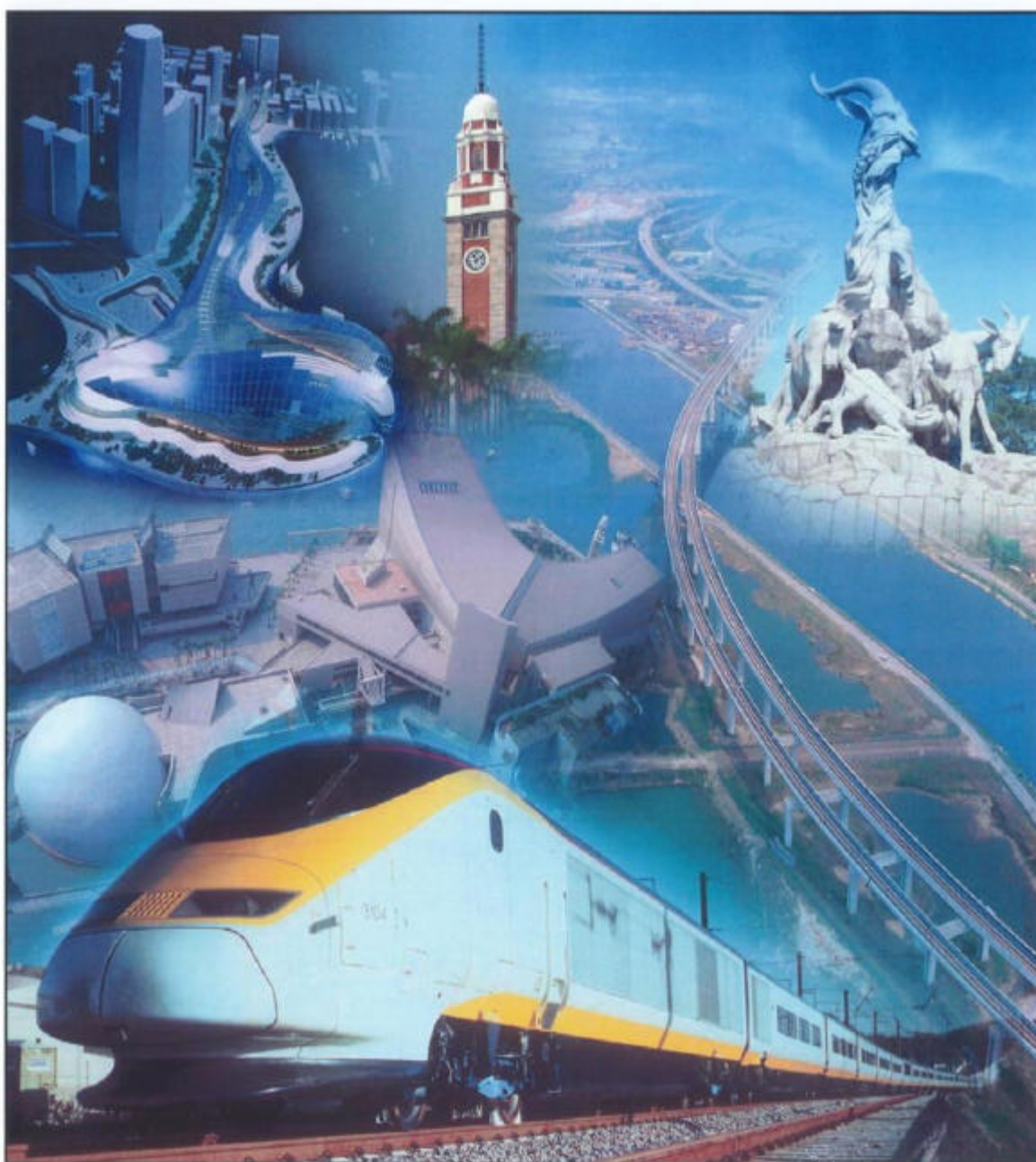


**HONG KONG SECTION OF
GUANGZHOU-SHENZHEN-HONG KONG
EXPRESS RAIL LINK
PROJECT PROFILE
SEPTEMBER 2008**



	Page
1 BASIC INFORMATION.....	1
1.1 Project Title.....	1
1.2 Purpose and Nature of the Project.....	1
1.3 Name of the Project Proponent	1
1.4 Location and Scale of Project and History of the Site	1
1.5 Number and Types of Designated Projects.....	2
1.6 Name and Telephone Number of Contact Persons	3
2 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME.....	4
2.1 Project Planning and Implementation.....	4
2.2 Project Programme.....	4
2.3 Project Interface	4
3 POSSIBLE IMPACTS ON THE ENVIRONMENT	4
3.1 Potential Environmental Impacts: Construction Phase	4
3.2 Potential Environmental Impacts: Operational Phase.....	6
4 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT.....	9
4.1 Existing and planned sensitive receivers	9
5 ENVIRONMENTAL PROTECTION MEASURES AND IMPLICATIONS...	10
5.1 Potential Measures to Minimize Environmental Impacts	10
5.2 Potential Severity, Distribution and Duration of Environmental Effects	12
5.3 Environmental Benefits.....	12
6 USE OF PREVIOUSLY APPROVED EIA REPORTS	13

FIGURES

- Figure 1 Alignment Plan (Sheet 1 of 2)
- Figure 2 Alignment Plan (Sheet 2 of 2)
- Figure 3 Alignment Vertical Profile

1 BASIC INFORMATION

1.1 PROJECT TITLE

Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL)

1.2 PURPOSE AND NATURE OF THE PROJECT

The Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (hereinafter, XRL or the Project) will connect West Kowloon Terminus to the Mainland section of XRL at Hongmian Dao, southwest of Lok Ma Chau Terminus. The XRL will provide cross-boundary services between stations at Hong Kong, Futian, Longhua (New Shenzhen Station), Humen, Shibi (New Guangzhou Station) and other major Mainland cities.

1.3 NAME OF THE PROJECT PROPONENT

MTR Corporation Limited

1.4 LOCATION AND SCALE OF PROJECT AND HISTORY OF THE SITE

General

Throughout the design development of XRL, the Corporation has undertaken engineering feasibility and site investigation work to determine all the technical parameters for the construction of the scheme presented in the study brief No. ESB-189/2008 dated 5 June 2008.

In parallel, the Corporation has also studied alternative proposals to enhance the overall rail network for the benefit of the local community and by taking account of all interfacing projects and constraints. Subsequent to this study, the original scheme has been optimized and developed.

This project profile covers the optimized scheme (hereinafter, the Project).

The Project consists of a similar alignment to the original scheme routing from West Kowloon to the boundary crossing point at Huanggang, except for the stabling arrangement in Shek Kong and the southern alignment, which has been rerouted from Sham Shui Po and Shek Kip Mei areas to Nam Cheong, Lai Chi Kok and Kwai Chung areas.

The total length of XRL tunnel from West Kowloon to the boundary crossing point at Huanggang is approximately 26 km. The approximate alignment and terminus are shown in Figures 1 and 2. The tunnel is to be located deep underground and its profile is given in Figure 3.

The ventilation buildings along the railway corridor will be located at Mai Po, Ngau Tam Mei, Tai Kong Po, Pat Heung, Shing Mun, Kwai Chung, Nam Cheong and Mong

Kok West. The ventilation shafts will also act as emergency access points in the future for emergency services.

A stabling sidings and maintenance facility will be located at Shek Kong to provide stabling and maintenance and cleaning activities. An emergency rescue station (ERS) will be located next to Shek Kong Stabling Sidings (SSS) for evacuation of passengers and access by emergency personnel to deal with incidents.

Construction of other works and facilities such as new/altered roads and barging points may also be required and the environmental issues arising from their operations would be studied according to the requirement in the relevant sections of the TM.

Proposed Alignment and Method of Construction

The XRL will start from WKT and pass beneath Jordan Road by cut and cover tunnel construction and pass underneath Hoi Wang Road largely by tunnel boring machine (TBM) to a construction shaft located adjacent to Sham Mong Road.

The tunnel will continue northwards and pass beneath Nam Cheong, Lai Chi Kok, Kwai Chung, Shing Mun Country Park, Tai Mo Shan Country Park towards Shek Kong. This section will be constructed using tunnel boring machines (TBM) in soft ground and drill and blast techniques in rock strata. Ventilation buildings/shafts and emergency access points will be provided at Shing Mun, Kwai Chung and Nam Cheong. An adit will be constructed to connect the ventilation building in Kwai Chung with the main tunnel.

An emergency rescue station will be constructed by cut and cover method at Shek Kong. The tunnel will proceed northwards and pass beneath the Lam Tsuen Country Park towards Ngau Tam Mei. The section between Tai Mo Shan and Lam Tsuen Country Park will be constructed using TBM techniques, while the sections beneath Tai Mo Shan and Lam Tsuen Country Park will be constructed using drill and blast techniques. Ventilation buildings and emergency access points will be located at Pat Heung, Tai Kong Po and Ngau Tam Mei. An adit will be constructed to connect the ventilation building in Pat Heung with the main tunnel.

North of Ngau Tam Mei, the alignment will pass deeply beneath San Tin and Mai Po wetlands to connect to the Mainland reception/access shaft located north of the Shenzhen River. For the cross-boundary section, TBMs will be used for tunnel construction beneath the wetlands. A ventilation building will be constructed at Mai Po

1.5 NUMBER AND TYPES OF DESIGNATED PROJECTS

The proposed Project is a single project and is classified as designated project under Schedule 2, Part I, Categories A.2, A.4, A.7 and Q.1 of the Environmental Impact Assessment Ordinance.

1.6 NAME AND TELEPHONE NUMBER OF CONTACT PERSONS

Dr. Glenn Frommer
MTR Corporation Limited
Head of Sustainability Development
Tel: 2688 1552

2 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 PROJECT PLANNING AND IMPLEMENTATION

The whole project will be planned and implemented by MTR Corporation Limited in-house departments together with external consultants and contractors.

2.2 PROJECT PROGRAMME

The construction works is tentatively scheduled to commence in the 4th quarter of 2009 and complete by 2015.

2.3 PROJECT INTERFACE

Major project committed that will interface with XRL includes the West Kowloon Cultural District.

3 POSSIBLE IMPACTS ON THE ENVIRONMENT

3.1 POTENTIAL ENVIRONMENTAL IMPACTS: CONSTRUCTION PHASE

The following sections describe the potential environmental impacts during the construction phase, which will be alleviated by effective and pragmatic mitigation measures designed according to the assessed levels of impact.

3.1.1 Air Quality

Potential air quality impacts may arise from fugitive dust emissions generated by construction activities such as concrete batching, excavation, cutting, filling, stockpiling, construction vehicle movements, as well as demolition works.

3.1.2 Noise

Airborne noise will be generated during cut and cover activities, drill and blast construction, piling, pile construction, column and ventilation building construction, spoil transportation etc.

Ground borne noise will be generated from TBM tunnelling and use of power mechanical equipment including hydraulic breakers, drill rigs and pile rigs. It is noted that there have been insignificant impacts arisen from the TBM operations during the construction of Kowloon Southern Link. Similarly, it is anticipated that the use of TBM for the XRL construction will not have significant impact on nearby receivers; nevertheless, assessment on ground borne noise impact will be conducted.

3.1.3 Water Quality

Water quality impacts may arise due to the following potential sources during the construction of the Project:

- Construction site run-off and drainage from works areas;
- General construction activities;
- Sewage effluent produced by on-site workers;
- River diversion; and
- Groundwater extracted during excavation and tunnel construction.

3.1.4 Waste Management

The key waste management implication will be excavated materials generated from the excavation of tunnels, terminus and rescue station. Environmental impacts arising will be assessed, and opportunities for re-use and potential disposal outlets will be studied.

3.1.5 Hazard

Explosives will be required for the drill and blast tunnel sections. The use of explosive will be controlled by the Mines Division of the Civil Engineering and Development Department. A risk assessment will be conducted to determine the risk due to the transport and storage of explosives.

The proposed tunnel alignment may pass deep below ground under the consultation zones of potential hazard installations (PHI). It is expected that there should be no insurmountable hazard to life issues. Quantitative risk assessment will be conducted, if necessary.

3.1.6 Ecology

The southern section of the XRL alignment is located deep under the highly urbanized Kowloon and Tsuen Wan area and ecological impact arising from the construction of this section is not expected.

Underground tunnelling methods, such as TBM and drill & blast, will be utilized for construction of tunnel sections underneath the ecological sensitive areas such as Tai Mo Shan Country Park, Shing Mun Country Park and Mai Po wetlands. The use of TBM techniques has been proven to be effective in avoiding adverse ecological impacts to above ground areas for instance in Long Valley during the construction phase of the Lok Ma Chau Spur Line tunnel.

Potential ecological impacts may arise due to the above-ground works at Shek Kong, Kam Tin, Ngau Tam Mei and Wo Shang Wai.

3.1.7 Fisheries Impact

The potential fisheries impact of the XRL is not anticipated. Direct impact on the fishponds identified at Wo Shang Wai is not expected. In-direct fisheries impact may arise if construction activities result in pollution of watercourses. Such impacts can be avoided by appropriate construction site management protocols.

3.1.8 Historical and Cultural Heritage Impacts

The XRL tunnel will be located deep underground. The slant separation between identified Declared Monuments/Graded Historical Buildings and the railway tunnel would be large. No insurmountable impact on built heritage resources is expected given the large separation.

Demolition of Declared Monuments and Graded Historical Buildings is not envisaged. Therefore, direct physical impact on historical buildings is not anticipated.

The Project does not lie within known archaeological sites. There are four archaeological sites, namely the Mai Po, Ngau Tam Mei, Yuen Shan, and Tsat Sing Kong, located within 300m from the Project.

3.1.9 Land Contamination

The above-ground works areas may be located at potentially contaminated sites such as open storage areas, car repairing workshops, scrap yard, etc. Appropriate investigation and assessment will be conducted during the EIA stage to determine if contaminated soil or groundwater will be encountered during construction. With implementation of remediation actions, no residual land contamination impact is anticipated.

3.1.10 Landscape and Visual Impact

The construction of above-ground structures will result in potential impacts to the nearby landscape resources and the adjacent existing and future landscape characters. Visual impacts will also arise from the construction works sites/areas.

3.2 POTENTIAL ENVIRONMENTAL IMPACTS: OPERATIONAL PHASE

3.2.1 Air Quality

The trains of XRL will be electrically operated, and therefore air quality impact is not expected.

3.2.2 Noise

Operation airborne noise and ground borne noise impacts are anticipated to be minimal along most of the alignment as the tunnel will be located deep underground. There may be potential ground borne noise impact on sensitive receivers at West Kowloon, Kwai Chung, Shek Kong, Ngau Tam Mei and Mai Po due to the operation

of XRL. There may also be potential airborne railway noise impact arisen from train-passby through the opening of ERS. Ground borne and airborne railway noise impacts will be assessed during the EIA and mitigation measures will be determined.

Sources of fixed plant noise impact associated with the operation of the Project, including shunting and maintenance activities at the SSS, ventilation systems and ancillary equipments at ventilation buildings, WKT and SSS. Impacts from these sources will be assessed in the EIA study.

3.2.3 Water Quality

Key sources of water quality impact during the operational phase would include:

- Runoff from rail track and operational tunnel drainage;
- Sewage from WKT operation;
- Discharge from seawater cooling system for WKT;
- Operational SSS runoff
- Wastewater generated by train washing and maintenance facilities at SSS
- Sewage from canteen and workforce of SSS

3.2.4 Waste Management

Municipal waste, including litter, foodstuffs, plastics, office waste and cleaning materials will be generated during the operation of the XRL. Scrap materials from rail and rolling stock maintenance, and chemical wastes including spent lubricating oil, solvent and acid/alkali will also arise from maintenance activities of the Project.

3.2.5 Hazard

Quantitative risk assessment study would be conducted if necessary to identify precautionary and / mitigation measures that may be needed for controlling the level of risk associated with any identified PHIs to within acceptable criteria.

3.2.6 Ecology

It is anticipated that the potential impacts to habitat types will be less severe than those identified for the construction phase and will be assessed in details during the EIA process.

3.2.7 Fisheries Impact

Fisheries impact during operation is not expected.

3.2.8 Historical and Cultural Heritage Impacts

No direct historical and cultural heritage impacts are expected during the operation of the XRL.

3.2.9 Land Contamination

No land contamination impacts are expected during the operation of the proposed railway.

3.2.10 Landscape and Visual

Potential landscape impacts will result from the permanent loss of landscape and trees arising from the Project. As XRL is mostly underground, visual impact is mainly contributed by the above ground structures such as ventilation buildings, stabling sidings and maintenance facility.

4 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 EXISTING AND PLANNED SENSITIVE RECEIVERS

The major sensitive receivers and sensitive parts of the natural environment, which might be affected by the Project, are listed below. The list of sensitive receivers is not exhaustive and will be reviewed during the EIA stage.

Table 4.1 Major Sensitive Receivers within 300m

Types	Sensitive Receivers
Residential Developments	The Arch, The Waterfront, Central Park, planned residential development next to Yan Cheung Road, The Victoria Towers, Residential blocks along Man Cheong Street, Charming Garden, Park Avenue, Fu Cheong Estate, Metro Harbour View, Yau Ma Hom Resite Village, Sau Shan House, Tse Uk Tsuen, Tsat Sing Kong Tsuen, Yau Tam Mei Tsuen, Royal Palms, and proposed residential development at Wo Shang Wai.
Educational Institutions	Yau Ma Tei Catholic Primary School, HKMA David Li Kwok Po College, SKH St. Andrew's Primary School, SKH St. Mary's Church Mok Hing Yiu College, Tack Ching Girl's Secondary School, St. Margaret's Co-educational English Secondary & Primary School, Ying Wa College, Po Leung Kuk Tong Nai Kan College, Tsuen Wan Lutheran School, Kam Tin Mung Yeung Public School.
Performance Venues	Future performance venues in West Kowloon Cultural District.
Water Courses	Inshore waters of Victoria Harbour, nullah and streams flowing to Kam Tin River, and ponds at Wo Shang Wai, and Mai Po.
Areas of conservation value	Tai Mo Shan Country Park, Shing Mun Country Park, Lam Tsuen Country Park, Mai Po wetlands, agricultural land and grasslands at Wo Shang Wai, and Mai Po Inner Deep Bay Ramsar Site.
Site of Cultural Heritage	Mai Po, Ngau Tam Mei, Yuen Shan, and Tsat Sing Kong Archaeological Sites and Lai Chi Kok Hospital

5 ENVIRONMENTAL PROTECTION MEASURES AND IMPLICATIONS

5.1 POTENTIAL MEASURES TO MINIMIZE ENVIRONMENTAL IMPACTS

Potential measures are outlined below to minimise environmental impacts. These measures will be further reviewed during the EIA process.

5.1.1 Construction Phase

Air Quality

Good site practices and relevant dust control measures set out in the Air Pollution Control (Construction Dust) Regulations will be implemented to control the dust impacts on the nearby sensitive receivers. With the mitigation measures in place, it is expected that the construction dust impact will be minimized to acceptable levels.

Noise

General site practices including the location of noisy machinery away from sensitive receivers; the use of silencers, mufflers and acoustic shields on plant and equipment; regular maintenance of plant and equipment; and the reduction in number of machines used at any one time, will be adopted as needed to control noise impacts.

Water Quality

Water quality impact mitigation measures will be implemented in accordance with the Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN 1/94) such as drainage facilities to control site runoff, wheel washing facilities, proper toilet facilities and comprehensive waste management procedures.

Waste Management

Mitigation measures to control waste will include adoption of good housekeeping practices, sorting and segregation of wastes for reuse and disposal. Potential disposal outlets and opportunities for re-use of the excavated materials will be studied in details.

Hazard

Potential hazards associated with the use of explosives for the drill and blast tunnels will be assessed and taken into consideration. Necessary mitigation measures will be proposed during EIA process.

Ecology

Ecological impacts will be avoided as far as practicable. Appropriate mitigation measures will be developed and implemented to mitigate the construction phase impacts.

Fisheries

Appropriate construction site management protocols will be adopted to avoid impact on fisheries due to pollution of watercourses.

Historical and Cultural Heritage

Detail assessment will be carried out during the EIA process to assess the potential cultural heritage impact and the mitigation measures required.

Land Contamination

The extent of land contamination and the required remediation method will be determined based on results of available ground investigation and assessment conducted during the EIA stage. Licensed waste collectors will collect and transport contaminated materials for disposal. Vehicles used for transporting the materials will be suitably covered to limit dust emissions, and the truck bodies and tailgates will be properly sealed to prevent any spillage.

Landscape and Visual Impact

Landscape and visual impact mitigation measures such as the following may be recommended for the construction stage subject to the detailed assessment under the EIA:

- i) Avoidance of impacts on adjacent landscape by minimising temporary works areas;
- ii) Avoidance of impacts on existing mature trees and transplantation will only be recommended where unavoidable. Tree felling will be undertaken as a last resort;
- iii) Temporary reprovision of open space for any public open spaces affected by construction works;
- iv) Control of night-time lighting; and
- v) Erection of decorative screen hoarding.

5.1.2 Operational Phase

Noise

Ground borne noise will be mitigated with appropriate trackform design. For air-borne railway noise and fixed plant noise, adequate noise control treatment such as barriers, silencers, acoustic louvres, and quiet plant will be adopted.

Ecology

Appropriate mitigation measures will be developed during the EIA process and implemented to mitigate the potential ecological impact due to XRL operation.

Landscape and Visual

Landscape and visual mitigation measures such as, tree transplanting, re-instatement of excavated areas, sensitive architectural design, buffer planting, and screening planting, will be implemented to minimize visual impacts due to the above ground structures of XRL.

Water Quality

Tunnel effluents will be collected and discharged to the nearest public sewers where available. Sewage and wastewater effluent generated from WKT will also be discharged to the nearby public sewer.

Sewage and wastewater arising along the alignment in the rural area such as those from the SSS at Shek Kong, where no main sewer is currently available, will be collected by a holding tank or septic tank and to be emptied by licensed contractor.

Waste Management

Waste management practices will be implemented to minimize waste generation and maximize waste recovery and recycling.

Chemical wastes will be stored, handled, transported and disposed of in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation and Code of Practice on Packaging, Labelling and Storage of Chemical Waste*.

5.2 POTENTIAL SEVERITY, DISTRIBUTION AND DURATION OF ENVIRONMENTAL EFFECTS

It is anticipated that the construction works will commence in 4th quarter of 2009 with completion targeted for 2015. Air, noise, water, waste, ecology, and landscape and visual impacts will be the potential issues during construction phase. It is expected that proven means of mitigation in most instances will be sufficient to mitigate adverse environmental impacts.

5.3 ENVIRONMENTAL BENEFITS

The XRL will provide high speed, safe, comfortable and high quality transport services between Hong Kong and major cities of Mainland China. Hong Kong will be better integrated into Pearl River Delta and the wider region of Mainland China.

The XRL offers an alternative transportation choice for the public. It encourages people to use an environmentally friendly public transport and thus benefits the environment by reducing air and noise pollution problem and other associated deleterious effects generated by automobile usage.

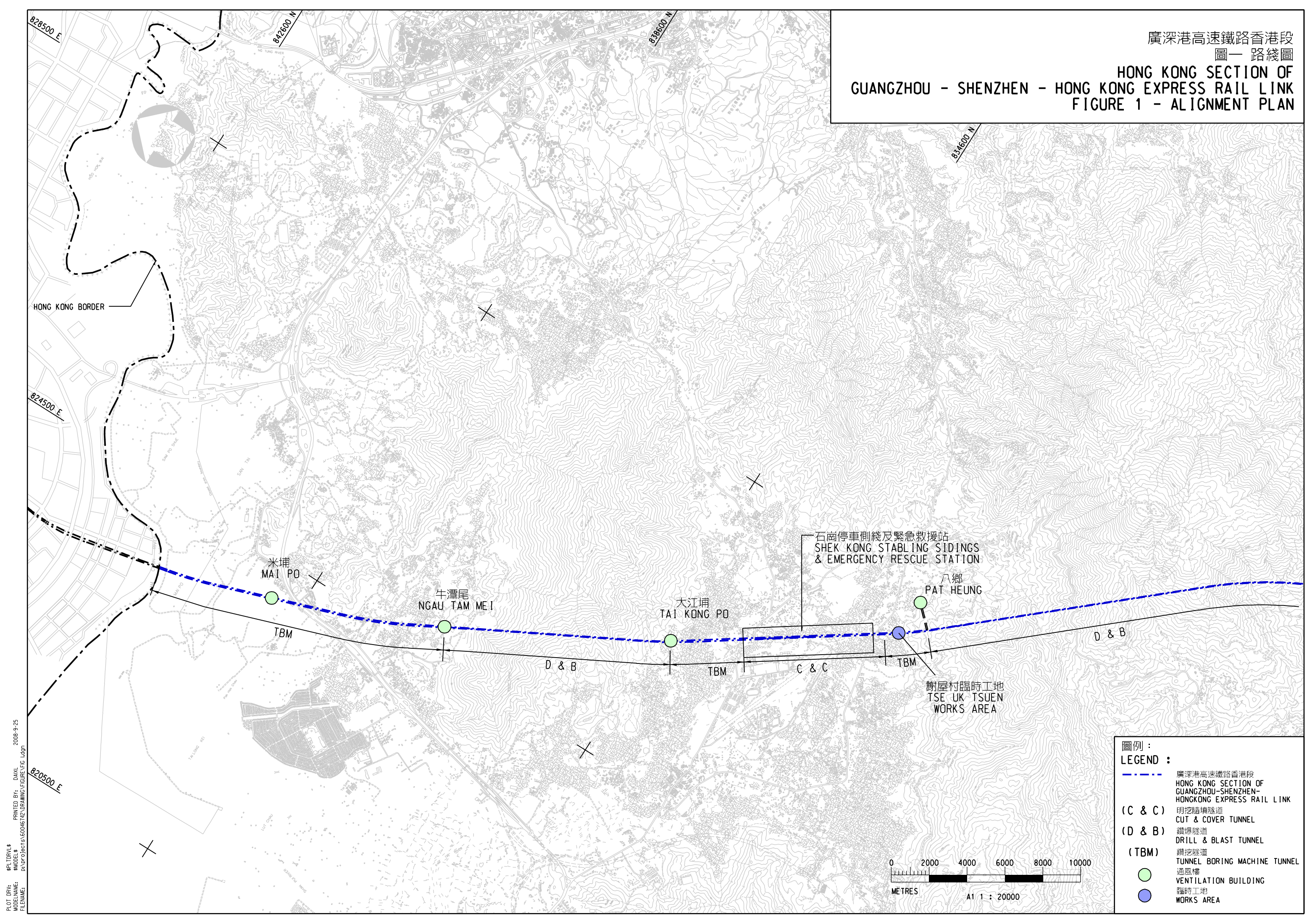
6 USE OF PREVIOUSLY APPROVED EIA REPORTS

No previously approved report exists for the project. However, reference may be made within the study area from the following reports:

- i) EIA Reports of KCRC LMC Spur Line (EIA-071/2001)
- ii) EIA Report of Kowloon Southern Link (EIA-098/2004)

Reference will also be made to the approved EIA reports on the EIAO register for other developments that will potentially interface with the Project.

HONG KONG SECTION OF
GUANGZHOU - SHENZHEN - HONG KONG EXPRESS RAIL LINK
FIGURE 1 - ALIGNMENT PLAN



圖例：
LEGEND：

— — — 廣深港高速鐵路香港段
HONG KONG SECTION OF
GUANGZHOU-SHENZHEN-
HONGKONG EXPRESS RAIL LINK

(C & C) 明挖隨填隧道
CUT & COVER TUNNEL

(D & B) 鑽爆隧道
DRILL & BLAST TUNNEL

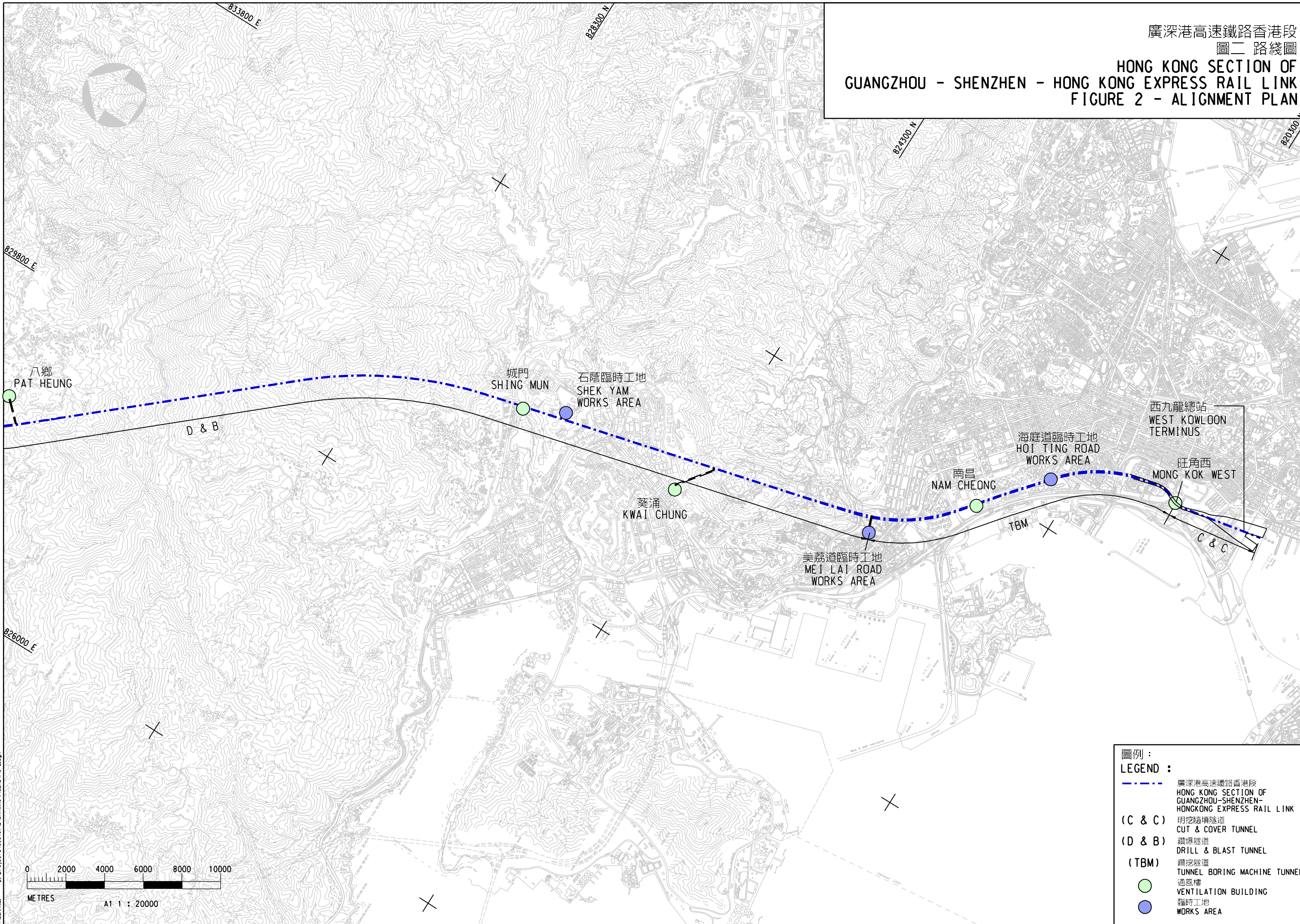
(TBM) 鑽挖隧道
TUNNEL BORING MACHINE TUNNEL

● 通風樓
VENTILATION BUILDING

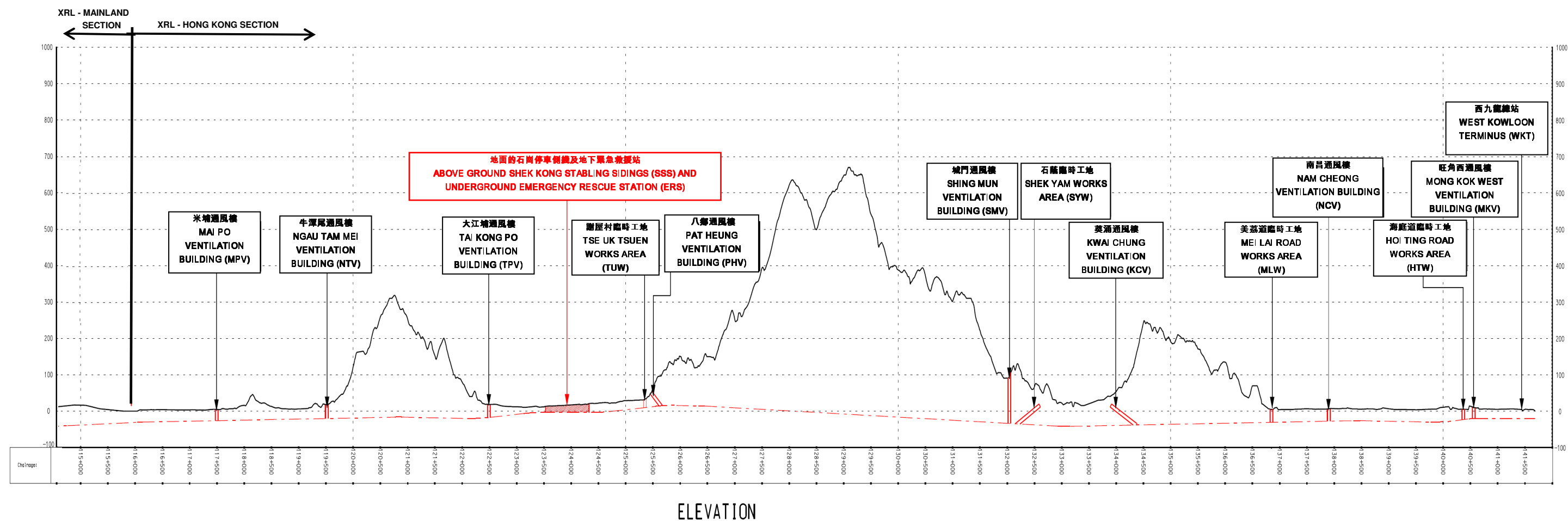
● 臨時工地
WORKS AREA

PLOT DRW: \$PLTDRAWL\$
MODEL: \$MODEL\$
FILENAME: D:\projects\60046742\DRAWING\FIGURE1.C Legn
PRINTED BY: DAKL 2008-9-25

廣深港高速鐵路香港段
圖二 路線圖
HONG KONG SECTION OF
GUANGZHOU - SHENZHEN - HONG KONG EXPRESS RAIL LINK
FIGURE 2 - ALIGNMENT PLAN



- 圖例：
LEGEND：
- 廣深港高速鐵路香港段
HONG KONG SECTION OF
GUANGZHOU-SHENZHEN-
HONGKONG EXPRESS RAIL LINK
 - (C & C) 明挖隨填隧道
CUT & COVER TUNNEL
 - (D & B) 鑽爆隧道
DRILL & BLAST TUNNEL
 - (TBM) 鑽挖隧道
TUNNEL BORING MACHINE TUNNEL
 - 通風樓
VENTILATION BUILDING
 - 臨時工地
WORKS AREA



廣深港高速鐵路香港段
圖三 - 路線縱向切面圖
HONG KONG SECTION OF
GUANGZHOU - SHENZHEN - HONG KONG EXPRESS RAIL LINK
FIGURE 3 - ALIGNMENT VERTICAL PROFILE