

Your ref

Our ref 240700/02.01/MS/JL/YL/0181

# ARUP

Level 5 Festival Walk  
80 Tat Chee Avenue  
Kowloon Tong  
Kowloon  
Hong Kong

t +852 2528 3031

d+852 2268 3395

f+852 2268 3121

mark.swift@arup.com

www.arup.com

## BY HAND

Chief Engineer (Islands)  
Hong Kong Island and Islands Development Office  
Civil Engineering and Development Department  
13th Floor, North Point Govt Offices  
333 Java Road North Point, Hong Kong

Attention: Mr David K C LO

23 October 2015

Dear Sir,

**Agreement No. CE 42/2014 (CE)  
Planning, Engineering and Architectural Study  
for Topside Development at Hong Kong Boundary Crossing Facilities Island  
of Hong Kong-Zhuhai-Macao Bridge – Feasibility Study  
TR8A Project Profile (English and Chinese)**

As requested by your office on 22 October 2015, please find enclosed following documents for your submission to EPD.

1. 26 hard copies of the Project Profile (both English and Chinese versions);
2. 4 CDs containing the Project Profile in html and pdf formats.

Should you have any queries, please do not hesitate to contact Mr. Jack Lam at tel. 2908 4070 via e-mail: Jack.Lam@arup.com or the undersigned.

Yours faithfully



Mark Swift  
Project Manager

- Encl.
- REP-012-04 TR8A Project Profile (English)
  - REP-012-04 TR8A Project Profile (Chinese)
  - 4 CDs

Civil Engineering and Development  
Department & Planning Department

**Agreement No. CE 42/2014 (CE)  
Planning, Engineering and  
Architectural Study for Topside  
Development at Hong Kong  
Boundary Crossing Facilities  
Island of Hong Kong-Zhuhai-  
Macao Bridge – Feasibility Study**

3rd Revised Final TR8A: Project  
Profile

REP-012-04

3rd Revised Final | 22 October 2015

This report takes into account the particular  
instructions and requirements of our client.

It is not intended for and should not be relied  
upon by any third party and no responsibility  
is undertaken to any third party.

Job number 240700

**Ove Arup & Partners Hong Kong Ltd**  
Level 5 Festival Walk  
80 Tat Chee Avenue  
Kowloon Tong  
Kowloon  
Hong Kong  
[www.arup.com](http://www.arup.com)


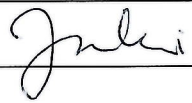

**ARUP**

# Document Verification

# ARUP

<b>Job title</b>		Agreement No. CE 42/2014 (CE) Planning, Engineering and Architectural Study for Topside Development at Hong Kong Boundary Crossing Facilities Island of Hong Kong-Zhuhai-Macao Bridge – Feasibility Study		<b>Job number</b>		240700	
<b>Document title</b>		3rd Revised Final TR8A: Project Profile		<b>File reference</b>		240700/20	
<b>Document ref</b>		REP-012-04					
<b>Revision</b>	<b>Date</b>	<b>Filename</b>	REP-012-00 Draft TR8A Project Profile.docx				
Draft 1	15 April 2015	<b>Description</b>	First draft				
			Prepared by	Checked by	Approved by		
		Name	Various	Jack Lam	Mark Swift		
		Signature					
Final	24 July 2015	<b>Filename</b>	REP-012-01 Final TR8A Project Profile.docx				
		<b>Description</b>	Final				
			Prepared by	Checked by	Approved by		
		Name	Various	Franki Chiu	Mark Swift		
		Signature					
Revised Final	6 October 2015	<b>Filename</b>	REP-012-02 Revised Final TR8A Project Profile.docx				
		<b>Description</b>	Revised Final				
			Prepared by	Checked by	Approved by		
		Name	Various	Franki Chiu	Mark Swift		
		Signature					
2 <sup>nd</sup> Revised Final	16 October 2015	<b>Filename</b>	REP-012-03 2 <sup>nd</sup> Revised Final TR8A Project Profile.docx				
		<b>Description</b>	2 <sup>nd</sup> Revised Final				
			Prepared by	Checked by	Approved by		
		Name	Various	Franki Chiu	Mark Swift		
		Signature					
<b>Issue Document Verification with Document</b> <input checked="" type="checkbox"/>							

# Document Verification

<b>Job title</b>		Agreement No. CE 42/2014 (CE) Planning, Engineering and Architectural Study for Topside Development at Hong Kong Boundary Crossing Facilities Island of Hong Kong-Zhuhai-Macao Bridge – Feasibility Study		<b>Job number</b> 240700	
<b>Document title</b>		3rd Revised Final TR8A: Project Profile		<b>File reference</b> 240700/20	
<b>Document ref</b>		REP-012-04			
<b>Revision</b>	<b>Date</b>	<b>Filename</b>	REP-012-04 3 <sup>rd</sup> Revised Final TR8A Project Profile.docx		
3 <sup>rd</sup> Revised Final	22 October 2015	<b>Description</b>	3 <sup>rd</sup> Revised Final		
			Prepared by	Checked by	Approved by
		Name	Various	Franki Chiu	Mark Swift
		Signature			
		<b>Filename</b>			
		<b>Description</b>			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		<b>Filename</b>			
		<b>Description</b>			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		<b>Filename</b>			
		<b>Description</b>			
			Prepared by	Checked by	Approved by
		Name			
		Signature			

Issue Document Verification with Document



# Contents

---

	Page
<b>1</b>	<b>Basic Information</b> <b>1</b>
1.1	Project Title 1
1.2	Purpose and Nature of the Project 1
1.3	Name of Project Proponent 2
1.4	Location and Scale of Project and History of Site within the HKBCF Island 2
1.5	Number and Types of Designated Projects to be Covered by the Project Profile 3
1.6	Name and Telephone Number of Contact Persons 4
<b>2</b>	<b>Outline of Planning and Implementation Programme</b> <b>5</b>
2.1	Planning and Implementation 5
2.2	Study Programme 5
2.3	Interfacing with Other Projects 5
<b>3</b>	<b>Possible Impact on the Environment</b> <b>7</b>
3.1	General 7
3.2	Existing Available Data 7
3.3	Construction and Operational Environmental Impact 8
<b>4</b>	<b>Major Elements of the Surrounding Environment</b> <b>13</b>
4.1	Existing and Planned Sensitive Receivers 13
4.2	Major Elements of the Surrounding Environment and Land Uses 13
<b>5</b>	<b>Environmental Mitigation Measures to be Incorporated in the Design and any further Environmental Implications</b> <b>16</b>
5.1	Measures to Minimize Environmental Impacts 16
5.2	Severity, Distribution and Duration of Environmental Effects and Further Implications 21
<b>6</b>	<b>Use of Previously Approved EIA Reports</b> <b>22</b>
<b>Appendix</b>	
Appendix A Project Area	

# 1 Basic Information

---

## 1.1 Project Title

**1.1.1** Planning, Engineering and Architectural (PEA) Study for Topside Development at Hong Kong Boundary Crossing Facilities (HKBCF) island of Hong Kong-Zhuhai-Macao Bridge – Feasibility Study.

## 1.2 Purpose and Nature of the Project

**1.2.1** The western Pearl River Delta (PRD) has undergone rapid development in recent years. When the Hong Kong-Zhuhai-Macao Bridge (HZMB) and the Tuen Mun-Chek Lap Kok Link (TM-CLKL) are completed in a couple of years, Lantau will become an essential connecting point for journeys to and from Hong Kong, Zhuhai and Macao and other nearby cities in the western PRD. Based on the previous Feasibility Study of HZMB, it is projected that the HKBCF would have a daily patronage of 9,200 to 14,000 vehicles and 55,850 to 69,200 passengers in Year 2016.

**1.2.2** The HKBCF island has an area of about 150 hectares (about 130 hectares for HKBCF and about 20 hectares for Tuen Mun – Chek Lap Kok Link Southern Landfall). With its proximity to the Hong Kong International Airport (HKIA) and being part of the regional multi-modal transport hub, it will serve as a gateway for Hong Kong and western PRD and will take on great value for development of “bridgehead economy”. Utilisation of land at the HKBCF island for the commercial development and the development of other activities, such as shopping, dining, entertainment, hotel facilities, convention and exhibition venues, creativity industries and logistics industries can capitalise on this unique locational advantage for developing “bridgehead economy”. It can also create synergy among HKIA, AsiaWorld-Expo, the North Commercial District (NCD) on the airport island, the planned Three-Runway System (3RS) Project of HKIA, and other tourist and business destinations on Lantau. The commercial development and the development of other economic activities can create job opportunities on Lantau and Hong Kong as a whole.

**1.2.3** A preliminary review of supporting infrastructure has been carried out to explore the feasibility of developing commercial development and the development of other economic activities at the HKBCF island. It is concluded that the proposed commercial development and the development of other economic activities will have substantial interfaces with the HKBCF during the construction and operation stages, including the customs, immigration and quarantine activities within the designated “Closed Area” and re-provisioning of the affected facilities on a temporary or permanent basis. As such, the architectural feasibility of integrating commercial development and the development of other economic activities with those boundary crossing facilities has to be examined through a study. Moreover, a convenient and highly accessible transport network facilitating vehicular, pedestrian and rail connectivity between the proposed

development and the NCD, HKIA, Tung Chung and the surroundings will be required to create synergy for developing a successful “bridgehead economy”. Additional engineering infrastructure works including sewerage system and other utilities will also be required to support the proposed commercial development and the development of other economic activities.

**1.2.4** Currently, the HKBCF island is zoned “Other Specified Uses” annotated “Boundary Crossing Facilities” on the draft Chek Lap Kok Outline Zoning Plan (OZP) No. S/I-CLK/13 and subject to maximum building height ranging from +15mPD to +45mPD. The HKBCF island is also subject to the Airport Height Restrictions (AHRs), which range from +30mPD to +50mPD at present (may be subject to possible revision in relation to the planned 3RS), and will impose constraints on the proposed topside development.

**1.2.5** With the vision of optimising the development potential of the HKBCF island, a PEA Study is proposed to examine the opportunities for commercial development and the development of other economic activities on the HKBCF island through topside and underground space developments at the public transport interchange (PTI), public parking and other areas; to ascertain and optimise the scope and scale of the proposed commercial development and the development of other economic activities; to recommend the phasing and implementation arrangement, and to address the interface issues with the operation of the HKBCF during the construction and operation phases of the proposed Developments. The proposed commercial development and the development of other economic activities will comprise, inter alia, shopping, dining, entertainment, hotel facilities, convention and exhibition venues, creativity industries and logistics industries, etc. with a view to promoting bridgehead economy and creating a visitor destination by itself.

## **1.3 Name of Project Proponent**

**1.3.1** Civil Engineering and Development Department (CEDD) and Planning Department (PlanD) of the Government of the Hong Kong Special Administrative Region.

## **1.4 Location and Scale of Project and History of Site within the HKBCF Island**

**1.4.1** The proposed topside development is located on the HKBCF island which is an artificial island. Reclamation works of the HKBCF island commenced since 2011. While the layout and configuration of the HKBCF Island has been optimised for its original function as a cross-boundary facility, this Project has further examined the possibility of integrating other land uses such as commercial uses that are not directly relating to cross-boundary facility through topside and underground space developments. This approach would ensure that the reclaimed artificial island will be even better utilised to serve multiple functions. The implementation of the proposed developments will be on the premise of not delaying the commissioning of

the HZMB and maintaining the daily operation of the HKBCF during construction.

**1.4.2** A total of 20 Potential Development Sites (PDSs) of about 33 hectares have been identified within the HKBCF island and the locations of the Project area and the proposed project components are shown in **Appendix A**. Since the facilities and layout on HKBCF has been optimised for its original function as a cross-boundary facility, only those areas such as 1) verge of and space between roads; 2) areas above and underneath planned Public Transport Interchange, areas underneath clearance plaza/kiosks etc. can be considered for PDS. Hence, given the technical issues involved, the number and scale of the PDSs are tentative and subject to adjustment and revision during the course of the Study. More PDSs may be identified at the HKBCF island under the PEA Study taking into account the technical feasibility and financial viability of the proposed development at the identified sites.

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

**1.5.1** The area covered by the PEA Study mentioned in **Section 1.2** above would be more than 20 hectares. Hence, in accordance with Item 1 of Schedule 3 under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499), this project is a Designated Project (DP) and an EIA would be required.

**1.5.2** The Project may also consist of various Schedule 2 DPs under the EIAO that may be identified in the course of the PEA Study. The following elements of the Project, which are not exhaustive and are identified as Schedule 2 DPs, are also included in this Project Profile:

- a) the possible construction of primary distributor roads or district distributor roads [under Schedule 2, Part I, A.1];
- b) the possible construction of a road bridge more than 100m in length between abutments [under Schedule 2, Part I, A.8];
- c) the possible construction of road fully enclosed by decking above and by structure on the sides for more than 100m [under Schedule 2, Part I, A.9];
- d) the possible construction of sewage treatment works with an installed capacity of more than 15,000 m<sup>3</sup> per day [under Schedule 2, Part I, F.1];
- e) the possible construction of sewage pumping station(s) with an installed capacity of more than 2,000 m<sup>3</sup> per day and a boundary of which is less than 150m from planned marine park or seawater intake point [under Schedule 2, Part I, F.3(b)];
- f) the possible reuse of treated sewage effluent from a treatment plant [under Schedule 2, Part I, F.4]; and
- g) the possible construction of a submarine sewage outfall (subject to further study) [under Schedule 2, Part I, F.6].



## 1.6 Name and Telephone Number of Contact Persons

1.6.1 All queries regarding the project can be addressed to:

**Mr. LO Kwok Chung, David** (Chief Engineer/Islands)

Civil Engineering and Development Department

13/F, North Point Government Offices

333 Java Road, North Point, Hong Kong

Tel.: 2231 4443

Fax: 2577 5040

Email: [kclo@cedd.gov.hk](mailto:kclo@cedd.gov.hk)

and

**Mr. LEUNG Wai Cheung, Terence** (Senior Town Planner/Cross-  
boundary Infrastructure and Development 2)

Planning Department

16/F, North Point Government Offices

333 Java Road, North Point, Hong Kong

Tel.: 2231 4817

Fax: 2868 4497

Email: [twcleung@pland.gov.hk](mailto:twcleung@pland.gov.hk)

## 2 Outline of Planning and Implementation Programme

---

### 2.1 Planning and Implementation

**2.1.1** On 23 January 2015, Civil Engineering and Development Department (CEDD) and Planning Department (PlanD) of the Government of the Hong Kong Special Administrative Region appointed the Ove Arup and Partners Hong Kong Limited to undertake the consultancy services in respect of PEA Study for Topside Development at Hong Kong Boundary Crossing Facilities island of Hong Kong-Zhuhai-Macao Bridge – Feasibility Study. It is also proposed to implement the project by employing consultants to undertake the preliminary design, detailed design, tender and supervision of construction phase of the project.

### 2.2 Study Programme

**2.2.1** The PEA Study has commenced on 23 January 2015 for completion within a study period of approximately 25 months. The outline implementation programme of the topside development and the associated infrastructure will be determined in the EIA Study.

### 2.3 Interfacing with Other Projects

**2.3.1** Potential projects that would interface with the proposed topside development have been identified and are listed below. Implementation of some of these projects has yet to be approved. The list should be re-visited during the EIA study to ensure all the latest projects available from the respective stakeholders are incorporated. Any cumulative impacts from these concurrent projects during both construction and operational phases of the Study, including but not limited to the following, would need to be identified and addressed as appropriate.

- Possible rail connection between HKBCF island and Lantau island;
- Construction of additional sewerage rising mains and rehabilitation of the existing sewage rising main between Tung Chung and Siu Ho Wan;
- Tung Chung New Town Development Extension;
- Salt Water Supply for Tung Chung;
- Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF);
- Hong Kong - Zhuhai - Macao Bridge Hong Kong Link Road (HKLR);
- Tuen Mun - Chek Lap Kok Link (TM-CLKL);
- New Contaminated Mud Marine Disposal Facility at Airport East / East Sha Chau;

- Upgrading Works for North Lantau Refuse Transfer Station;
- Organic Waste Treatment Facilities Phase 1;
- Proposed Lantau Logistics Park;
- Proposed Integration of Siu Ho Wan and Silver Mine Bay Water Treatment Works;
- Expansion of Hong Kong International Airport into a Three-Runway System (3RS);
- North Commercial District (NCD) of Hong Kong International Airport;
- Further Landscape Enhancement to North Lantau Highway (NLH);
- Planned / Committed Developments in Tung Chung Area (such as residential developments in Tung Chung Area 27, Area 39, Area 54, Area 55 and Area 56, and hotel development at Tung Chung Area 53);
- Increasing Land Supply by Reclamation and Rock Cavern Development cum Public Engagement – Feasibility Study;
- Preliminary Feasibility Study for Container Terminal 10 at Southwest Tsing Yi;
- Greening Master Plans for New Territories South West - Investigation, Design and Construction;
- Review and Update of Secondary Railway Development Study – Feasibility Study (RDS-2U);
- Development of the Integrated Waste Treatment Facilities Phase 1 at Tsang Tsui Ash Lagoons Site and Artificial Island near Shek Kwu Chau;
- Black Point Gas Supply Project;
- Sunny Bay Reclamation;
- Proposed Marine Park at Brother Islands;
- Pillar Point Sewage Treatment Works;
- Sham Tseng Sewage Treatment Works;
- San Wai Sewage Treatment Works;
- Any potential sewage discharge from planned facilities at HKBCF;
- Sludge Treatment Facilities at Tsang Tsui; and
- Emissions Control Project at Castle Peak Power Station “B” Units.

## 3 Possible Impact on the Environment

---

### 3.1 General

**3.1.1** Based on the preliminary review, the topside development project would conceptually be made up of the following elements:

- Commercial development of the PDSs and development of other economic activities to be identified; and
- Infrastructures supporting the proposed commercial developments and development of other economic activities, e.g.:
  - a) Landscaping;
  - b) Site formation;
  - c) Roads, passageway, and transport facilities
  - d) Provision of space for the possible rail connection to the Lantau Island (by other project);
  - e) Pedestrian / Vehicular connection between the Airport island and HKBCF island;
  - f) Sewers and stormwater drains;
  - g) Sewage pumping station(s) (with capacity potential exceeding 2,000 m<sup>3</sup>/day);
  - h) Sewage treatment works (with capacity potential exceeding 15,000 m<sup>3</sup>/day);
  - i) Possible submarine outfall (subject to further study);
  - j) District cooling systems;
  - k) Water reclamation plant and reclaimed water distribution system;
  - l) Fresh water services reservoir at Siu Ho Wan with a capacity of approx. 12,400m<sup>3</sup>/day;
  - m) Fresh water mains connecting the proposed fresh water services reservoir and the HKBCF island; and
  - n) Other utility service, etc.

### 3.2 Existing Available Data

**3.2.1** In 2009, Highways Department engaged a consultant to carry out an EIA for the HKBCF project. The area was examined and assessed based on environmental criteria such as air quality, noise, water quality, ecology, fishery, landscape and visual, cultural heritage and waste management.

**3.2.2** In addition to the HKBCF EIA, the EIA study “*Expansion of Hong Kong International Airport into a Three-Runway System*” (AEIAR-185/2014), Executive Summary on the Final Report for “*Cumulative Environmental Impact Assessment Study for the Three Potential Nearshore Reclamation*”

*Sites in the Western Waters of Hong Kong – Investigation*”, the EIA study “*Tung Chung New Town Extension*” currently undertaken by CEDD, as well as the EM&A data obtained under the EP of “*Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities*” (EP-353/2009/H) would also provide most up-to-date baseline information on environmental conditions for the area in the vicinity of this Project.

### 3.3 Construction and Operational Environmental Impact

**3.3.1** It is anticipated that surrounding sensitive receivers could be affected by air quality, noise, water quality, waste, ecology, fishery, landscape and visual, and potential hazard during the construction and operational stages.

#### Air Quality

**3.3.2** During construction phase, construction dust will be potentially generated from site formation, foundation works, excavation works, backfilling, wind erosion of exposed area, temporary storage of spoil on site, transportation and handling of spoil, etc.

**3.3.3** During operational phase, air pollution sources will be associated with emissions from the traffic connecting the proposed commercial facilities on the HKBCF. Cumulative air quality impact would need to take into account neighbouring roads and other sources, e.g. the HKBCF, HKLR, TM-CLKL, NLH, future Three-Runway System of HKIA, Castle Peak and Black Point Power Plants etc. Cross boundary emissions may need to be considered as well. Odour from sources such as sewage treatment works and sewage pumping stations would need to be considered.

#### Noise

**3.3.4** During construction phase, potential noise impacts on Noise Sensitive Receivers (NSRs) will be associated with construction activities and powered mechanical equipment. The key construction activities which would create noise impacts will be foundation works, excavation and concreting, etc.

**3.3.5** During operational phase, noise sources will be associated with the traffic using the roads within HKBCF island and other fixed plant noise sources. Aircraft noise generated from the Hong Kong International Airport (HKIA) may also affect the potential noise sensitive uses under the proposed topside development.

**3.3.6** However, based on the current design, all the possible noise sensitive uses (including hotel and offices) will be provided with central air-conditioning, which would not rely on opened windows for ventilation. Hence, adverse construction noise impact and operational noise impact due to road traffic, fixed plant noise sources and aircraft noise impact on the proposed topside development are not anticipated and would be addressed in the EIA.

**3.3.7** Although the possible rail connection between HKBCF island and Lantau island is a separate Schedule 2 DP and will be separately implemented by the respective operator, potential ground-borne noise generated from the possible rail connection between HKBCF island and Lantau Island may affect the indoor noise sensitive uses proposed under this Project, including hotel/hostels, and offices. The ground-borne noise impact would therefore need to be considered in the EIA.

### **Water Quality**

**3.3.8** During construction phase, potential major sources of water quality impacts may arise from construction runoff and sewage generated by workforce. Depends on the final design and location of the Sewage Treatment Works (STW) outfall and the associated construction methodology, certain dredging works may be required. Good site practices and proper mitigation measures should be implemented during construction phase in order to minimise potential water quality impact.

**3.3.9** Based on the current design approach, the outfall for the proposed STW is located at the seawall instead of a submarine outfall, which is similar to the planned STW in HKBCF island. However, actual location of this outfall would need to be further studied during the EIA. During operational phase, treated effluent will be considered to be reused for uses such as for irrigation, flushing water and for cooling purpose etc. as far as possible under normal circumstances. Potential water pollution source would only include the surface runoff and surplus discharge of effluent during normal and/or emergency operation. However, if seawater is adopted as the cooling media in the cooling system, seawater discharge to the sea is also anticipated and will cause water quality impact due to discharge of thermal water and biocide. Potential water quality impacts including any cumulative impacts from the nearby discharges will be considered. In addition, given the treated effluent will be re-used for cooling purpose, the potential health issues due to Legionnaires' disease will be addressed.

### **Waste Management**

**3.3.10** During construction phase, construction work including site formation, construction of roads and drainage, construction of proposed topside and underground developments and associated infrastructures may generate construction and demolition (C&D) materials. Other than C&D materials and solid waste such as C&D waste, chemical waste, dredged sediment, general refuse etc. may also be generated. In addition, under the Current EP for the HZMB-HKBCF (EP-353/2009/I), Clause 3.18 stated that the dredged sediment from the Project shall be disposed of inside the sheet pile cellular structures within the Project boundary or the designated re-deposition area within the HKBCF island. Any underground spaces such as car parks and basements would be designed to avoid the re-deposited sediment layers (if any) as much as practicable. The quantities of wastes to be generated during construction of the proposed topside and underground developments and infrastructure will largely depend on the future scope and

scale of the proposed development and the construction methods. Proper solid waste management would be implemented and considerations would also need to be given to the disposal of spoil and any contaminated material, if any.

**3.3.11** During operational phase, potential waste sources would include the municipal solid waste to be generated by the commercial activities and the amount will depend on the scope and scale of development, and sludge generated from the proposed STW. The storage and handling of these waste may have the potential to cause environmental impact.

### **Ecology**

**3.3.12** During construction phase, potential impacts on ecology would include disturbance to Chinese White Dolphin and other marine life due to construction site runoff, if any. The construction of proposed freshwater services reservoir would also have impact on terrestrial ecology. The transportation of construction materials will largely depends on the link roads connecting to the HKBCF island. However, depends on the final design and location of the STW outfall and the associated construction methodology, certain dredging works may be required.

**3.3.13** Based on the current design approach, the outfall for the proposed STW is located at the seawall instead of a submarine outfall, which is similar to the planned STW in HKBCF island. However, actual location of this outfall would need to be further studied during the EIA. During operational phase, the current design approach on the sewage treatment is to reuse the treated effluent such as use for irrigation, as flushing water and for cooling purpose etc. as far as possible under normal circumstances. Potential ecological impacts include disturbance to marine life due to discharge of effluent during normal and/or emergency operation. However, if seawater is adopted as the cooling media in the cooling system, seawater discharge to the sea is also anticipated and may cause disturbance to marine life. Potential impact on ecology would therefore be considered. The operation of proposed freshwater services reservoir would unlikely cause adverse impact on terrestrial ecology.

### **Fishery**

**3.3.14** During construction phase, potential risk due to construction site runoff (if any) may affect fishery habitats and resources. However, depends on the final design and location of the STW outfall and the associated construction methodology, certain dredging works may be required.

**3.3.15** Based on the current design approach, the outfall for the proposed STW is located at the seawall instead of a submarine outfall, which is similar to the planned STW in HKBCF island. However, actual location of this outfall would need to be further studied during the EIA. During operational phase, the current design approach on the sewage treatment is to reuse the treated effluent such as use for irrigation, as flushing water and for cooling purpose etc. as far as possible under normal circumstances. The fisheries resources

as well as spawning ground might be affected due to discharge of effluent during normal and/or emergency operation. However, if seawater is adopted as the cooling media in the cooling system, seawater discharge to the sea is also anticipated and may cause impact on fisheries. Potential impact on fishery would therefore be considered.

### **Cultural Heritage**

**3.3.16** The topside development is located on the HKBCF island which is an artificial island. In accordance with the EIA report for HKBCF, that the project is unlikely to have adverse impacts on marine archaeology. In addition, the proposed fresh water service reservoir is located at the natural terrain to the east of existing Siu Ho Wan Water Treatment work (SHW WTW) where neither Sites of Archaeological Interest nor graded buildings have been identified. Hence, it is not envisaged that there will be issues on cultural heritage.

### **Landscape and Visual**

**3.3.17** Extensive green roof and vertical greening system is proposed to enhance the lush greenery environment, which provide as much greening area within the site as possible, thus can form a harmonic design with the surrounding environment.

**3.3.18** The proposed topside development is subject to the AHRs, which range from +30mPD to +50mPD. The proposed topside development may cause visual impact to the existing/planned receiver on the airport island and Tung Chung. Construction works and the proposed commercial facilities may cause a blockage of seaview to the existing/planned receivers at Tung Chung/Airport. However, the proposed topside development is considered comparable to the existing / planned buildings at airport island and the visual impact to the existing / planned receiver on the airport island and Tung Chung will be assessed and minimized. The actual building height will be subject to the agreement with Civil Aviation Department (CAD). The proposed landscaping areas from the approved EIA landscape proposal at the PDSs will be affected and reduced. However, landscape treatments such as vertical greening, green roof, sky garden etc. will be reviewed where applicable. Furthermore, suitable aesthetic architectural design shall be applied and the structure shall be optimised according to the mitigation measures stated in the approved EIA “*Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities*” (AEIAR-145/2009) to provide harmonic atmosphere.

**3.3.19** Potential receiver group areas include, but not limited to residential area at Tung Chung, workers and travellers at Hong Kong International Airport, transport routes along North Lantau Expressway, and hikers at Lantau North Country Park. Details of visually sensitive receivers (VSRs) will be assessed.



## Land Contamination

**3.3.20** Since the proposed topside development would be constructed on the artificial land, and the “land use” of the identified PDS include vehicle loading/unloading bay, car park, landscaping area and open spaces. It is unlikely to have land contamination issues during its construction phase.

## Potential Hazard

**3.3.21** It is not intended to have any potential hazardous installation (PHI) within the proposed topside development. In addition, no blasting will be required under this Project and there will not be overnight storage of explosives during the construction stage of the Project. However, sodium hypochlorite would be required for the disinfection process for production of reclaimed water for the reuse of TSE. It is anticipated that sodium hypochlorite solution of concentration of 11%-15% will be used to deliver the required residual chlorine level in the reclaimed water prior to the non-potable reuses.

**3.3.22** Sodium hypochlorite solution is classified as Category 4 dangerous goods (DG) item under the Dangerous Good Ordinance (Cap 295) and its subsidiary Regulations. The solution will be transported in liquid form for storage within the proposed STW serving the Project. Requirements from Fire Services Department (FSD) for bulk storage would be properly observed. With proper precautionary measures in the transportation, storage and handling of sodium hypochlorite solutions per the FSD licencing conditions, no significant hazard impact would be anticipated.

**3.3.23** The proposed topside development on the HKBCF island is located at more than 2.5km and 4km from the fuel tank farm on the airport island and the Siu Ho Wan Water Treatment Works (SHW WTW) respectively. However, a fresh water services reservoir is proposed approximately 200m to the east of SHW WTW, which is partially located within the consultation zone of the SHW WTW. And a section of the proposed freshwater mains is also located within the consultation zone and the site boundary of SHW WTW. Its construction work may cause impact to the transport, storage and use of chlorine associated with the operation of SHW WTW. The potential hazard should be assessed in the EIA.

**3.3.24** In addition to the potential hazard arising from the SHW WTW, the construction of the proposed freshwater mains is also located in close proximity to the planned biogas storage of OWTF Phase 1. According to the approved EIA “*Organic Waste Treatment Facilities, Phase I*” (AEIAR-149/2010), the potential hazards due to biogas storage include fireball, jet fire, flash fire and Vapour Cloud Explosion (VCE). Construction works of the proposed freshwater mains is partially located within the flash fire hazard distance. The potential hazard on the construction workers should be assessed in the EIA.

**3.3.25** On the other hand, it is considered that the construction of freshwater mains is only small scale works and will not cause significant impact on the biogas storage of OWTF Phase 1. This issue will be addressed in the EIA.

## 4 Major Elements of the Surrounding Environment

---

### 4.1 Existing and Planned Sensitive Receivers

4.1.1 The existing and planned sensitive receivers are discussed below. Any other planned sensitive receivers identified during the PEA Study will also be considered. Detailed investigation and surveys will be carried out under the Study to assess the impact.

### 4.2 Major Elements of the Surrounding Environment and Land Uses

#### Air Quality

4.2.1 Potential Air Sensitive Receivers (ASRs) are located at:

- The HKBCF (including the passenger clearance building), offices, hotel, AsiaWorld-Expo and workshops at the airport island, and future landuses in the vicinity of Siu Ho Wan;
- Tung Chung New Town and development extensions;
- Village houses and other facilities near Tai Ho Wan; and
- Proposed uses (such as offices, hotel etc.) under this Project.

#### Noise

4.2.2 No Noise Sensitive Receivers (NSRs) relying on opened windows for ventilation are proposed under this Project. However, potential ground-borne noise sensitive receivers include the proposed hotel/hostels and offices under this Project.

#### Water Quality

4.2.3 Potential Water Sensitive Receivers (WSRs) would be:

- Gazetted and non-gazetted beaches in Tuen Mun;
- Seawater / cooling water intakes at the HKIA;
- Seawater / cooling water intakes at the HKBCF;
- Sha Chau and Lung Kwu Chau Marine Park;
- Planned Marine Park at the Brothers islands;
- Proposed New Marine Park under Three-Runway System Project;
- Chinese White Dolphin habitat;
- Fish culture zones;
- Artificial Reefs inside Sha Chau and Lung Kwu Chau Marine Park;

- Spawning area of commercial fisheries resources;
- Planned seawater intakes at Tung Chung East;
- Seawater/cooling water intakes at the potential Lantau Logistic Park (LLP);
- Coral communities at the Brothers;
- Cooling water intakes at Tuen Mun;
- Tai Ho Site of Special Scientific Interest (SSSI);
- Tuen Mun typhoon shelter;
- Cooling water intake at Shui Wing Steel Mills;
- Cooling water intake at Castle Peak Power Station;
- Sham Shui Kok dolphin habitat;
- San Tau SSSI; and
- Other ecological sensitive receivers (mangroves, seagrass, horseshoe crabs nursery sites within the Airport Channel).

## **Ecology**

### **4.2.4**

Potential ecological sensitive receivers would be:

#### Marine

- Sha Chau and Lung Kwu Chau Marine Park;
  - San Tau SSSI; Chinese White Dolphin habitat;
  - Artificial Reefs inside Sha Chau and Lung Kwu Chau Marine Park;
  - Planned Marine Park at the Brothers islands;
  - Proposed New Marine Park under 3RS Project;
- Mangroves, seagrass, horseshoe crabs nursery sites within the Airport Channel; and
- Coral to the east of the Airport.

#### Terrestrial

- Lantau North Country Park and Lantau North (Extension) Country Park;
- Bat roost in Tai Ho Wan;
- Fung shui woods near the Pak Mong; and
- Romer's tree frogs in Tai Ho.

## **Fishery**

### **4.2.5**

Fishing areas in the vicinity of the study area would be:

- Fish culture zones;

- Planned Marine Park at the Brothers islands;
- Proposed New Marine Park under 3RS Project;
- Spawning Grounds of Commercial Fisheries Species in north Lantau waters;
- Artificial reefs inside Sha Chau and Lung Kwu Chau Marine Park.

### **Cultural Heritage**

**4.2.6** No cultural and heritage resources within the Project area are identified.

### **Landscape and Visual**

**4.2.7** Potential landscape and visual sensitive receivers would include, but not limited to the followings:

#### Landscape Resources and Characters

- Inshore water landscape between Tuen Mun and HKIA; and
- Island landscape at Tai Mo To.

#### Visual Sensitive Receivers

- Workers and visitors on northeast part of HKIA;
- Workers, officers and visitors on HKBCF;
- Users and workers of the proposed Lantau Logistics Park and MTR Siu Ho Wan Depot;
- North Lantau Highway and Depot;
- Residents in Tung Chung New Town;
- Travellers along North Lantau Highway, MTR Tung Chung Line and Airport Express Line, the future TM-CLKL and HKLR;
- Hikers of Lantau North Country Park;
- Visitors on Ngong Ping 360 Cable Car;
- Users of major parks, open spaces and waterfront promenade;
- Villages in Tai Ho; and
- Hikers at Tai Ho.

## 5 Environmental Mitigation Measures to be Incorporated in the Design and any further Environmental Implications

---

### 5.1 Measures to Minimize Environmental Impacts

**5.1.1** Based upon the potential impacts as a result of the construction and operation of the project, it is anticipated that mitigation measures will be required. Potential measures to be further studied are highlighted below.

#### **Air Quality**

**5.1.2** Appropriate dust mitigation measures as stipulated in the Air Pollution Control (Construction Dust) Regulations (Cap. 311R) will be implemented to control fugitive dust emission. The key measures are:

- Regular watering on all exposed and unpaved surface, particularly during dry weather;
- Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;
- Temporary storage of stockpiles on site should be minimized as far as practicable;
- Covering all excavated or stockpile of dusty material by impervious sheeting or spraying with water to maintain the entire surface wet;
- Provision of wheel washing facilities at the exit points of the site;
- Covering of any dusty materials on a vehicle leaving the site; and
- Use of appropriate dust suppression measures.

**5.1.3** Subject to investigation, provision of suitable filtering system or alternative means at the receivers will be considered to minimize the air quality impacts during operational period on nearby air sensitive receivers.

**5.1.4** The proposed mitigation measures to minimize the odour impact from possible sewage treatment works are:

- Design of the sewage treatment works will comply with DSD's requirements;
- Odour impact assessment will be conducted to identify the sources and impact to nearby sensitive receivers; and
- Major odour sources will be covered up. Adequate ventilation and odour removal system will be provided.

#### **Noise**

**5.1.5** Subject to investigation, the following measures will be considered during construction period to minimize construction noise impacts on nearby noise sensitive receivers.

- Quiet plants will be used to reduce noise generated. Silencers or

mufflers on construction equipment will be utilized and will be properly maintained during the works;

- Movable and temporary barriers will be provided to screen noise sensitive receivers from particular items of plant or noisy operations;
- Noise screening structures or purpose-built noise barriers will be provided along the site boundary to provide additional protection to NSRs nearby;
- Good site practices will be implemented as effective noise mitigation measures. These will include, but not limited to, locating noisy equipment and activities as far from noise sensitive receivers as practical, scheduling noisy activities to minimize exposure of nearby noise sensitive receivers to high levels of construction noise, proper maintenance of construction plant and devising methods of working to minimize noise impacts on the surrounding environment. Regular noise monitoring for noisy works after noise mitigation measures should be taken; and
- Travelling route of the construction vehicles on public roads should be planned as far as practicable in a way to minimize the noise impacts to noise sensitive receivers.

### 5.1.6

Subject to investigation, the following measures will be considered to minimize the traffic noise impacts during operational period on the nearby noise sensitive receivers.

- Noise barriers close to noise sources may be required for operational noise from vehicles; and
- Sound attenuators for the ventilation plant for various facilities.

### Water Quality

### 5.1.7

The following mitigation measures will be adopted to control water quality impact:

- Good site practice in accordance with the ProPECC PN 1/94 "Construction Site Drainage" and "Recommended Pollution Control Clauses for Construction Contracts" issued by EPD, and the procedures in the Environment, Transport and Works Bureau (ETWB) Technical Circular (Works) (TCW) No. 5/2005 "Protection of Natural Stream / Rivers from adverse impact arising from construction works";
- All runoffs arising from the construction site should be properly collected and treated to ensure the effluent comply with Water Pollution Control Ordinance. Silt trap and oil interceptor will be provided to remove the oil, lubricants, grease, silt, grit and debris from the wastewater before being pumped to the public stormwater drainage system. The silt traps and oil interceptors will be cleaned and maintained regularly;
- Open stockpiles of materials on site will be avoided or where unavoidable covered with tarpaulin or similar fabric during rainstorms;

- Where possible, works entailing soil excavation will be minimized during the rainy season;
- Oil interceptors will be provided and properly maintained for collecting spillage or leakages from site workshops. The waste oil removed will be collected by licensed collectors; and
- Mobile toilets or other appropriate means will be provided to store sewage before disposal through licensed collection agent or discharging to main sewerage system.

### 5.1.8

The following mitigation measures will be considered to minimize the water quality impacts during operational period on nearby water sensitive receivers:

- Provision of sand/silt and oil/grease traps at suitable locations to prevent ingress of pollutants to the stormwater drainage system;
- Emergency storage tanks, standby units or automatic-operated emergency generator will be considered in the design of the proposed sewage treatment works as well as sewage pumping station(s) to minimize the need for untreated or partially treated discharges under emergency conditions;
- Water quality assessment, including modelling studies will be conducted to analyse the impacts (including cumulative impacts from nearby discharges) to the nearby sensitive receivers due to the discharge of treated effluent, possible discharge of untreated or partially treated sewage during an event of emergency overflow/bypass and possible discharge of seawater after cooling purpose; and
- Develop contingency plan for accidental chemical spillage and emergency overflow/bypass.

## Waste

### 5.1.9

C&D materials and solid waste such as C&D waste, chemical waste, general refuse, etc. would be generated during the construction works. Potential re-deposited sediment may also be generated due to proposed underground developments. The following measures will be considered to reduce the quantities of C&D materials for disposal off site and to handle the dredged contaminated / uncontaminated sediment:

#### *C&D Materials*

- All C&D materials will be sorted and re-used whenever possible;
- Waste haulier should obtain the necessary registration and licenses under the Waste Disposal Ordinance (Cap. 354) and the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);
- Nomination of an approved person to be responsible for good site practice, arrangements for collection and effective disposal to an appropriate facility, of all waste generated at the site;
- Separation of chemical wastes for special handling and appropriate treatment at a licensed facility;

- A recording system for the amount of wastes generated, recycled and disposed of;
- Implementation of ticket-trip system in accordance with Development Bureau Technical Circular No. 6/2010 "Trip Ticket System for Disposal of Construction & Demolition Materials" to monitor the management of C&D materials and disposal of solid wastes at public filling facilities and landfills;
- Contractor will be requested to prepare the Waste Management Plan (WMP) in accordance with ETWB TCW No. 19/2005 "Environmental Management on Construction Sites" and submit to the Engineer for approval;
- Segregation and storage of different types of waste in different containers, skips or stockpiles;
- To enhance reuse of recycling of materials and their proper disposal;
- Any unused chemicals or those with remaining functional capacity shall be recycled;
- Use of non-timber form work to reduce the amount of C&D materials; and
- Proper storage and site practices to minimize the potential for damage or contamination of construction materials.

#### *Contaminated / Uncontaminated Sediment*

- Contractor will be requested to follow the procedures set out in the ETWB TCW No. 34/2002 and seek approval with the Engineer;
- Any contaminated sediments that may need stockpiling or need to be transported should be covered with tarpaulin; and
- All construction plant and equipment shall be designed and maintained to minimise the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited in the locations other than designated location.

#### *Treated Sludge*

- The treated sludge from the proposed STW during the operational phase will need to be stored in water tight containers or skips to avoid odour emission prior to disposal at the landfill and/or treatment in the Sludge Treatment Facilities (STF).

### **Ecology**

#### **5.1.10**

Avoidance of any identified sensitive sites will be the preferred mitigation measures. The water quality impact mitigation measures proposed in **Section 5.1.7** and **Section 5.1.8** of this Project Profile will also help to minimize impacts to ecological sensitive receivers. Subject to investigation, the following mitigation measures during construction phase will be considered to minimize the impact.



- Avoid using marine-based transportation for the transport of construction material and workers.

### **Fishery**

**5.1.11** Subject to investigation, the following investigation measures during construction phase will be considered to minimize the impact:

- The water quality impact mitigation measures proposed in **Section 5.1.7** and **Section 5.1.8** of this Project Profile will be adopted.

**5.1.12** The following mitigation measures will be considered to minimize the impact during operational phase:

- The water quality impact mitigation measures proposed in **Section 5.1.7** and **Section 5.1.8** of this Project Profile will be adopted.

### **Landscape and Visual**

**5.1.13** Mitigation measures to minimize environmental impact during both the construction and operational phases should be comprehensively reviewed for both landscape and visual aspects.

**5.1.14** The following general mitigation measures will be considered to alleviate the impacts for the construction phase:

- Temporary greening treatment on base soil surface before construction works of structures take place;
- Hoarding to be erected at interface between the construction site and the existing area; and
- Early formation of the planting area and advance planting of vegetation on the concerned landscape sensitive receivers.

**5.1.15** The following general mitigation measures will be considered to alleviate the impacts for the operational phase:

- Aesthetic design of the buildings;
- Tree planting and earth mounds to visually screen and soften the structures; and
- Early formation of the planting area and advance planting of vegetation on the concerned landscaped sensitive receivers in operation phase.

### **Land Contamination**

**5.1.16** No land contamination is anticipated during the construction phase of the Project and no mitigation measures will be required.

### **Potential Hazard**

**5.1.17** Mitigation measures will not be required for the topside development. However, for the construction works for the proposed fresh water services reservoir and freshwater mains located near the SHW WTW and OWTF Phase 1, the feasibility of the following measures will be reviewed to reduce

the potential hazard on the construction workers due to the risk of chlorine leakage and flash fire:

- Limitation of working hours, number of workers in the vicinity of the SHW WTW and OWTF Phase 1; and
- Suspension of construction work during chlorine deliveries.

## **5.2 Severity, Distribution and Duration of Environmental Effects and Further Implications**

**5.2.1** Subject to the findings of assessments, effective control and mitigation measures will be identified to ensure the impacts to acceptable level. The possible severity, distribution and duration of environmental effects such as beneficial and adverse effects; short and long term effects; secondary and induced effects; cumulative effects and trans-boundary effects, and further implications will be considered and addressed in the EIA, where applicable. The key results from public consultation should be documented in the EIA.

## 6 Use of Previously Approved EIA Reports

**6.1.1** The following reports are relevant and will be referred to in the EIA. Other relevant information would also be considered and documented in the EIA where applicable.

Application No.	Title	Date of Approval	Relevant to this Project
EIA-223/2014	Expansion of Hong Kong International Airport into a Three-Runway System	7 November 2014	Various aircraft emissions and fixed noise sources from the Three-Runway System would need to be considered in the EIA
EIA-186/2010	Integration of Siu Ho Wan and Silver Mine Bay Water Treatment Works	13 January 2011	The baseline information would be considered as appropriate
EIA-176/2009	Organic Waste Treatment Facilities, Phase I	24 February 2010	Air emissions from OWTF facilities would need to be considered in the EIA
EIA-174/2009	Tuen Mun - Chek Lap Kok Link	23 October 2009	Alignment of TMCLKL would need to be considered in the EIA
EIA-173/2009	Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities	23 October 2009	Road network in the HKBCF island would need to be considered in the EIA
EIA-172/2009	Hong Kong - Zhuhai - Macao Bridge Hong Kong Link Road	23 October 2009	Alignment of HKLR would need to be considered in the EIA
EIA-106/2005	New Contaminated Mud marine Disposal Facility at Airport East/East Sha Chau	1 September 2005	Locations and construction methodology would need to be considered in the EIA
EIA-100/2004	Siu Ho Wan Water Treatment Works Extension	15 December 2004	The baseline information would be considered as appropriate

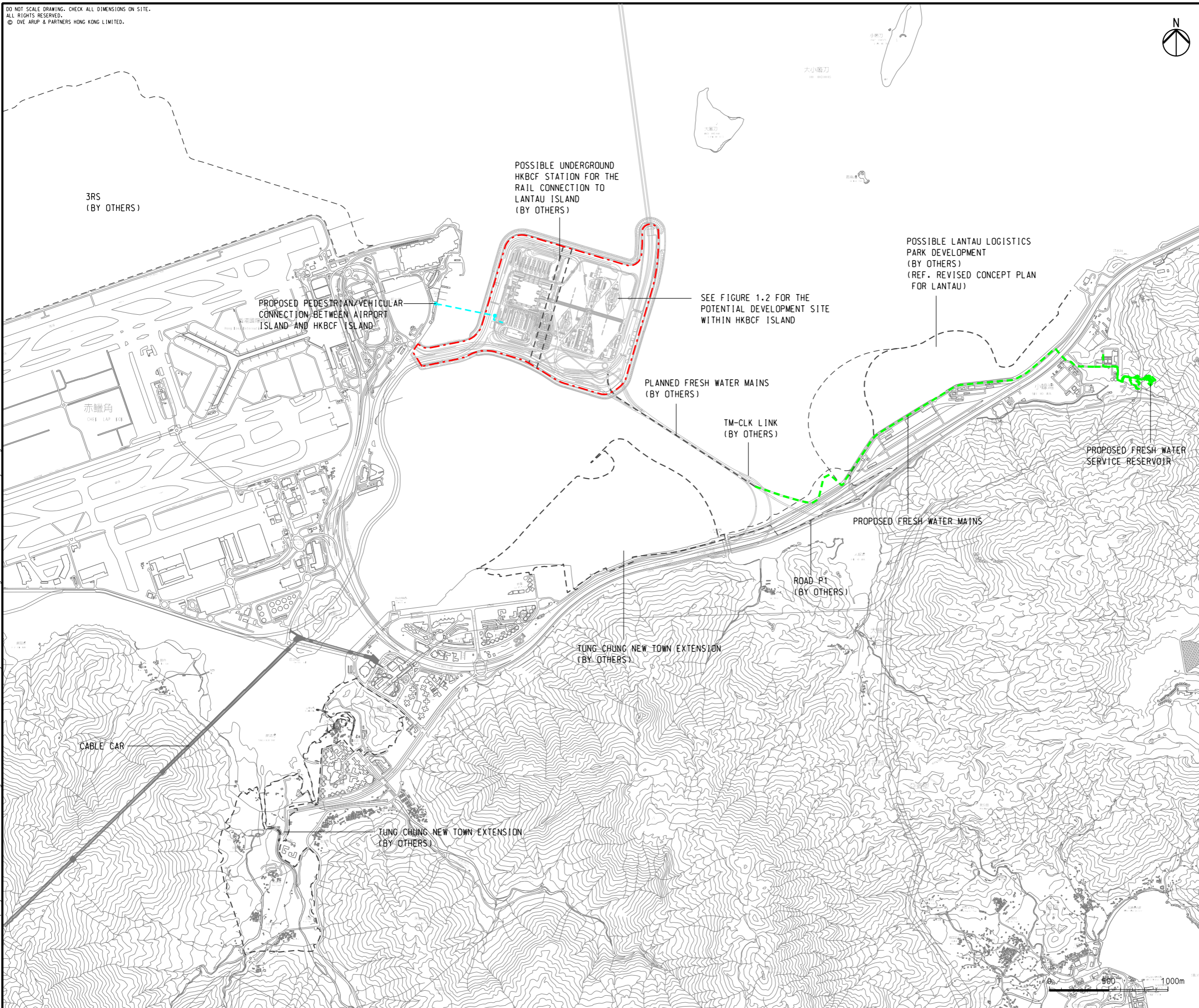
## **Appendix A**

### **Project Area**

DO NOT SCALE DRAWING. CHECK ALL DIMENSIONS ON SITE.  
 ALL RIGHTS RESERVED.  
 © OVE ARUP & PARTNERS HONG KONG LIMITED.



- LEGEND**  
**PROJECT COMPONENT**
- PROJECT AREA WITHIN HKBCF ISLAND
  - PROPOSED FRESH WATER MAINS
  - PROPOSED FRESH WATER SERVICE RESERVOIR
  - PROPOSED PEDESTRIAN/VEHICULAR CONNECTION



A	FIRST ISSUE	GL	10/15
Rev	Description	By	Date


Consultant  
**ARUP**

Contract No. and Title  
 Agreement No. CE 42/2014(CE)  
 Planning, Engineering and Architectural Study for Topside Development at Hong Kong Boundary Crossing Facilities Island of Hong Kong-Zhuhai-Macao Bridge - Feasibility Study


Drawing title  
**LOCATION OF PROJECT**

Drawing no. <b>Figure 1.1</b>		Rev. <b>A</b>	
Drawn GL	Date 10/15	Checked LK	Approved FC
Scale 1:30000 @A3		Status <b>PRELIMINARY</b>	

COPYRIGHT RESERVED



土木工程拓展署  
Civil Engineering and Development Department



規劃署  
Planning Department

Printed by : 10/22/2015  
 Filename : G:\env\project\240700-40\13 Drawing Deliverables\04 TR8A Project Profile Draft\Figure 1.1 - Location of Project.dgn

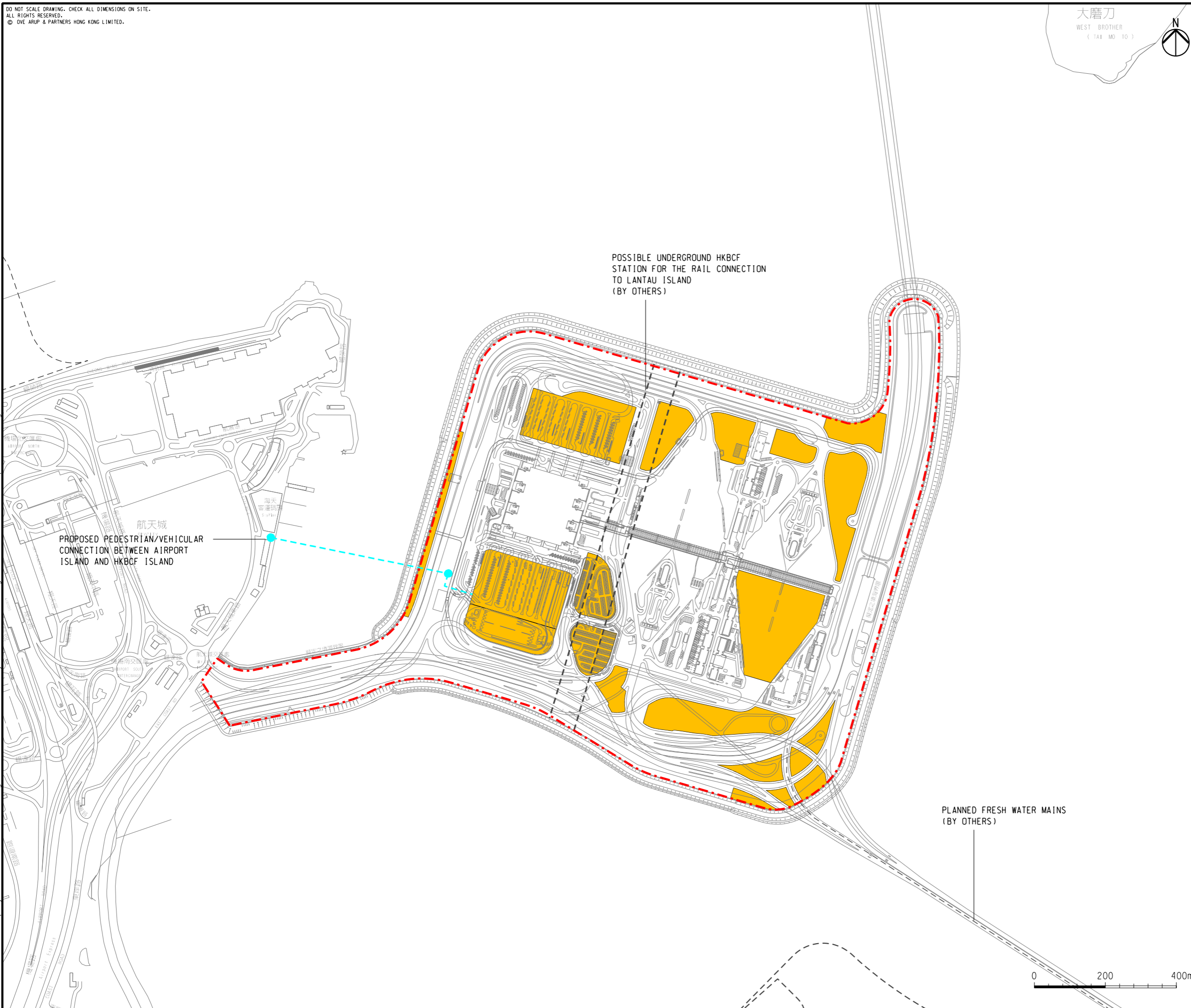
DO NOT SCALE DRAWING. CHECK ALL DIMENSIONS ON SITE.  
 ALL RIGHTS RESERVED.  
 © OVE ARUP & PARTNERS HONG KONG LIMITED.

大磨刀  
 WEST BROTHER  
 (TAI MO TO)



- LEGEND**
- PROJECT AREA WITHIN HKBCF ISLAND
  - POTENTIAL DEVELOPMENT SITES WITHIN HKBCF ISLAND
  - PROPOSED PEDESTRIAN/VEHICULAR CONNECTION

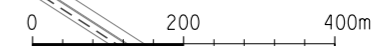
Printed by : 10/22/2015  
 Filename : G:\env\project\240700-40\13 Drawing Deliverables\04 TR8A Project Profile Draft\Figure 1.2 - Potential Development Sites.dgn



POSSIBLE UNDERGROUND HKBCF STATION FOR THE RAIL CONNECTION TO LANTAU ISLAND (BY OTHERS)

航天城  
 PROPOSED PEDESTRIAN/VEHICULAR CONNECTION BETWEEN AIRPORT ISLAND AND HKBCF ISLAND

PLANNED FRESH WATER MAINS (BY OTHERS)



Rev	Description	By	Date
A	FIRST ISSUE	GL	10/15


Consultant  
**ARUP**

Contract No. and Title  
 Agreement No. CE 42/2014(CE)  
 Planning, Engineering and Architectural Study for Topside Development at Hong Kong Boundary Crossing Facilities Island of Hong Kong-Zhuhai-Macao Bridge - Feasibility Study


Drawing title  
**POTENTIAL DEVELOPMENT SITES**

Drawing no. <b>Figure 1.2</b>		Rev. <b>A</b>	
Drawn GL	Date 10/15	Checked LK	Approved FC
Scale 1:10000 @A3		Status <b>PRELIMINARY</b>	

COPYRIGHT RESERVED



土木工程拓展署  
Civil Engineering and Development Department



規劃署  
Planning Department