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 – 2011

Completion for operation – late 2016

This pack of presentation is prepared by Raymond Wong, City University of Hong Kong
June 2016

South Island Line (East) is a medium-capacity railway connecting the current MTR network from Admiralty Station to the Southern District of Hong Kong, via new stations at Ocean Park, Wong Chuk Hang, Lei Tung and South Horizons. This new rail line is designed with features responding to the transport needs of the community. It will also promote tourism development and economic activities in Southern District.
The construction of the South Island Line (East) began in May 2011 and it is expected to open for passenger service at the end of 2016.

Basic Information

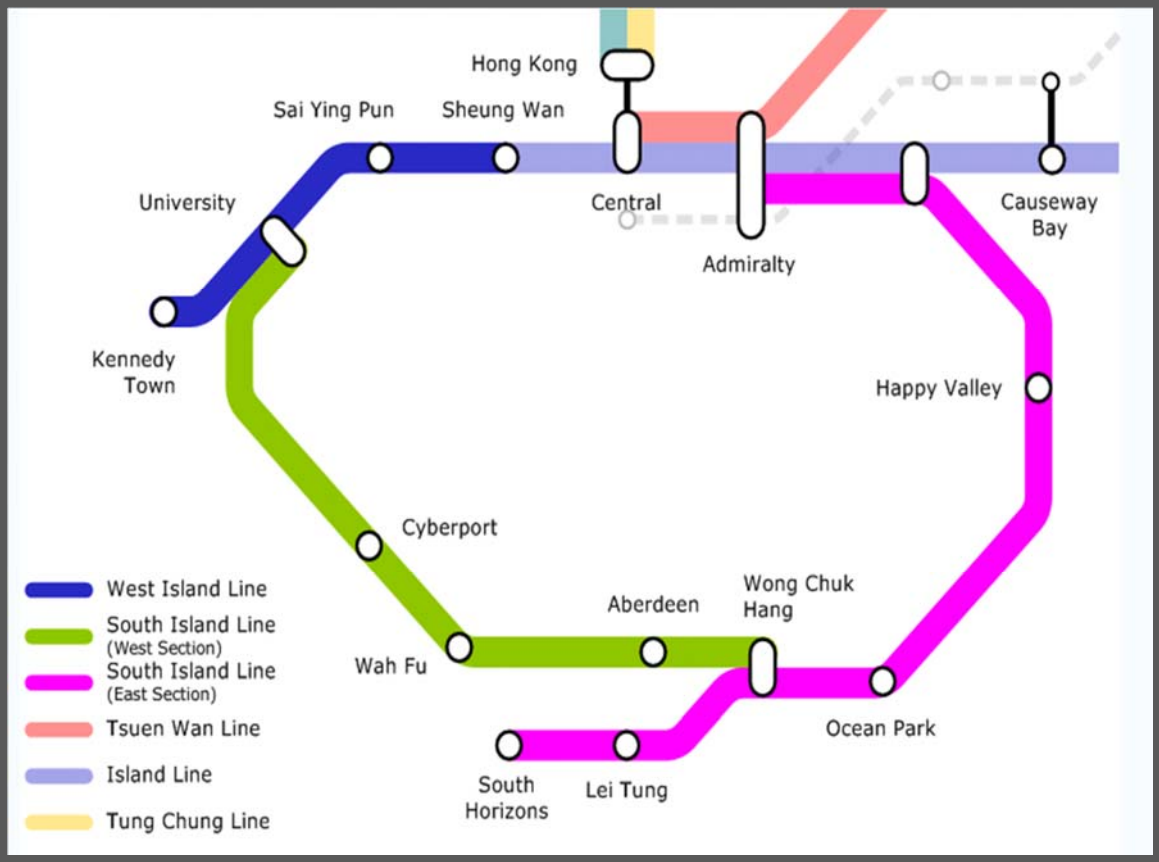
Alignment	From Admiralty to South Horizons, comprising about 4.5 km of underground sections (the Mount Cameron Tunnel 3.7 km and Lei Tung Tunnel 0.8 km), a 0.4 km crossing bridge and 1.4 km in viaduct
Stations	Admiralty, Ocean Park, Wong Chuk Hang, Lei Tung and South Horizons. The train depot is located near WCH Station.
Route Length	Approximately 7 km
Train frequency and capacity	Approximately 3 minutes during peak hours, with a capacity of up to 20,000 passengers per hour per direction
Interchange	Admiralty Station will serve as an interchange station for four MTR lines, namely the existing Island Line and Tsuen Wan Line as well as the new South Island Line (East) and the Shatin to Central Link.
Operation of train	The SIL is a medium capacity system with 3-car trains to meet the population need of the region. The line requires shorter platforms and smaller stations. The line is run under a Fully Automatic Operation (FAO) similar to the MTR Disneyland Resort Line.

This set of presentation serves as a brief highlight of the project making use of a series of record photos captured by Raymond Wong throughout a period of almost 5 years as part of his studies of the SIL project.

This presentation is breaking down into the below sections for easier illustration:

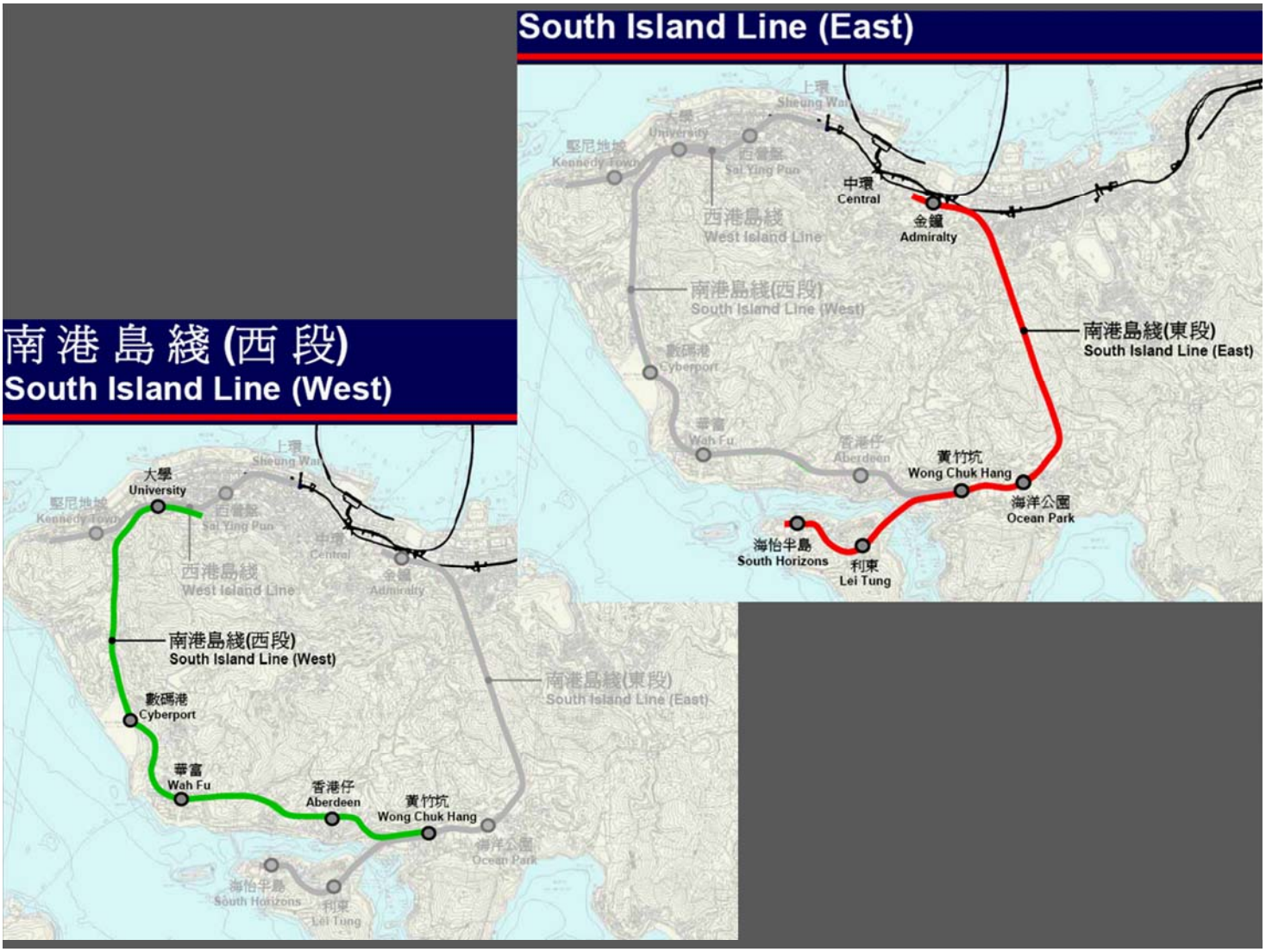
1. Alignment of the SIL
2. Construction of the Admiralty Station
3. Mount Cameron Tunnel portal near the toll Plaza of Aberdeen Tunnel
4. Re-aligning of the Wong Chuk Hang Nullah
5. Viaduct from Mount Cameron tunnel portal to WCH Station
6. Construction of the Ocean Park and WCH stations
7. Viaduct from WCH Station to the ALC Channel
8. Lei Tung, South Horizon stations and other assoicated works

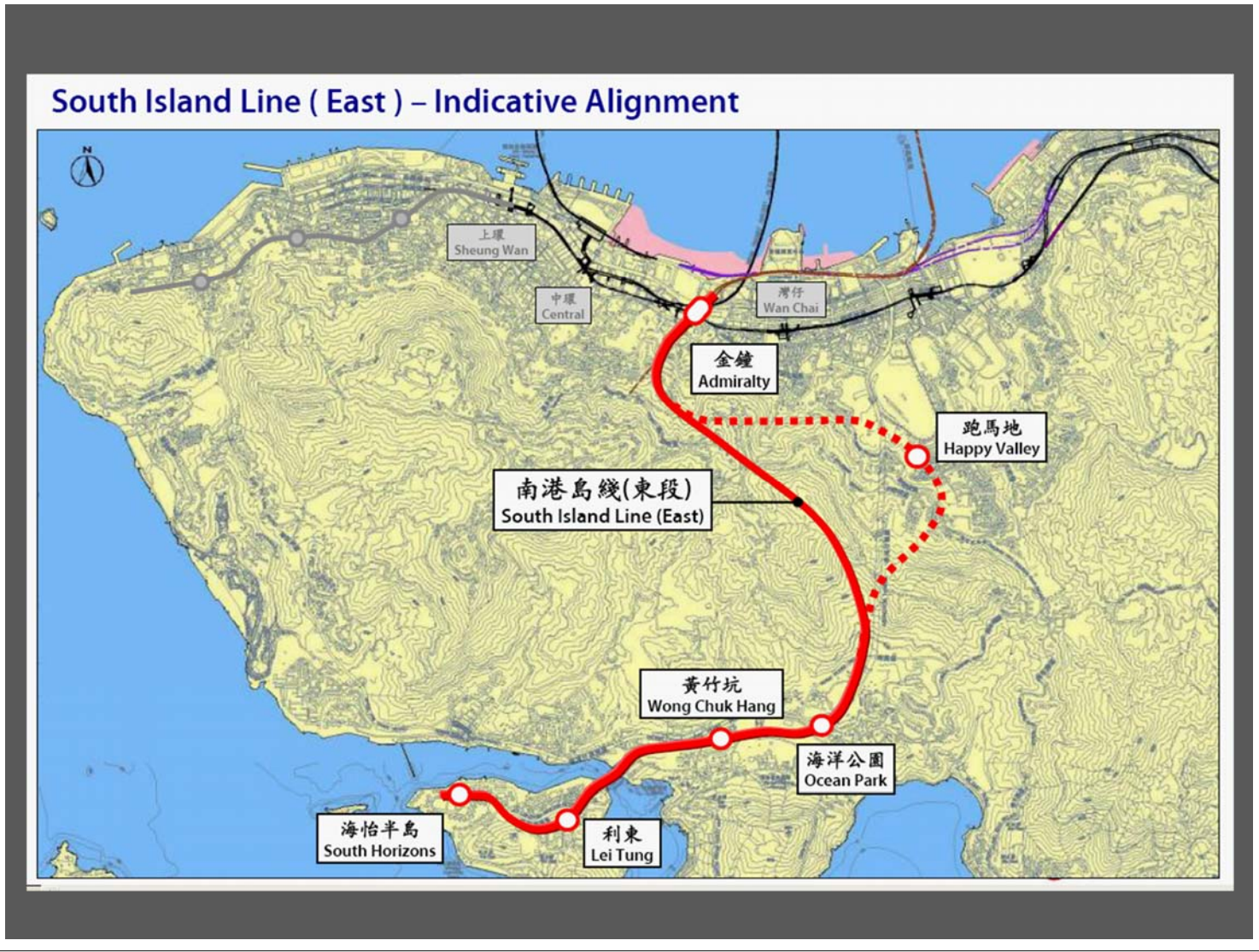
Alignment of the South Island Line

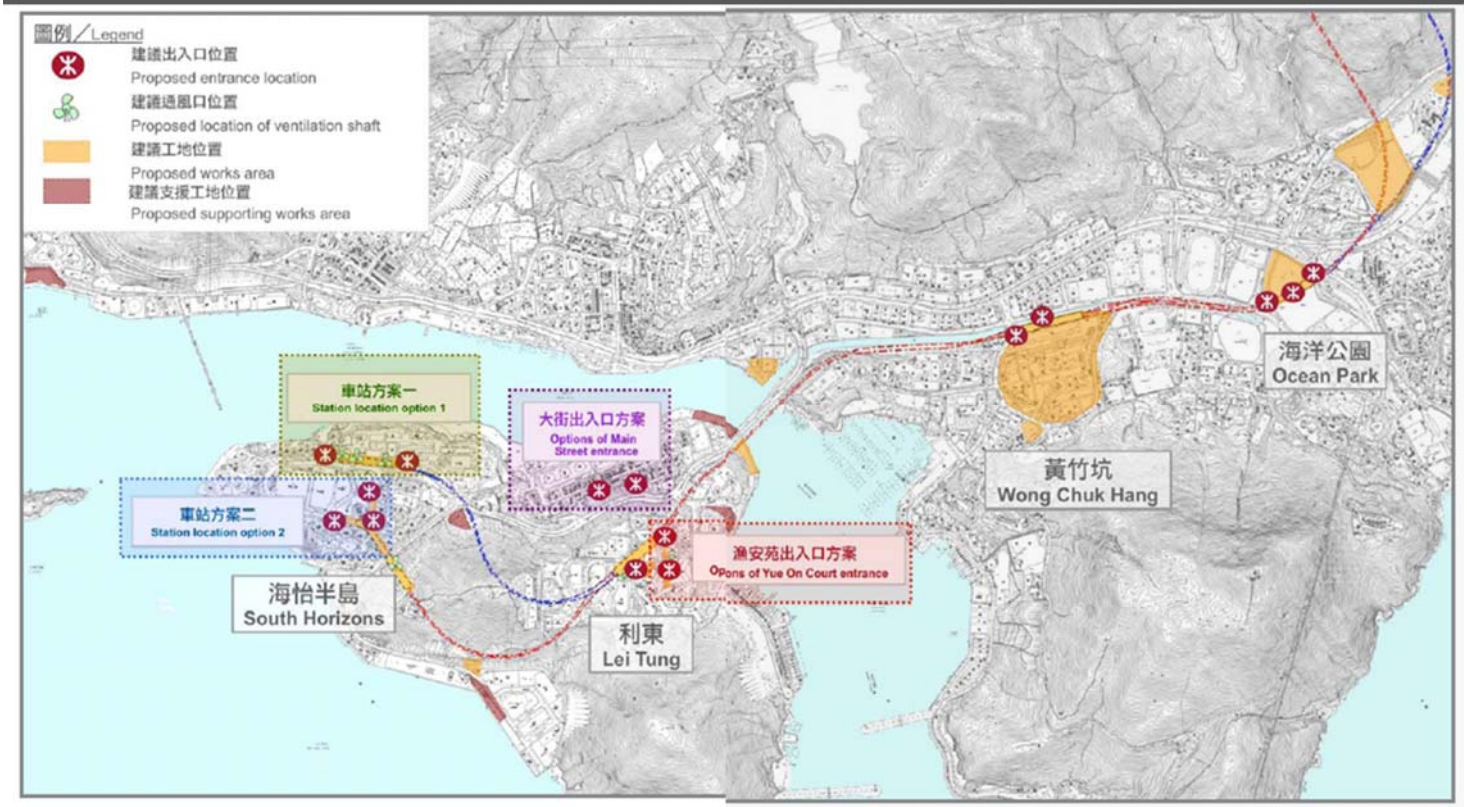


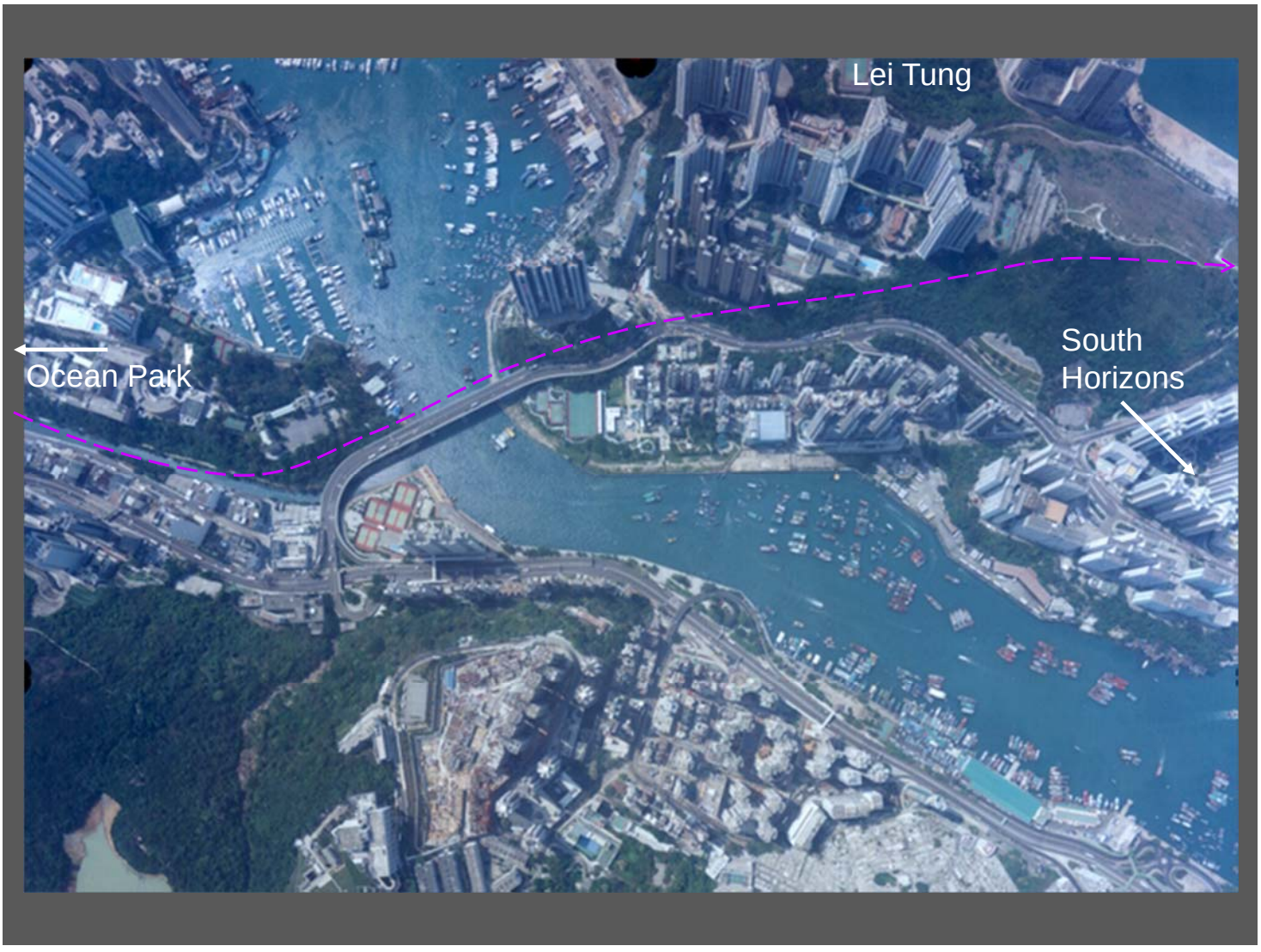
MTR West Island Line and South Island Line

(2005 proposal with Happy Valley Station)

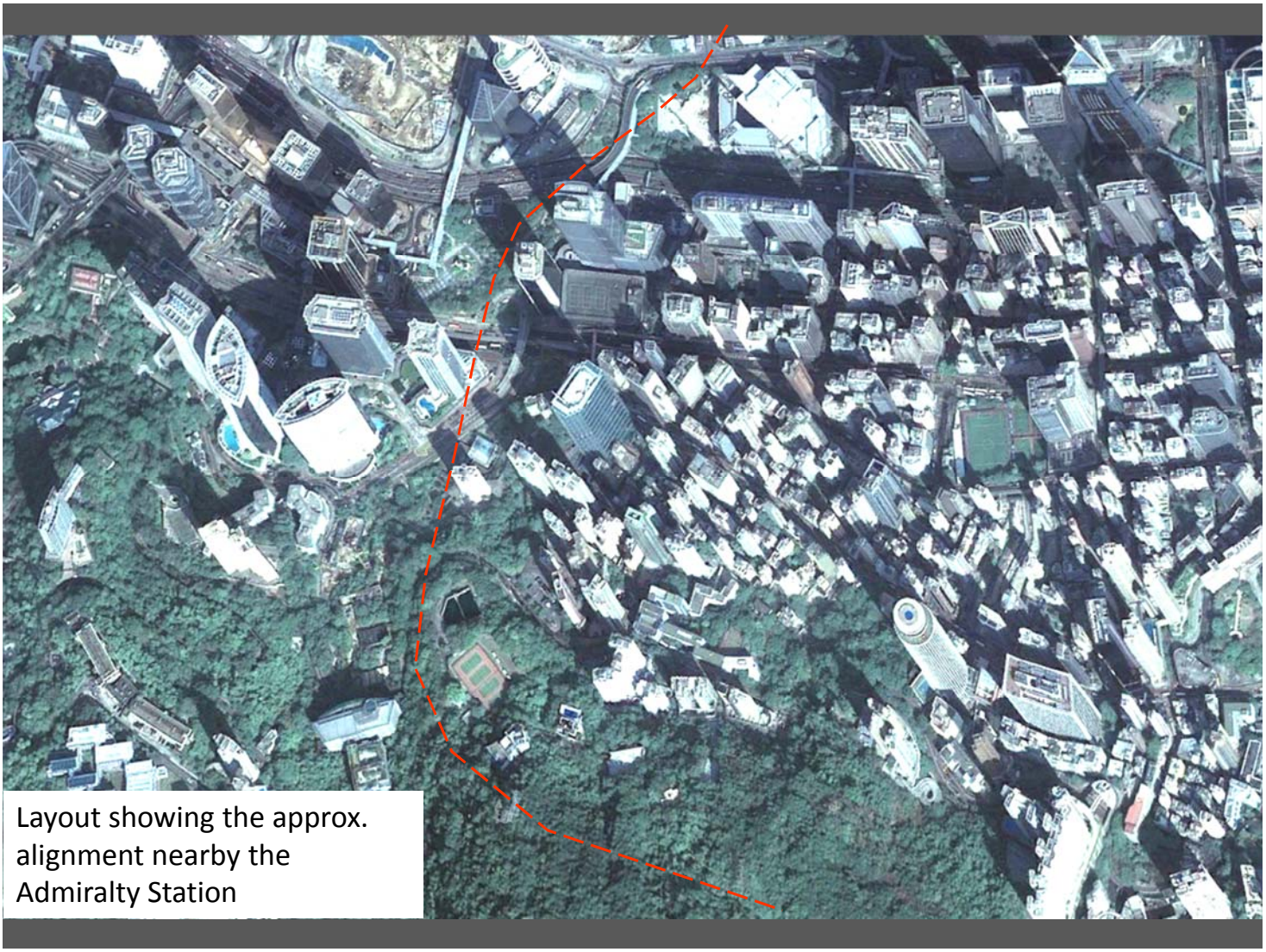

South Island Line (East)
南港島綫(西段)
South Island Line (West)
中環
Central
金鐘
Admiralty
西港島綫
West Island Line
南港島綫(西段)
South Island Line (West)
南港島綫(東段)
South Island Line (East)
數碼港
Cyberport
香港仔
Aberdeen
黃竹坑
Wong Chuk Hang
海洋公園
Ocean Park
海怡半島
South Horizons
利東
Lei Tung
大學
University
上環
Sheung Wan
堅尼地城
Kennedy Town
西營盤
Sai Ying Pun
華富
Wah Fu


South Island Line (East) – Indicative Alignment
上環
Sheung Wan
中環
Central
灣仔
Wan Chai
金鐘
Admiralty
跑馬地
Happy Valley
南港島綫(東段)
South Island Line (East)
黃竹坑
Wong Chuk Hang
海洋公園
Ocean Park
海怡半島
South Horizons
利東
Lei Tung


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
大街出入口方案
Options of Main Street entrance
車站方案二
Station location option 2
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

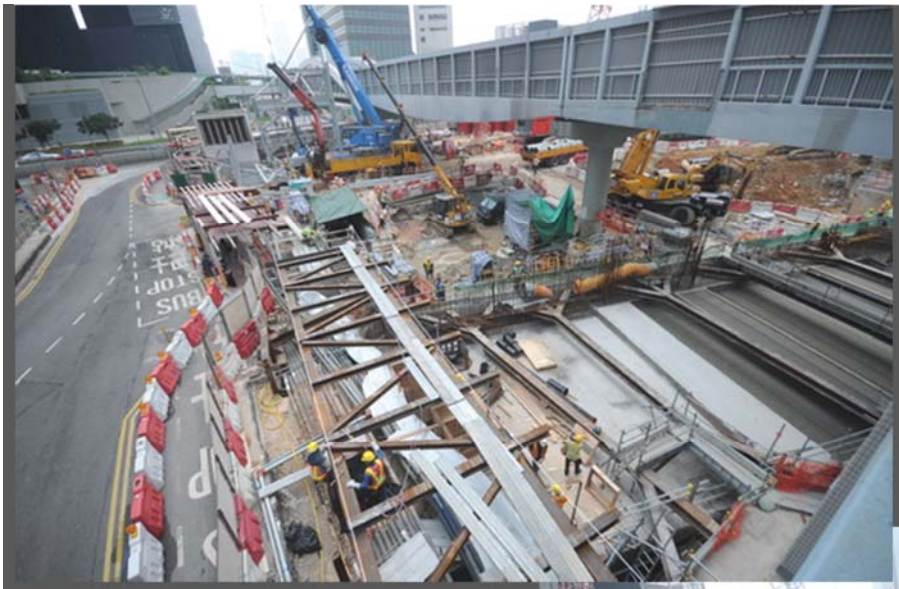

Lei Tung
Ocean Park
South Horizons

Construction of the Admiralty Station

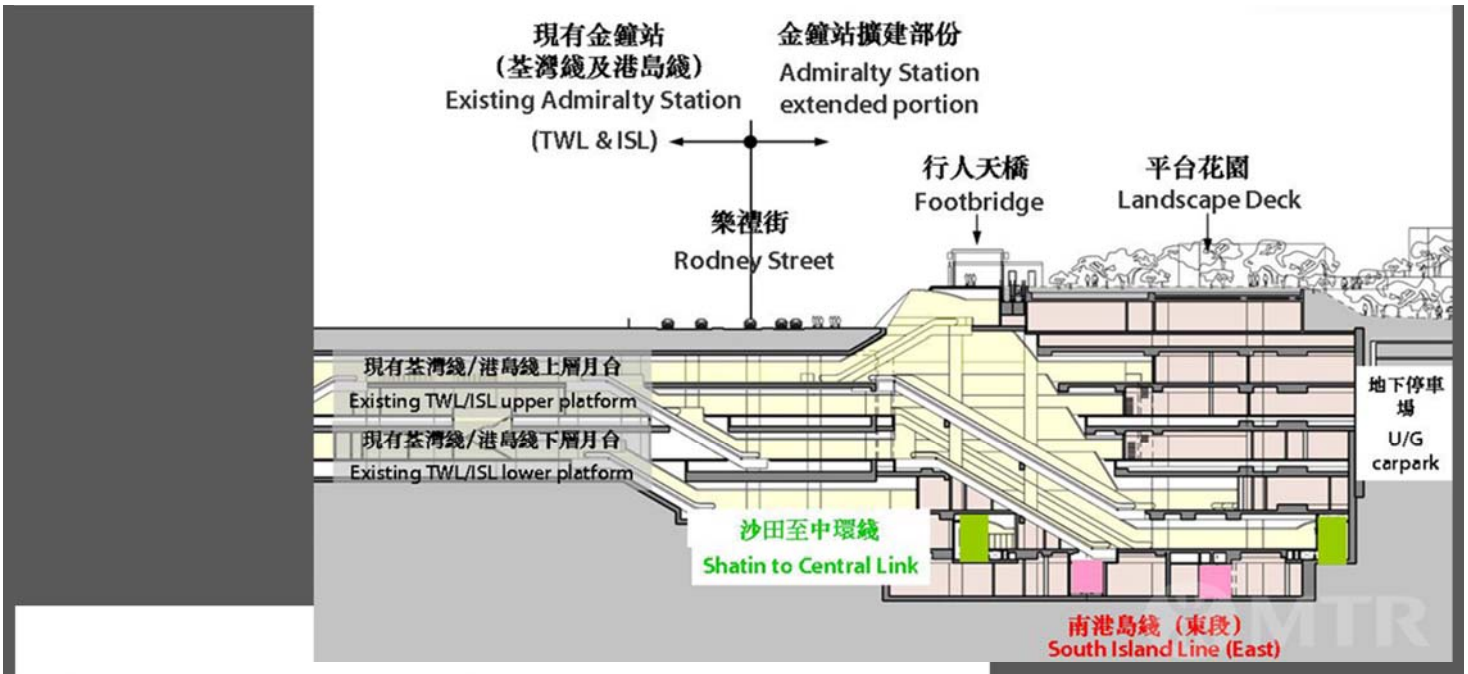


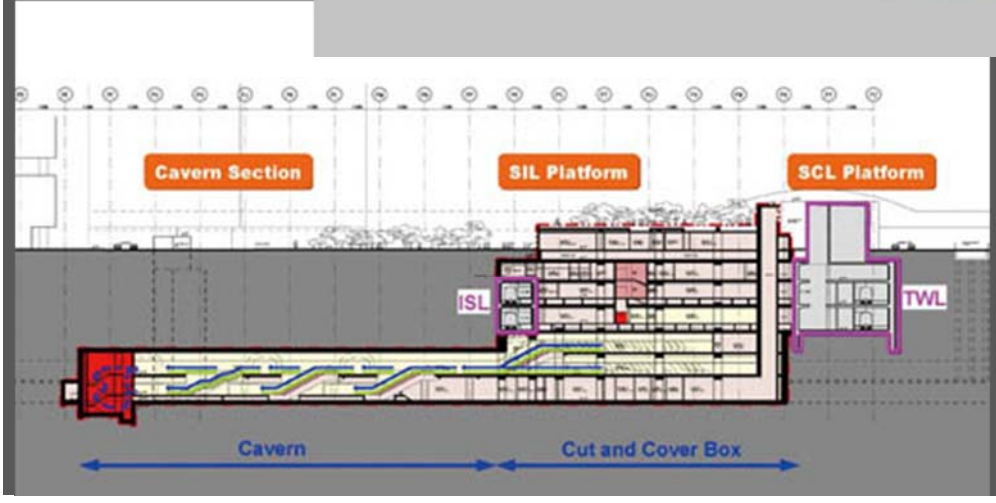
Layout showing the approx. alignment nearby the Admiralty Station

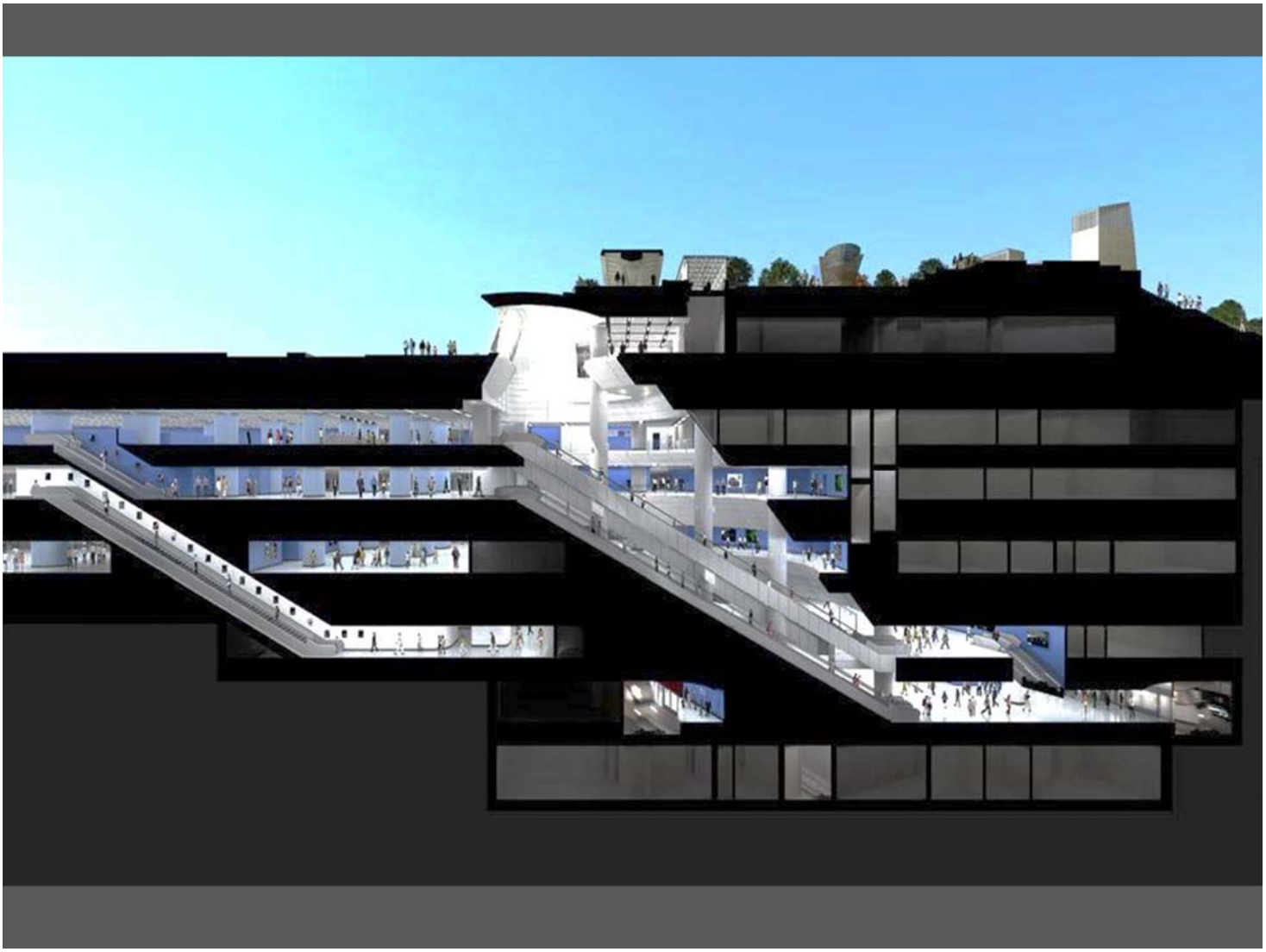
Early stage of work for the SIL Admiralty Station – formation of the previous Harcourt Garden into the work site

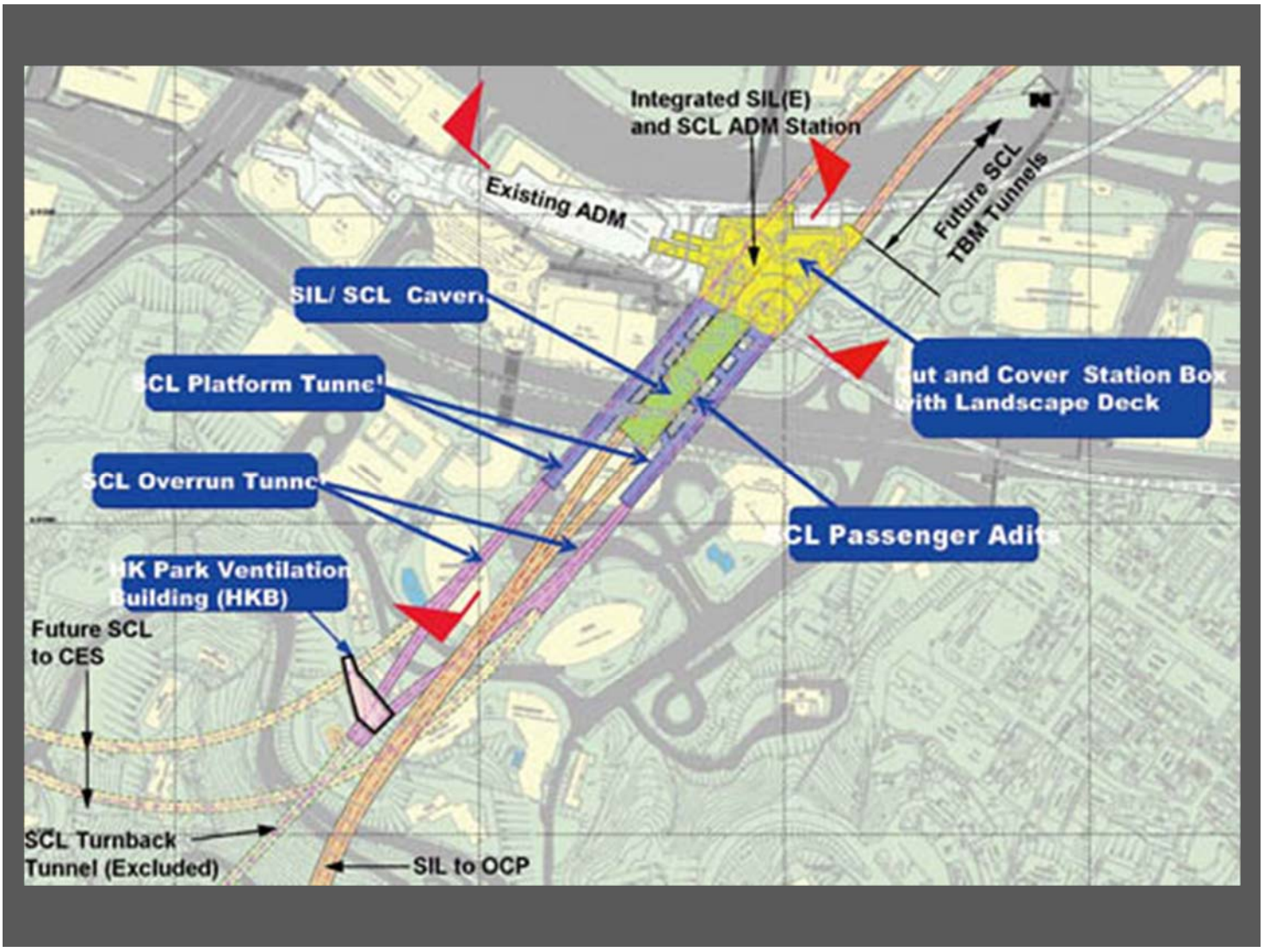


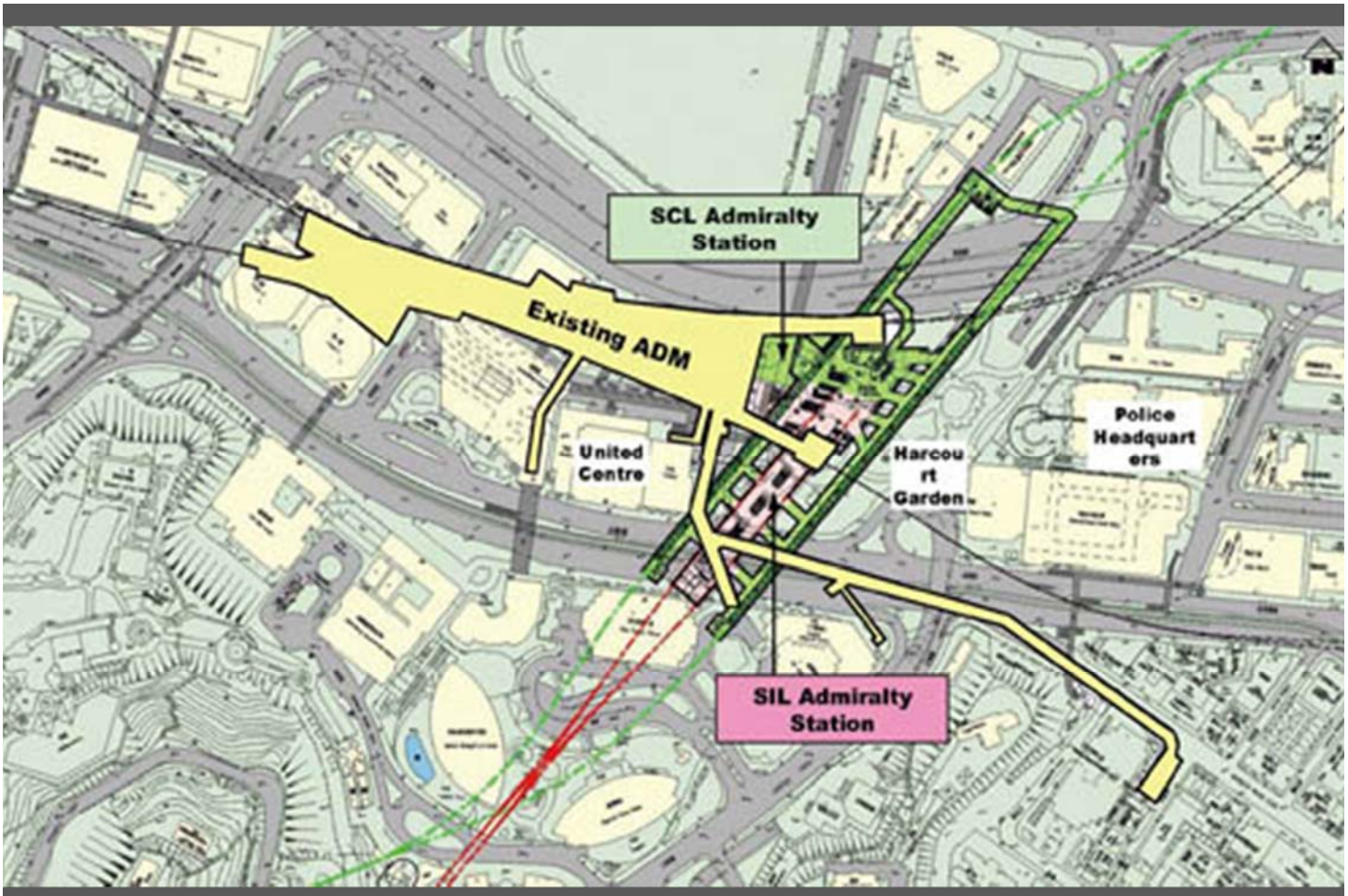
Early stage of work for the SIL Admiralty Station – formation of the previous Harcourt Garden into the work site



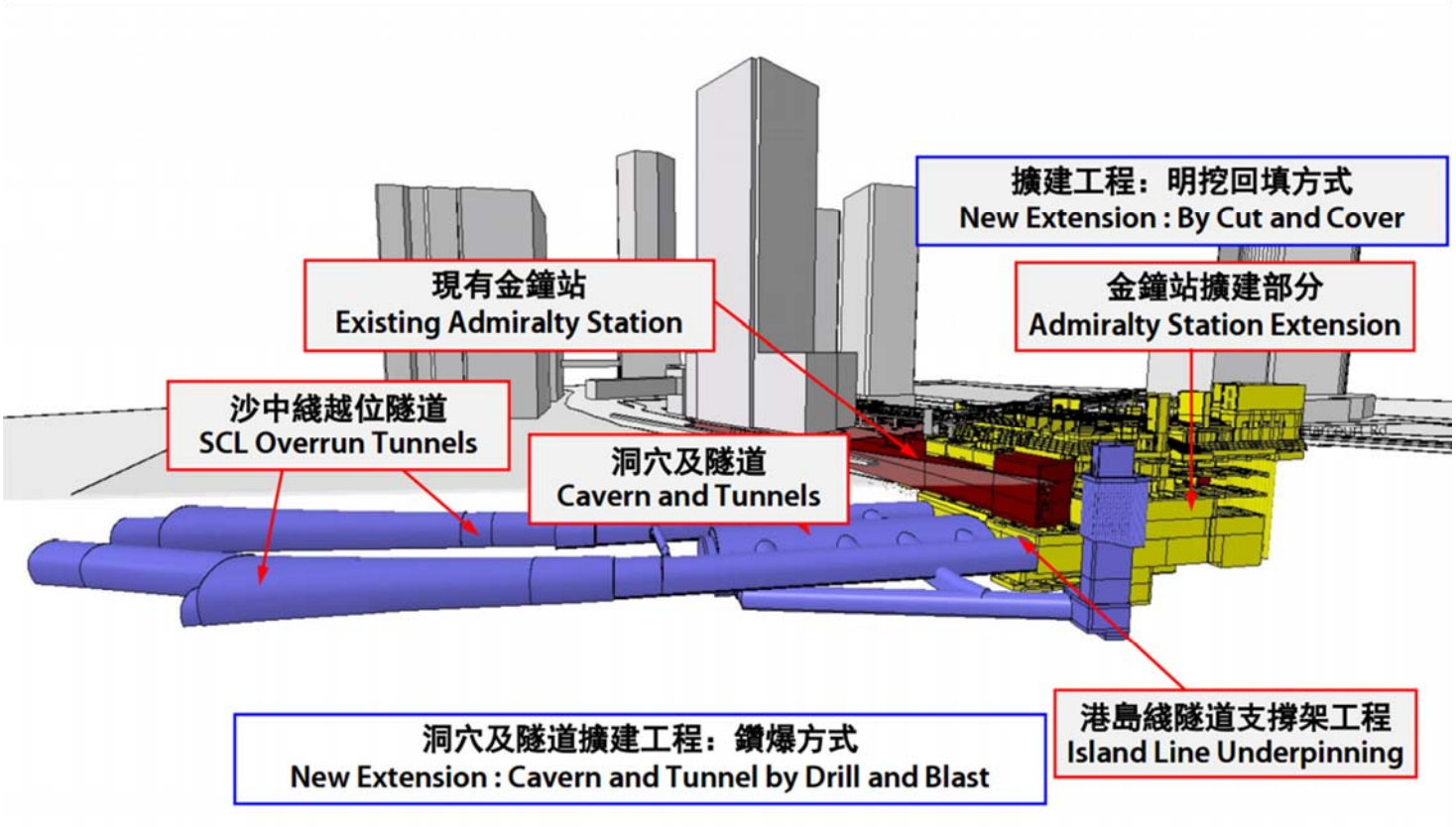





Integrated SIL(E)
and SCL ADM Station
Existing ADM
Future SCL
TBM Tunnels
SIL/ SCL Caver
SCL Platform Tunne
ut and Cover Station Box
ith Landscape Deck
SCL Overrun Tunne
SCL Passenger Adits
K Park Ventilation
Building (HKB)
Future SCL
to CES
SCL Turnback
Tunnel (Excluded)
SIL to OCP



Layout showing the integration between the existing Admiralty Station and the station extension for the SIL and SCL



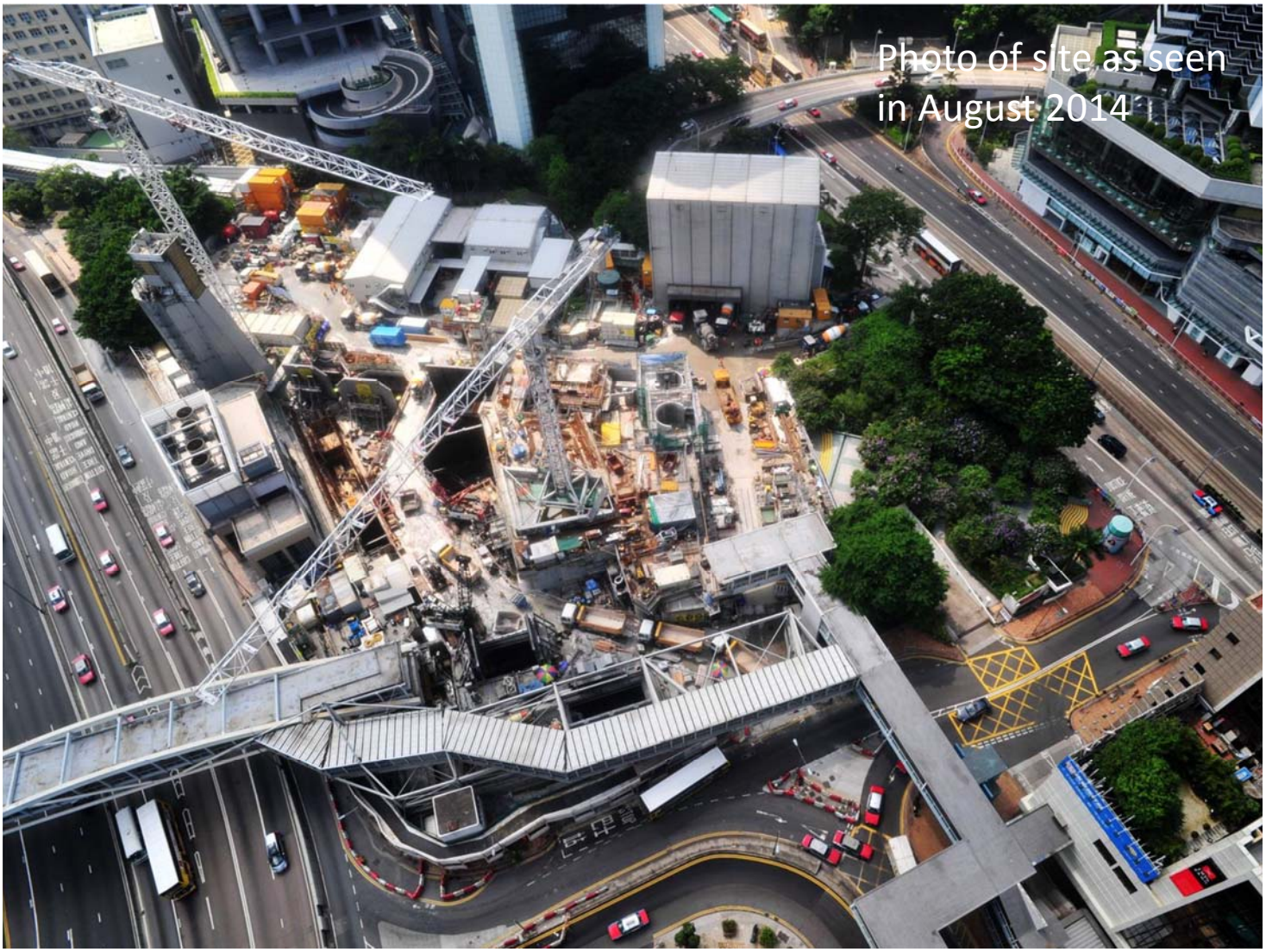
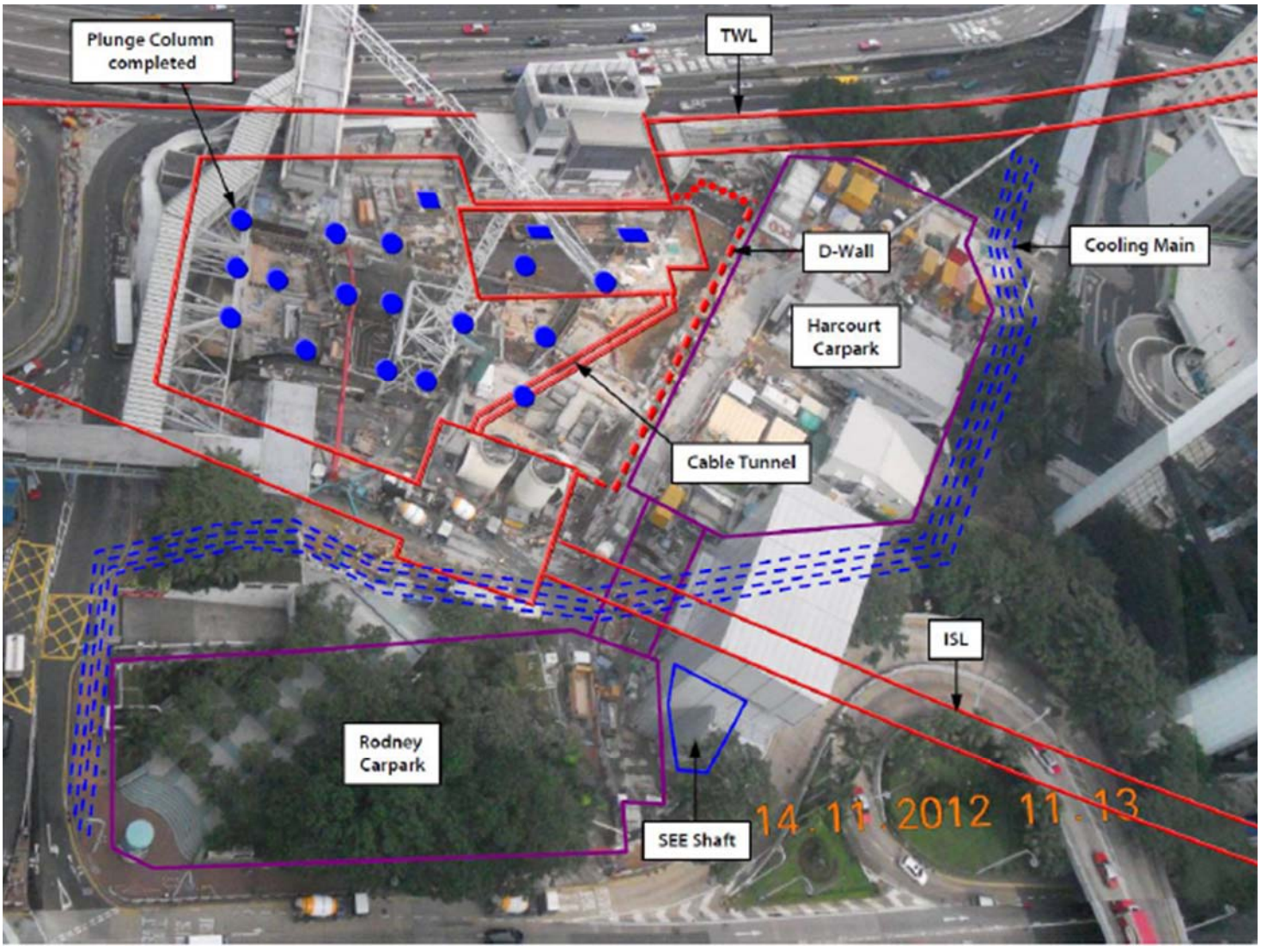
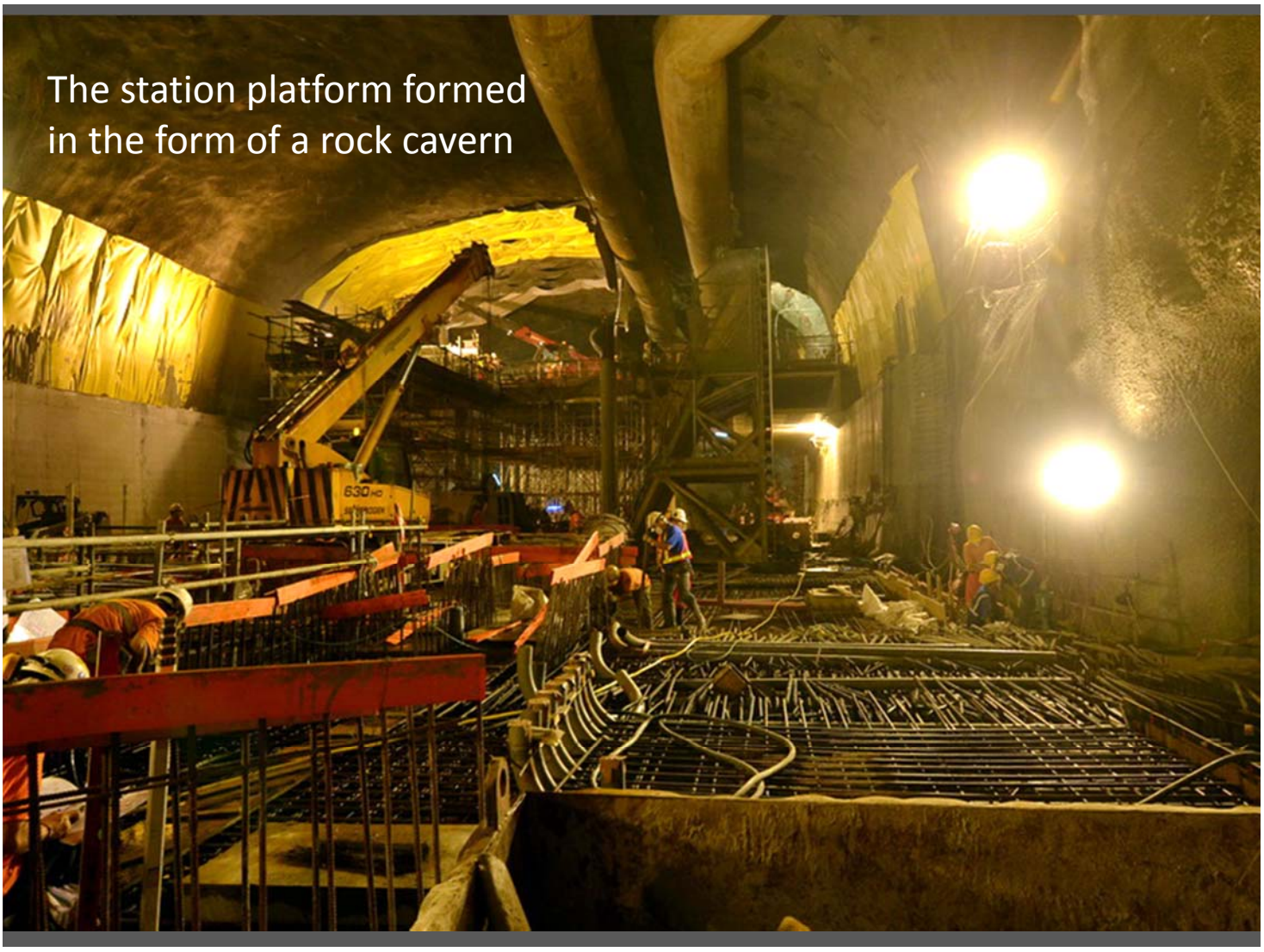


Photo of site as seen in August 2014


Plunge Column completed
TWL
D-Wall
Cooling Main
Harcourt Carpark
Cable Tunnel
ISL
Rodney Carpark
SEE Shaft
14.11.2012 11:13

The access shaft entering into the underground station



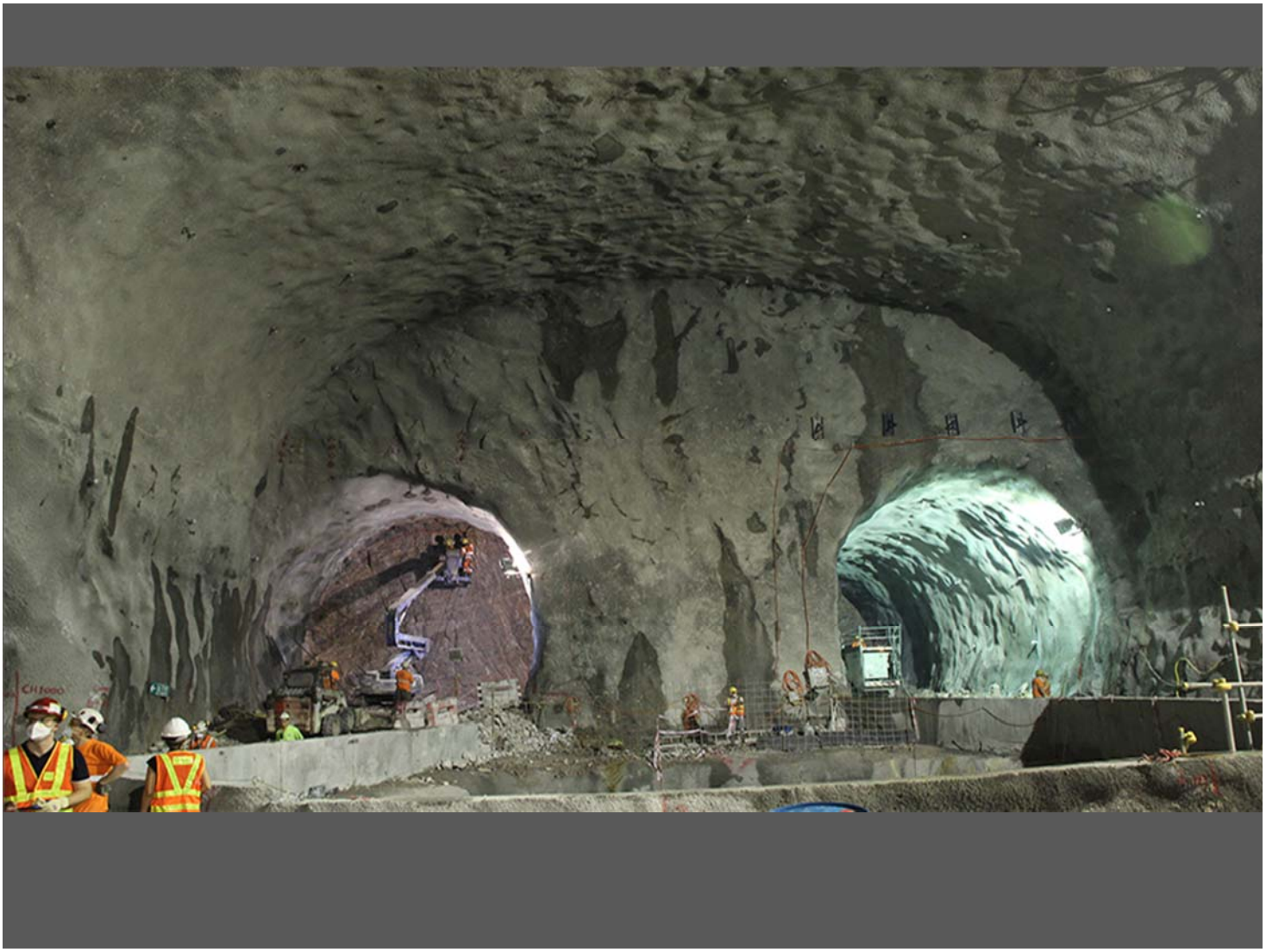
The station platform formed in the form of a rock cavern

Fixing the water-proofing membrane before
laying the concrete lining for the cavern chamber

One of the 80-ton output breaker machine using in the project

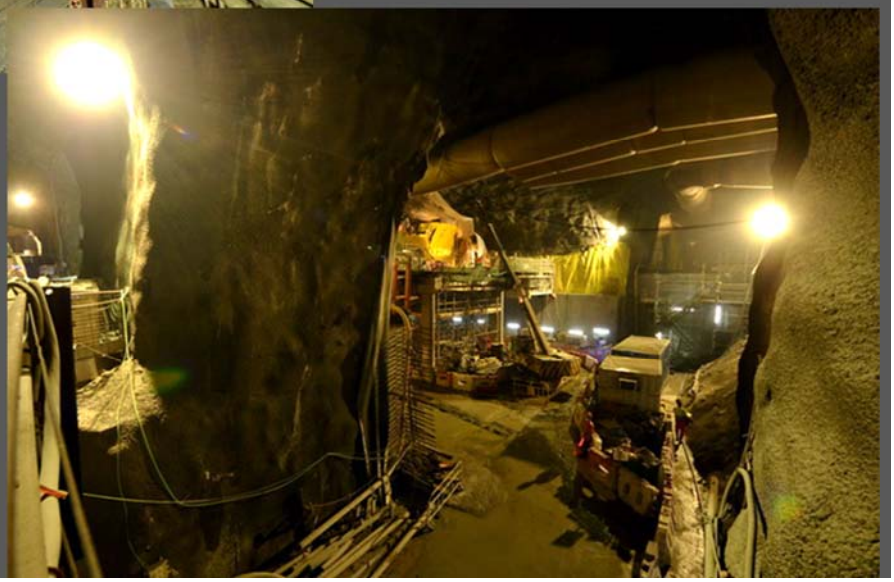
Drilling before the rock blasting/breaking

Drilling before the rock blasting/breaking

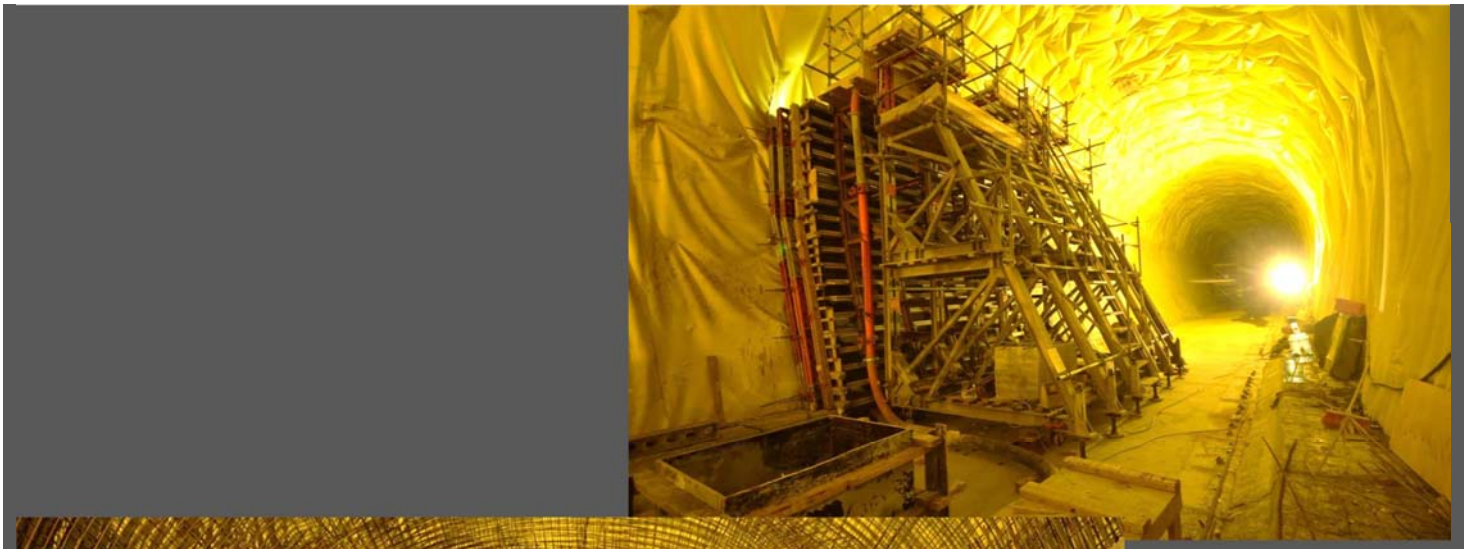


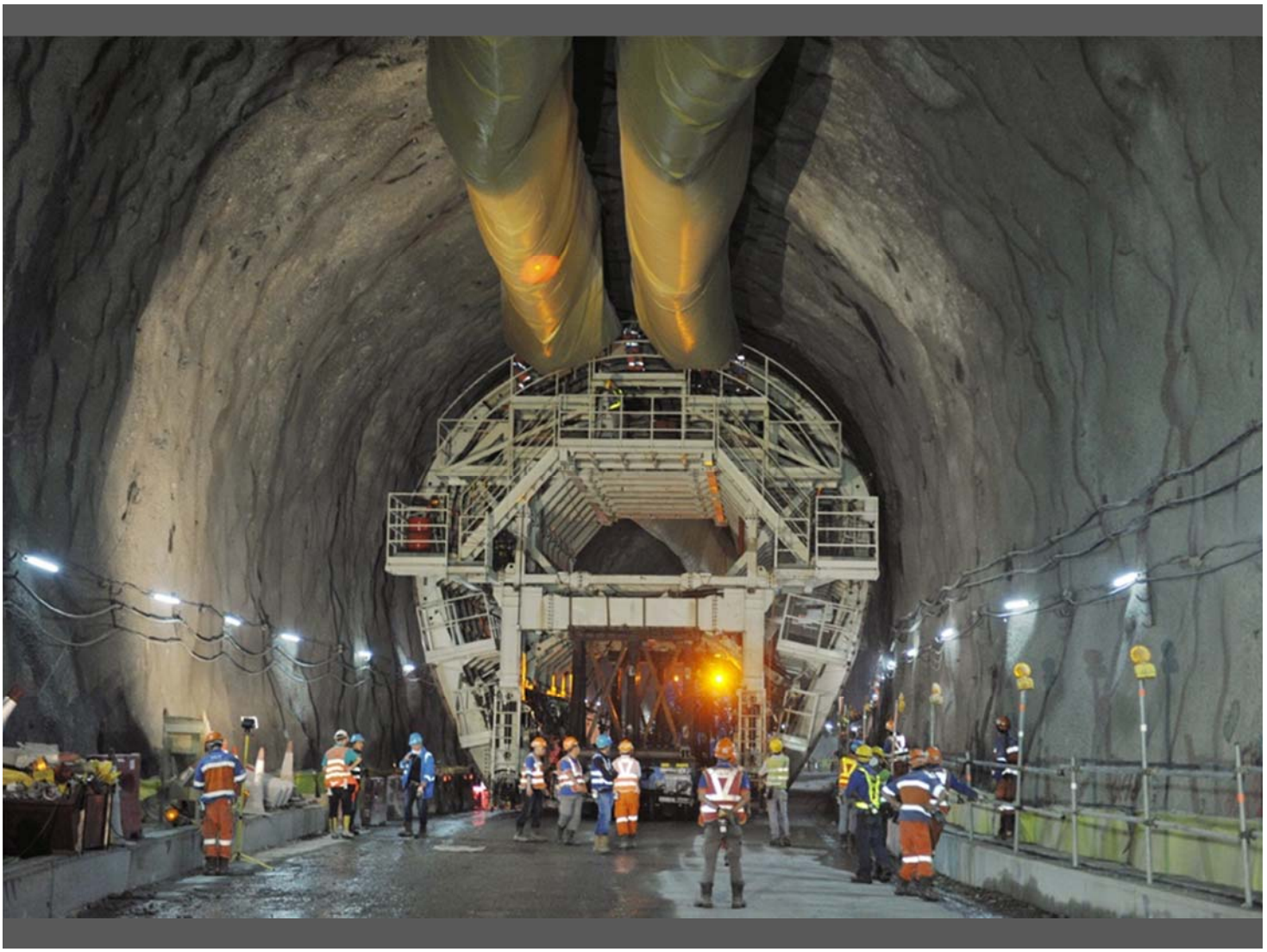
Complicated geometrical layout inside the station

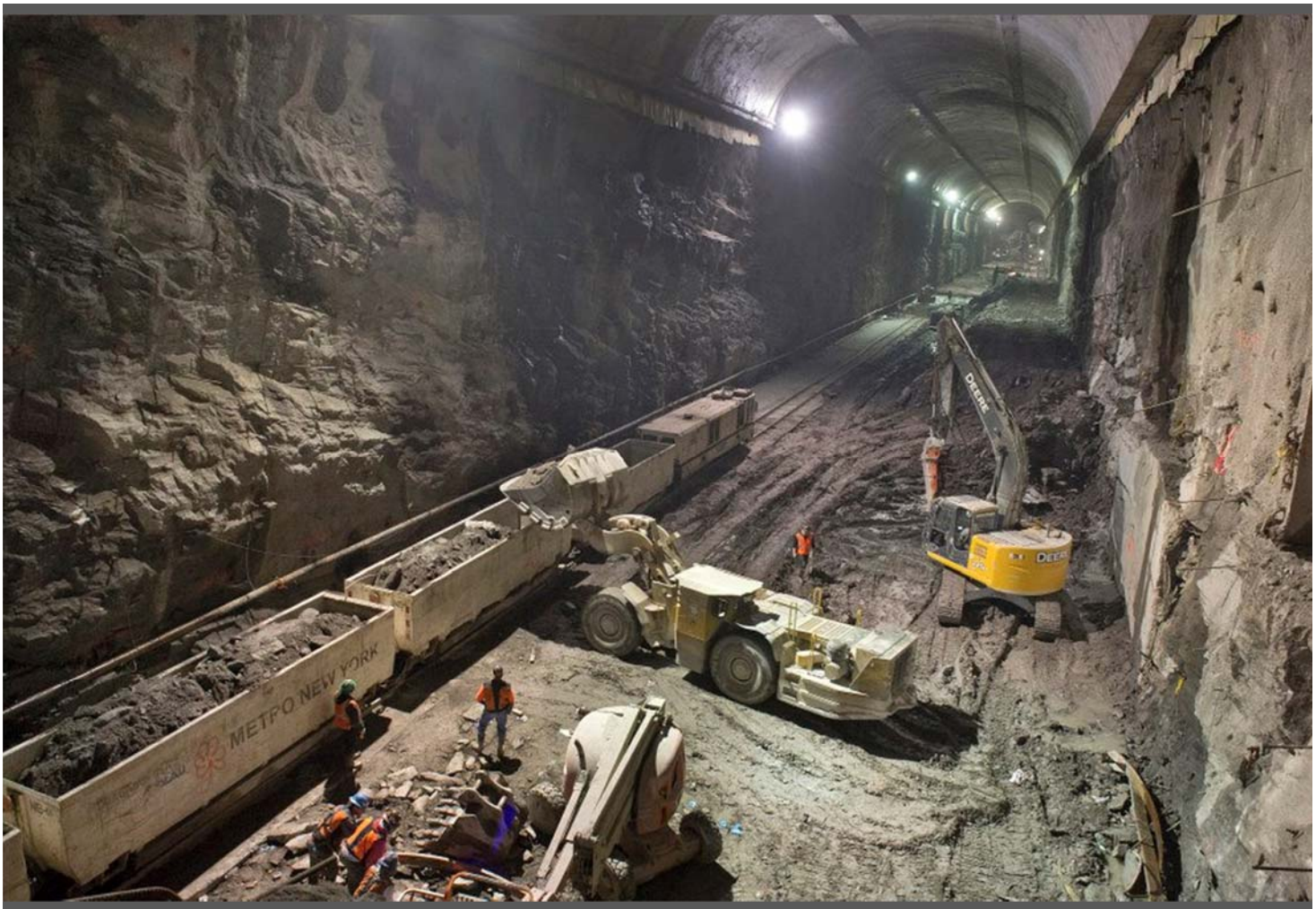
Complicated geometrical layout inside the station



Laying the water proofing membrane before forming the tunnel lining

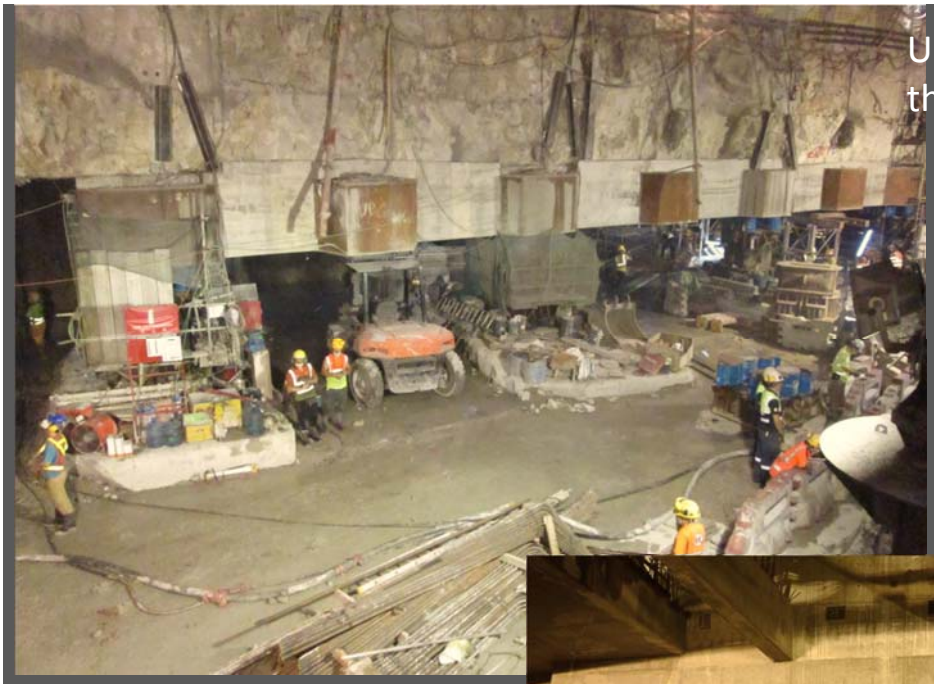






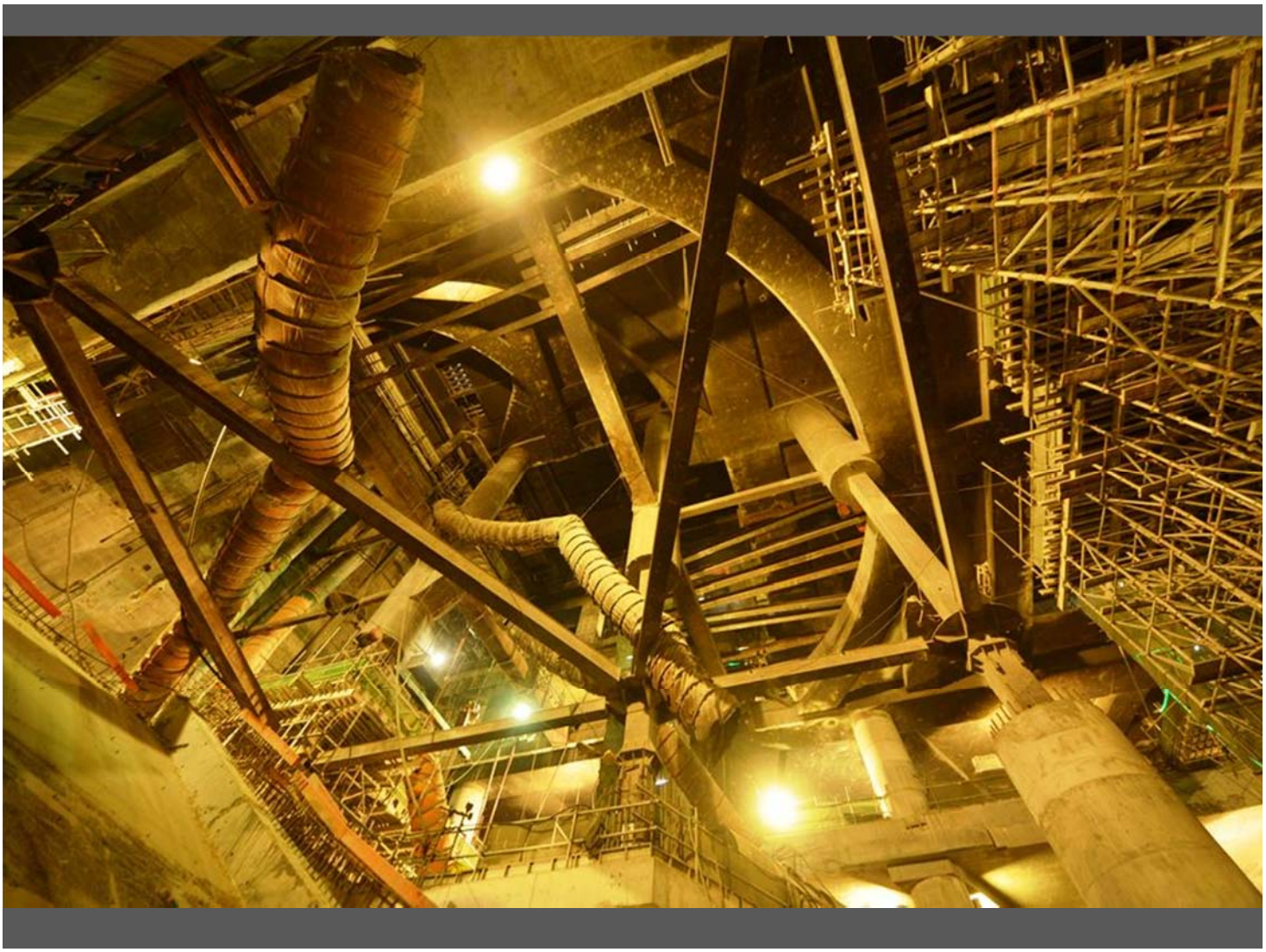
Final stage of the tunneling work (the overrun tunnel for the SCL)

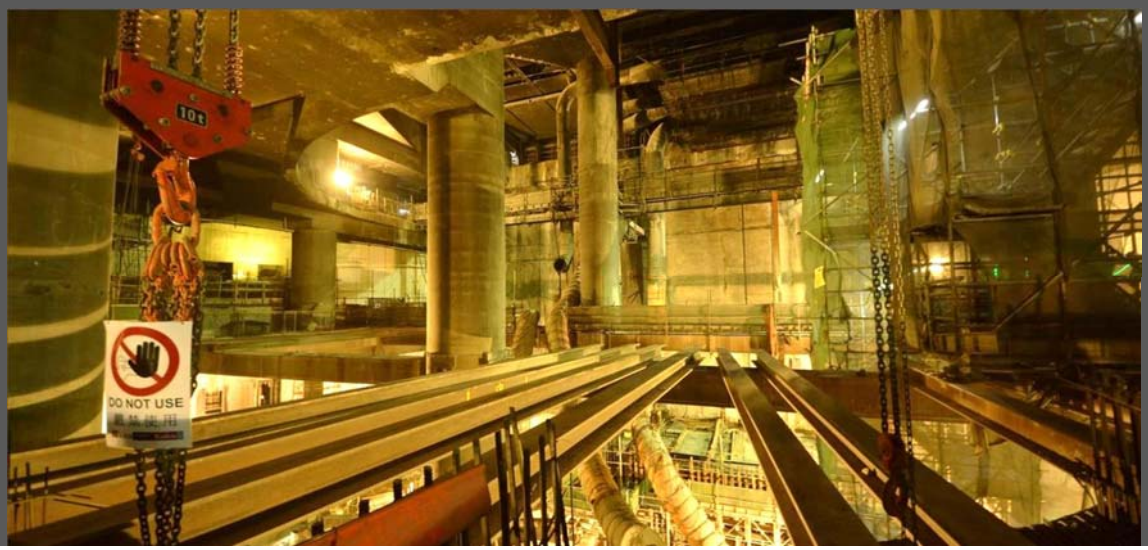
Underpinning work to support the servicing Island Line Tunnel

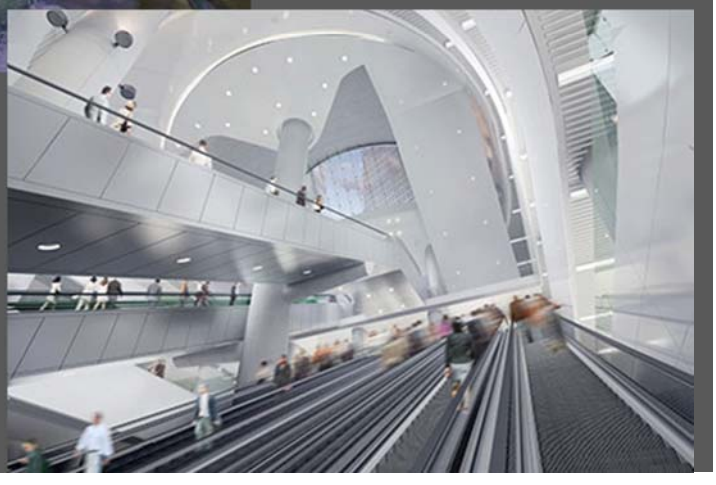


Underpinning work to support the servicing Island Line Tunnel

The main concourse of Admiralty Station in 2015



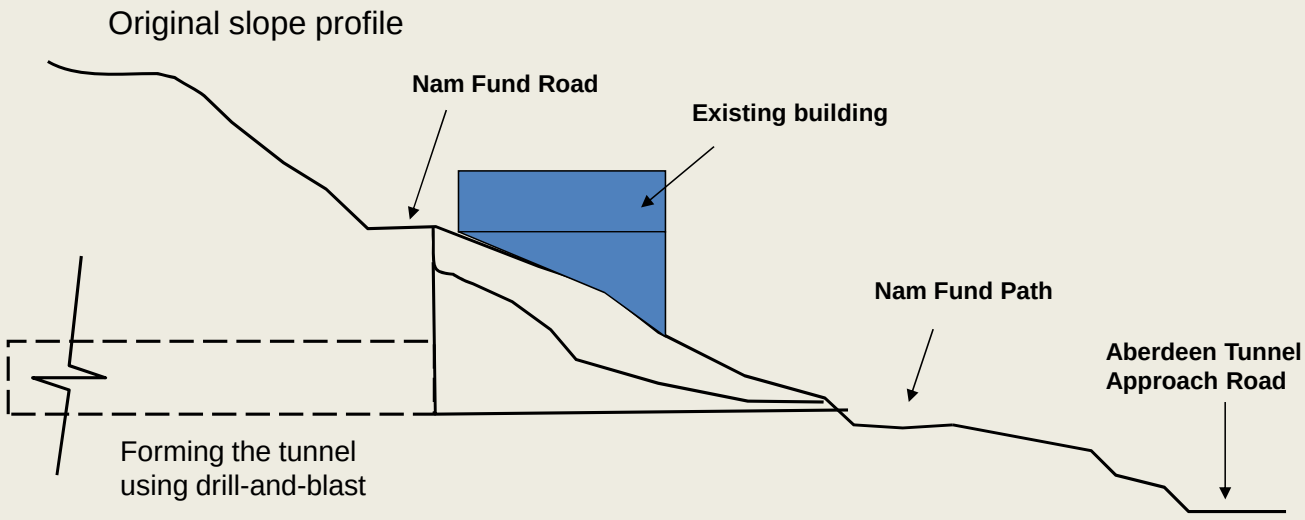




The gigantic size of the interior space for the Main Concourse of the Station

Illustration of the future SIL Admiralty Station (Main Entrance at Rodney Street)

Mount Cameron Tunnel portal near
the toll Plaza of Aberdeen Tunnel



Formation of the tunnel portal underneath Nam Fung Road


Formation of the tunnel portal underneath Nam Fung Road


MARUKYO
KATO
Tunnel portal as seen in
mid of 2012 and 2013

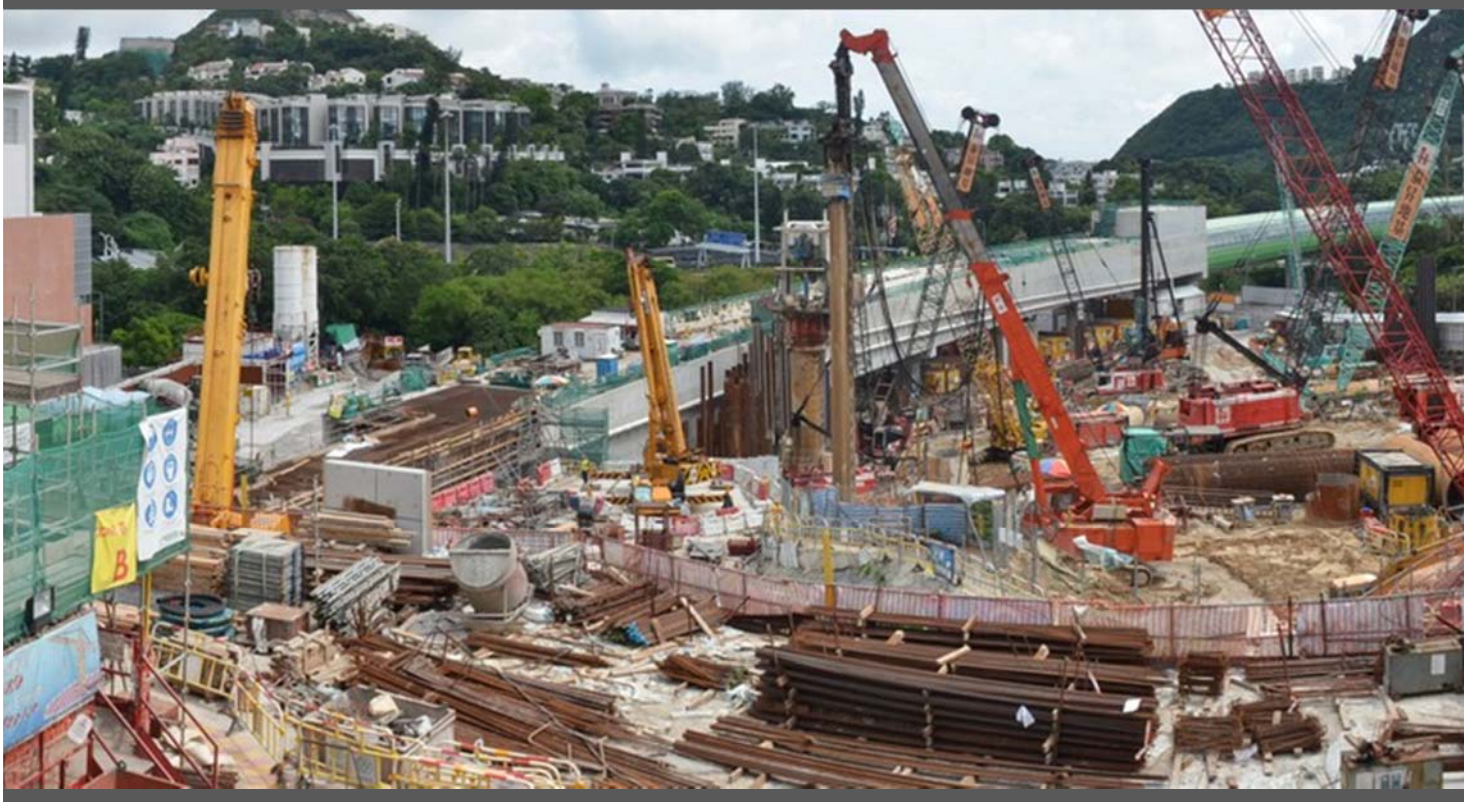

循環水再生系統
HIRAM

The trial section of the tunnel near Aberdeen with the tunnel cut supported by temporary steel arch portal

Typical tunnel section with waterproofing membrane being fixed ready for the forming of the in-situ RC lining

Typical view inside tunnel seeing the construction set-up

Tunnel immediately connecting to the viaduct crossing the Aberdeen Tunnel toll plaza




Toll Plaza of the
Aberdeen Tunnel

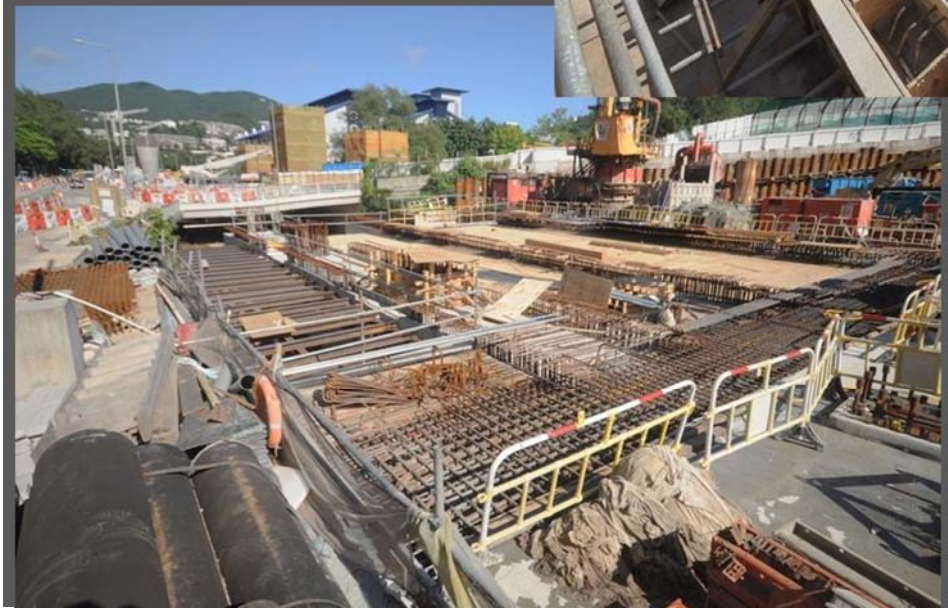

MTR

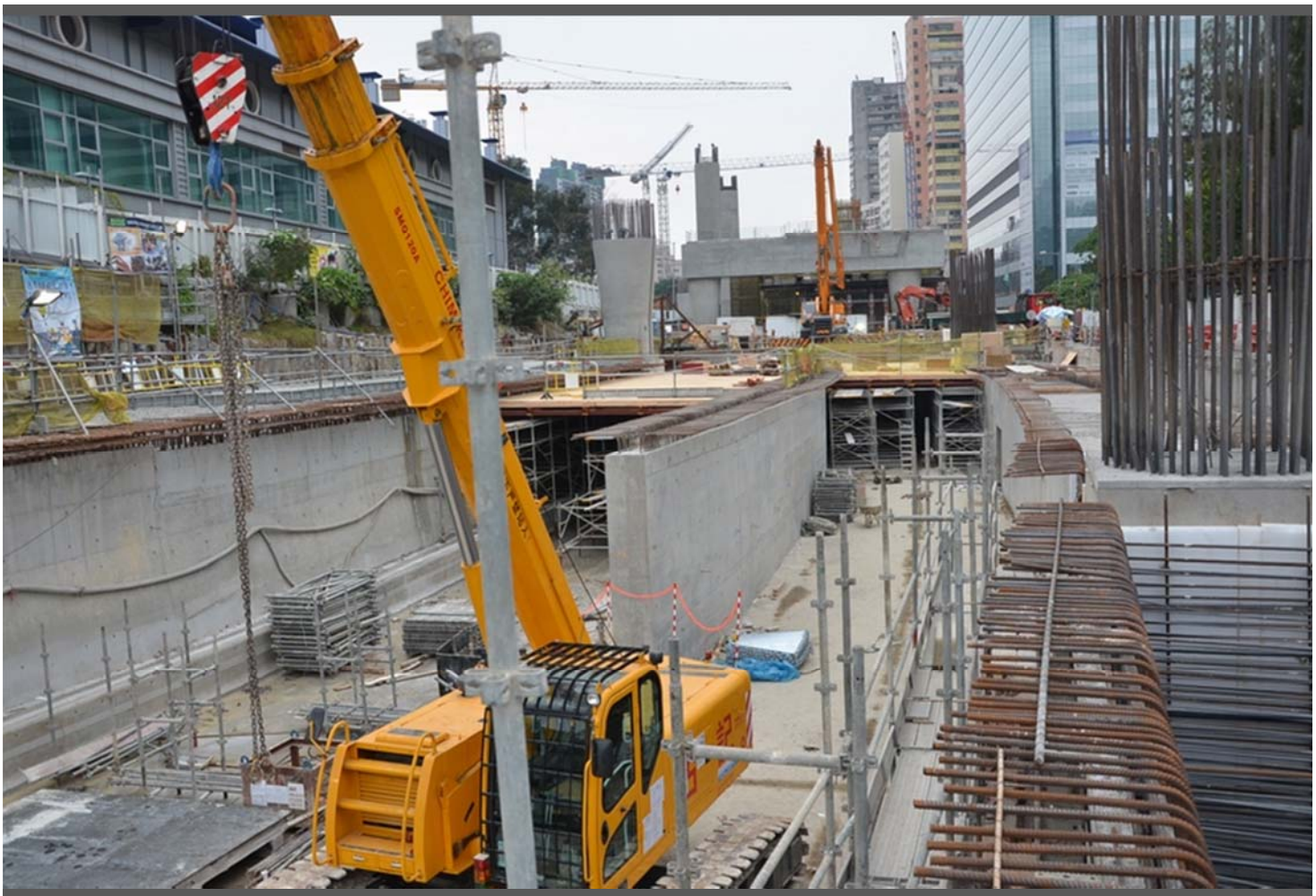
Re-aligning the Wong Chuk Hang Nullah

Nullah section situated along WCH Police Training Complex

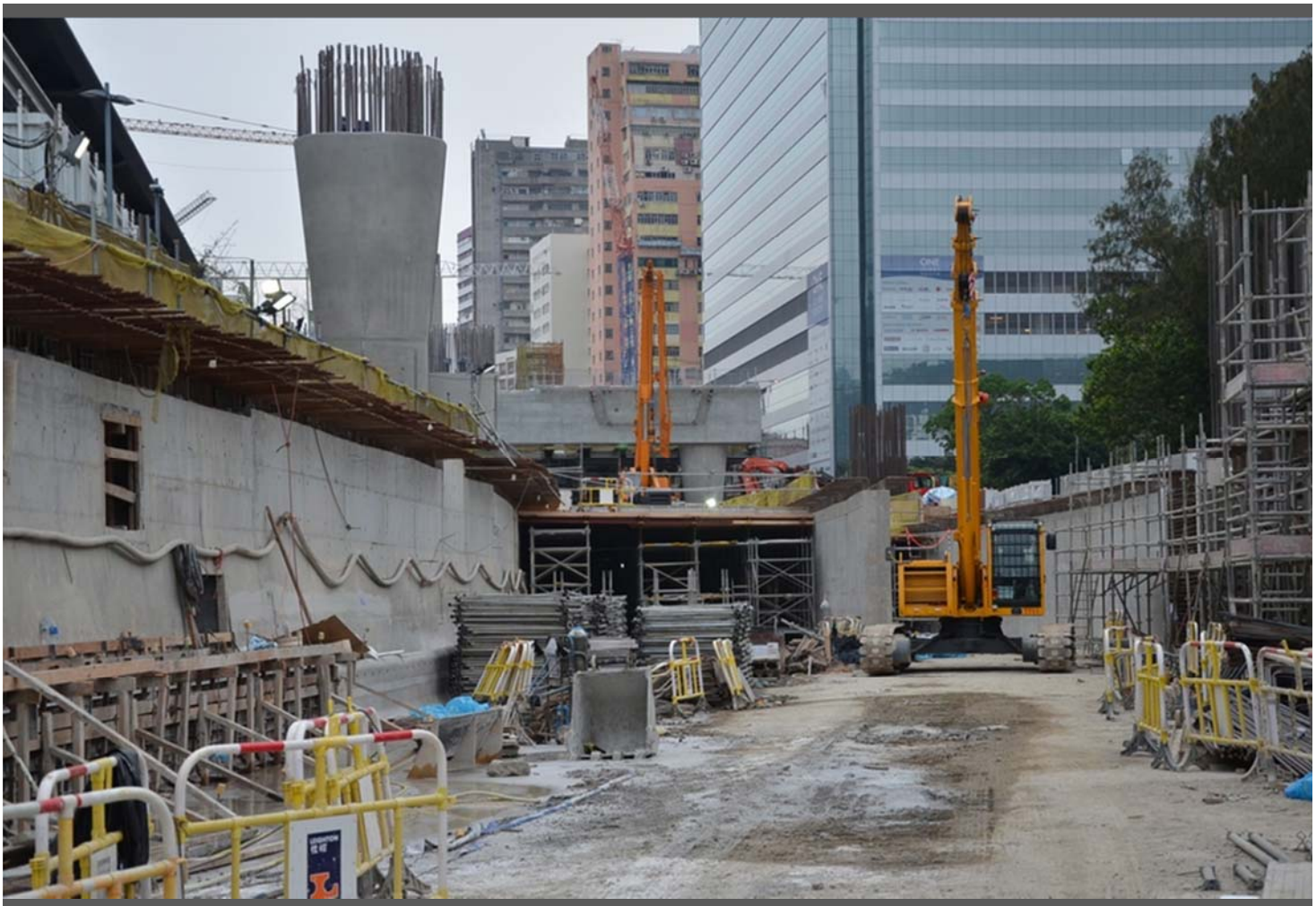
Nullah section situated under the WCH Station

Casting the deck of the nullah section





Re-aligning the nullah at a later stage before the casting of the covering slab



Re-aligning the nullah at a later stage before the casting of the covering slab

Nullah section situated near the Nam Long Shan Road Cooked Food Market

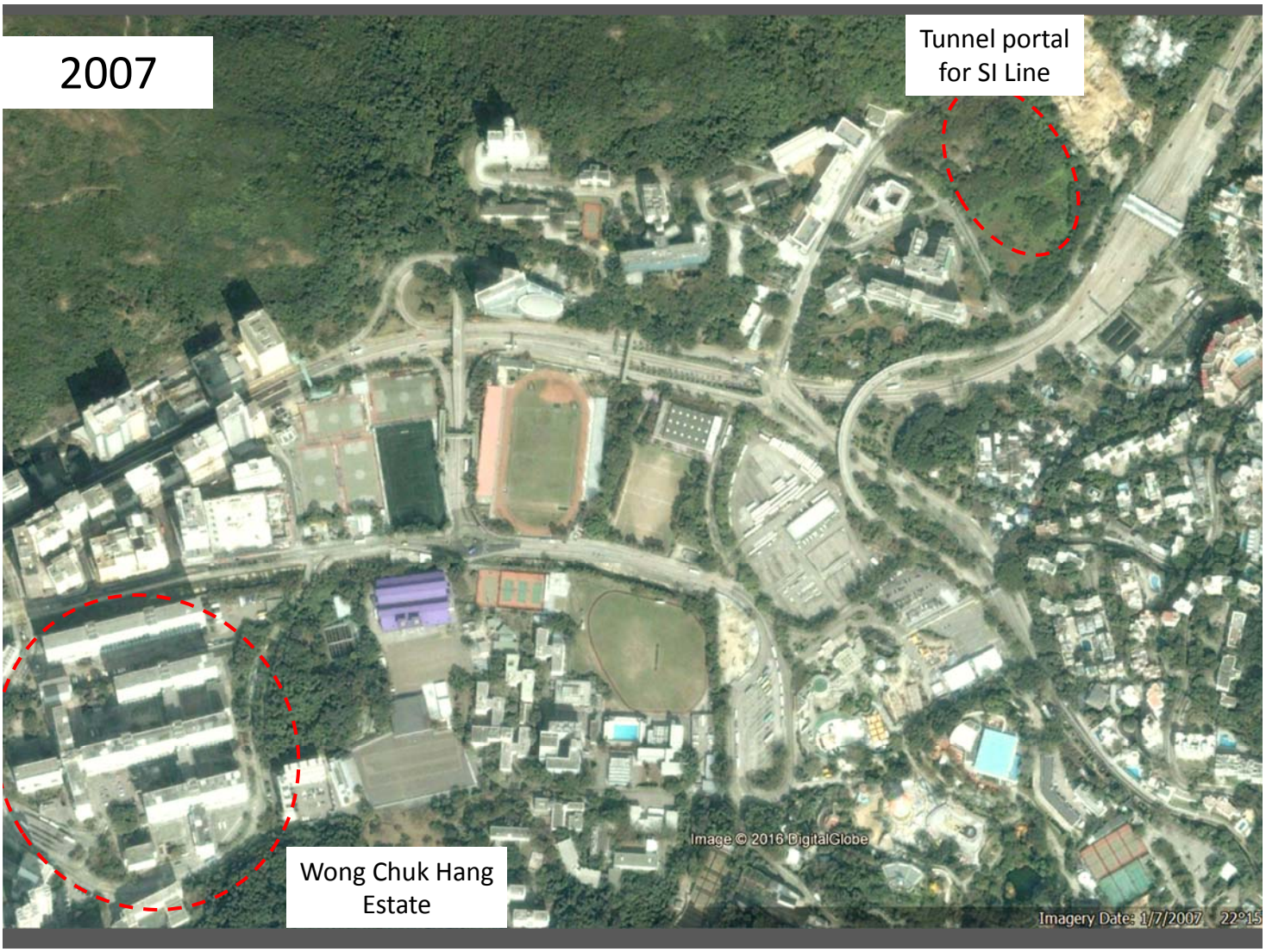
Nullah section situated near Jockey Club Rehabilitation Centre

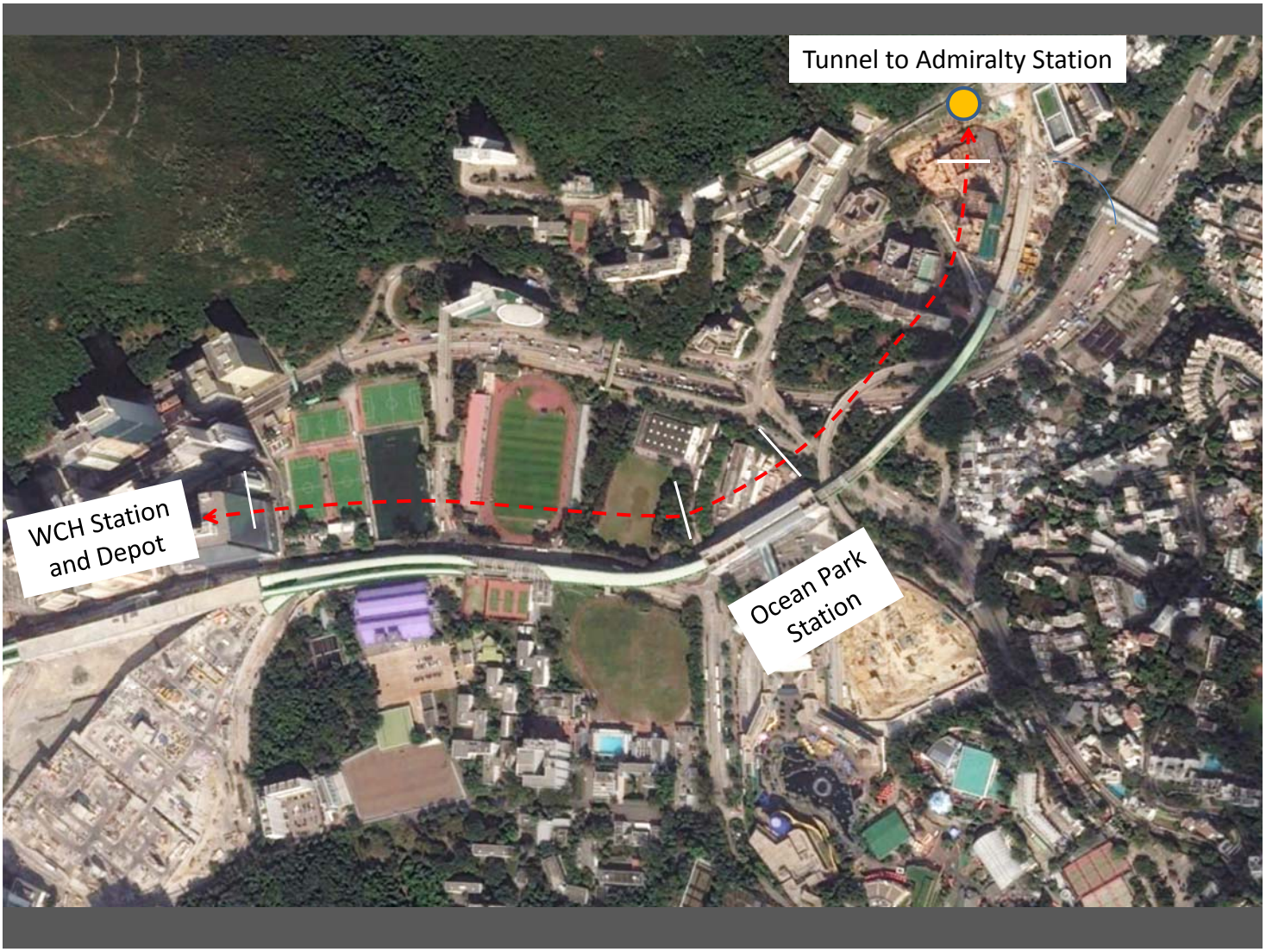
The nullah along Heung Yip Road with part of the viaduct section being erected (work status as in March 2013)

Integrating all the related facilities including the nullah re-alignment, buried service, traffic interchange and pedestrian facilities at the final stage of work

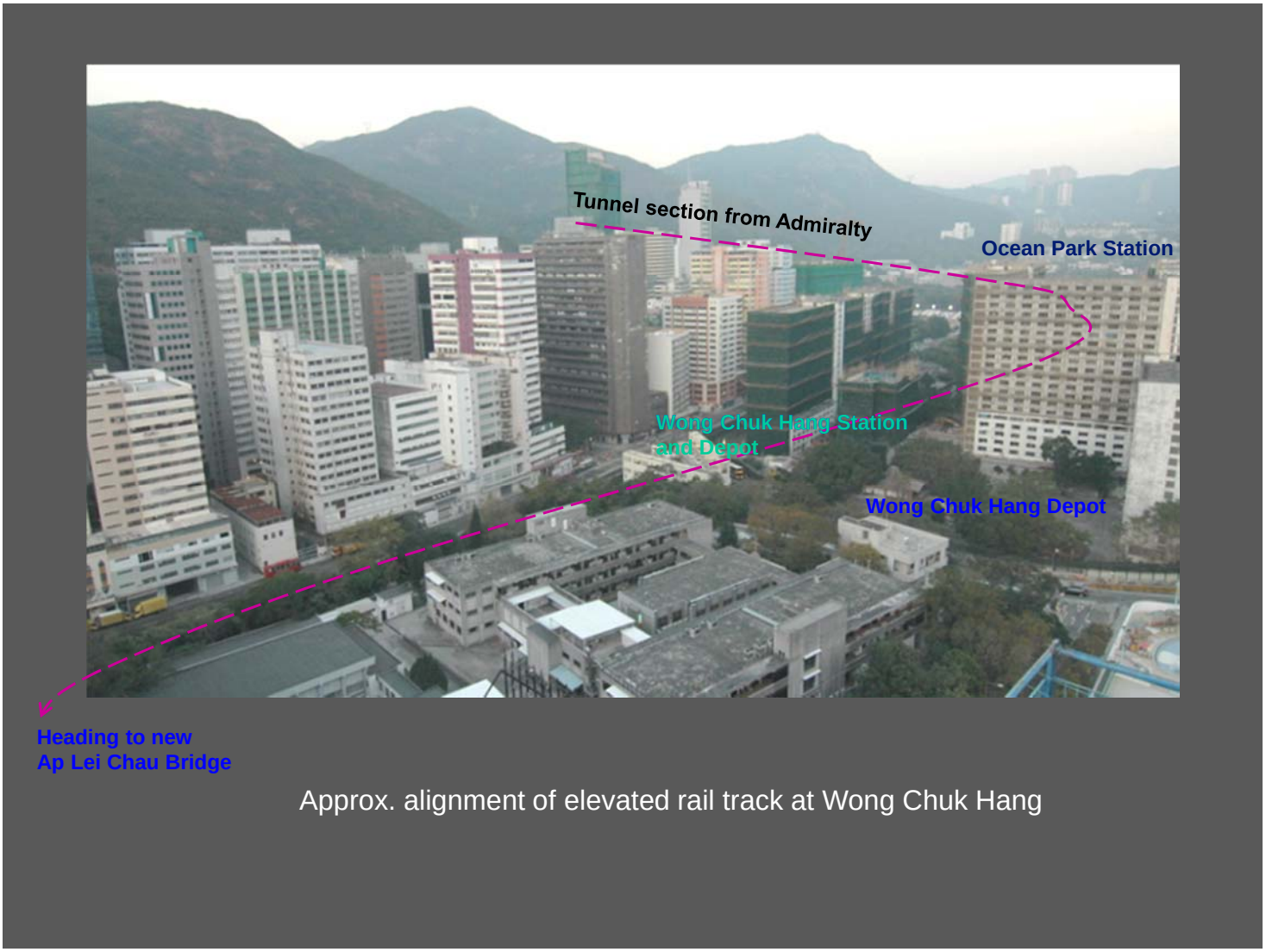
Integrating all the related facilities including the nullah re-alignment, buried service, traffic interchange and pedestrian facilities at the final stage of work

Viaduct from Mount Cameron tunnel portal to WCH Station

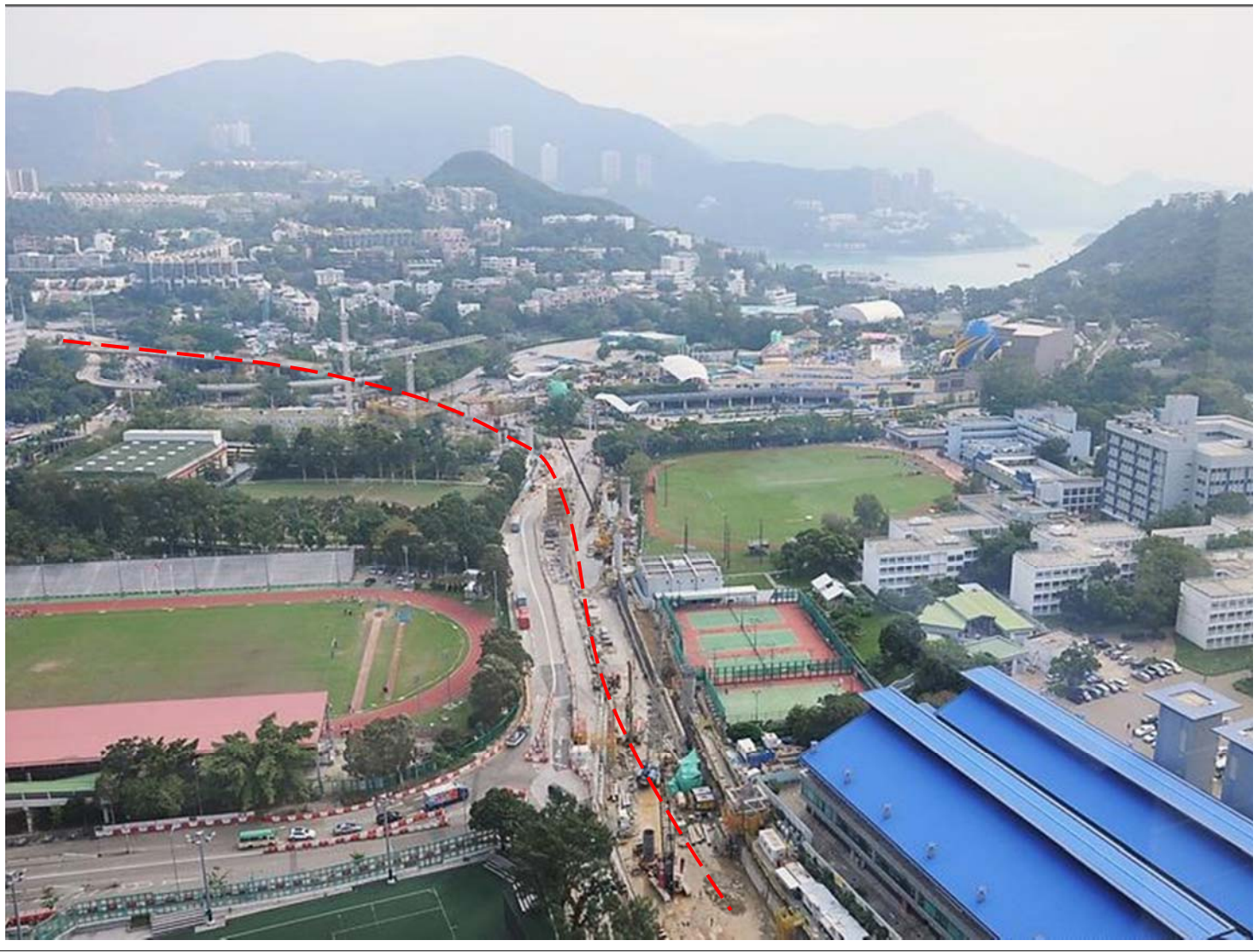




The original alignment of Wong Chuk Hang nullah before re-alignment



Approx. alignment of elevated rail track at Wong Chuk Hang



Construction of a portal beam located immediately on the bank of the nullah

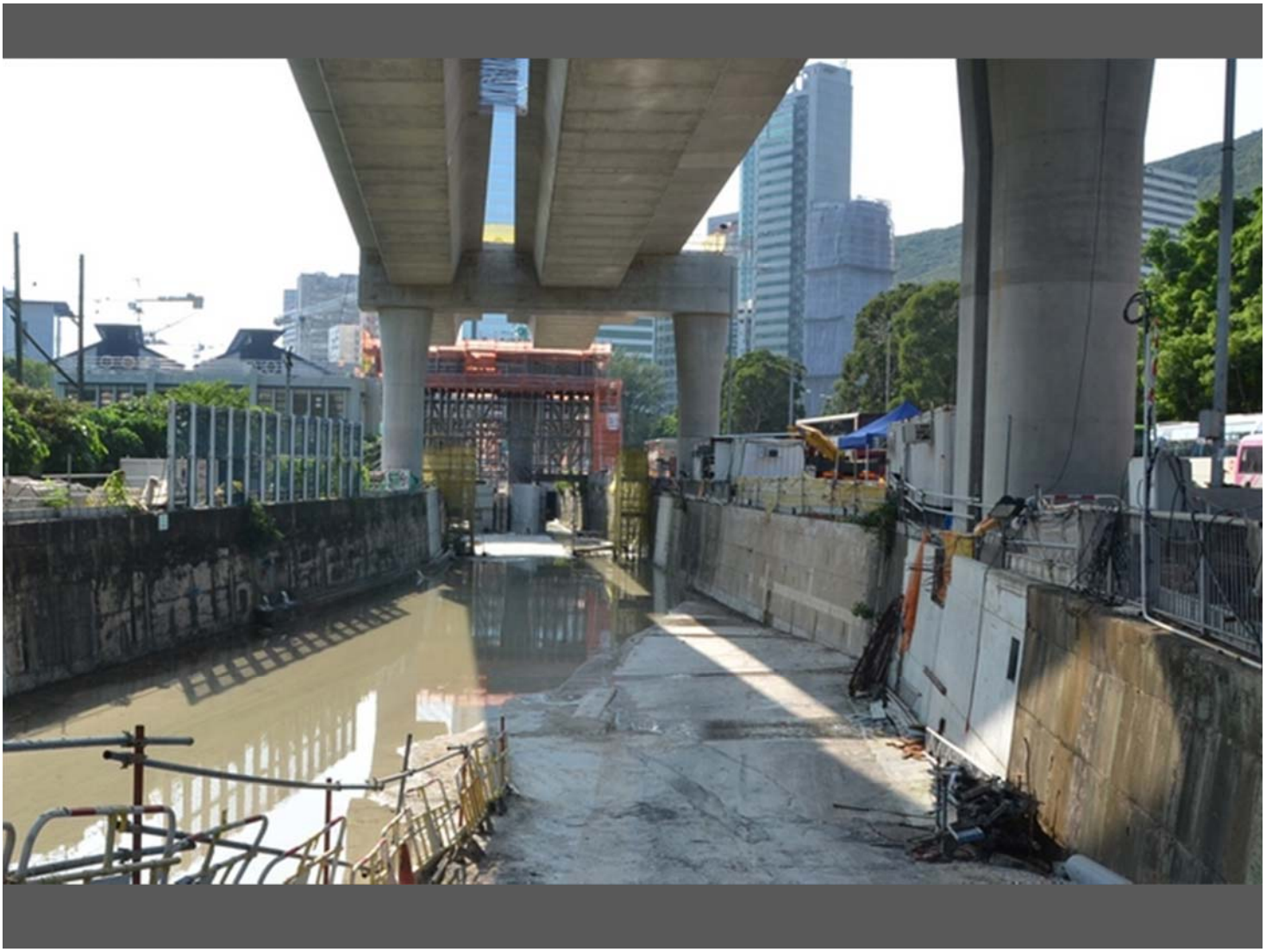
Setting up of the launching gantry on top of the pier head


MTR
MTR
MTR
LEIGHTON


MTR
SOLAR
MTR

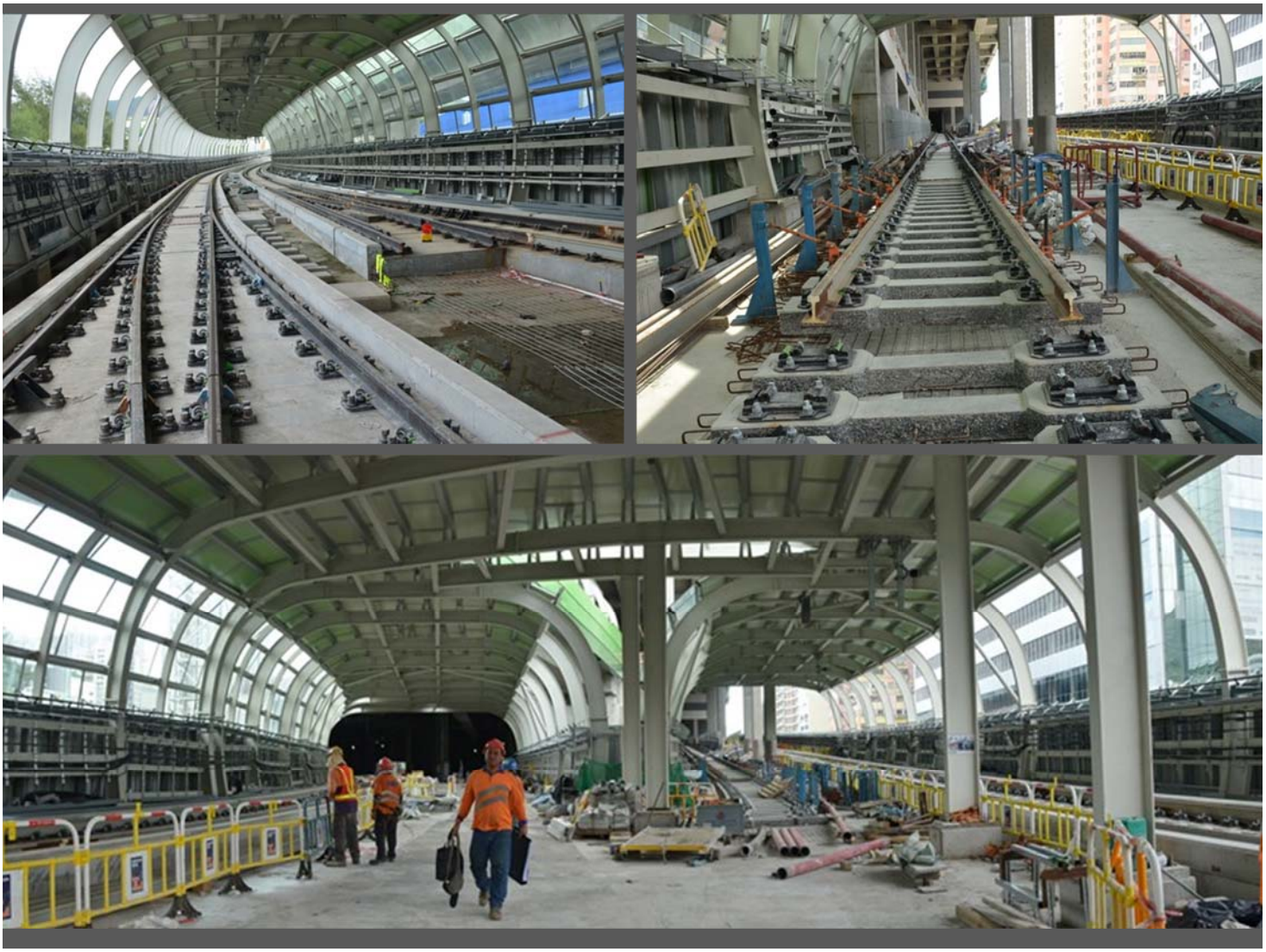
Construction of the viaduct using balanced-cantilever arrangement

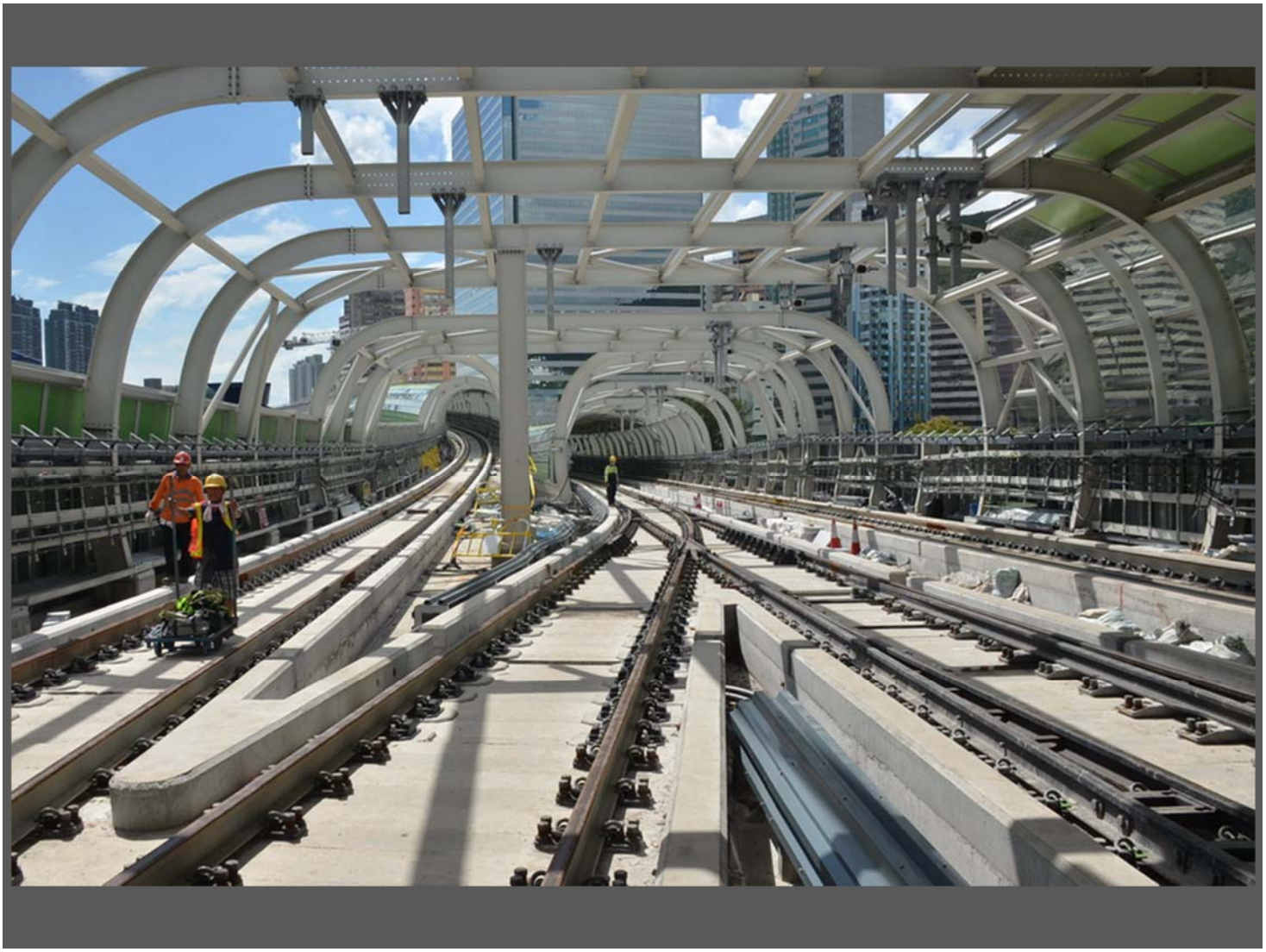
Precast segment delivered to the spot ready for erection



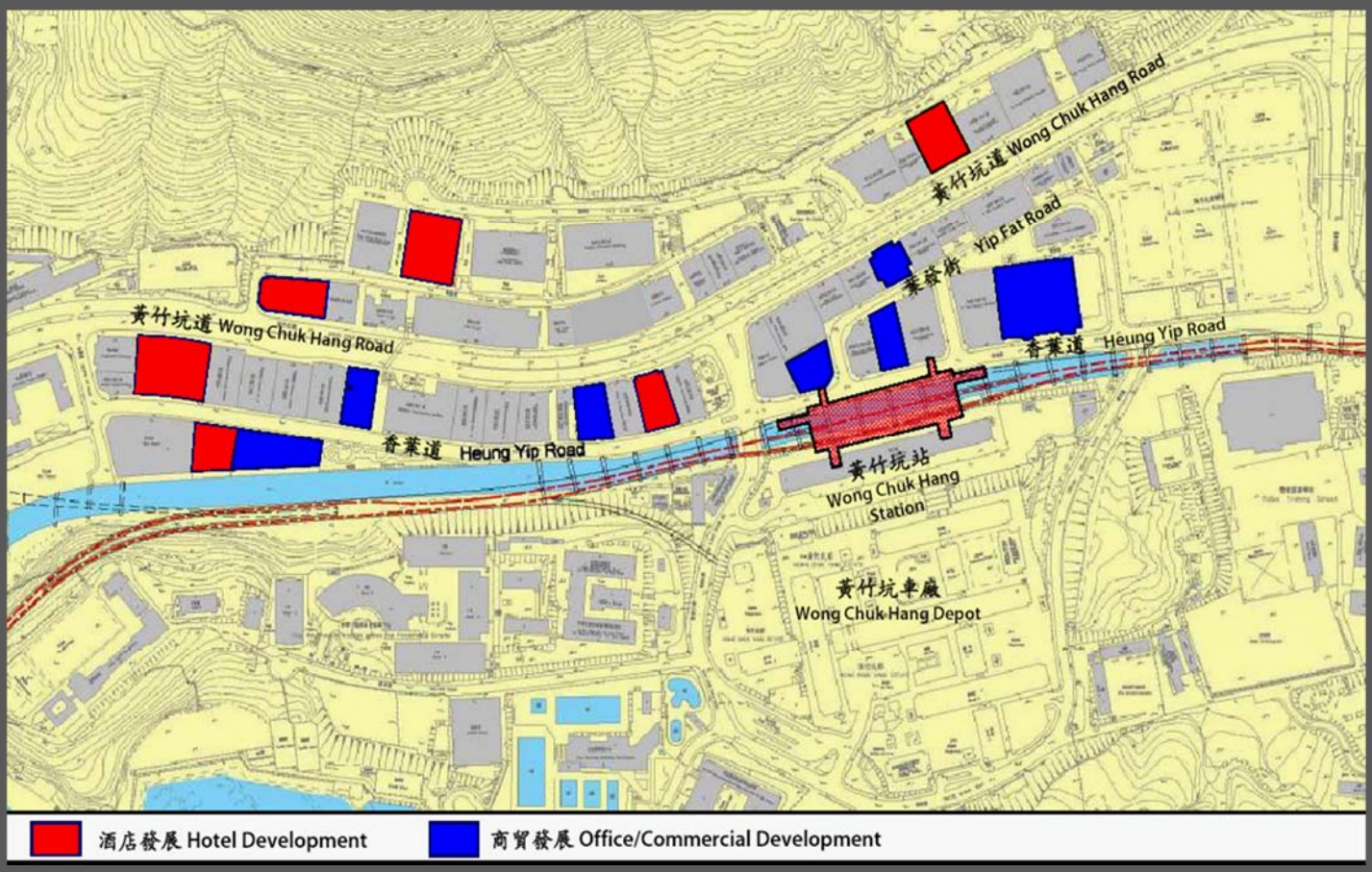
Elevated rail track approaching the WCH Station was construction using in-situ method


Genie GS-5390

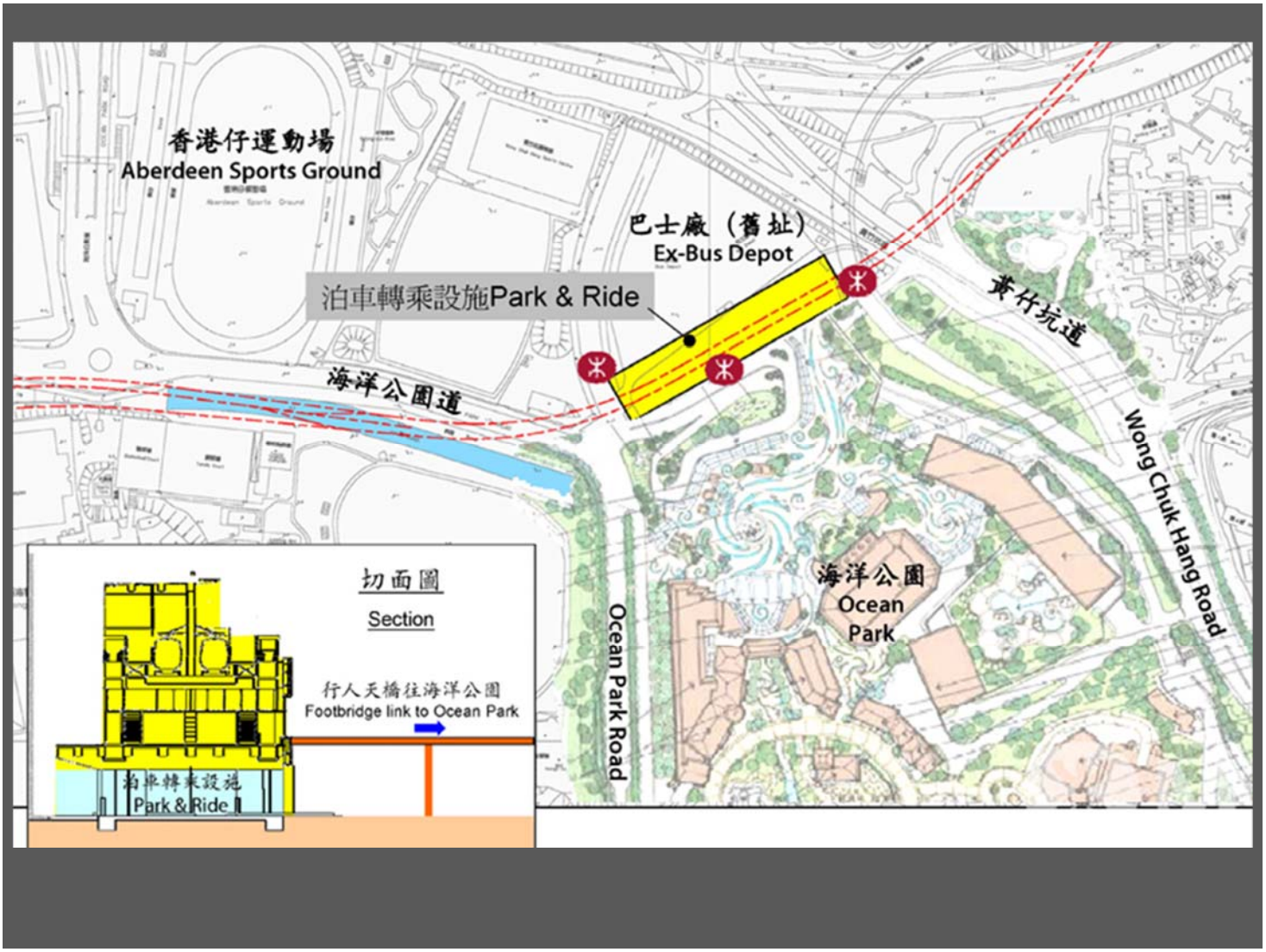


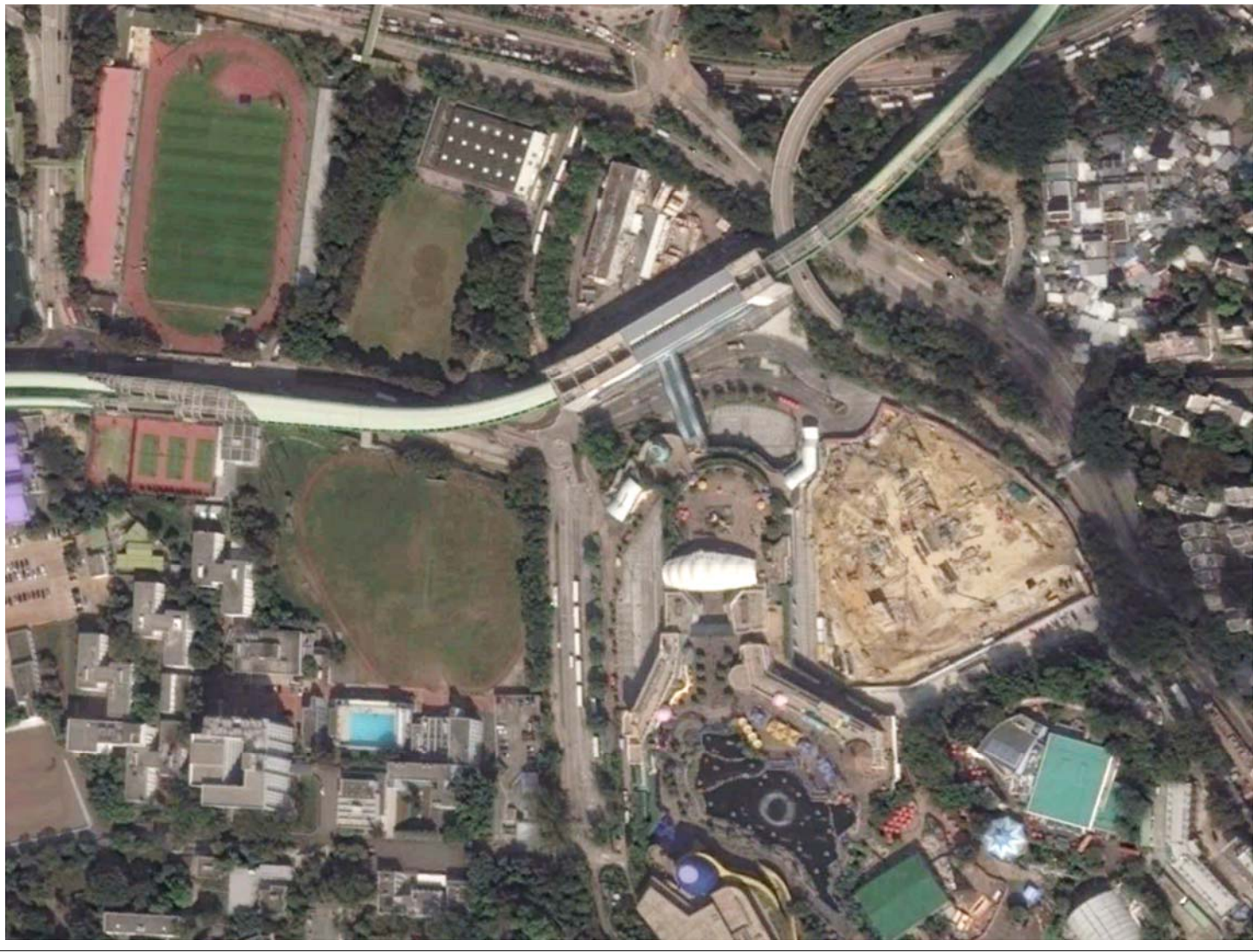


Alignment of South Island Line at Wong Chuk Hang



Construction of
Ocean Park and WCH stations


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
黃竹坑道
海洋公園道
Wong Chuk Hang Road
海洋公園
Ocean
Park
Ocean Park Road
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

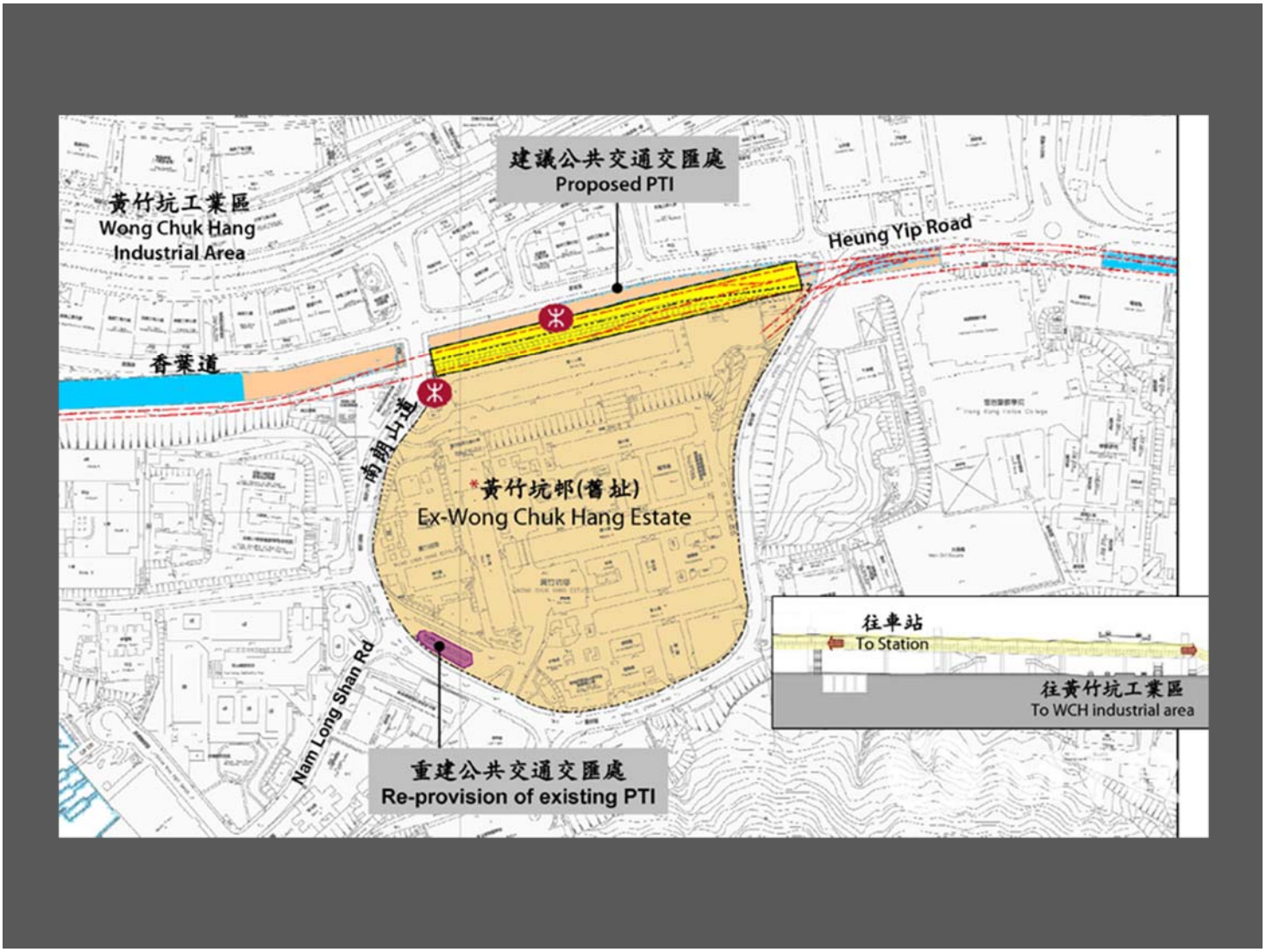


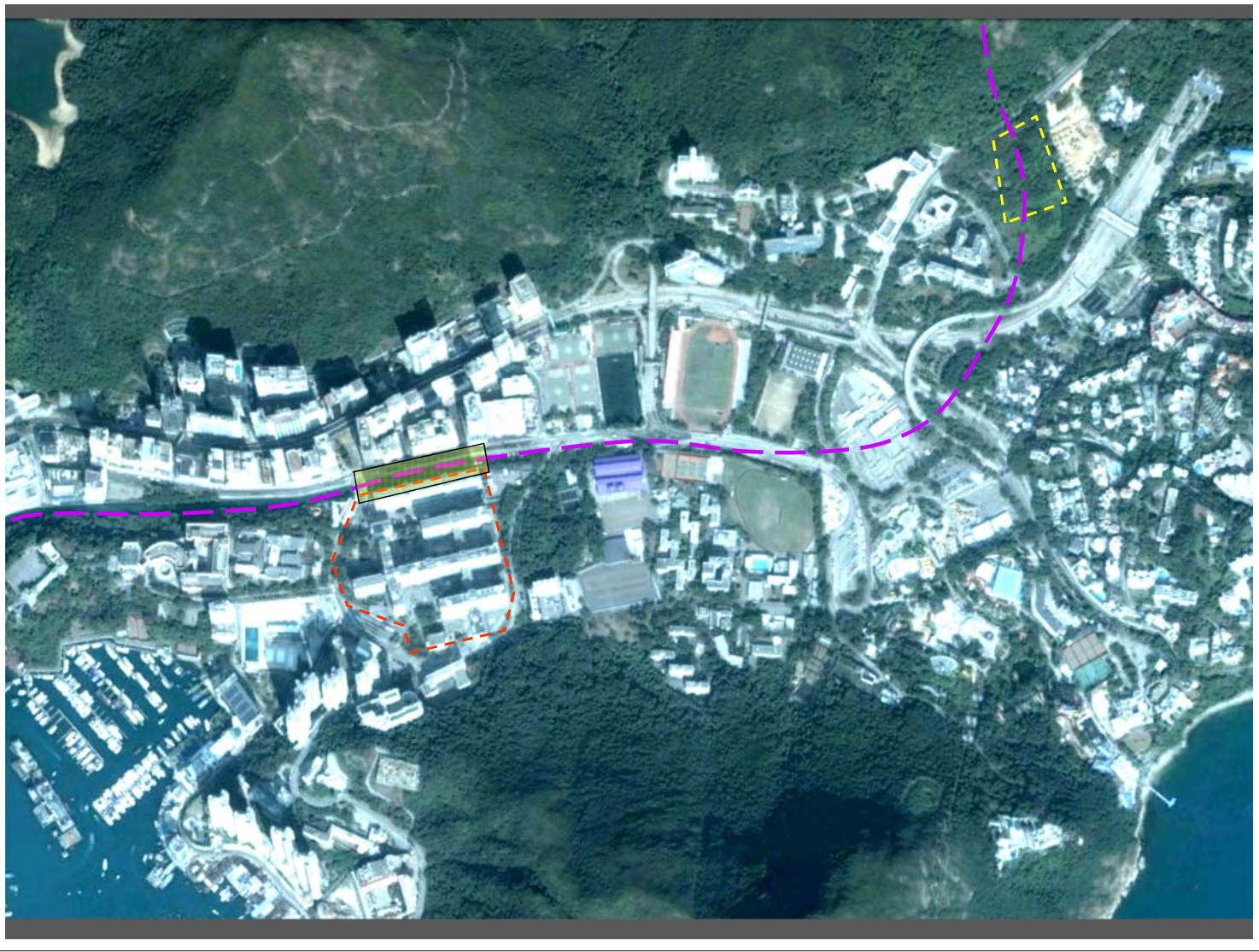
Site for the Ocean Park Station as seen in early and late 2012

Site for the Ocean Park Station as in early 2013

Construction of the station structure as seen on the platform deck in early 2013

Ocean Park Station under construction as seen on the approaching rail track in late 2013


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



金鐘站

黃竹坑站

現貌

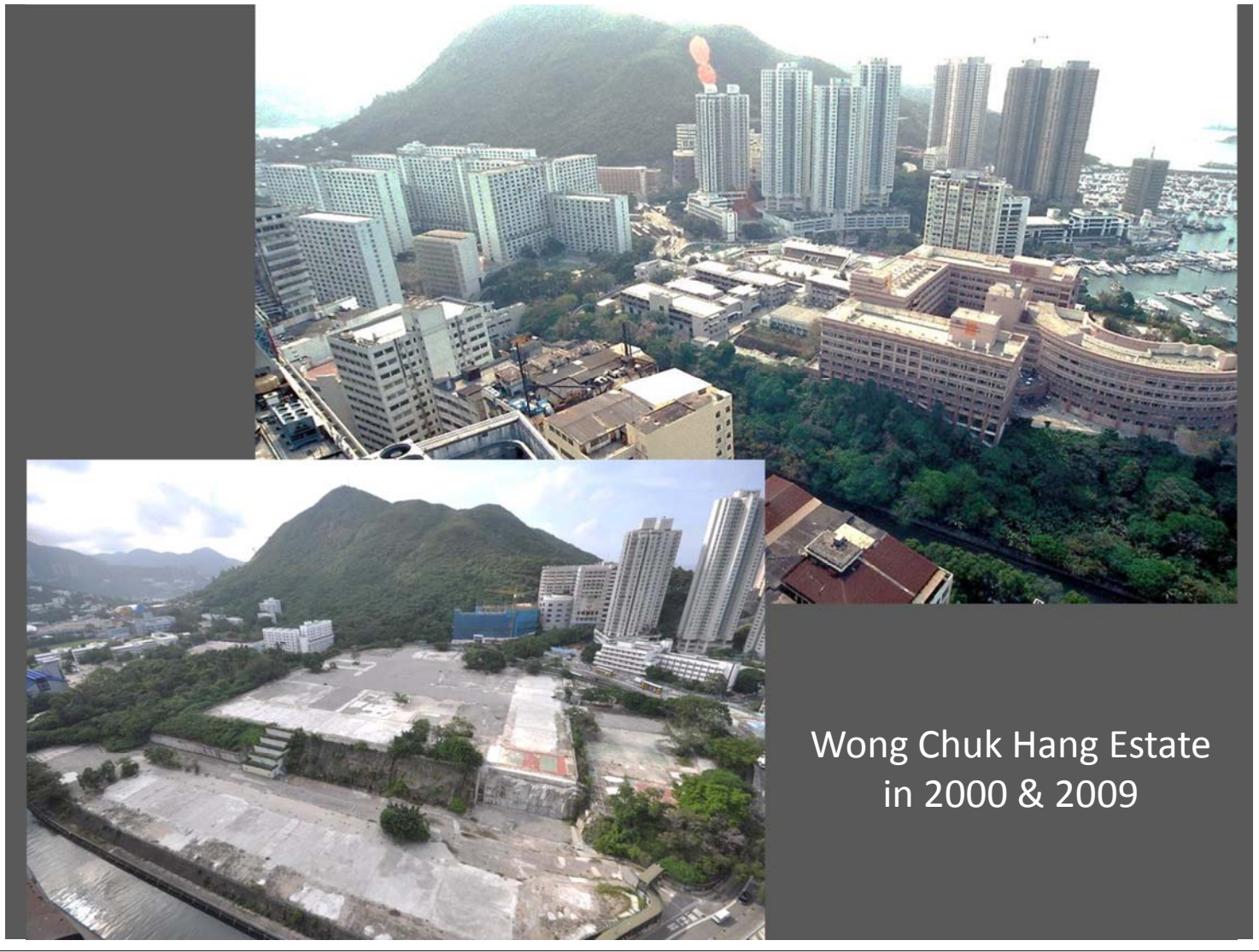
新貌

Urban environment of HK Southern district

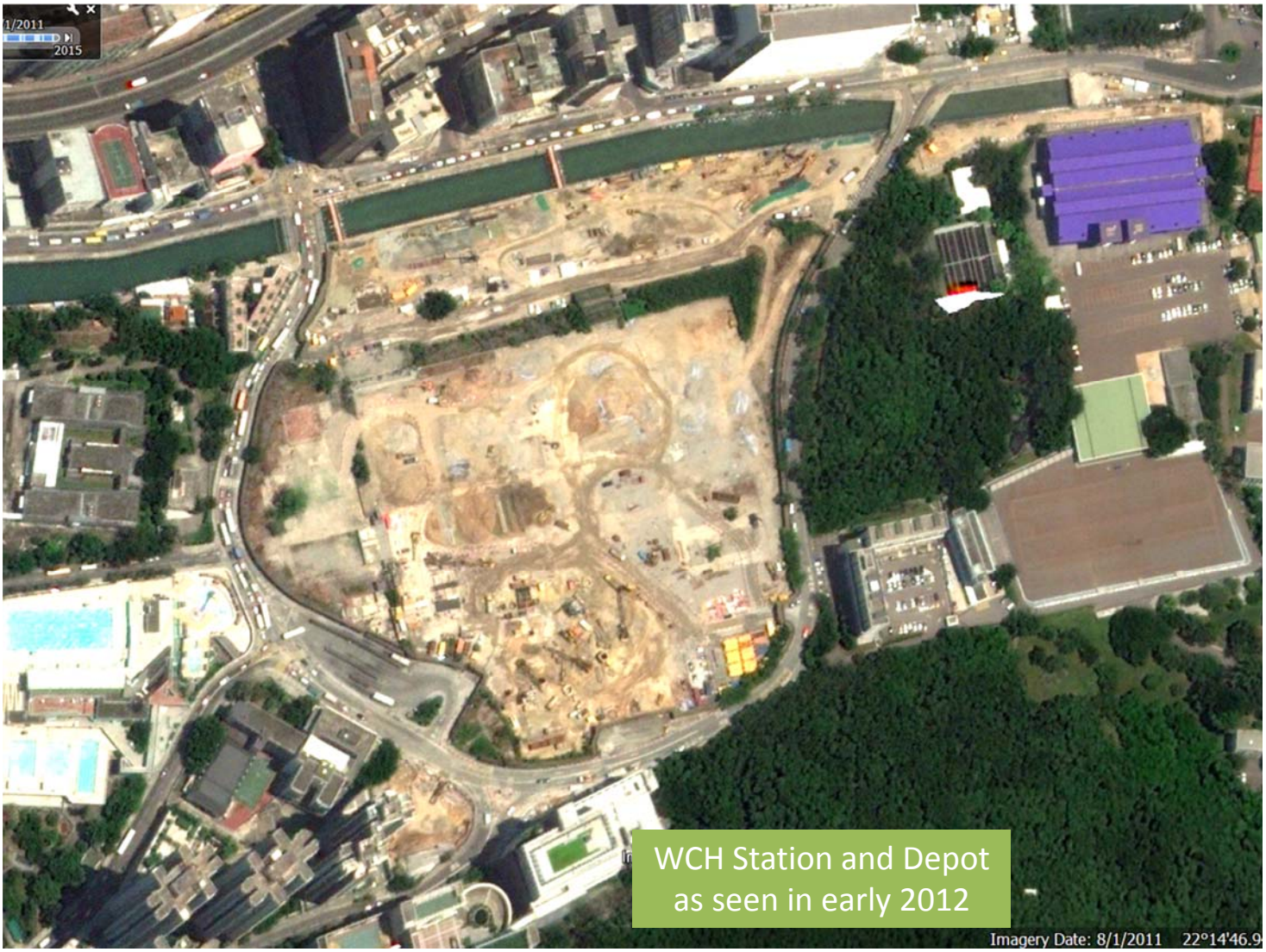
Aberdeen and Ap Lei Chau

Cyperport

Previous Wong Chuk Hang Estate (demolished in 2009 to give way for the Depot of SIL)



Wong Chuk Hang Estate in 2000 & 2009


1/2011
2015
WCH Station and Depot
as seen in early 2012
Imagery Date: 8/1/2011


WCH Station and Depot
as seen in early 2013
Image © 2016 DigitalGl

WCH Station and Depot
as seen in early 2013

Early stage (early 2012) of site formation works for the WCH Station and the Depot

site formation work as seen in mid 2012

site formation work
as seen in early 2013


KOBELCO


KATO


KOMATSU


BUS
LANE

View of the Depot as in end 2013

A close look of the podium of the Depot where property development will be provided on top in future

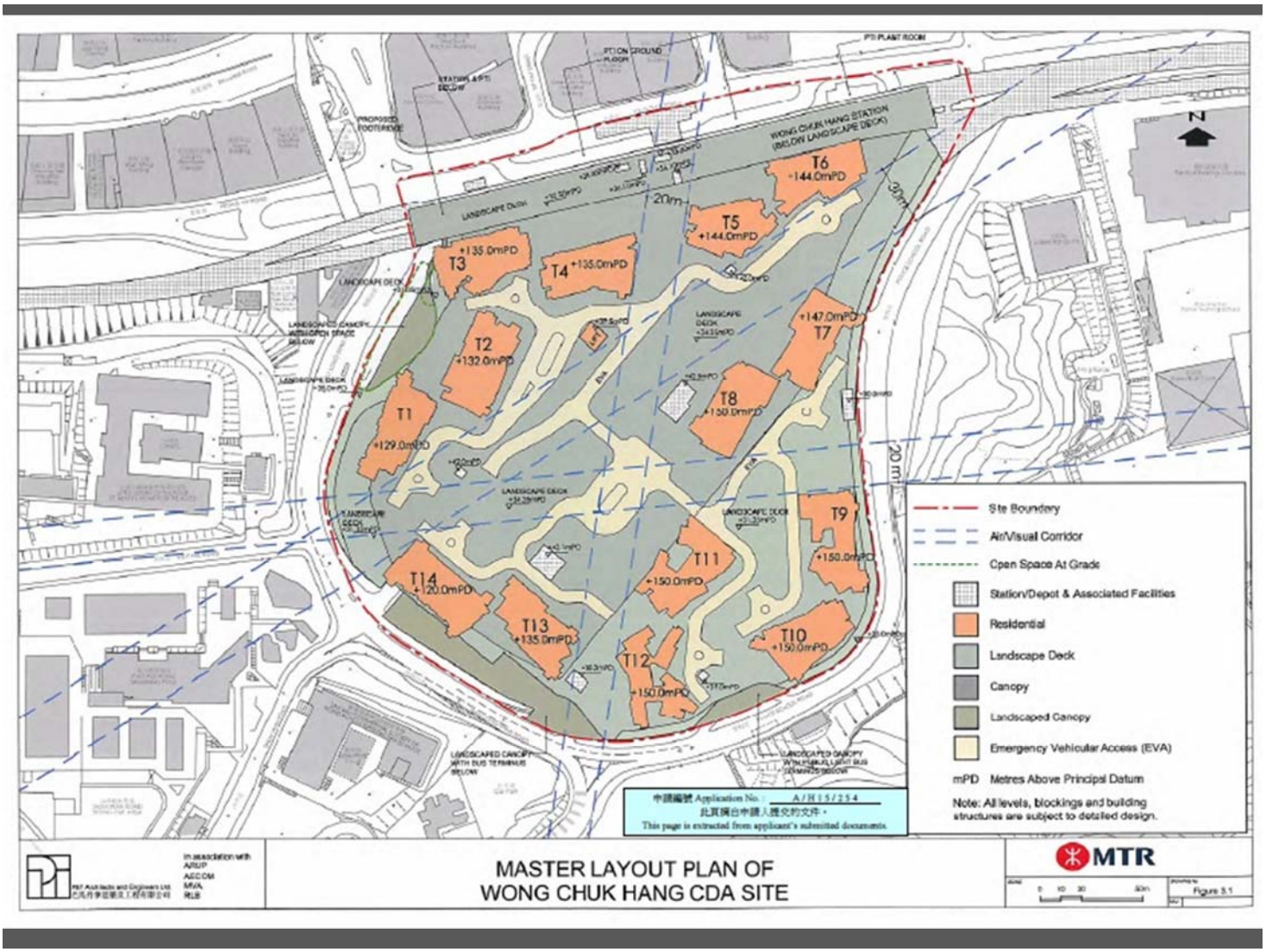
The podium of WCH Depot as seen in mid 2014

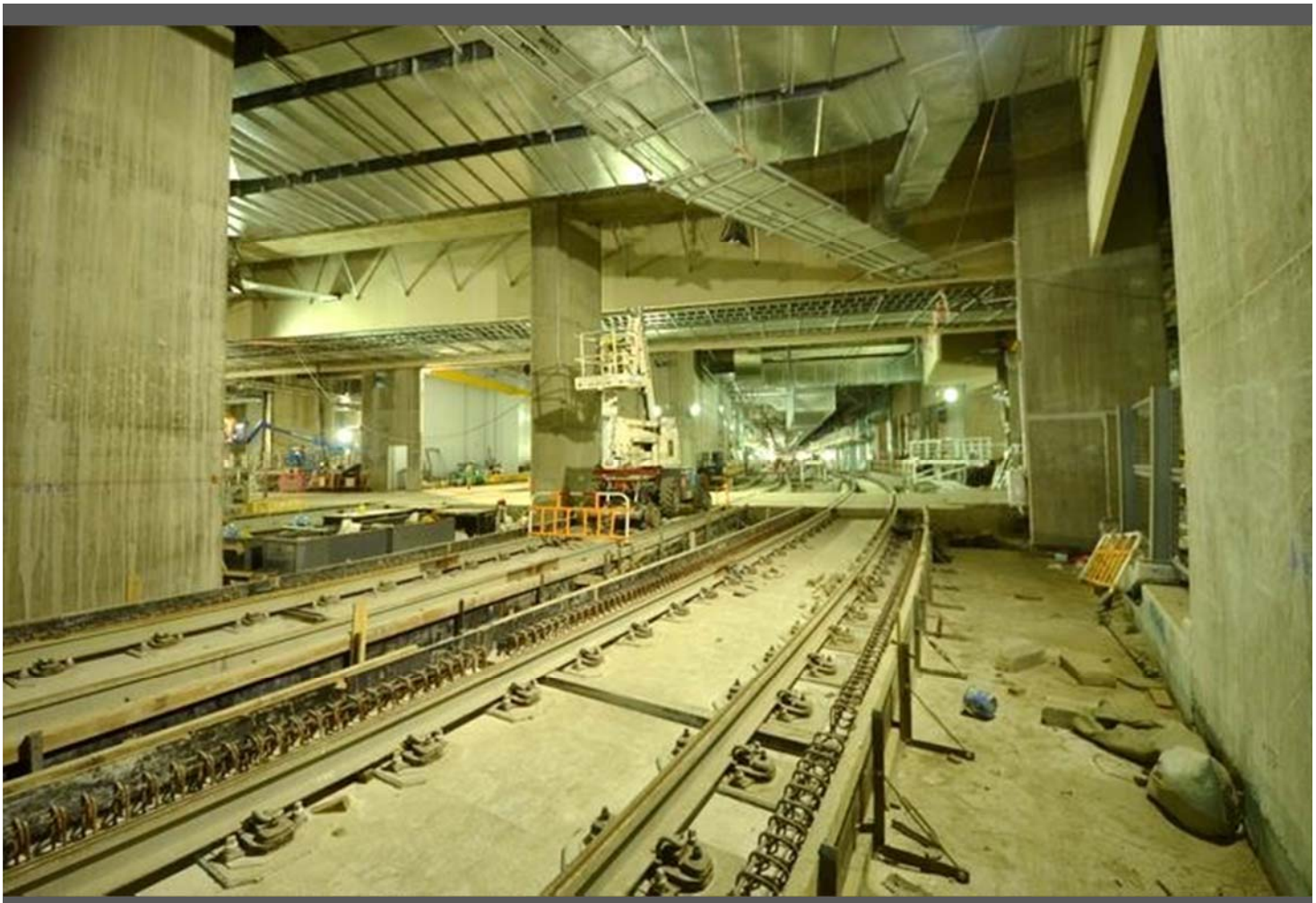
The podium of WCH Depot as seen in late 2014

View of the Wong Chuk Hang Station and the Depot as in mid 2015

View of the Wong Chuk Hang Station and the Depot as in mid 2015

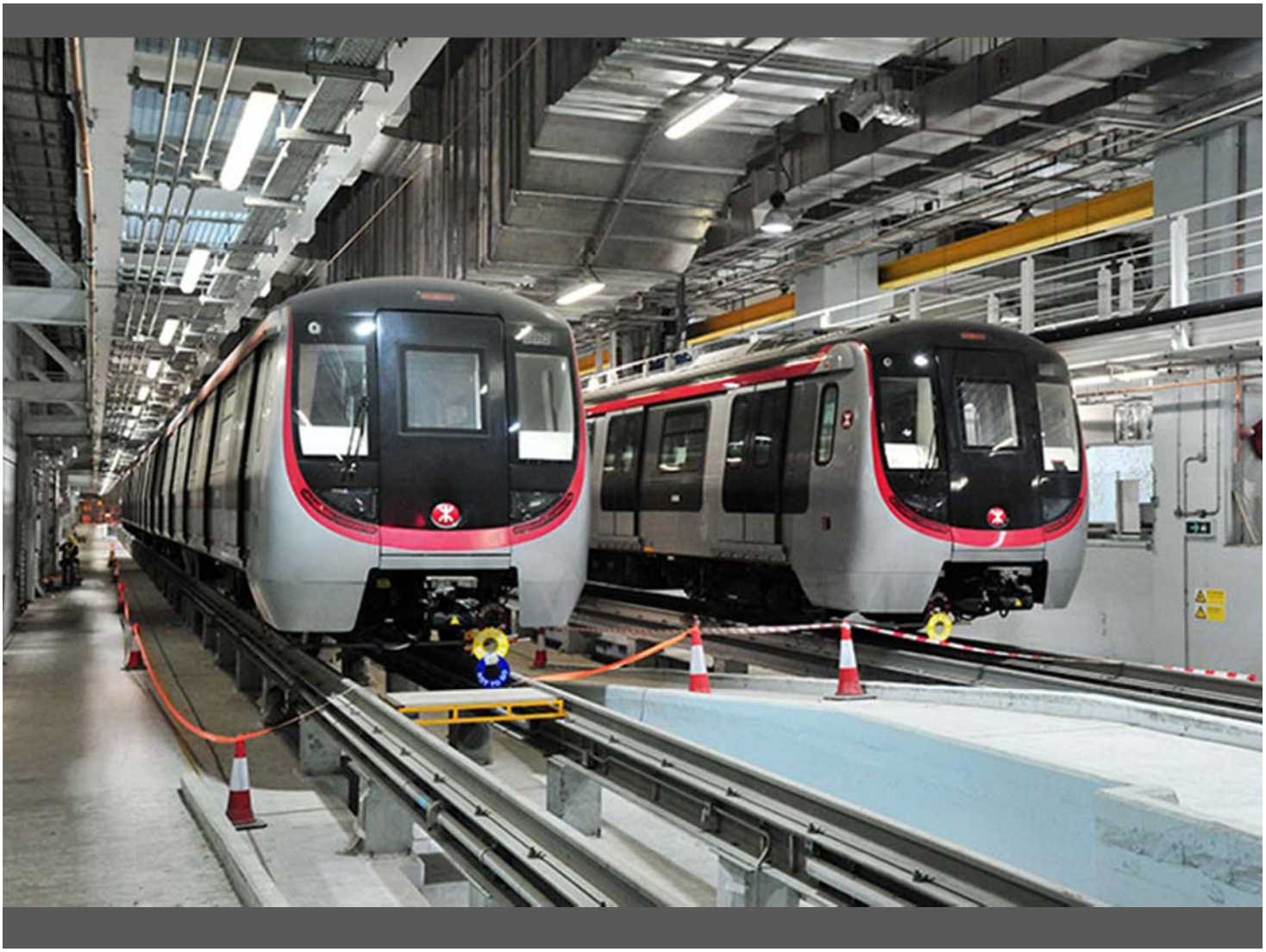

The podium of WCH Depot
as seen in late 2015


T1 +129.0mPD
T2 +132.0mPD
T3 +135.0mPD
T4 +135.0mPD
T5 +144.0mPD
T6 +144.0mPD
T7 +147.0mPD
T8 +150.0mPD
T9 +150.0mPD
T10 +150.0mPD
T11 +150.0mPD
T12 +150.0mPD
T13 +135.0mPD
T14 +120.0mPD
WONG CHUK HANG STATION (BELOW LANDSCAPE DECK)
PROPOSED FOOTBRIDGE
LANDSCAPE DECK
LANDSCAPED CANOPY WITH BUS TERMINUS BELOW
20m
N
Site Boundary
Air/Visual Corridor
Open Space At Grade
Station/Depot & Associated Facilities
Residential
Landscape Deck
Canopy
Landscaped Canopy
Emergency Vehicular Access (EVA)
mPD Metres Above Principal Datum
Note: All levels, blockings and building structures are subject to detailed design.
Application No. A/H15/254
This page is extracted from applicant's submitted documents.
In association with ARUP AECOM MVA RLB
MASTER LAYOUT PLAN OF
WONG CHUK HANG CDA SITE
MTR
Figure 5.1

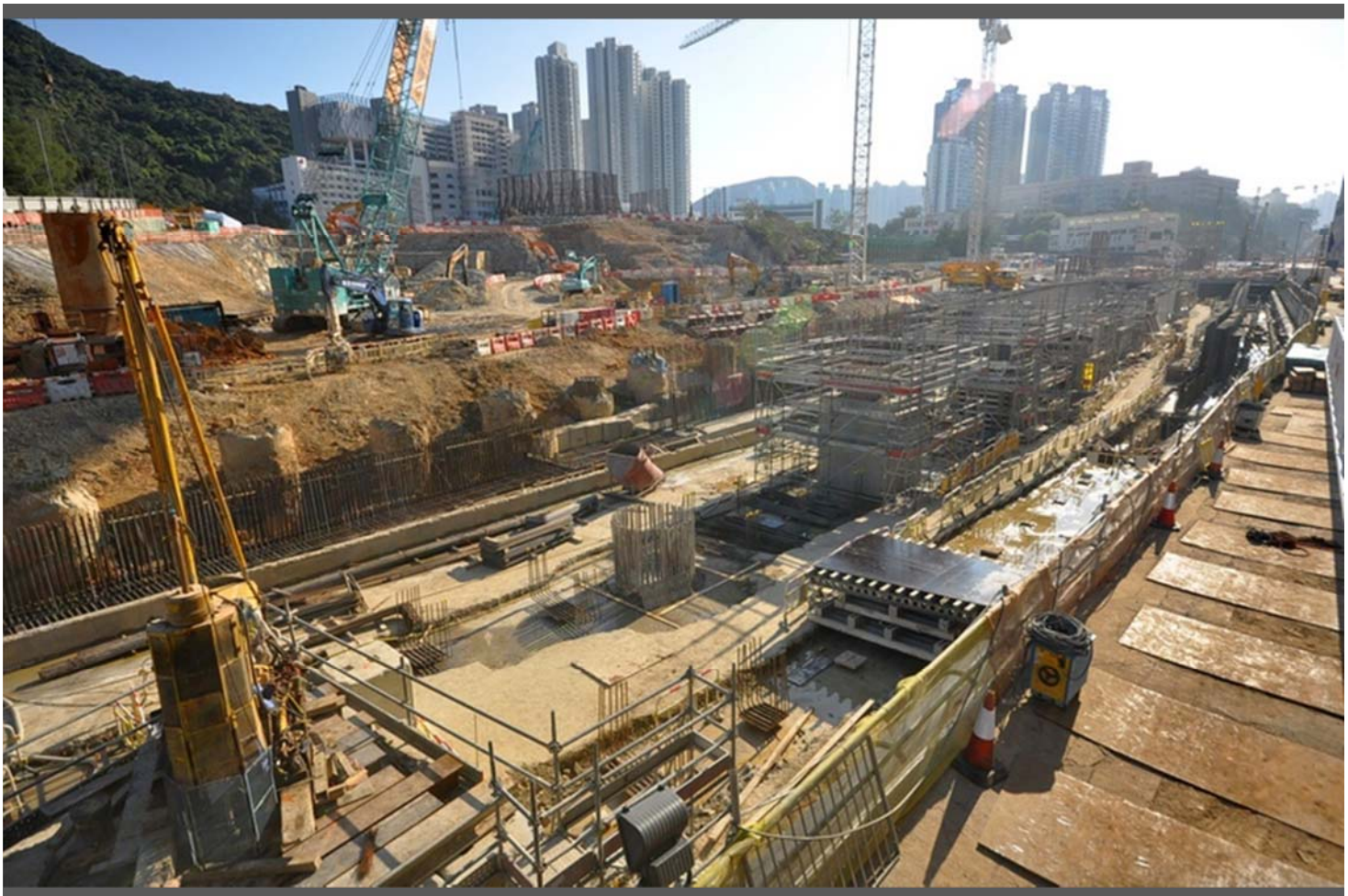


A general view of the track and work area layout inside the Depot

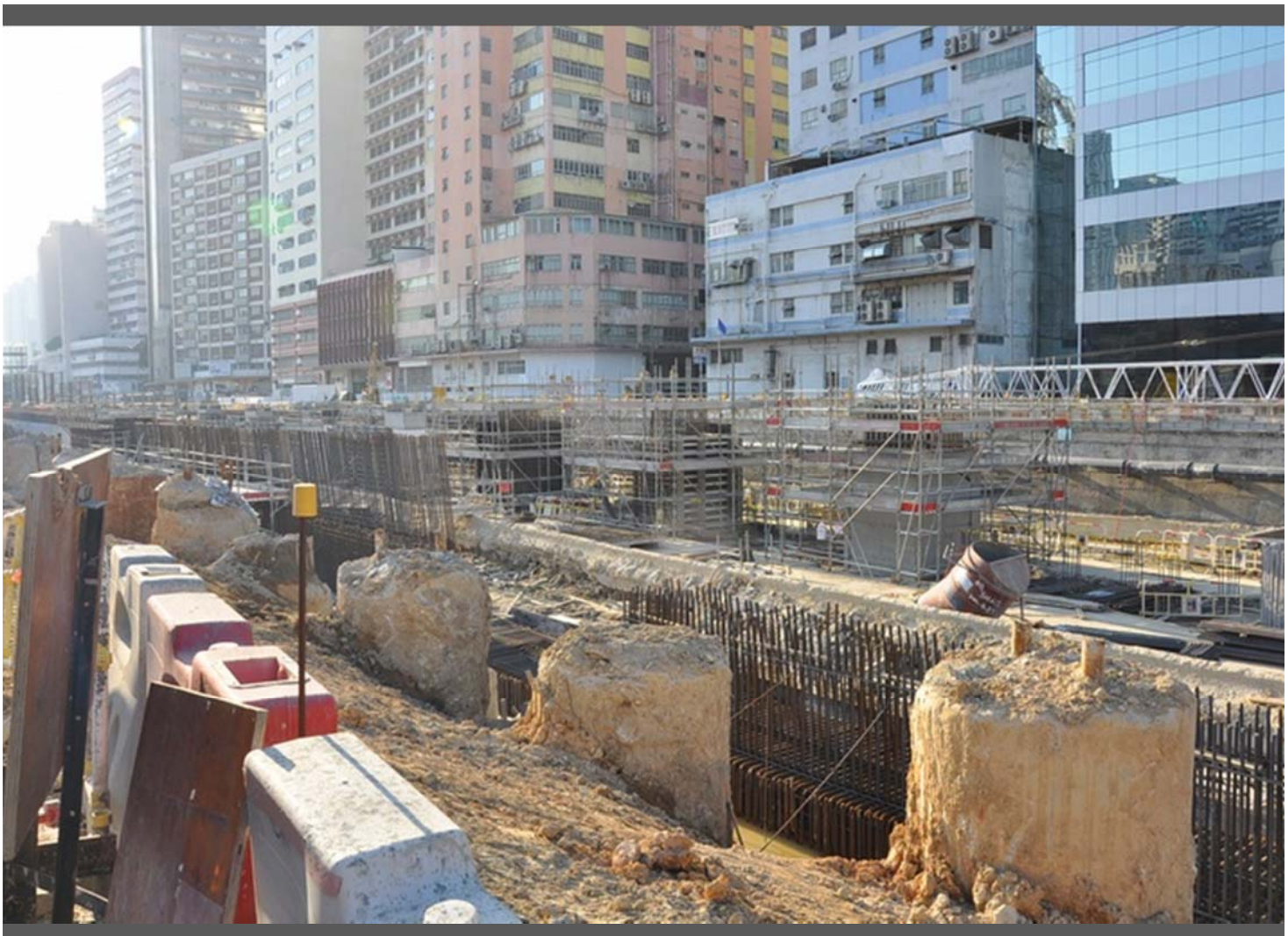
A general view of the track and work area layout inside the Depot



Construction of the WCH Station



Ground columns located on the sides and within the nullah being formed to support the superstructure of the WCH station

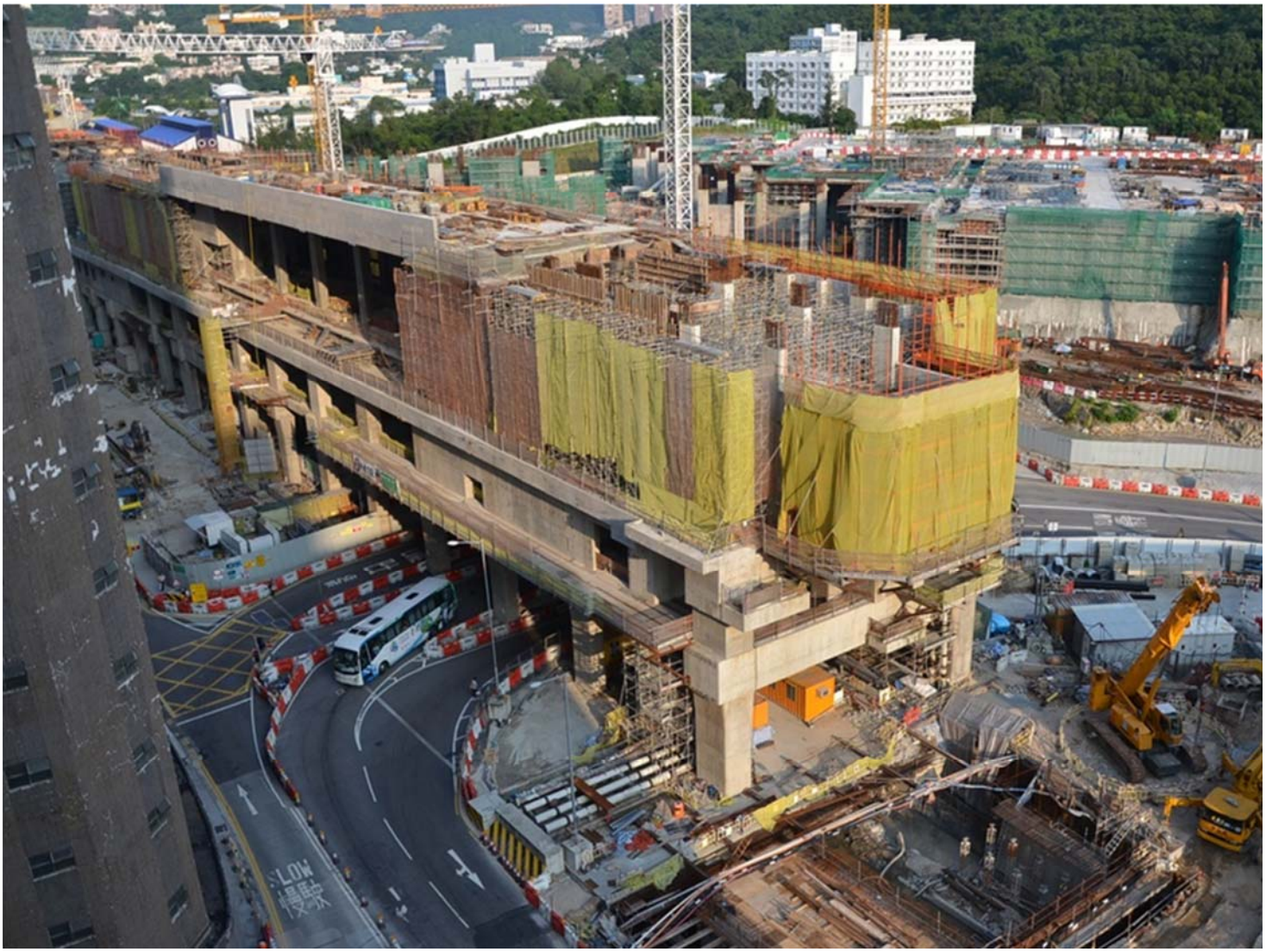


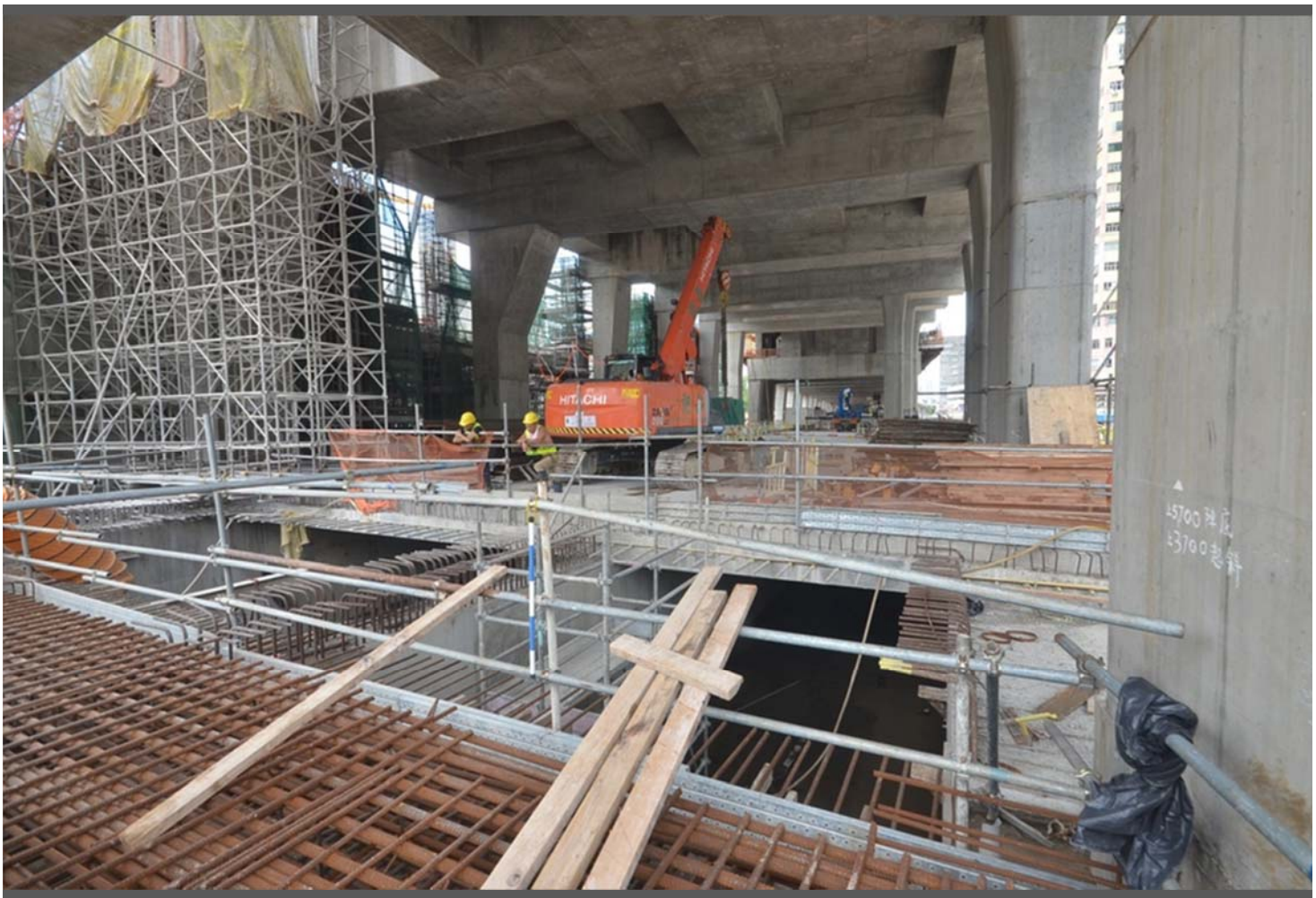
Construction of the WCH Station as in mid 2012

The structure of the Wong Chuk Hang Station as seen in March 2013

The structure of the Wong Chuk Hang Station as seen in June 2013

The structure of the WCH Station as seen in December 2013



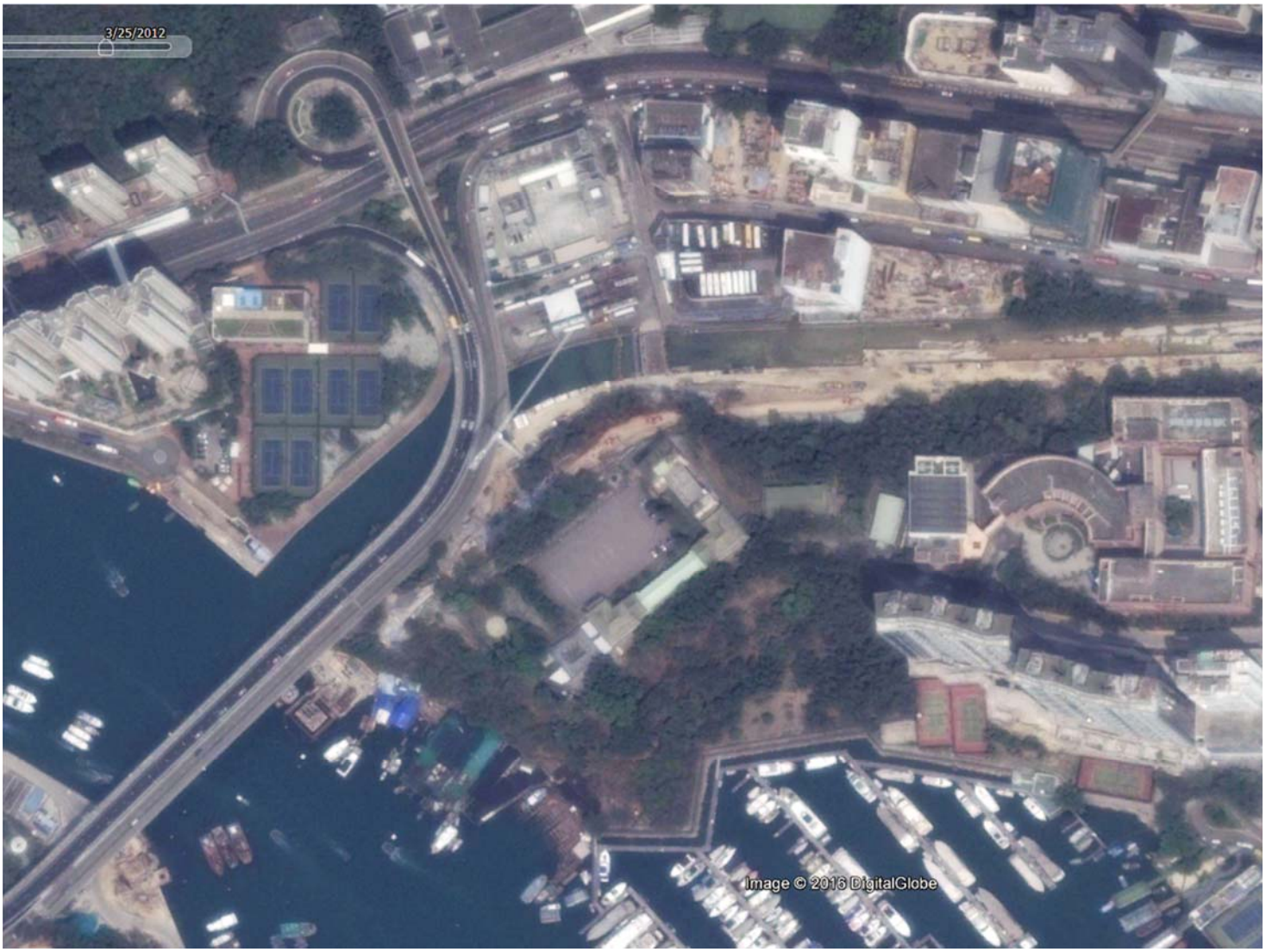


Nullah soon be concealed became an covered culvert for storm water discharge

Track leading into the
Wong Chuk Hang Station

Final stage of the station work as seen in mid 2015

Viaduct from WCH Station
to the ALC Channel


3/25/2012
Image © 2016 DigitalGlobe

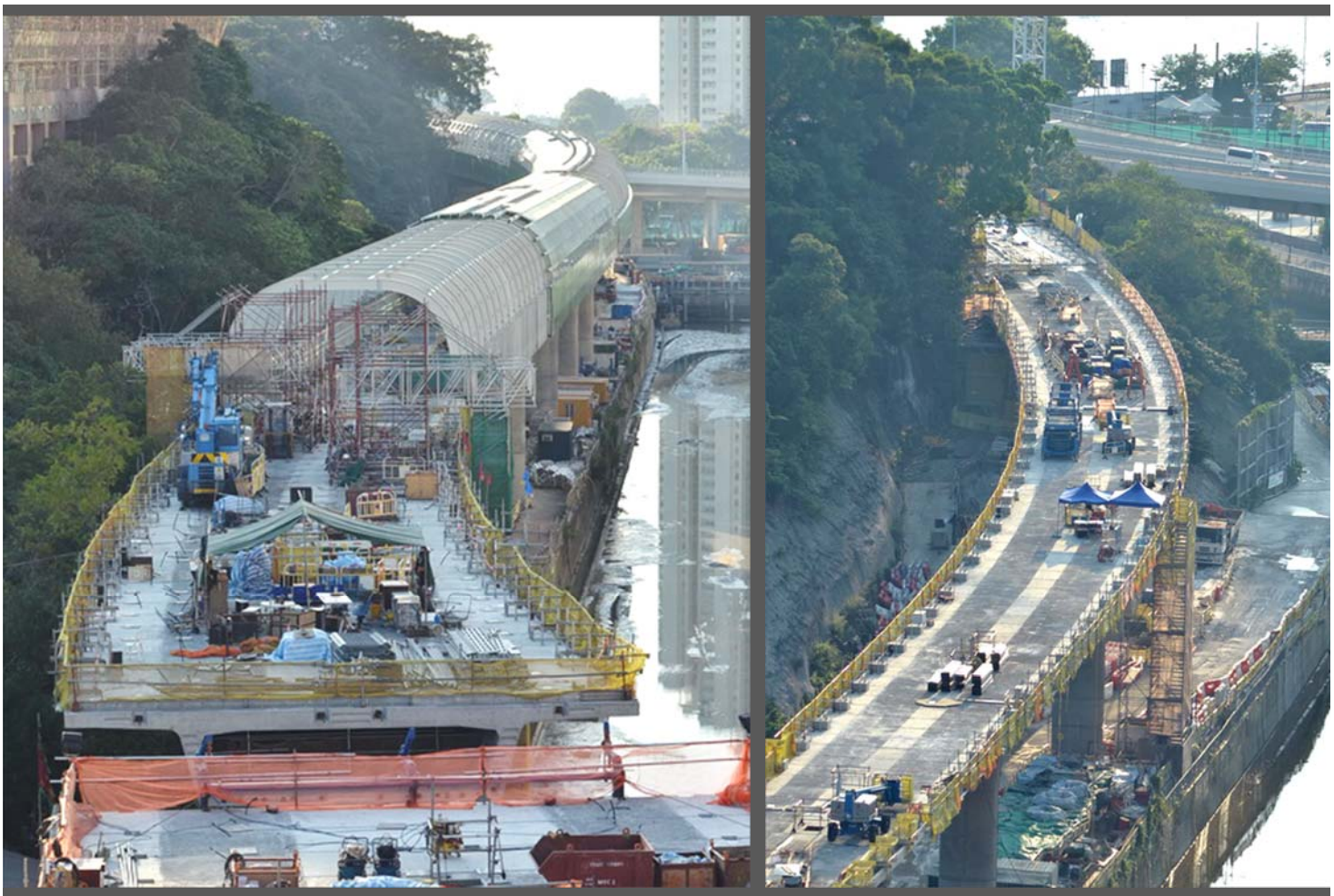

12/24/2012
Image © 2016 DigitalGlobe


1/1/2015
2015
Image © 2016 DigitalGlobe


Existing Ap Lei Chau Bridge

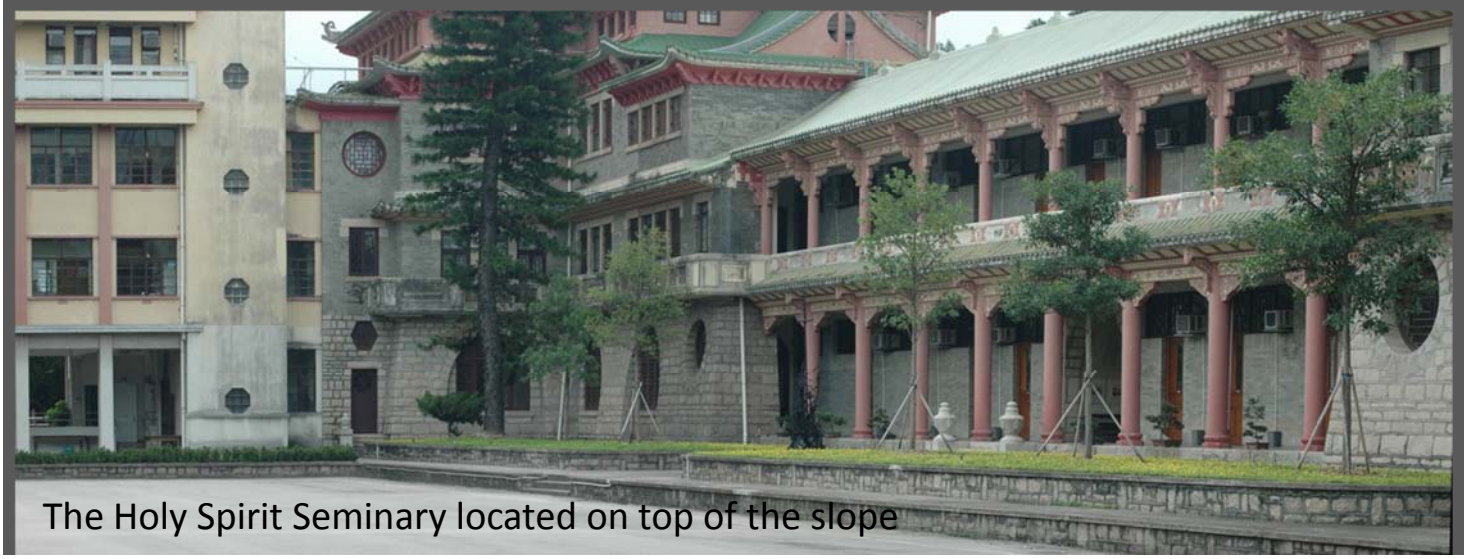

KOBELCO
KATO


Slope formation for the running of
the at-grade track along the hill side
of Wong Chuk Hang Nullah



The viaduct for the track linking between the Wong Chuk Hang Station and the Ap Lei Chau Link Bridge

Carriageway for the rail track cutting the side of slope directly under the Holy Spirit Seminary



The Holy Spirit Seminary located on top of the slope

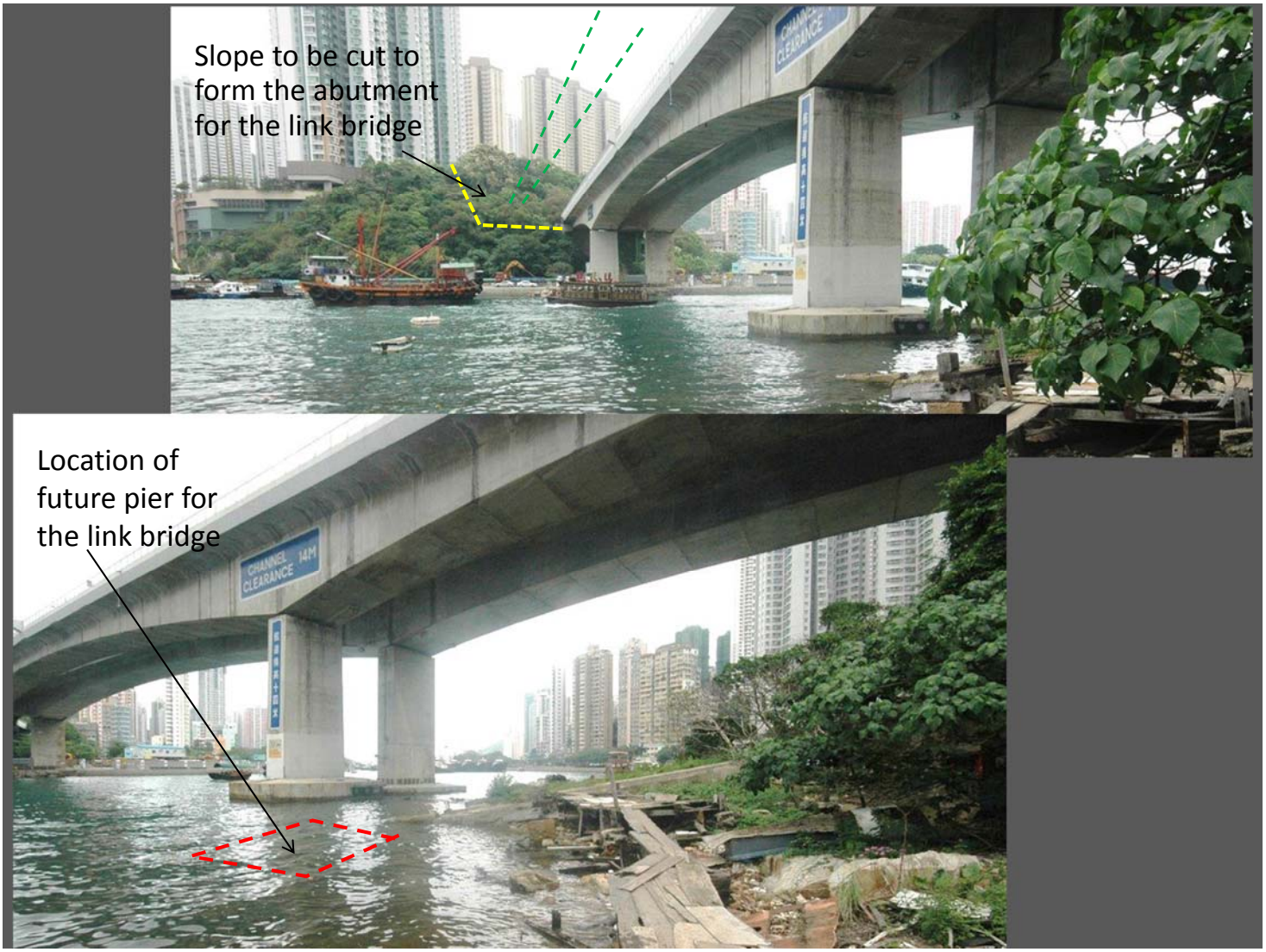
The elevated viaduct meeting the Ap Lei Chau Bridge

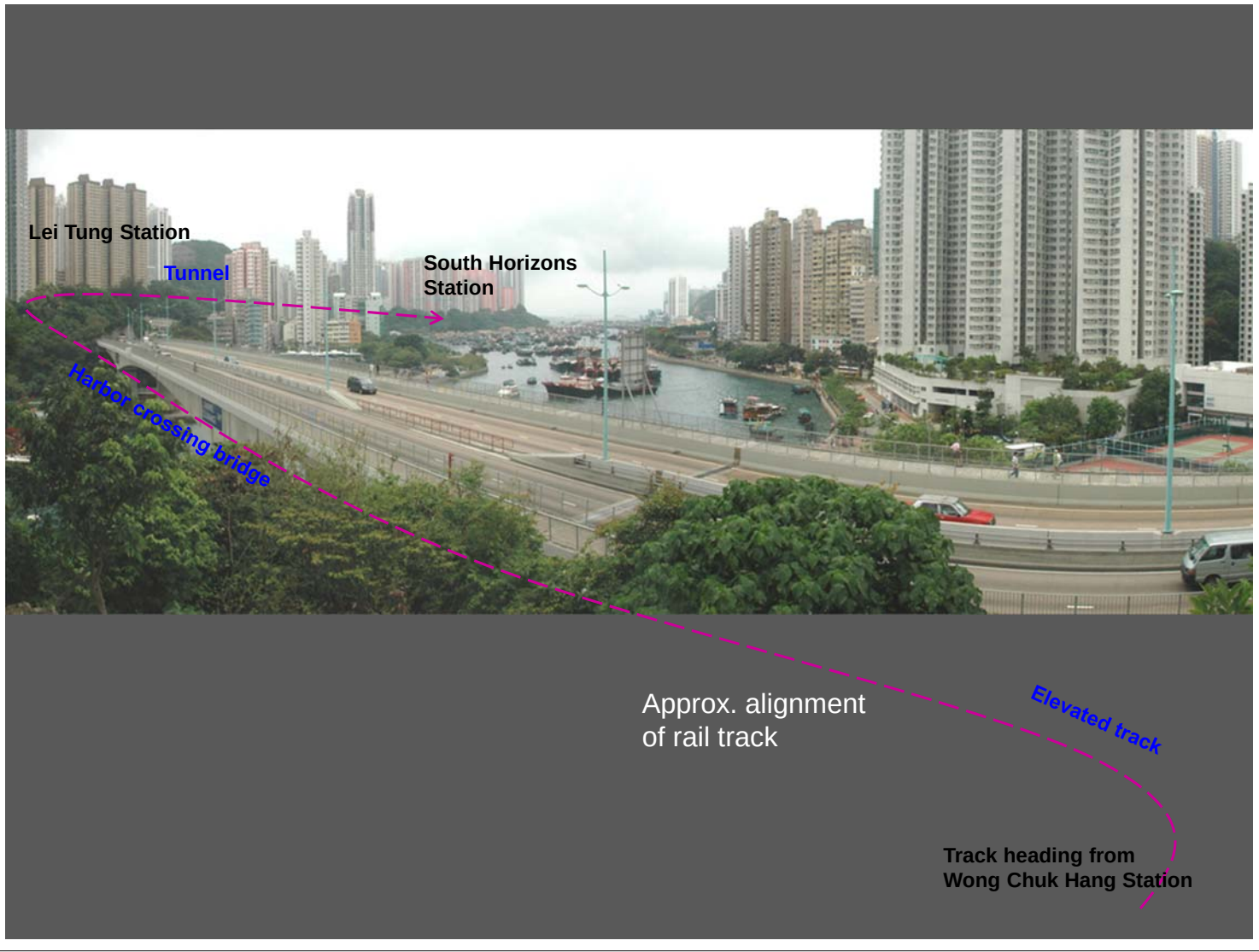
The Holy Spirit Seminary

The elevated viaduct along the Wong Chuk Hang Nullah

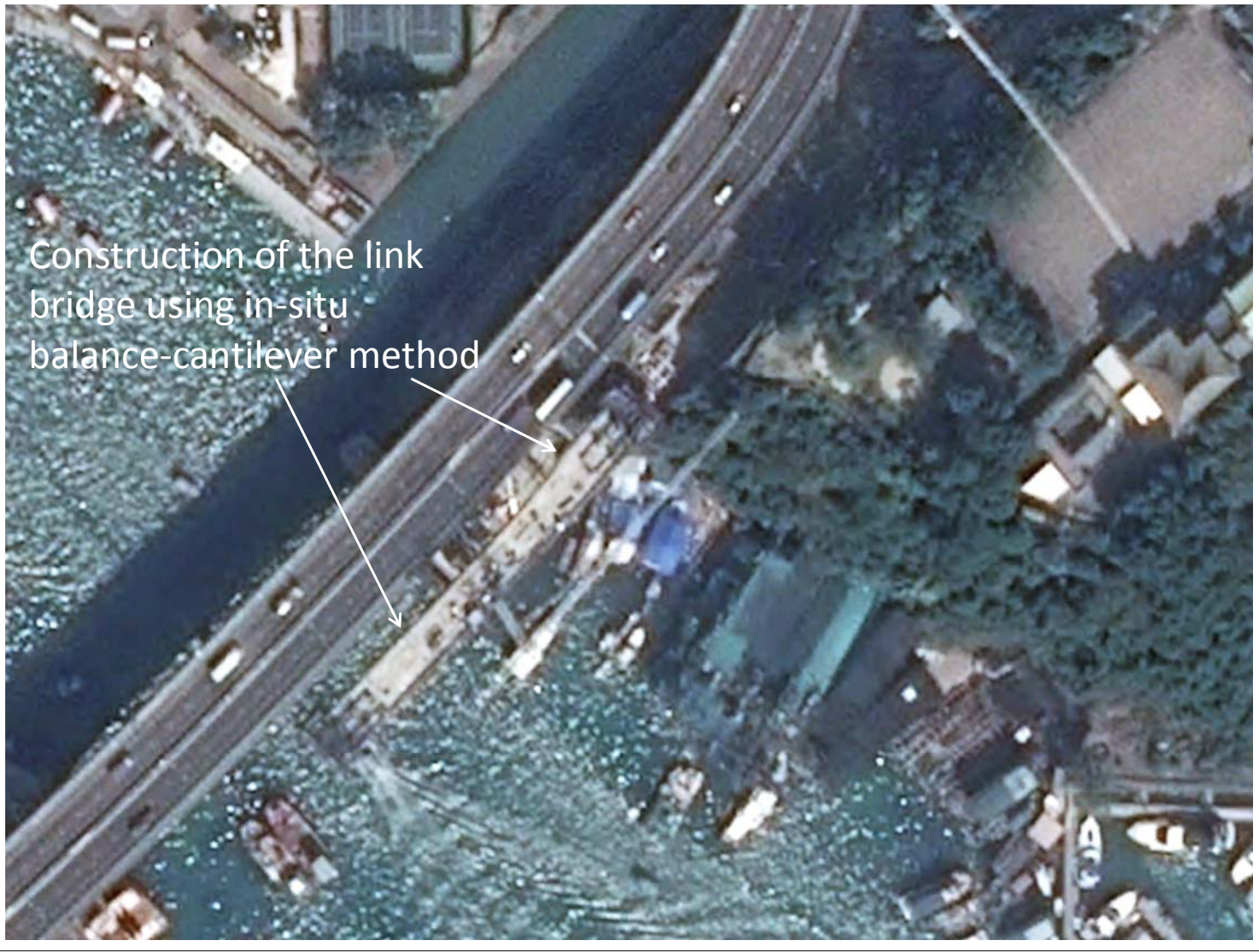
The link bridge crossing
the Ap Lei Chau Channel


Approximate alignment of the
South Island Line on Ap Lei Chau


Slope to be cut to form the abutment for the link bridge
Location of future pier for the link bridge
CHANNEL CLEARANCE 14M


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

The Ap Lei Chau Channel before the construction of the link bridge



Construction of the link bridge using in-situ balance-cantilever method

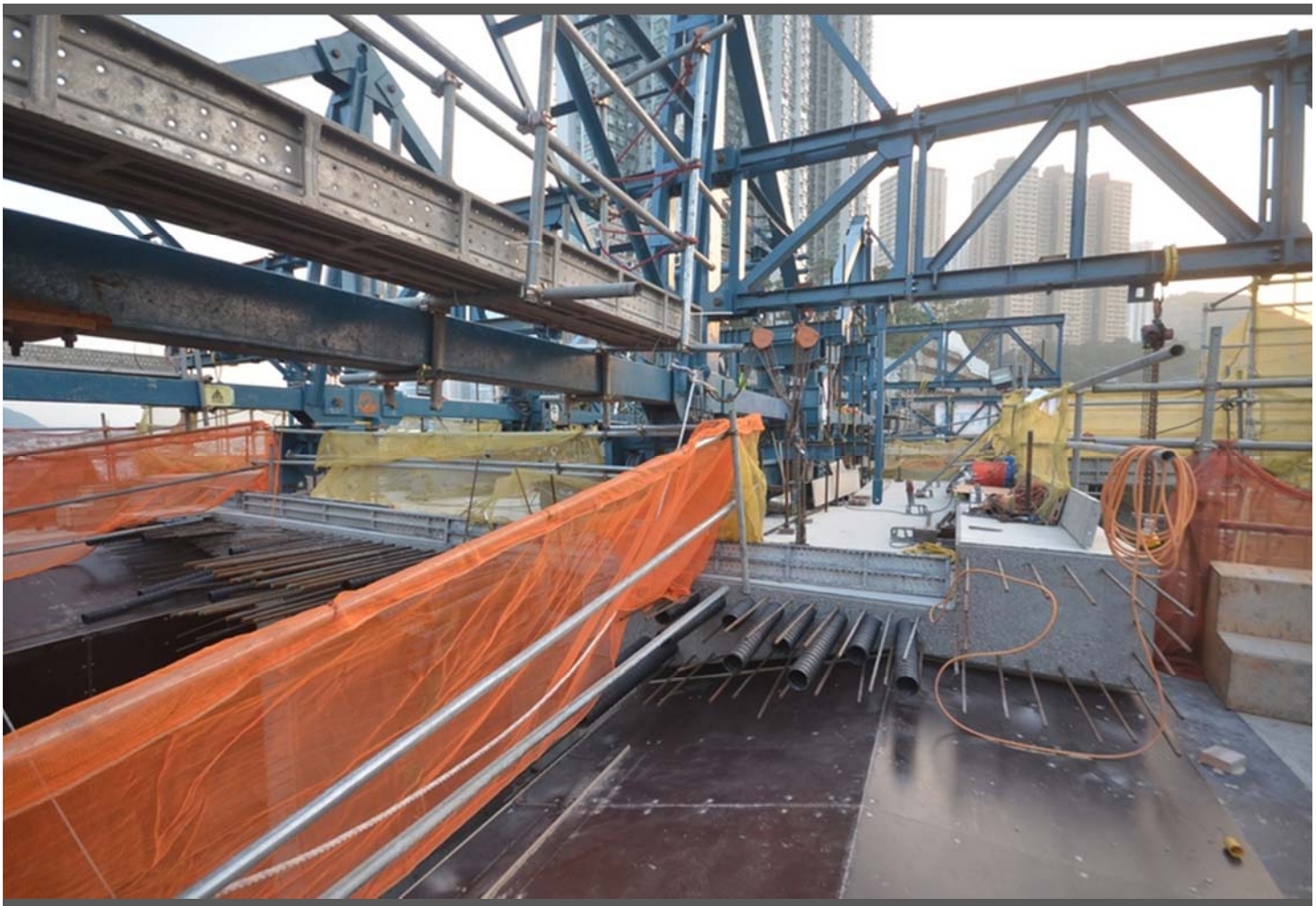

MTR


MTR


MTR
VSL

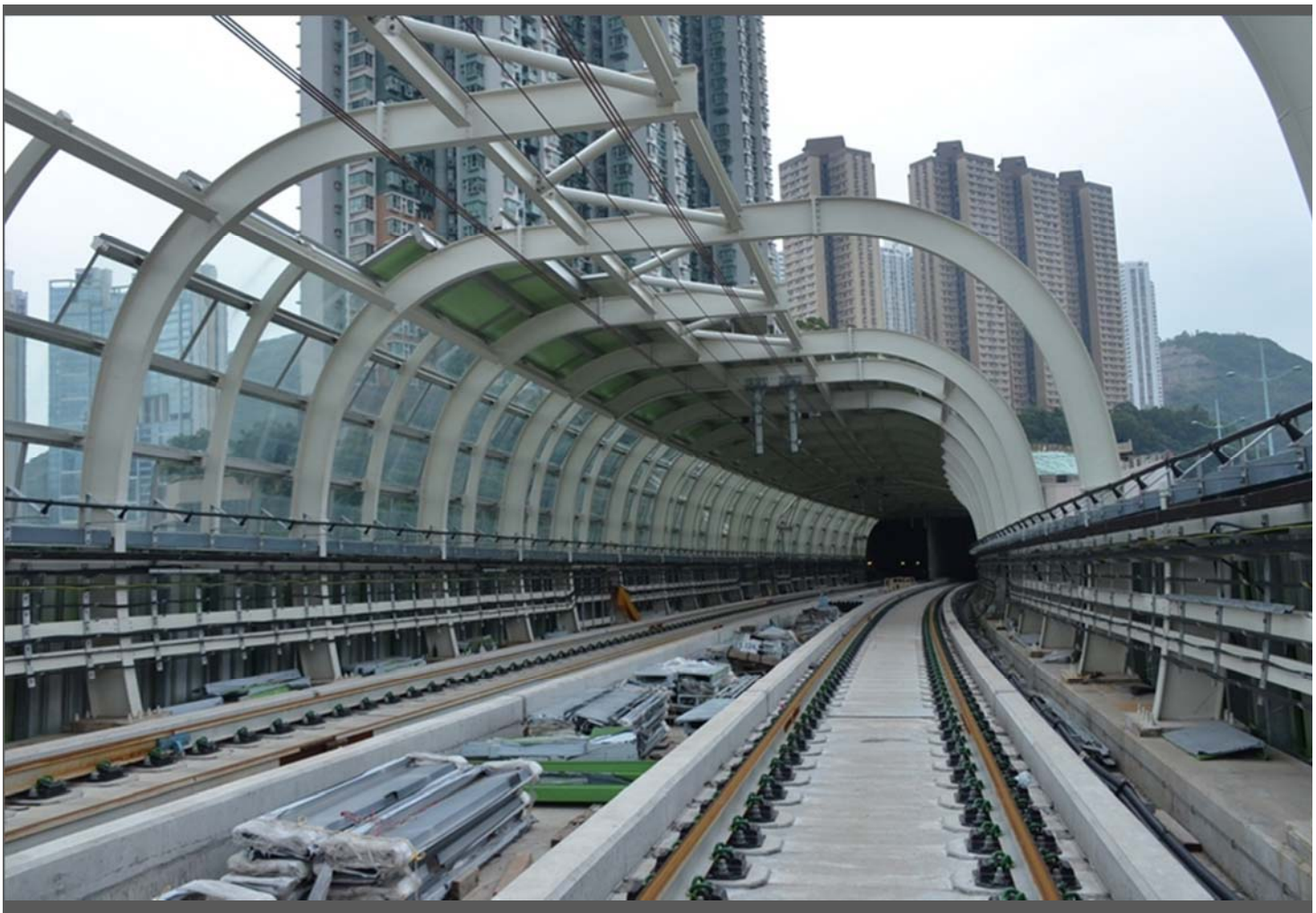
MTR
VSL


MTR
VSL

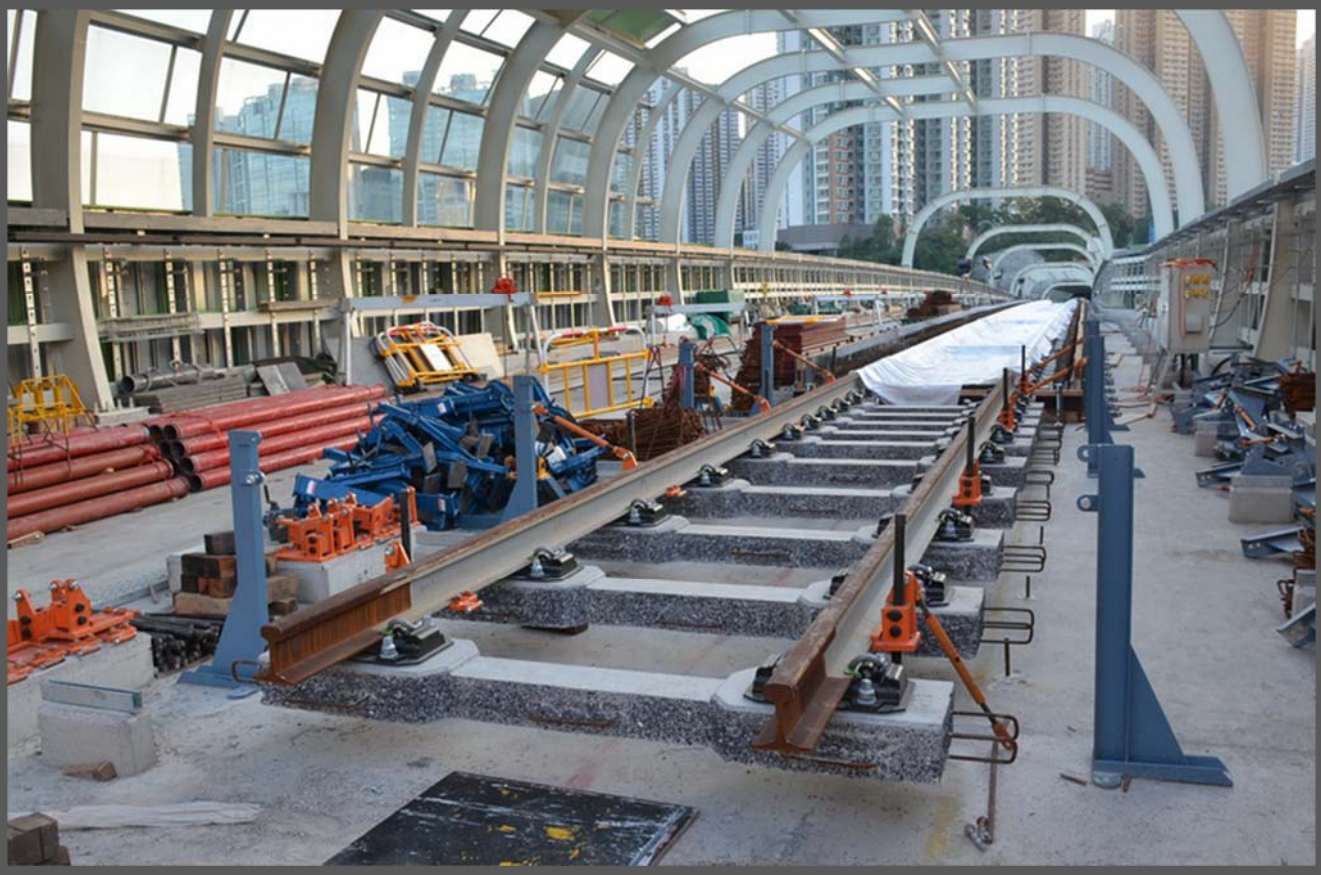


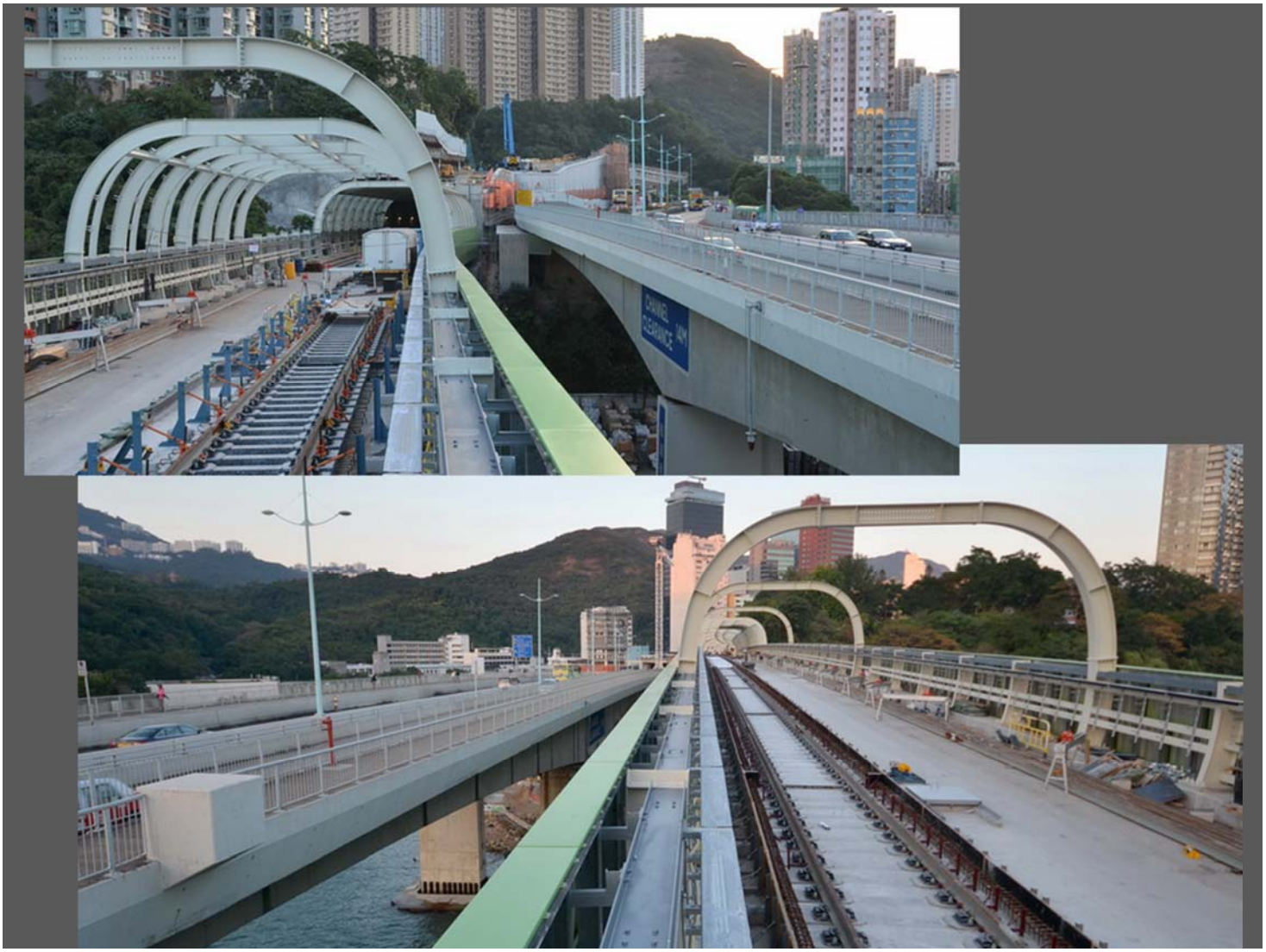
Work setting-up as seen on the working deck of the formwork gantry

Mock-up of the noise barrier hood

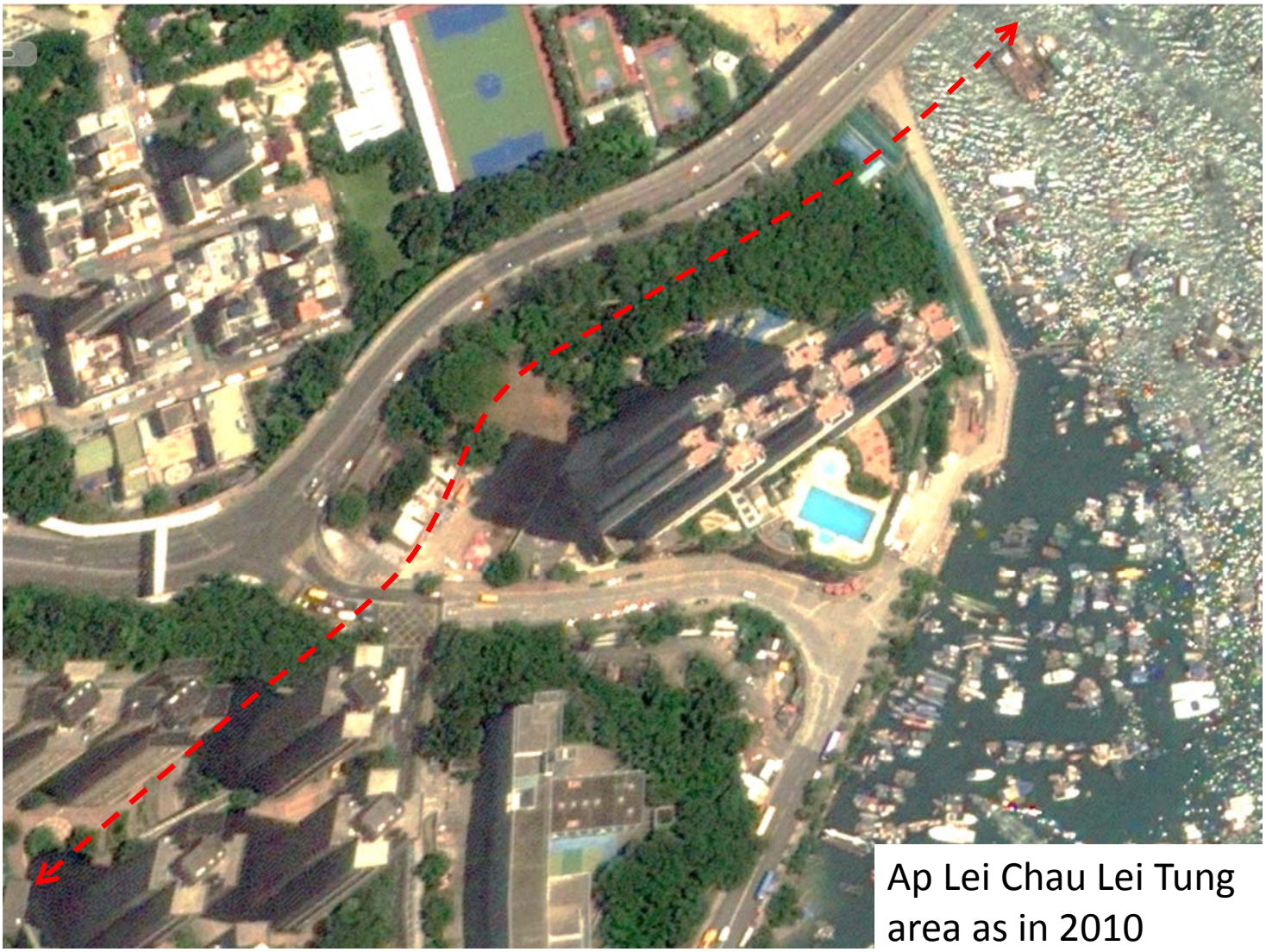


View on the deck level of the Ap Lei Chau Link Bridge

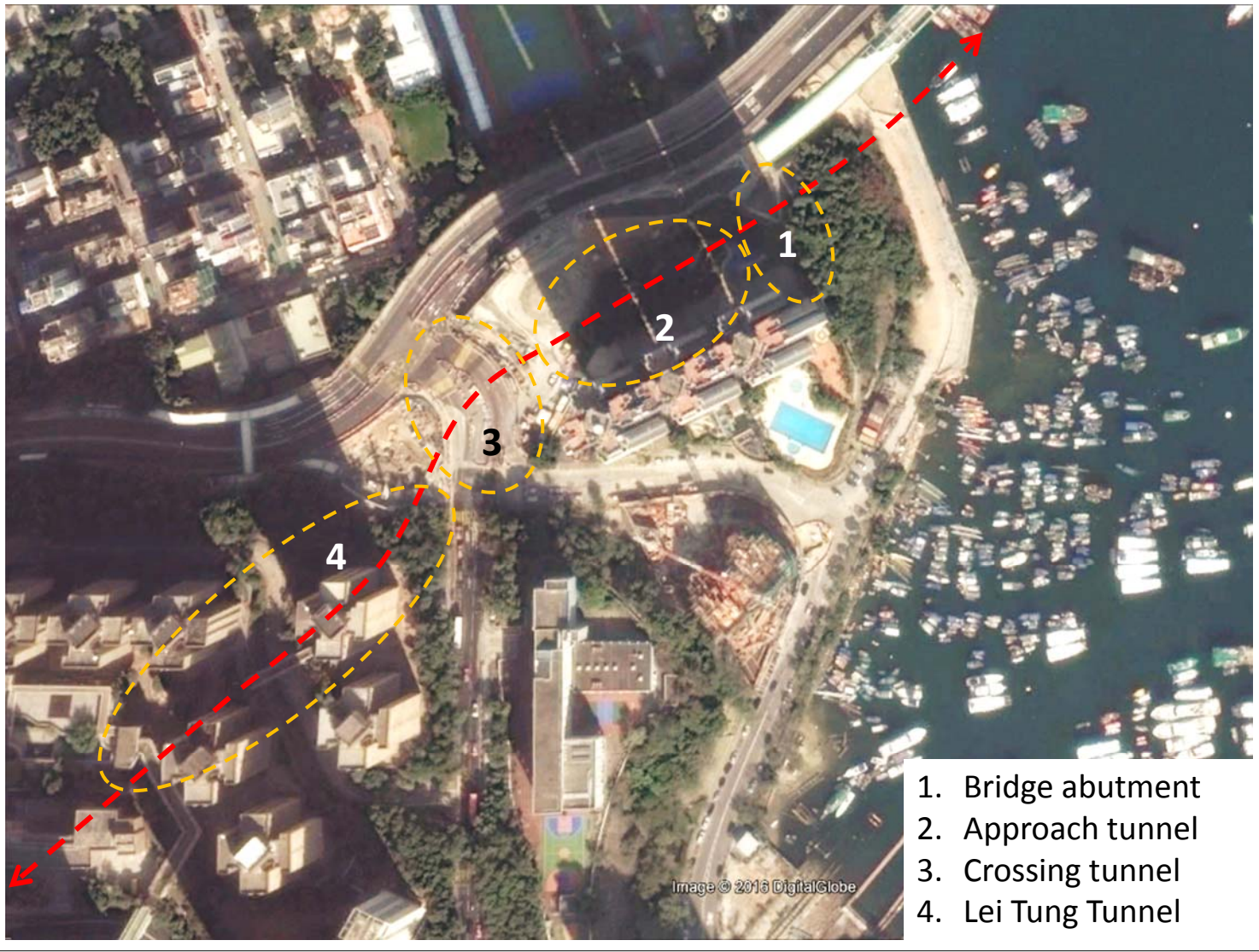




Section of rail track landing to the Ap Lei Chau



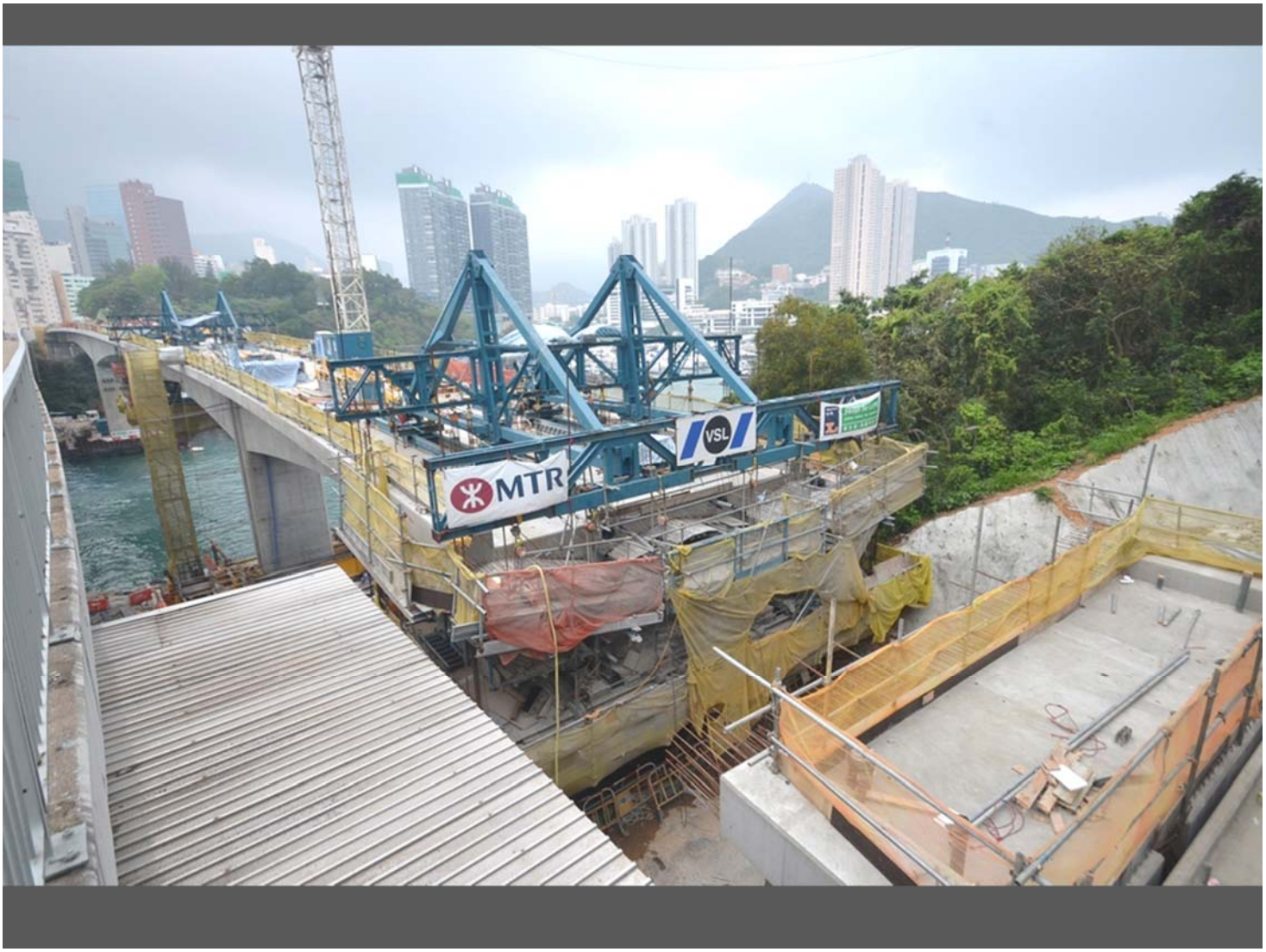
Ap Lei Chau Lei Tung area as in 2010

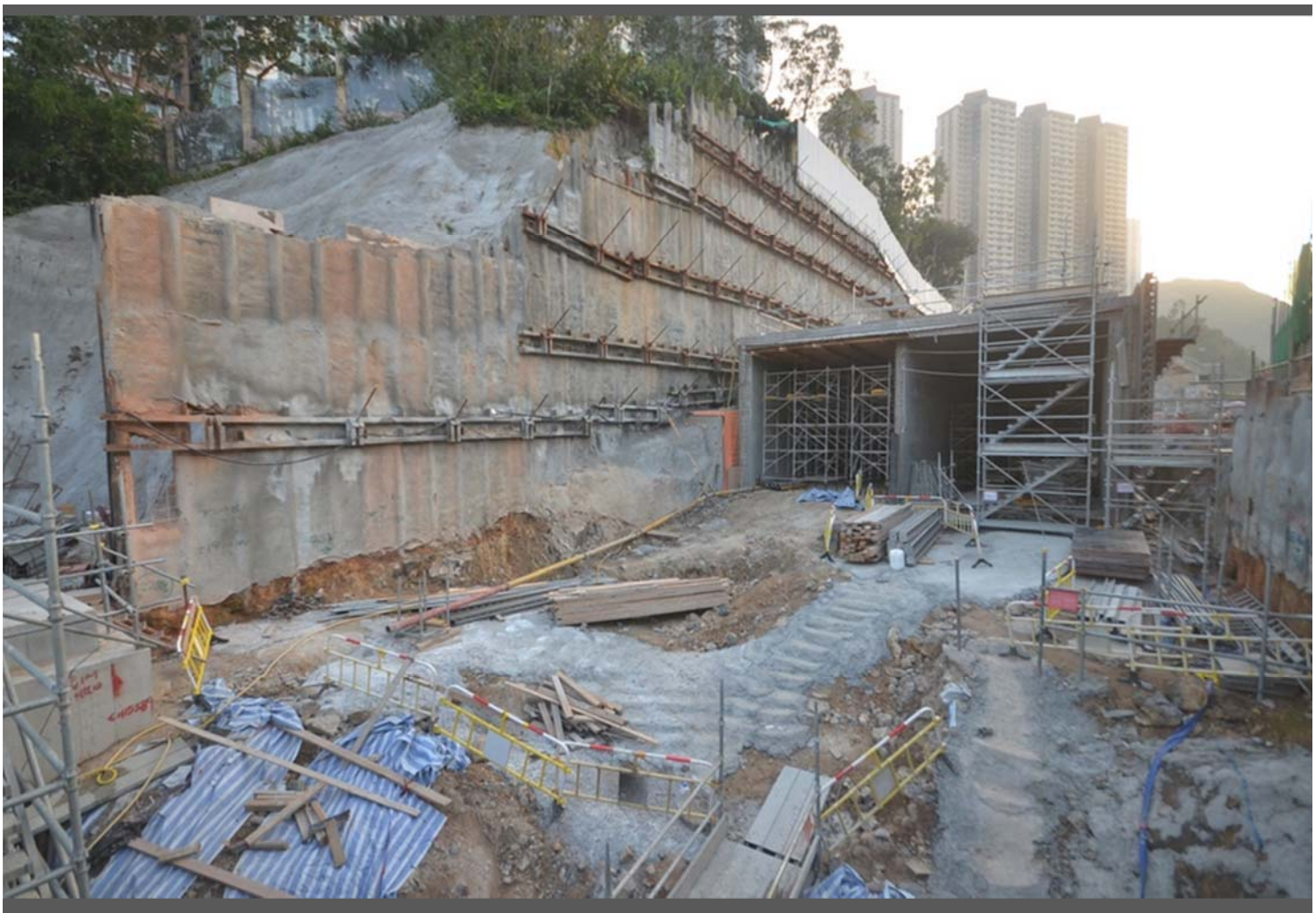


1. Bridge abutment
2. Approach tunnel
3. Crossing tunnel
4. Lei Tung Tunnel

Abutment for the landing of
the Ap Lei Chau Link Bridge

Abutment for the landing of the Ap Lei Chau Link Bridge


MTR
VSL



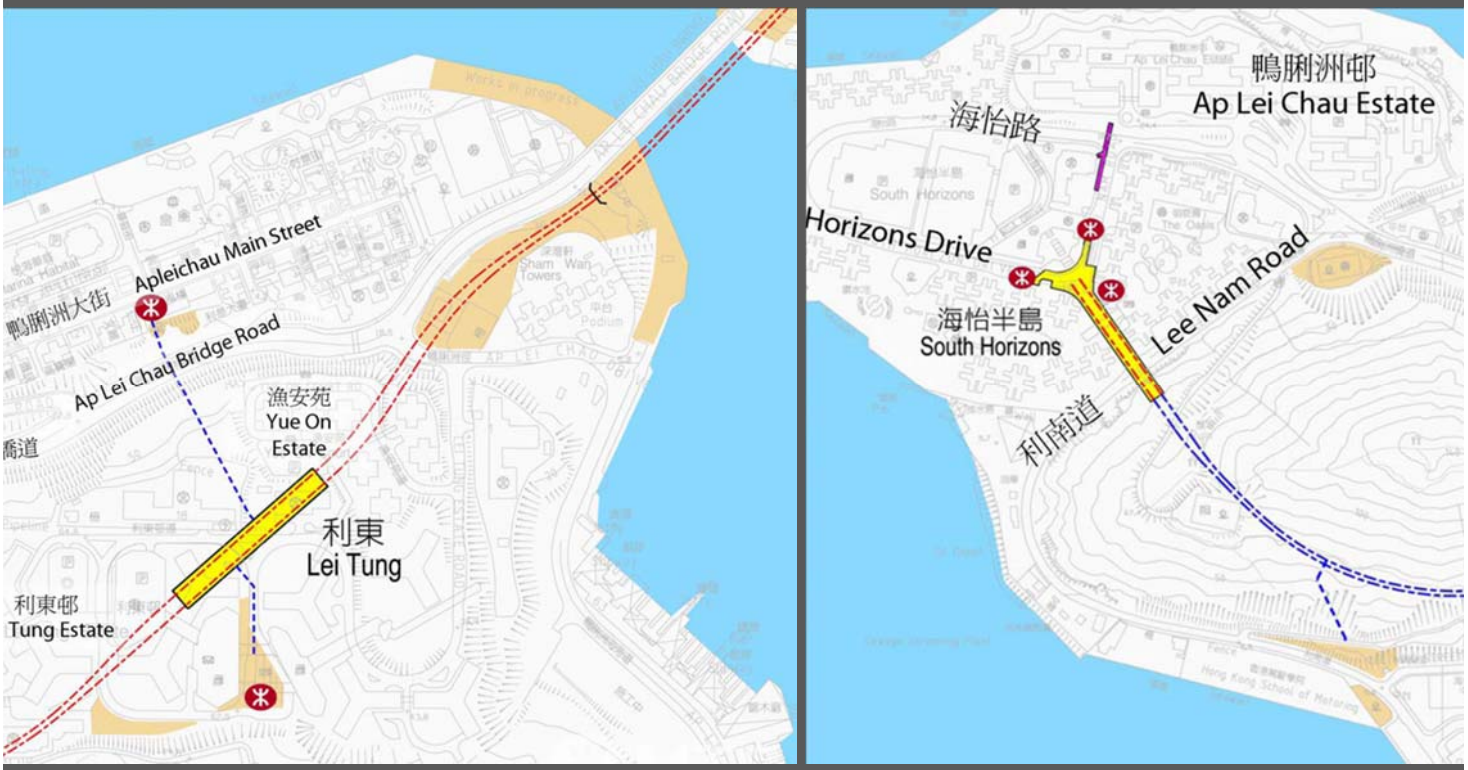
Forming of the crossing tunnel gradual in shape


Portal leading to the tunnel
running under the Lei Tung Estate

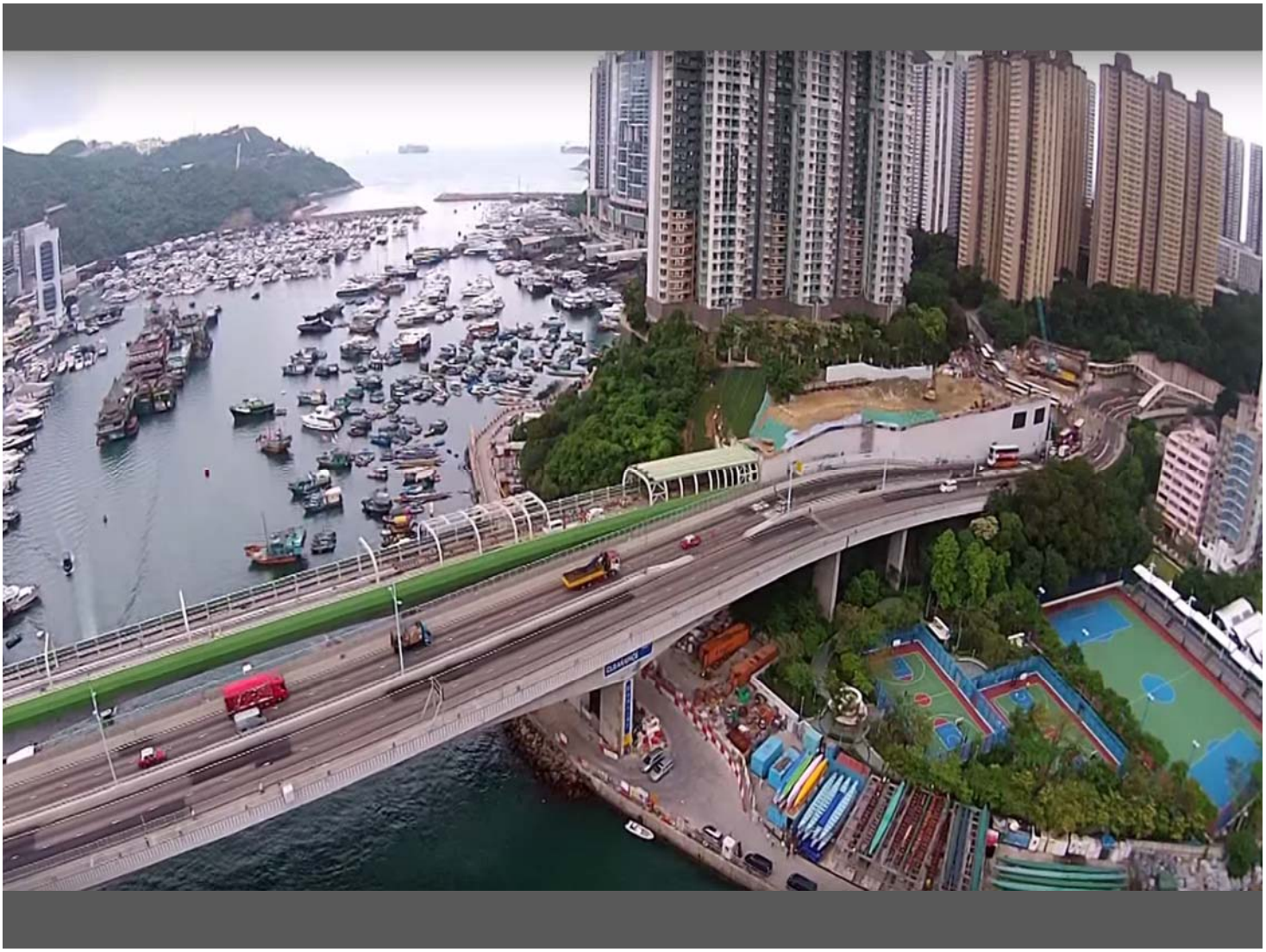

Side road leading
to Lei Tung Estate
Tunnel tube heading to the Lei Tung Tunnel

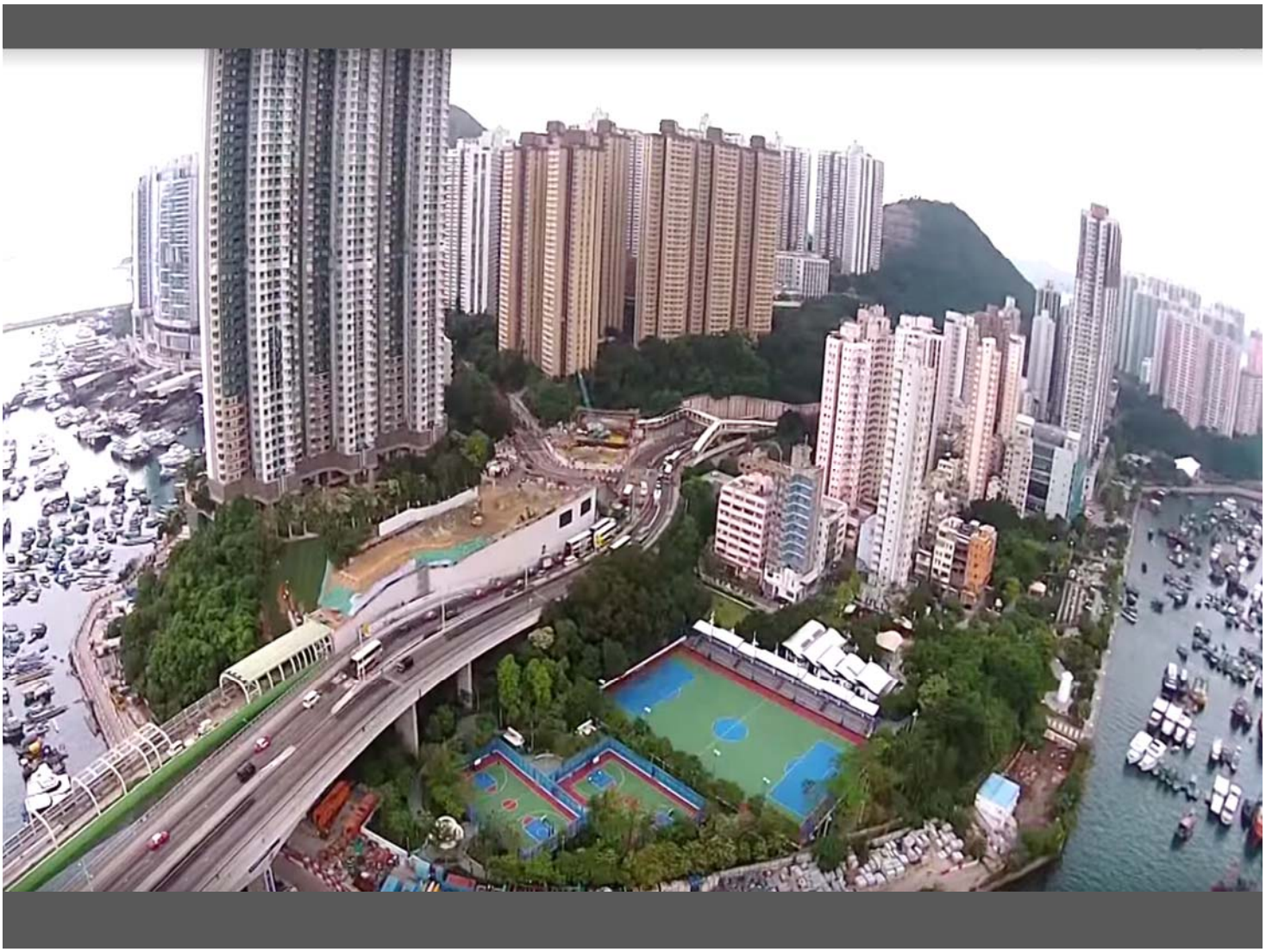
The cut-and-cover tunnel crossing the road junction

Lei Tung, South Horizon stations
and other associated works

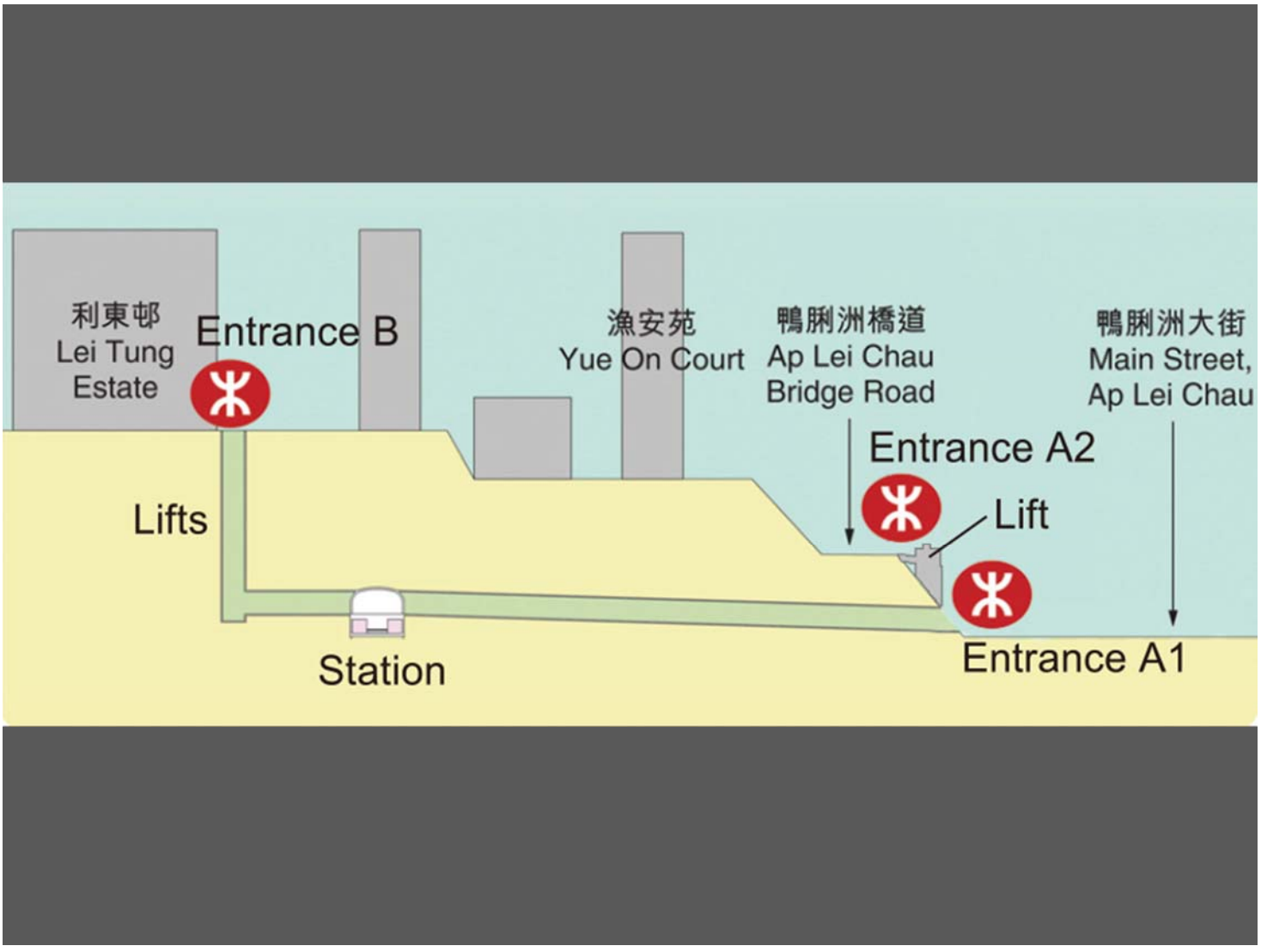

Apleichau Main Street
鴨脷洲大街
Ap Lei Chau Bridge Road
漁安苑
Yue On
Estate
利東
Lei Tung
利東邨
Tung Estate
鴨脷洲邨
Ap Lei Chau Estate
海怡路
Horizons Drive
海怡半島
South Horizons
Lee Nam Road
利南道


Portal section leading to the Lei Tung Tunnel
Lei Tung Estate
Ap Lei Chau
Link Bridge

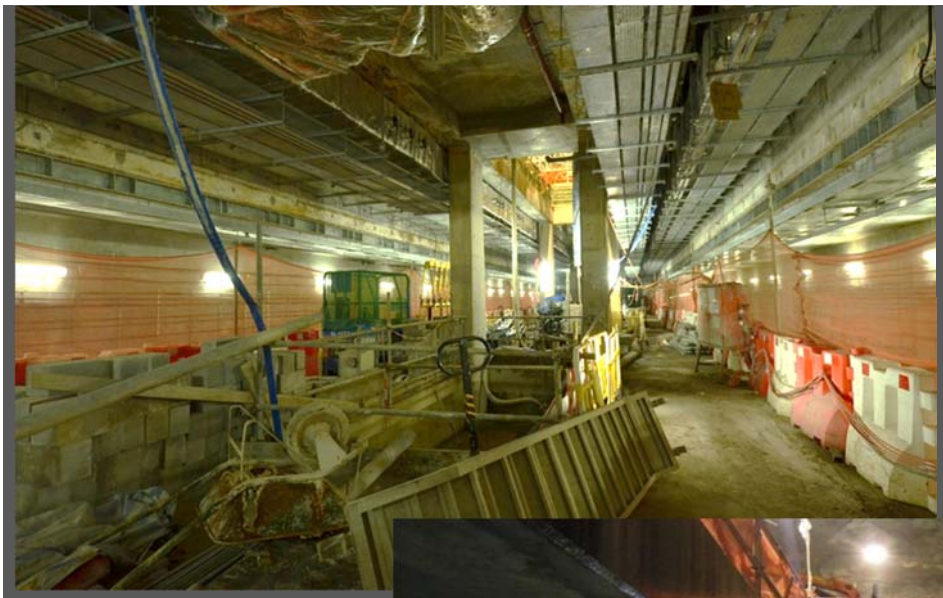





Apleichau Main Street
鴨脷洲大街
Ap Lei Chau Bridge Road
漁安苑
Yue On
Estate
利東
Lei Tung
利東邨
ei Tung Estate
Sham Wan
Towers
Podium
Works in progress

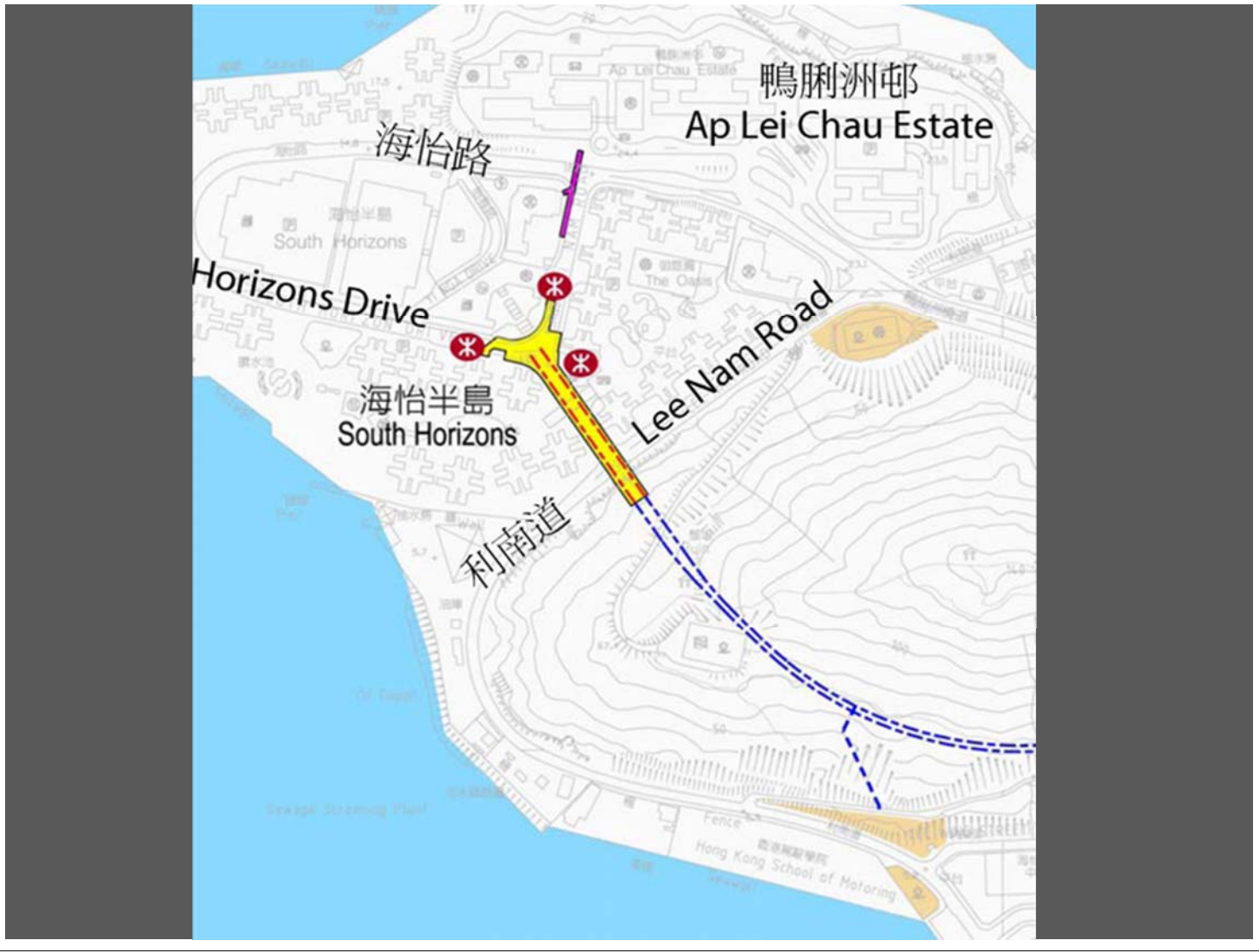

利東邨
Lei Tung
Estate
Entrance B
漁安苑
Yue On Court
鴨脷洲橋道
Ap Lei Chau
Bridge Road
鴨脷洲大街
Main Street,
Ap Lei Chau
Entrance A2
Lift
Lifts
Station
Entrance A1

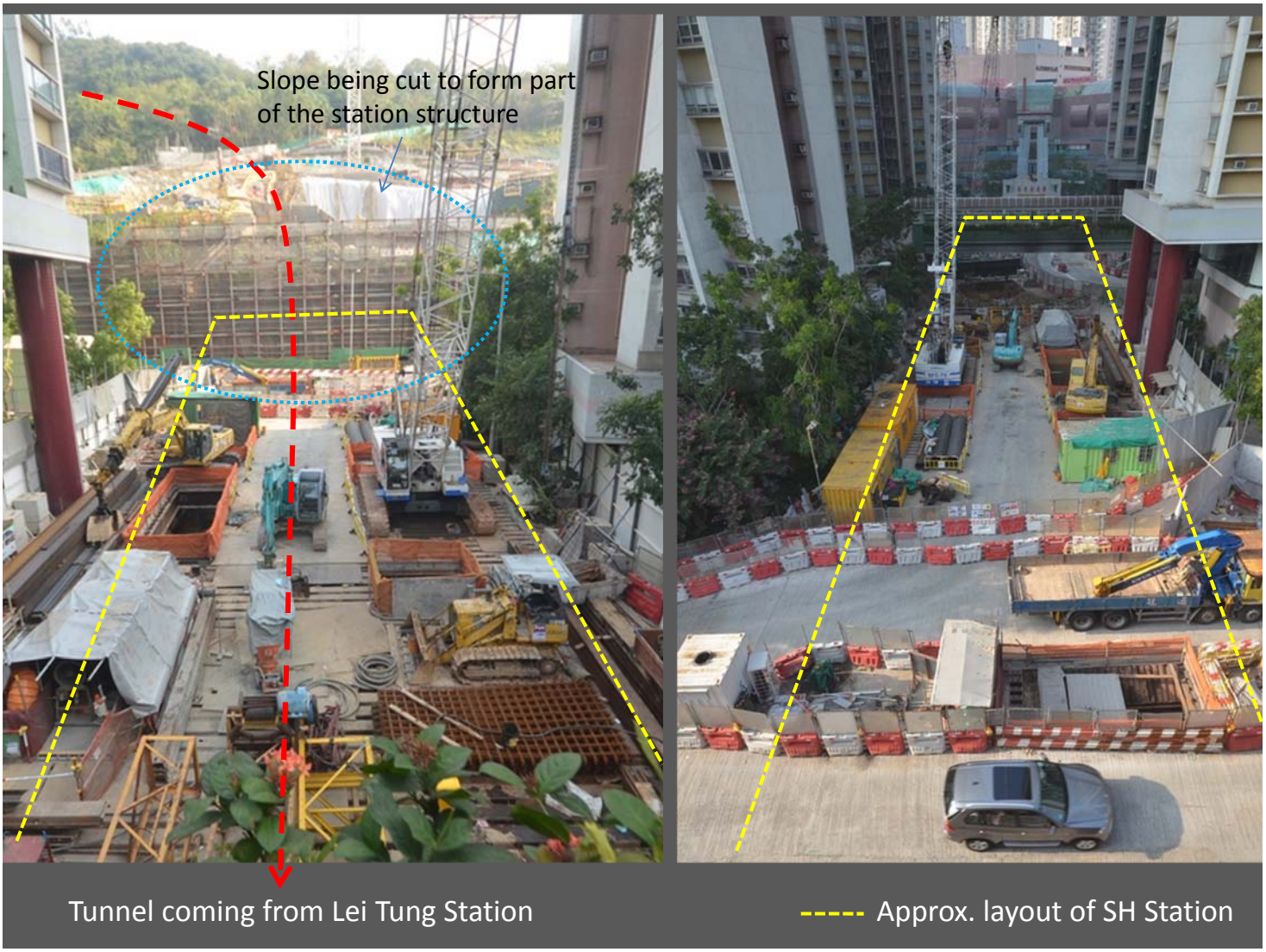
Pedestrian subway leading to Lei Tung Station in the form of a rock cavern



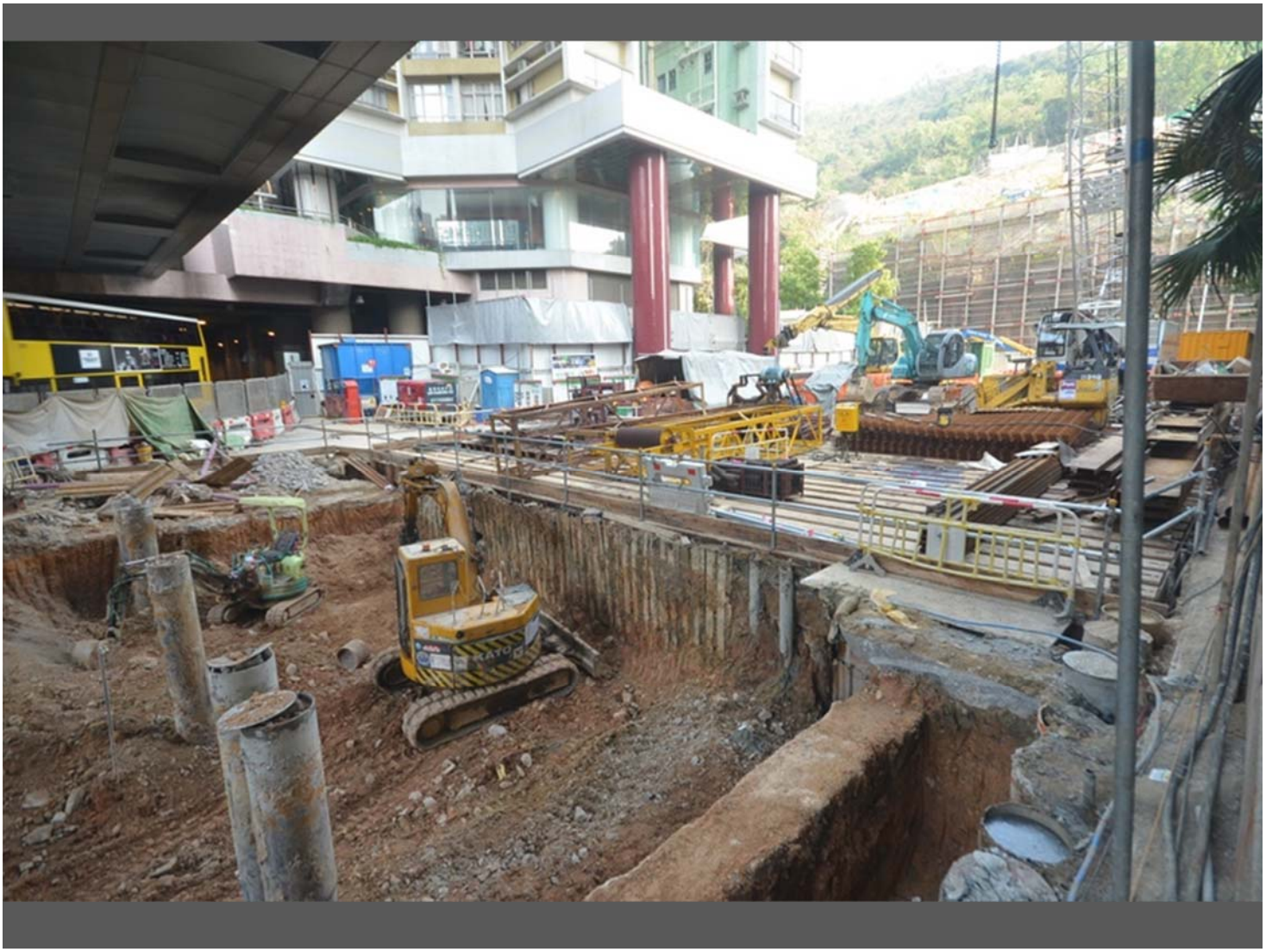
Interior of the Lei Tung Station at the fitting out stage

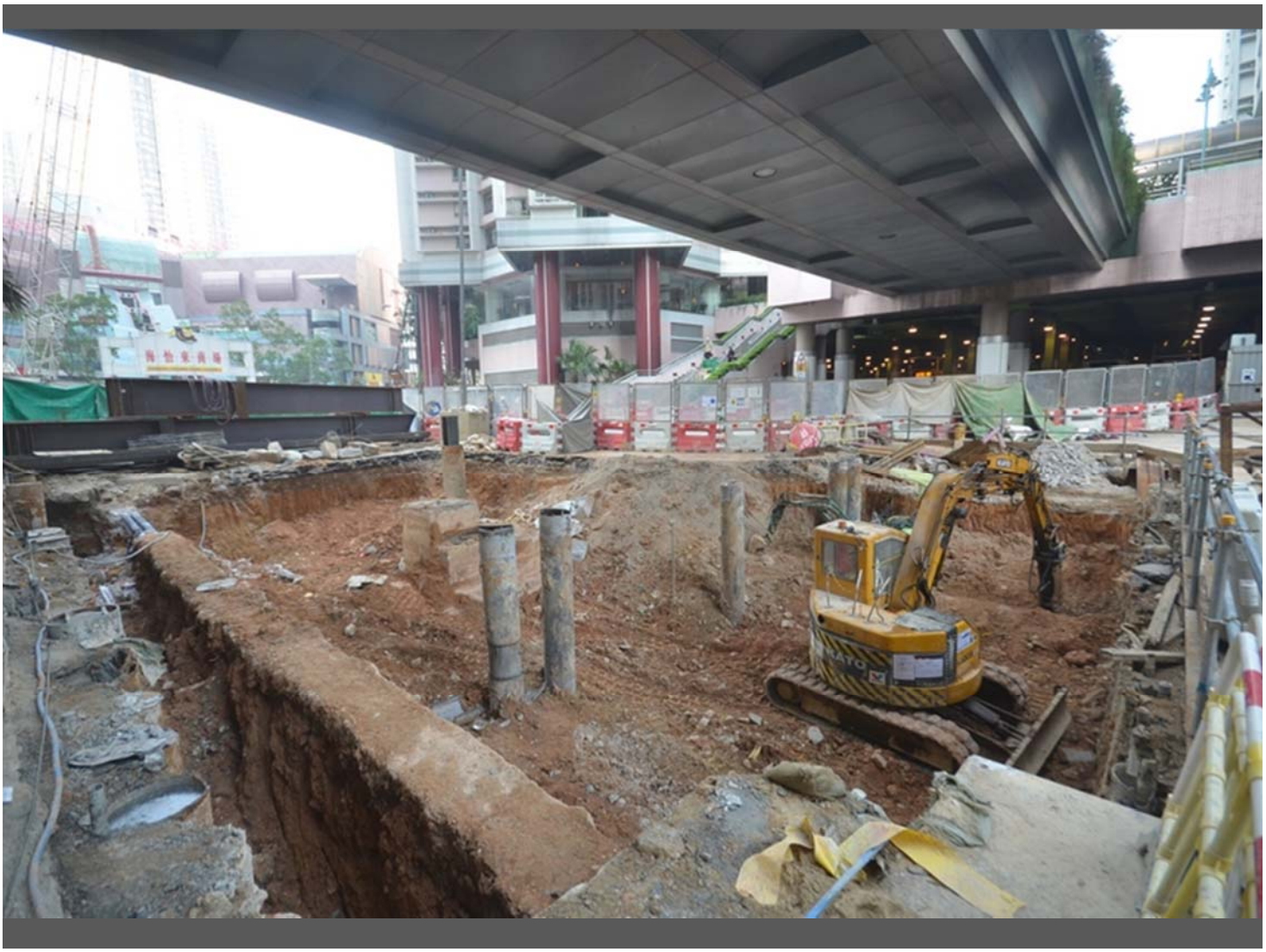
Pedestrian tunnel entrance leading
from the Ap Lei Chau Main Street

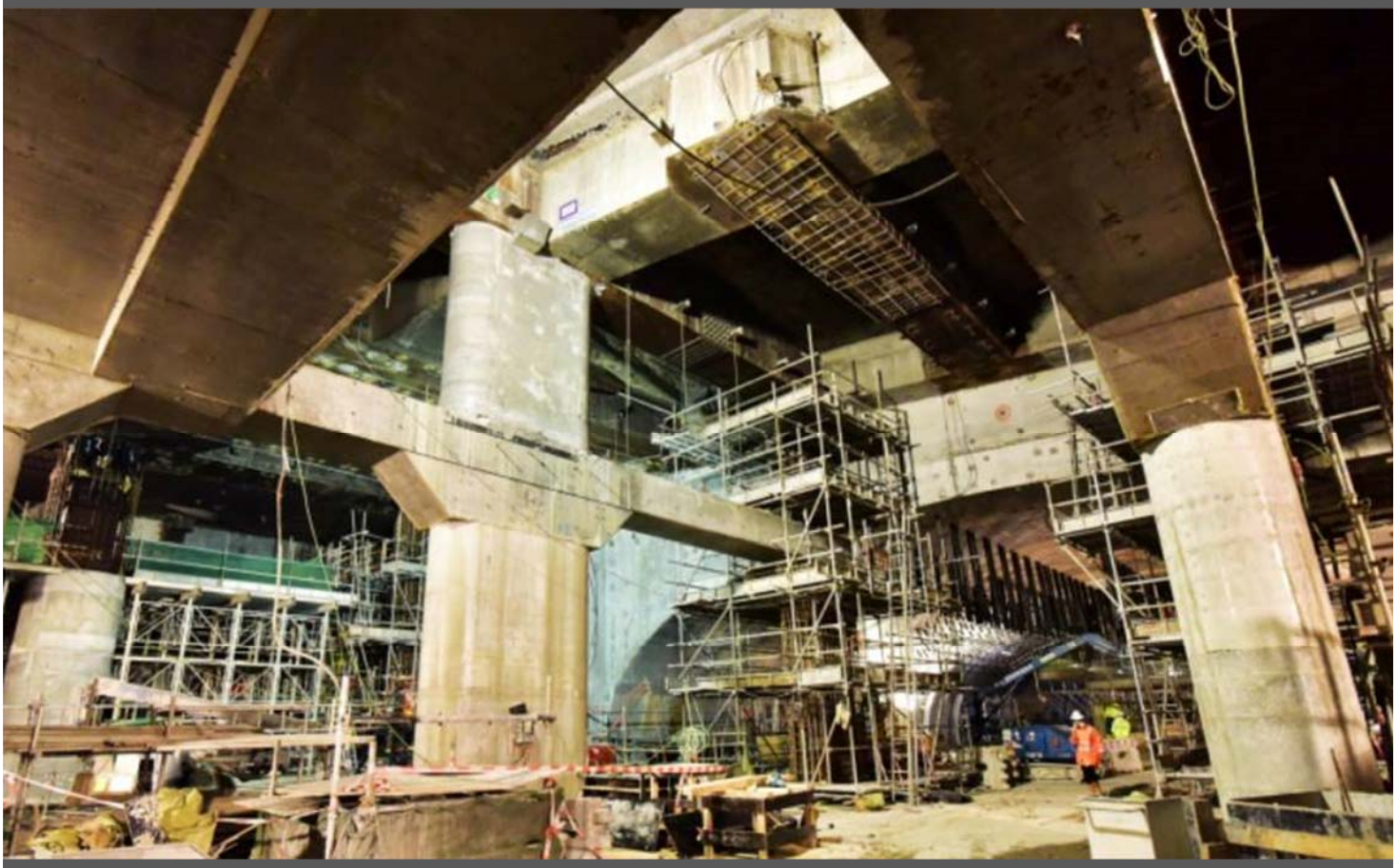


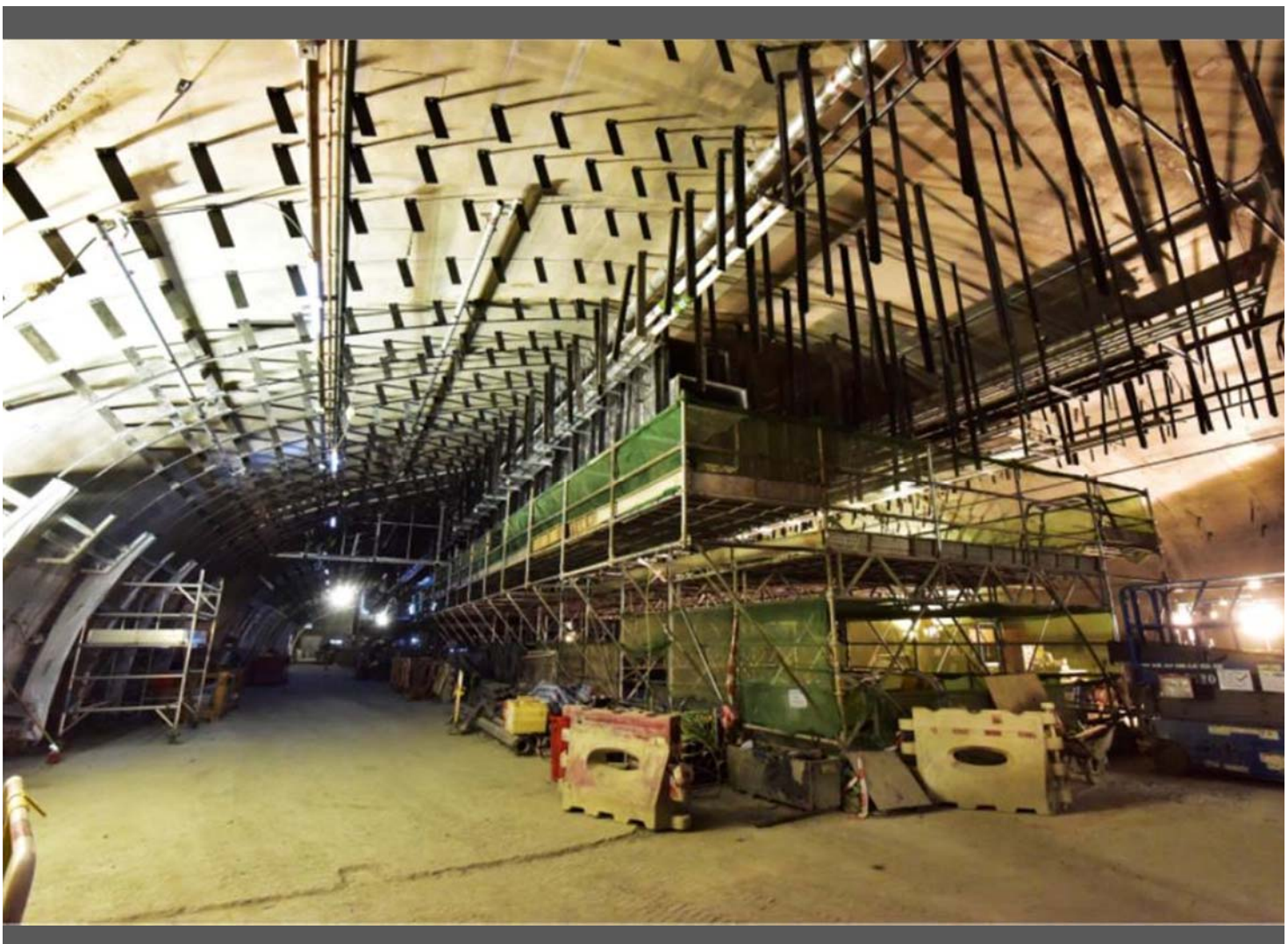


Slope being cut to form part of the station structure









End of the presentation

Notes:

This is only a preliminary version of technical report for the South Island Line up to June 2016. Detail description for other related work operations are not prepared at this stage. This presentation is to give a general outline of the project for those who are interested in the topic.