# Trunk Road T2

## Project Profile

**Civil Engineering and Development Department**

**March 2009**

# Contents



**LIST OF DRAWINGS**

Drawing No. KZ555 - Trunk Road T2

Drawing No. KZ579 - Locations of Sensitive Receivers

# 1 BASIC INFORMATION

## 1.1 Project Title

1.1.1 Trunk Road T2

## 1.2 Purpose and Nature of the Project

1.2.1 This project profile covers a designated project, namely Trunk Road T2 (T2).

1.2.2 T2, together with the proposed Central Kowloon Route (CKR) and Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) will form a new strategic highway network, namely, Route 6. Route 6 will provide an east-west express link between West Kowloon and Tseung Kwan O. Route 6 will also provide the necessary relief to the existing heavily trafficked road network in the central and eastern Kowloon as well as Tseung Kwan O and reduce the related environmental impacts on these areas.

1.2.3 T2 is a dual two-lane trunk road of about 3.6 kilometres (km) long with 2.6km long of tunnel. T2 will play the role as a connector linking up the CKR and the TKO-LTT.

## 1.3 Name of Project Proponent

1.3.1 Kowloon Development Office, Civil Engineering and Development Department, HKSAR Government

## 1.4 Location and Scale of Project and History of Site

1.4.1 South East Kowloon Development Comprehensive Feasibility Study (SEKDCFS) was commissioned in November 1999 to prepare detailed proposal and examine the overall feasibility for the Outline Master Development Plan. The alignment of T2 was endorsed under the SEKDCFS. The endorsed alignment would run at grade and tunnel at former Kai Tak South Apron in order to pass the various planned development. It then rose again near How Ming Street junction and link to the bridge deck section and then connected to TKO-LTT.

1.4.2 In January 2004, the Court of Final Appeal handed down the Judgment on the draft Wan Chai North Outline Zoning Plan, clarifying the legal principles behind the Protection of the Harbour Ordinance, that the “presumption against reclamation” in the harbour can only rebutted by meeting the “overriding public need” test. The OMDP prepared under SEKDCFS comprised extensive reclamation and therefore was required to be reviewed.

1.4.3 In July 2004, Kai Tak Planning Review (KTPR) was commissioned to review the SEKDCFS with “no reclamation” as the planning basis. Under KTPR, T2 was replanned as a submerged tunnel. Preliminary assessments indicated that T2 in form of submerged tunnel could maintain the role to play as connector connecting CKR and TKO-LTT.

1.4.4 Under the preliminary assessment, the alignment of T2 starts on at-grade level of

former Kai Tak South Apron heading to Kwun Tong Typhoon Shelter (KTTS) with descending gradient and then encroaches on KTTS in form of tunnel fully embedded into seabed. The tunnel rises again to landfall at Cha Kwo Ling Public Cargo Working Area (CKL PCWA).

1.4.5 The tunnel section of 600 metres (m) long approximately at land side will be constructed by cut and cover method while the tunnel section of 2,000m long approximately at sea side will be constructed by immersed tube method. With this arrangement, temporary reclamation will be required for the landfall structures at both end of immersed tube tunnel.

1.4.6 The schematic layout of Trunk Road T2 is shown on Drawing No. KZ555.

1.4.7 The scope of the Project includes the following:

- a dual two-lane trunk road of about 3.6km long with about 2.6km in form of tunnel;
- temporary reclamation for construction of the tunnel (extent of temporary reclamation less than 5ha), temporary relocation of existing breakwaters of the Kwun Tong Typhoon Shelter and reconstruction of sewage submarine outfall at the Kwun Tong Preliminary Treatment Works;
- ventilation and administration buildings and a traffic control and surveillance system; and
- associated civil, electrical, mechanical, landscaping and environmental protection and mitigation works.

## 1.5 Number and Types of Designated Projects to be covered by the Project Profile

1.5.1 This project profile covers the following Designated Project under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO):

- Trunk Road T2 is a designated project under Schedule 2, Part I, A.1, A.7, C.12 and F.6 of the EIAO.

## 1.6 Name and Telephone Number of Contact Person

1.6.1 All enquiries regarding the project can be addressed to:

Mr. MAK CHI BIU

Chief Engineer/Kowloon East

Kowloon Development Office

Civil Engineering and Development Department

Tel. No.: 2301 1455

Fax No.: 2369 4980

# 2 OUTLINE OF PLANNING AND IMPLEMENATION PROGRAMME

## 2.1 Project Implementation Time Table

2.1.1 The Project Proponent will engage consultants to undertake environmental impact assessment (EIA) Study, design and supervision of construction of the project.

2.1.2 The tentative implementation programme is as follows:

Detailed Design and Tendering ..... mid 2009 – early 2012

Construction .....early 2012 – end 2016

## 2.2 Interactions with Other Projects

2.2.1 The project may have interaction with other projects including, but not limited to the following:

- Central Kowloon Route (CKR)
- Tseung Kwan O – Lam Tin Tunnel (TKO-LTT)
- Kai Tak Development

# 3 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

## 3.1 Major existing and planned sensitive receivers

3.1.1 The major existing and planned sensitive receivers that might be affected by the Project during construction and operational phases are tabulated in **Table 3.1** and shown on Drawing No. KZ579.

**Table 3.1 Major existing and planned sensitive receivers**

| No | Sensitive Receivers | Type | Status |
|---|---|---|---|
| 1 | Undesignated Government Site at former South Apron | Government | Planned |
| 2 | Hospital at former South Apron | Hospital | Planned |
| 3 | Yau Fook Building at Cha Kwo Ling Road | Residential | Existing |
| 4 | Kam See Building at Cha Kwo Ling Road | Residential | Existing |
| 5 | Kar Hing Building at Cha Kwo Ling Road | Residential | Existing |
| 6 | Hoi Chu Building at Cha Kwo Ling Road | Residential | Existing |
| 7 | Wai Shun Building at Cha Kwo Ling Road | Residential | Existing |
| 8 | Cheung Lee Building at Cha Kwo Ling Road | Residential | Existing |
| 9 | Cha Kwo Ling Building at Cha Kwo Ling Road | Residential | Existing |
| 10 | Cha Kwo Ling Tsuen | Residential | Existing |
| 11 | Laguna City | Residential | Existing |
| 12 | Kai Fuk Industrial Centre | Commercial | Existing |
| 13 | Hong Leong Industrial Complex | Commercial | Existing |
| 14 | Hong Kong International Trade & Exhibition Centre | Commercial | Existing |
| 15 | Enterprise Square V | Commercial | Existing |
| 16 | Commercial developments at southern end of former South Apron | Commercial | Planned |

# 4 POSSIBLE IMPACT ON THE ENVIRONMENT

## 4.1 Air Quality

Construction Phase

4.1.1 Possible air quality impacts during construction phase of the Project include:

- fugitive dust arising from any land side construction activities including demolition and construction of structures, movement of construction traffic over the site area, and wind erosion of open sites and stockpiling areas;
- cumulative impact of fugitive dust resulting from any adjacent construction works.

Operational Phase

4.1.2 Operational phase air quality impact arising from the Project would be vehicle emissions of Nitrogen Dioxide ($NO_2$) and Respirable Suspended Particulates (RSP) from traffic on the proposed Trunk Road T2 at open road sections and portals and ventilation buildings of the road tunnel. Cumulative air quality impact from vehicle emissions of other existing and planned connecting road networks including the proposed CKR and TKO-LTT, the existing Kai Tak Tunnel and Eastern Harbour Crossing could have adverse impact on the nearby ASRs and mitigation measures may need to be considered.

## 4.2 Noise Impact

Construction Phase

4.2.1 Construction noise will be generated from various phases of construction activities including construction of roads and landfalls, temporary reclamation, temporary relocation of breakwaters, dredging and installation for immersed tube tunnel, reconstruction of submarine outfall and construction of ventilation building at Kai Tak South Apron & Cha Kwo Ling by use of Powered Mechanical Equipment (PME).

4.2.2 Noise sensitive receivers (NSRs) such as residential premises and schools in the vicinity of the work sites may be impacted.

Operational Phase

4.2.3 The key noise impact on NSRs would be operational phase traffic noise.

4.2.4 Fixed plant noise impact from the ventilation buildings would likely be a concern and appropriate mitigation measures may be required.

## 4.3 Water Quality

Construction Phase

4.3.1 Dredging, disposal of dredged materials and installation for the immersed tube tunnel, temporary reclamation, temporary relocation of breakwaters and reconstruction of submarine outfall would be the key water quality impact associated with the construction of the Project. During dredging and reconstruction of submarine outfall activities, there could be temporary elevation in concentrations of suspended solids and generation of sediment plumes, possible release of organic and inorganic contaminants and nutrients as well as creation of potential embayment, which may affect the water quality of Kwun Tong Area. Appropriate mitigation measures may need to be recommended.

Operational Phase

4.3.2 Water quality impact during the operational phase of the Project is considered negligible, as the impact would be confined to the road surface runoff.

## 4.4 Wastes Management Implications

Construction Phase

4.4.1 Wastes generated by the construction works are likely to include site wastes, chemical wastes, and construction wastes and dredged sediment. The possible presence of contaminated sediments that may require dredging and disposal will need to be determined.

Operational Phase

4.4.2 Wastes generated during the operation phase would be limited and adverse environmental impacts are not expected to arise from the operation of the Project.

## 4.5 Land Contamination

Construction Phase

4.5.1 According to the approved EIA Report on Decommissioning of the Former Kai Tak Airport Other than the North Apron land contamination site was identified in the South Apron area. The identified land contamination will be remediated and no residual impact would be expected during the construction phase of this Project.

Operational Phase

4.5.2 No land contamination issue is expected.

## 4.6 Ecological Impact

Construction Phase

*Marine Ecology*

4.6.1 Direct loss of marine habitats (soft bottom seabed and intertidal) and associated benthos and intertidal assemblage would be resulted from dredging, disposal of dredged materials and installation for the immersed tube tunnel, temporary reclamation, temporary relocation of breakwaters and reconstruction of submarine outfall. Potential indirect water quality impact to nearby marine habitats (i.e. subtidal and artificial intertidal) and associated subtidal and intertidal communities may also occur, which in turn may reduce food availability for waterbirds found along the coastlines of the Kai Tak area. These potential impacts would be adequately assessed and addressed in the EIA study. Marine ecological survey(s), if necessary, would be conducted to fill in any information gap identified and update the existing ecological baseline condition.

*Terrestrial Ecology*

4.6.2 As the land-based construction activities would be confined to developed area at Kai Tak South Apron and Cha Kwo Ling, potential direct (i.e. tree removal) and indirect (i.e. noise and human disturbance) impacts to terrestrial ecological resources are expected to be minimal and acceptable.

Operational Phase

*Marine Ecology*

4.6.3 No potential operational phase impact to marine ecological resources is expected.

*Terrestrial Ecology*

4.6.4 Potential indirect disturbance impact to existing wildlife due to increased level of traffic noise and human activities during the operation of Trunk Road T2 would be resulted but is expected to be negligible.

## 4.7 Fisheries Impact

Construction Phase

4.7.1 Temporary loss of fishing ground would be resulted during dredging, disposal of dredged materials and installation for the immersed tube tunnel, temporary reclamation, temporary relocation of breakwaters and reconstruction of submarine outfall. Potential indirect impact to existing fisheries resources due to changes of water quality may also be resulted, which may require implementation of proper water control measures.

Operational Phase

4.7.2 No potential operational phase impact to fisheries resources and fishing operation is expected to occur.

## 4.8 Visual and Landscape Impacts

Construction Phase

4.8.1 Landscape and visual impacts are expected from construction works such as road construction, site cabins, construction plant, etc. Nevertheless, the impacts would be temporary and can be minimized by appropriate mitigation measures.

Operational Phase

4.8.2 During operation phase, potential landscape impacts may arise from disturbance of landscape resource (e.g. trees) and potential visual impacts from the above ground structures such as roads, viaducts, and ventilation buildings. These potential impacts will need to be addressed.

## 4.9 Cultural Heritage

4.9.1 No cultural heritage issues are expected during construction and operation of the proposed project.

# 5 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

## 5.1 Air Quality Impact

5.1.1 Construction dust would not be an issue with the implementation of proper dust control and suppression measures as stipulated in the Air Pollution Control (Construction Dust) Regulation.

5.1.2 For operational phase air quality impact, reference will be made to the Air Pollution Control Ordinance (APCO) (Cap. 311) and the guiding Hong Kong Air Quality Objectives (AQOs) for the accepted levels of pollution for the sensitive receivers. Mitigation measures will be developed to address any exceedance found and the necessary performance and implementation of these measures will be documented in the EIA study.

## 5.2 Noise Impact

5.2.1 With the application of mitigation in the form of quieter mechanical plant, installation of movable noise barriers, reduction in number of plant and on-time percentage powered mechanical equipment, etc, construction noise criteria would normally be complied with and no adverse residual impacts would be expected during construction phase.

5.2.2 Operational traffic noise arising from the new roads would be minimized with the implementation of noise mitigation measures.

## 5.3 Water Quality Impact

5.3.1 Mitigation measures during any necessary dredging and filling operations would include:

- installation of silt curtains during dredging works;
- reduction of the dredging rate, use of tightly closed grabs, and control of grab descending speed to minimize disturbance to the seabed and sediment loss during dredging.

5.3.2 For land-based construction activities, water quality impact would be readily mitigated with the adoption of good site arrangement and management practices.

## 5.4 Waste Management Implications

5.4.1 Standard waste management measures and good site practices in waste handling, disposal and transportation would be implemented.

5.4.2 The requirements and procedures for dredged mud disposal under the Environment, Transport and Works Bureau Technical Circular No. 34/2002 would be followed.

## 5.5 Land Contamination

5.5.1 No land contamination issue is expected.

## 5.6 Ecological Impact

5.6.1 Compensatory planting of native trees would mitigate any tree loss. To avoid and/or minimize any adverse impacts to marine environment, alternative construction method, minimizing size of dredging area, re-provision of artificial seawall and use of closed-grab dredger and silt curtains would be suggested as necessary to mitigate potential direct and indirect impacts on existing marine ecological resources.

## 5.7 Fisheries Impact

5.7.1 Water control measures such as closed-grab dredger and silt curtains would be deployed to protect existing fisheries resources from adverse water quality impact due to dredging activities.

## 5.8 Landscape and Visual Impact

5.8.1 The following mitigation measures should be implemented:

Construction Phase

- Avoid or minimize disturbance to significant landscape resources;
- Mitigate unavoidable landscape impacts through compensatory planting or transplantation; and
- Use decorative screen hoarding and control night time lighting.

Operational Phase

- Landscape planting for the Project and reinstatement of planted areas; and
- Aesthetic architectural design including colour and finishes of any visible structure.

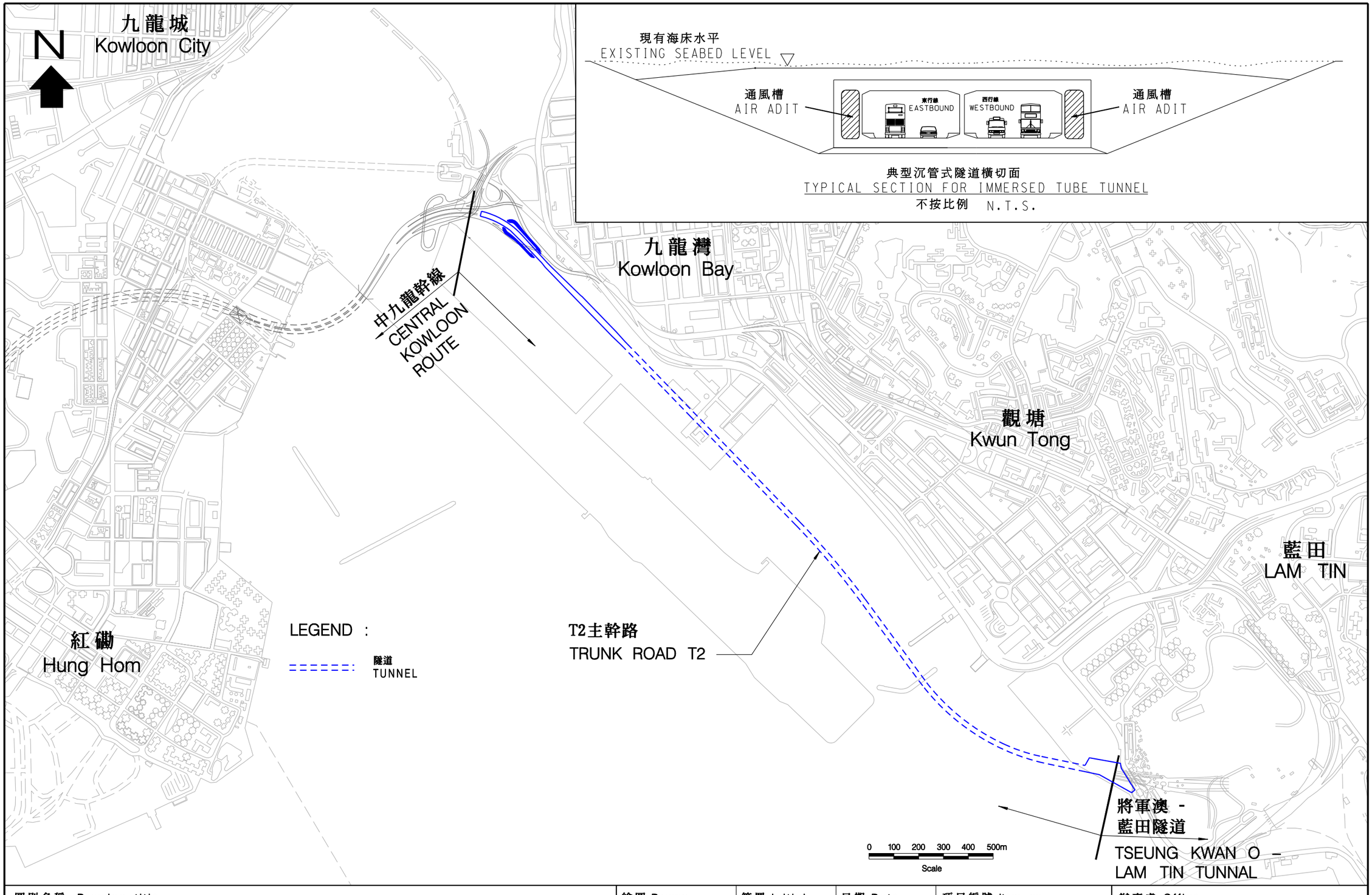
## 5.9 Cultural Heritage

5.9.1 No cultural heritage issue is expected.

# 6 USE OF PREVIOUSLY APPROVED EIA REPORTS

The following approved EIA Reports will be referred in the Study:

- Kai Tak Airport North Apron Decommissioning (EIA Register No. AEIAR-002/1998, approved with conditions on 4 Sep 1998)
- Comprehensive Feasibility Study for the Revised Scheme of South East Kowloon Development (EIA Register No. AEIAR-044/2001 approved with conditions on 25 Sep 2001)
- Further Development of Tseung Kwun O Feasibility Study (EIA Register No. AEIAR-092/2005, approved without conditions on 8 Dec 2005)
- Dredging Works for Proposed Cruise Terminal at Kai Tak (EIA Register No. AEIAR-115/2007, approved without conditions on 19 Dec 2007)
- Decommissioning of the Former Kai Tak Airport Other than the North Apron (EIA Register No. AEIAR-114/2007, approved with conditions on 19 Dec 2007)
- Kai Tak Development (EIA Register No. AEIAR-130/2009, approved without conditions on 4 Mar 2009)




圖則名稱 Drawing title

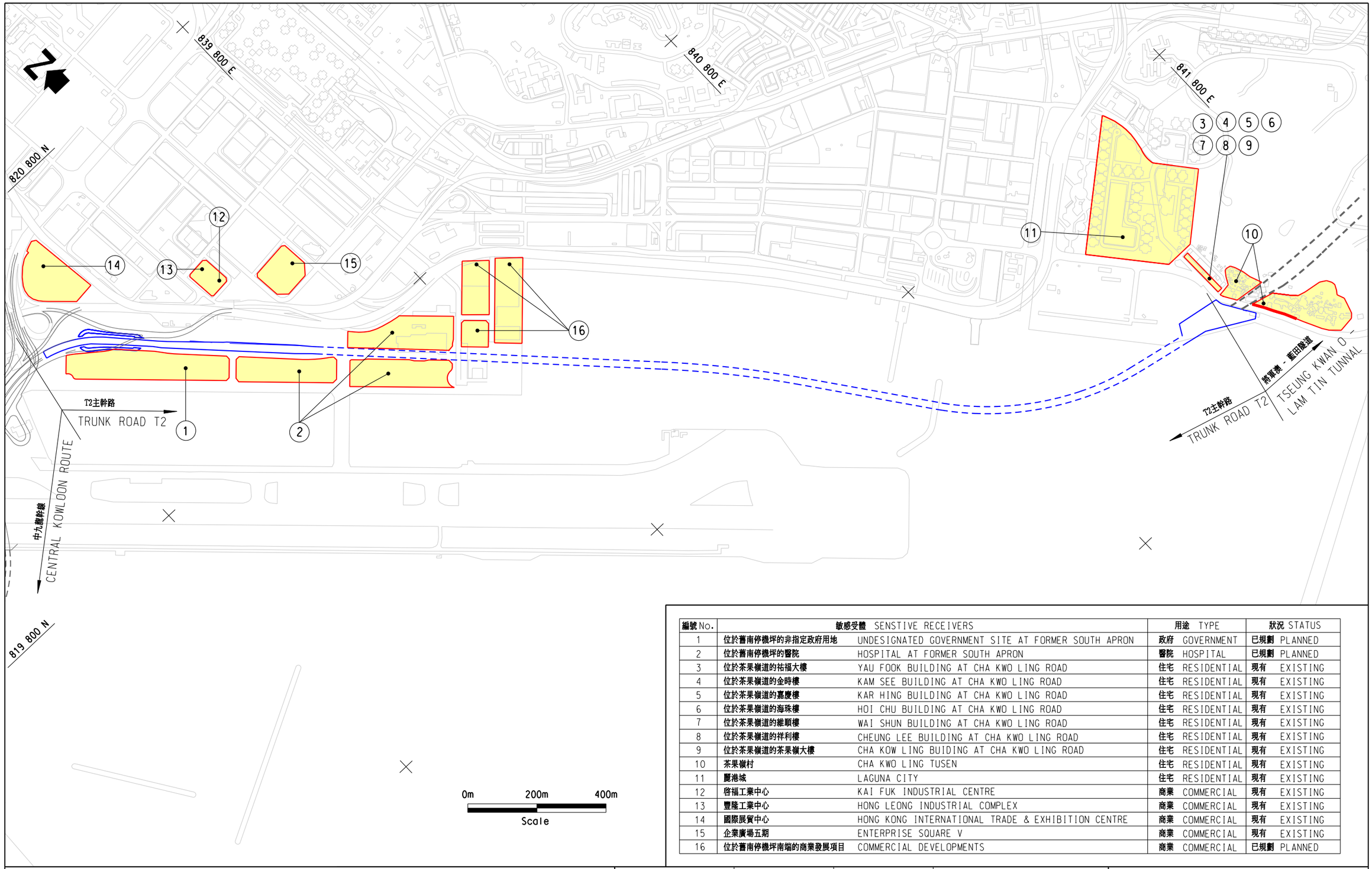
# T2主幹路
# TRUNK ROAD T2

| | | | |
|---|---|---|---|
| 繪圖 Drawn: Tony Tsui | 簽署 Initial: signed | 日期 Date: 9 Dec 2008 | 項目編號 Item no.: – N.A. – |
| 核對 Checked: David Leung | 簽署 Initial: signed | 日期 Date: 9 Dec 2008 | 比例尺 Scale: As shown |
| 核准 Approved: – N.A. – | 簽署 Initial: – N.A. – | 日期 Date: – N.A. – | 圖則編號 Drawing no.: KZ 555 |

辦事處 Office

九龍拓展處
KOWLOON DEVELOPMENT OFFICE

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT




| 編號 No. | 敏感受體 SENSTIVE RECEIVERS | | 用途 TYPE | 狀況 STATUS |
|---|---|---|---|---|
| 1 | 位於舊南停機坪的非指定政府用地 | UNDESIGNATED GOVERNMENT SITE AT FORMER SOUTH APRON | 政府 GOVERNMENT | 已規劃 PLANNED |
| 2 | 位於舊南停機坪的醫院 | HOSPITAL AT FORMER SOUTH APRON | 醫院 HOSPITAL | 已規劃 PLANNED |
| 3 | 位於茶果嶺道的祐福大樓 | YAU FOOK BUILDING AT CHA KWO LING ROAD | 住宅 RESIDENTIAL | 現有 EXISTING |
| 4 | 位於茶果嶺道的金時樓 | KAM SEE BUILDING AT CHA KWO LING ROAD | 住宅 RESIDENTIAL | 現有 EXISTING |
| 5 | 位於茶果嶺道的嘉慶樓 | KAR HING BUILDING AT CHA KWO LING ROAD | 住宅 RESIDENTIAL | 現有 EXISTING |
| 6 | 位於茶果嶺道的海珠樓 | HOI CHU BUILDING AT CHA KWO LING ROAD | 住宅 RESIDENTIAL | 現有 EXISTING |
| 7 | 位於茶果嶺道的維順樓 | WAI SHUN BUILDING AT CHA KWO LING ROAD | 住宅 RESIDENTIAL | 現有 EXISTING |
| 8 | 位於茶果嶺道的祥利樓 | CHEUNG LEE BUILDING AT CHA KWO LING ROAD | 住宅 RESIDENTIAL | 現有 EXISTING |
| 9 | 位於茶果嶺道的茶果嶺大樓 | CHA KOW LING BUIDING AT CHA KWO LING ROAD | 住宅 RESIDENTIAL | 現有 EXISTING |
| 10 | 茶果嶺村 | CHA KWO LING TUSEN | 住宅 RESIDENTIAL | 現有 EXISTING |
| 11 | 麗港城 | LAGUNA CITY | 住宅 RESIDENTIAL | 現有 EXISTING |
| 12 | 啓福工業中心 | KAI FUK INDUSTRIAL CENTRE | 商業 COMMERCIAL | 現有 EXISTING |
| 13 | 豐隆工業中心 | HONG LEONG INDUSTRIAL COMPLEX | 商業 COMMERCIAL | 現有 EXISTING |
| 14 | 國際展貿中心 | HONG KONG INTERNATIONAL TRADE & EXHIBITION CENTRE | 商業 COMMERCIAL | 現有 EXISTING |
| 15 | 企業廣場五期 | ENTERPRISE SQUARE V | 商業 COMMERCIAL | 現有 EXISTING |
| 16 | 位於舊南停機坪南端的商業發展項目 | COMMERCIAL DEVELOPMENTS | 商業 COMMERCIAL | 已規劃 PLANNED |

圖則名稱 Drawing title

# 敏感受體位置圖

# LOCATIONS OF SENSITIVE RECEIVERS

| | | | |
|---|---|---|---|
| 繪圖 Drawn: K.Y. LAM | 簽署 Initial: signed | 日期 Date: 12 Feb 2009 | 項目編號 Item no.: – N.A. – |
| 核對 Checked: David LEUNG | 簽署 Initial: signed | 日期 Date: 12 Feb 2009 | 比例尺 Scale: As shown |
| 核准 Approved: – N.A. – | 簽署 Initial: – N.A. – | 日期 Date: – N.A. – | 圖則編號 Drawing no.: KZ 579 |

辦事處 Office

九龍拓展處
KOWLOON DEVELOPMENT OFFICE

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT