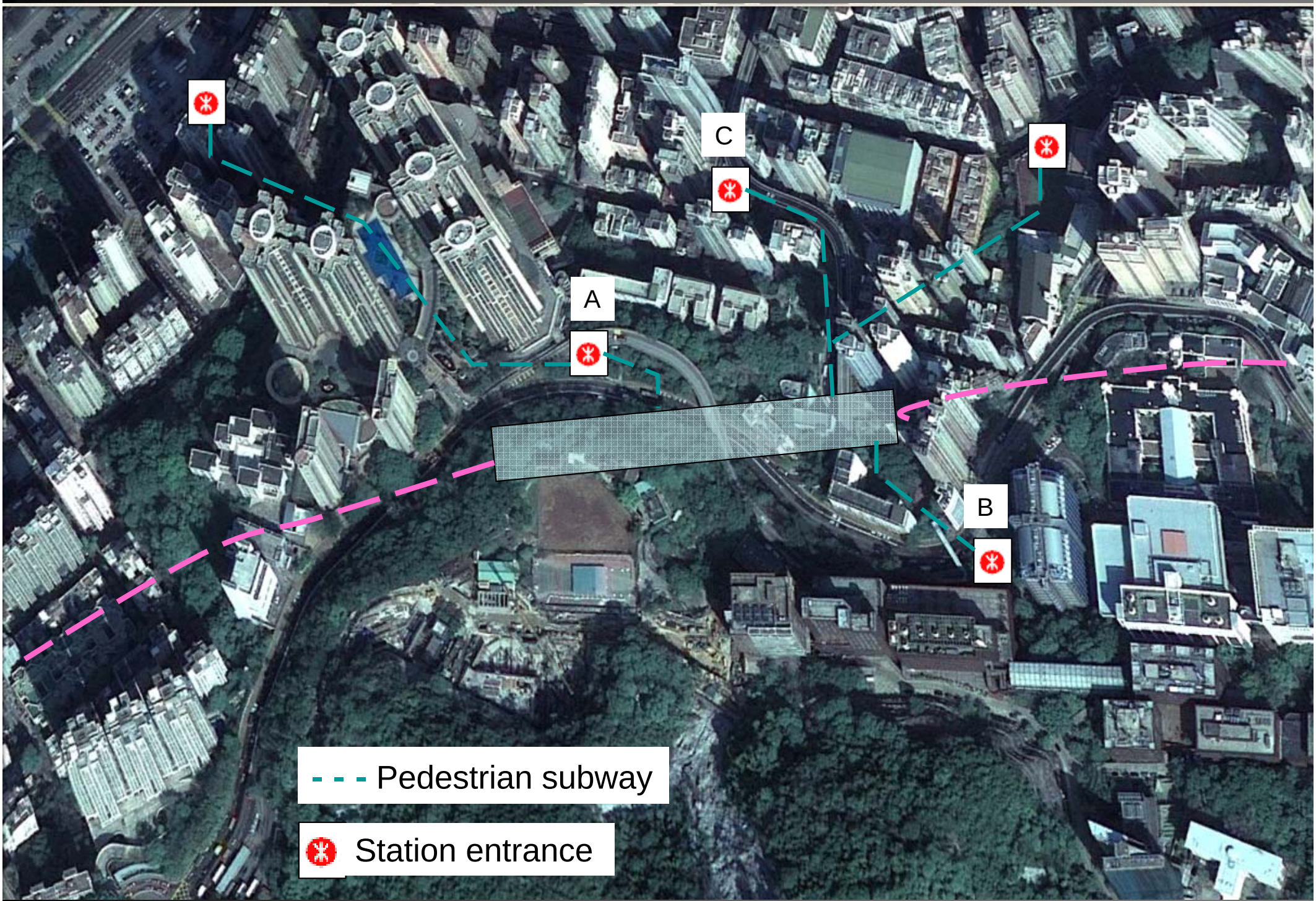
Approx. alignment of the West Island Line

香港大學站之切面圖
Sectional Plan of University Station

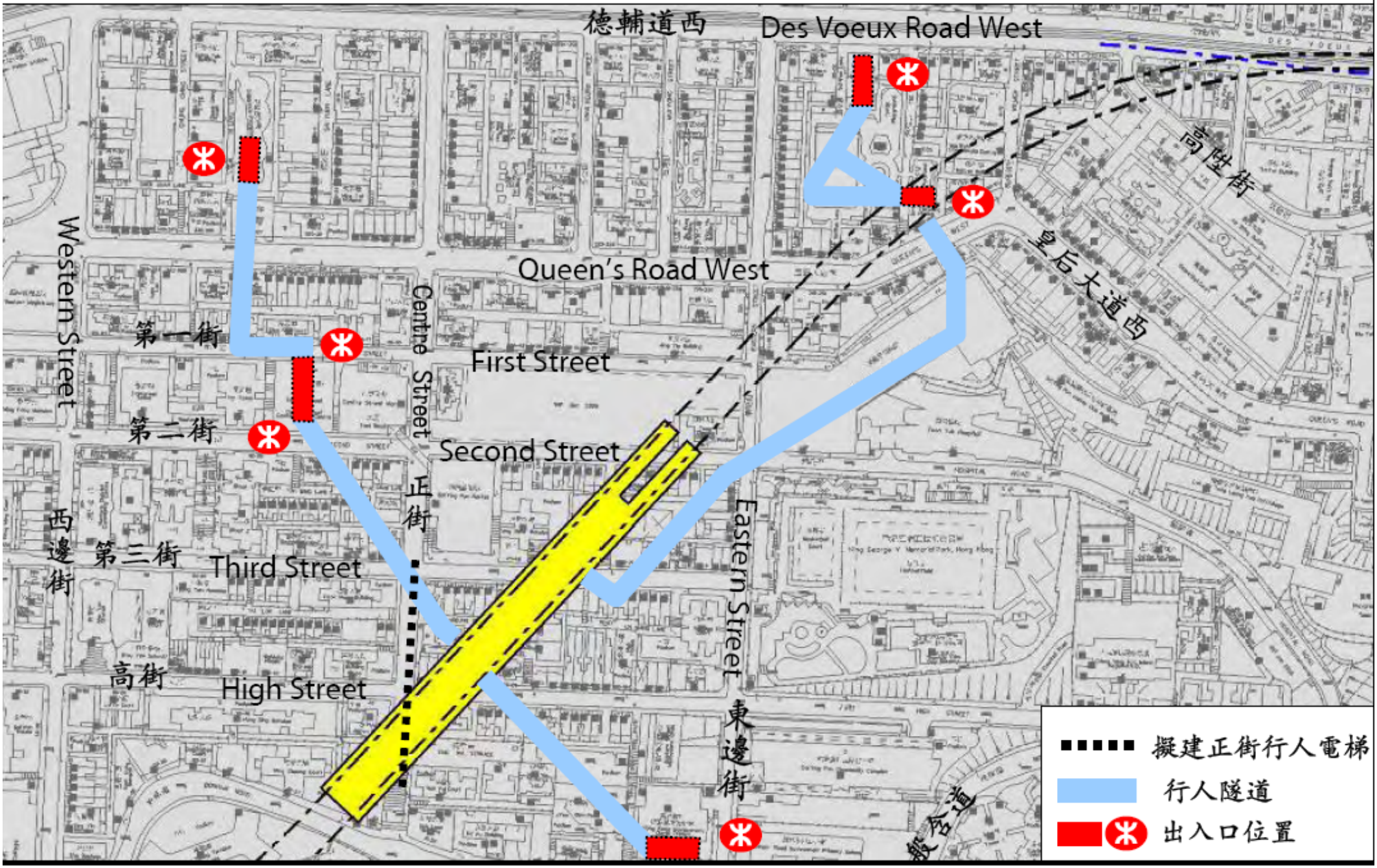


MTR Corporation Limited

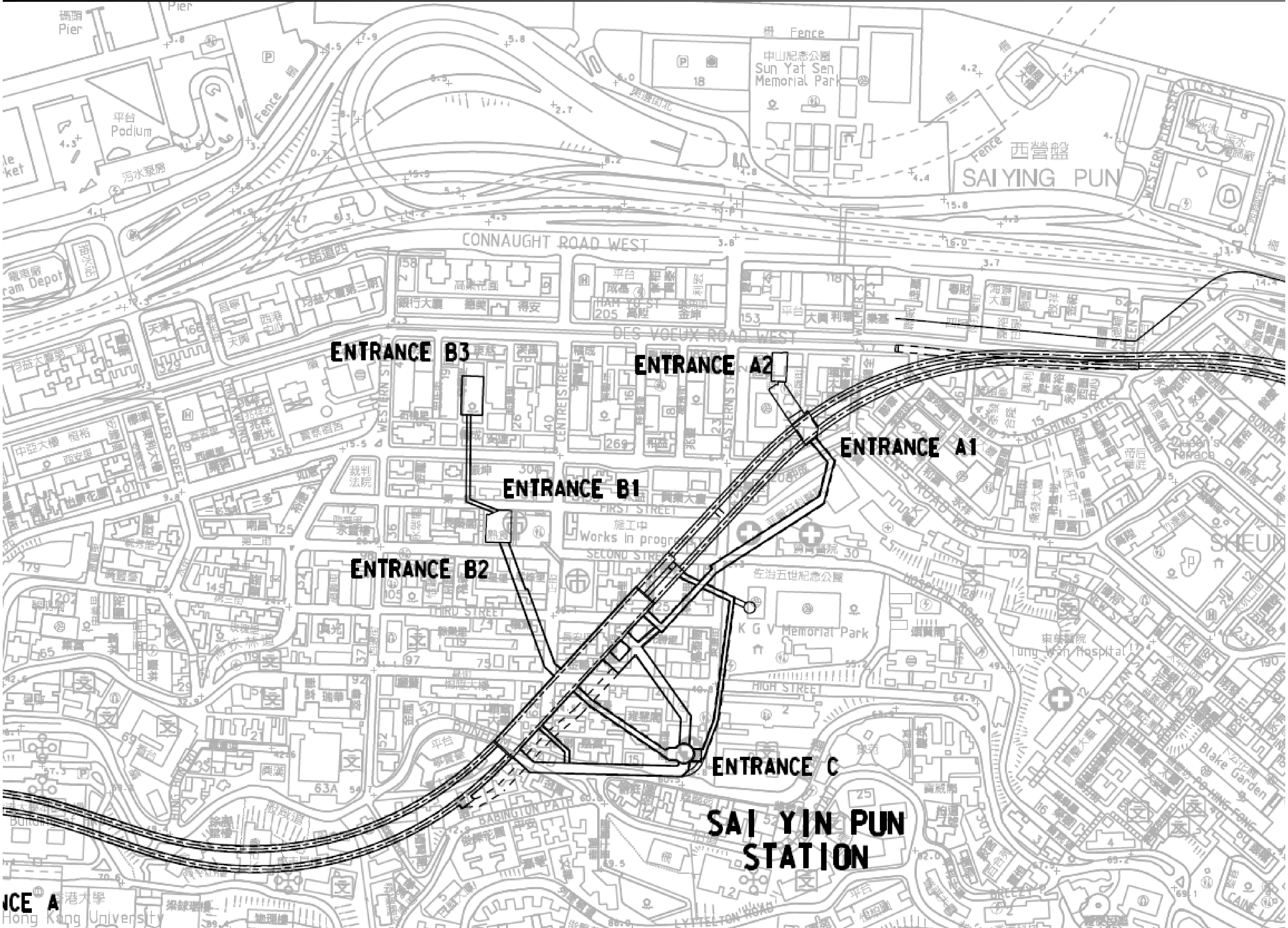
地鐵公司 MTR Corporation

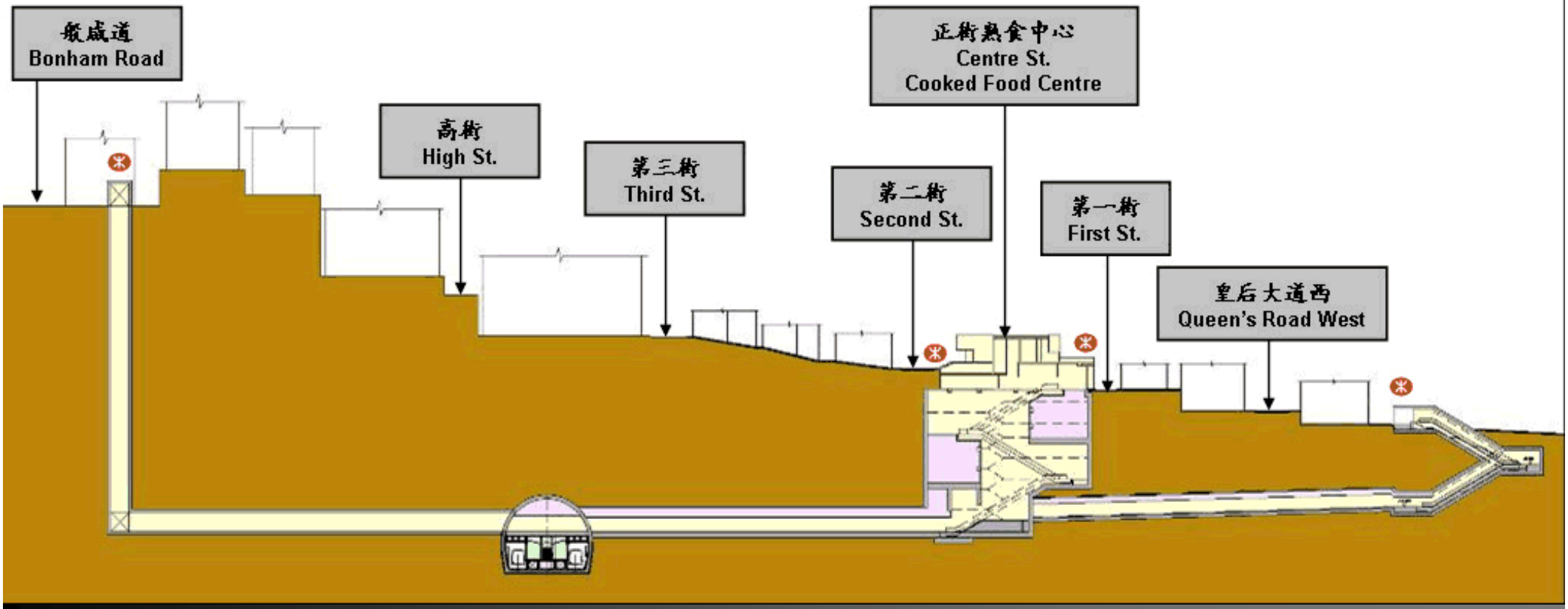

C
A
B
Pedestrian subway
Station entrance

Sai Ying Pun Station




1/2007
B
A
Pedestrian subway
Station entrance


ENTRANCE B3
ENTRANCE A2
ENTRANCE A1
ENTRANCE B1
ENTRANCE B2
ENTRANCE C
SAI YIN PUN
STATION
CONNAUGHT ROAD WEST
DES VOEUX ROAD WEST
SAIYING PUN
Sun Yat Sen
Memorial Park
K G V Memorial Park
Tung Wah Hospital
FIRST STREET
SECOND STREET
THIRD STREET
HIGH STREET
Works in progress
Hong Kong University



Section of the Sai Ying Pun Station and the relation with the nearby urban environment

Forming an vertical shaft for the station entrance at entrance A. This vacated open area also forms an service access for the launching of a tunnel boring machine.

End 2010

Early 2011, with the covering hood and work deck erected

Forming an vertical shaft for the station access at entrance A of University Station

Semi-underground storm water discharge to be diverted to allow for the placing of the pedestrian subway

(near University Station entrance B)

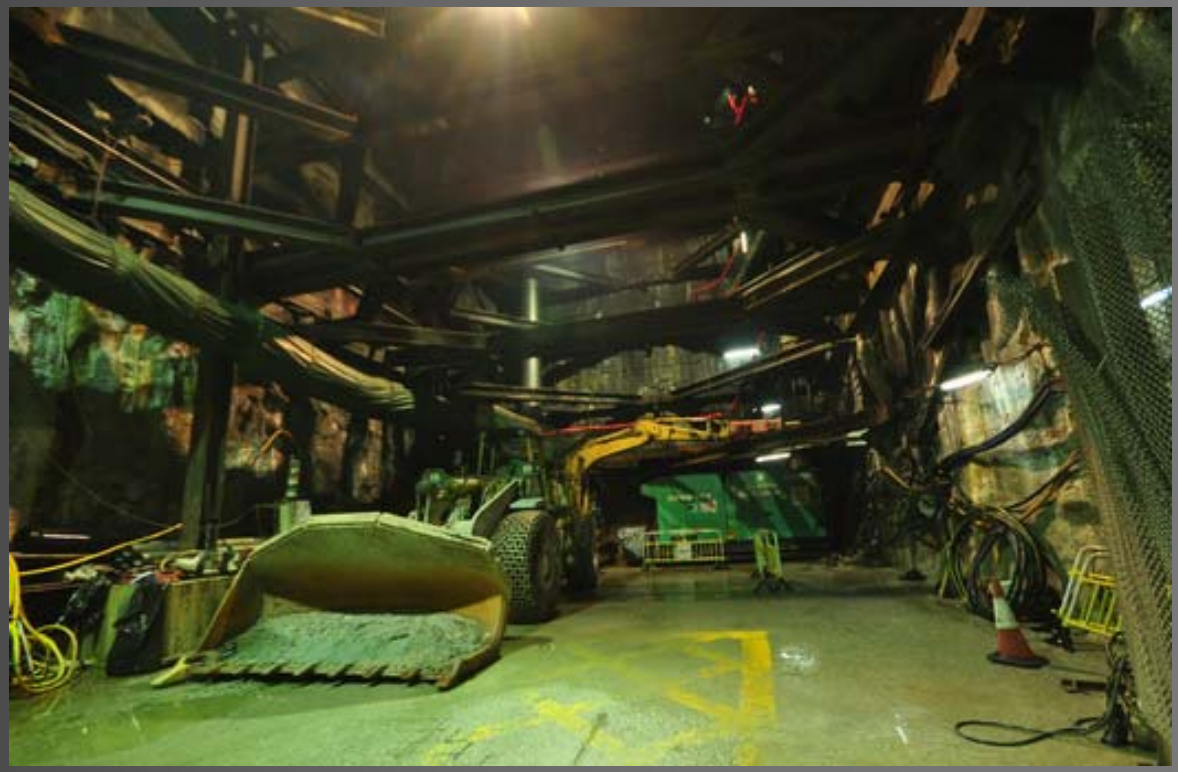
Forming an vertical shaft for the station entrance at entrance C.


24 hrs
全日

Forming an vertical shaft for the station entrance at entrance C. A covering deck has been erected to minimize public disturbance.

Other safety and environmental provisions inside the tunnel at work, which include the temporary ventilation duct, blast protection gate, dust filter and service pipework etc.

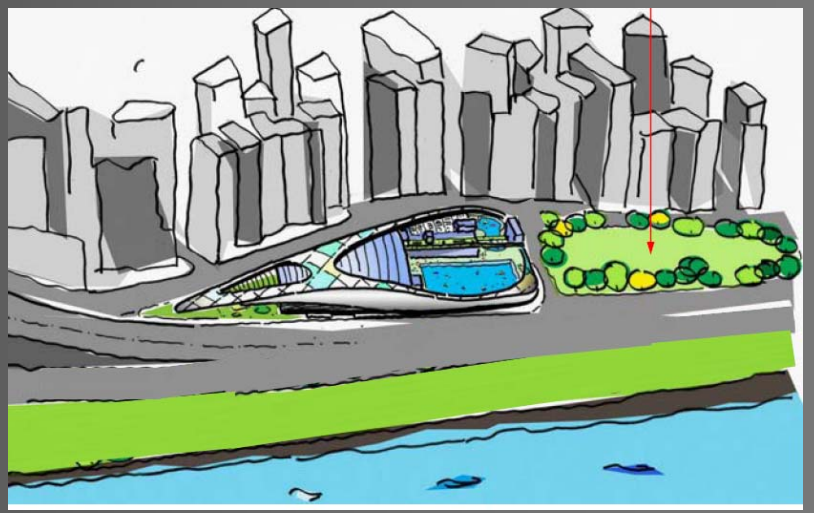

實踐安全至上



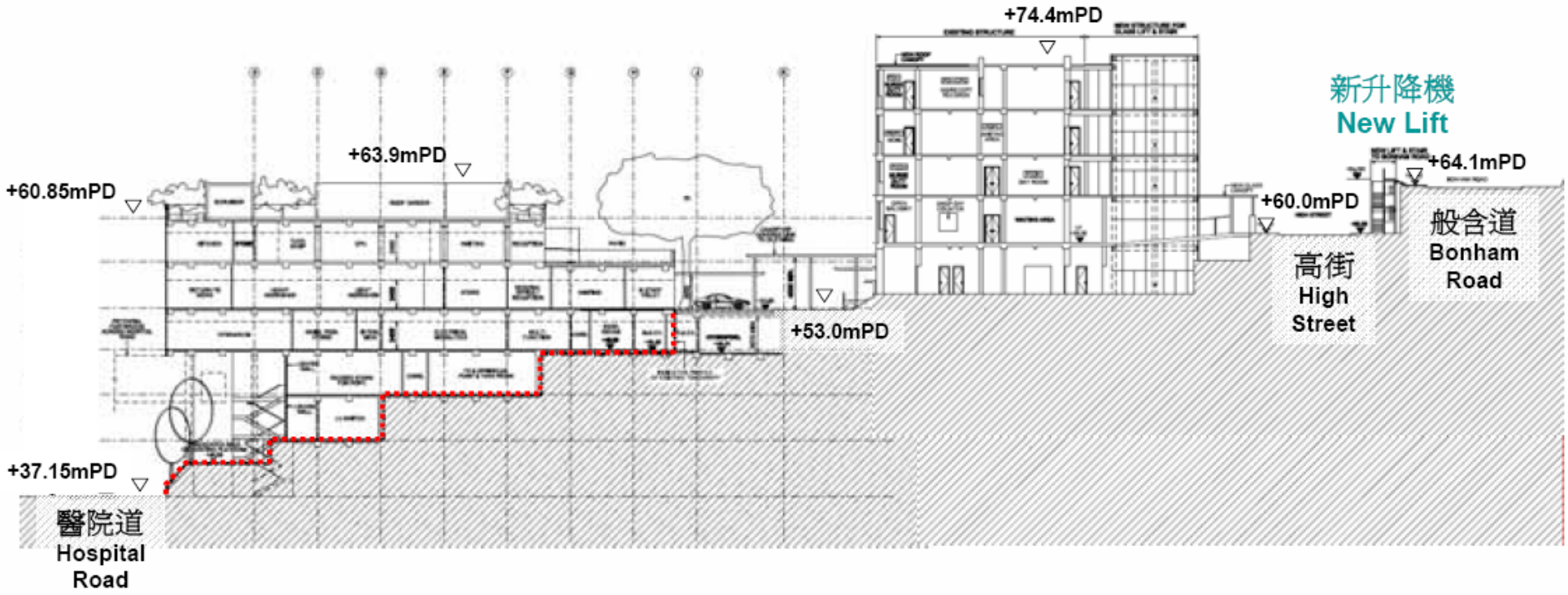
Construction of a new swimming pool to replace the existing one at the new Kennedy Town Station site.

Previous lorry parking area to be used as the new site for the swimming pool

New swimming pool completed for operation in early 2011. Upon the changing over, the one in Kennedy Town started the demolition.



重置戴麟趾康復中心（2）
Relocation of David Trench Rehabilitation Centre (2)

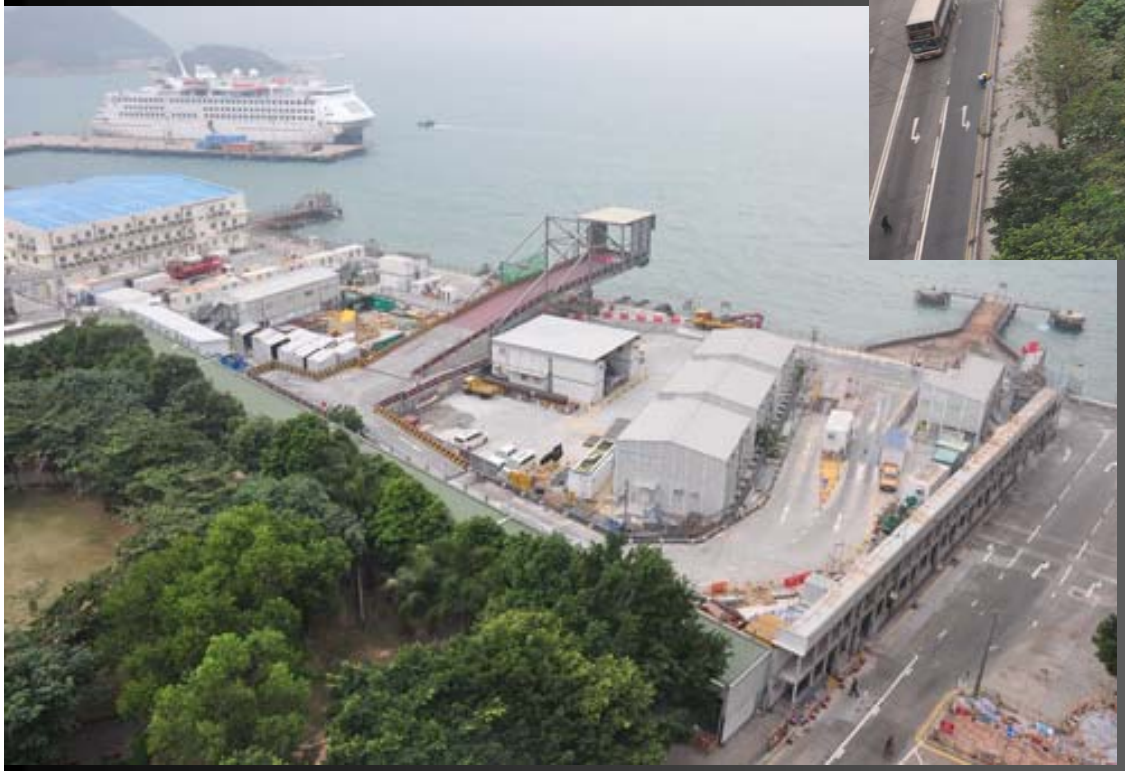


新大樓 **NEW** Building

前半山警署 **OLD** Building

The ex upper-level police Station at High Street as viewed before the commencement of conversion work in late 2009.

In order to minimize disturbance to local traffic, temporary barging points are set up at the previous incinerator site and Western District Public Cargo Works Areas for the removal of excavated spoil by sea. Covered conveyor belts are temporary erected to carry the excavated materials directly from the tunnel drilling/excavation points for disposal.



Covered conveyor

Western District Public Cargo Works Area served as a spoil disposal point during the work period

Facilities and set-up for the spoil disposal arrangement

Examples showing the complexity of the West Island Line Projects

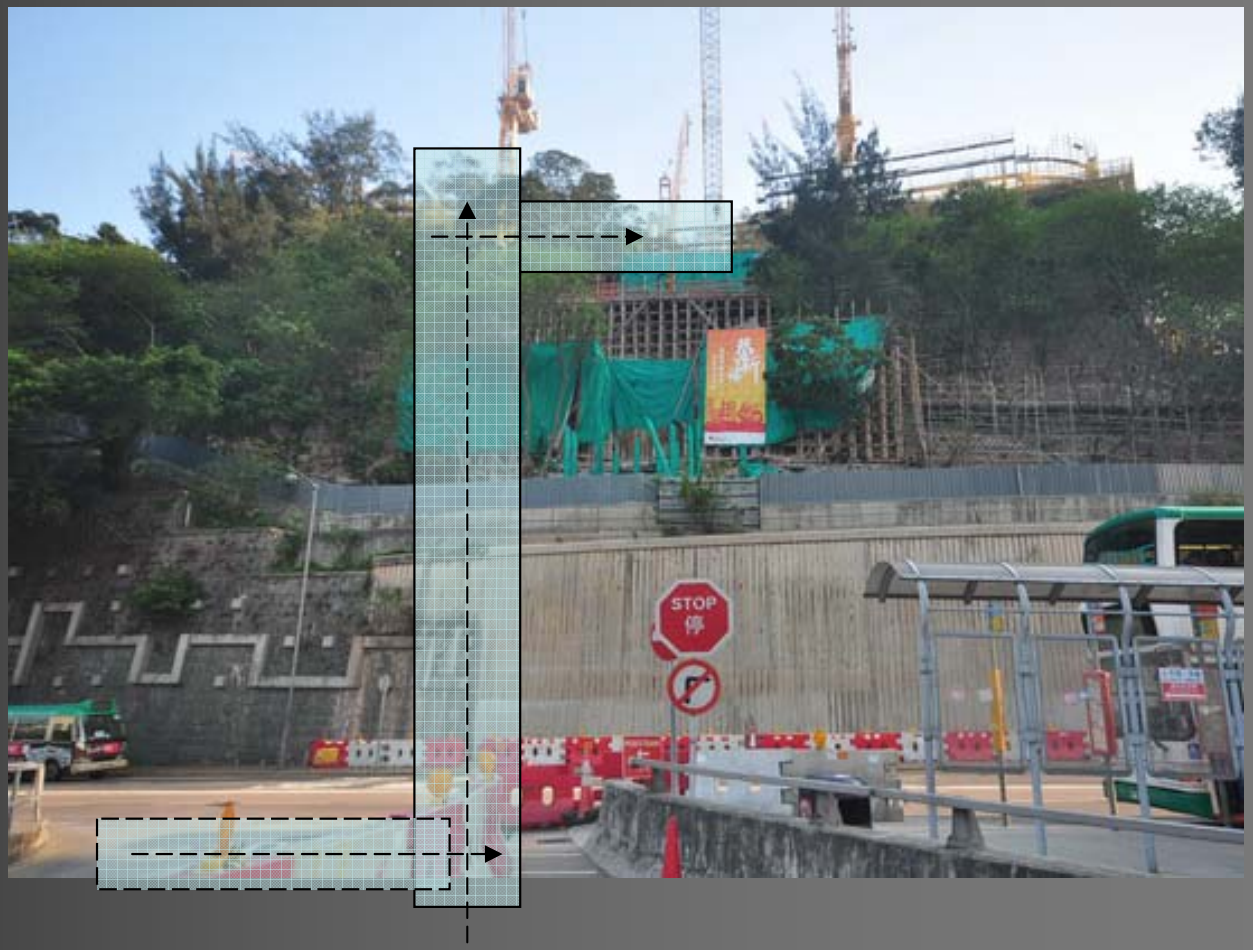
Large areas of work locations involving complicated slope cutting and stabilization works

堅尼地城警察宿舍附近斜坡鞏固工程

Locations in close proximity of the work areas where land-slide occurred shortly before the commencement of the WIL projects

Examples showing the complexity of the West Island Line Projects

Difficult location for the forming of pedestrian access point



Access to be provided from underground pedestrian subway leading to elevated location (HK University access)

Tunnel construction using
tunnel boring machine (TBM)

The Sha Tin to Central Link

The SCL is one of the strategic railway lines recommended in the Railway Development Strategy 2000. In March 2008, the Executive Council approved the further planning and design of the SCL using a service concession approach under which the project will be funded by the Government and the Corporation is entrusted with its planning and design.

The railway scheme was gazetted on 26 November 2010 under the Railways Ordinance and authorised by the Chief Executive in Council on 27 March 2012. The Finance Committee of the Legislative Council endorsed the funding of the SCL project on 11 May 2012.

Special features of the Shatin to Central Link

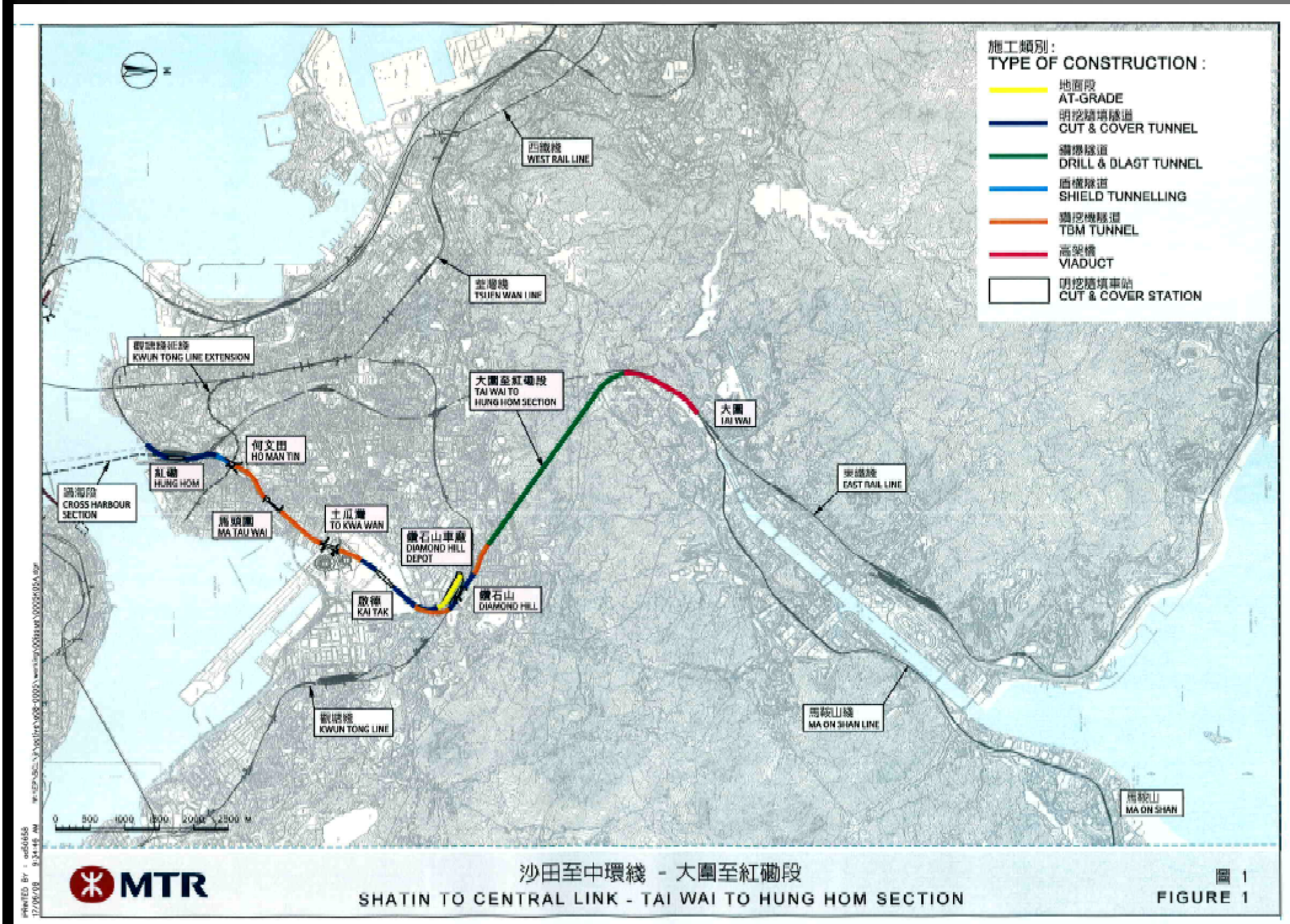
- Total length of the line is about 17 km.
- Majority of the track alignment are constructed underground
- Construction of a 3.5 km tunnel running from Tai Wai to Diamond Hill
- Construction of one 1.5 km harbour-crossing tunnel (using immerse tube method) running from Hung Hom to Causeway Bay
- Kwun Tong Line will also be extended from Yau Ma Tei Station to provide rail service for Whampoa area, with an intermediate station at Homantin.
- Interchanging provisions will be allowed for future connection to East Rail at Tai Wai and Hung Hom; to Kwun Tong Line at Diamond Hill, to the future North Hong Kong Island Line at Causeway Bay and the rail network to the Southeast Kowloon redevelopment (former Kai Tak).
- Expedite urban renewal process for East Kowloon along Hung Hom, To Kwa Wan, Kowloon City and San Po Kong

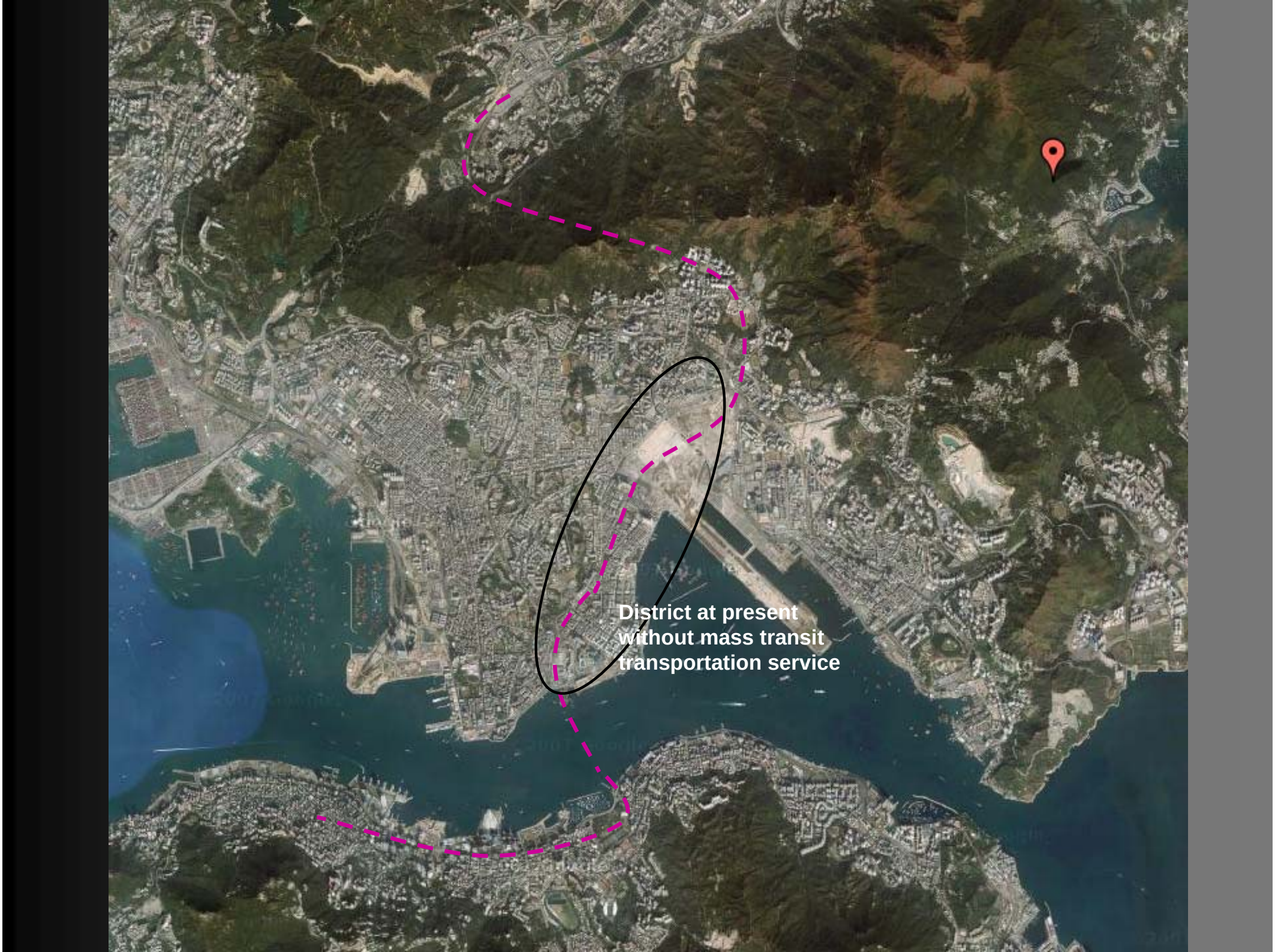
Operation and Schedule

- A 'service concession approach‘ will be adopted for the funding of construction cost directly and leasing the line to MTR under a 50-year operating concession valued at about HK$70bn. This allows the government to retain control of the property development rights.
- In the light of future railway service demands, and in consideration of the interfaces between the SCL and the various development plans and infrastructure projects along its alignment, the Government intends to have the SCL completed in phases, with the Tai Wai to Hung Hom section by 2018 and the cross harbour section by 2020.
- Due to complicated overlapping with other major infrastructure projects on the Hong Kong side, works at the following locations are entrusted to the Central-Wanchai Bypass/Wanchai Development Phase II projects:

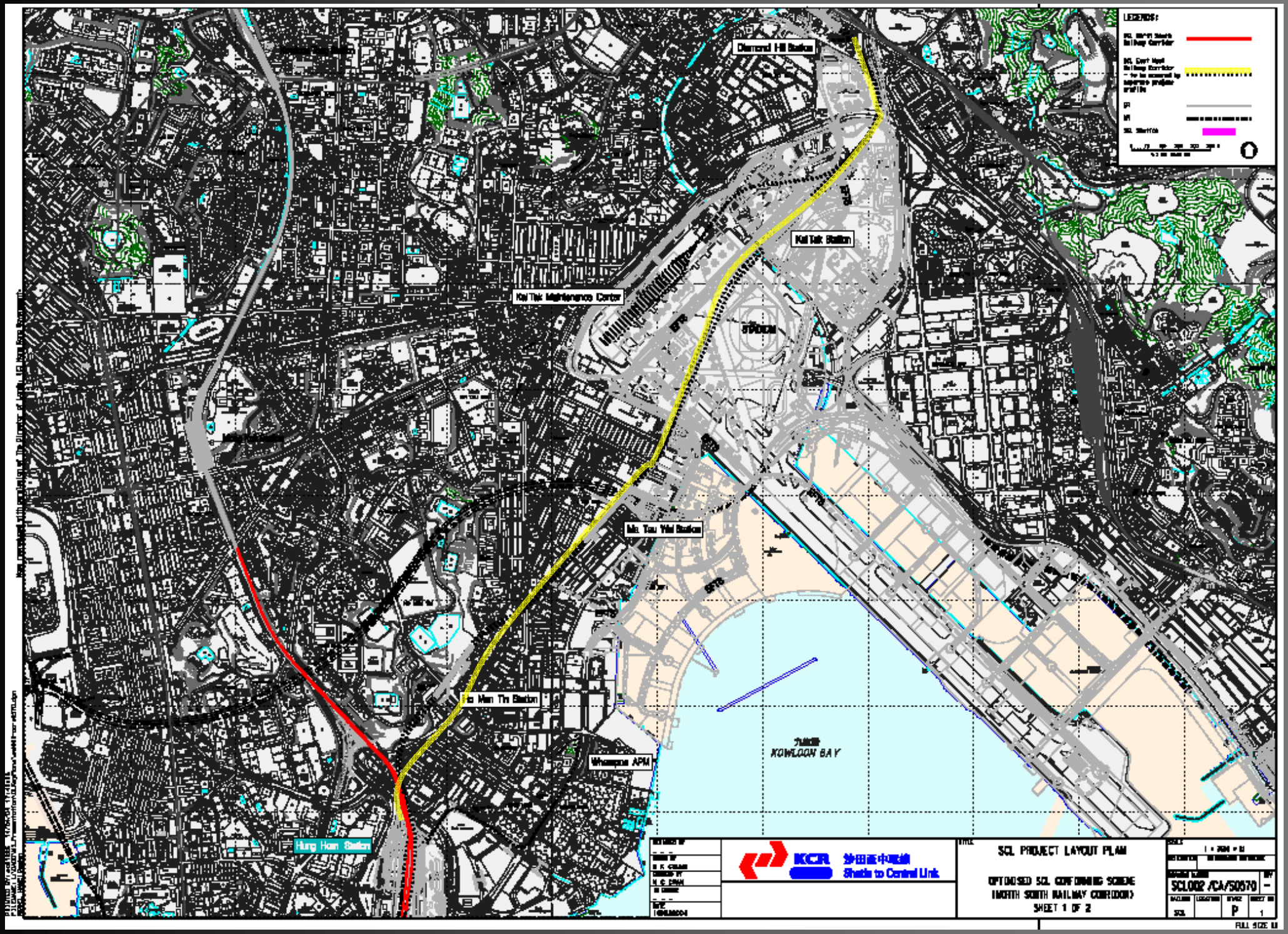
  a) temporary reclamation, construction of a 160m-long SCL tunnel, as well as dredging at the CB Typhoon Shelter.

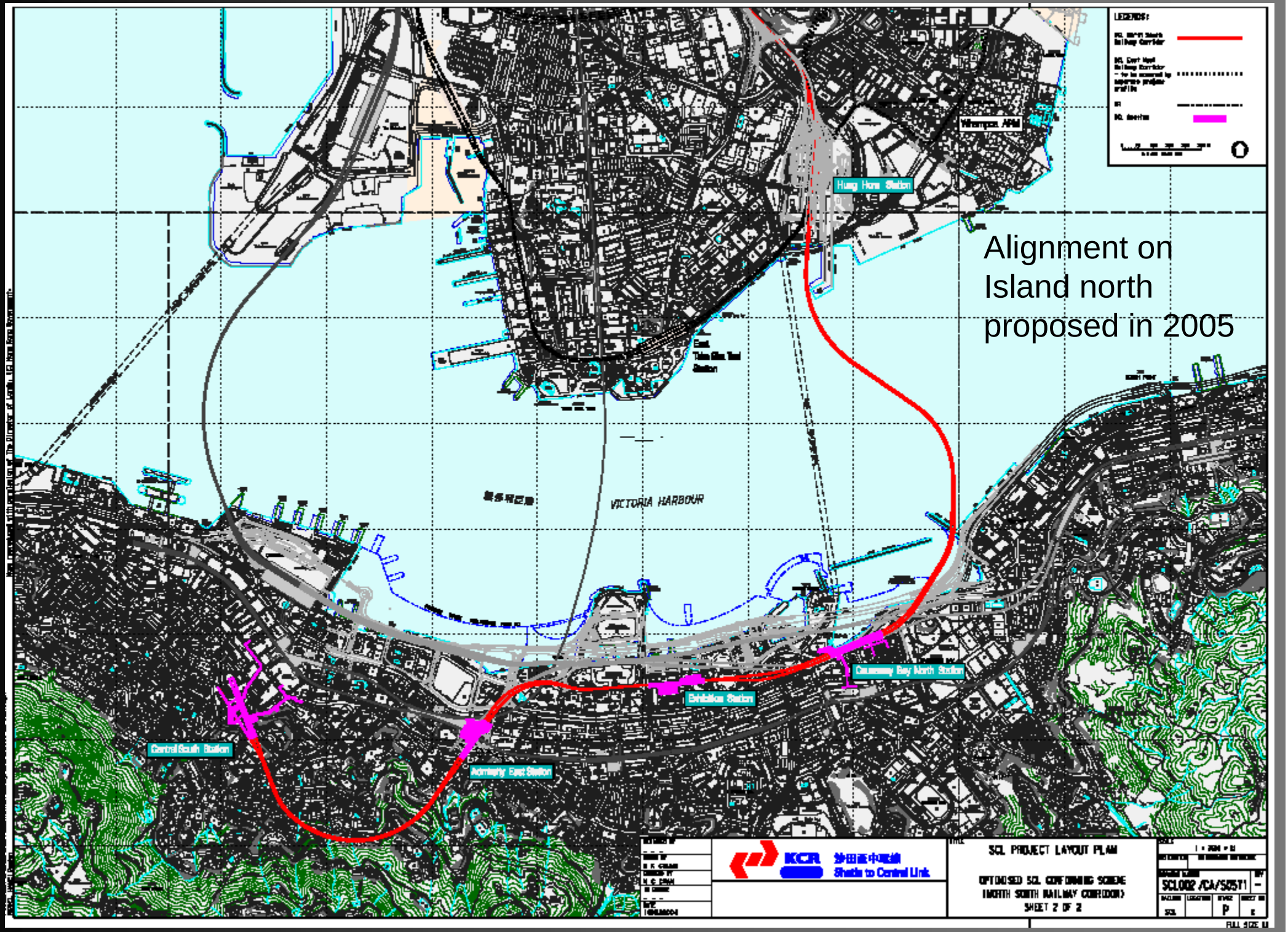
  b) construction of a 70m-long shelf under the water channel between the H K Convention and Exhibition Centre Phases I and II

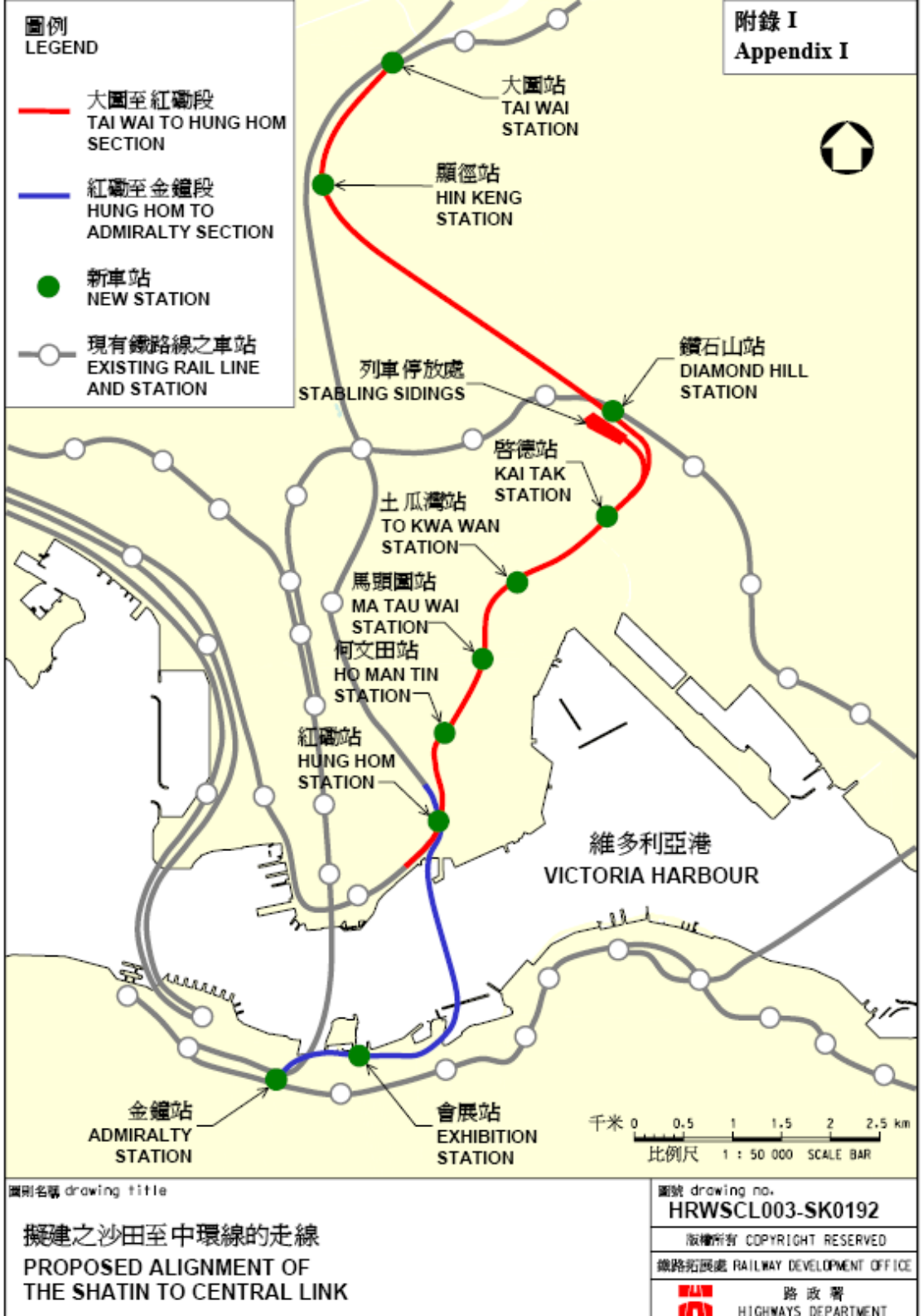

施工類別:
TYPE OF CONSTRUCTION :
地面段
AT-GRADE
明挖隧填隧道
CUT & COVER TUNNEL
鑽爆隧道
DRILL & BLAST TUNNEL
盾構隧道
SHIELD TUNNELLING
鑽挖機隧道
TBM TUNNEL
高架橋
VIADUCT
明挖隧填車站
CUT & COVER STATION
西鐵綫
WEST RAIL LINE
荃灣綫
TSUEN WAN LINE
觀塘綫延綫
KWUN TONG LINE EXTENSION
大圍至紅磡段
TAI WAI TO
HUNG HOM SECTION
大圍
TAI WAI
何文田
HO MAN TIN
紅磡
HUNG HOM
過海段
CROSS HARBOUR
SECTION
東鐵綫
EAST RAIL LINE
馬頭圍
MA TAU WAI
土瓜灣
TO KWA WAN
鑽石山車廠
DIAMOND HILL
DEPOT
鑽石山
DIAMOND HILL
啟德
KAI TAK
觀塘綫
KWUN TONG LINE
馬鞍山綫
MA ON SHAN LINE
馬鞍山
MA ON SHAN
0 500 1000 1500 2000 2500 M
MTR
沙田至中環綫 - 大圍至紅磡段
SHATIN TO CENTRAL LINK - TAI WAI TO HUNG HOM SECTION
圖 1
FIGURE 1


District at present
without mass transit
transportation service


N
Image © 2009 DigitalGlobe
© 2007
Google


Diamond Hill Station
Kai Tak Station
Kai Tak Maintenance Center
STADIUM
Ma Tau Wai Station
To Kwa Wan Station
Whampoa APM
KOWLOON BAY
Hung Hom Station
SCL PROJECT LAYOUT PLAN
OPTIMISED SCL CONFIRMING SCHEME
NORTH SOUTH RAILWAY CORRIDOR
SHEET 1 OF 2
SCL002 /CA/2007


Alignment on
Island north
proposed in 2005
VICTORIA HARBOUR
Hung Hom Station
Exhibition Station
Causeway Bay North Station
Admiralty East Station
Central South Station
SCL PROJECT LAYOUT PLAN
OPTIMISED SCL CONFIRMING SCHEME
(NORTH SOUTH RAILWAY CORRIDOR)
SHEET 2 OF 2
SCL002 /CA/S2ST1



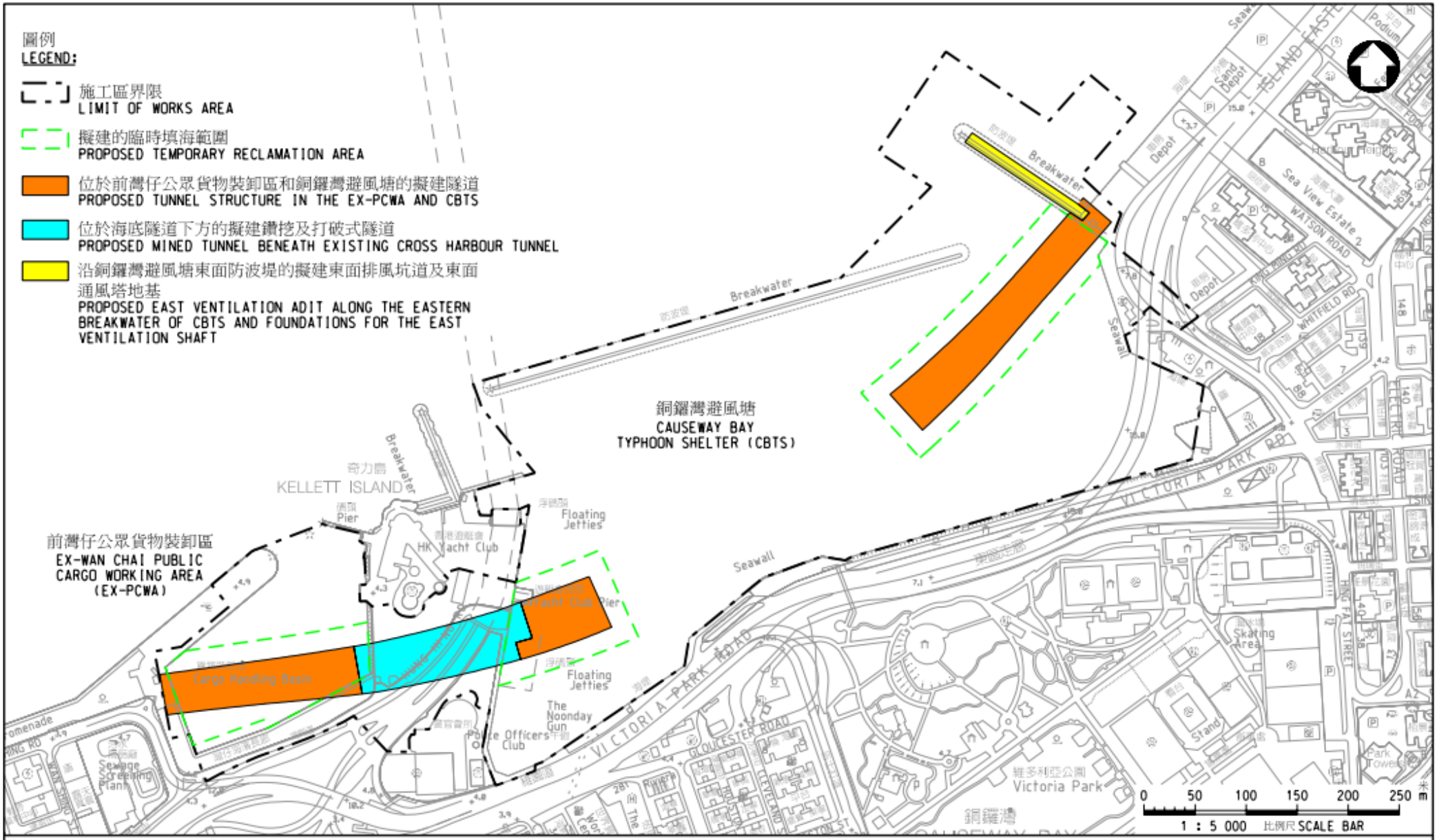
Final alignment as approved by Legislative Council in 2012

過海段
Cross Harbour Section

保護工程由中環灣仔繞道建造
Protection works to be constructed under Central – Wan Chai Bypass project

臨時填海
Temporary Reclamation

通風井
Ventilation Shaft

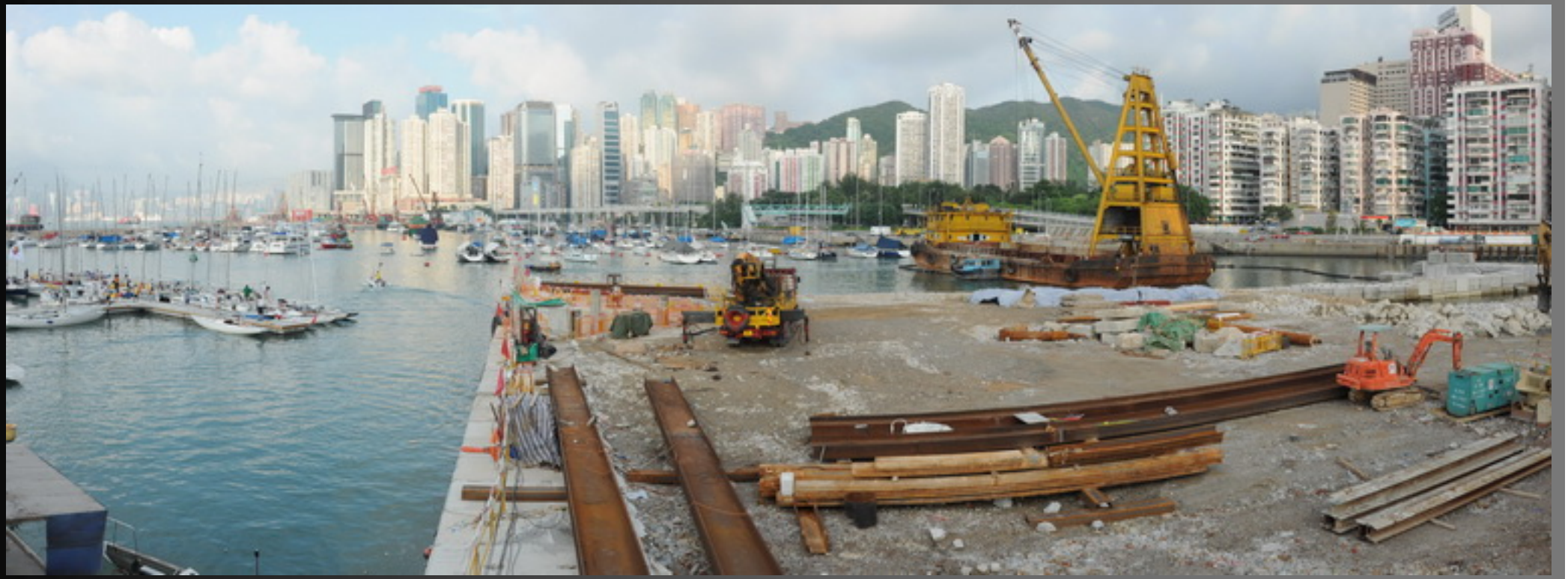


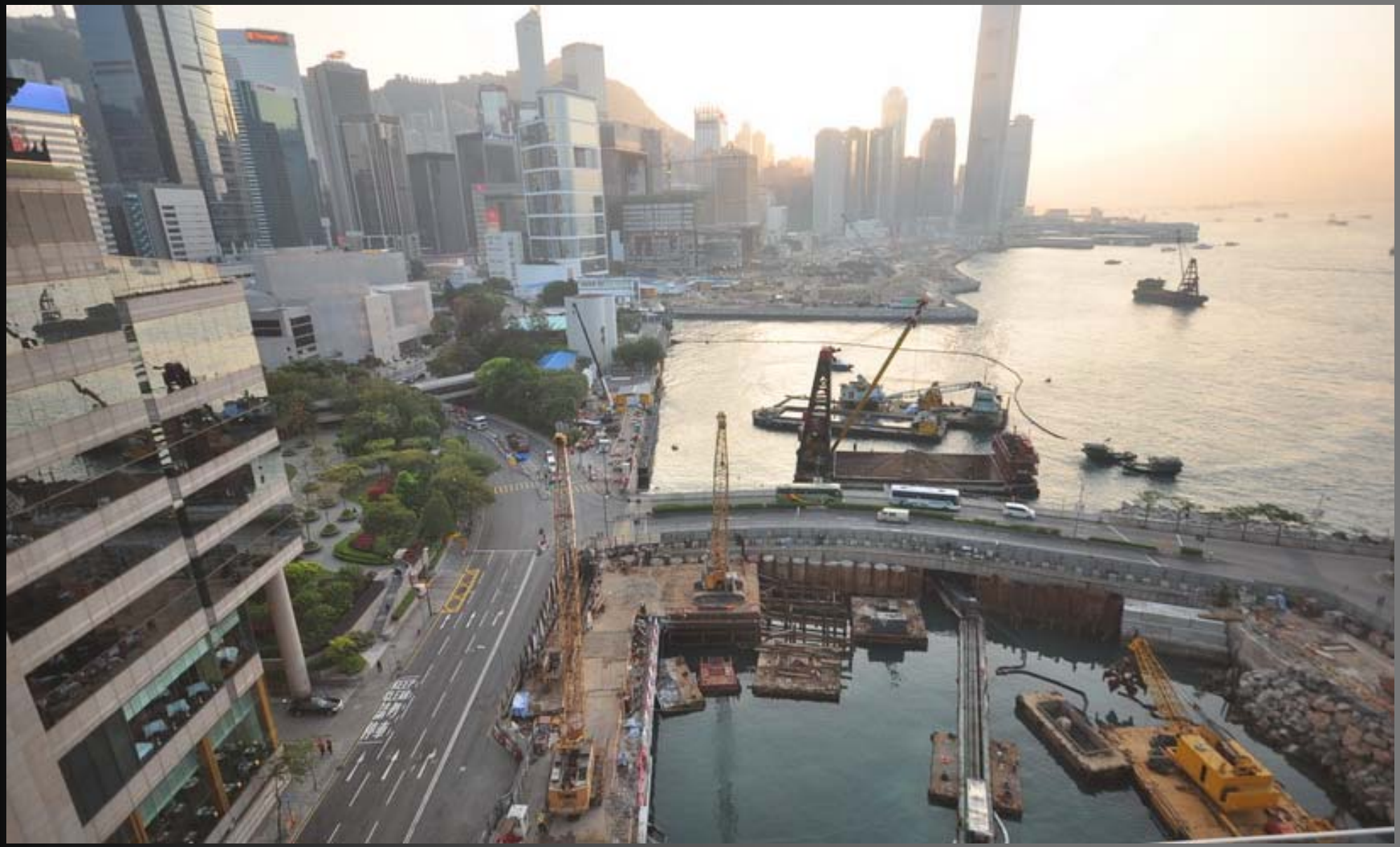
合約編號 HY/2009/15 - 中環灣仔繞道 - 銅鑼灣避風塘段隧道工程

CONTRACT NO. HY/2009/15 - CENTRAL-WAN CHAI BYPASS - TUNNEL (CAUSEWAY BAY TYPHOON SHELTER SECTION)

Temporary reclamation and construction of SCL tunnel in Causeway Typhoon Shelter.

Temporary reclamation and construction of SCL tunnel in Causeway Typhoon Shelter



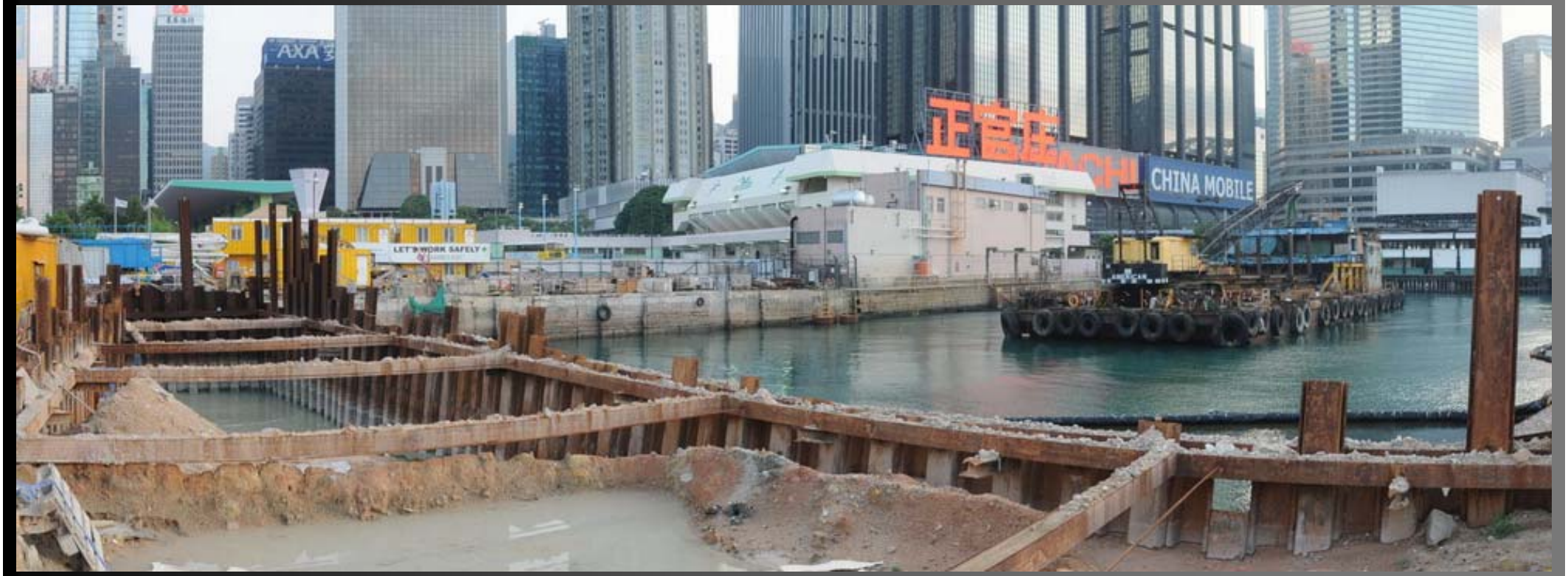


Construction of a shelf for future SCL under the water channel between the HKCEC Phases I and II


Road work ahead
please use other footpath

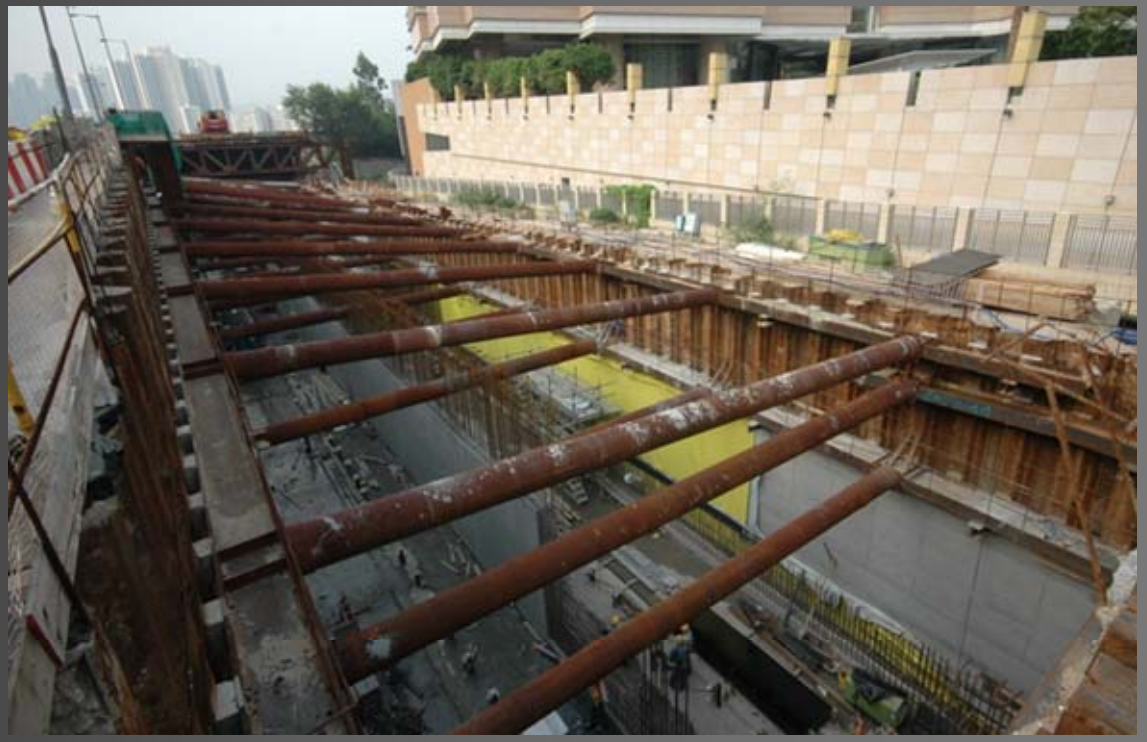

CAT


Other views of the Central-WC Bypass
near HKCEC under construction


AXA
正官庄
CHINA MOBILE


AXA
正官庄ITACHI
CHINA MOBILE

Railway construction within congested urban area can be very complicated. This series of photos shows the works along the Kowloon Southern Link from Tai Kok Tsui to Jordon in October 2007.



Tunnel construction using cut-and-cover method

Temporary falsework to support the udergound servicing pipework to facilitate onward diversion

A brief highlight of stations
along the alignment

顯徑站
Hin Keng Station

車站/鐵路設施
Station/Railway Facilities

出入口
Station Entrance

通風井
Ventilation Shaft

隔音設施
Noise Mitigation Measures

N

東鐵線
East Rail Line

顯田遊樂場
Hin Tin Playground

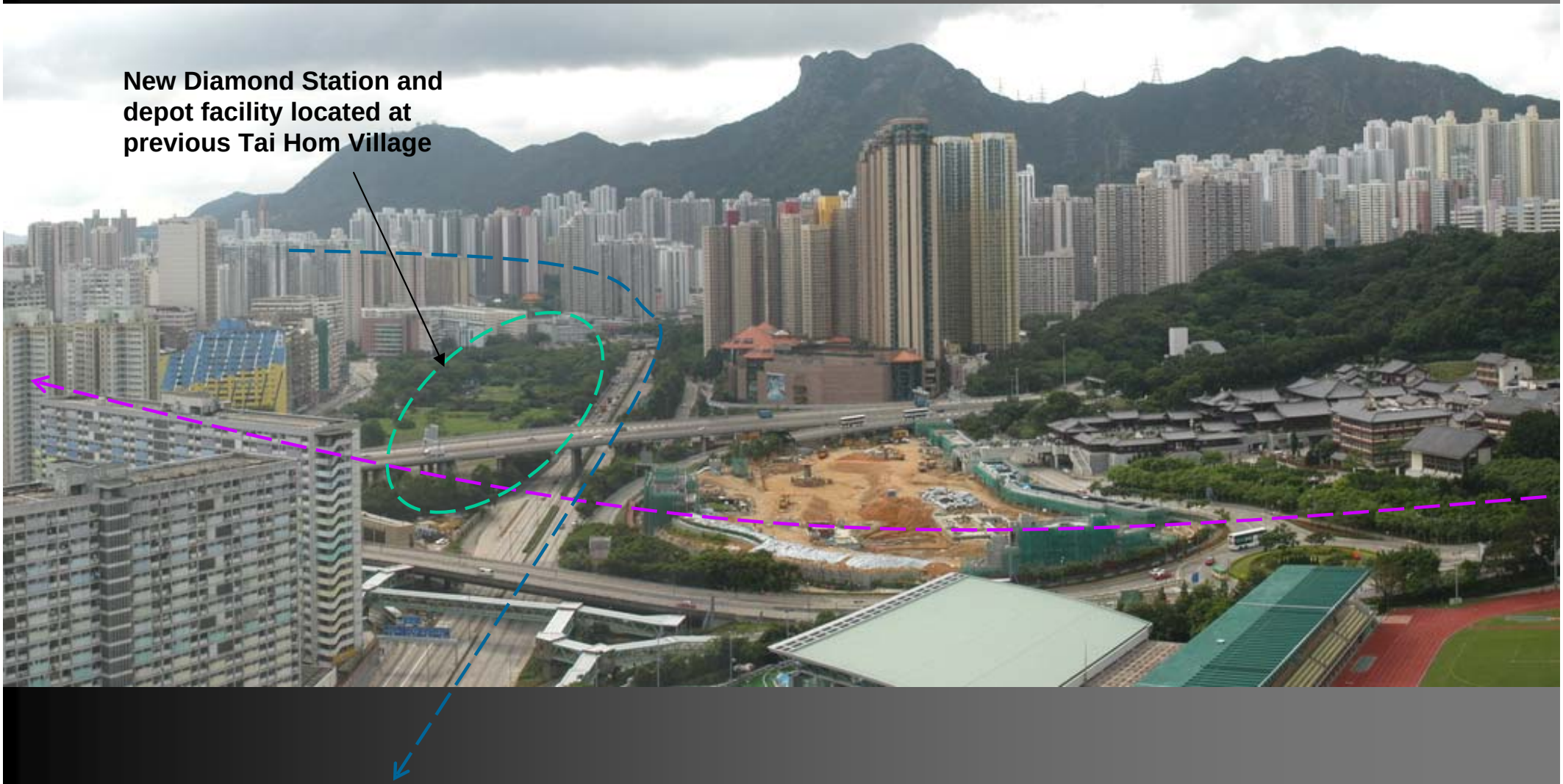
車公廟路 Che Kung Miu Road

沙中線
(東西走廊)
SCL
(East West Corridor)

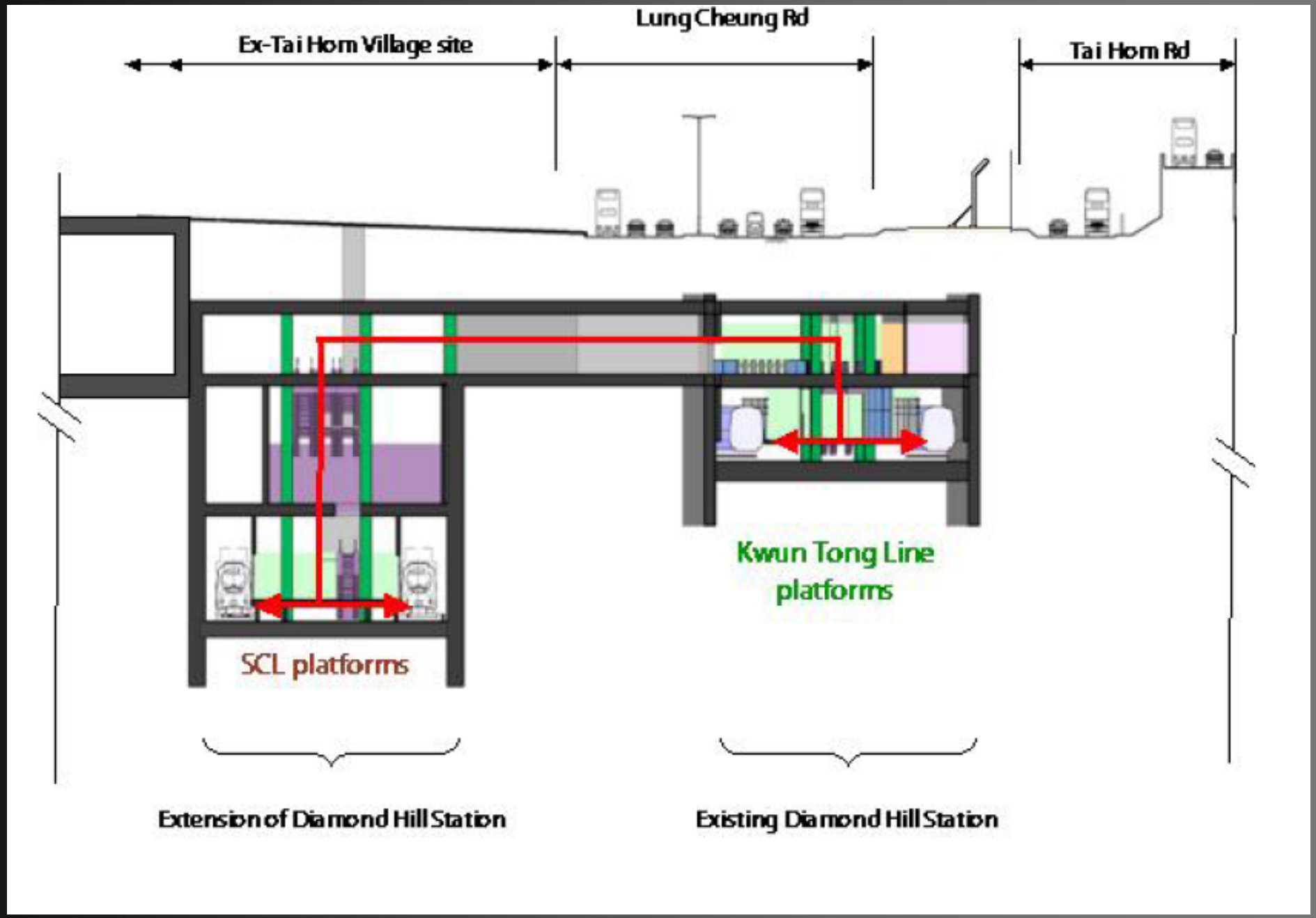
顯徑邨
Hin Keng Estate

現有漁護署新界南動物管理中心及
沙田植物檢疫站將予搬遷
Existing AFCD's NT South Animal Management Centre
and Sha Tin Plant Quarantine Station to be relocated

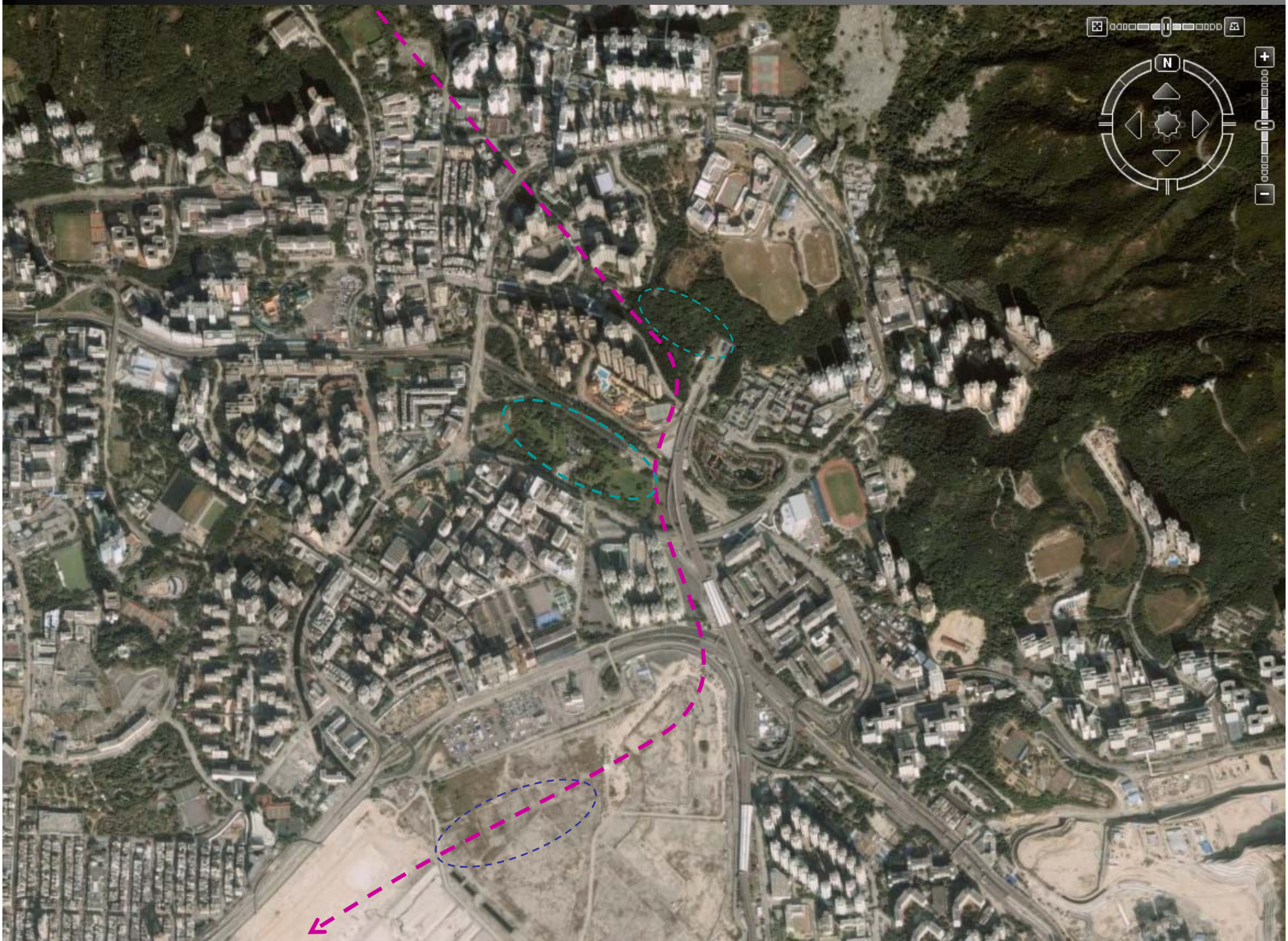

Diamond Hill Station
and Depot

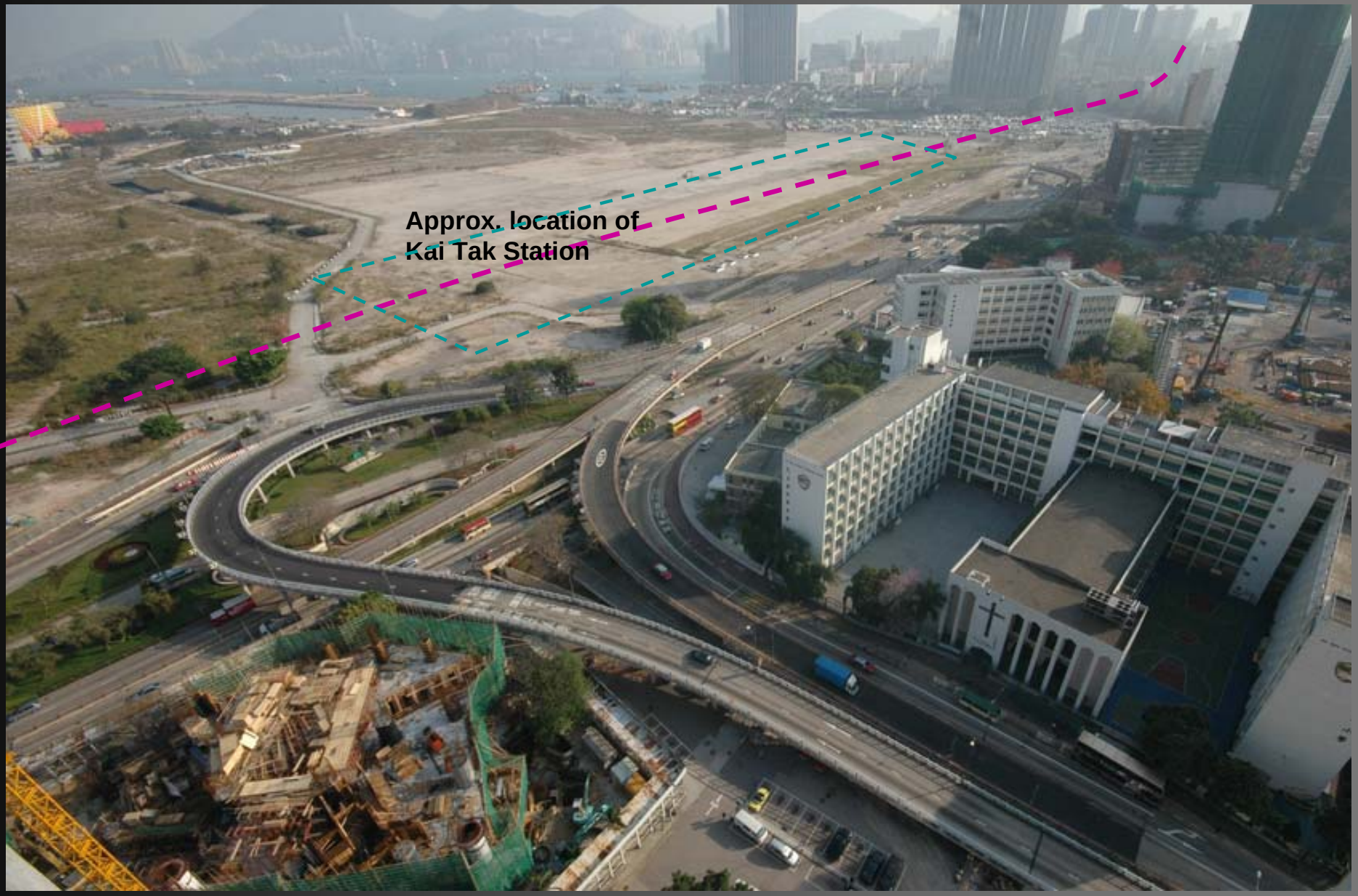

New Diamond Station and depot facility located at previous Tai Hom Village
Existing MTR Kwun Tong Line

鑽石山站及列車停放處
Diamond Hill Station and Stabling Sidings


Lung Cheung Rd
Ex-Tai Hom Village site
Tai Hom Rd
Kwun Tong Line platforms
SCL platforms
Extension of Diamond Hill Station
Existing Diamond Hill Station

啟德站
Kai Tak Station


N


Approx. location of
Kai Tak Station

Approximate run of
Shatin-Central Link


Location of the Kai Tak Station of SCL

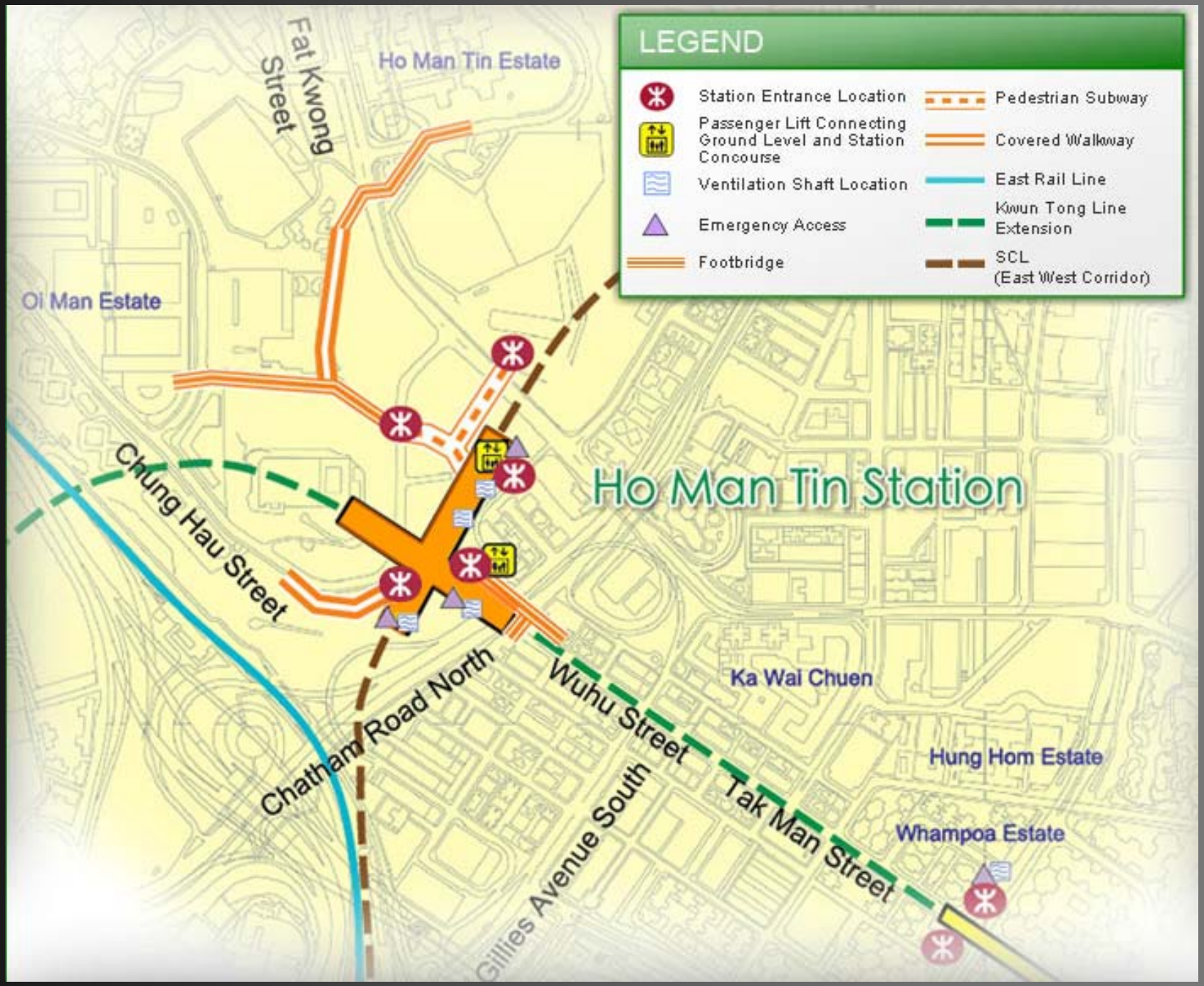
Advance works for Kai Tak Development nearby the Kai Tak Station of SCL

土瓜灣站
To Kwa Wan Station

馬頭圍站
Ma Tau Wai Station

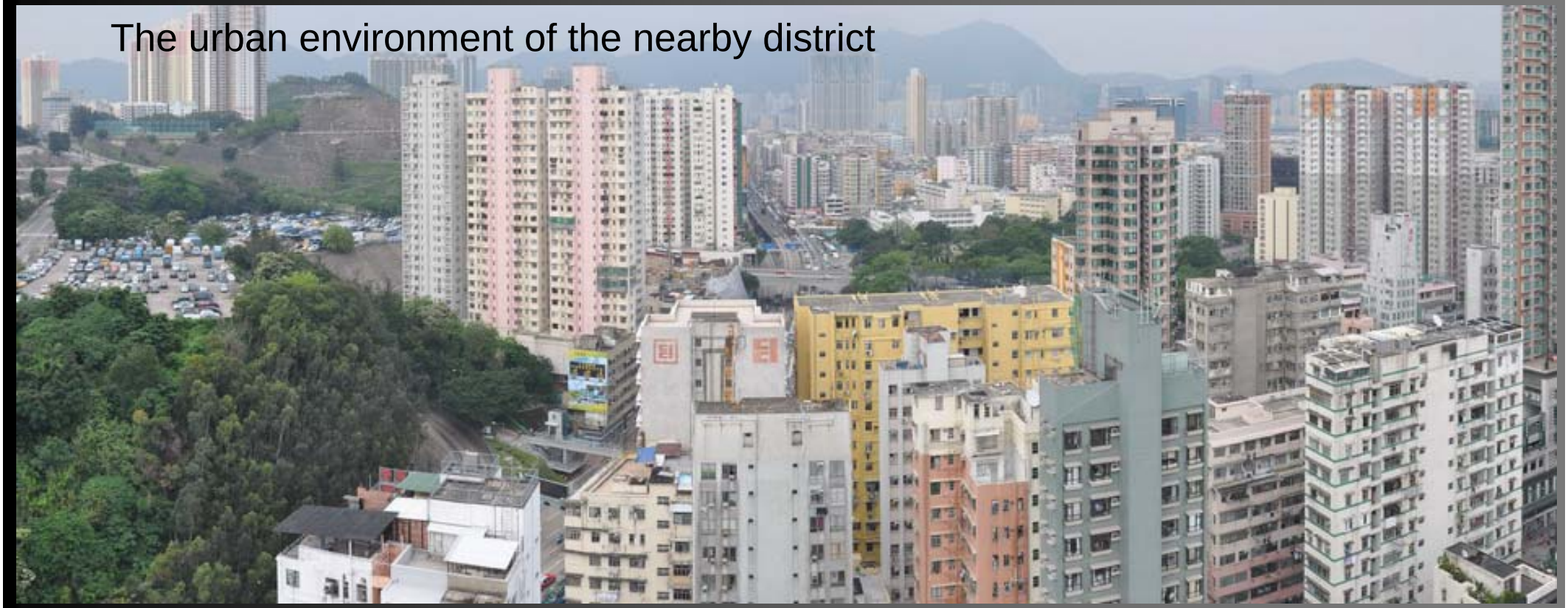
The urban environment of
the nearby district

Toward
Ho Man Tin
Station

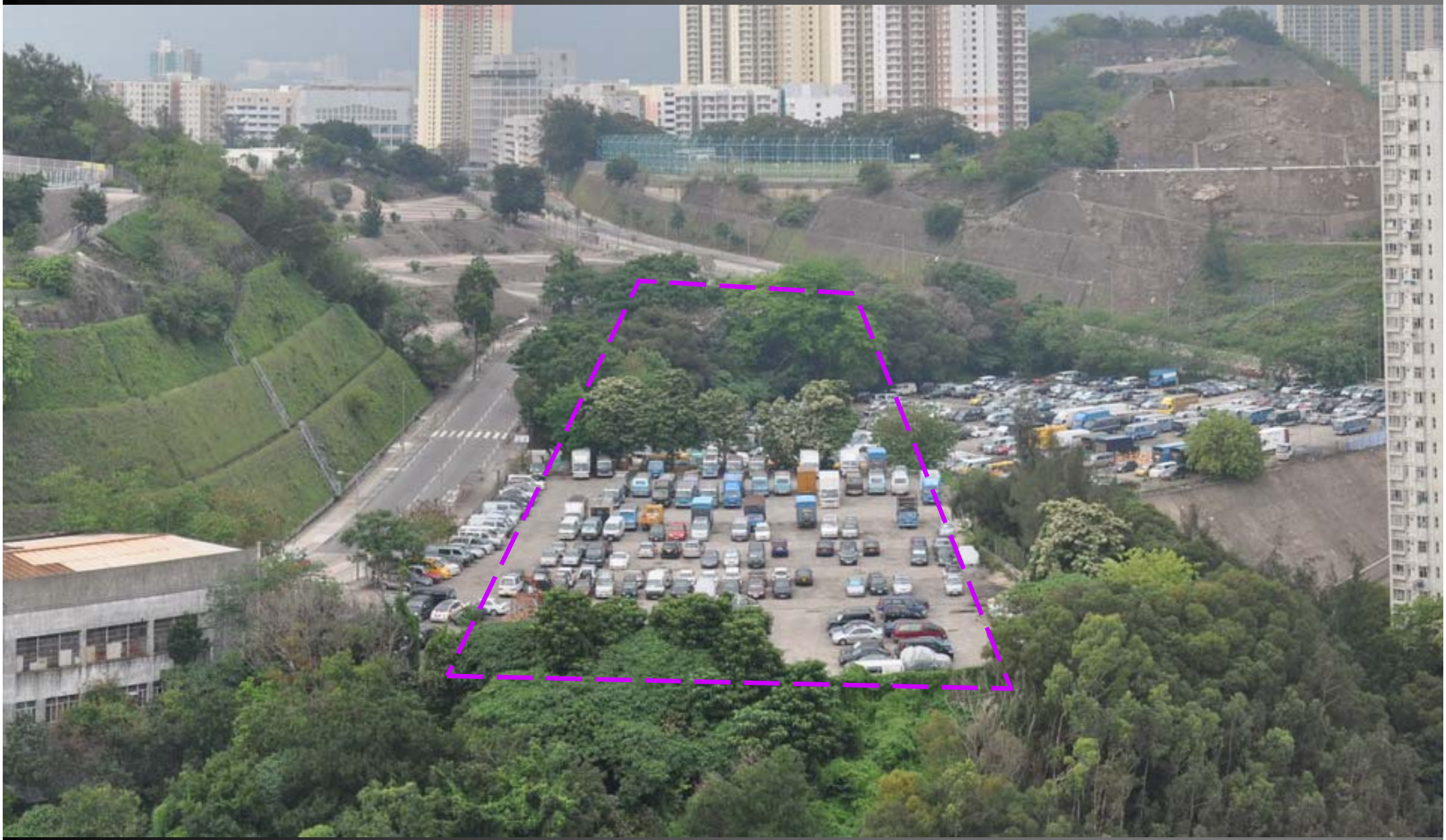


Kwun Tong Line Extension as a sub-network to the
Shatin Central Link serving the Whampoa District

The urban environment of the nearby district



Satellite map showing the original layout of the site Homantin Station,
which is an interchanging station for the SCL and KTE lines



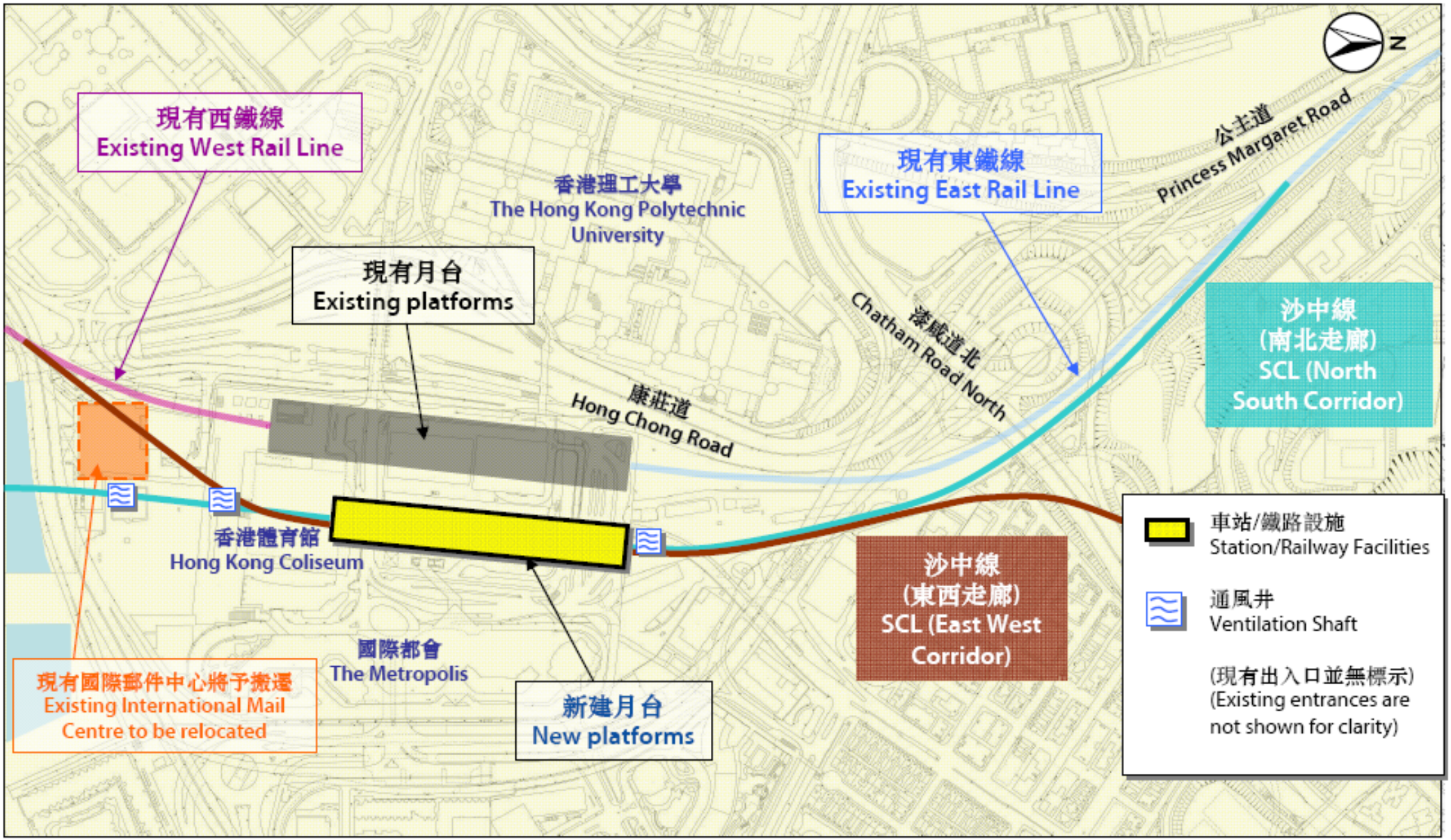
The land reserved for the Ho Man Tin Station
(previous Valley Road Estate) before site formation

Site formation for the Ho Man Tin Station

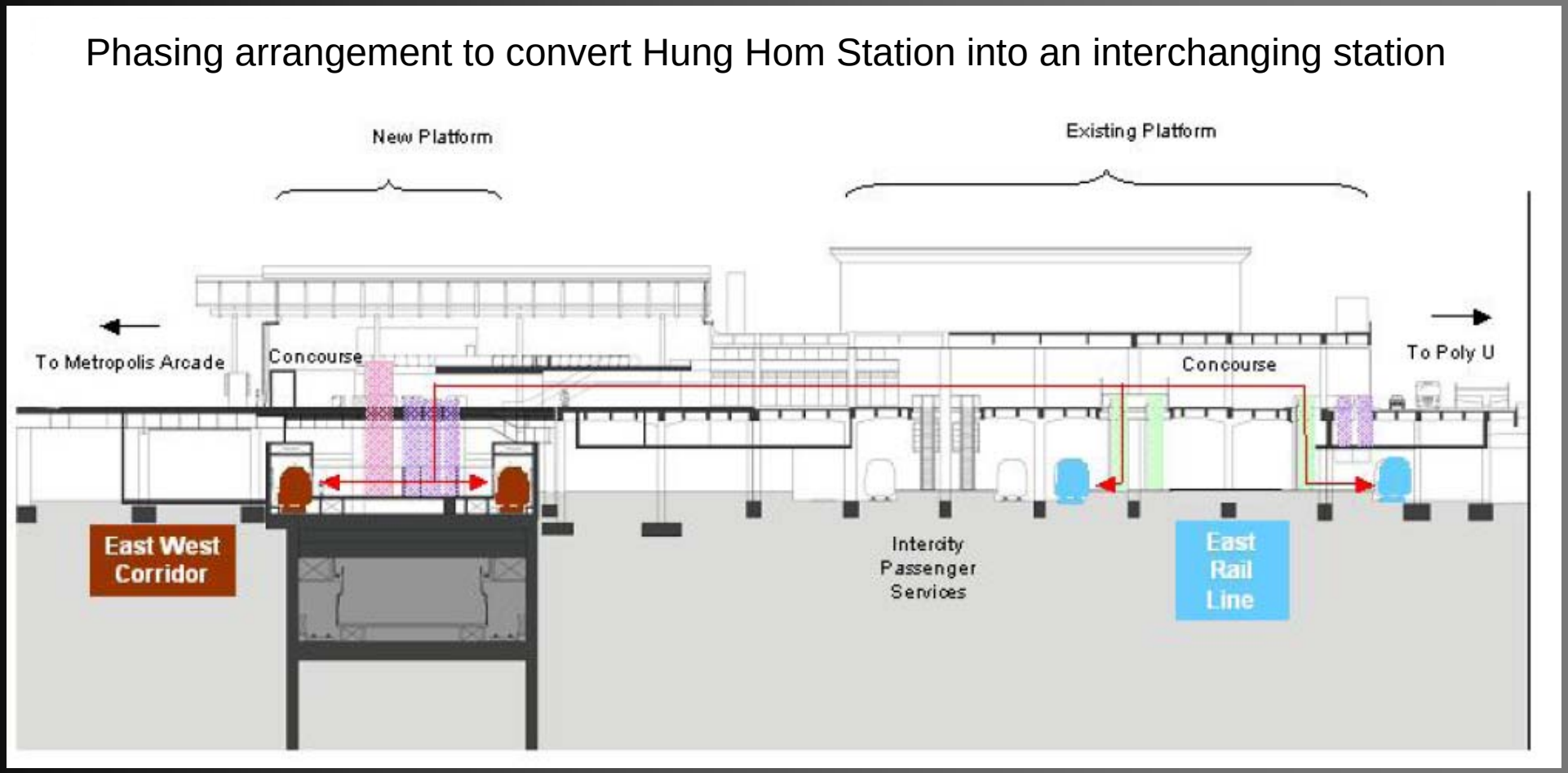

MTR

Advance work for the Whampoa Station in early 2012

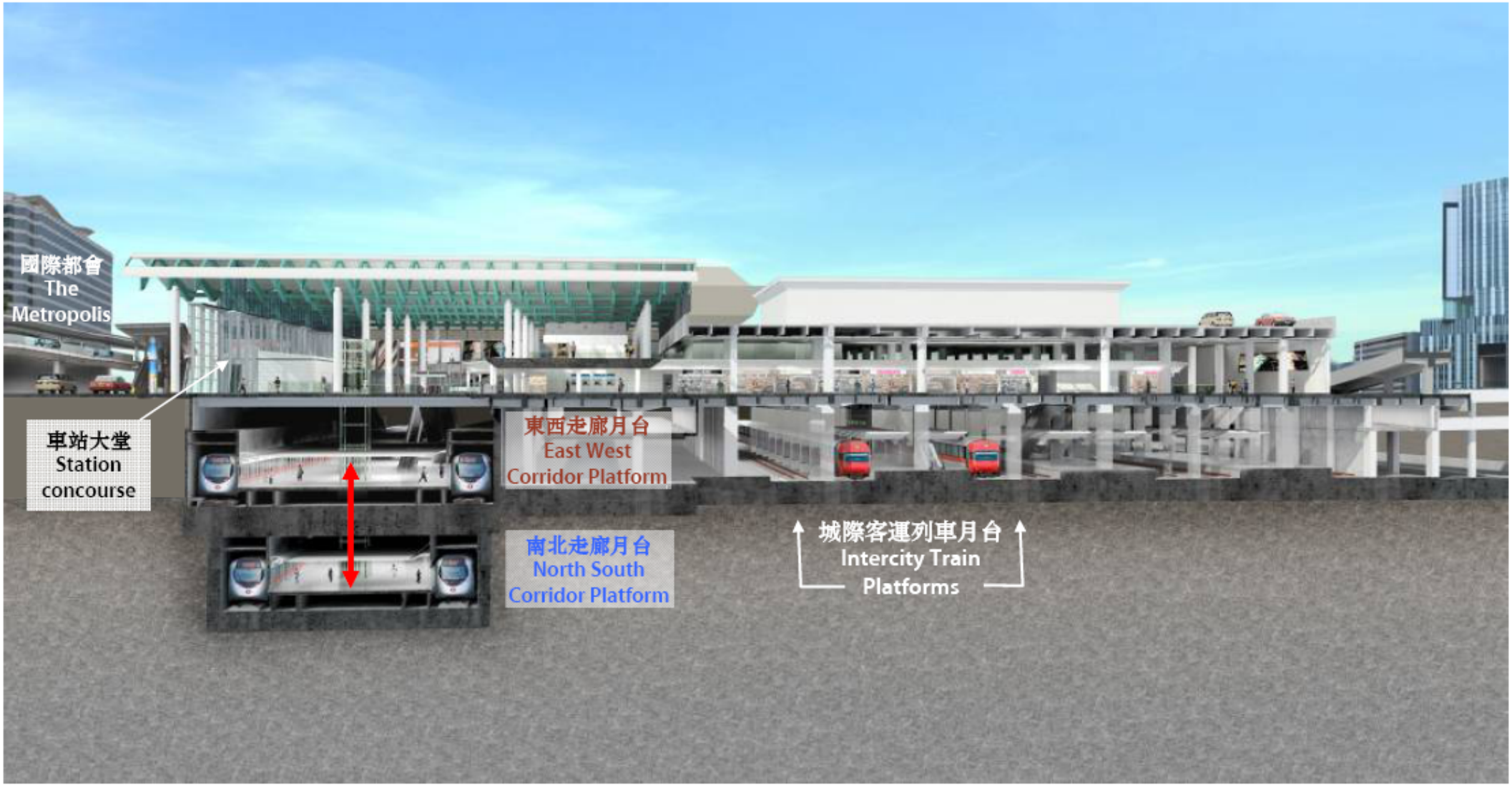
紅磡站
Hung Hom Station



Phasing arrangement to convert Hung Hom Station into an interchanging station

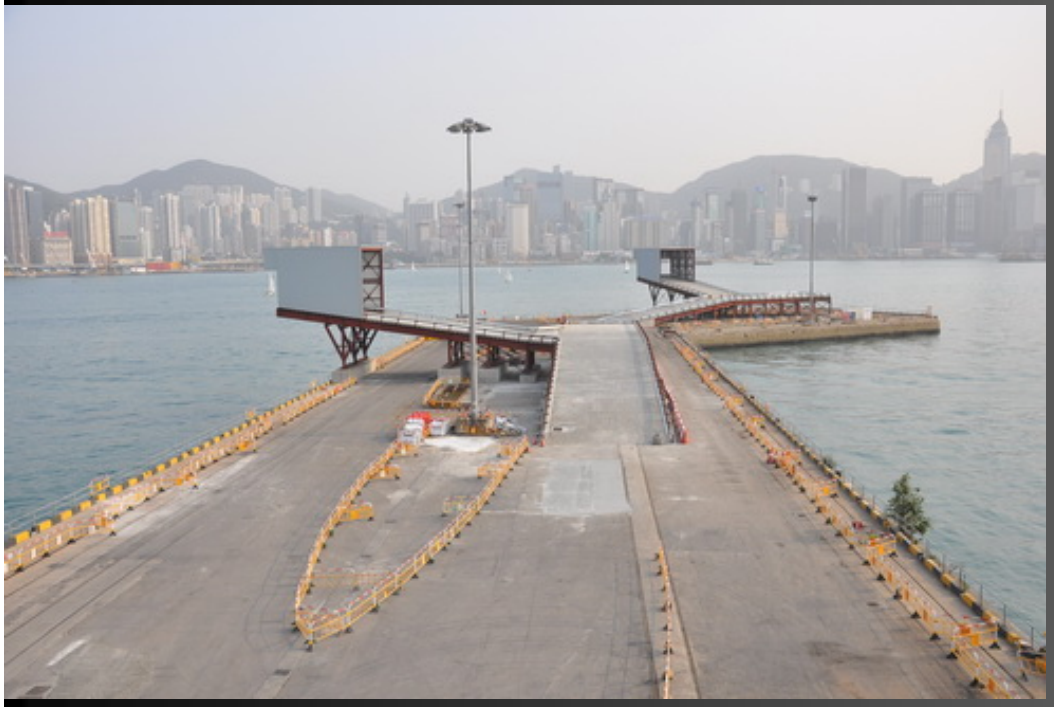


紅磡站
Hung Hom Station



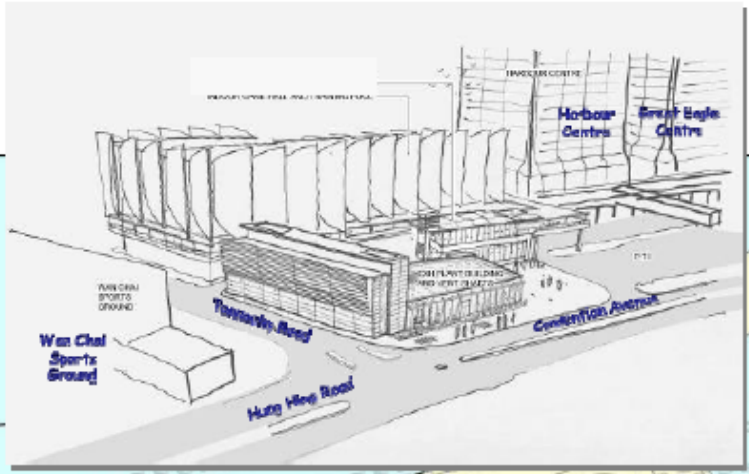

P30


FLW 3507



The International Mail Centre – to be relocated to Kowloon Bay due to part of the building foundations will be infringed by the SCL harbour crossing tunnel

會展站
Exhibition Station



車站/鐵路設施
Station/Railway Facilities

出入口
Station Entrance

通風井
Ventilation Shaft

緊急救援通道
Emergency Access

升降機
Passenger Lift

中環灣仔繞道
Central – Wan Chai Bypass

鴻興道 Hung Hing Road

沙中線
(南北走廊)
SCL (North South Corridor)

會議道 Convention Avenue

香港會議展覽中心
HK Convention & Exhibition Ctr

港灣道 Harbour Road

菲林明道 Fleming Road

港灣道體育館
Harbour Road Sports Centre

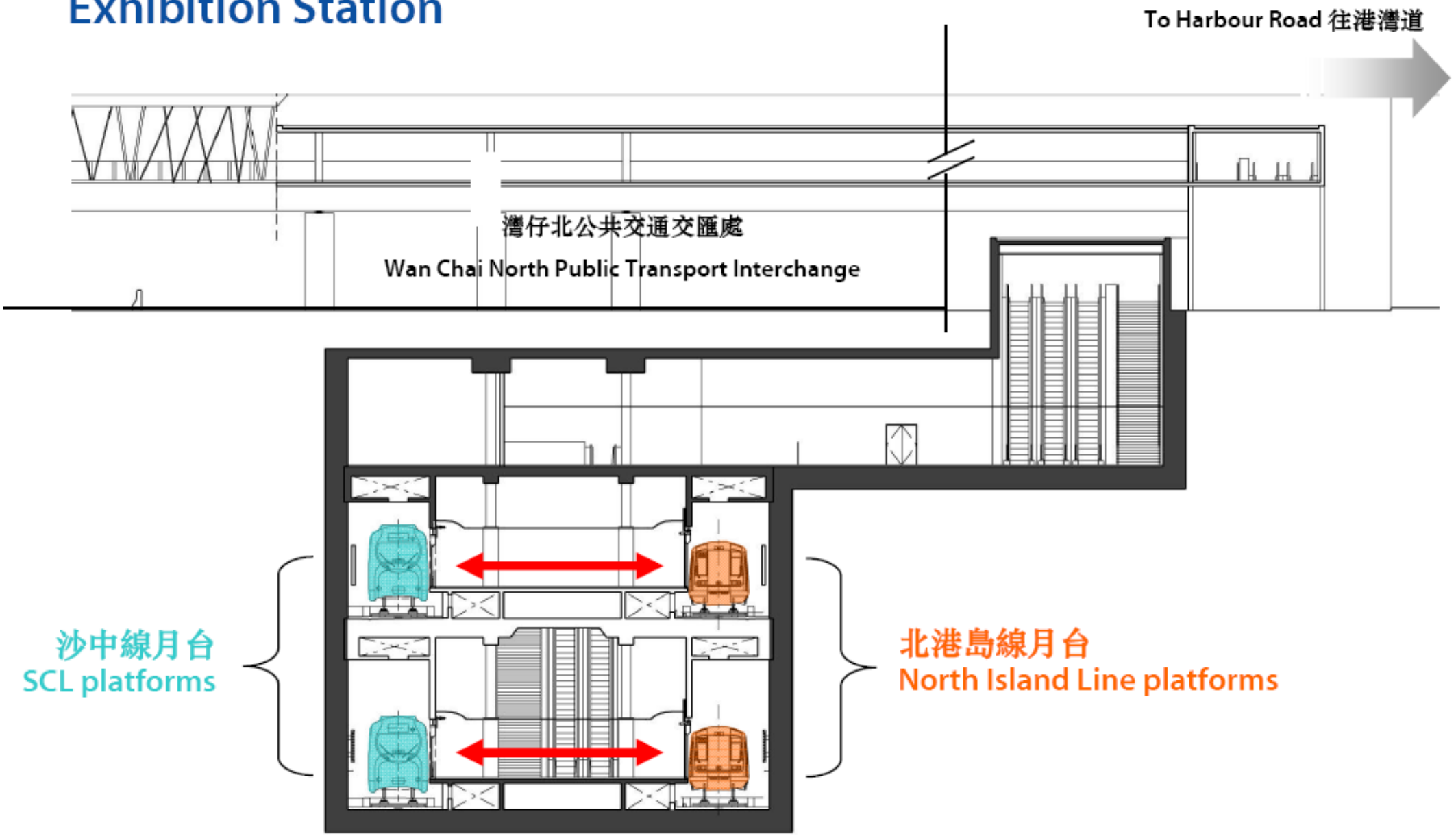
杜老誌道 Tonnochy Road

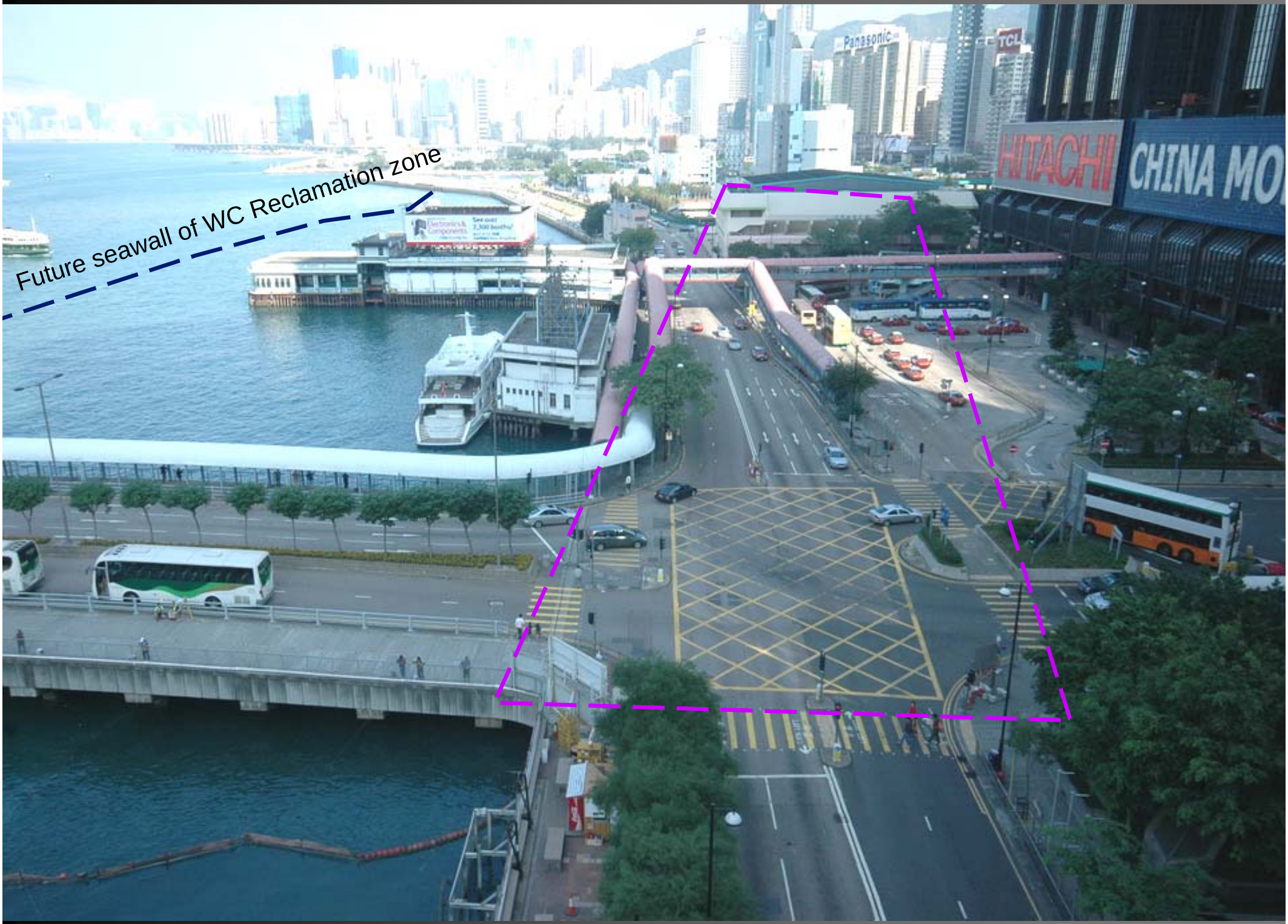
灣仔運動場
Wan Chai Sports Ground

將來的北港島線
Future North Island Line

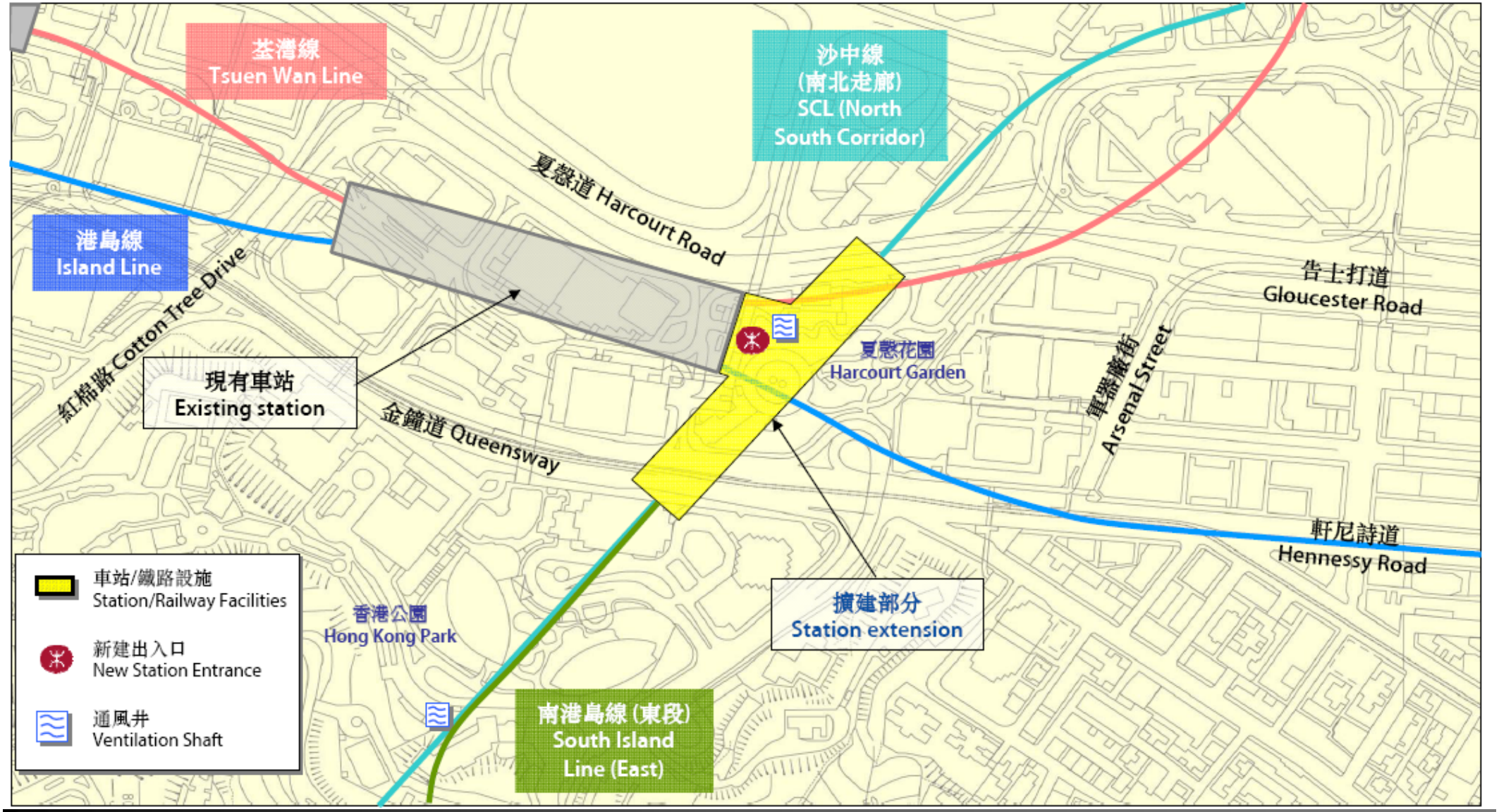
告士打道 Gloucester Road

會展站
Exhibition Station




Future seawall of WC Reclamation zone
HITACHI
Panasonic
TCL

金鐘站
Admiralty Station



Storing of explosive for drill-and-blast tunnel works

The Tuen Mun Western Bypass and Tuen Mun-Chek Lap Kok Link

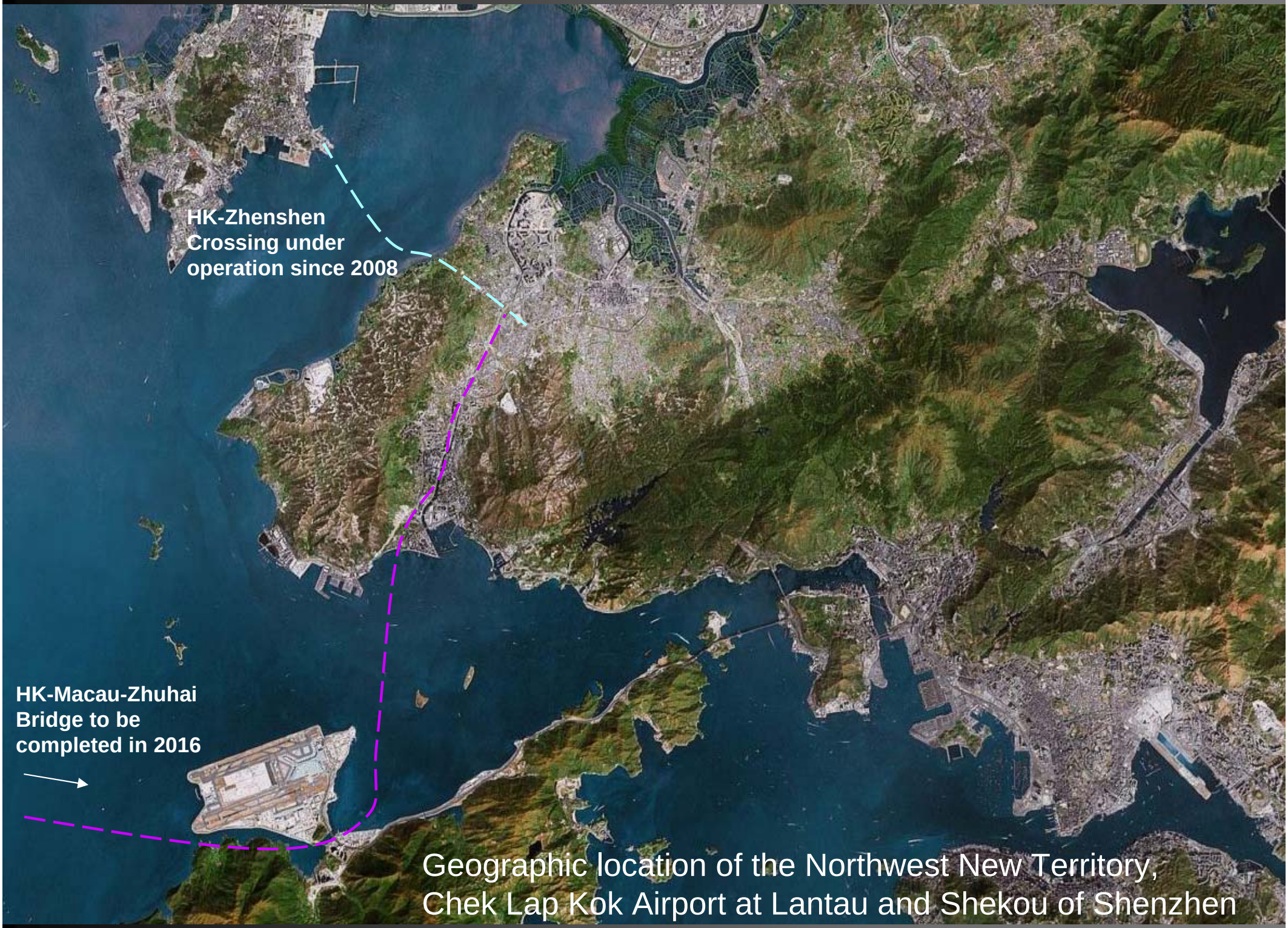
To meet future traffic demand for the Northwest New Territories and Lantau, a plan to develop the Tuen Mun Western Bypass (9 km) and the Tuen Mun-Chek Lap Kok Link (4 km in immersed-tube) at a cost of over $20 billion is proposed.

The proposed TM-CLKL and TMWB is a north-south trunk route between North West New Territories (NWNT) and Lantau. It provides the most direct route linking the Shenzhen Bay Bridge, Kong Sham Western Highway, NWNT and Tuen Mun to the Airport and Lantau; and the proposed HZMB. Compared to the existing corridor, traffic between NWNT and Lantau can save a travelling distance by as much as 22 km. In addition, it provides an alternative route to the Airport independent from the existing Lantau Link and North Lantau Highway.

Project Objective :

The proposed Tuen Mun – Chek Lap Kok Link and Tuen Mun Western Bypass will provide the most direct route between the Northwest New Territories (NWNT) and Lantau, joining the Kong Sham Western Highway, the port back-up areas in the NWNT, the Tuen Mun River Trade Terminal, the Ecopark, the Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities, the Hong Kong International Airport (the Airport), the proposed Lantau Logistics Park and various North Lantau developments.

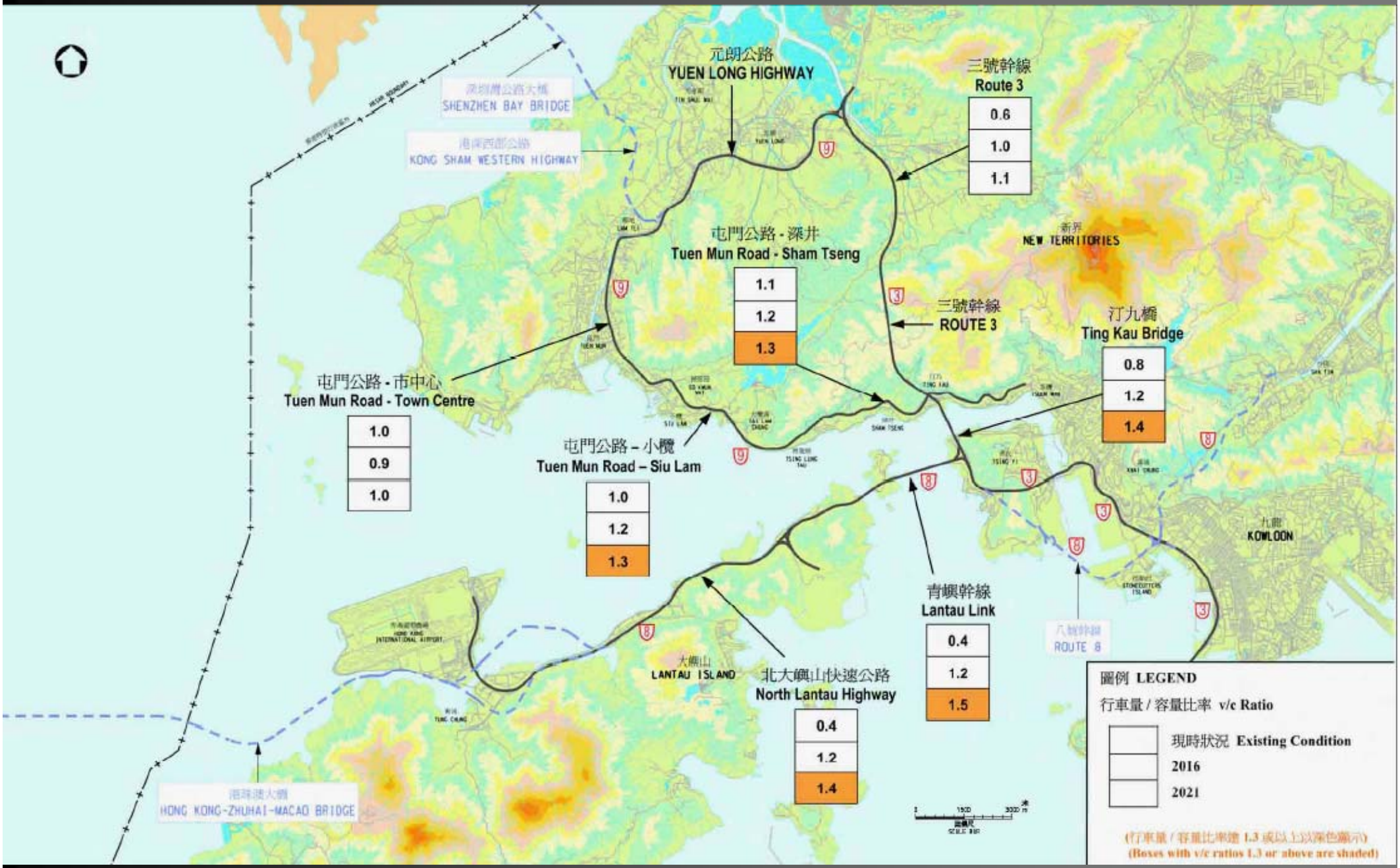
Upon completion, the new route will significantly reduce the journey time between the NWNT and Lantau. The Project will release some capacity of the existing roads such as Tuen Mun Road, Ting Kau Bridge, Lantau Link and North Lantau Highway, offer strong support to the logistics industry and reinforce the Airport as an international and regional aviation hub through providing an alternative land access for the Airport.



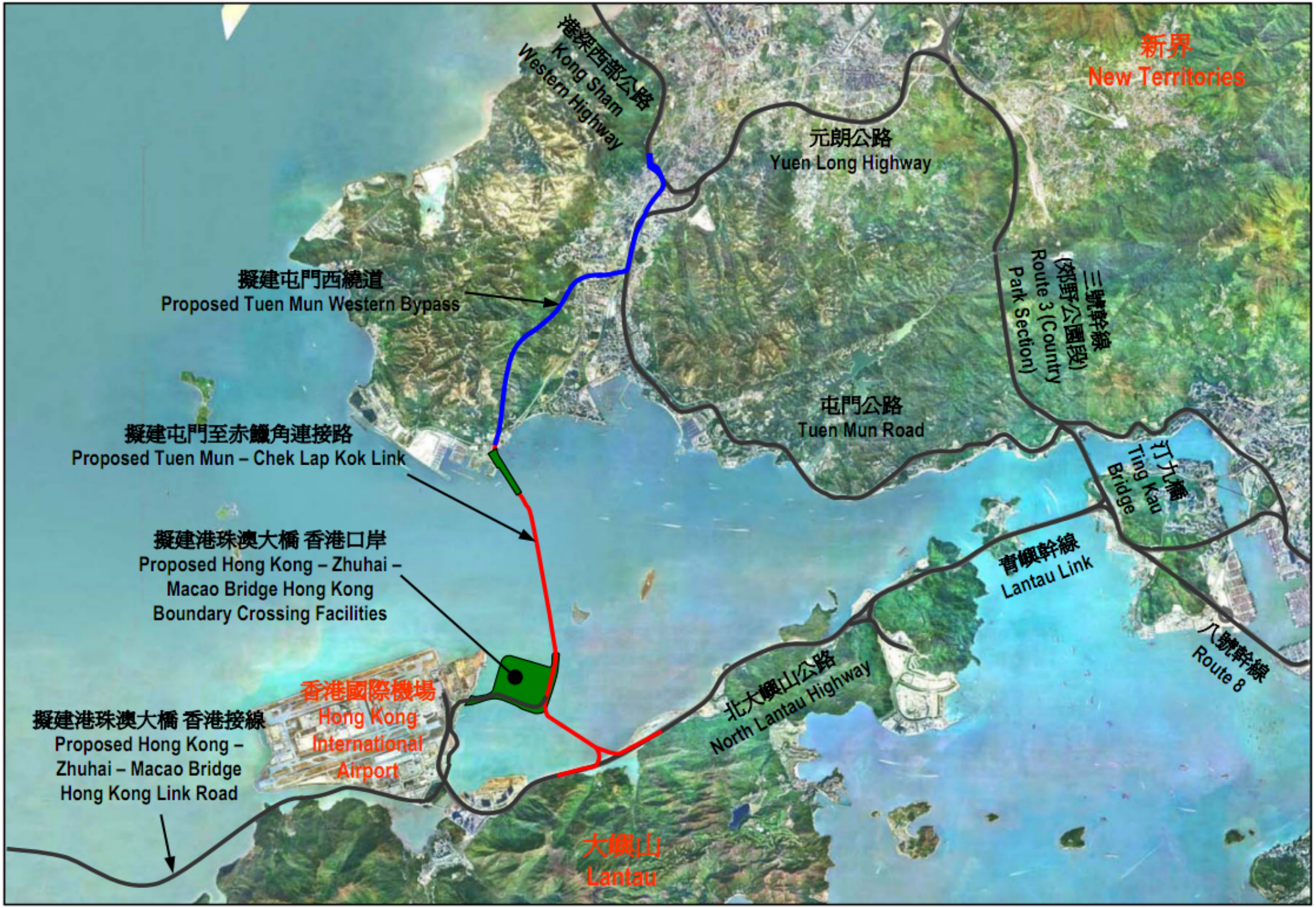
Geographic location of the Northwest New Territory,
Chek Lap Kok Airport at Lantau and Shekou of Shenzhen

Existing Route Connecting Kong Sham Western Highway and Tung Chung / Airport

New Route TM-CLKL and TMWB Connecting Kong Sham Western Highway and Tung Chung / Airport

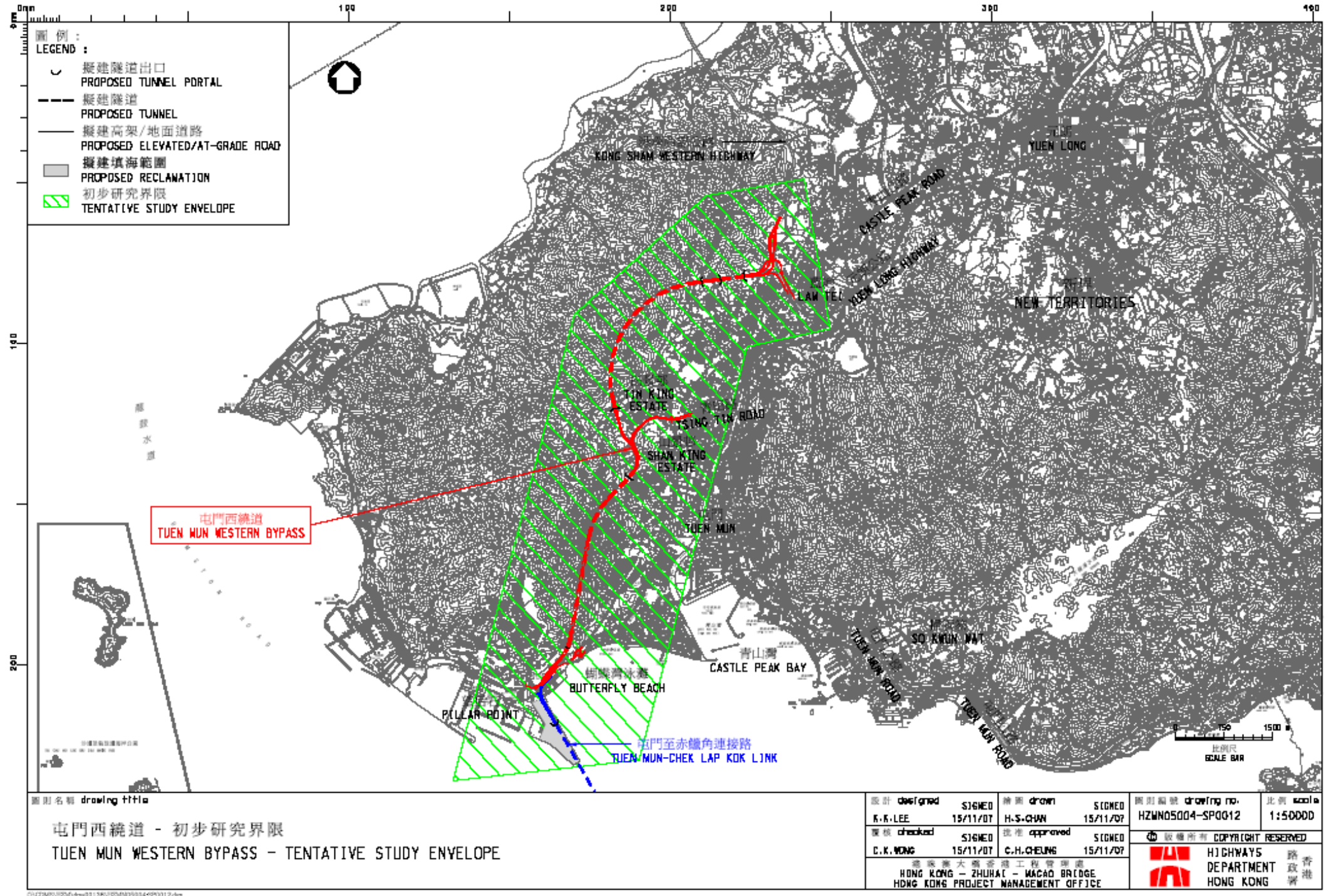


Estimated Traffic Condition on Northwest New Territory from 2006 – 2021



擬建「屯門至赤鱲角連接路」及「屯門西繞道」

Proposed "Tuen Mun – Chek Lap Kok Link" and "Tuen Mun Western Bypass"


圖例：
LEGEND：
擬建隧道出口
PROPOSED TUNNEL PORTAL
擬建隧道
PROPOSED TUNNEL
擬建高架/地面道路
PROPOSED ELEVATED/AT-GRADE ROAD
擬建填海範圍
PROPOSED RECLAMATION
初步研究界限
TENTATIVE STUDY ENVELOPE
KONG SHAM WESTERN HIGHWAY
TUEN LONG
CASTLE PEAK ROAD
KWUN LONG HIGHWAY
LAM TEI
NEW TERRITORIES
TIN KING ESTATE
TSING TIN ROAD
SHAN KING ESTATE
TUEN MUN
屯門西繞道
TUEN MUN WESTERN BYPASS
青山灣
CASTLE PEAK BAY
SO KWUN WAT
TUEN MUN ROAD
蝴蝶灣泳灘
BUTTERFLY BEACH
PILLAR POINT
屯門至赤鱲角連接路
TUEN MUN-CHEK LAP KOK LINK
比例尺
SCALE BAR
圖則名稱 drawing title
屯門西繞道 - 初步研究界限
TUEN MUN WESTERN BYPASS - TENTATIVE STUDY ENVELOPE
設計 designed
R.K.LEE
SIGNED 15/11/07
繪圖 drawn
H.S.CHAN
SIGNED 15/11/07
核准 approved
C.H.CHEUNG
SIGNED 15/11/07
圖則編號 drawing no.
HZWN05004-SP0012
比例 scale
1:50000
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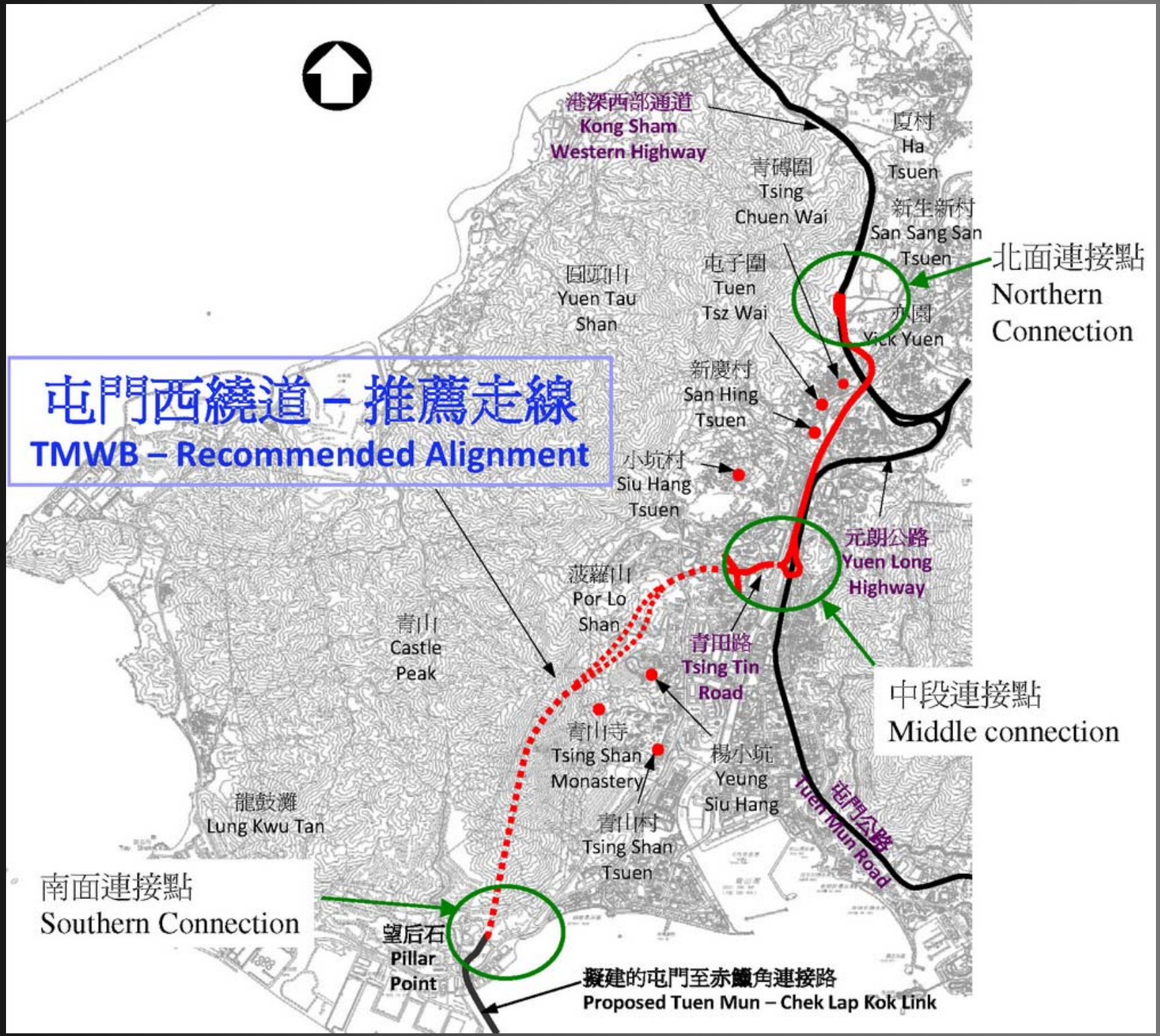
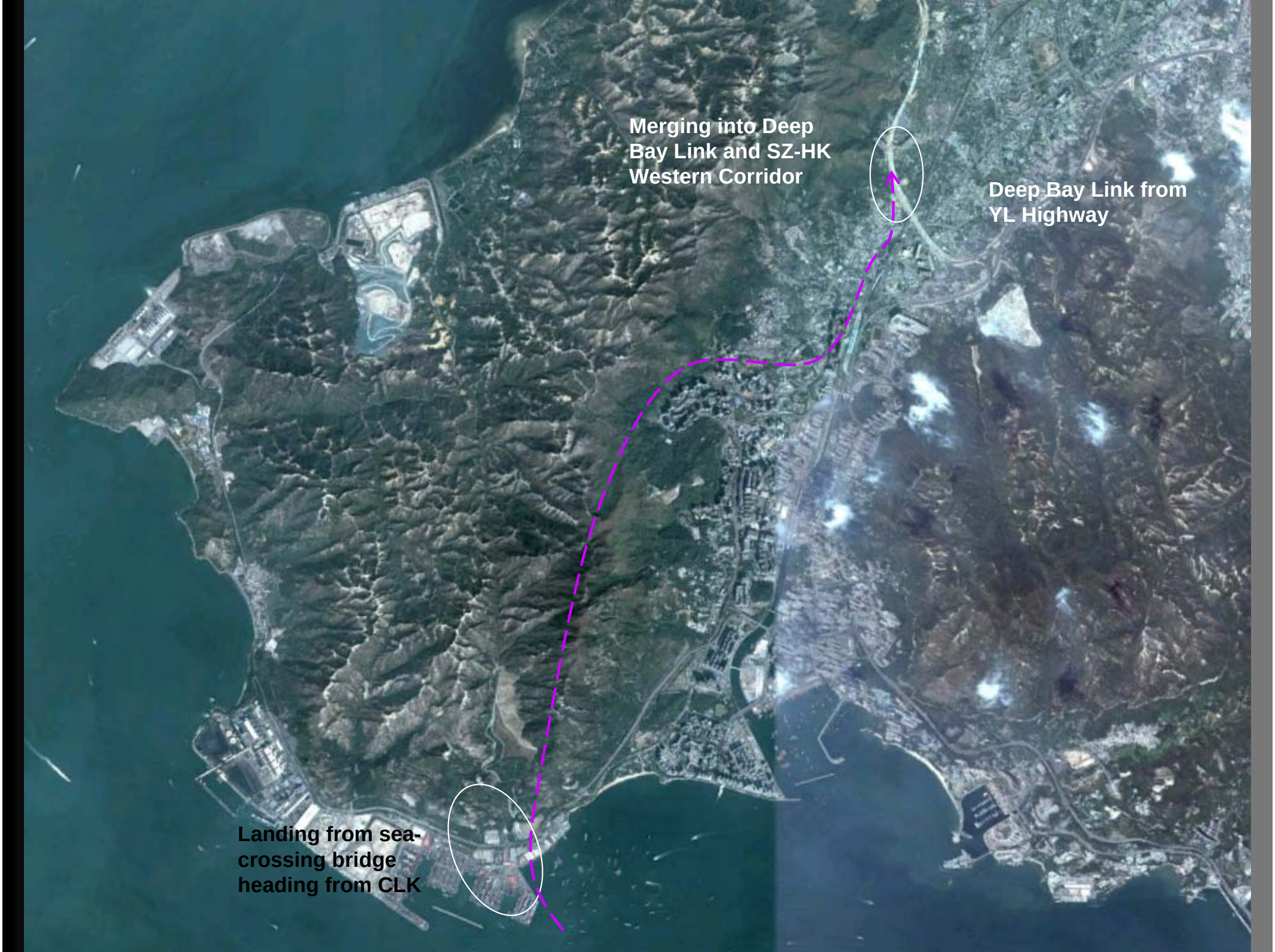
HIGHWAYS DEPARTMENT HONG KONG
香港路政署
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG PROJECT MANAGEMENT OFFICE
A3 420 x 297

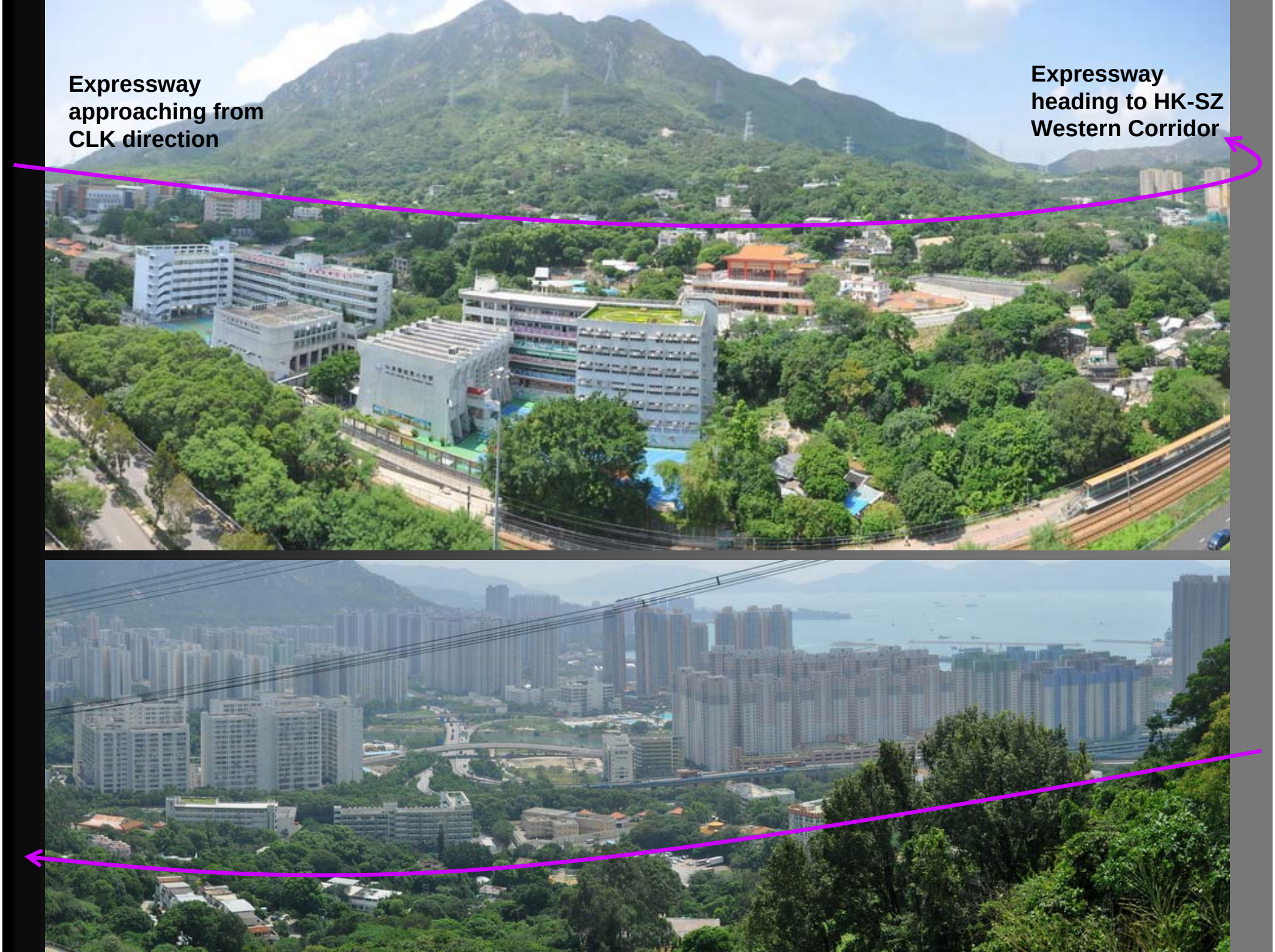

屯門西繞道 – 推薦走線
TMWB – Recommended Alignment
港深西部通道
Kong Sham Western Highway
青磚圍 Tsing Chuen Wai
厦村 Ha Tsuen
新生新村 San Sang San Tsuen
北面連接點 Northern Connection
圓頭山 Yuen Tau Shan
屯子圍 Tuen Tsz Wai
新慶村 San Hing Tsuen
小坑村 Siu Hang Tsuen
元朗公路 Yuen Long Highway
菠蘿山 Por Lo Shan
青山 Castle Peak
青田路 Tsing Tin Road
中段連接點 Middle connection
青山寺 Tsing Shan Monastery
楊小坑 Yeung Siu Hang
龍鼓灘 Lung Kwu Tan
青山村 Tsing Shan Tsuen
屯門公路 Tuen Mun Road
南面連接點 Southern Connection
望后石 Pillar Point
擬建的屯門至赤鱲角連接路
Proposed Tuen Mun – Chek Lap Kok Link

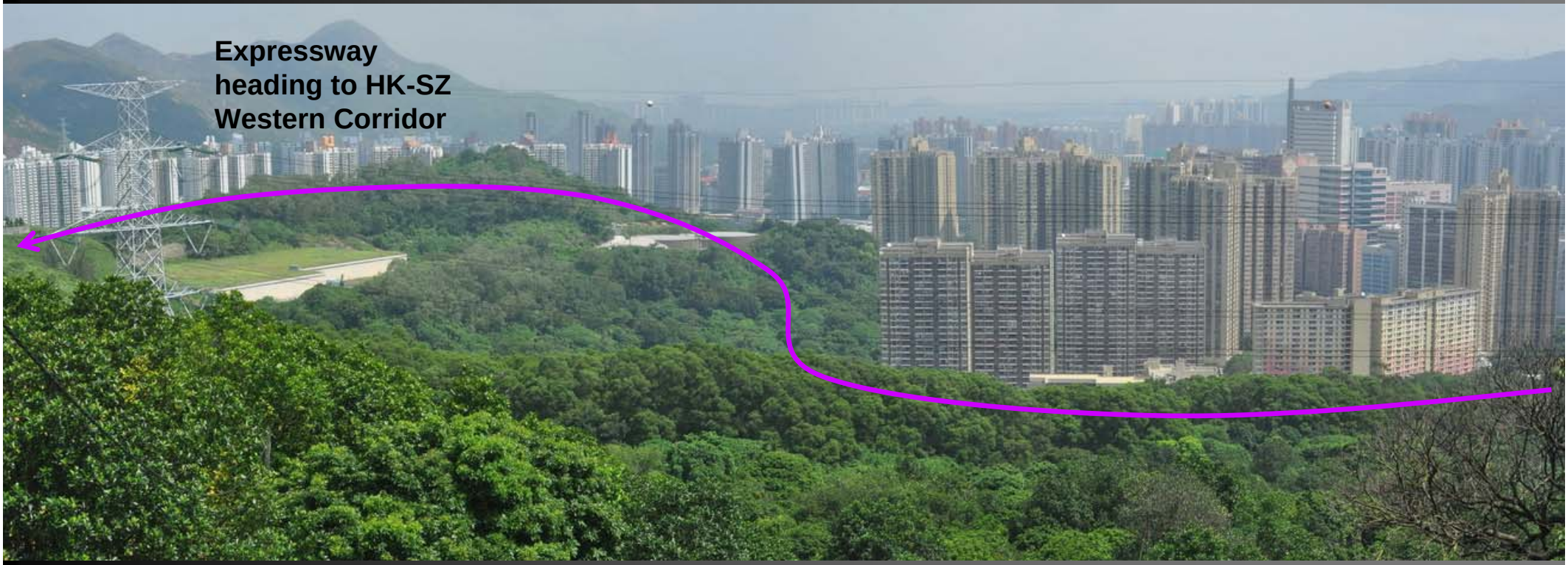

Merging into Deep Bay Link and SZ-HK Western Corridor
Deep Bay Link from YL Highway
Landing from sea-crossing bridge heading from CLK

Indicative Connection to Kong Sham Western Highway (Location A)

Indicative Connection to Tsing Tin Road (Location B)

Interchanging the new bypass to the existing network


Expressway
approaching from
CLK direction
Expressway
heading to HK-SZ
Western Corridor

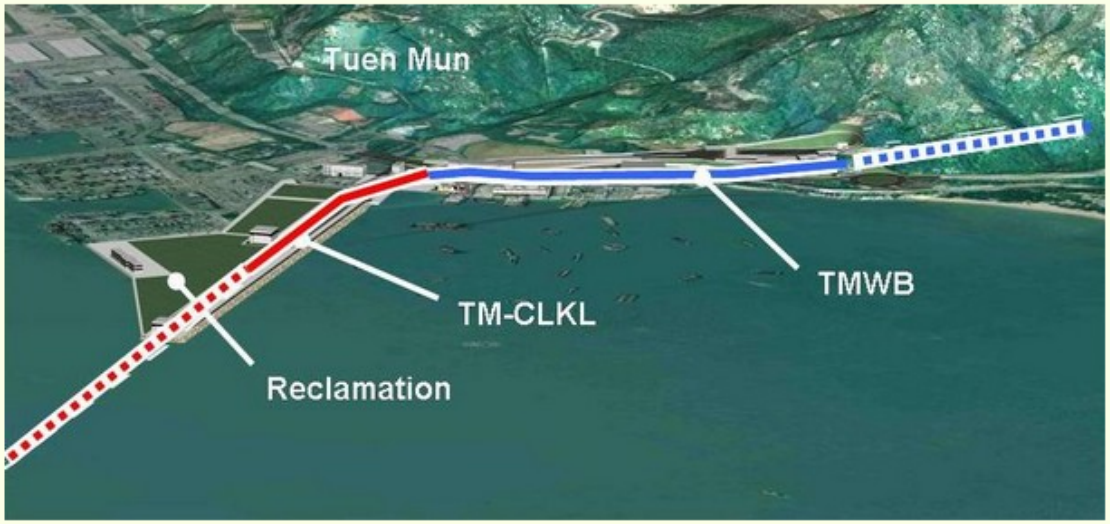

Expressway
heading to HK-SZ
Western Corridor

Expressway linking to HK-SZ Western Corridor

TM-CLK Link landing location

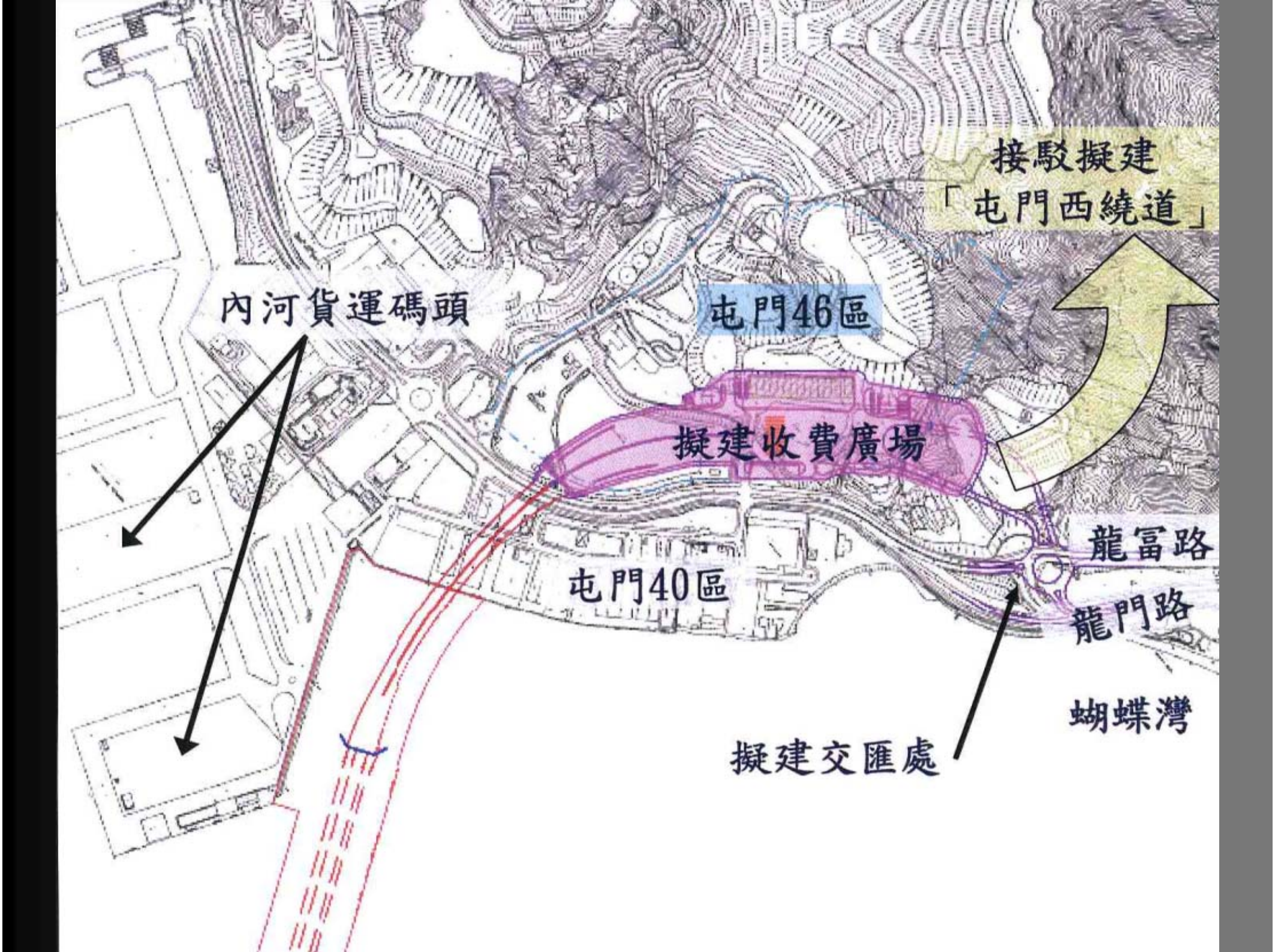
TUEN MUN - CHEK LAP KOK LINK (TM-CLKL)

Indicative Alignment of TMCLKL

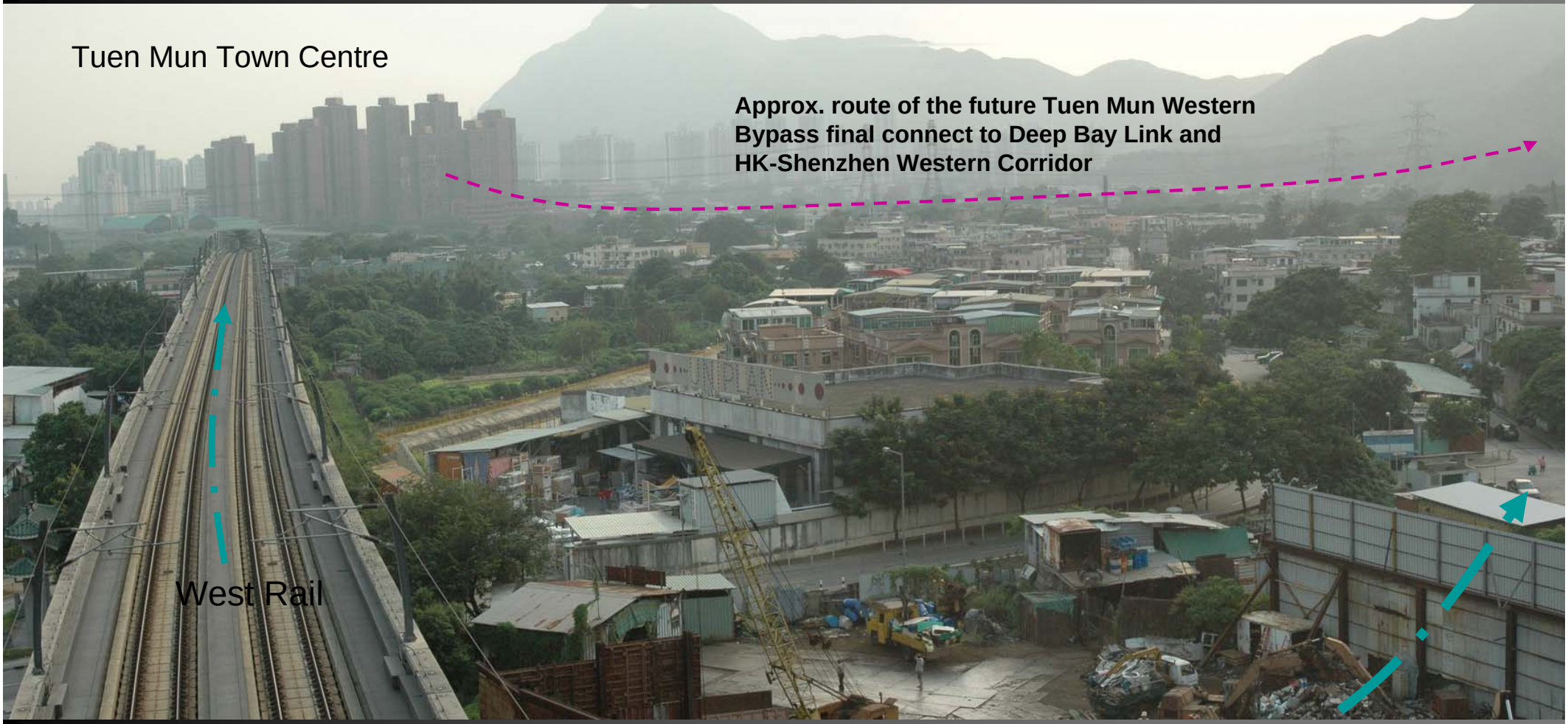


Indicative Alignment at Tuen Mun South (Location A)

Indicative Connection to North Lantau Highway (Location B)


接駁擬建
「屯門西繞道」
內河貨運碼頭
屯門46區
擬建收費廣場
龍富路
屯門40區
龍門路
蝴蝶灣
擬建交匯處

Landing location of the Tuen Mun-Chek Lap Kok Link at Tai Ho


Tuen Mun Town Centre
Approx. route of the future Tuen Mun Western Bypass final connect to Deep Bay Link and HK-Shenzhen Western Corridor
West Rail
Alignment of existing Deep Bay Link

Final connection to Mainland China through the HK-Shenzhen Crossing

Location and Scale of the Project

The location of the project is shown on the attached drawing no. HZMN05004-SP0012. The tentative study envelope for the possible alignments covers Tuen Mun Area from north to south, all within the HKSAR boundary.

The scope of the TMWB is to provide a proposed highway and the associated interchanges connecting the Kong Sham Western Highway and the proposed TMCLKL, which is divided into two sections:

TMWB – Southern Section, which comprises the followings:

(i) a toll plaza near Lung Mun Road and about 2.7km land tunnel continuing from TMCLKL running through Castle Peak and emerging at the south of the Tuen Mun North Freshwater Service Reservoir at Por Lo Shan;

(ii) about 1.1km viaduct emerging from the northern portal of (i) running between the Freshwater Service Reservoir and Saltwater Service Reservoir, which then turns northward to the western hillside of Leung King Estate, to connect to TMWB - Northern Section; and

(iii) about 1km link roads bifurcating from (ii) near the Service Reservoirs, to connect to Tsing Tin Road to allow traffic movement to/from Tuen Mun East.

TMWB – Northern Section, which comprises the followings:

(i) about 2.7km long land tunnel continuing from TMWB - Southern Section at the west of Leung King Estate through Castle Peak encroaching upon the Tsing Shan Firing Range and emerging at the north of Villa Pinada;

(ii) about 0.4km short viaduct continuing from the northern portal of (i) above, spanning across the valley at the north of Villa Pinada and ending at the western side of Chung Shan;

(iii) about 0.4km short tunnel through Chung Shan and emerging at the east of Chung Shan; and

(iv) about 1.7km viaduct and associated slips roads bifurcating to connect with Kong Sham Western Highway at both the northern side towards Shenzhen Bay Bridge (formerly known as Shenzhen Western Corridor) and the southern side towards Yuen Long Highway.

The above proposed structural forms are all tentative at this stage and subject to review. Other structural forms will be investigated if necessary.

There will be refinement of the highway alignment within the tentative study envelope. Selection of the alignment will be dependent on a variety of factors such as environmental impacts, construction programme and cost, planning and engineering considerations, traffic implications, land resumption requirements, etc.