

# Landscape and Visual Plan

Updated March 2022

## PROJECT

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing Facilities  
(Superstructures and Infrastructures)  
Design and Construction


Highways Department  
Major Works Project Management Office  
(Special Duties)




**HIGHWAYS DEPARTMENT  
MAJOR WORKS PROJECT MANAGEMENT OFFICE  
(SPECIAL DUTIES)**

Agreement No. CE 13/2010 (CE)  
Hong Kong – Zhuhai – Macao Bridge  
Hong Kong Boundary Crossing Facilities  
(Superstructures and Infrastructures) –  
Design and Construction

**Landscape and Visual Plan**

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# 1. INTRODUCTION

## 1.1 Background

- 1.1.1 The Environmental Impact Assessment (EIA) Report and the Environmental Monitoring and Audit (EM&A) Manual (Register No. AEIAR-145/2009) was presented together for the Hong Kong – Zhuhai – Macao Bridge (HZMB) Hong Kong Boundary Crossing Facilities (HKBCF) and Hong Kong Link Road (HKLR) as they are closely interrelated. The EIA Report for the HZMB HKBCF was approved in 2009.
- 1.1.2 The Environmental Permit (EP) for HKBCF (EP No. EP-353/2009) was granted to the Permit Holder (Highways Department of HKSAR Government) in 2009, with a few subsequent variations of Environmental Permits (VEPs). The latest version of the EP is EP No. EP-353/2009/K. HKLR is under a separate EP No. EP-352/2009/D and a Further EP No. FEP-01/352/2009/D.
- 1.1.3 As stipulated in Condition 2.9 of EP No. EP-353/2009/K, “*The Permit Holder shall deposit with the Director, at least 1 month before the commencement of construction of relevant part of the Project, three hard copies and one electronic copy of a landscape and visual plan incorporating aesthetic architectural design on buildings structures and related infrastructure of the Project, streetscape elements, planting proposals and other measures including night-time lighting control*”.
- 1.1.4 For the HKBCF, there are eight contracts with five of them, namely Contract nos. HY/2013/01 (C1), HY/2013/02 (C2), HY/2013/03 (C3), HY/2013/04 (C4) and HY/2014/05 (C8), comprising landscape works. The extent of each of the five contracts is shown in **Figure 1.1** for reference. A brief scope of works and the respective Environmental Team Leaders (ETLs) and Independent Environmental Checker (IEC) for these five relevant contracts are tabulated in **Appendix A**. In addition, to complete any outstanding works of the eight contracts, a ninth contract, i.e., Contract no. HY/2019/01 (C9), has been awarded in 2019. This Contract C9 includes the outstanding landscape works of C4 Contract.
- 1.1.5 To fulfill Condition 2.9 of the EP, five separate Landscape and Visual Plans have been prepared, certified by the relevant Environmental Team Leaders (ETLs), verified by the Independent Environmental Checker (IEC), and submitted to the Director of Environmental Protection (DEP) at least 1 month before the commencement of construction of relevant parts of these five contracts.
- 1.1.6 This Landscape and Visual Plan (hereinafter referred to as “this LVP”), which consolidates the information as presented in the five Landscape and Visual Plans for individual contracts, is prepared in response to the comments from the Director of Environmental Protection (DEP). More importantly, as requested by the DEP, one consolidated Landscape and Visual Plan covering the entire HKBCF project site to demonstrate the holistic design approach for the HKBCF should be prepared for ease of review. Hence, this LVP supersedes the five previously submitted Landscape and Visual Plans for individual contracts, and serves as a consolidated version in which all the relevant contracts of the HKBCF are covered and included. This LVP has been certified by the ETL (see **Appendix B1**) and verified by the IEC (see **Appendix B2**).

- 1.1.7 The LVP had been previously submitted and approved by the DEP in October 2018. Subsequent to the approval in October 2018, update was required due to the Designated Project “Intermodal Transfer Terminal - Bonded Vehicular Bridge and Associated Roads” (hereinafter referred to as “the ITT-BVB Project”) initiated by Airport Authority Hong Kong (AAHK) on HKBCF island. The approved EIA Report of the ITT-BVB Project (Register No.: AEIAR-216/2018) indicates that part of the areas on HKBCF (within the area of Contract no. HY/2013/02 (C2)) would be taken up by AAHK for the ITT-BVB Project (see **Figure 1.1**). Hence, the landscape and visual mitigation measures implemented under HKBCF Contracts in this area (including 190 nos. of trees to be planted by the future Contractor of C4 landscape works (i.e. Contractor of C9) within C2 Contract boundary) would be superseded by the ITT-BVB Project. All the landscape and visual mitigation measures for this affected area would be fully covered by AAHK’s upcoming works as stipulated in their approved EIA Report (Register No.: AEIAR-216/2018) and EP (No. EP-560/2018). Hence, this affected area, which is shown in **Figure 1.1**, was excluded from HKBCF’s EP (No. EP-353/2009/K) and the subsequently revised LVP as agreed with the DEP, and the total no. of trees on HKBCF was reduced from 1,712 nos. as shown in the LVP approved in October 2018 to  $1,712 - 190 = 1,522$  nos. as shown in the revised LVP which had been further approved by the DEP in May 2020.
- 1.1.8 In the revised LVP approved in May 2020, the proposed temporary landscape treatment of an area near the southeastern corner of HKBCF (within the area of Contract no. HY/2013/04 (C4)), which was originally proposed to be covered by gravel as a temporary measure before further development is confirmed and implemented, had been changed to hydroseeding (see **Figure 1.1**) to be implemented by the future Contractor of C4 landscape works (i.e. Contractor of C9). Also, trees originally proposed to be planted by other projects on HKBCF as shown in the LVP approved in October 2018 would be planted by the future Contractor of C4 landscape works (i.e. Contractor of C9) with a few newly proposed tree species, namely *Brassaia actinophylla*, *Grevillea banksii*, *Heteropanax fragrans* and *Plumeria rubra* (see **Figure 3.6**).
- 1.1.9 Subsequent to the approval of the revised LVP in May 2020, further update is required in this LVP due to the Designated Project “Airport City Link” (hereinafter referred to as “ACL”) and “HZMB HKBCF - Inbound Carpark A (Phase 1) and Inbound Carpark B (Phase 1)” (hereinafter referred to as “ICPs”) initiated by AAHK on HKBCF island. Part of the areas on HKBCF (within the areas of Contract nos. HY/2013/01 (C1), HY/2013/02 (C2) and HY/2013/03 (C3)) will be taken up by AAHK for the ACL project and ICPs project (see **Figure 1.1**). Hence, the landscape and visual mitigation measures implemented under HKBCF Contracts in these areas will be superseded by the ACL project and ICPs project. For ACL project area, about 62 nos. of trees (including 6 trees already planted and 56 trees to be planted) will be superseded and excluded in this LVP. For ICPs project areas, about 151 nos. of trees (including 41 trees already planted and 110 trees to be planted) will be superseded and excluded in this LVP. All the landscape and visual mitigation measures for these affected areas will be fully covered by AAHK’s upcoming works as stipulated in their Project Profile (Register No.: PP-606/2020) and EP (EP No.: EP-581/2020) for ACL project and the further EP (FEP no.: FEP-02/353/2009/K) for ICPs project under the approved EIA Report of HKBCF (Register No.: AEIAR-145/2009). Hence, these affected areas, which are shown in **Figure 1.1**, will be excluded from HKBCF’s EP (No. EP-353/2009/K) and this updated LVP as agreed with the DEP, and the total no. of trees in this LVP will be reduced from 1,522 nos. as shown

in the approved LVP in May 2020 to 1,522 - 62 - 151 = 1,309 nos. as shown in this updated LVP. However, change in the total nos. of trees on HKBCF Island is not anticipated as AAHK confirmed to plant / transplant the 213 nos. of affected trees within the HKBCF Island. Re-assessment on the residual impacts with the latest changes are detailed in **Paragraphs 4.2.5** and **4.2.6** in this LVP.

## **1.2 Project Description**

1.2.1 While the HKBCF reclamation works are under a separate design and construction consultancy, the HKBCF superstructure and infrastructure works under the Project comprise the following provisions:

- (a) Facilities including processing kiosks and examination facilities for private cars and coaches, a Passenger Clearance Building (PCB), annexure for examination of accompanying passengers of private cars, etc.;
- (b) Roads connecting HKBCF to HKLR, Tuen Mun-Chek Lap Kok Link (TM-CLKL) and the Hong Kong International Airport (HKIA), except the part of road works in HKIA entrusted to the HKLR project;
- (c) A Vehicular Clearance Plaza (VCP) for vehicles and other associated ancillary buildings including kiosks for clearance of goods vehicles, customs inspection platforms, X-ray buildings, etc.;
- (d) Accommodation / offices for and facilities (like fire station, police station, buildings for Immigration Department, Customs and Excise Department, Agriculture, Fisheries and Conservation Department, Food and Environmental Hygiene Department, Department of Health, etc.) of the Government departments providing services in connection with the HKBCF;
- (e) Transport and miscellaneous facilities inside the HKBCF including public transport interchange (PTI), transport drop-off and pick-up areas, vehicle holding areas, passenger queuing areas, road networks, footbridges, fencing, sewerage and drainage systems, sewage treatment plant and treated effluent disposal facilities, water supply system including pump stations, utilities, electrical and mechanical systems, building services works, electronic system, and traffic control and information system including traffic control and surveillance system (TCSS), etc.; and
- (f) TCSS under sub-clauses (d) and (e) above excepting the civil works provision and power supply for the part of road works in HKIA entrusted to the HKLR project.

1.2.2 Landscape works under the Project include the following:

- (a) Construction of landscape hardworks, including
  - Pedestrian paving
  - Stone swathe
  - Pond and bio-swale
- (b) Construction of landscape softworks, including
  - Tree planting

- Shrub planting
- Groundcover planting
- Turfing
- Hydroseeding
- Roof greening
- Vertical greening

## **1.3 Purpose and Scope**

1.3.1 This LVP for the HKBCF aims to demonstrate, as a whole, the landscape and visual design and mitigation measures adopted in the detailed design stage, construction phase and operation phase with reference to Section 14 – Landscape and Visual Impact Assessment (LVIA) of the approved EIA Report and EM&A Manual. Design measures developed during the detailed design stage to remedy and compensate unavoidable impacts in accordance with the approved EIA Report will be discussed in the subsequent sections of this LVP.

## 2. DESIGN CONSIDERATIONS

### 2.1 Landscape and Visual Design Measures Considered

- 2.1.1 In Section 14.3.3.2 of the approved EIA Report and Section 14.2.4 of the EM&A Manual, design measures are proposed as landscape and visual mitigation measures during detailed design stage. These mitigation measures are considered and will be adopted during construction as far as practicable.
- 2.1.2 Some of these design measures are applicable to HZMB HKLR but not HKBCF. Relevance of these design measures to the Project will be discussed in **Section 3**.
- 2.1.3 The design measures as extracted from Section 14.3.3.2 of the approved EIA Report are listed below for easy reference.
- *Roadside planting and planting along the edge of the reclamation is proposed;*
  - *Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting;*
  - *Protection measures for the trees to be retained during construction activities;*
  - *Optimizing the sizes and spacings of the bridge columns;*
  - *Fine-tuning the location of the bridge columns to avoid visually-sensitive locations;*
  - *Aesthetic design of the bridge form and its structural elements for HKLR, e.g. parapet, Soffit, columns, lightings and so on;*
  - *Considering the decorative urban design elements for HKLR, e.g. decorative road lightings;*
  - *Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed;*
  - *Providing planting area around peripheral of HKLR and HKBCF for tree planting screening effect;*
  - *Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline;*
  - *For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonic atmosphere of the HKBCF;*
  - *Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF; and*
  - *For HKLR, providing aesthetic design on the viaduct, tunnel portals, at-grade roads and reclamation (e.g. subtle colour tone and slim form for viaduct to minimize the bulkiness of the structure and to blend the viaduct better with the background environment, featured form of tunnel portals, roadside planting along at-grade roads and landscape berm on & planting along edge of reclamation area) to beautify the HKLR alignment.*

### 2.2 Landscape Design Considerations

- 2.2.1 HKBCF is located very close to the Hong Kong International Airport (HKIA) and underneath the air-flight route. In this connection, all landscape planting proposed have to adhere to the HKIA Approved Plant Species List (APSL) (Revision 4.0.1: October 2015) (see **Appendix C1**). For the works contract(s) of HKBCF awarded after 2018, all planting proposed follows the latest HKIA APSL (Revision 5.0: January 2018) (see **Appendix C2**).
- 2.2.2 According to the zoning plan of the Airport Island presented as Figure 1 in the HKIA APSL (Revision 4.0.1: October 2015), the works areas of the Project fall within Zone 1 and Zone 2. HKIA APSL (Revision 4.0.1: October 2015) is appended as **Appendix C1** and the relevant restrictions on planting design in Zone 1 and Zone 2 are extracted below for easy reference.

#### • Zone 1

*Only grass and ground cover of less than 200mm in height; climbers that do not produce fleshy fruit and should be planted in areas not exceeding 25m<sup>2</sup> and regularly pruned shrubs that do not produce fleshy fruit and are of less than 1.5m in height and 25m<sup>2</sup> in area size are allowed.*

#### • Zone 2

*Climbers, palms, cycad, trees or shrubs are acceptable only if they do not produce fleshy fruit. As a precautionary measure, height restriction of newly planted palms, cycad and tree is normally 5-10m, and trees that could produce a spreading crown and/or develop into a tall structure should be avoided. Hence, selection of small trees is preferred as a long-term management and maintenance approach. For all existing, planted palms, cycad and trees, their suitability and horticultural maintenance practice will be regularly reviewed by AAHK, and will be monitored for bird activities and potential hazard to aircraft by AA's Wildlife Hazard Consultant. Given that the mature size of certain existing tree species (such as Casuarina equisetifolia and Delonix regia) is up to 10-15m, close monitoring on their bird attractiveness of these particular trees would be carried out. Height restriction of existing and newly-planted shrubs is 1.5m.*

*For initial planting, palm / cycad / ravenala / bamboo / trees should be in groups of 50 individuals or fewer. The area of each tree group should not exceed 150m<sup>2</sup>, and shrubs / climbers should be planted in areas of no more than 500m<sup>2</sup>. Routine horticultural maintenance should be carried out to maintain vegetation groups of smaller sizes as far as practical.*

*For all existing, planted palm / cycad / ravenala bamboo / trees as well as shrubs are monitored by AA's Wildlife Hazard Consultant for usage by birds, and by AAHK. The planted area can be no more than 500 m<sup>2</sup> for palm / cycad / ravenala / bamboo / trees and 1,000m<sup>2</sup> for shrubs / climbers. The linear segregation for adjacent groups of palms / cycad / ravenala / bamboo / trees / shrubs should be at least 50m; however, this segregation restriction can be relaxed if the plantation is assessed as not creating significant or hazardous attraction to birds by AA's Wildlife Hazard Consultant.*

*Spread of tree crowns should be pruned to less than 3m for initial planting, and 6m for mature plants on the condition that the tree species does not produce fleshy fruits and that bird usage is monitored by AA's Wildlife Hazard Consultant.*

2.2.3 Basically, **Zone 1** is a no tree zone. Within **Zone 2**, other than the tree planting restrictions stipulated in HKIA APSL (Revision 4.0.1: October 2015), the following also pose constraints on tree planting and landscape treatment on the HKBCF:

- **Public Lighting Design Manual (PLDM) (2<sup>nd</sup> Edition: September 2006)**

As stipulated in PLDM (2<sup>nd</sup> Edition: September 2006), “*trees shall be planted 5m away from the lighting columns*”. Hence, there is a no tree zone with a 5m radius at each of the public lighting column on the HKBCF

- **Areas Reserved for Future Development**

There are a few areas on the HKBCF which are reserved for potential future development as shown in **Figure 3.1a**. Tree planting is not recommended in these areas because trees are anticipated to be removed in these areas in the near future to cater for future development.

- **Areas under Shade**

Areas under shade are not suitable for tree planting as the environment is not favourable for healthy development of trees. Such areas include places under the canopy cover of various building structures and under viaducts.

- **Systematic Identification of Maintenance Responsibility (SIMAR) Slopes**

Trees are not recommended on SIMAR slopes because the SIMAR slopes are on the embankments of viaducts. Trees may affect the sightline of road / viaduct traffic. Also, tree failure on these SIMAR slopes may pose safety hazard to road users.

- **Hard-paved Areas**

Tree planting is not feasible in hard-paved areas reserved for road traffic access.

- **Underground Utilities and Structures**

Reasonable amount of land area is reserved for accommodation of underground public utilities and under structures. Tree planting in these areas are undesirable because trees may obstruct the necessary maintenance works of underground utilities and structures.

2.2.4 Other than the constraints on planting, the large scale of the Project also poses a challenge to the landscape design. To minimize potential landscape and visual impact, other than maximizing greening opportunities, aesthetic architectural design on all above-ground structures to provide a harmonized effect on HKBCF and the adjacent Airport Island is therefore also a key design consideration.

### 3. ADOPTED DESIGN MEASURES

#### 3.1 Landscape and Visual Design Measures Adopted

3.1.1 During the detailed design stage, the proposed landscape and visual design measures in Section 14.3.3.2 of the approved EIA Report and Section 14.2.4 of the EM&A Manual are considered. They are proposed and adopted as far as practicable. The following sections summarize the development of relevant design measures relevant to the Project as recommended in the approved EIA Report and EM&A Manual.

##### 3.1.2 *Roadside planting and planting along the edge of the reclamation is proposed*

Roadside planting and planting along the edge of the reclamation is proposed where feasible as shown in the Master Landscape Plan in **Figures 3.1a to 3.1c**.

##### 3.1.3 *Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting*

**Not applicable to the Project.** The entire works area of the Project is on newly reclaimed land with no existing trees (see **Figure 3.1a**) except for a small area on the existing Airport Island where no mature tree in good health and amenity value is identified. Hence, transplantation of mature trees is not relevant to the Project. For the disturbed areas on the existing Airport Island, they will be reinstated to their former state with hydroseeding and planting up to the satisfaction of Airport Authority, the future maintenance agent of the reinstated areas.

##### 3.1.4 *Protection measures for the trees to be retained during construction activities*

**Not applicable to the Project.** The entire works area of the Project is on newly reclaimed land with no existing trees to be retained (see **Figure 1.1**) except for a small area on the existing Airport Island where the proposed works are far from any existing trees to be retained. Protection of retained trees during construction is therefore not relevant to the Project.

##### 3.1.5 *Optimizing the sizes and spacings of the bridge columns*

The sizes of the bridge columns have been minimized to reduce the bulkiness of the structure. Spacing of the bridge columns has also adopted an evenly distributed spacing of 40m to 50m so that the structure would be aesthetically more pleasing. The optimal balance between the size and spacing of the bridge columns is achieved to blend in with the surrounding environment and other built aesthetics. **Figure 3.2** shows the optimized size and spacing of bridge columns.

##### 3.1.6 *Fine-tuning the location of the bridge columns to avoid visually-sensitive locations*

The locations of the bridge columns have been designed in the same aligned north and south axis, creating a limited and shorter elevations perceived from the visually sensitive receivers (VSRs) at Airport Island, Tung Chung and North Lantau Island. In addition, locations of the bridge columns are fine-tuned to avoid the columns becoming a prominent part of the views of at-grade road users. **Figure 3.2** provides examples illustrating how the locations of the

bridge columns are optimized to minimize potential visual impact.

##### 3.1.7 *Aesthetic design of the bridge form and its structural elements for HKLR, e.g. parapet, soffit, columns, lightings and so on*

**Not applicable to the Project.** This design measure is applicable to HKLR, not HKBCF, hence not relevant to the Project.

##### 3.1.8 *Considering the decorative urban design elements for HKLR, e.g. decorative road lightings*

**Not applicable to the Project.** This design measure is applicable to HKLR, not HKBCF, hence not relevant to the Project.

##### 3.1.9 *Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed*

In the overall landscape design of the HKBCF Island, greening opportunities have been maximized as shown in **Figures 3.1a to 3.1c**, with proposed tree (about 1,309 nos., including 21 nos. of compensatory trees for trees felled on existing Airport Island), shrub and groundcover planting (see **Figure 3.6**) covering almost all the land area without permanent hard structures where feasible. Also, roof greening (see **Figures 3.1a to 3.1c** and **3.3**) and vertical greening (see **Figures 3.4**) are adopted where feasible to provide additional greening.

##### 3.1.10 *Providing planting area around peripheral of HKLR and HKBCF for tree planting screening effect*

Tree planting is proposed along the northern and western edge, as well as the south-eastern corner of HKBCF Island (see **Figures 3.1a to 3.1c**) to give a screening effect in accordance with the planting restrictions in Zone 2 of HKIA as stipulated in HKIA APSL (Revision 4.0.1: October 2015). Tree planting is not proposed along the connection between the Airport Island and HKBCF and the western half of the southern periphery of the HKBCF because these areas are within Zone 1 of HKIA where no tree planting is allowed. Alternatively, landscape berms are proposed to provide screening effect adjacent to viaduct structures (see **Figure 3.5**) and to enhance the landscape and visual interest of the relatively flat landscape on the HKBCF, even though landscape berms are not included in any of the relevant landscape and visual mitigation measures recommended in the approved EIA Report.

##### 3.1.11 *Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline*

Salt-tolerant native tree *Thespesia populnea* (恒春黄槿) is included in the planting proposal (see **Figure 3.6**) for tree planting along the newly reclaimed coastline.

##### 3.1.12 *For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonic atmosphere of the HKBCF*

For aesthetic architectural design on the PCB, the design of the roof has adopted a sinuous and organic form that echoes the surrounding sea and the nearby Airport as shown in **Figure 3.7**. The use of glass for facade and balustrade similar to Airport buildings is also shown in **Figure 3.7**. It optimizes the natural daylight and expansiveness of space. The design

language adopted is similar to that of the current Hong Kong International Airport which can promote a unique building cluster around the airport areas to provide harmonic atmosphere of the HKBCF. For aesthetic architectural design on other related buildings, a modern and contemporary design using simple outlines and subtle materials with light colour tones is adopted and illustrated in **Figure 3.8**. Such architectural design on ancillary buildings and facilities provide a harmonic atmosphere in the HKBCF. Roof planting are also proposed where feasible on related buildings as shown in the Master Landscape Plan in **Figures 3.1a to 3.1c**.

- 3.1.13 To harmonize the atmosphere of the HKBCF, aesthetic architectural design on infrastructures, such as roadside planting and planting along embankments of elevated roads, is incorporated into the overall design as illustrated in **Figure 3.2**. Design of stone swathe is also included as shown in **Figure 3.9**. Parapet planting is not adopted because due to the abundance of at-grade soft landscape, it would be incongruous and out of keeping with the overall aesthetics of HKBCF if landscaping is repeated in the form of parapet planters slung to the sides of the concrete viaducts which would increase the bulkiness of the viaducts.

- 3.1.14 *Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF*

A slender form of the structural members has been adopted to minimize the bulkiness of buildings which is applied to the PCB as shown in **Figure 3.10**. The 'Tree'-shaped tree columns with a careful design steel reduces the weight and depth of the solid structure and allows for light to flow in. More importantly, it offers a more spacious feeling for the users as total nos. of columns are reduced. Optimization of building arrangement is demonstrated in **Figure 3.11** where the general layout in the EIA stage and the adopted layout are shown for comparison. The layout and bulkiness of buildings have been minimized in the adopted layout to allow more spacious greening which is illustrated in **Figure 3.12**.

- 3.1.15 *For HKLR, providing aesthetic design on the viaduct, tunnel portals, at-grade roads and reclamation (e.g. subtle colour tone and slim form for viaduct to minimize the bulkiness of the structure and to blend the viaduct better with the background environment, featured form of tunnel portals, roadside planting along at-grade roads and landscape berm on & planting along edge of reclamation area) to beautify the HKLR alignment*

**Not applicable to the Project.** This design measure is applicable to HKLR, not HKBCF, hence not relevant to the Project.



## 4. MITIGATION MEASURES AND MAINTENANCE

### 4.1 Landscape and Visual Mitigation Measures

- 4.1.1 In Section 14.3.3.3 of the approved EIA Report and Section 14.2.5 of the EM&A Manual, landscape and visual mitigation measures are proposed for construction and operation phases. These mitigation measures are considered and will be adopted during construction and operation as far as practicable.
- 4.1.2 In the approved EIA Report, 14 out of 32 identified Visually Sensitive Receivers (VSRs), namely VSR19 to VSR32, are relevant to HKBCF (see **Figure 4.1**). Hence, only photomontages with mitigation measures targeted for these 14 VSRs are shown in **Figures 4.2 to 4.15**.
- 4.1.3 Implementation details of mitigation measures under the Project are summarized in **Table 4.1**. The contractors of the relevant contracts as shown in **Table 4.1** will be responsible for the implementation of the respective mitigation measures, including the landscape construction works and the maintenance during the establishment period. **Appendix F** shows the implementation schedule of all landscape and visual design and mitigation measures.

**Table 4.1 Summary of Mitigation Measures for Construction and Operation Phases**

Mitigation Code	Mitigation Measure as Extracted from Section 14.3.3.3 of the Approved EIA Report	Implementation Detail of Mitigation Measure under the Project	Relevant Contract(s)
<b>Construction Phase</b>			
G1	<i>Grass-hydroseed bare soil surface and stock pile areas.</i>	Whenever bare soil surface and stock pile areas are expected to be left unoccupied and exposed for reasonably long periods of time, which allows the establishment of hydroseeded grass, these areas are grass-hydroseeded. For example, temporary grass-hydroseeding is applied at the bare soil surface of SIMAR slopes to protect the soil surface before shrub and groundcover planting commences. Areas of bare soil surface reserved for future development, which are expected to be unoccupied for years, are also grass-hydroseeded.	C2, C3, C4
G2	<i>Add planting strip and automatic irrigation system if appropriate at some portions of bridge or footbridge to screen bridge and traffic.</i>	This mitigation measure is implemented along some portions of viaducts, but not footbridges.  There are totally 8 nos. of pedestrian footbridges (connecting to the PCB) under the Project. They are designed with a contemporary approach with all glass	C1, C2, C3, C4

Mitigation Code	Mitigation Measure as Extracted from Section 14.3.3.3 of the Approved EIA Report	Implementation Detail of Mitigation Measure under the Project	Relevant Contract(s)
		<p>balustrades resting on the light metal base. It matches with the design language used for the PCB and its transparency would allow pedestrians to appreciate the surrounding environment, including the landscape background, when they are using these footbridges. In order to keep the concept of transparency for this new footbridge design, planting on these footbridges is not recommended, but the concept of gaining greening from the transparent balustrades can still be achieved. The proposed design has been endorsed and approved in the ACABAS submission on 17 July 2012. In this connection, no planting strip to these footbridges would be incorporated (See <b>Figure 3.7</b>).</p> <p>For viaducts, an optimal solution in terms of minimizing visual impact is developed through the use of patterned parapets to provide visual interest, and greening at the embankments (as recommended under G2) which will soften the hard structures and blend in with the at-grade soft landscape distributed amongst the road network (See <b>Figure 3.2</b>). Due to the abundance of at-grade soft landscape, it would be incongruous and out of keeping with the overall aesthetics of HKBCF if landscaping is repeated in the form of planters slung to all sides of the concrete viaducts which would increase the bulkiness of the viaducts. It is therefore inappropriate to add planting strip and automatic irrigation system at all portions of the bridges to be constructed under the Project, and greening along viaducts are limited to the embankments.</p>	
G3	<i>For HKLR, providing aesthetic design on the viaduct, tunnel portals, at-grade roads and reclamation (e.g. subtle colour tone and slim form for viaduct, aesthetic design of the bridge form and its structural elements including the</i>	<b>Not applicable to the Project.</b> This mitigation measure is applicable to HKLR, not HKBCF, hence not relevant to the Project.	-

Mitigation Code	Mitigation Measure as Extracted from Section 14.3.3.3 of the Approved EIA Report	Implementation Detail of Mitigation Measure under the Project	Relevant Contract(s)
	<i>parapet, soffit, columns and so on and decorative urban design elements and lightings for the HKLR; featured form of tunnel portals, roadside planting along at-grade roads and landscape berm on &amp; planting along edge of reclamation area) to beautify the HKLR alignment</i>		
G4	<i>For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building façade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonic atmosphere of the HKBCF.</i>	<p>For aesthetic architectural design on the PCB, the design of the roof has adopted a sinuous and organic form that echoes the surrounding sea and the nearby Airport as shown in <b>Figure 3.7</b>. The use of glass for facade and balustrade similar to Airport buildings is also shown in <b>Figure 3.7</b>. It optimizes the natural daylight and expansiveness of space. The design language adopted is similar to that of the current Hong Kong International Airport which can promote a unique building cluster around the airport areas to provide harmonic atmosphere of the HKBCF.</p> <p>For aesthetic architectural design on other related buildings, a modern and contemporary design using simple outlines and subtle materials with light colour tones is adopted and illustrated in <b>Figure 3.8</b>. Such architectural design on ancillary buildings and facilities provide a harmonic atmosphere in the HKBCF. Roof planting are also proposed where feasible on related buildings as shown in the Master Landscape Plan in <b>Figures 3.1a to 3.1c</b>.</p> <p>To harmonize the atmosphere of the HKBCF, aesthetic architectural design on infrastructures, such as roadside planting and planting along embankments of elevated roads, is incorporated into the overall design as illustrated in <b>Figure 3.2</b>. Design of stone swathe is also included as shown in <b>Figure 3.9</b>. Parapet planting is not adopted because due to the abundance of at-grade soft</p>	C1, C2, C3, C4, C8

Mitigation Code	Mitigation Measure as Extracted from Section 14.3.3.3 of the Approved EIA Report	Implementation Detail of Mitigation Measure under the Project	Relevant Contract(s)
		landscape, it would be incongruous and out of keeping with the overall aesthetics of HKBCF if landscaping is repeated in the form of parapet planters slung to the sides of the concrete viaducts which would increase the bulkiness of the viaducts.	
G5	<i>Vegetation reinstatement and upgrading to disturbed areas.</i>	The entire works area of the Project is on newly reclaimed land except for a small area on the existing Airport Island (see <b>Figure 3.1a</b> ). The disturbed areas on the existing Airport Island will be reinstated to their former state with hydroseeding and planting up to the satisfaction of Airport Authority, the future maintenance agent of the reinstated areas. There are 10 nos. of deformed self-seeded trees within this small area on the existing Airport Island which need to be removed for the construction of the Project (see <b>Appendix E</b> ). The felling of these trees would be compensated by planting 21 nos. of trees on the HKBCF to fully compensate the loss of trees in terms of aggregated girth.	C2
G6	<i>Maximize new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed.</i>	In the overall landscape design of the HKBCF Island, greening opportunities have been maximized as shown in <b>Figures 3.1a to 3.1c</b> , with proposed tree (about 1,309 nos., including 21 nos. of compensatory trees for trees felled on existing Airport Island), shrub and groundcover planting (see <b>Figure 3.6</b> ) covering almost all the land area without permanent hard structures where feasible. Also, roof greening (see <b>Figures 3.1a to 3.1c and 3.3</b> ) and vertical greening (see <b>Figure 3.4</b> ) are adopted where feasible to provide additional greening.	C1, C2, C3, C4, C8, Future Contractor of C4 landscape works (i.e. Contractor of C9)
G7	<i>Provide planting area around peripheral of and within HKBCF and HKLR for tree screening buffer effect.</i>	In accordance with the restrictions in the HKIA APSL (Revision 4.0.1: October 2015), no tree is proposed in <b>Zone 1</b> . Tree planting are maximized on the northern, western and south-eastern periphery of as well as within the HKBCF in <b>Zone 2</b> for tree screening effect as shown in <b>Figures 3.1a to 3.1c</b> .  The proposed no. of trees in each tree group, and the minimum segregation between	C1, C2, C3,

Mitigation Code	Mitigation Measure as Extracted from Section 14.3.3.3 of the Approved EIA Report	Implementation Detail of Mitigation Measure under the Project	Relevant Contract(s)
		adjacent tree groups strictly follow the restrictions as stipulated in the HKIA APSL (Revision 4.0.1) (see <b>Appendix C1</b> ). All tree species proposed on the HKBCF are selected from the HKIA APSL (Revision 4.0.1: October 2015) and HKIA APSL (Revision 5.0) (see <b>Appendix C2</b> ).	
G8	<i>Plant salt tolerant native tree and shrubs etc along the planter strip at affected seawall.</i>	Salt-tolerant native tree <i>Thespesia populnea</i> (恒春黄槿) is included in the planting proposal for tree planting along the newly reclaimed coastline.  For native shrubs, <i>Ixora chinensis</i> (龍船花) and <i>Rhododendron simsii</i> (紅杜鵑) are included in the planting proposal along the planter strip at the seawall.	Future Contractor of C4 landscape works (i.e. Contractor of C9)
G9	<i>Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt “natural-look” by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance “natural-look” of the new coastline.</i>	The new seawall is constructed with armour rocks in the form of natural rock material to create a “natural-look” to the new coastline under a separate design and construction consultancy for the HKBCF reclamation works ( <b>Appendix D</b> refers).  Planting strip along the new coastline to accommodate screen buffer and enhance the “natural-look” is proposed as shown in <b>Figures 3.1a to 3.1c</b> and <b>3.2</b> .	C2, C3, C4, Future Contractor of C4 landscape works (i.e. Contractor of C9)
V1	<i>Minimize time for construction activities during construction period.</i>	The progress of construction works will be closely monitored to ensure that the time for construction activities is minimized during construction period.	C1, C2, C3, C4, C8, Future Contractor of C4 landscape works (i.e. Contractor of C9)
V2	<i>Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKLR &amp; HKBCF construction.</i>	<b>Not applicable to the Project.</b> Since the entire HKBCF island is located far (>500m) from the VSRs who have low-level views to the Project, hoarding is therefore considered unnecessary. Even for the most concerned VSR31 with low-level views, who is located approximately 500m from the Project, hoarding (normally 2m in height) would have very limited screening effect.	-

Mitigation Code	Mitigation Measure as Extracted from Section 14.3.3.3 of the Approved EIA Report	Implementation Detail of Mitigation Measure under the Project	Relevant Contract(s)
<b>Operation Phase</b>			
G10	<i>Provide proper planting maintenance on the new planting areas to enhance the aesthetic degree.</i>	Planting maintenance such as watering, fertilizing, weeding, pruning and mowing etc. will begin immediately after planting. <b>Table 4.5</b> and <b>Table 4.6</b> show the planting maintenance principle and schedule.	C1, C2, C3, C4, C8, Future Contractor of C4 landscape works (i.e. Contractor of C9)
V3	<i>Lighting design to minimize glare at night. Decorative road lighting to be considered during detailed design stage.</i>	Decorative road lighting has been considered during the detailed design stage. However, to minimize glare at night and avoid any unnecessary light spill to nearby VSRs (e.g. those on Airport Island and residents at Tung Chung and north Lantau), only minimum functional lighting will be provided for safety and all directional lighting will be facing towards, instead of away from, the HKBCF.	C1, C2, C3, C4, C8

## 4.2 Re-assessment of Residual Impacts

4.2.1 As stated in **Paragraphs 1.1.7, 1.1.8 and 1.1.9**, subsequent to the approval of this LVP in October 2018 and May 2020, updates which affect the implementation of the landscape and visual mitigation measures on HKBCF are required to be incorporated in this updated LVP. Re-assessment on the residual impacts with the latest changes are detailed in the following paragraphs.

### 4.2.2 Exclusion of ITT-BVB Project Area (see **Paragraph 1.1.7**)

In the approved EIA Report of the ITT-BVB project (Register No.: AEIAR-216/2018), the potential landscape and visual impact on HKBCF was assessed and mitigation measures were proposed to mitigate the potential impacts to acceptable level. Also, as stipulated in Condition 2.8 of the EP for ITT-BVB project (EP No. EP-560/2018), a Landscape and Visual Plan will be prepared and submitted by the Permit Holder (i.e. AAHK) with implementation details of landscape and visual mitigation measures. Hence, any potential landscape and visual impact on HKBCF due to implementation of the ITT-BVB project will be mitigated to acceptable level and will not have unacceptable impact on the landscape and visual mitigation measures implemented by HKBCF.

### 4.2.3 Replacement of gravel by hydroseeding (see **Paragraph 1.1.8**)

An area originally proposed to be covered by gravel as a temporary measure before further development is confirmed and implemented (as stated in the approved LVP) is now proposed to be hydroseeded (as stated in **Paragraph 1.1.8**) (refer to **Figure 1.1**). This is a landscape improvement measure and have a positive effect on the landscape of HKBCF.

#### 4.2.4 No tree planting by other projects on HKBCF (see **Paragraph 1.1.8**)

Tree planting originally planned to be implemented by contractors of other projects (as stated in the approved LVP) will be implemented by the future contractor of C4 landscape works (i.e. Contractor of C9) (as stated in **Paragraph 1.1.8**). In other words, the implementation agent of some of the tree planting is proposed to be changed, but not the quantity (except about 190 nos. affected by the ITT-BVB Project, 62 nos. affected by the ACL Project and 151 nos. affected by the ICPs Project). Hence, change in the effectiveness of the proposed mitigation measures is not anticipated with proposed change of implementation agent.

#### 4.2.5 Exclusion of ACL Project Area (see **Paragraph 1.1.9**)

In the Project Profile (Register No.: PP-606/2020) permitted to apply directly for environmental permit for ACL project, the potential landscape and visual impact on ACL was assessed and mitigation measures were proposed to mitigate the potential impacts to acceptable level. Also, as stipulated in Condition 2.6 of the EP for ACL project (EP No.: EP-581/2020), a Landscape and Visual Plan will be prepared and submitted by the Permit Holder (i.e. AAHK) with implementation details of landscape and visual mitigation measures. Hence, any potential landscape and visual impact on HKBCF due to implementation of the ACL project will be mitigated to acceptable level and will not have unacceptable impact on the landscape and visual mitigation measures implemented by HKBCF.

About 62 nos. of trees affected in the ACL project location (including 6 trees already planted and 56 trees to be planted) will be planted / transplanted and maintained by the Permit Holder of EP No.: EP-581/2020. Details will be elaborated in the LVP for ACL project, and the 62 nos. of affected trees will be planted / transplanted within the HKBCF Island. Hence, change in the effectiveness of the proposed landscape and visual mitigation measures on HKBCF Island is not anticipated with the exclusion of ACL project area.

#### 4.2.6 Exclusion of ICPs Project Areas (see **Paragraph 1.1.9**)

For ICPs project under the approved EIA Report of HKBCF (Register No.: AEIAR-145/2009), FEP (FEP no.: FEP-02/353/2009/K) has been granted to AAHK to implement part of the planting proposal within the project location. Under the Condition 2.4 of the FEP for ICPs project, a Landscape and Visual Plan will be prepared and submitted by the Permit Holder (i.e. AAHK) with implementation details of landscape and visual mitigation measures. Hence, any potential landscape and visual impact on HKBCF due to implementation of the ICPs project will be mitigated to acceptable level and will not have unacceptable impact on the landscape and visual mitigation measures implemented by HKBCF.

About 151 nos. of trees affected in the ICPs project location (including 41 trees already planted and 110 trees to be planted) will be planted / transplanted and maintained by the Permit Holder of FEP no.: FEP-02/353/2009/K. Details will be elaborated in the LVP for ICPs project, and the 151 nos. of affected trees will be planted / transplanted within the HKBCF Island. Hence, change in the effectiveness of the proposed landscape and visual mitigation measures on HKBCF Island is not anticipated with the exclusion of ICPs project areas.

4.2.7 In conclusion, the proposed amendments in this updated LVP to the LVP approved in May 2020 do not affect the effectiveness of the landscape and visual mitigation measures as listed in the approved LVP. The residual impact will remain acceptable with mitigation measures in this updated LVP.

### 4.3 Maintenance and Management

4.3.1 As specified in Section 14.2.10 of the EM&A Manual, “*The planting works shall be monitored during the first 10 years of the operation phase of the Project.*”

4.3.2 The Environmental Teams engaged by individual contractors of HKBCF will be responsible for the landscape and visual monitoring works as listed in the monitoring programme in Table 14.1 of the EM&A Manual during construction and the establishment period. The landscape and visual monitoring works shall make reference to this LVP once this LVP is endorsed by PlanD/ EPD. For reporting and submission on landscape and visual monitoring, for both construction and the establishment periods, the ETs of relevant HKBCF contracts will submit their reports to the IEC. All these reports shall be submitted to the Environmental Project Office (ENPO) for the HZMB HKLR, HZMB HKBCF and TM-CLKL for record.

4.3.3 After the establishment period, the monitoring of planting works in the remaining 9 years of the operation phase of the Project will be taken up by the HKBCF MOM contractor.

4.3.4 The schedule of management and maintenance responsibilities for landscape works is shown in **Table 4.2** to identify the long-term management and maintenance responsibilities after the establishment period. Such arrangement has been included in the overall Management and Maintenance Schedule for the Project, which has been agreed by the Project proponent.

**Table 4.2 Landscape Works Schedule of Management and Maintenance Responsibilities**

Item	Detailed Description	Management Authority	Maintenance Agent
<b>Hard Landscape</b>			
1	Paving works	HyD	HyD
2	Site furniture (benches and bins)	IDMC of HK Port <sup>(1)</sup>	HyD
3	At-grade planters	HyD	HyD
<b>Soft Landscape</b>			
1	At-grade planting works (trees, shrubs, groundcovers, turf and hydroseeding)	IDMC of HK Port <sup>(1)</sup>	HKBCF MOM Contractor (engaged by HyD)
2	Roof Greening (RG) / Vertical Greening (VG)	Respective User of Buildings	HKBCF MOM Contractor (engaged by HyD)
3	Planting on SIMAR slopes	HyD	HyD
4	At-grade irrigation system	IDMC of HK Port <sup>(1)</sup>	HKBCF MOM Contractor (engaged by HyD)
5	Irrigation system on RG	Respective User of Buildings	EMSTF/ArchSD <sup>(2)</sup>

<sup>(1)</sup> “IDMC of HK Port” denotes Inter-departmental Management Committee of Hong Kong Port.

<sup>(2)</sup> ArchSD is responsible for maintenance for the plumbing and drainage except the pump sets, if any; EMSTF is responsible for maintenance of the pump set if any.

4.3.5 A full Operations and Maintenance (O&M) Manual will be prepared describing in detail all routine and periodic maintenance inspections and operations to be carried out by the O&M agent and/or his contractors. Typical operations and scheduling are illustrated in **Table 4.3** to **Table 4.6**.

**Table 4.3 Hard Landscape Maintenance Principles**

<b>Irrigation</b>	
Operation:	Oversee system and adjust timers as required
Adjust:	Adjust valve water flow rates in field twice a year March and October
Repair:	Repair and replace fittings and pipework as required
<b>Lighting</b>	
Repair:	Fittings as required
Replace:	Replace bulbs as required
<b>Hard Paving</b>	
Repair:	Check and maintain all paving and repair as required
Clear:	Remove debris from drains twice a year and routinely check monthly and after storms
<b>Water Features</b>	
Maintenance:	Maintenance contract/ program should be arranged and agreed with a program to be prepared by Specialist Water Feature Contractor. Routine maintenance visits should be at least twice a year with additional maintenance visits as required.

**Table 4.4 Hard Landscape Maintenance Schedule**

	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
<b>Irrigation</b>												
Operation	*	*	*	*	*	*	*	*	*	*	*	*
Adjust valves			*							*		
Repair	*	*	*	*	*	*	*	*	*	*	*	*
<b>Lighting</b>												
Repair	*	*	*	*	*	*	*	*	*	*	*	*
Replace	*	*	*	*	*	*	*	*	*	*	*	*
<b>Hard Paving</b>												
Repair	*	*	*	*	*	*	*	*	*	*	*	*
Clear	*	*	*	*	*	*	*	*	*	*	*	*
<b>Water Features</b>												
Maintenance		*						*				

**Table 4.5 Soft Landscape Maintenance Principles**

<b>Planting</b>	
Watering:	Watering to all plants to ensure satisfactory growth and health (manual and automatic irrigation)
Fertilizing:	Twice yearly November and March with emphasis on March application
Fungicide / Insecticide:	Spray as necessary or 3 times a year with approved non-toxic pesticides
Weeding:	Use selective herbicide to reduce maintenance costs as required
Securing:	Adjust tree stakes, guys and ties as required for safety and avoid chaffing of bark
Repairing:	After exceptional weather conditions replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site
Litter Removal:	Remove all litter and debris
Pruning Shrubs / GCs:	Prune Shrubs and ground covers twice a year in March and November in accordance with HKIA APSL (Revision 4.0.1: October 2015) or the latest revision of HKIA APSL for respective zones (i.e. <b>Zone 1</b> or <b>Zone 2</b> )
Pruning Trees:	Prune trees/limb overhanging branches in accordance with HKIA APSL (Revision 4.0.1: October 2015) or the latest revision of HKIA APSL for <b>Zone 2</b> , monthly and as required for safety to minimize usage by birds
Mowing:	Mow grass twice a year in March and October in accordance with HKIA APSL (Revision 4.0.1: October 2015) or the latest revision of HKIA APSL for respective zones (i.e. <b>Zone 1</b> or <b>Zone 2</b> )
Tree Risk Assessment:	Undertake Tree Risk Assessment in accordance with the latest edition of <i>Guidelines for Tree Risk Assessment and Management Arrangement</i> promulgated by Greening, Landscape and Tree Management Section of Development Bureau

**Table 4.6 Soft Landscape Maintenance Schedule**

	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Watering *	●	●	●	●	●	●	●	●	●	●	●	●
Fertilizing			●								●	
Fungicide / Insecticide			●						●			●
Weeding		●	●	●	●	●	●	●		●		●
Securing			●						●			
Repairing	As required											
Litter Removal	●	●	●	●	●	●	●	●	●	●	●	●
Pruning Shrubs / GCs			●								●	
Pruning Trees	●	●	●	●	●	●	●	●	●	●	●	●
Mowing			●							●		
Tree Risk Assessment			●									

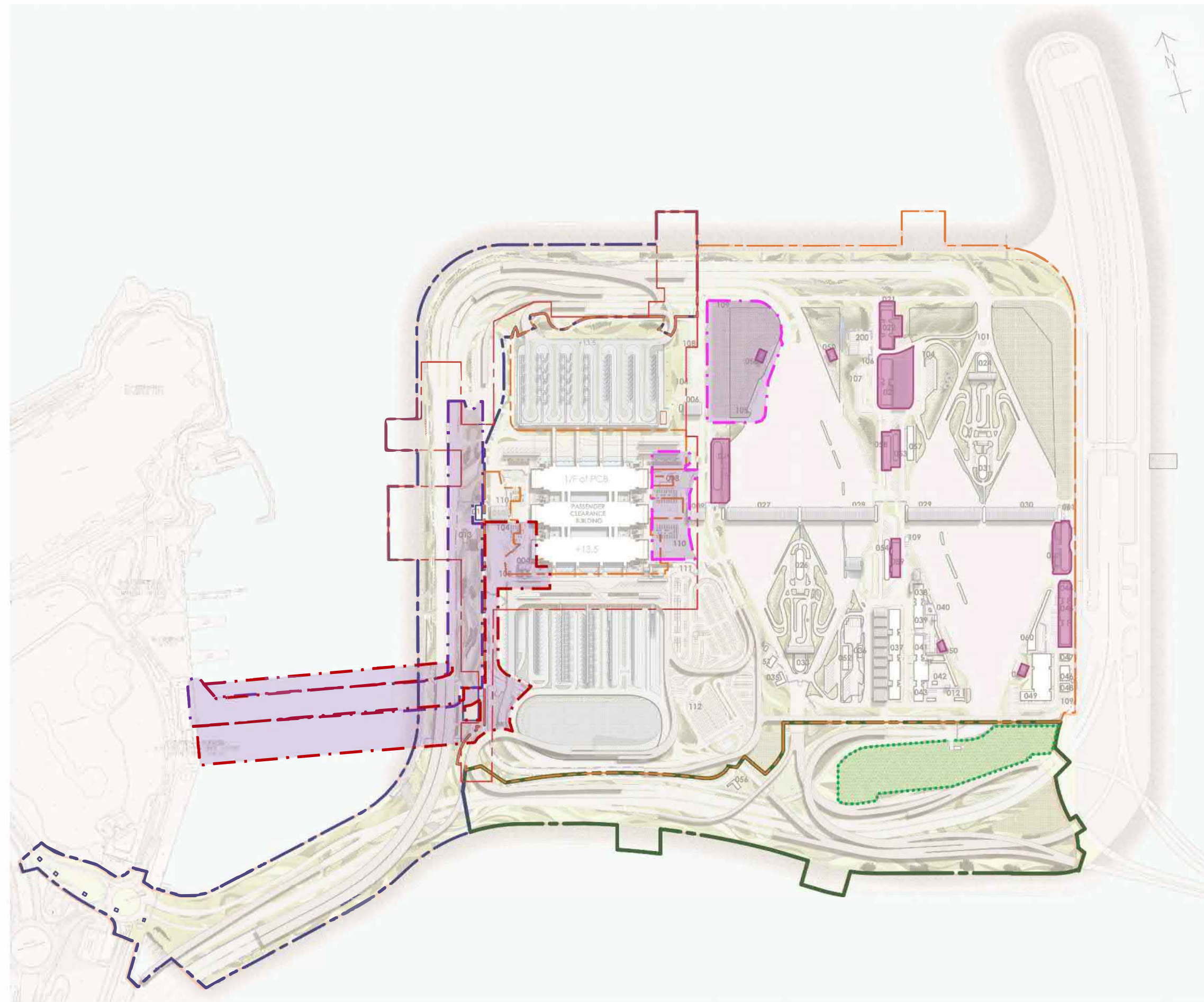
\* Dot size denotes watering frequency, which will be higher in dry season and lower in wet season in general. Exact frequency of watering shall be adjusted from time to time as required to suit the site condition.

## 5. SUMMARY

- 5.1.1 This LVP submission is prepared in fulfilment of Condition 2.9 of EP No. EP-353/2009/K. This LVP submission covers the entire HKBCF project site to demonstrate the holistic design approach for HKBCF.
- 5.1.2 This LVP was originally approved in October 2018. A revised LVP was submitted and further approved in May 2020 due to the ITT-BVB Project initiated by AAHK on HKBCF island. Area on HKBCF affected by the ITT-BVB Project is therefore excluded from HKBCF's EP conditions and from the revised LVP. Subsequent to the approval of LVP in May 2020, this updated LVP is required due to the ACL and ICPs projects initiated by AAHK on HKBCF island. Areas on HKBCF within the ACL and ICPs projects are therefore excluded from this updated LVP and from the HKBCF's EP conditions under EP No. EP-353/2009/K.
- 5.1.3 The HKBCF Project mainly involves the construction of superstructures and infrastructures on the newly reclaimed HKBCF Island. Landscape hardworks include pedestrian paving, stone swathe, pond and bio swale; landscape softworks include tree, shrub and groundcover planting, turfing, hydroseeding, roof greening and vertical greening.
- 5.1.4 All relevant design measures listed in Section 14.3.3.2 of the approved EIA Report (Register No.: AEIAR-145/2009) and Section 14.2.4 of the EM&A Manual have been considered in the detailed design stage. These measures have been incorporated into the landscape design as far as practicable.
- 5.1.5 Since HKBCF is located underneath the air-flight route, the planting design also complies with the planting restrictions in respective Zones of HKIA as stipulated in HKIA APSL (Revision 4.0.1: October 2015). For the works contract(s) of HKBCF awarded after 2018, all planting proposed follows the latest HKIA APSL (Revision 5.0: January 2018).
- 5.1.6 To minimize potential landscape and visual impact, other than maximizing greening opportunities, aesthetic architectural design on all above-ground structures to provide a harmonized effect on HKBCF and the adjacent Airport Island is a key design consideration.
- 5.1.7 Landscape and visual mitigation measures for construction and operation phases as recommended in Section 14.3.3.3 of the approved EIA Report and Section 14.2.5 of the EM&A Manual will also be adopted as far as practicable. Implementation details of mitigation measures relevant to the HKBCF Project are described in this LVP submission.
- 5.1.8 Detailed arrangement on maintenance and management of landscape works is also presented in this LVP submission to identify the management authorities and maintenance parties and summarize the basic principles for maintenance of landscape works, the details of which will be developed in the O&M Manual.



## Figures

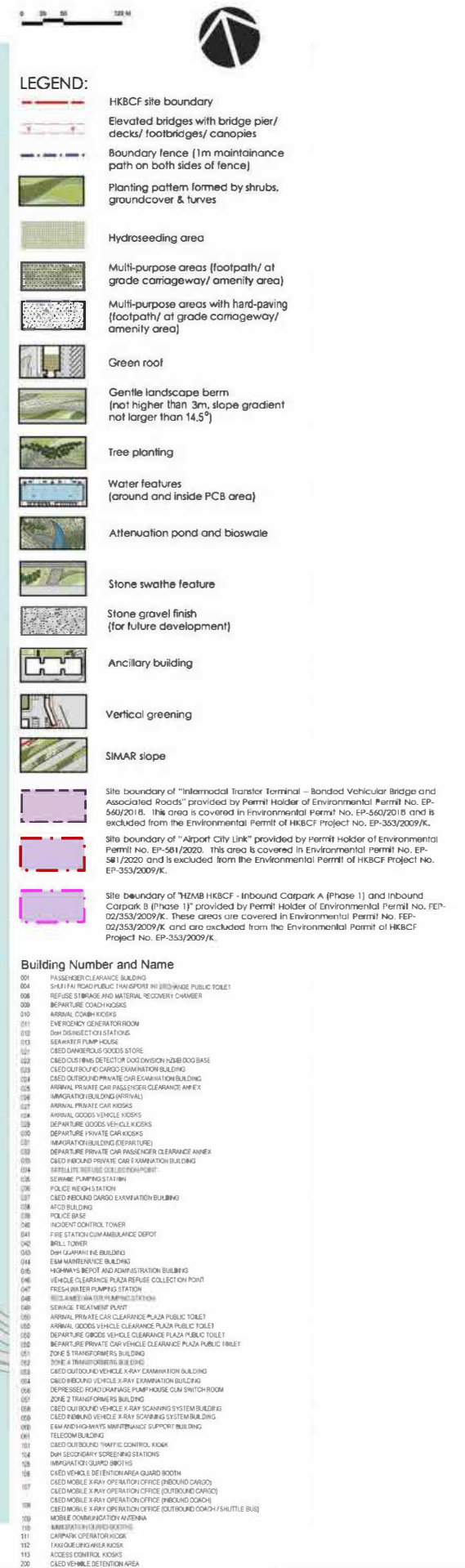


- LEGEND:
- CONTRACT NO. HY/2013/01  
HZMB HKBCF -Passenger Clearance Building
  - CONTRACT NO. HY/2013/02  
HZMB HKBCF -Infrastructure Works Stage I (Western Portion)
  - CONTRACT NO. HY/2013/03  
HZMB HKBCF -Vehicle Clearance Plazas and Ancillary Buildings and Facilities
  - CONTRACT NO. HY/2013/04  
HZMB HKBCF -Infrastructure Works Stage II (Southern Portion)
  - CONTRACT NO. HY/2014/05  
HZMB HKBCF -Remaining Ancillary Buildings and Facilities
  - Area with proposed temporary treatment changed from hard surface (covered with gravel) in the Landscape and Visual Plan approved in October 2018 to hydroseeding as a landscape improvement initiative in addition to the landscape mitigation measures.
  - Project area of the Designated Project "Intermodal Transfer Terminal – Bonded Vehicular Bridge and Associated Roads" provided by Airport Authority Hong Kong, the Permit Holder of Environmental Permit No. EP-560/2018. This area is excluded from HZMB HKBCF's Environmental Permit conditions and Landscape and Visual Plan under Environmental Permit No. EP-353/2009/K.
  - Project area of the Designated Project "Airport City Link" provided by Airport Authority Hong Kong, the Permit Holder of Environmental Permit No. EP-581/2020. This area is excluded from HZMB HKBCF's Environmental Permit conditions and Landscape and Visual Plan under Environmental Permit No. EP-353/2009/K.
  - Project areas of the Designated Project "HZMB HKBCF - Inbound Carpark A (Phase 1) and Inbound Carpark B (Phase 1)" provided by Airport Authority Hong Kong, the Permit Holder of Environmental Permit No. FEP-02/353/2009/K. These areas are excluded from Environmental Permit conditions and Landscape and Visual Plan under HZMB HKBCF's Environmental Permit No. EP-353/2009/K.



Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing Facilities (HKBCF) Superstructures and Infrastructures

For submission of Landscape and Visual Plan to EPD

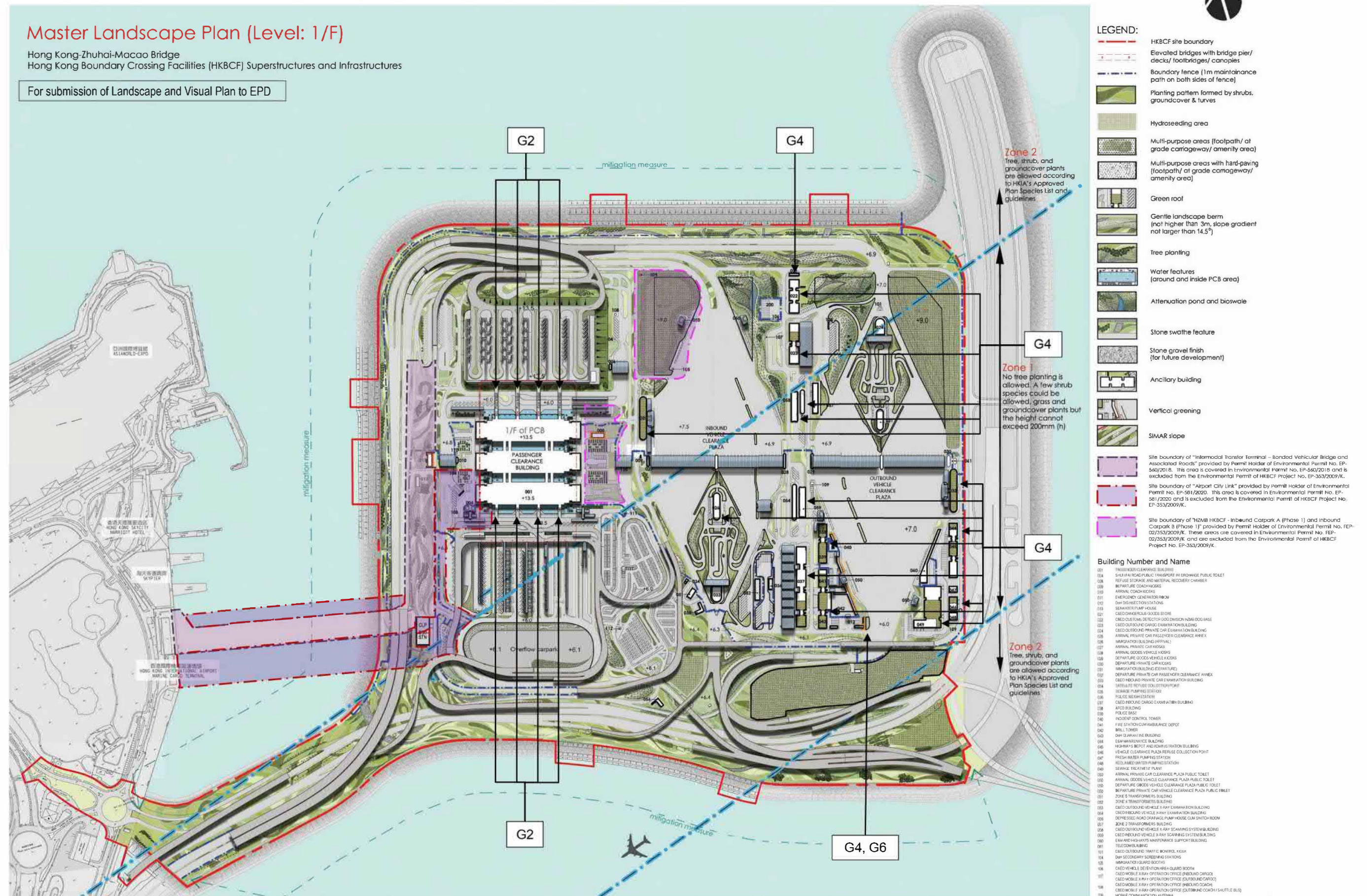




# Master Landscape Plan (Level: 1/F)

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing Facilities (HKBCF) Superstructures and Infrastructures

For submission of Landscape and Visual Plan to EPD

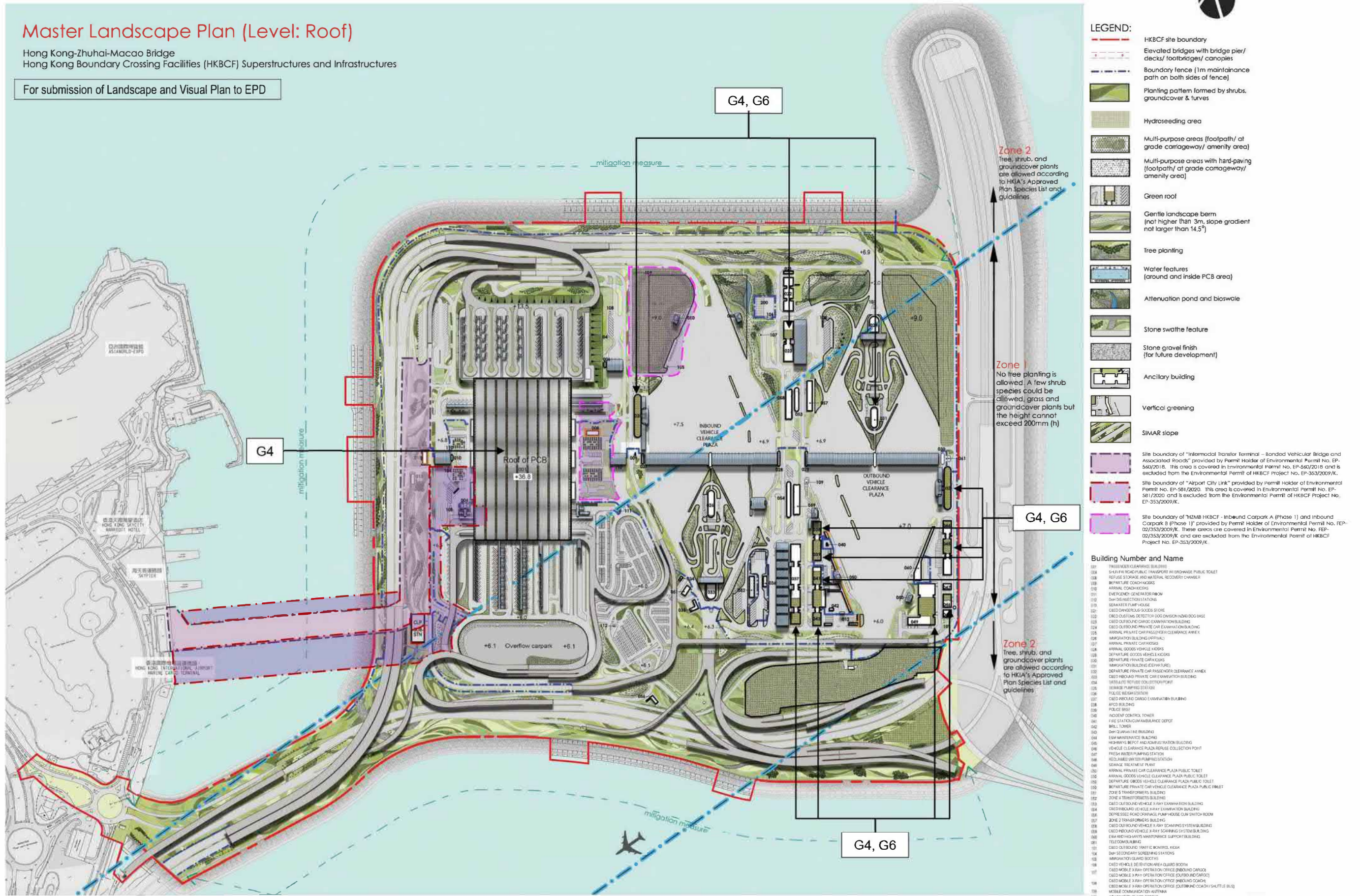




# Master Landscape Plan (Level: Roof)

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing Facilities (HKBCF) Superstructures and Infrastructures

For submission of Landscape and Visual Plan to EPD







Optimized size, spacing and locations of bridge columns



Roadside planting



Planting along embankments of elevated roads



# KEY PLAN



PLANT SPECIES: *Zephyranthes candida*  
 SOIL DEPTH: 300mm  
 IRRIGATION SYSTEM: AUTOMATIC DRIP-LINE

MAINTENANCE ACCESS: 600-900mm IN WIDTH



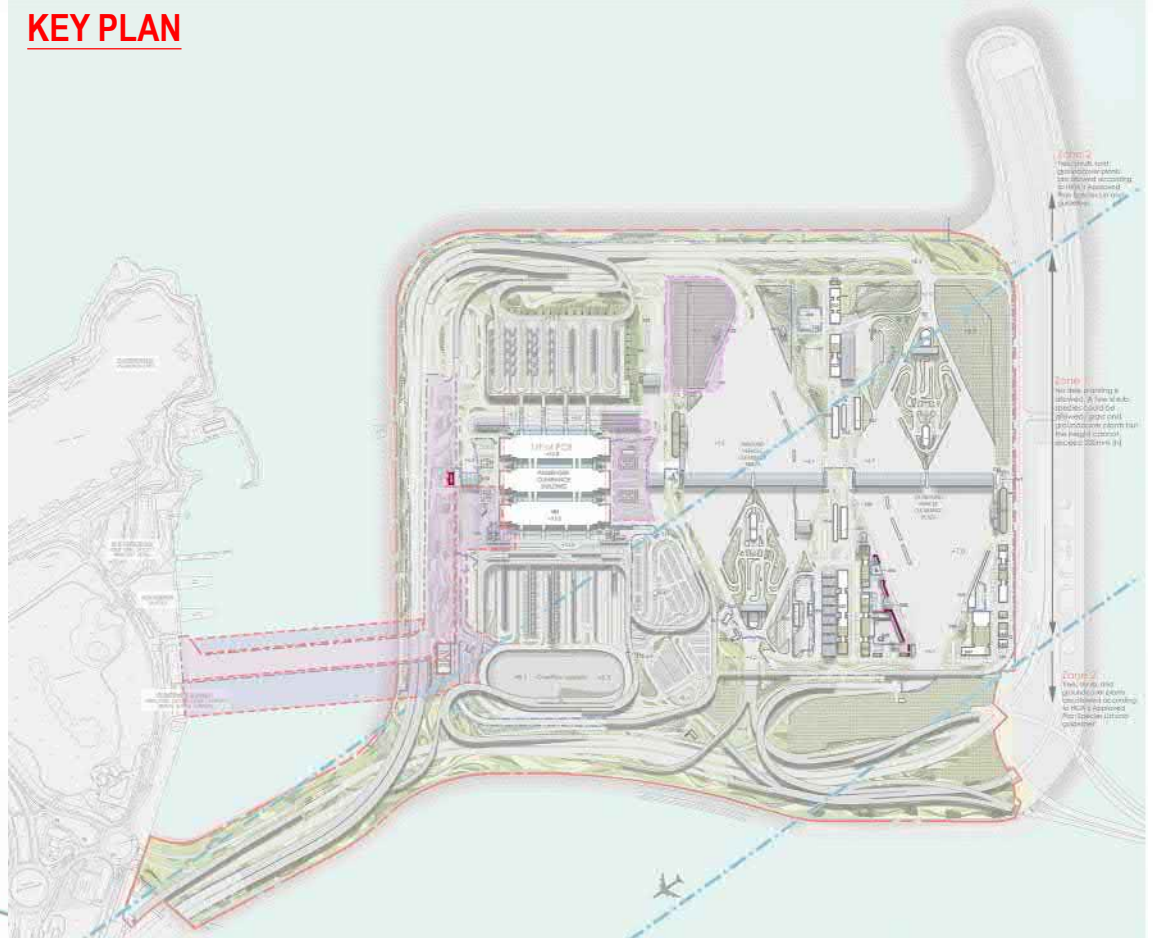




CLIMBERS: *Parthenocissus dalzielii*  
*Pyrostegia venusta*  
SOIL DEPTH: 300mm

STAINLESS STEEL WIRE MESH

KEY PLAN



AGREEMENT NO. CE 13/2010 (CE)  
HONG KONG-ZHUHAI-MACAO BRIDGE HONG KONG BOUNDARY CROSSING FACILITIES (SUPERSTRUCTURES AND INFRASTRUCTURES) DESIGN AND CONSTRUCTION  
Typical Arrangement of Vertical Greening

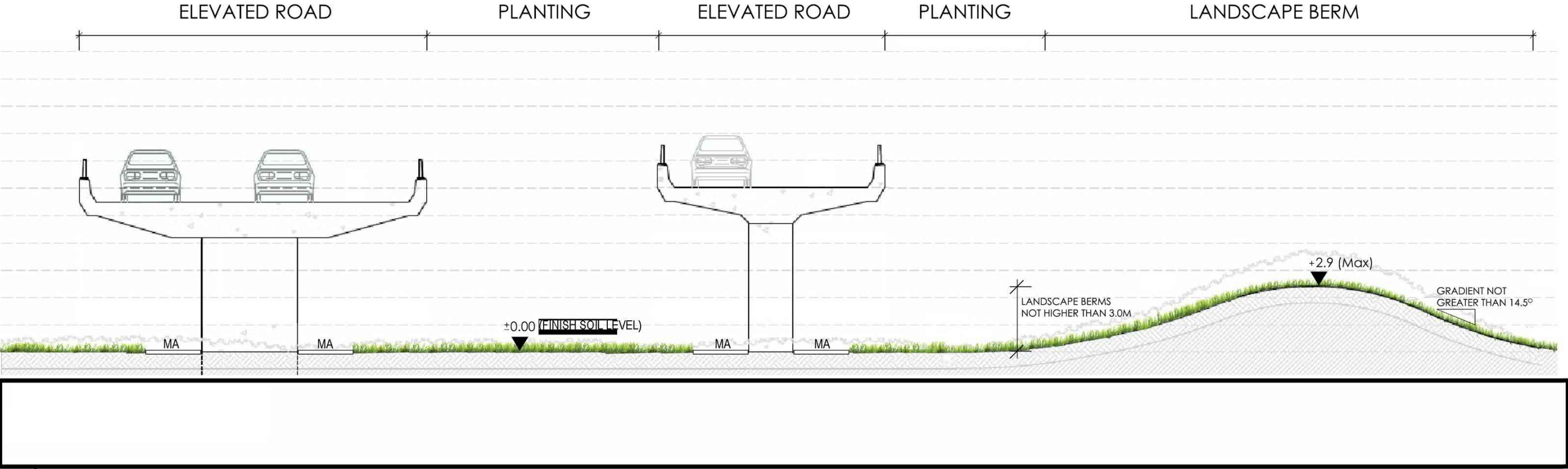
SCALE	N.T.S.	DATE	10 MAR 2022
FIGURE NO.	FIGURE 3.4 (rev.A)		



KEY PLAN



KEY:  
MA - MAINTENANCE ACCESS  
±0.00 - RELATIVE LEVEL



AGREEMENT NO. CE 13/2010 (CE)  
HONG KONG-ZHUHAI-MACAO BRIDGE HONG KONG BOUNDARY CROSSING FACILITIES (SUPERSTRUCTURES AND INFRASTRUCTURES) DESIGN AND CONSTRUCTION  
TYPICAL CROSS-SECTIONAL PLAN OF PROPOSED LANDSCAPE BERMS

SCALE	N.T.S.	DATE	10 MAR 2022
FIGURE NO.	FIGURE 3.5 (rev.A)		

TREE PLANTING <sup>(1)</sup>				
SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [m]
AL ** #	<i>Albizia lebbbeck</i>	大葉合歡	4000-5000(H) x 3000(SP) x 100(DBH)	4
BV	<i>Bauhinia variegata</i>	宮粉羊蹄甲	4000-5000(H) x 3000(SP) x 100(DBH)	4
BA ^	<i>Brassaia actinophylla</i>	傘樹	3000-4000(H) x 2500(SP) x 100(DBH)	3
CV	<i>Callistemon viminalis</i>	串錢柳	4000-5000(H) x 3000(SP) x 100(DBH)	4
CS **, #	<i>Cassia siamea</i>	鐵刀木	4000-5000(H) x 3000(SP) x 100(DBH)	4
GB **, #, ^	<i>Grevillea banksii</i>	紅花銀樺	3000-4000(H) x 2500(SP) x 100(DBH)	3
GR #	<i>Grevillea robusta</i>	銀樺	4000-5000(H) x 3000(SP) x 100(DBH)	4
HF ^	<i>Heteropanax fragrans</i>	幌傘楓	3000-4000(H) x 2500(SP) x 100(DBH)	3
JA #	<i>Jacaranda mimosifolia</i>	藍花楸	4000-5000(H) x 3000(SP) x 100(DBH)	4
JC **	<i>Juniperus chinensis</i>	龍柏	4000-5000(H) x 3000(SP) x 100(DBH)	4
PR #, ^	<i>Plumeria rubra</i>	雞蛋花	2500-3000(H) x 2500(SP) x 100(DBH)	3
TP *, **	<i>Thespesia populnea</i>	恒春黃槿	4000-5000(H) x 3000(SP) x 100(DBH)	4

SHRUB PLANTING <sup>(1)</sup>				
SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [mm]
Aod #	<i>Aglaia odorata</i>	米仔蘭	700(H) x 500(SP)	400
Cha	<i>Calliandra haematocephala</i>	紅絨球	700(H) x 500(SP)	400
Fmi **, #	<i>Ficus microcarpa</i> 'golden leaves'	黃金榕	1000(H) x 700(SP)	600
Ich *	<i>Ixora chinensis</i>	龍船花	500(H) x 400(SP)	350
Mar	<i>Malvaviscus arboreus</i>	大紅袍	700(H) x 500(SP)	450
Mfi	<i>Michelia figo</i>	含笑	800(H) x 500(SP)	400
Pmy	<i>Phyllanthus myrtifolius</i>	瘤腺葉下珠	400(H) x 300(SP)	250
Rpu #	<i>Rhododendron pulchrum</i>	錦繡杜鵑	600(H) x 400(SP)	300
Rsi *	<i>Rhododendron simsii</i>	紅杜鵑	600(H) x 400(SP)	300
Sco	<i>Spathiphyllum commutatum</i>	白掌	300(H) x 300(SP)	200
Sre #	<i>Strelitzia reginae</i>	天堂鳥蕉	500(H) x 400(SP)	350

GREEN ROOF GROUND COVER PLANTING <sup>(1)</sup>				
SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [mm]
Zan	<i>Zephyranthes candida</i>	蔥蓮	100(H) x 100(SP)	100

#### NOTES:

<sup>(1)</sup> All proposed plant species and specifications are subject to change during construction to suit the site conditions.

<sup>(2)</sup> Minimum requirement of grass seed mix for hydroseeding shall follow General Specification for Civil Engineering Works Clause 3.26(3).

\* Species native to Hong Kong according to the Hong Kong Herbarium website <<http://www.herbarium.gov.hk>>

\*\* Species which is salt spray tolerant

# Species proposed on landscape berms

^ Selected from updated Hong Kong International Airport Approved Plant Species List (Revision 5.0: January 2018)

CLIMBER PLANTING <sup>(1)</sup>				
SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [mm]
Pda	<i>Parthenocissus dalzielii</i>	異葉爬山虎	300(H) x 250(SP)	250
Pve **	<i>Pyrostegia venusta</i>	炮仗花	300(H) x 250(SP)	250

GROUND COVER PLANTING <sup>(1)</sup>				
SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [mm]
Aag #	<i>Agave angustifolia</i>	狹葉龍舌蘭	200(H) x 300(SP)	200
Aam #	<i>Agave americana</i>	龍舌蘭	100(H) x 100(SP)	100
Asl #	<i>Aglaonema</i> 'Silver King'	銀王粗肋草	150(H) x 150(SP)	100
Ave #	<i>Alternanthera versicolor</i>	錦繡莧, 紅草	100(H) x 100(SP)	100
Ite #	<i>Iris tectorum</i>	鳶尾	100(H) x 100(SP)	100
Lmo #	<i>Lantana montevidensis</i>	鋪地臭金鳳	200(H) x 300(SP)	200
Lsp *, #	<i>Liriope spicata</i>	山麥冬	100(H) x 100(SP)	100
Nex *	<i>Nephrolepis hirsutula</i>	毛葉腎蕨	150(H) x 200(SP)	150
Oja *, #	<i>Ophiopogon japonicus</i>	麥冬	150(H) x 150(SP)	100
Rds #	<i>Rhoeo discolor</i>	紫背萬年青	150(H) x 200(SP)	100
Spo **	<i>Syngonium podophyllum</i>	合果芋	200(H) x 200(SP)	150
Wtr **, #	<i>Wedelia trilobata</i>	蟛蜞菊	100(H) x 100(SP)	100
Zan #	<i>Zephyranthes candida</i>	蔥蓮	100(H) x 100(SP)	100
Zro #	<i>Zephyranthes rosea</i>	玫瑰蔥蓮	150(H) x 200(SP)	100

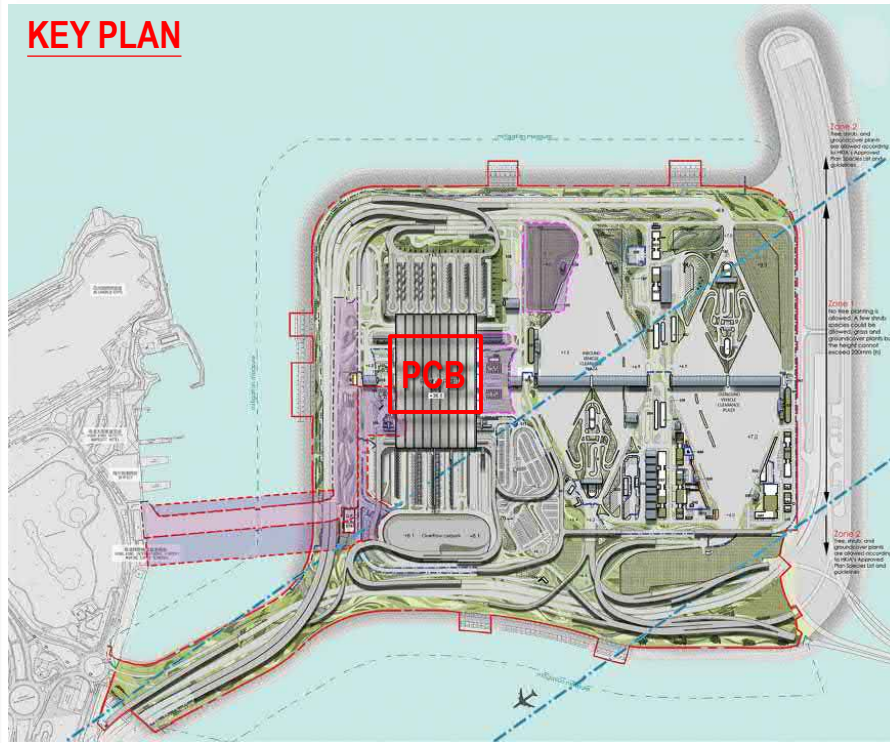
TURFING <sup>(1)</sup>			
SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]
Zja **, #	<i>Zoysia sp.</i>	朝鮮草	25(H)

HYDROSEEDING <sup>(1),(2)</sup>		
SPECIES CODE	BOTANICAL NAME	CHINESE NAME
Cda *, **, #	<i>Cynodon dactylon</i>	百慕達草
Pno #	<i>Paspalum notatum</i>	百喜草
Eop *, # / Lpe #	<i>Eremochloa ophiuroides</i> / <i>Lolium perenne</i>	假儉草 / 黑麥草

INDOOR PLANTING IN PASSENGER CLEARANCE BUILDING <sup>(1)</sup>				
SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [m]
TREE				
FB **	<i>Ficus benjamina</i>	垂榕	5000(H) x 4000(SP) x 150(DBH)	N.A.
SHRUB				
Ite	<i>Iris tectorum</i>	鳶尾	300(H) x 200(SP)	150
Sco	<i>Spathiphyllum commutatum</i>	白掌	300(H) x 300(SP)	200



# KEY PLAN



Note: Reference to ACABAS Submission - PCB Main Roof / PTI Canopy (Ref. 173-01)



Artist Impression of Passenger Clearance Building

Note: Reference to ACABAS Submission- PCB Main Roof / PTI Canopy (Ref. 173-01)



Note: Reference to ACABAS Submission- PCB Main Roof / PTI Canopy (Ref. 173-01)

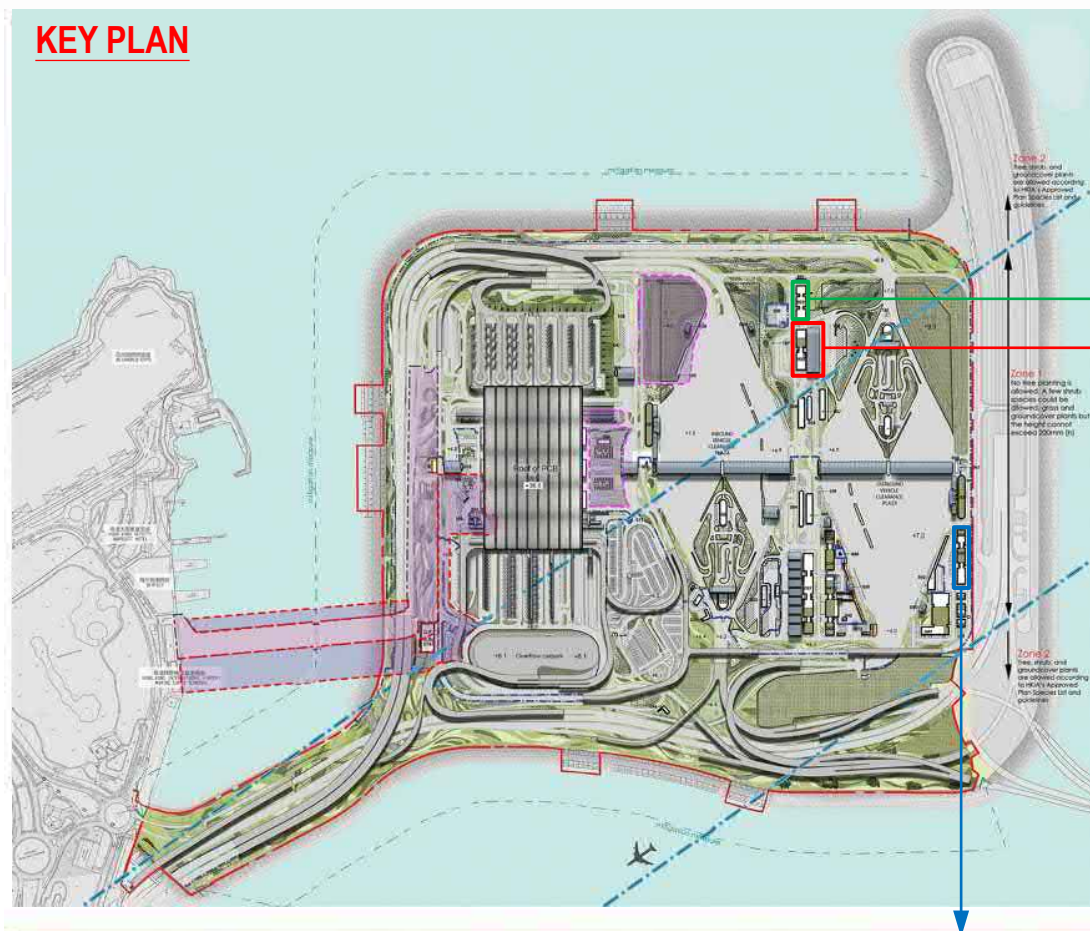


Footbridges at PCB (North)

Note: Reference to ACABAS Submission - PCB Main Roof / PTI Canopy (Ref. 173-01)



# KEY PLAN



Artist Impression ; C&ED Outbound Cargo Examination Building

Note: Reference to Stage 1 Aesthetic Submission for Building Works and Ancillary Facilities to ArchSD (Ref. 067-04)



Artist Impression

Note: Reference to Stage 1 Aesthetic Submission for Building Works and Ancillary Facilities to ArchSD (Ref. 067-04)

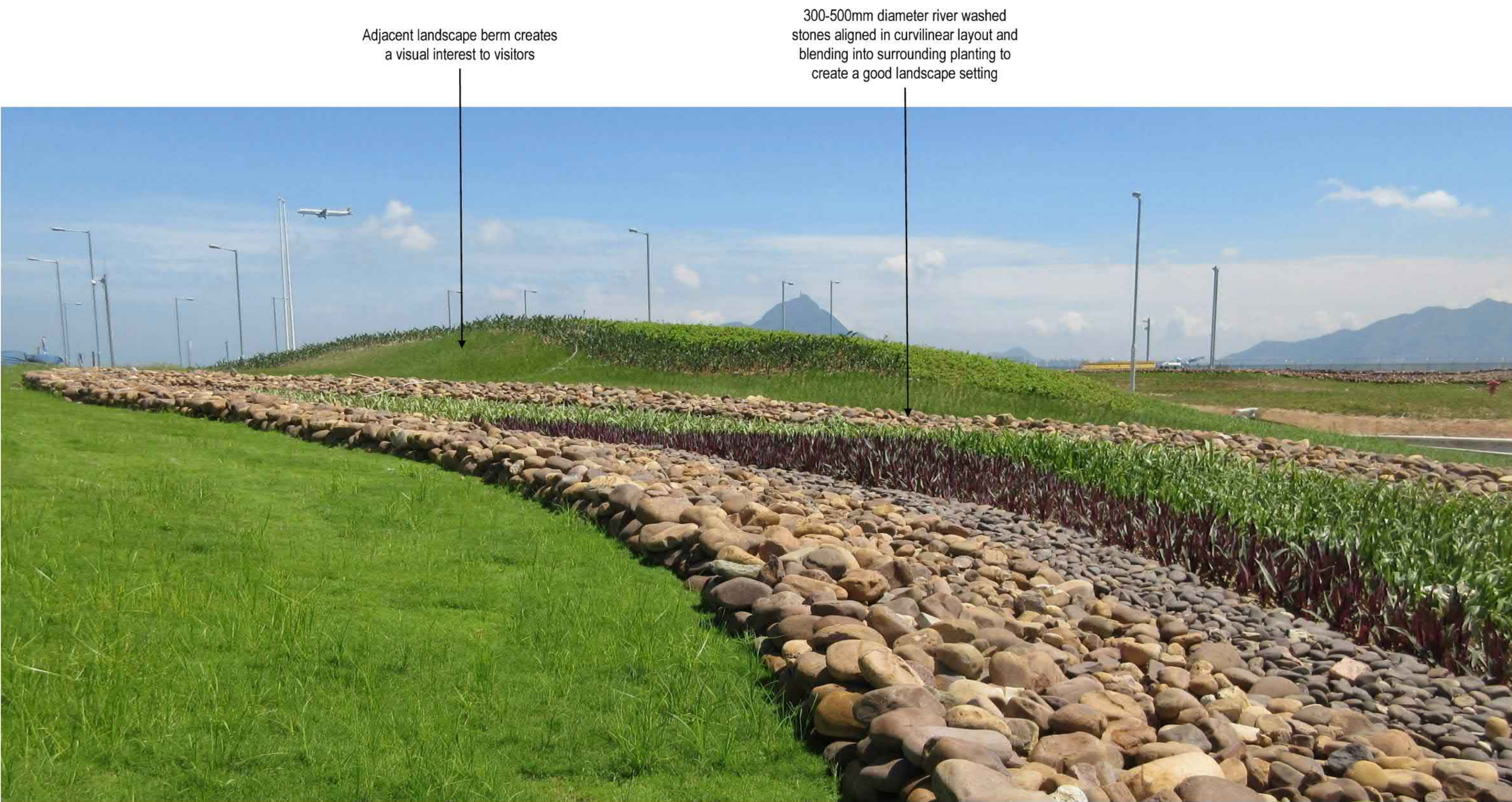


Artist Impression: C&ED Customs Detector Dog Division HZMB Dog Base

Note: Reference to Stage 1 Aesthetic Submission for Building Works and Ancillary Facilities to ArchSD (Ref. 067-04)



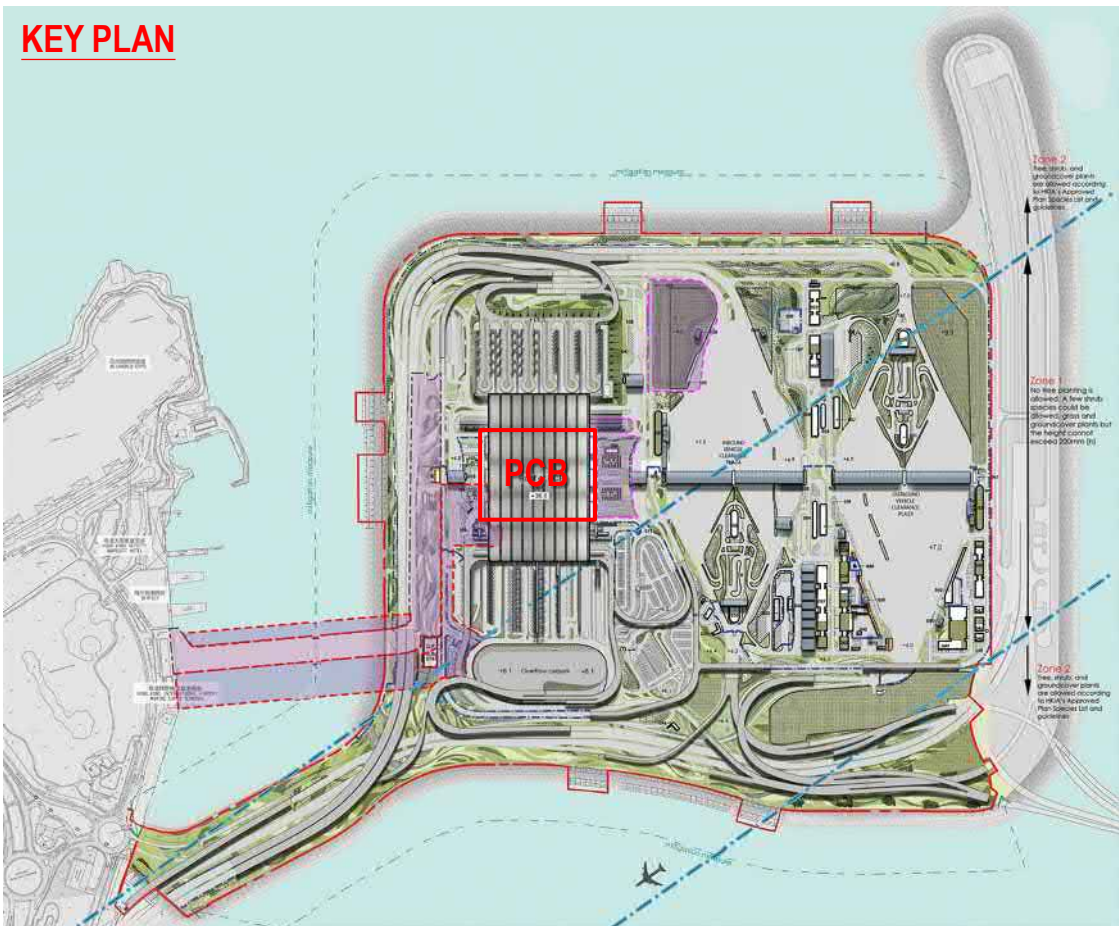
# STONE SWATHE DESIGN ON LANDSCAPE AREA



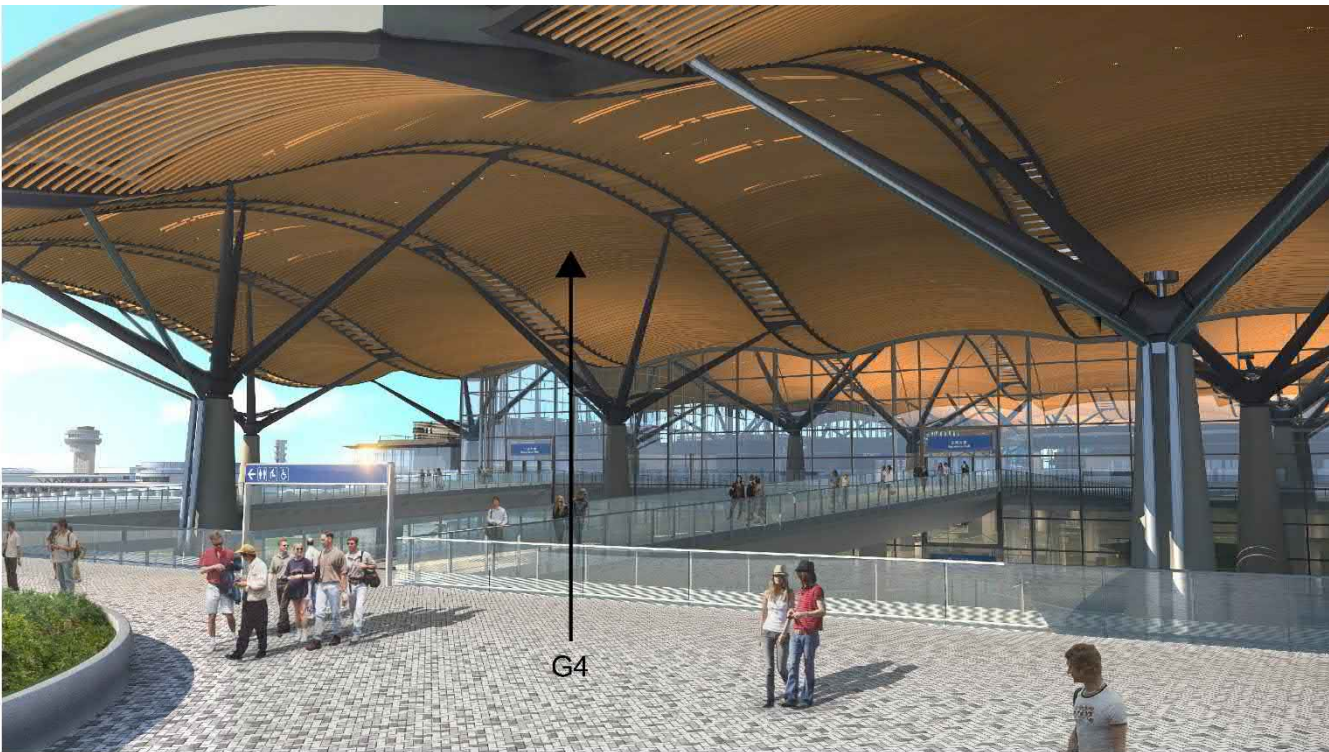




Footbridges at PCB (Interface Detail) (North)  
 Note: Reference to ACABAS Submission - PCB Main Roof / PTI Canopy (Ref. 173-01)

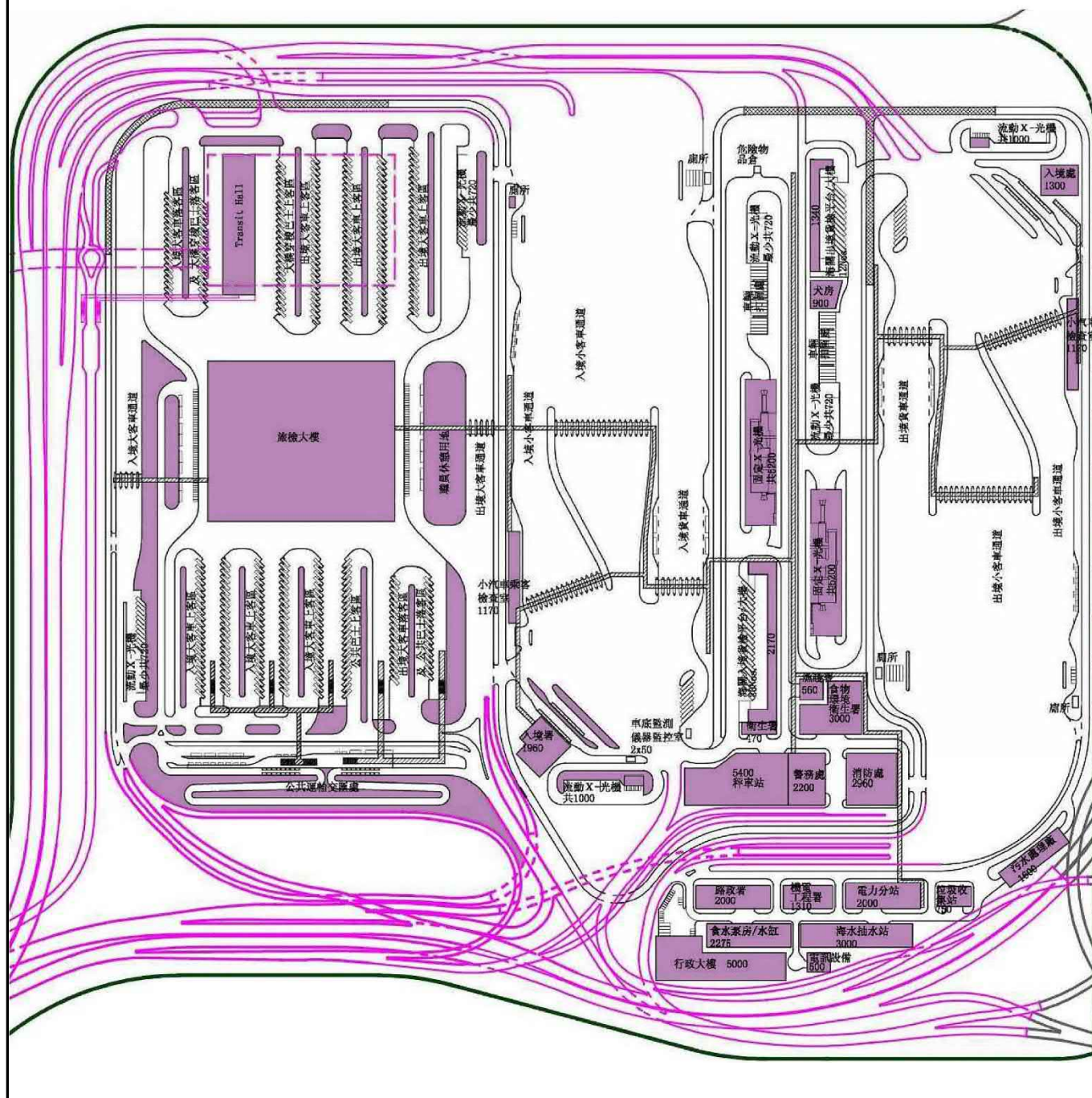


Vertical Circulation  
 East Core - View from North East  
 Note: Reference to Landscape Proposal for HKBCF (Ref. 181-02)

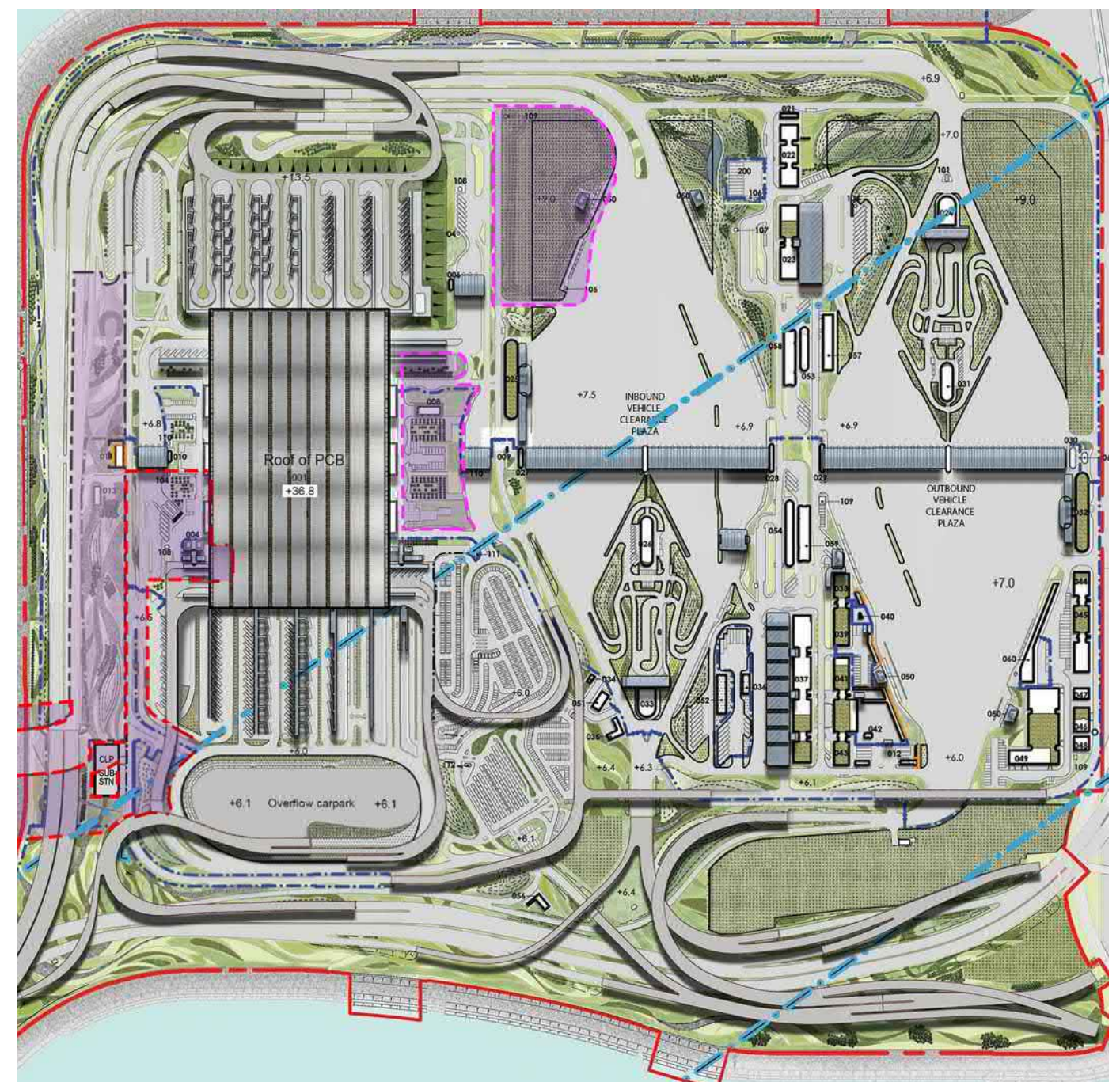


Footbridges at PCB (North)  
 Note: Reference to ACABAS Submission - PCB Main Roof / PTI Canopy (Ref. 173-01)





MASTER LAYOUT PLAN IN APPROVED EIA REPORT

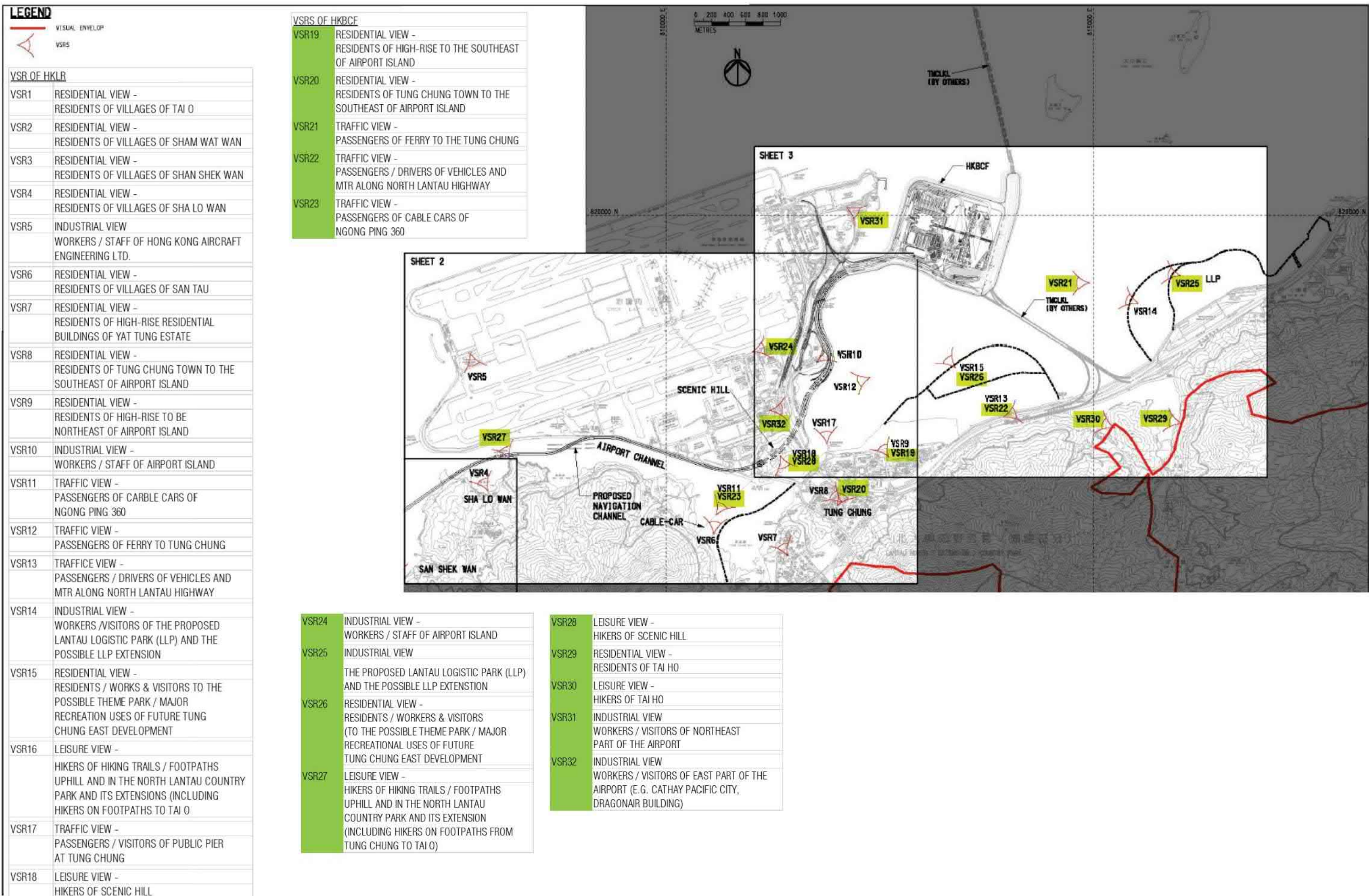


LATEST MASTER LAYOUT PLAN (JULY 2019)





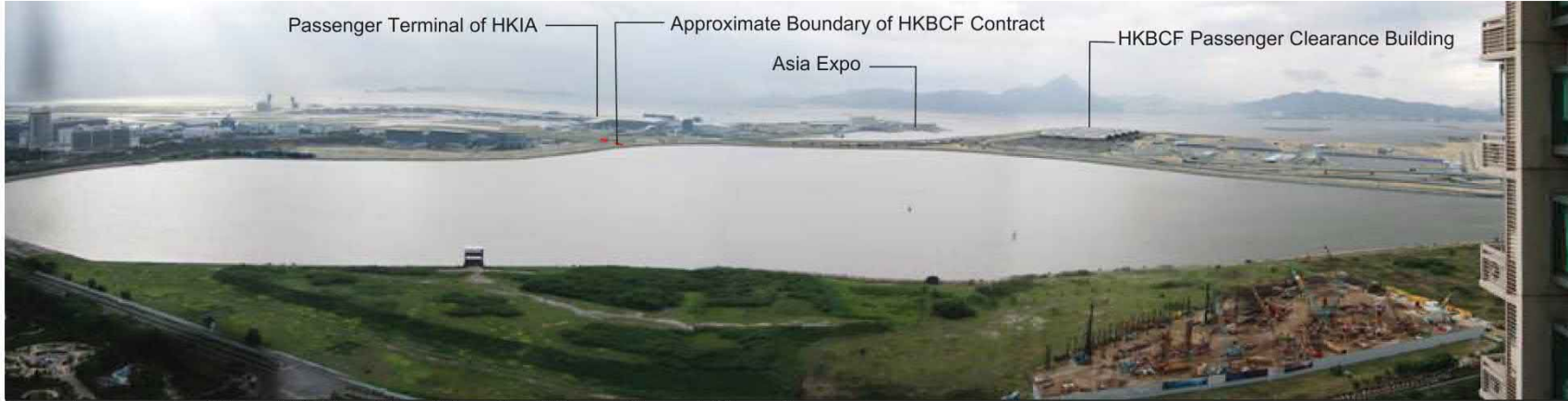




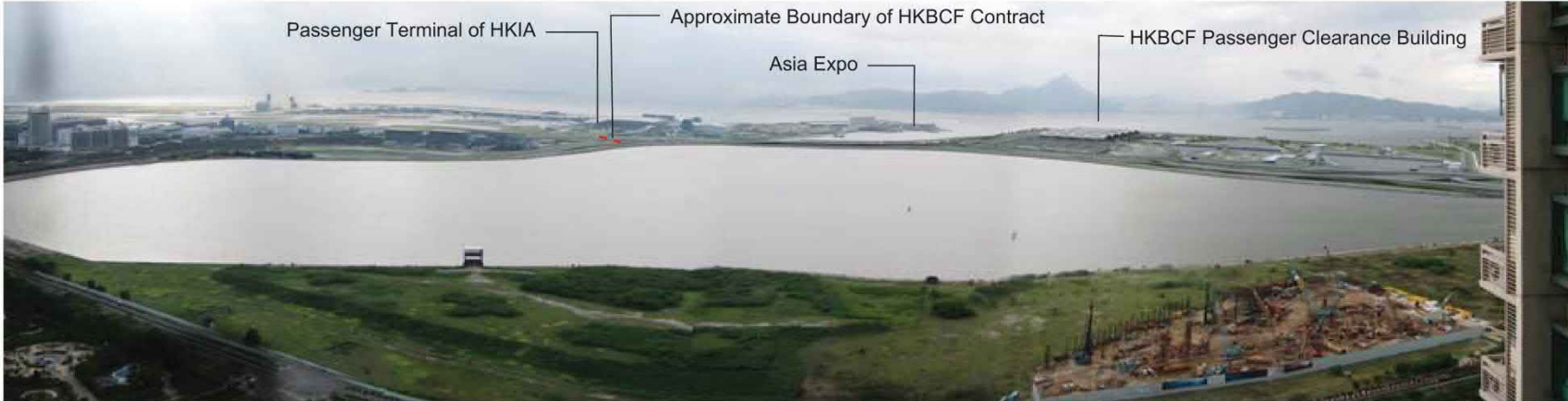




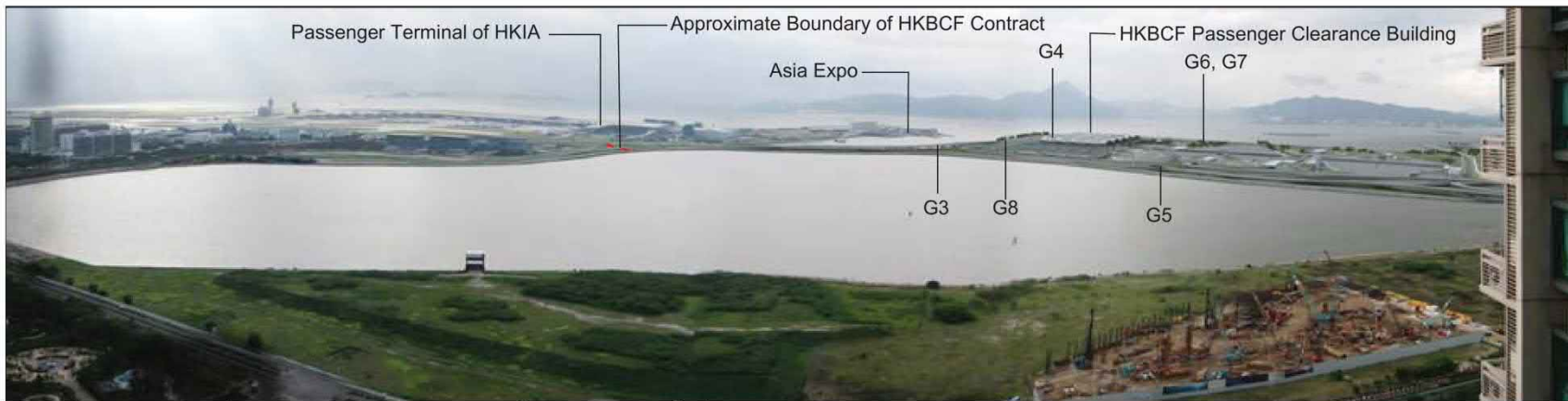
Existing Baseline Condition - Viewing Towards HKBCF (Day 1 of Construction Phase)



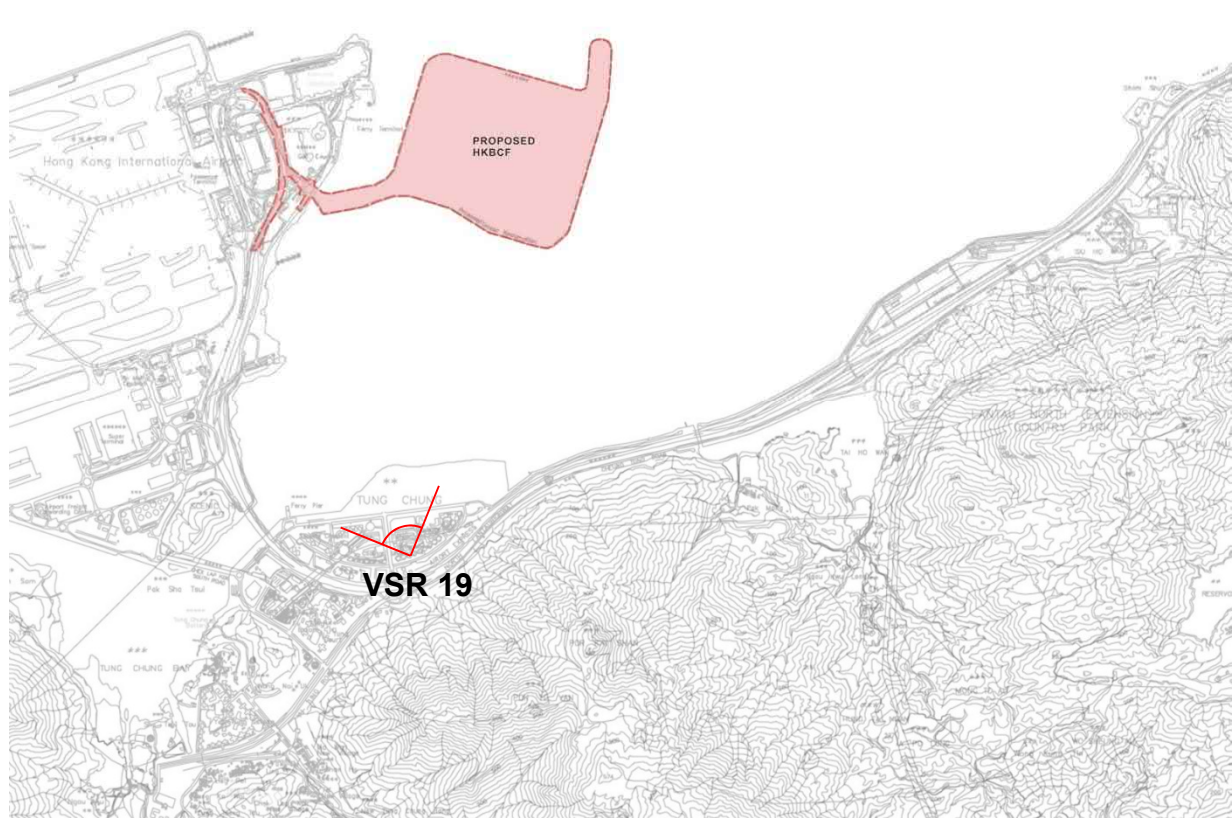
Development without Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Year 10 of Operational Phase)



Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-02)





Existing Baseline Condition - Viewing Towards HKBCF (Day 1 of Construction Phase)



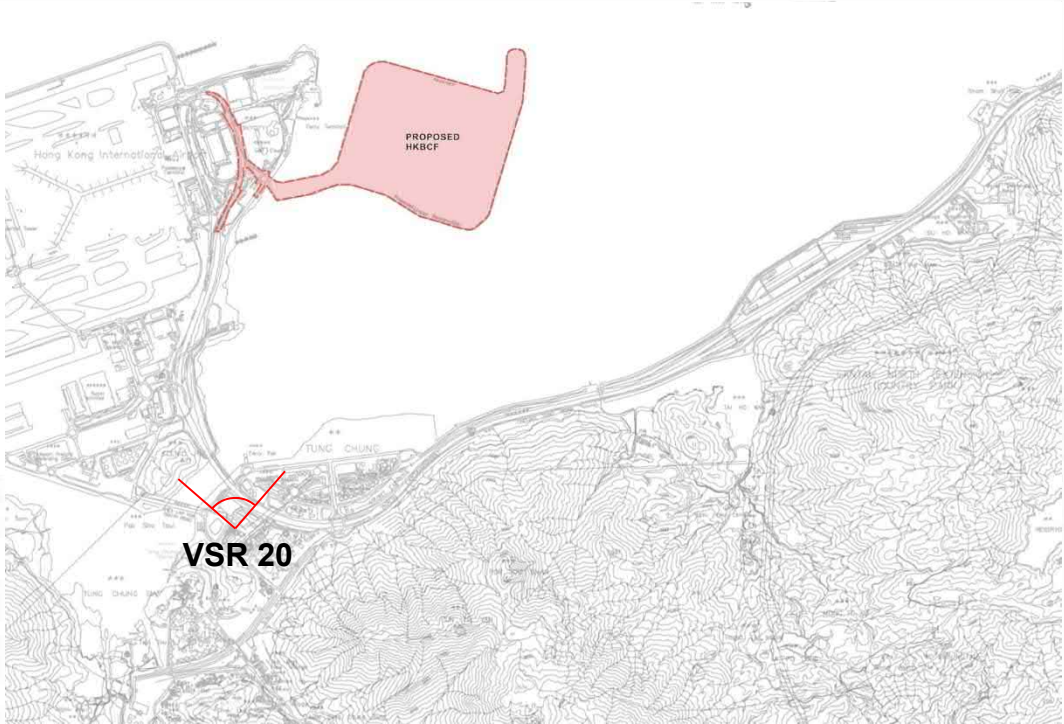
Development without Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Day 1 of Operational Phase)



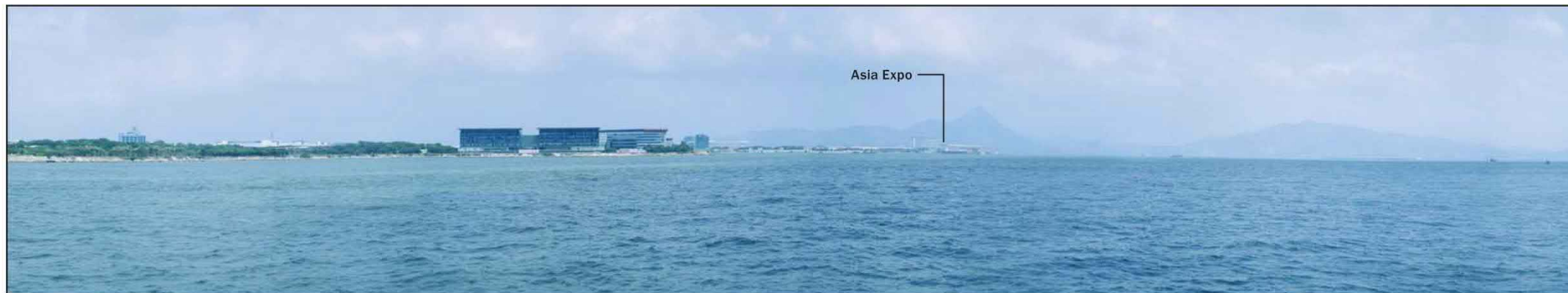
Development with Mitigation (Year 10 of Operational Phase)



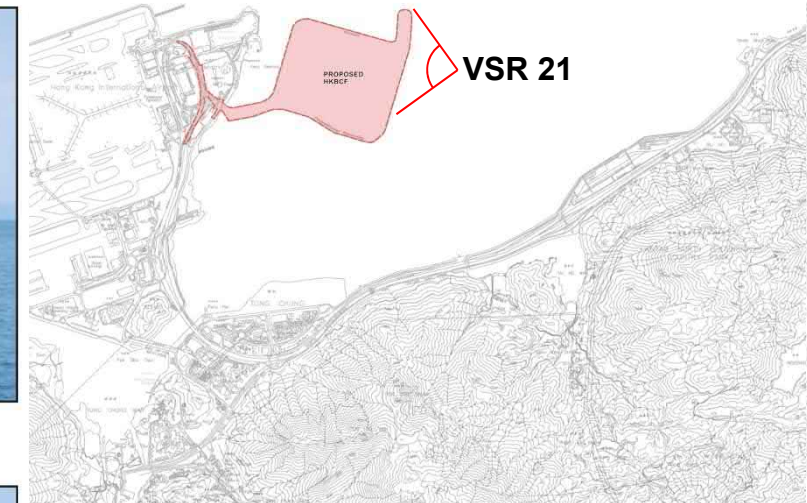
Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-04)

SCALE	NA	DATE	Aug 2015
CHECK	ELK	DRAWN	TRT
JOB No.	AECMP01	DRAWING No.	Figure 4.3
		REV	-





Existing Baseline Condition - Viewing Towards HKBCF (Day 1 of Construction Phase)



Development without Mitigation (Day 1 of Operational Phase)



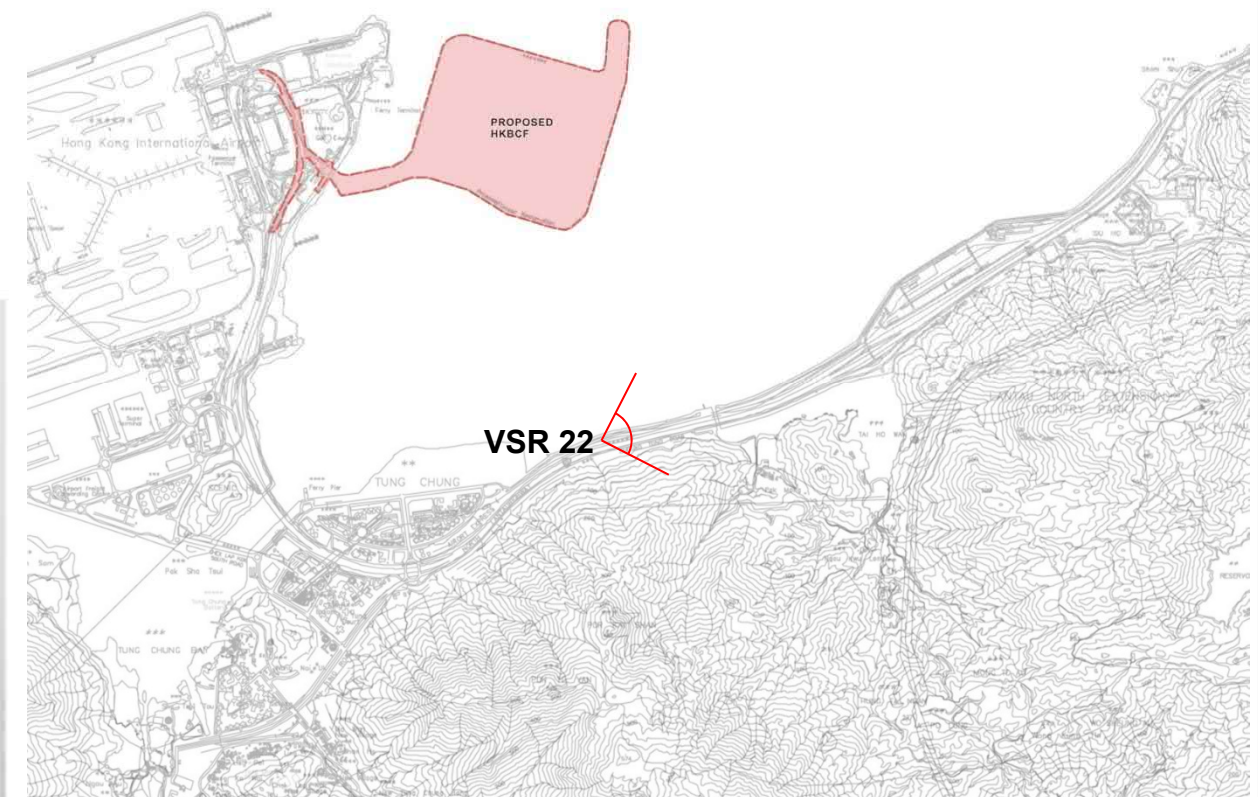
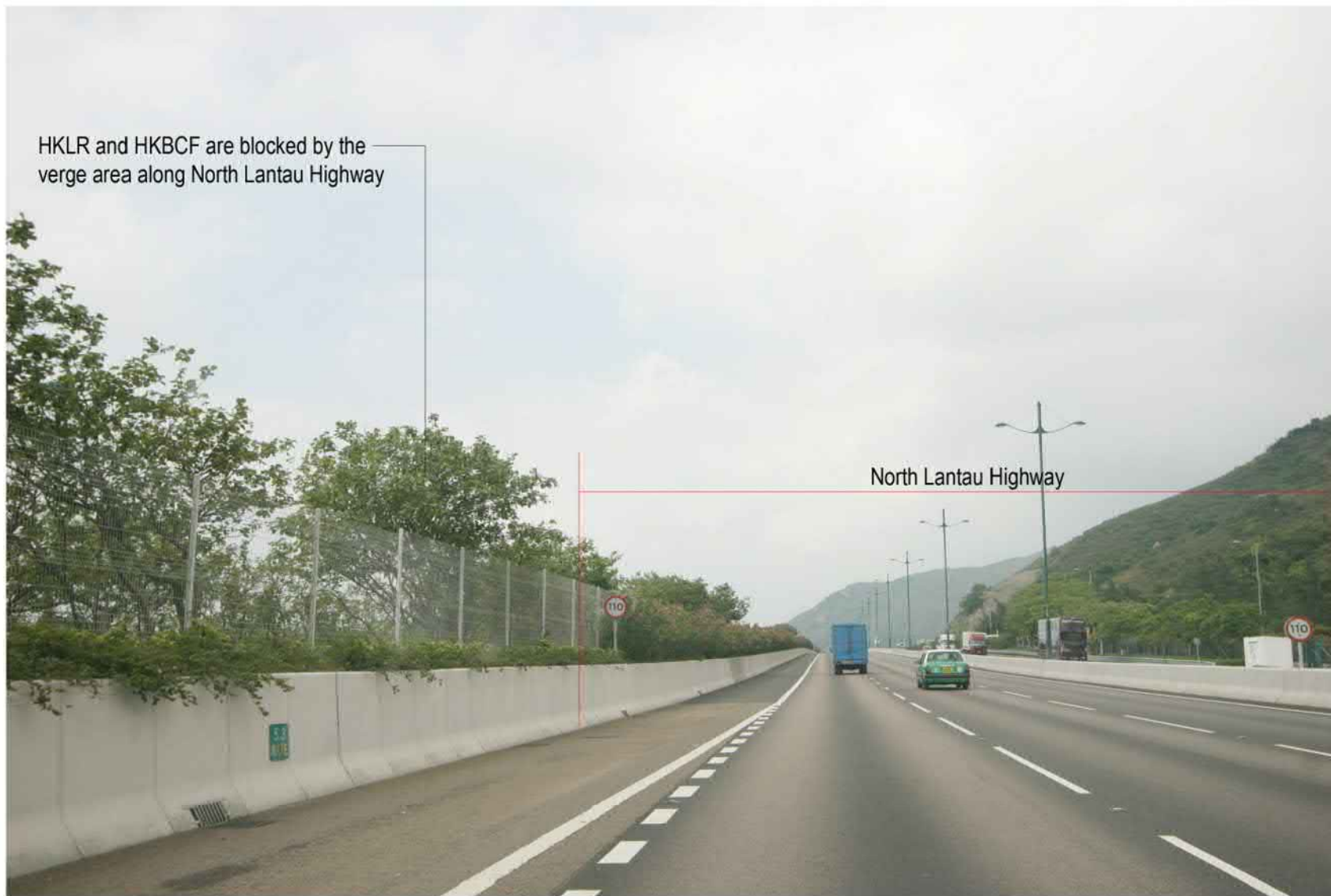
Development with Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Year 10 of Operational Phase)

Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-02)





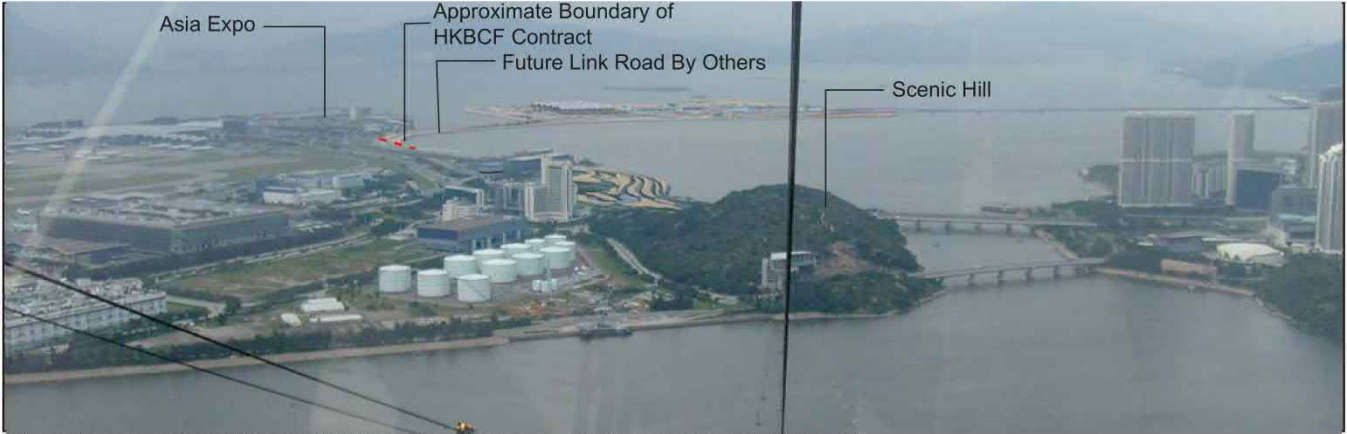
Existing Baseline Condition

Note: Since the view is blocked by the North Lantau Highway, therefore, Development without Mitigation (Day 1 of Operation Phase), Development with Mitigation (Day 1 of Operation Phase) and development with mitigation (Year 10 of Operation Phase) should be the same as the existing baseline condition.

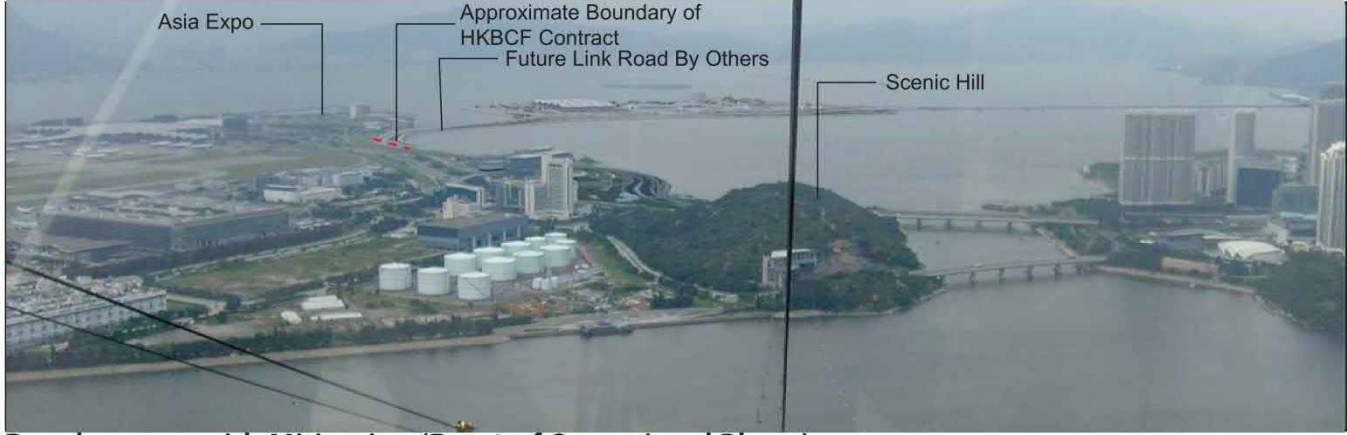




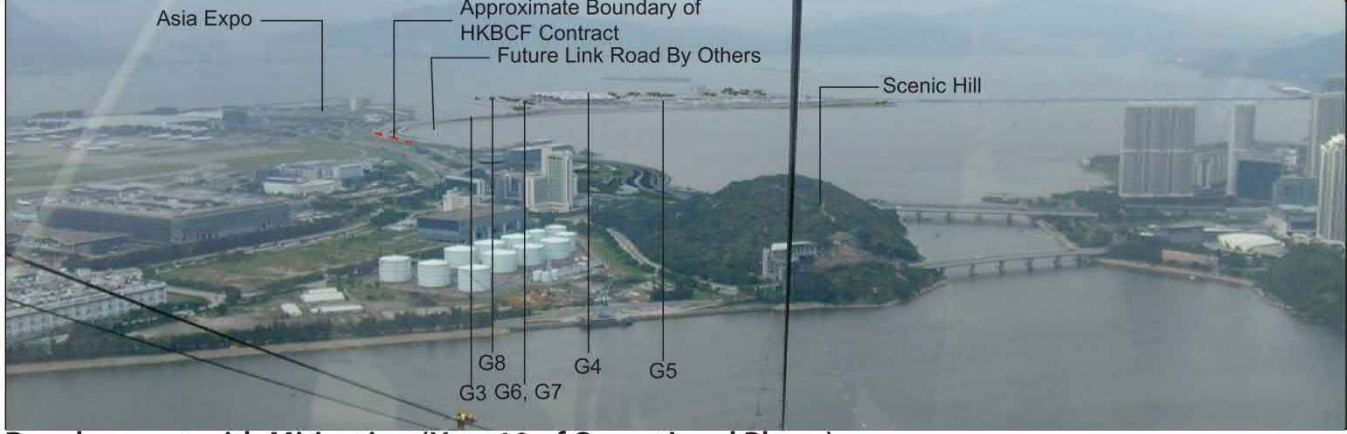
Existing Baseline Condition - Viewing Towards HKBCF (Day 1 of Construction Phase)



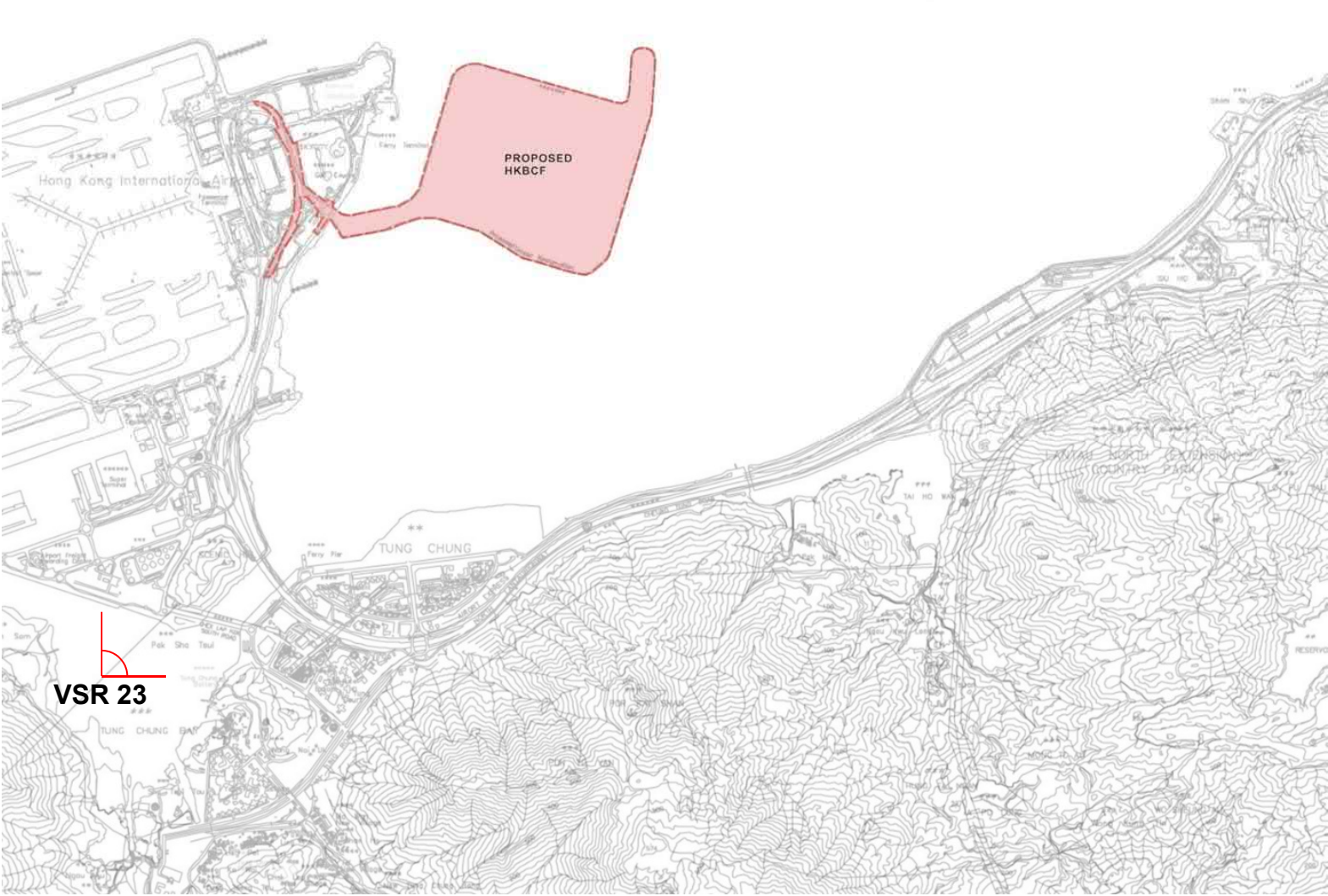
Development without Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Year 10 of Operational Phase)

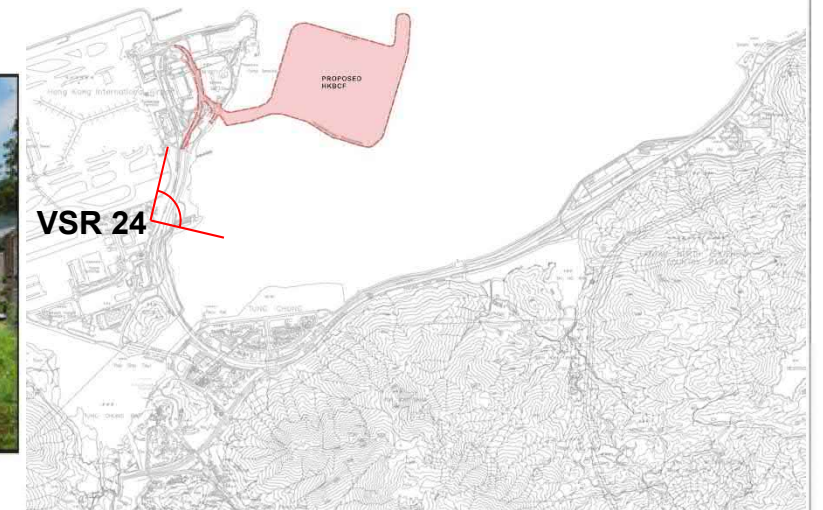


Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-02)





Existing Baseline Condition (Day 1 of Construction Phase)



Existing Baseline Condition (Day 1 of Construction Phase)



Development with Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Year 10 of Operational Phase)

Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-04)





Existing Baseline Condition - Viewing Towards HKBCF (Day 1 of Construction Phase)



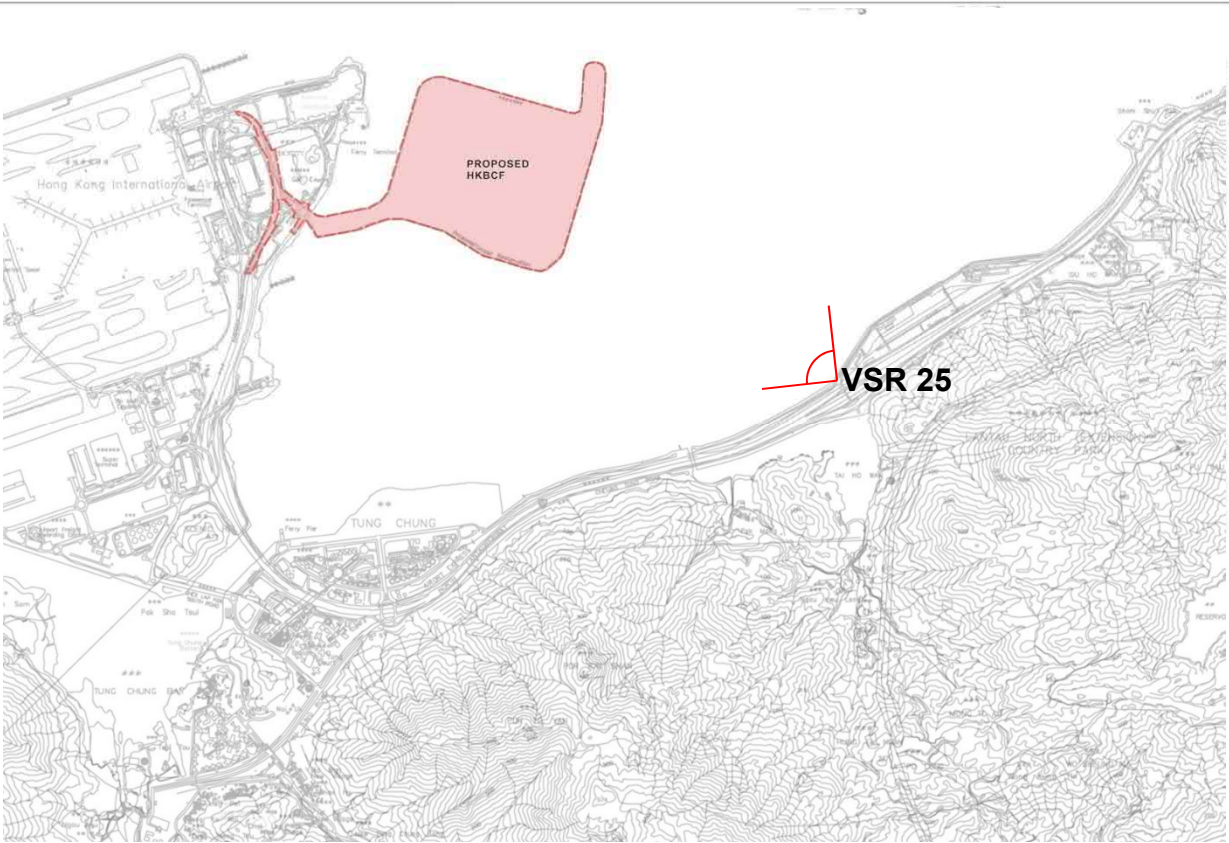
Development without Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Year 10 of Operational Phase)

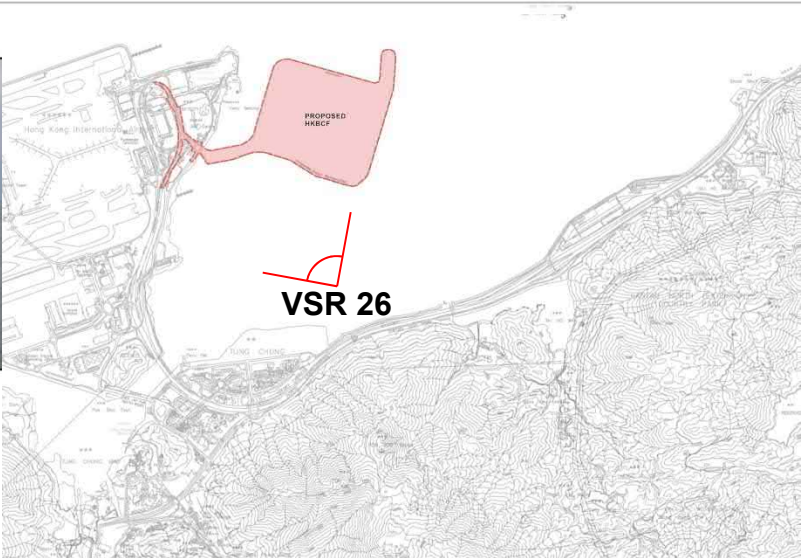


Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-02)





Existing Baseline Condition - Viewing Towards HKBCF (Day 1 of Construction Phase)



Development without Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Year 10 of Operational Phase)

Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-02)

SCALE	NA	DATE	JUL 2014
CHECK	ELK	DRAWN	TRT
JOB No.	AECMP01	DRAWING No.	Figure 4.9
		REV	-

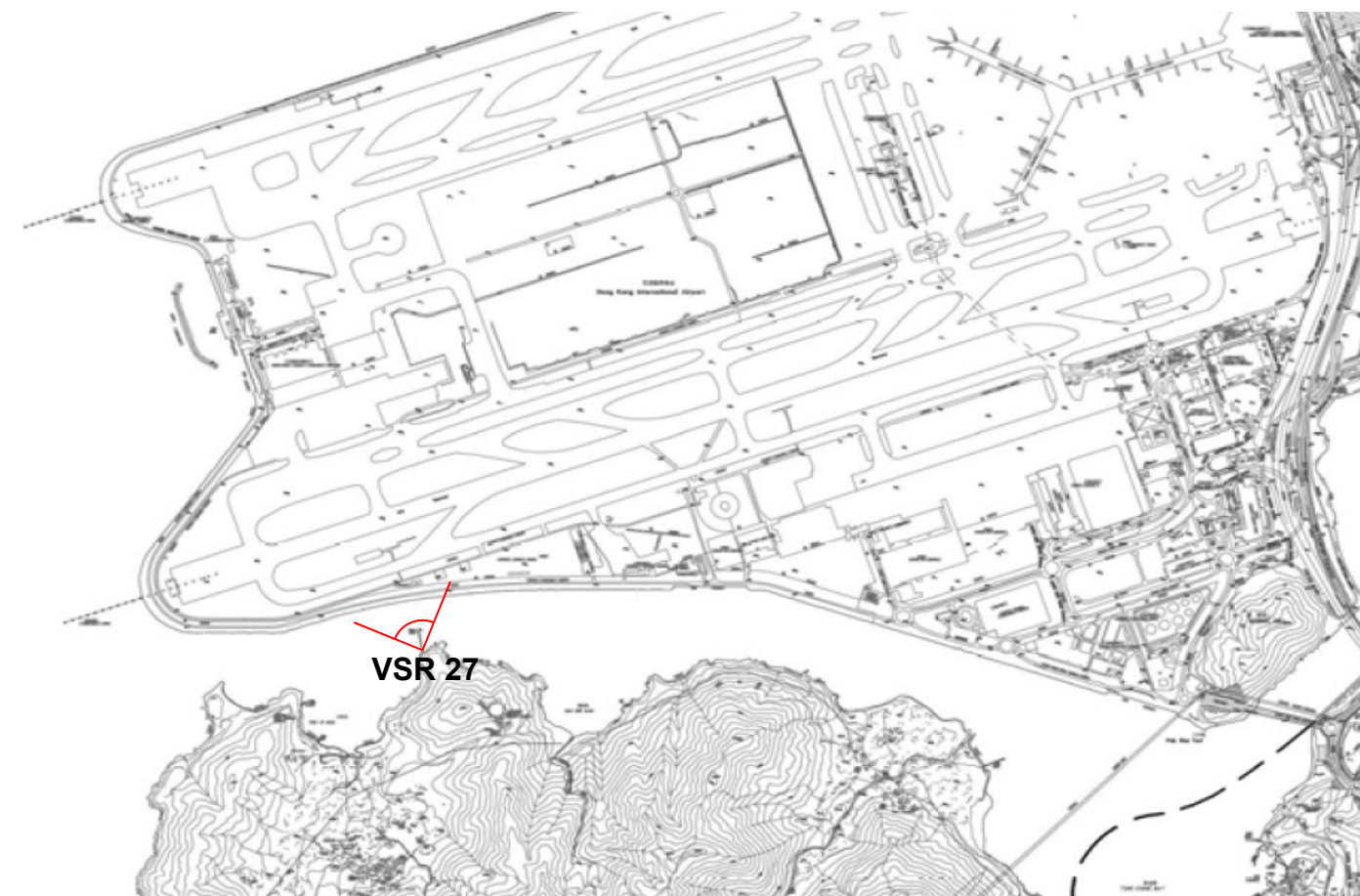




Chek Lap Kok Channel and  
HK International Airport

Sha Lo Wan Hiking Trail and  
Public Pier

Existing Baseline Condition



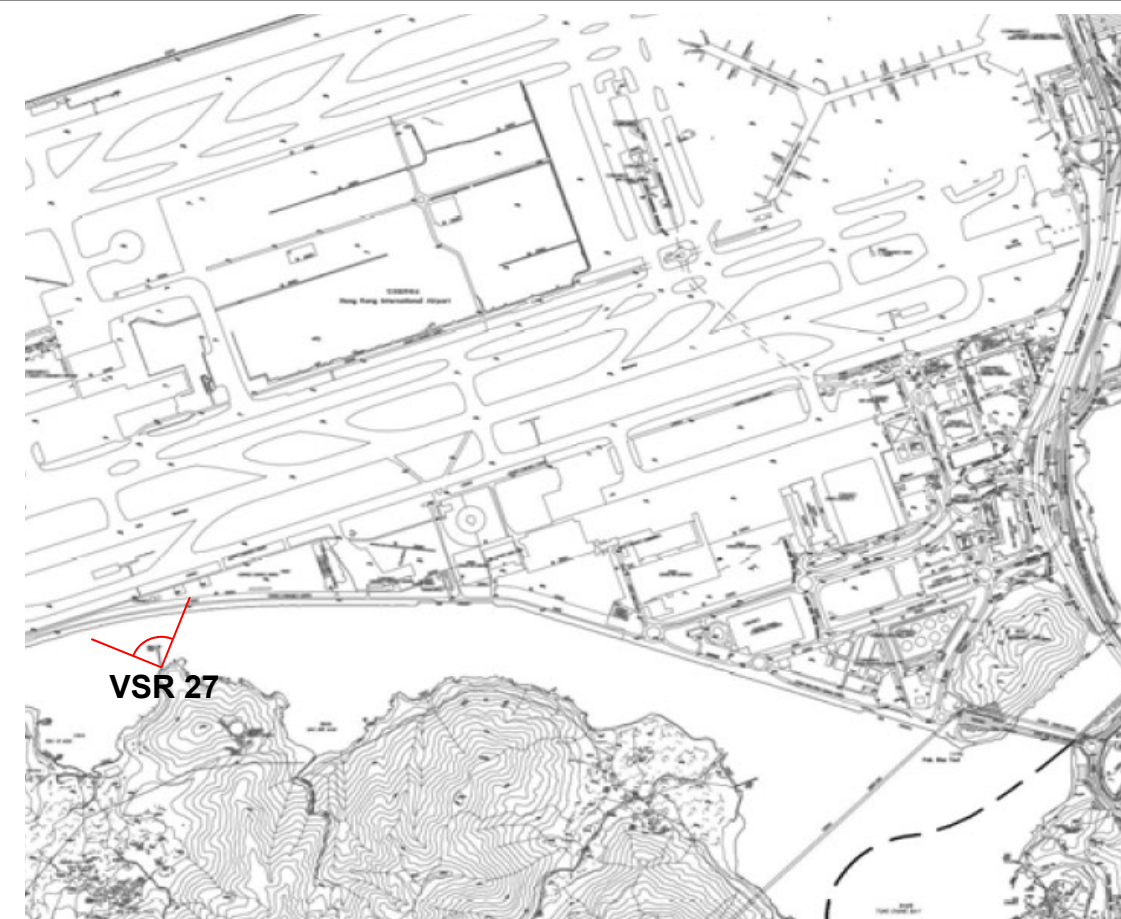
HKLR towards Chek Lap Kok Channel  
and HK International Airport

Development without Mitigation (Construction Phase)





HKLR towards Chek Lap Kok Channel and HK International Airport



## Development with Mitigation (Day 1 and Year 10 of Operational Phase)

**Note:**  
Some urban design elements of HKLR, e.g. aesthetic structural forms of parapets, soffits, columns, railings, decorative road lightings and so on should be considered during detailed design stage in order to enhance the appearance of HKLR visually.







Existing Baseline Condition - Viewing Towards HKBCF (Day 1 of Construction Phase)



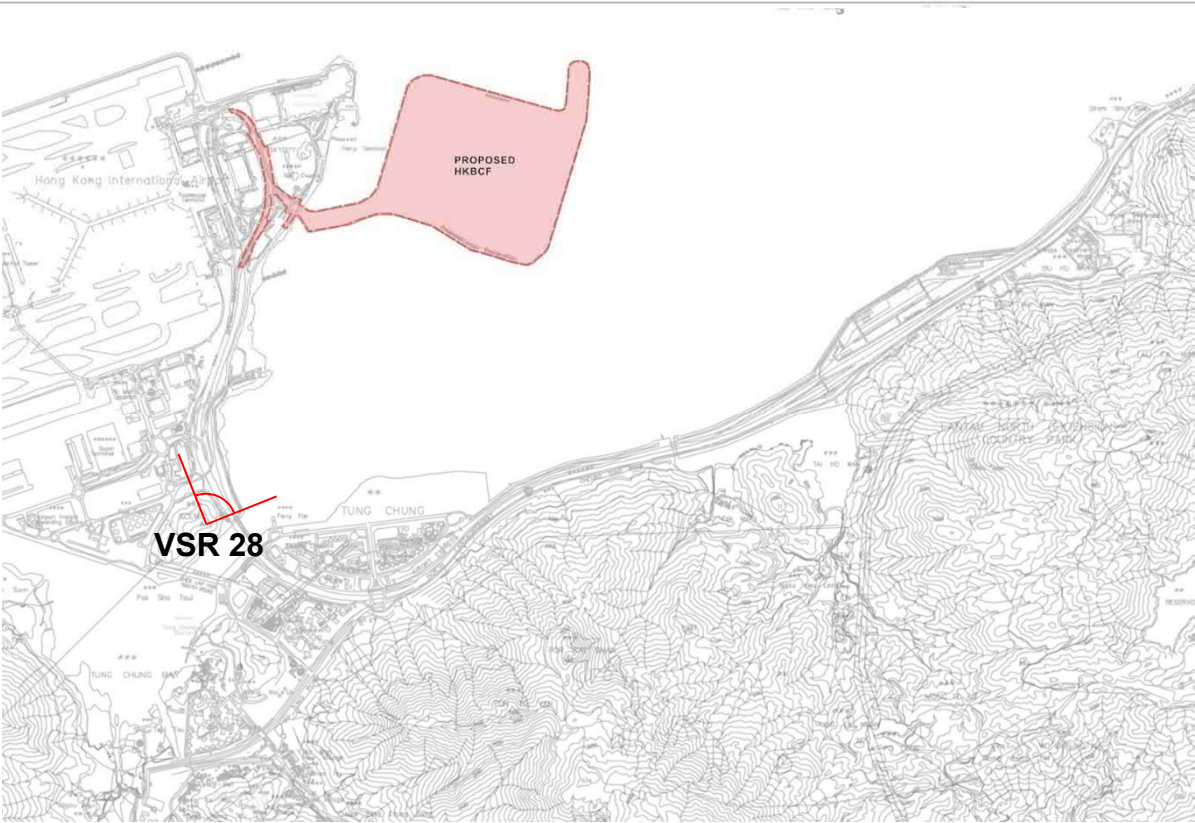
Development without Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Day 1 of Operational Phase)



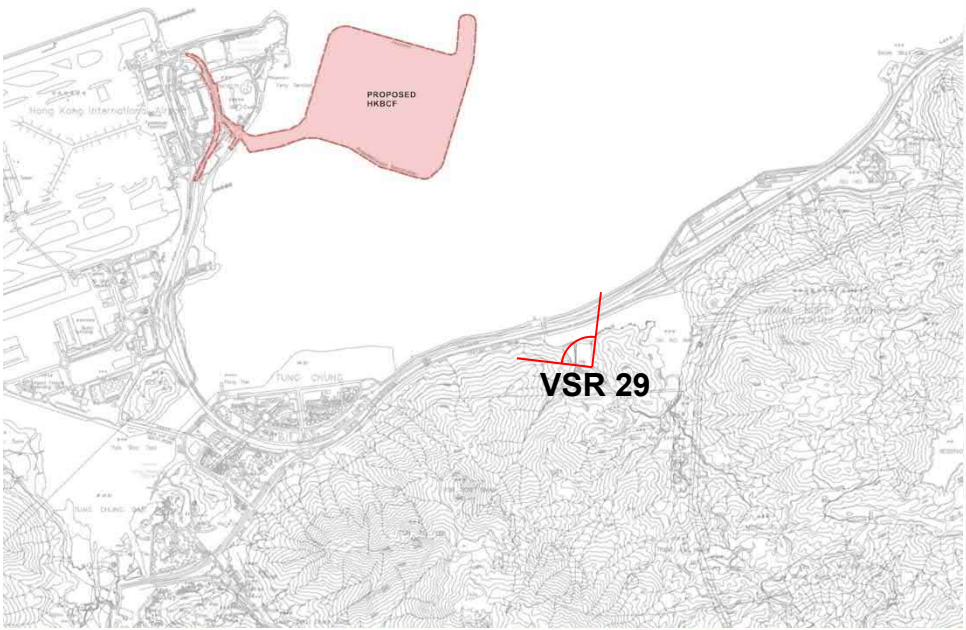
Development with Mitigation (Year 10 of Operational Phase)



Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-02)

SCALE	NA	DATE	JUL 2014
CHECK	ELK	DRAWN	TRT
JOB No.	AECMP01	DRAWING No.	Figure 4.11
		REV	-





Note: Reference to Landscape and Visual Impact Assessment  
(Ref. 072-04)



Existing Baseline Condition (Day 1 of Construction Phase)



Development without Mitigation (Day 1 of Operational Phase)

Note: Since the view is blocked by the North Lantau Highway, therefore, Development without Mitigation (Day 1 of Operation Phase), Development with Mitigation (Day 1 of Operation Phase) and Development with Mitigation (Year 10 of Operation Phase) should be the same.





Existing Baseline Condition - Viewing Towards HKBCF (Day 1 of Construction Phase)



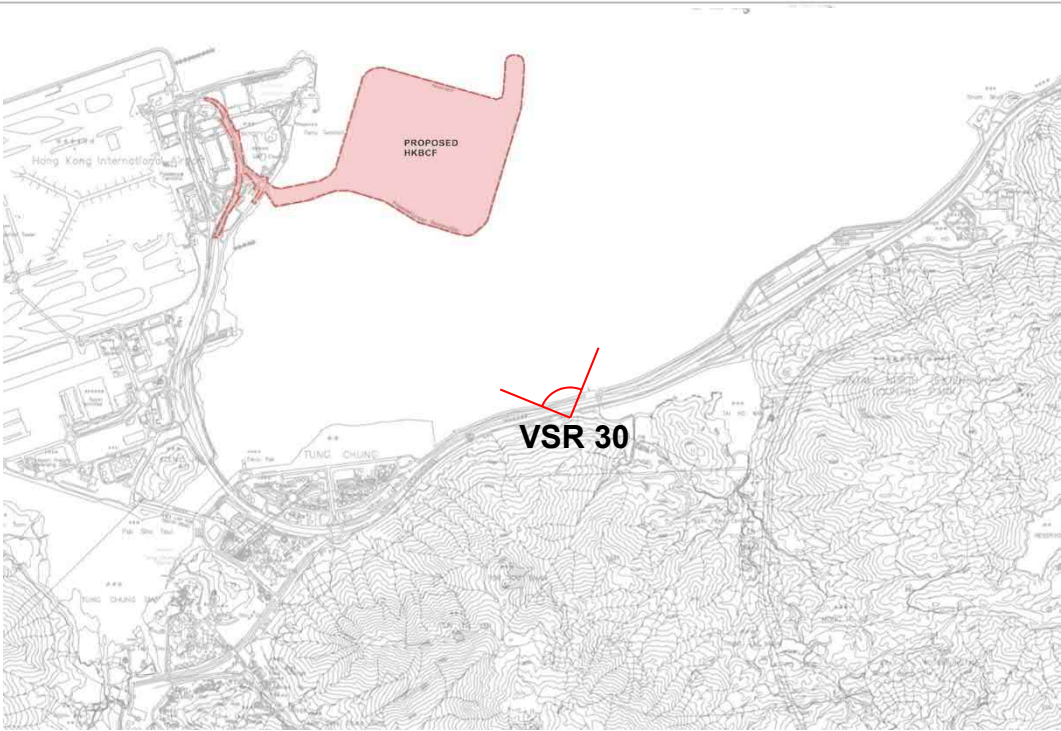
Development without Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Day 1 of Operational Phase)



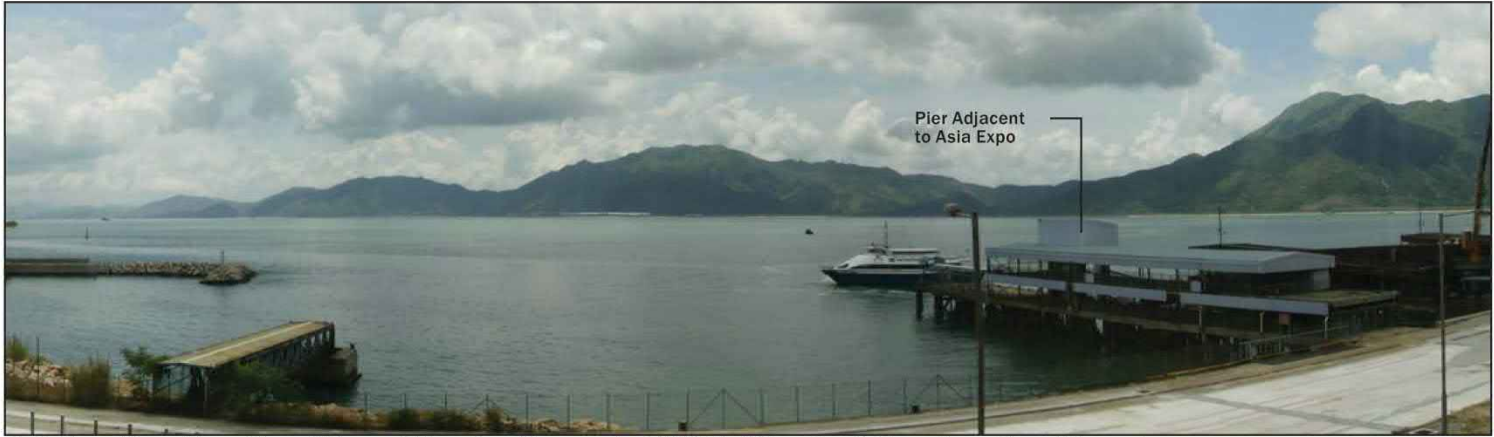
Development with Mitigation (Year 10 of Operational Phase)



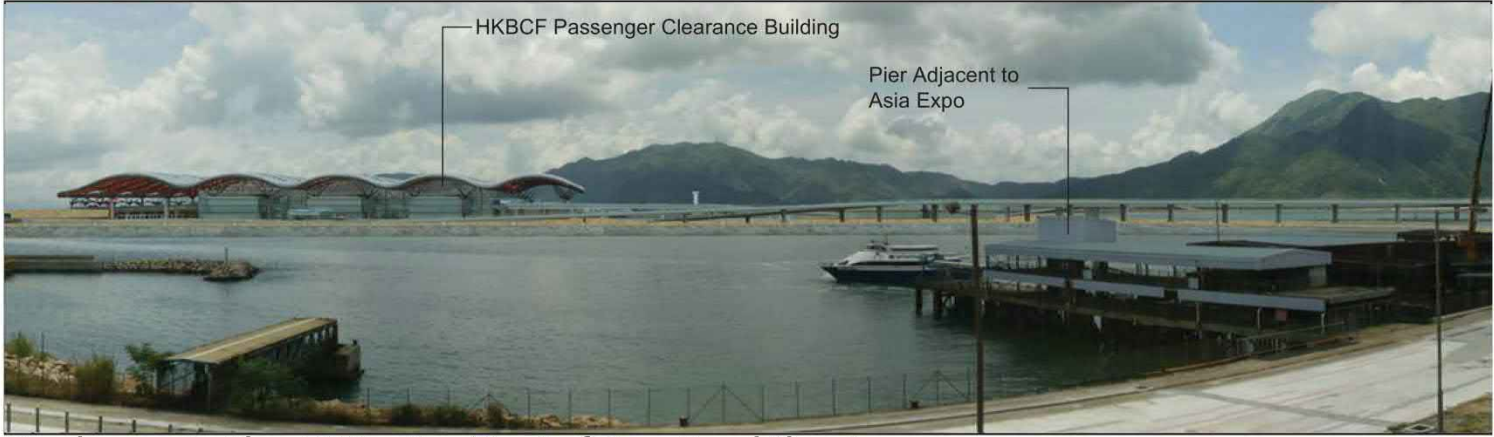
Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-02)

SCALE	NA	DATE	JUL 2014
CHECK	ELK	DRAWN	TRT
JOB No.	AECMP01	DRAWING No.	Figure 4.13
		REV	-





Existing Baseline Condition - Viewing Towards HKBCF (Day 1 of Construction Phase)



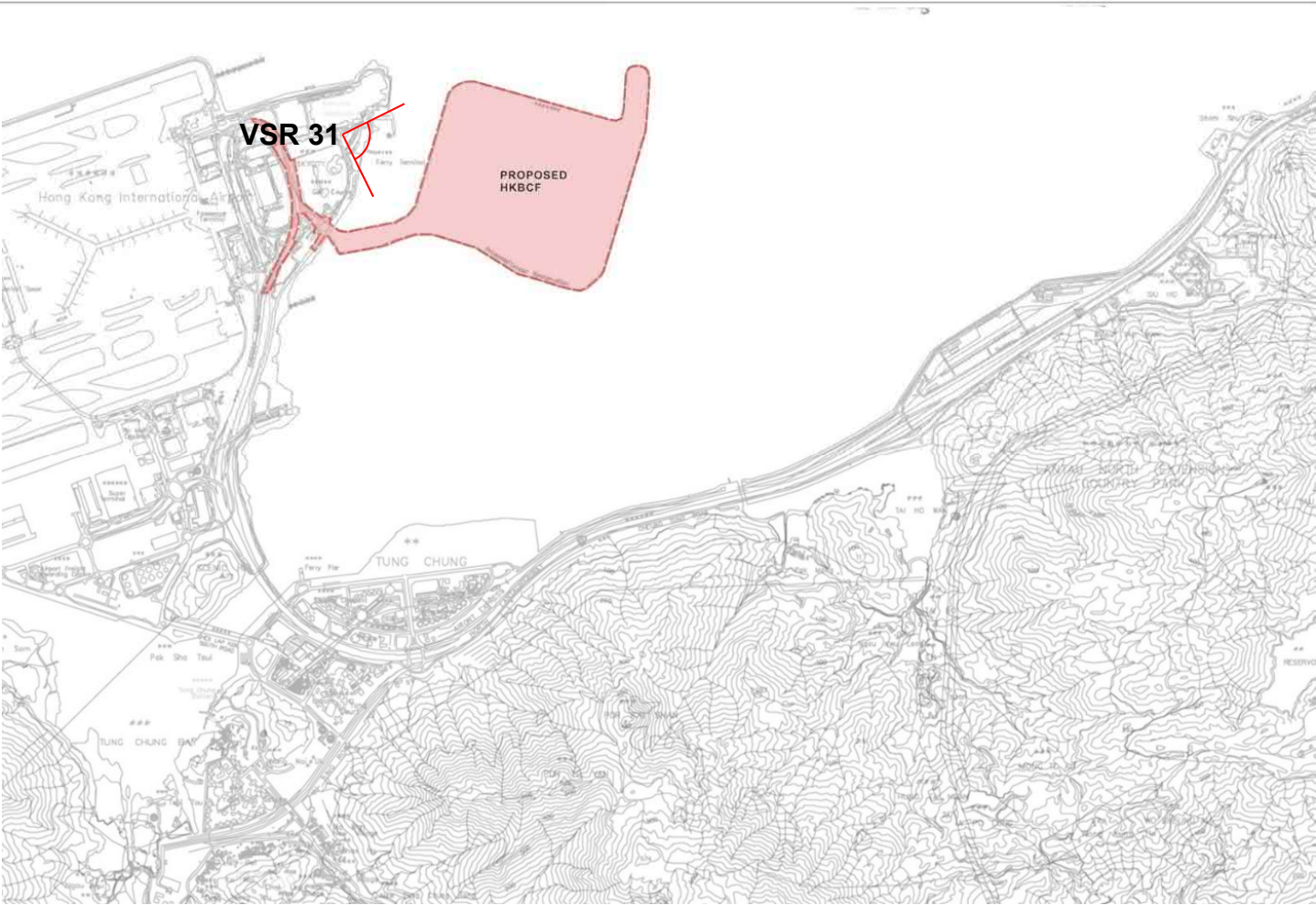
Development without Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Year 10 of Operational Phase)

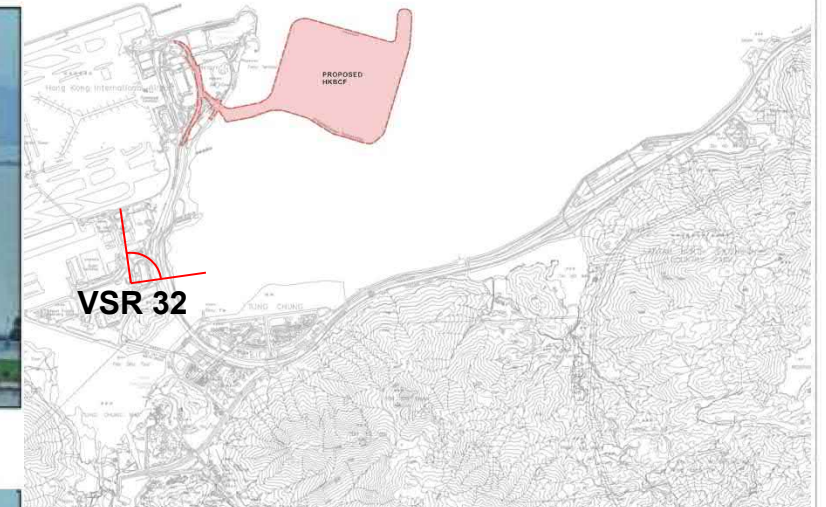


Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-02)





Existing Baseline Condition - Viewing Towards HKBCF (Day 1 of Construction Phase)



Development without Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Day 1 of Operational Phase)



Development with Mitigation (Year 10 of Operational Phase)

Note: Reference to Landscape and Visual Impact Assessment (Ref. 072-02)



## **Appendix A – Contract Division and Scope of Works for Hong Kong Boundary Crossing Facilities**



**Appendix A Contract Division and Scope of Works for Hong Kong Boundary Crossing Facilities**

Contract No.	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Scope of Works	Involvement of Landscape and Visual Mitigation Works
Contract 1 (C1) <b>HY/2013/01</b> - HZMB HKBCF - Passenger Clearance Building	Keith CHAU Atkins China Limited	Ray YAN Ramboll Hong Kong Limited	<ul style="list-style-type: none"> <li>Construction of a Passenger Clearance Building (PCB) and its associated facilities, footbridges connection to the PCB.</li> <li><b>Landscape hardwork:</b> Water features inside/ around the PCB, site furniture outside PCB</li> <li><b>Landscape planting work:</b> Tree and other planting inside/ around the PCB, vertical greening with climber to ancillary buildings.</li> </ul>	✓
Contract 2 (C2) <b>HY/2013/02</b> - HZMB HKBCF - Infrastructure Works Stage I (Western Portion)	C. L. LAU ETS-Testconsult Limited	Ray YAN Ramboll Hong Kong Limited	<ul style="list-style-type: none"> <li>Construction of a dual three land road and the associated slip roads (at western side) connecting to HKBCF and the HZMB Hong Kong Link Road.</li> <li><b>Landscape hardwork:</b> Concrete paving blocks at coaching parking areas.</li> <li><b>Landscape planting work:</b> At-grade planting (Shrubs, groundcover and turf arranged in wavy layout) adjacent to road side, some feature landscape berms (less than 3m height) and stone swathes on planting areas</li> </ul>	✓
Contract 3 (C3) <b>HY/2013/03</b> - HZMB HKBCF - Vehicle Clearance Plazas and Ancillary Buildings and Facilities	Arthur CHENG MaterialLab Consultants Limited	Ray YAN Ramboll Hong Kong Limited	<ul style="list-style-type: none"> <li>Construction of the ancillary buildings and facilities, a common utilities enclosure (CUE), Vehicle Clearance Kiosks with staff subway and some viaducts connection to other HKBCF Contracts.</li> <li><b>Landscape hardwork:</b> Concrete paving blocks to car parking areas, site furniture close to the PCB and an attenuation pond for irrigation system.</li> <li><b>Landscape planting work:</b> At-grade planting (Trees, shrubs, ground cover and turf arranged in wavy layout) adjacent to road side, some feature landscape berms (less than 3m height), stone swathes on planting areas are included, roof greening and vertical greening (with climbers) on some ancillary buildings.</li> </ul>	✓
Contract 4 (C4) <b>HY/2013/04</b> - HZMB HKBCF - Infrastructure Works Stage II (Southern Portion)	Gary CHOW Mott MacDonald Hong Kong Limited	Ray YAN Ramboll Hong Kong Limited	<ul style="list-style-type: none"> <li>Construction of vehicular bridges and at-grade roads at southern portion of HKBCF</li> <li><b>Landscape hardwork:</b> concrete paving block works to one ancillary building.</li> <li><b>Landscape planting work:</b> At-grade planting (Shrubs, ground cover and turf arranged in wavy layout) adjacent to road side, some feature landscape berms (less than 3m height) and stone swathes on planting areas are included.</li> </ul>	✓
Contract 5 (C5) <b>HY/2013/05</b> - HZMB HKBCF and HKLR, and TM-CLKL - Traffic Control and Surveillance System	-	-	<ul style="list-style-type: none"> <li>Design, supply, installation, testing and commissioning of traffic control and surveillance facilities and field equipment, Communications system, Electrical distribution system</li> <li>No landscape work is involved.</li> </ul>	x
Contract 6 (C6) <b>HY/2013/06</b> - HZMB HKBCF - Automatic Vehicle Clearance Support System	-	-	<ul style="list-style-type: none"> <li>Design, supply, installation, testing and commissioning of Automatic Vehicles Clearance Support System</li> <li>No landscape work is involved.</li> </ul>	x
Contract 7 (C7) <b>HY/2014/04</b> - HZMB HKBCF - Gantry Type X-Ray Vehicle Inspection System	-	-	<ul style="list-style-type: none"> <li>Design, supply, installation, testing and commissioning of Gantry X-ray vehicle inspection systems</li> <li>No landscape work is involved.</li> </ul>	x
Contract 8 (C8) <b>HY/2014/05</b> - HZMB HKBCF - Remaining Ancillary Buildings and Facilities	Keith CHAU Atkins China Limited	Ray YAN Ramboll Hong Kong Limited	<ul style="list-style-type: none"> <li>Construction of the remaining ancillary buildings and facilities including architectural and builders works, structural steel canopy, reinforced concrete frames, foundations, curtain wall façade, building services and electrical and mechanical works.</li> <li><b>Landscape hardwork:</b> concrete paving block works</li> <li><b>Landscape planting work:</b> At-grade planting (Shrubs and ground cover in wavy layout) adjacent to road side and roof greening on some ancillary buildings.</li> </ul>	✓



## **Appendix B1 – Certification Letter from the Environmental Team Leader (ETL)**



Date 11 March 2022

Our Ref. MCL/ED/0091/2022/C

China Harbour Engineering Company Limited  
19/F, China Harbour Building,  
370-374 King's Road,  
North Point,  
Hong Kong

BY EMAILAttn.: Mr. Matthew Wu

Dear Sir,

**Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
Phase 2 and Other Works (Contract No. HY/2019/01)**

**Environmental Permit: EP-353/2009/K – Condition 2.9, Updated EM&A Manual Clause 14.2  
Revised Landscape and Visual Plan**

With reference to the revised Landscape and Visual Plan for Contract No. HY/2019/01 received, via email, on 8<sup>th</sup> March 2022, we have no adverse comment on the plan and hereby certify it in accordance with EP-353/2009/K condition 2.9 and the updated EM&A Manual Clause 14.2.

Thank you for your attention, should there be any comments or queries, please contact our Mr. Cyrus Lai at 3565-4442 or the undersigned at 3565-4441.

Yours faithfully,  
for and on behalf of  
FUGRO TECHNICAL SERVICES LIMITED



Calvin Leung  
Environmental Team Leader

c.c.	AECOM	Attn: Mr. Jason Yu, Mr. Gordon Kok
	Ramboll	Attn: Mr. Y. H. Hui, Mr. Brian Tam, Mr. Theo Chan
	CHEC	Attn: Mr. Marko Chan



## **Appendix B2 – Verification Letter from the Independent Environmental Checker (IEC)**



Ref.: HYDHZMBEEM00\_0\_8692L.22

22 March 2022

By Fax (3748 8900) and By Post

AECOM Asia Co. Ltd.  
The PRE's Office  
550 Cheung Tung Road, Lantau, Hong Kong

Attention: Mr. W. K. Heung

Dear Sir,

**Re: Agreement No. CE 48/2011 (EP)  
Environmental Project Office for the  
HZMB HKLR, HZMB HKBCF, and TM-CLKL – Investigation**

**Agreement No. CE 13/2010 (CE) – HZMB HKBCF (Superstructures and  
Infrastructures) – Design and Construction  
Landscape and Visual Plan**

Reference is made to the submission of revised Landscape and Visual Plan (L&V Plan) for HZMB HKBCF Superstructure and Infrastructure contracts and certified by the ET Leader (ET's ref.: "MCL/ED/0091/2022/C" dated 11 March 2022).

We are pleased to inform you that we have no adverse comments on the captioned submission. We write to verify the captioned plan in accordance with Condition 2.9 of the Environmental Permit No. EP-353/2009/K.

The ER is reminded of the following:

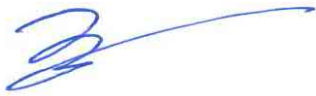
1. The landscape construction and establishment phase EM&A works shall be conducted in accordance with Table 14.1 of the Updated EM&A Manual. The landscape EM&A works shall be based on the consolidated L&V Plan endorsed by EPD/PlanD.
2. Environmental Team(s) (ETs) with Environmental Team Leader(s) (ETLs) and Independent Environmental Checker (IEC) satisfying Conditions 2.1 and 2.2 of EP-353/2009/K shall be established or continued to be maintained to undertake the landscape EM&A works covering all landscape works as in the consolidated L&V Plan endorsed by EPD/PlanD.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

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Yours faithfully,  
For and on behalf of  
Ramboll Hong Kong Limited



Brian Tam  
Independent Environmental Checker  
HZMB HKBCF

c.c.

HyD	Mr. Sally Choi	(By Fax: 3188 6614)
HyD	Mr. Maggie Lai	(By Fax: 3188 6614)
AAHK	Ms. Becky Yan	(By Fax: 2182 1773)
AECOM	Mr. Jason Yu	(By Fax: 3748 8900)
AECOM	Mr. Gordon Kok	(By Fax: 3748 8900)
Fugro	Mr. Calvin Leung	(By Fax: 2450 6138)
CHEC	Mr. Johnason Ko	(By Fax: 2887 3104)



## **Appendix C1 – Hong Kong International Airport Approved Plant Species List (Revision 4.0.1: October 2015)**

Remark: The Hong Kong International Airport Approved Plant Species List is provided for general reference only, and this List does not form part of the Environmental Permit EP-353/2009/K and it may be updated under separate forum.

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**Hong Kong International Airport**  
**Approved Plant Species List**  
**(Revision 4.0.1: October 2015)**

## 1 Background

Environmental management is integral to bird control at the Hong Kong International Airport (HKIA). Since Hong Kong lies on the bird seasonal migratory path and there is a large undeveloped area with vast natural vegetation in the adjacent Lantau Island, the Airfield Department of the Airport Authority Hong Kong (AA) has engaged a consultant to issue and maintain an Approved Plant Species List (APSL) in February 2000 in order to remove or limit the attractiveness of HKIA to birds.

Revisions 1, 2 and 3 were issued in February 2002, August 2003 and June 2007 respectively. The APSL was updated due to change of zoning of certain areas as a result of airport development and issued as Revision 4.0 in July 2013.

In view of the continuing large scale developments in airside and landside areas of the HKIA and in the vicinity of the airport island, the Airport Authority has issued this Revision 4.0.1 to supersede Revision 4.0. This revision includes the Hong Kong-Zhuhai-Macau Bridge and the Border Crossing Facility, and provides more descriptive guidelines based on the guiding principles and species in Revision 3 for easy reference by the Airport Authority and government departments in considering future planting proposals throughout all areas on the airport island and areas in the vicinity.

## 2 General Information

The airport island is divided into four zones based on the distances from runways and land use (**Figure 1**). Planting criteria in each zone are described as follow:

### Airside

Only grass and ground cover of less than 200mm in height.

### Zone 1

Only grass and ground cover of less than 200mm in height; climbers that do not produce fleshy fruit and should be planted in areas not exceeding 25m<sup>2</sup> and regularly pruned shrubs that do not produce fleshy fruit and are of less than 1.5m in height and 25m<sup>2</sup> in area size are allowed.

### Zone 2

Climbers, palms, cycad, trees or shrubs are acceptable only if they do not produce fleshy fruit. As a precautionary measure, height restriction of **newly planted** palms, cycad and tree is normally 5-10m, and trees that could produce a spreading crown and/or develop into a tall structure should be avoided. Hence, selection of small trees is preferred as a long-term management and maintenance approach. For all existing, planted palms, cycad and trees, their suitability and horticultural maintenance practice will be regularly reviewed by AAHK, and will be monitored for bird activities and potential hazard to aircraft by AA's Wildlife Hazard Consultant. Given that the mature size of certain existing tree species (such as *Casuarina equisetifolia* and *Delonix regia*) is up to 10-15m, close monitoring on their bird attractiveness of these particular trees would be carried out. Height restriction of existing and newly-planted shrubs is 1.5m.

For initial planting, palm / cycad / ravenala / bamboo / trees should be in groups of 50 individuals or fewer. The area of each tree group should not exceed 150m<sup>2</sup>, and shrubs / climbers should be planted in areas of no more than 500m<sup>2</sup>. Routine horticultural maintenance should be carried out to maintain vegetation groups of smaller sizes as far as practical.

For all existing, planted palm / cycad / ravenala bamboo / trees as well as shrubs are monitored by AA's Wildlife Hazard Consultant for usage by birds, and by AAHK. The planted area can be no more than 500 m<sup>2</sup> for palm / cycad / ravenala / bamboo / trees and 1,000m<sup>2</sup> for shrubs / climbers. The linear segregation for adjacent groups of palms / cycad / ravenala / bamboo / trees / shrubs should be at least 50m; however, this segregation restriction can be relaxed if the plantation is assessed as not creating significant or hazardous attraction to birds by AA's Wildlife Hazard Consultant. Spread of tree crowns should be pruned to less than 3m for initial planting, and 6m for mature plants on the condition that the tree species does not produce fleshy fruits and that bird usage is monitored by AA's Wildlife Hazard Consultant.

### Zone 3

In general, there is no restriction on the species planted in this zone. Trees, shrubs and palms are allowed. Large trees with complex structure encouraging birds' foraging and perching should be monitored for bird visitation. Existing plant species with fleshy fruits should also be monitored for bird attraction. In addition, to streamline long-term management and maintenance, planting of large groups of trees/ palms/ cycad/ ravenala that set fleshy fruits in the planting areas close to Zone 2 should be avoided.



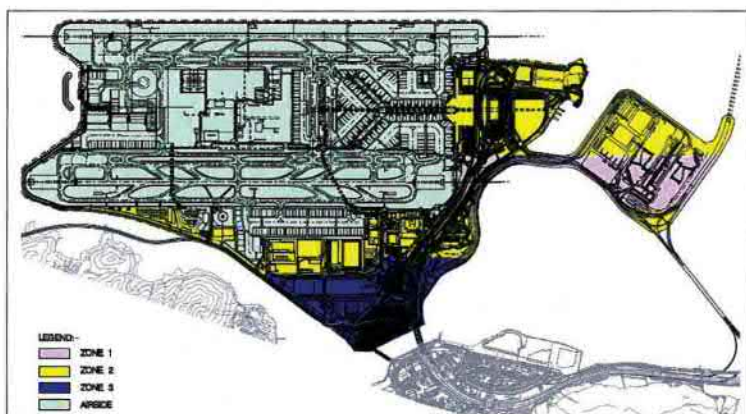


Figure 1. Zoning of the airport island

## 2 Approved Plant Species List (APSL)

The plant species allowed for planting in each zone are stated in the Approved Plant Species List (APSL). The acceptability of each species and management strategy has been evaluated based on their growth form and attractiveness to wildlife, particularly birds. The APSL (Table 1) provides a flora list to be followed in future planting proposals in each zone in the landside areas on the airport island; this was last reviewed in July 2015 by AA's Wildlife Hazard Consultant with update on the remarks based on Revision 3.

Flora species not in the APSL may be proposed to the Airport Authority for assessment by AA's Wildlife Hazard Consultant. Approval will be granted, with conditions given by the Airport Authority if appropriate, if the proposed species are not considered to pose unacceptable attraction to wildlife, particularly birds.

## 3 Plant species of Airport Island

Apart from planting, plants also naturally colonize and the plant community in the airport island will change with time. AA's Wildlife Hazard Consultant will conduct monthly landside bird survey and semi-annual vegetation survey, and submit reports on the plantation on the airport island with reference to the APSL, and assess whether planting at the Airport is providing unacceptable attractions to birds.

Table 1. FLORA SPECIES APPROVED FOR FUTURE PLANTING IN ZONES 1 AND 2

Scientific names	Approved in Zone 1	Approved in Zone 2	Remarks for planting and management
<b>TREES</b>			
<i>Acacia confusa</i>		✓	Require regular pruning
<i>Albizia lebbek</i>		✓	
<i>Bauhinia blakeana</i>		✓	
<i>Bauhinia purpurea</i>		✓	
<i>Bauhinia variegata</i>		✓	
<i>Callistemon viminalis</i>		✓	
<i>Cassia nodosa</i> (New scientific name: <i>Cassia javanica</i> var. <i>indochinensis</i> )		✓	Require regular pruning
<i>Cassia siamea</i>		✓	
<i>Cassia spectabilis</i>		✓	Require regular pruning
<i>Casuarina equisetifolia</i>		✓	Require regular pruning
<i>Cerbera manghas</i>		✓	
<i>Coccoloba uvifera</i>		✓	Removal any fleshy fruits wherever possible; Require regular pruning
<i>Delonix regia</i>		✓	Require regular pruning.
<i>Euphorbia cotinifolia</i>		✓	Require regular pruning.
<i>Ficus benjamina</i>		✓	Require regular pruning and removal of figs.
<i>Ficus microcarpa</i>		✓	
<i>Grevillea robusta</i>		✓	
<i>Jacaranda acutifolia</i> (New scientific name: <i>Jacaranda mimosifolia</i> )		✓	
<i>Juniperus chinensis</i>		✓	Regular pruning to maintain height < 5m in Zone 2. Require regular pruning and removal of figs.
<i>Plumeria rubra</i>		✓	
<i>Polyalthia longifolia</i> 'Pendula'		✓	
<i>Thespesia populnea</i>		✓	Require regular pruning.
<b>SHRUBS/HERBS</b>			
<i>Agave americana</i>	✓	✓	Remove the flower spikes in both zones.
<i>Agave angustifolia</i>	✓	✓	Same as <i>Agave americana</i> .
<i>Aglaia odorata</i>		✓	
<i>Aglaonema</i> 'Silver King'	✓	✓	
<i>Allamanda nerifolia</i> (New scientific name: <i>Allamanda schottii</i> )		✓	
<i>Allamanda cathartica</i>		✓	Require removal of the flower spikes.
<i>Alpinia zerumbet</i>		✓	
<i>Alpinia speciosa</i>		✓	
<i>Alternanthera versicolor</i> (New scientific name: <i>Alternanthera bettzickiana</i> )	✓	✓	
<i>Amaryllis</i> spp. ( <i>Hippeastrum</i> spp.)	✓	✓	
<i>Asparagus sprengeri</i> ( <i>Asparagus densiflorus</i> cv. <i>Sprengeri</i> )		✓	
<i>Begonia</i> spp.	✓	✓	



Scientific names	Approved in Zone 1	Approved in Zone 2	Remarks for planting and management
<i>Bougainvillea glabra</i>	✓	✓	Regular pruning to maintain dense low canopy in both zones.
<i>Caesalpinia pulcherrima</i>		✓	Regular pruning to maintain dense low canopy.
<i>Canna x generalis</i>	✓	✓	
<i>Canna indica</i>		✓	
<i>Calathea</i> spp.		✓	Regular pruning to maintain a dense low canopy
<i>Calliandra haematocephala</i>		✓	Regular pruning to maintain a dense low canopy.
<i>Cassia surattensis</i>		✓	Require regular pruning
<i>Catharanthus roseus</i>		✓	
<i>Codiaeum variegatum</i>		✓	
<i>Coleus hybridus</i>		✓	
<i>Cuphea</i> spp.	✓	✓	<i>C. hyssopifolia</i> acceptable in all zones. Other <i>Cuphea</i> spp. acceptable in Zone 2 with regular pruning.
<i>Dieffenbachia amoena</i>		✓	
<i>Ervatamia divaricata</i>		✓	
<i>Ficus microcarpa</i> 'Golden Leaf'		✓	
<i>Gordonia axillaries</i>		✓	Regular pruning to maintain height <1.5m in Zone 2.
<i>Hibiscus hamabo</i>		✓	
<i>Hibiscus syriacus</i>		✓	
<i>Hibiscus rosa-sinensis</i>		✓	
<i>Hibiscus tiliaceus</i>		✓	Avoid planting in clumps esp. in areas nearby Zone 1 and the runway.
<i>Hymenocallis americana</i>	✓	✓	
<i>Iris tectorum</i>	✓	✓	
<i>Ixora chinensis</i>		✓	
<i>Ixora coccinea</i>		✓	
<i>Lagerstroemia indica</i>		✓	
<i>Ligustrum ovalifolium</i>		✓	Require regular pruning to maintain dense low canopy.
<i>Malvaviscus arboreus</i> var. <i>penduliflorus</i>		✓	
<i>Michelia figo</i>		✓	
<i>Nephrolepis exaltata</i> (New scientific name: <i>Nephrolepis hirsutula</i> )	✓	✓	
<i>Nerium indicum</i> (New scientific name: <i>Nerium oleander</i> )		✓	
<i>Nerium oleander</i> (Same as <i>N. indicum</i> )		✓	
<i>Osmanthus fragrans</i>		✓	
<i>Philodendron selloum</i>		✓	
<i>Phyllanthus myrtifolius</i>		✓	
<i>Pilea nummularifolia</i>	✓	✓	
<i>Polyscias guilfoylei</i>		✓	
<i>Rhododendron farrerae</i>	✓	✓	Regular pruning to maintain height < 1.5m in both zones.

Scientific names	Approved in Zone 1	Approved in Zone 2	Remarks for planting and management
<i>Rhododendron hybridum</i>	✓	✓	Same as <i>Rhododendron farrerae</i> .
<i>Rhododendron indica</i>	✓	✓	Same as <i>Rhododendron farrerae</i> .
<i>Rhododendron latitum</i>	✓	✓	Same as <i>Rhododendron farrerae</i> .
<i>Rhododendron mucronatum</i> "Akemomo"	✓	✓	Same as <i>Rhododendron farrerae</i> .
<i>Rhododendron mucronatum</i> "omuraski"	✓	✓	Same as <i>Rhododendron farrerae</i> .
<i>Rhododendron pulchrum</i>	✓	✓	Same as <i>Rhododendron farrerae</i> .
<i>Rhododendron simsii</i>	✓	✓	Same as <i>Rhododendron farrerae</i> .
<i>Rhododendron simsii</i> "GR"	✓	✓	Same as <i>Rhododendron farrerae</i> .
<i>Russelia equisetiformis</i>	✓	✓	
<i>Saintpaulia idantha</i> (ionantha)	✓	✓	
<i>Spathiphyllum commutatum</i>	✓	✓	
<i>Strelitzia reginae</i>	✓	✓	
<i>Tecomaria capensis</i> (New scientific name: <i>Tecoma capensis</i> )		✓	
<i>Vitex rotundifolia</i>		✓	Acceptable only on retaining walls at roadside; close monitoring on bird use and fruiting density; remove any fleshy fruits wherever practical.
<i>Yucca aloifolia</i>	✓	✓	
<b>GROUND COVER</b>			
<i>Ipomoea brasiliensis</i> (New scientific name: <i>Ipomoea pes-caprae</i> )	✓	✓	
<i>Lantana montevidensis</i>	✓	✓	Cultivar 'Spreading Sunset' acceptable in all Zones; regular pruning to maintain dense low canopy.
<i>Liriope spicata</i>		✓	Close monitoring on bird use and fruit production.
<i>Ophiopogon japonicus</i>	✓	✓	
<i>Rhoeo discolor</i> (New scientific name: <i>Tradescantia spathacea</i> )	✓	✓	
<i>Syngonium podophyllum</i>	✓	✓	
<i>Wedelia trilobata</i>	✓	✓	Regular pruning to maintain dense low mat.
<i>Zephyranthes candida</i>	✓	✓	
<i>Zephyranthes rosea</i>	✓	✓	
<i>Zoysia</i> sp.	✓	✓	Regular cutting to prevent seed head production.
<b>CLIMBERS</b>			
<i>Bauhinia glauca</i>	✓	✓	
<i>Bougainvillea spectabilis</i>	✓	✓	Regular pruning to maintain dense low canopy in both zones.
<i>Dalbergia benthamii</i>	✓	✓	
<i>Ficus pumila</i>		✓	Close monitoring on bird visitation and fruiting density; remove any fleshy fruits wherever practical.
<i>Monstera deliciosa</i>	✓	✓	
<i>Parthenocissus himalayana</i>	✓	✓	Acceptable only on retaining walls at



Scientific names	Approved in Zone 1	Approved in Zone 2	Remarks for planting and management
(New scientific name: <i>Parthenocissus dalzielii</i> )			roadside.
<i>Pyrostegia ignea</i> (New scientific name: <i>Pyrostegia venusta</i> )	✓	✓	Acceptable only on retaining walls at roadside.
<i>Scindapsus aureus</i> (New scientific name: <i>Epipremnum aureum</i> )	✓	✓	Acceptable only on retaining walls at roadside.
<b>PALMS/ BAMBOOS/ CYCADS/ RAVENALA</b>			
<i>Bambusa multiplex</i>		✓	
<i>Bambusa ventricosa</i>		✓	
<i>Bambusa vulgaris</i>		✓	
<i>Chrysalidocarpus lutescens</i>		✓	
<i>Cocos nucifera</i>		✓	
<i>Cycas revoluta</i>		✓	
<i>Elaeis guineensis</i>		✓	
<i>Phoenix roebelenii</i>	✓	✓	Remove any bunches of fruits wherever practical.
<i>Ravenala madagascariensis</i>		✓	
<i>Rhapis excelsa</i>		✓	

#### 4 References

Corlett, R.T. 1992. Plants attractive to frugivorous birds in Hong Kong. *Memoirs of the Hong Kong Natural History Society* 19: 115-116.

Corlett, R.T. 1998. Frugivory and seed dispersal by birds in Hong Kong shrubland. *FORKTAIL* 13: 23-27.



## **Appendix C2 – Hong Kong International Airport Approved Plant Species List (Revision 5.0: January 2018)**

Remark: The Hong Kong International Airport Approved Plant Species List is provided for general reference only, and this List does not form part of the Environmental Permit EP-353/2009/K and it may be updated under separate forum.

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## Hong Kong International Airport

### Approved Plant Species List

(Revision 5.0: January 2018)

## 1 Background

Environmental management is integral to wildlife control, especially bird hazard, at the Hong Kong International Airport ("HKIA"). Since Hong Kong lies on a seasonal migratory bird path and there is a large area of natural habitats on the adjacent Lantau Island, the Airfield Department of the Airport Authority Hong Kong ("AA") engaged a consultant to issue and maintain an Approved Plant Species List ("APSL") in February 2000 in order to remove or limit the attractiveness of HKIA to birds.

In accordance with the ICAO Airport Services Manual Part 3, Wildlife Control and Reduction, Chapter 4, Para 4.7, a bird/wildlife management plan should be developed for the area, typically a 13 km (or 7NM) circle of the airport aerodrome reference point. Besides, In accordance with ICAO Annex 14, Volume I, Chapter 9, Para 9.4.5, States should give due consideration to aviation safety concerns related to land developments in the vicinity of the aerodrome that may attract wildlife.

In view of the continuing large-scale developments in airside and landside areas of the HKIA and in the vicinity of the airport island, the Airport Authority has issued this Revision 5.0 to guide project proponents in considering future planting proposals throughout all areas on the airport island and areas in the vicinity.

The APSL aims to strike a balance between aviation safety and landscape attractiveness in HKIA and areas in the vicinity. The bird control service consultant engaged by AA reviews, as necessary, the suitability of any new plant species proposed, as well as the planting and vegetation management guidelines in HKIA.

## 2 General Information

All species provided in this APSL have to be regularly managed with the principle of reducing their attractiveness to birds (e.g. selective pruning and removal of fleshy fruits) and must be observed in all landscape planning. In addition, all proposals of new landscape planting or new tree group transplanting should be submitted for Airfield Department review and approval on a case-by-case basis. Large-scale planting of any tree species in Zones 1 and 2, even of approved tree species, should be avoided to further minimise the potential attractiveness of extensive tree island to flocks of birds in the airport island.

The existing airport island is divided into four zones based on the distances from runway centre lines and land use (**Figure 1**). Planting criteria in each zone are described as follows. **All new landscape proposals for Zones 2 and 3 shall be submitted to Airfield Department for review and approval on a case-by-case basis.**

### Airside

Only grass and ground cover of less than 200mm in height.

Any proposal of outdoor landscape surrounded by or in the passenger terminal structure such as central courtyard or balcony in the Airside shall be reviewed by AA's bird control service consultant on a case by case basis to avoid or minimise any bird attraction.

### Zone 1

Only grass and ground cover of less than 200mm in height; climbers that do not produce fleshy fruit and should be planted in areas not exceeding 25m<sup>2</sup> and regularly pruned shrubs that do not produce fleshy fruit and are of less than 1.5m in height and 25m<sup>2</sup> in area size are allowed.

### Zone 2

Climbers, palms, cycad, trees or shrubs are acceptable only if they do not produce fleshy fruit. As a precautionary measure, a height restriction of 5-10m applies to the future planting of palms, cycads and trees, and trees that could produce a spreading crown and/or develop a tall structure should be avoided. This also applies to the long-term management on the height restriction of such future planting of palms, cycads and trees. Hence, selection of small trees is preferred as a long-term management and maintenance approach. For all existing, planted palms, cycads and trees, their suitability and horticultural maintenance practice will be regularly reviewed by AAHK, and will be monitored for bird activities and potential hazard to aircraft by AA's bird control service consultant. Given that the mature size of certain existing tree species (such as *Casuarina equisetifolia* and *Delonix regia*) is up to 10-15m, close monitoring on their bird attractiveness of these particular trees would be carried out. Height restriction of existing and newly-planted shrubs is 1.5m.

Future planting of palms, cycads, ravenala, bamboos and trees should be planted in groups of 50 individuals or fewer. The area of each tree group should not exceed 150m<sup>2</sup>, and shrubs / climbers should be planted in areas of no more than 500m<sup>2</sup>. Routine horticultural maintenance should be carried out to maintain vegetation groups of smaller sizes as far as practical.

Existing planted palms, cycads, ravenala, bamboos, trees and shrubs are monitored by AA's bird control service consultant for usage by birds, and by AA. The planted area can be no more than 500 m<sup>2</sup> for palms, cycads ravenala, bamboos and trees, and 1,000m<sup>2</sup> for shrubs and climbers. The linear segregation for adjacent groups of palms, cycad, ravenala, bamboo, trees



and shrubs should be at least 50m; however, this segregation restriction can be relaxed if the plantation is assessed as not creating significant or hazardous attraction to birds by AA’s bird control service consultant. Primarily, trees that can produce fleshy fruits should be avoided for further planting in Zone 1, 1a, 2 and areas in Zone 3 close to the runway and the airfield. Should new fleshy fruit-bearing tree individuals be proposed and/or planted in these zones, strong justification for such proposal should be provided. These trees should be monitored for their fruit attraction to birds and bird usage if they should be planted in Zone 2 or areas close to the runway and the airfield.

Zone 3

Trees, shrubs and palms are allowed since much of this Zone is far away from the runway centerline; in addition, management control of plant growth and planting works in Zone 2 has reduced bird occurrence in Zones close to the airfield. Nonetheless, in regard to the potential increase in development projects and their associated landscaping work in Zone 3, certain restrictions on species selection and implementation of horticultural maintenance practice should be followed.

For existing tree species, large trees with a complex structure encouraging bird foraging or perching should be monitored for bird visitation. Existing plant species with fleshy fruits should also be monitored for bird attraction. In addition, to streamline long-term management and maintenance, planting of large and continuous groups of trees, palms, cycads and ravenala that set fleshy fruits in the planting areas close to Zone 2 should be avoided. Planting of certain species, e.g. *Ficus benjamina* and *Ficus microcarpa*, which provide abundant fleshy fruits, should not be carried out.

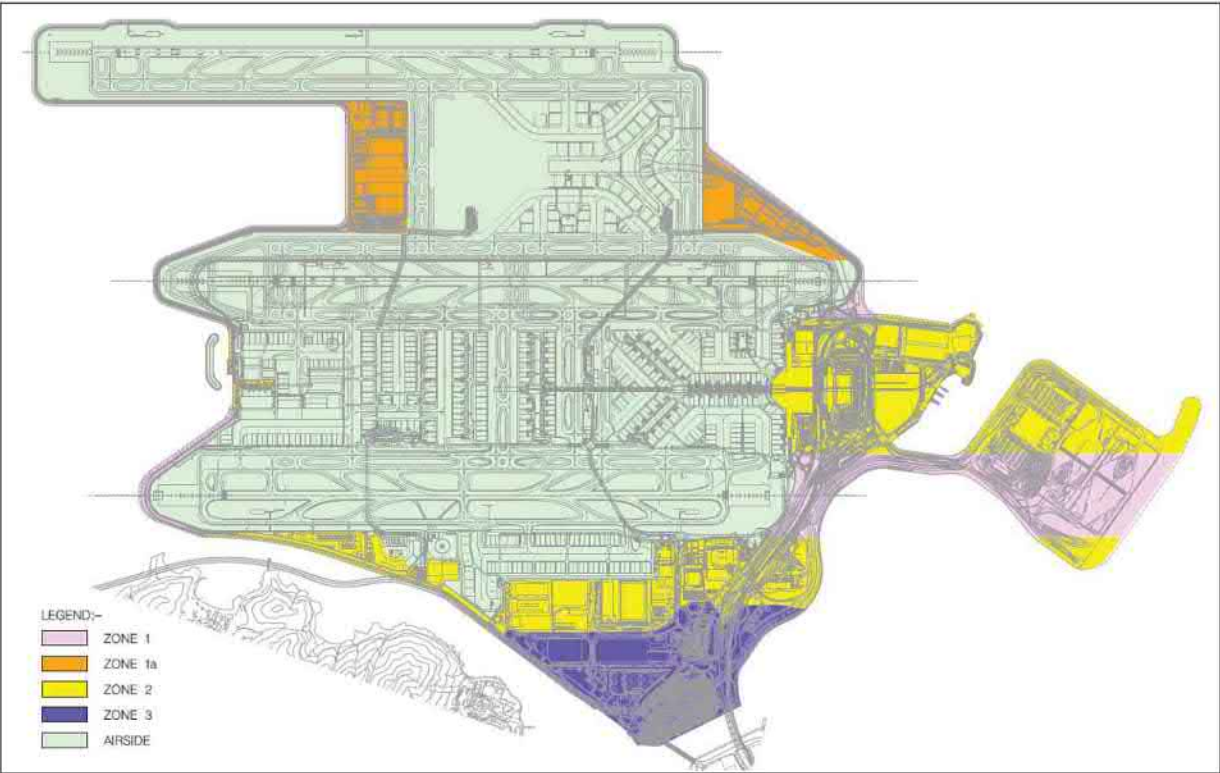


Figure 1. Zoning of the airport island for existing platform and future 3RS (the future 3RS portion is indicative only and will be updated at the appropriate time)



3 Approved Plant Species List (APSL)

The plant species allowed in each zone are stated in the Approved Plant Species List (APSL). The acceptability of each species and management strategy has been evaluated based on their growth form and attractiveness to wildlife, particularly birds. The APSL (Table 1) provides the most updated flora list to be followed in future planting proposals in each zone in the landside areas on the airport island.

Only in rare occasions, flora species not in the APSL may be proposed to AA for assessment by AA’s bird control service consultant. Approval may be granted, with conditions (such as appropriate vegetation management to control the tree spread and remove any potential attractive fleshy fruits) given by the AA if appropriate, if the proposed species are not considered to pose unacceptable attraction to wildlife, particularly birds.

4 Plant species of Airport Island

Apart from planting, plants also naturally colonize and the plant community in the airport island will change with time. AA’s bird control service consultant will conduct monthly landside bird surveys and semi-annual vegetation survey, and submits reports on the plantation on the airport island with reference to the APSL, and assesses whether vegetation at the Airport is appropriate in regard to its attraction to birds.

5 Third Runway development

The creation of a third runway will create new airside and landside areas that require to be placed in an appropriate vegetation zone. Airside areas will automatically be treated in the same manner as currently occurs, with vegetation restricted to grass and ground cover of less than 200mm in height.

Landside areas of the East Support Area (“ESA”) and West Support Area (“WSA”) (Figure 2) require a zoning that reflects their proximity to airside areas. It is accepted that including these areas within Zone 1 is inappropriate given that they are not under aircraft approaches and that they are required to provide a more attractive approach. However, it is also considered that placing them within Zone 2 does not reflect the potential for birds to be attracted from areas to the south, which might increase the number flying across existing runways. For these reasons it is proposed that a new zone, 1a, is included within the APSL (Table 1). This zone is based on Zone 1, but provides a selection of shrubs and trees of little attraction to birds that can still provide diversity and visual attraction. The height of the mature tree for zone 1a should not exceed 7m.

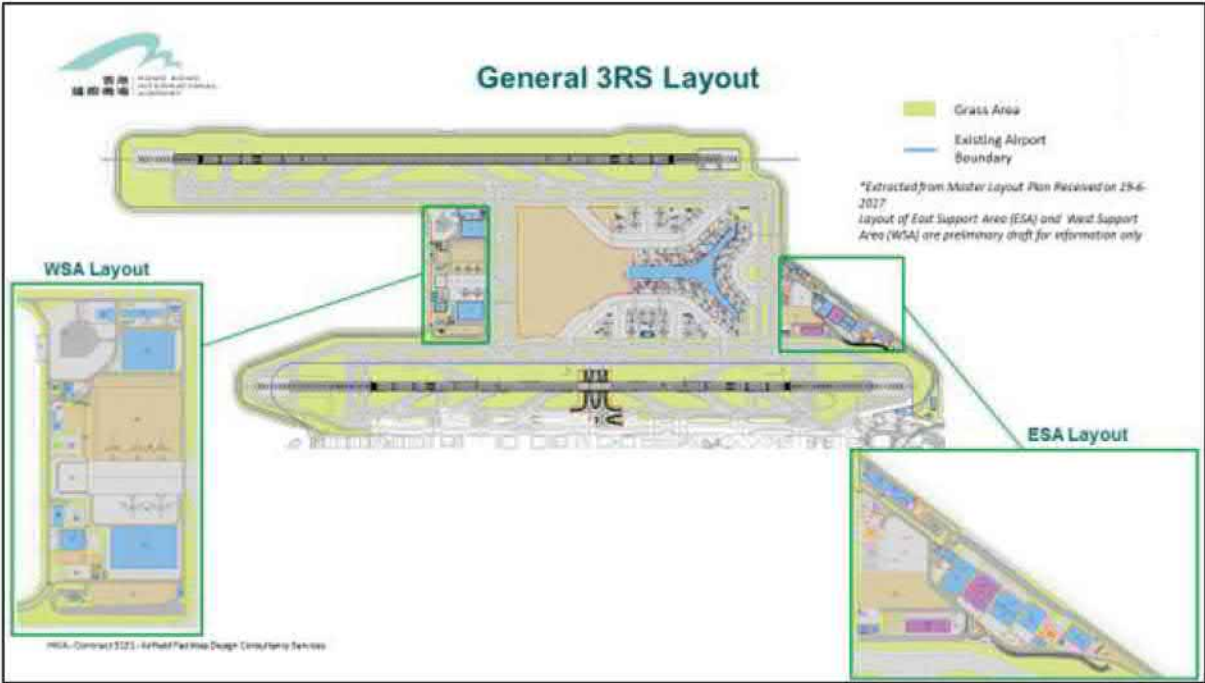


Figure 2 General 3RS Layout

6 References

Corlett, R.T. 1992. Plants attractive to frugivorous birds in Hong Kong. *Memoirs of the Hong Kong Natural History Society* 19: 115-116.

Corlett, R.T. 1998. Frugivory and seed dispersal by birds in Hong Kong shrubland. *FORKTAIL* 13: 23-27.



Table 1. FLORA SPECIES APPROVED FOR FUTURE PLANTING IN ZONES 1, 1a AND 2

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
Trees						
<i>Acacia auriculiformis</i>	耳英相思	N	N	N (only allowed for existing individuals already planted)	N (only allowed for existing individuals already planted)	This exotic species cannot be further planted in Zones 2 and 3 since existing environment will be changed due to development projects. Any existing individuals already planted in Zones 2 and 3 (areas away from runway and airfield in both zones) are allowed but should be regularly pruned to remove any fleshy fruits.
<i>Acacia confusa</i>	台灣相思	N	N	Y	Y	Requires regular pruning in Zone 2.
<i>Acacia mangium</i>	馬占相思	N	N	N (only allowed for existing individuals already planted)	N (only allowed for existing individuals already planted)	This species cannot be further planted in Zones 2 and 3 since existing environment will be changed due to development projects. Any existing individuals already planted in Zones 2 and 3 (areas away from runway and airfield in both zones) are allowed but should be regularly pruned to remove any fleshy fruits.
<i>Acerpalmatum Jinling Huang-feng</i>	金陵黃楓	N	Y	Y	Y	The cultivar usually does not produce fruit. Limited use in Zone 1a.
<i>Acer palmatum</i> 'Atropurpureum'	紅楓	N	N	Y	Y	

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Albizia julibrissin</i>	台歡	N	N	Y	Y	This is a large tree with open canopy; its spreading structure, heavy flowering and insect load encourage bird's perching and foraging on trees. It is acceptable in small scale planting in areas away from runway and airfield.
<i>Albizia lebbbeck</i>	大葉台歡	N	N	Y	Y	This is a large tree with open canopy; its spreading structure, heavy flowering and insect load encourage bird's perching and foraging on trees. It is acceptable in small-scale planting in areas away from runway and airfield.
<i>Aleurites montana</i>	皺桐	N	N	Y	Y	This species can produce showy flowers and with maximum height up to 20m. Acceptable in limited use and small-scale planting in areas away from runway and airfield. AAHK should control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Bauhinia x blakeana</i>	洋紫荊	N	N	Y	Y	
<i>Bauhinia purpurea</i>	紅花羊蹄甲	N	N	Y	Y	
<i>Bauhinia variegata</i> / Camel's foot tree	宮粉花羊蹄甲	N	N	Y	Y	



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Brachychiton acerifolius</i>	槭葉酒瓶樹	N	N	Y	Y	This species can produce showy flowers and with maximum height up to 20m. Acceptable in limited use and small-scale planting in areas away from runway and airfield. AAHK should control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Brassaia actinophylla</i>	澳洲鴨腳木	N	N	Y	Y	Same as <i>Schefflera actinophylla</i> ; this species can produce fruits which are eaten by many birds. Unless the flower spikes can be regularly removed once it is developed, this species is not recommended in any areas which are close to the runways and airfield.
<i>Callistemon rigidus</i>	紅千層	N	N	Y	Y	Flowers may be very attractive to small birds and produce perches for birds; only limited use and small-scale planting is allowed in Zone 2, as well as the areas in Zone 3 which are away from Zone 2 and the airfield.
<i>Callistemon viminalis</i>	串錢柳	N	N	Y	Y	AAHK has to control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Cassia fistula</i>	豬腸豆	N	N	Y	Y	
<i>Cassia nodosa</i> (New scientific name: <i>Cassia javanica</i> var. <i>indochinensis</i> )	爪哇旃那	N	N	Y	Y	Requires regular pruning in Zone 2.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Cassia siamea</i>	鐵刀木	N	N	Y	Y	Requires regular pruning in Zone 2.
<i>Cassia spectabilis</i>	美國槐	N	N	Y	Y	Requires regular pruning in Zone 2.
<i>Cassia surattensis</i>	黃槐	N	N	Y	Y	Requires regular pruning in Zone 2.
<i>Casuarina equisetifolia</i>	木麻黃	N	N	Y	Y	The cultivars and varieties of this <i>Cerasus</i> sp.for ornamental use usually do not produce fleshy fruits that attract birds. Therefore, this species is still accepted in Zones 2 and 3. Please make sure that the chosen cultivated specimens of <i>Cerasus</i> sp. will not produce fruits so as to minimize its attraction to birds. Moreover, for those in Zone 2, it should be monitored regularly for any production of fruits.
<i>Cerasus</i> sp.	櫻花	N	N	Y	Y	The cultivars and varieties of <i>Cerasus</i> sp. for ornamental use usually do not produce fleshy fruits that attract birds. Any planted individuals, especially those planted in Zone 2, should be monitored regularly for any production of fruits.
<i>Cerasus</i> cv. Guangzhou	櫻花 (廣州櫻)	N	N	Y	Y	The cultivars and varieties of <i>Cerasus</i> sp. for ornamental use usually do not produce fleshy fruits that attract birds. Any planted individuals, especially those planted in Zone 2, should be monitored regularly for any production of fruits.
<i>Cerasus</i> cv. Zhongguohong	櫻花 (中國紅)	N	N	Y	Y	The cultivars and varieties of <i>Cerasus</i> sp. for ornamental use usually do not produce fleshy fruits that attract birds. Any planted individuals, especially those planted in Zone 2, should be monitored regularly for any production of fruits.



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Cerbera manghas</i>	海芒果	N	N	Y	Y	Recommend to have small-scale planting in Zone 2; also planted in areas away from the public in view of the production of poisonous fruits.
<i>Chukrasia tabularis</i>	麻楝	N	N	Y	Y	AAHK has to control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Coccoloba uvifera</i>	海葡萄	N	N	Y	Y	Removal any fleshy fruits wherever possible. Requires regular pruning if planted in Zone 2.
<i>Cupressus macroglossus</i> cv. Goldcrest	香冠柏	Y	Y	Y	Y	Regular pruning is required for Zones 1 and 2; it should be pruned in ball or cone shape if used in Zone 1 and should be pruned to height less than 1.5m tall.
<i>Delonix regia</i>	鳳凰木	N	N	Y	Y	This species has open and spreading canopy. It is quite vulnerable to storm damage due to its brittle wood. It is only acceptable in small-scale planting in areas away from the airfield and Zone 1. It also requires regular pruning to control its spread in Zones 2 and 3.
<i>Euphorbia cotinifolia</i>	紅烏柏	N	N	Y	Y	Requires regular pruning in Zone 2.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Ficus benjamina</i>	垂葉榕	N	N	N (only allowed for existing individuals already planted)	N (only allowed for existing individuals already planted)	This species cannot be further planted in Zones 2 and 3 since existing environment will be changed due to development projects. Any existing individuals already planted in Zones 2 and 3 (areas away from runway and airfield in both zones) can be allowed but they should be regularly pruned to remove any fleshy fruits.
<i>Ficus crassifolia</i>	厚葉榕	N	N	N (only allowed for existing individuals already planted)	N (only allowed for existing individuals already planted)	<i>Ficus crassifolia</i> is equivalent to <i>Ficus microcarpa</i> var. <i>crassifolia</i> . Depending on the type of cultivar, this could become a larger shrub/tree. Any existing individuals already planted in Zones 2 and 3 (areas away from the runway and airfield in both zones) can be allowed but they should be regularly pruned to maintain a ball or cone shape, and any fleshy fruits should be removed during pruning.



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Ficus microcarpa</i>	細葉榕	N	N	N (only allowed for existing individuals already planted)	N (only allowed for existing individuals already planted)	This species cannot be further planted in any zones, or in any area close to the airfield due to its production of fruits which may attract birds. Depending on the type of cultivar, this could become larger shrub/ tree. Any existing individuals already planted in Zones 2 and 3 (areas away from the runway and airfield in both zones) can be allowed but they should be regularly pruned to remove all fleshy fruits.
<i>Ficus microcarpa</i> L.f	圓葉榕	N	N	Y	Y	This <i>Ficus</i> species can be accepted in Zones 2 and 3 only if its cultivar form (production of sterile fruits) is used and only small-scale planting (i.e. planting area can be no more than 1000 sq. meter) is allowed. Regular pruning of this species should be carried out in Zone 2 and areas close to the runway and the airfield to maintain its dense low canopy.
<i>Grevillea banksii</i>	紅花銀樺	N	N	Y	Y	This can produce large and open canopy. Acceptable only in small-scale planting. AAHK should control the tree height as a long-term tree management approach in Zones 2 and 3.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Grevillea robusta</i>	銀樺	N	N	Y	Y	This can produce large and open canopy. Acceptable only in small-scale planting. AAHK should control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Heteropanax fragrans</i>	幌傘楓	N	N	Y	Y	Acceptable in areas away from the airfield; AAHK should control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Hibiscus tiliaceus</i>	黃槿	N	N	Y	Y	This is a small tree that birds may use for shelter. Large-scale planting should be avoided, esp. in areas near Zone 1 and the runway. The planting area can be no more than 500 sq. meter following the restriction stipulated in APSL Rev. 5.
<i>Jacaranda acutifolia</i> (New scientific name: <i>Jacaranda mimosifolia</i> )	藍花楹	N	N	Y	Y	This species has a medium tree size and produces showy flowers, but is very vulnerable to storm damage due to its brittle wood. It is only acceptable in small-scale planting if it is planted in Zone 2.
<i>Juniperus chinensis</i>	龍柏	N	Y	Y	Y	Regular pruning to maintain height < 5m in Zone 2. Requires regular pruning and removal of fruits in Zone 2.



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Juniperus formosana</i>	刺柏/ 針松	N	Y	Y	Y	Acceptable in areas away from the runway and the airfield, and only in limited use in Zone 1a. Regular pruning should be applied in Zones 1a and 2.
<i>Koelreuteria bipinnata</i>	複葉藥樹	N	N	Y	Y	Acceptable in areas away from the airfield and runway; AAHK should control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Koelreuteria formosana</i>	台灣藥樹	N	N	Y	Y	Acceptable in areas away from the airfield and runway; AAHK should control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Lagerstroemia speciosa</i>	大葉紫薇	N	Y	Y	Y	Acceptable in areas away from the runway and airfield, and only in limited use in Zone 1a.
<i>Melaleuca bracteata</i>	黃金香柳	N	N	Y	Y	Flowers of this species may be regularly visited by bird flocks, like tree <i>Melaleuca cajuputi</i> subsp. <i>cumingiana</i> . This species is acceptable in Zone 2, but regular pruning should be adopted to control its height as shrub or small tree, and monitoring of its attractiveness to birds is required.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Melia azedarach</i>	苦楝	N	N	N (only allowed for existing individuals already planted)	Y	This species cannot be further planted in Zones 1, 1a and 2, or in any area close to the airfield, due to its production of fruits which may attract birds. Depending on the type of cultivar, this could become larger tree. Any existing individuals already planted in Zone 2 (areas away from the runway and airfield) can be allowed but they should be regularly pruned to remove all fleshy fruits.
<i>Michelia alba</i>	白玉蘭	N	N	Y	Y	This species has a spreading canopy which encourages bird's foraging. This species can only be accepted in small-scale planting in areas away from the airfield and runway.
<i>Michelia champaca</i>	黃玉蘭	N	N	Y	Y	This species has a spreading canopy which encourages bird's foraging. This species can only be accepted in small-scale planting in areas away from the airfield and runway.
<i>Michelia chapensis</i>	樂昌含笑	N	N	Y	Y	This species has a spreading canopy which encourages bird's foraging. This species can only be accepted in small-scale planting in areas away from the airfield and runway.



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Peltaphorum pterocarpum</i>	盾柱木	N	N	Y	Y	The large spreading open canopy may encourage bird perching; preferable to be planted in Zone 3 only, but can have limited use in Zone 2 areas away from the runway and landside. AAHK has to control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Plumeria obtuse</i> 'Pink Flower'	鈍葉雞蛋花	N	Y	Y	Y	Acceptable only in limited use in Zone 1a, 2 and 3 (areas away from the airfield and the runway in these zones).
<i>Plumeria rubra</i>	雞蛋花	N	Y	Y	Y	Acceptable only in limited use in areas away from the airfield and the runway.
<i>Podocarpus macrophyllus</i>	羅漢松	N	N	Y	Y	Acceptable in areas away from the runway and the airfield if routine pruning and vegetation maintenance work is applied to this species so as to reduce its attractiveness to bird visitation.
<i>Polyalthia longifolia</i> 'Pendula'	長葉暗羅	N	N	Y	Y	Acceptable in areas away from the airfield and runway. It should be emphasized that this species can grow into a tall tree with spreading canopy. AAHK has to control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Saraca asoca</i>	無憂樹	N	N	Y	Y	

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Sophora japonica</i> cv. Golden stem	黃金槐(金枝槐)	N	N	Y	Y	Acceptable for sterile cultivar to be planted in areas away from the runway and airfield. Maximum height of this species can reach 25m, AAHK has to control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Spathodea campanulata</i>	火焰木	N	N	Y	Y	This species can produce showy flowers attracting small to medium-sized birds. It can only be used in limited use in areas away from the runway and the airfield. AAHK has to control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Tabebuia argentea</i>	銀鱗風鈴木	N	N	Y	Y	Acceptable in areas away from the airfield and runway. AAHK has to control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Tabebuia chrysantha</i>	黃花風鈴木	N	N	Y	Y	Acceptable in areas away from the airfield and runway. AAHK has to control the tree height as a long-term tree management approach in Zones 2 and 3.
<i>Tabebuia impetiginosa</i>	紫花風鈴木	N	N	Y	Y	Acceptable in areas away from the airfield and runway. AAHK has to control the tree height as a long-term tree management approach in Zones 2 and 3.



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Tabebuia rosea</i>	紅花風鈴木	N	N	Y	Y	Acceptable in areas away from the runways and airfield; recommend to have small-scale planting in Zone 2.
<i>Tabebuia roseo-alba</i>	白玫瑰鐘木	N	N	Y	Y	Acceptable in areas away from the runways and airfield.
<i>Terminalia mantaly</i> var. <i>tricolor</i>	花葉細葉欖仁樹	N	N	Y	Y	Acceptable in areas away from the runway and airfield. Drupe fruits may be too large for birds, but possibly eaten by bats, suggest to remove the fruits if this tree has to be planted in Zone 2.
<i>Thespesia populnea</i>	織楊	N	N	Y	Y	Requires regular pruning if planted in Zone 2.
<i>Thuja orientalis</i> cv. <i>Aurea Nana</i>	黃金側柏	N	Y	Y	Y	Acceptable in Zone 2 with regular pruning. It should be pruned in ball or cone shape, and pruned to height less than 1.5m tall, if it is used in Zones 1a and 2.
<i>Ulmus pumila</i> cv. <i>Jinye</i>	金葉榆	N	N	Y	Y	Acceptable only in small-scale planting and requires regular pruning to maintain dense low canopy in Zone 2.
SHRUBS/HERBS						
<i>Acalypha hispida</i>	狗尾紅	Y	Y	Y	Y	Acceptable in Zones 1 and 1a if regular pruning is carried out to maintain its small size of less than 1.5m.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Ardisia fordii</i>	紫金牛	N	N	Y	Y	Acceptable in areas away from the airfield and runway if regular and special pruning occur at the end of flowering season to remove all fruits.
<i>Agave</i> spp.	龍舌蘭	N	N	Y	Y	Its tall flower spike is very attractive to birds and needs regular removal. This species should not be planted at a large-scale. Flower spikes should also be removed.
<i>Agave americana</i>	黃邊龍舌蘭	N	N	Y	Y	Remove the flower spikes if planted in Zone 2.
<i>Agave angustifolia</i>	狹葉龍舌蘭	N	N	Y	Y	Same as <i>Agave americana</i> .
<i>Aglaia odorata</i>	米仔蘭	N	N	Y	Y	Regular pruning to maintain the shrubs to less than 1.5m should be adopted in Zone 2.
<i>Aglaonema</i> 'Silver King'	銀皇后	Y	Y	Y	Y	
<i>Allamanda blanchetii</i>	紫花黃蟬	N	N	Y	Y	
<i>Allamanda cathartica</i>	軟枝黃蟬	N	N	Y	Y	
<i>Allamanda nerifolia</i> (New scientific name: <i>Allamanda schottii</i> )	硬枝黃蟬	N	N	Y	Y	
<i>Alpinia speciosa</i> (New scientific name: <i>Alpinia zerumbet</i> )	艷山薑	N	N	Y	Y	
<i>Alpinia zerumbet</i>	艷山薑	N	N	Y	Y	
<i>Alternanthera versicolor</i> (New scientific name: <i>Alternanthera bettckickiana</i> )	錦繡苧	N	N	Y	Y	
<i>Amaryllis</i> spp. ( <i>Hippeastrum</i> spp.).	朱頂紅屬	N	N	Y	Y	



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Asparagus sprengeri</i> ( <i>Asparagus densiflorus</i> cv. Sprengeri)	非洲天門冬	N	N	Y	Y	
<i>Barleria cristata</i>	假杜鵑	N	N	Y	Y	
<i>Begonia</i> spp.	秋海棠屬	N	N	Y	Y	
<i>Bougainvillea</i> spp.	勒杜鵑	Y	Y	Y	Y	Regular pruning to maintain dense low canopy in Zones 1, 1a and 2.
<i>Brunfelsia acuminata</i> Benth	鴛鴦茉莉	N	N	Y	Y	
<i>Buddleja davidii</i>	大花醉魚草	N	N	Y	Y	Acceptable only in limited use in Zone 2. This species is quite invasive in the planting areas.
<i>Caesalpinia pulcherrima</i>	洋金鳳	N	N	Y	Y	Regular pruning to maintain dense low canopy in Zone 2.
<i>Calathea</i> spp.	崗竹芋屬	N	N	Y	Y	Regular pruning to maintain a dense low canopy in Zone 2.
<i>Calliandra haematocephala</i>	紅絨球	N	N	Y	Y	Regular pruning to maintain a dense low canopy in Zone 2.
<i>Calliandra harrisii</i>	澳洲粉撲	N	N	Y	Y	Regular pruning to maintain a dense low canopy in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Calliandra surinamensis</i> Benth	粉撲花	N	N	Y	Y	This species produces showy flowers and dry seeds, and can be regularly visited by small birds; acceptable only in small-scale planting with regular pruning to maintain dense low canopy if it is planted in Zone 2.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Camellia japonica</i> (Red/white Flower)	山茶 (紅/白花)	N	N	Y	Y	This species is not appropriate for heavy pruning, and may form closed canopy structure to attract birds. This species can be in limited use, and accepted in small-scale planting in areas away from the runway and airfield.
<i>Camellia japonica</i> 'Alba-plena' (White Flower)	山茶 (白花)	N	N	Y	Y	This species is not appropriate for heavy pruning, and may form closed canopy structure to attract birds. This species can be in limited use, and accepted in small-scale planting in areas away from the runway and airfield.
<i>Camellia japonica</i> 'Rosedale beauty' (Red/ pink Flower)	山茶 (紅花)	N	N	Y	Y	This species is not appropriate for heavy pruning, and may form closed canopy structure to attract birds. This species can be in limited use, and accepted in small-scale planting in areas away from the runway and airfield.
<i>Canna indica</i>	美人蕉	N	N	Y	Y	
<i>Canna x generalis</i>	大花美人蕉	N	N	Y	Y	
<i>Carmona microphyll</i>	福建茶	Y	Y	Y	Y	Acceptable in Zone 1, 1a and 2 only if regular pruning is adopted to maintain its dense low canopy.
<i>Cassia alata</i> (new scientific name: <i>Senna alata</i> )	有翅決明	N	N	Y	Y	
<i>Cassia surattensis</i> (New scientific name: <i>Senna surattensis</i> )	黃槐	N	N	Y	Y	Requires regular pruning if planted in Zone 2.
<i>Catharanthus roseus</i>	長春花	N	N	Y	Y	

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Clerodendrum thomsonaea</i>	龍吐珠	N	N	Y	Y	
<i>Clerodendrum ugandense</i>	藍蝴蝶	N	N	Y	Y	
<i>Codiaeum variegatum</i>	灑金榕	N	Y (if cultivar form with no production of fleshy fruits is planted)	Y	Y	Accepted only cultivar form 'Indian Blanket' of this species with no production of fleshy fruits can be allowed in the airport island, future Third Runway area, and the infrastructural works to be completed near the airport island.
<i>Coleus hybridus</i>	洋紫蘇	N	N	Y	Y	Fleshy fruits can attract birds; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway. Removal of fruits is also required in these areas.
<i>Cordyline terminalis</i>	鐵樹	N	N	Y	Y	The cultivar form of this species may not produce fleshy fruits; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway.
<i>Cordyline terminalis</i> cv. Dolly	娃娃朱蕉	N	N	Y	Y	The cultivar form of this species may not produce fleshy fruits; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway.
<i>Cordyline terminalis</i> cv. Rubra	紅葉鐵樹	N	N	Y	Y	The cultivar form of this species may not produce fleshy fruits; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway.
<i>Cuphea</i> spp.	萼距花屬	N	N	Y	Y	<i>Cuphea</i> spp. acceptable in Zone 2 with regular pruning.
<i>Daphne odora f. marginata</i>	金邊瑞香	N	N	Y	Y	

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Dieffenbachia amoena</i>	黛粉葉	N	N	Y	Y	Not recommended in Zone 2 as it can develop into heavy clump with fleshy fruit attractive to birds. Any existing individuals can be allowed in areas away from the airfield and runway, if they can be regularly pruned and any produced fleshy fruits are removed during the pruning.
<i>Dracaena angustifolia</i>	狹葉龍血樹	N	N	N (only allowed for existing individuals already planted)	Y	The species should be regularly pruned and any produced fleshy fruits would be removed during the pruning, if it is planted in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield. Please make sure that regular pruning practice would be maintained to remove the fleshy fruits.
<i>Dracaena marginata</i>	紅邊龍血樹	N	N	Y	Y	Fleshy fruits can attract birds; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway. Removal of fruits is also required in these areas.
<i>Dracaena fragrans</i>	巴西鐵樹	N	N	Y	Y	The cultivar form of this species may not produce fleshy fruits; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway.
<i>Dracaena godffiana</i> 'Bausei'	黃道星點木	N	N	Y	Y	



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Dracaena marginata</i> 'Tricolor Rainbow'	彩虹竹蕉	N	N	Y	Y	The cultivar form of this species may not produce fleshy fruits; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway, if it is planted in Zone 2.
<i>Dracaena reflexa</i> 'Song of Jamaica'	百合竹	N	N	Y	Y	The cultivar form of this species may not produce fleshy fruits; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway, if it is planted in Zone 2.
<i>Dracaena reflexa</i> 'Variegata'	金邊百合竹	N	N	Y	Y	The cultivar form of this species may not produce fleshy fruits; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway, if it is planted in Zone 2.
<i>Dracaena sanderiana</i>	白邊萬年竹	N	N	Y	Y	The cultivar form of this species may not produce fleshy fruits; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway, if it is planted in Zone 2.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Dracaena sanderiana</i> 'Golden Edge'	黃邊萬年竹	N	N	Y	Y	The cultivar form of this species may not produce fleshy fruits; acceptable only in small-scale planting in areas close to building blocks and away from the airfield and runway, if it is planted in Zone 2.
<i>Duranta repens</i>	假連翹	N	N	Y	Y	Fruits are attractive to birds and regular removal of fruits by pruning is required, if it is planted in Zone 2, as well as the areas in Zone 3 which are close to the airfield and runway.
<i>Duranta repens</i> cv. <i>Marginata</i>	金邊金露花	N	N	Y	Y	Fruits are attractive to birds and regular removal of fruits by pruning is required if it is planted in Zone 2, as well as the areas in Zone 3 which are close to the airfield and runway.
<i>Duranta repens</i> 'Golden Leaves'	金連翹	N	N	Y	Y	Fruits are attractive to birds and regular removal of fruits by pruning is required, if it is planted in Zone 2, as well as the areas in Zone 3 which are close to airfield and runway.
<i>Duranta repens</i> 'Variegata'	花葉假連翹	N	N	Y	Y	Fruits are attractive to birds and regular removal of fruits by pruning is required, if it is planted in Zone 2, as well as the areas in Zone 3 which are close to airfield
<i>Ervatamia divaricata</i>	狗牙花	N	N	Y	Y	
<i>Euphorbia cotinifolia</i> L.	紅烏柏	N	N	Y	Y	Requires regular pruning in Zone 2.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Euphorbia leucocephala</i>	白雪木	N	Y	Y	Y	Regular pruning to maintain a dense low canopy in Zone 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Excoecaria cochinchinensis</i>	紅背桂	Y	Y	Y	Y	Only small-scale planting is allowed in Zone 1a. Regular pruning should be maintained to reduce its dense cover in Zones 1a and 2.
<i>Fagraea ceilanica</i>	非洲茉莉	N	Y	Y	Y	Only small-scale planting is allowed in Zone 1a. Regular pruning should be maintained to reduce its dense cover in Zones 1a and 2.
<i>Fagraea ceilanica</i> 'Golden Leaves'	金葉灰莉	N	Y	Y	Y	Fruits are attractive to birds. Pruning is required to remove all fruits. Only small scale planting is allowed in areas away from the airfield.
<i>Fatsia japonica</i>	八角金盤	N	N	Y	Y	This Ficus species can be accepted only if its cultivar form (production of sterile fruits) is used, and only small-scale planting (i.e. planting area can be no more than 1000 sq. meter) is allowed. Regular pruning of this species should be carried out to maintain its dense low canopy.
<i>Ficus benjamina</i> 'Variegata'	白斑垂榕	N	N	Y	Y	

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Ficus microcarpa</i> cv. Golden Leaves	金葉榕	N	N	Y	Y	This <i>Ficus</i> species can be accepted only if its cultivar form (production of sterile fruits) is used and only small-scale planting (i.e. planting area can be no more than 500sq. meter for initial planting and 1000 sq. meter for existing planted groups) is allowed. Regular pruning of this species should be carried out to maintain its dense low canopy.
<i>Furcraea foetida</i>	黃紋萬年麻	N	N	Y	Y	Acceptable in limited use and removal of flower spikes is required in Zone 2.
<i>Gardenia jasminoides</i>	白蟬	N	N	Y	Y	Flowers are quite attractive to small birds. Acceptable only in small-scale planting and with regular pruning in Zone 2, as well as areas in Zone 3 which are close to Zone 2 and the airfield.
<i>Gomphocarpus physocarpus</i>	汽球花	N	N	Y	Y	Regular pruning to maintain height <1.5m in Zone 2.
<i>Gordonia axillaries</i>	大頭茶	N	N	Y	Y	
<i>Hibiscus hamabo</i>	黃芙蓉	N	N	Y	Y	Showy flowers may be visited by sunbirds and this species is not suitable for heavy pruning. Limited use in Zone 2 is acceptable if it is planted in areas away from the runway and airfield.
<i>Hibiscus mutabilis</i>	木芙蓉	N	N	Y	Y	
<i>Hibiscus rosa sinensis</i> (red/orange/pink/yellow flowers)	大紅花(紅花/白花/粉花/黃花)	N	N	Y	Y	



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Hibiscus schizopetalus</i>	吊燈花	N	N	Y	Y	Showy flowers may be visited by sunbirds and this species is not suitable for heavy pruning. Limited use in Zone 2 is acceptable if it is planted in areas away from the runway and airfield.
<i>Hibiscus syriacus</i>	木槿	N	N	Y	Y	
<i>Hymenocallis americana</i>	蜘蛛蘭	N	N	Y	Y	
<i>Iris tectorum</i>	鳶尾 (雙色)	N	N	Y	Y	
<i>Ixora chinensis</i>	龍船花	N	Y	Y	Y	Regular pruning is required, except areas in Zone 3 which are away from Zone 2 and the airfield.
<i>Ixora coccinea</i>	龍船花	N	Y	Y	Y	Regular pruning is required, except areas in Zone 3 which are away from Zone 2 and the airfield.
<i>Ixora duffii</i> 'Super King'	大王龍船花	N	Y	Y	Y	The cultivar form may still produce fruits to attract birds, acceptable only in limited use and with regular pruning in Zone 2.
<i>Ixora parviflora</i>	白龍船花	N	Y	Y	Y	The cultivar form may still produce fruits to attract birds, acceptable only in limited use and with regular pruning in Zone 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield.
<i>Ixora stricta</i>	細葉龍船花	N	Y	Y	Y	The cultivar form may still produce fruits to attract birds, acceptable only in limited use and with regular pruning in Zone 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Ixora x westii</i>	宮粉龍船花	N	Y	Y	Y	The cultivar form may still produce fruits to attract birds, acceptable only in limited use and with regular pruning in Zone 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield.
<i>Jasminum mesnyi</i>	黃素馨	N	N	Y	Y	Regular pruning work is required in Zones 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield.
<i>Jasminum sambac</i>	茉莉	N	N	Y	Y	Regular pruning work is required in Zone 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield.
<i>Jatropha integerrima</i>	琴葉珊瑚	N	N	Y	Y	
<i>Jatropha pandurifolia</i>	日日櫻	N	N	Y	Y	
<i>Lagerstroemia indica</i>	細葉紫薇	N	N	Y	Y	
<i>Lagerstroemia indica</i> 'Pink velour'	美國天鵝絨 細葉紫薇	N	N	Y	Y	Regular pruning work is required in Zone 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield.
<i>Leucophyllum frutescens</i> (round shape)	紅花玉芙蓉 (圓形)	N	N	Y	Y	
<i>Ligustrum sinense</i> 'Variegatum'	花葉山指甲	N	N	Y	Y	Acceptable in small-scale planting in areas away from the airfield and runway.
<i>Ligustrum ovalifolium</i>	卵葉女貞	N	N	Y	Y	Requires regular pruning in Zone 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield, to maintain dense low canopy.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Loropetalum chinensis</i> var. <i>rubrum</i>	紅繼木	N	N	Y	Y	Acceptable in small-scale planting in the areas away from runway and airfield. Regular pruning is required.
<i>Malvaviscus arboreus</i> var. <i>penduliflorus</i>	垂花懸鈴花	N	N	Y	Y	
<i>Melastoma candidum</i>	野牡丹	N	N	Y	Y	Allowed in the areas away from the airfield and runway. The species should be regularly pruned in Zone 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield. Any produced fleshy fruits would be removed during the pruning. Please make sure that regular pruning practice would be maintained to remove the fleshy fruits to maintain the ball-cone shape of the species.
<i>Michelia figo</i>	含笑	N	N	Y	Y	Not suitable for heavy pruning, but acceptable in small-scale planting in Zone 2.
<i>Michelia figo</i> (Tree shape)	含笑樹	N	N	Y	Y	
<i>Murraya paniculata</i>	九里香	N	N	Y	Y	Regular pruning is required and small-scale planting of this species is acceptable in Zone 2.
<i>Nandina domestica</i>	南天竺	N	N	Y	Y	Regular pruning is required and small-scale planting of this species is acceptable in Zone 2.
<i>Nephrolepis exaltata</i> (New scientific name: <i>Nephrolepis hirsutula</i> )	毛葉腎蕨	N	N	Y	Y	

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Nerium oleander</i> (Also known as <i>Nerium indicum</i> as its synonym)	洋夾竹桃	N	N	Y	Y	Regular pruning is required and small-scale planting of this species is acceptable in Zone 2.
<i>Osmanthus fragrans</i>	桂花	N	N	Y	Y	
<i>Pentas lanceolata</i>	五星花	N	N	Y	Y	
<i>Philodendron selloum</i>	春羽	N	N	Y	Y	
<i>Phyllanthus myrtifolius</i>	瘤腺葉下珠	N	N	Y	Y	
<i>Pilea nummularifolia</i>	古錢冷水花	N	N	Y	Y	
<i>Pistacia weinmannifolia</i>	清香木	N	N	Y	Y	The species planted in Zone 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield, should be regularly pruned. Any produced fleshy fruits would be removed during the pruning. Please make sure that regular pruning practice would be maintained to remove the fleshy fruits to maintain the ball-cone shape of the species.
<i>Pittosporum tobira</i>	海桐花	N	N	Y	Y	Regular pruning is required if it is planted in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Plumbago capensis</i>	藍雪花	N	N	Y	Y	
<i>Polyscias fruticosa</i>	裂葉假沙梨	N	N	Y	Y	
<i>Polyscias guilfoylei</i>	假沙梨	N	N	Y	Y	
<i>polyscias scutellaria</i>	圓葉假沙梨	N	N	Y	Y	



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Raphiolepis indica</i>	車輪梅	N	N	Y	Y	Fruits are attractive to birds. Pruning is required to remove all fruits if this species must be planted in Zone 2. Only small scale planting is allowed in Zone 2 but it is required to closely monitor its growing. Small-scale planting is allowed in Zone 3.
<i>Rhododendron</i> spp.	山杜鵑	N	N	Y	Y	Regular pruning to maintain the shrubs to less than 1.5m should be adopted in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Rhododendron farrerae</i>	丁香杜鵑	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Rhododendron hybridum</i>	西洋杜鵑	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Rhododendron indica</i>	皋月杜鵑	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Rhododendron lapponicum</i>	高山杜鵑花	Y	Y	Y	Y	Showy flowers occasionally attract small birds. It is acceptable in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield, if regular pruning is carried out to maintain the small shrub form.
<i>Rhododendron lateritum</i>	磚紅杜鵑	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Rhododendron mucronatum</i>	白杜鵑	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Rhododendron mucronatum</i> ‘Akemona’	平戶杜鵑(粉紅)	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Rhododendron mucronatum</i> ‘omuraski’	平戶杜鵑(紫紅)	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Rhododendron pulchrum</i>	紫花杜鵑	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Rhododendron pulchrum</i> var. <i>phoeniceum</i>	紫杜鵑	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Rhododendron simsii</i>	紅花杜鵑	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Rhododendron simsii</i> “GR”	紅杜鵑	Y	Y	Y	Y	Regular pruning to maintain height < 1.5m is required in Zones 1, 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Rondeletia odorata</i>	郎德木	N	Y	Y	Y	Regular pruning is required in Zones 1a and 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Ruellia coerulea</i>	翠蘆利	N	N	Y	Y	
<i>Ruellia elegans</i>	紅花蘆莉	N	N	Y	Y	
<i>Ruellia rosea</i>	玫紅蘆莉	N	N	Y	Y	
<i>Russelia equisetiformis</i>	吉祥草	N	N	Y	Y	
<i>Saintpaulia idantha</i> ( <i>ionantha</i> )	非洲紫蘿蘭	N	N	Y	Y	

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Schefflera arboricola</i>	八葉	N	N	Y	Y	This cultivar species normally does not produce fleshy fruits. This is acceptable in the areas away from the runway and airfield, if it is regularly pruned to maintain its shrub form less than 1.5m tall. Also, all fleshy fruits produced (if any) should be removed.
<i>Schefflera arboricola</i> 'Golden Marginata'	金邊鵝掌藤	N	N	Y	Y	This cultivar species normally does not produce fleshy fruits. This is acceptable in the areas away from the runway and airfield, if it is regularly pruned to maintain its shrub form less than 1.5m tall. Also, all fleshy fruits produced (if any) should be removed.
<i>Schefflera arboricola</i> 'Variegata'	夏威夷花八葉	N	N	Y	Y	This cultivar species normally does not produce fleshy fruits. This is acceptable in the areas away from the runway and airfield, if it is regularly pruned to maintain its shrub form less than 1.5m tall. Also, all fleshy fruits produced (if any) should be removed.
<i>Schefflera octophylla</i> 'Var'	荷蘭鴨腳木	N	N	Y	Y	This cultivar species normally does not produce fleshy fruits. This is acceptable in the areas away from the runway and airfield, if it is regularly pruned to maintain its shrub form less than 1.5m tall. Also, all fleshy fruits produced (if any) should be removed.



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Serissa japonica</i> 'Variegata'	金邊六月雪	N	Y	Y	Y	Regular pruning is required to maintain dense low canopy in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield.
<i>Spathiphyllum commutatum</i>	白掌	N	N	Y	Y	
<i>Strelitzia nicolai</i>	大鶴望蘭	Y	Y	Y	Y	
<i>Strelitzia reginae</i>	鶴望蘭	N	N	Y	Y	
<i>Stromanthe sanguinea</i> 'Tricolor'	三色竹芋	N	N	Y	Y	
<i>Syzygium campanulatum</i>	星加坡楠	N	N	Y	Y	This species can produce fleshy fruit potentially attractive to birds. This can be acceptable in areas away from runway and the airfield, if regular pruning and removal of fleshy fruit are applied in these areas.
<i>Syzygium rehderianum</i>	紅枝蒲桃	N	N	Y	Y	Allowed in small-scale planting in areas away from the runway and airfield. The species should be regularly pruned and any produced fleshy fruits would be removed during the pruning. Please make sure that regular pruning practice would be maintained to remove the fleshy fruits to maintain the ball-cone shape of the species.
<i>Tecoma stans</i>	黃鐘花	N	N	Y	Y	
<i>Tecomaria capensis</i> (New scientific name: <i>Tecoma capensis</i> )	洋凌霄	N	N	Y	Y	

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Thevetia peruviana</i>	黃花夾竹桃	N	N	Y	Y	Acceptable in small-scale planting in Zone 2.
<i>Thryallis glauca</i>	金英	N	N	Y	Y	
<i>Tibouchina semidecandra</i>	巴西野牡丹	N	N	Y	Y	
<i>Vitex rotundifolia</i>	海埔姜 / 單葉蔓荊	N	N	Y	Y	Acceptable only on retaining walls at roadside; close monitoring on bird use and fruiting density; remove any fleshy fruits wherever practical in Zone 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield.
<i>Yucca aloifolia</i>	王蘭	N	N	Y	Y	Removal of any fruit produced is required, if the species is planted in Zone 2, as well as the areas in Zone 3 area which are immediately next to Zone 2 and the airfield.
<i>Zamia furfuracea</i>	金錢樹	N	N	Y	Y	Acceptable in Zones 1, 1a and 2 if regularly pruning is applied.
<i>Zanthoxylum 'Odorum'</i>	胡椒木	Y	Y	Y	Y	
GROUND COVER						
<i>Acorus gramineus</i> 'Variegatus'	花葉石菖蒲	N	N	Y	Y	
<i>Adenium obesum</i>	沙漠玫瑰	N	N	Y	Y	
<i>Aerva sanguinolenta</i>	絹毛莧	N	N	Y	Y	
<i>Alternanthera dentata</i> 'Ruby'	新加坡紅草	N	N	Y	Y	
<i>Alternanthera ficoidea</i> 'Yellow Form'	綠草	N	N	Y	Y	
<i>Arachis duranensis</i>	蔓花生	N	N	Y	Y	
<i>Asplenium nidus</i>	雀巢芒	N	N	Y	Y	
<i>Buxus microphylla</i>	黃楊	N	N	Y	Y	
<i>Chlorophytum capense</i>	吊蘭	N	N	Y	Y	

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Coleus pumilus</i> (Mixed dwarfed)	小洋紫蘇	N	N	Y	Y	
<i>Dianella ensifolia</i> 'Var'	花葉山管蘭	N	N	Y	Y	
<i>Ipomoea brasiliensis</i> (New scientific name: <i>Ipomoea pes-caprae</i> )	馬鞍藤	N	N	Y	Y	
<i>Iris</i> spp. (Blue folwer)	鳶尾	N	N	Y	Y	
<i>Juniperus horizontalis</i>	地柏/ 雞翼松	N	N	Y	Y	Regular pruning is required in the areas close to the airfield and runway in both Zones 2 and 3.
<i>Lantana mista</i>	黃花馬櫻丹	N	N	Y	Y	
<i>Lantana montevidensis</i>	鋪地臭金鳳	N	N	Y	Y	Regular pruning is required to maintain dense low canopy in Zone 2.
<i>Liriope spicata</i>	山麥冬	N	N	Y	Y	Close monitoring on bird use and fruit production.
<i>Liriope spicata</i> 'Dwarf'	日本小蒲草	N	N	Y	Y	
<i>Liriope spicata</i> 'Variegata'	花葉蒲草	N	N	Y	Y	
<i>Maranta bicolor</i>	花葉竹芋	Y	Y	Y	Y	
<i>Neomaria gracilis</i>	巴西鳶尾	N	N	Y	Y	
<i>Nephrolepis exaltata</i> 'Bostoniensis'	波斯頓蕨	N	N	Y	Y	
<i>Nephrolepis exaltata</i> 'Compacta'	劍蕨	N	N	Y	Y	
<i>Ophiopogon japonicus</i>	沿階草	Y	Y	Y	Y	
<i>Peperomia obtusifolia</i>	圓葉椒草	Y	Y	Y	Y	Should maintain regular pruning in Zones 1, 1a and 2.
<i>Philodendron</i> (mini)	迷你春羽	N	N	Y	Y	
<i>Phyllanthus myrtifolius</i>	錫蘭葉下珠	N	N	Y	Y	
<i>Pilea cadierei</i>	冰水花	N	N	Y	Y	
<i>Rhoeo discolor</i> 'Dwarf'	矮種蚌花	N	N	Y	Y	

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Rhoeo discolor</i> (New scientific name: <i>Tradescantia spathacea</i> )	蚌花	N	N	Y	Y	
<i>Scindapsus aureus</i> (New scientific name: <i>Epipremnum aureum</i> )	黃金葛	N	N	Y	Y	Acceptable only on retaining walls at roadside.
<i>Setcreasea purpurea</i>	紫錦草	N	N	Y	Y	
<i>Spathiphyllum</i> 'Clevelandii'	白掌	N	N	Y	Y	
<i>Spathiphyllum</i> 'Rallas'	綠巨人	N	N	Y	Y	
<i>Syngonium podophyllum</i> 'White butterfly'	白蝴蝶	Y	Y	Y	Y	
<i>Tradescantia zebrina</i>	水竹草	N	N	Y	Y	
<i>Wedelia trilobata</i>	南美鯉旗菊	N	N	Y	Y	Regular pruning is required to maintain dense low mat in Zone 2.
<i>Zephyranthes candida</i>	玉簪	Y	Y	Y	Y	
<i>Zephyranthes candida</i> (white / pink flowers)	玉簪 (白花/ 粉花)	Y	Y	Y	Y	
<i>Zephyranthes rosea</i>	玫瑰玉簪	Y	Y	Y	Y	
CLIMBERS						
<i>Allamanda blanchetii</i>	紫花黃蟬	N	N	Y	Y	
<i>Bauhinia glauca</i>	洋蹄甲藤	N	N	Y	Y	
<i>Bougainvillea spectabilis</i>	簕杜鵑	Y	Y	Y	Y	Regular pruning is required to maintain dense low canopy in Zones 1, 1a and 2.
<i>Dalbergia benthamii</i>	兩粵黃檀	N	N	Y	Y	
<i>Ficus pumila</i>	薛荔	N	N	Y	Y	Close monitoring on bird visitation and fruiting density; remove any fleshy fruits wherever practical in Zone 2, as well as the areas in Zone 3 which are close to Zone 2 and the airfield.



Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Parthenocissus himalayana</i> (New scientific name: <i>Parthenocissus dalzielii</i> )	爬牆虎	N	N	Y	Y	Acceptable only on retaining walls at roadside.
<i>Pseudocalymma alliaceum</i>	蒜香藤	N	N	Y	Y	
<i>Pyrostegia ignea</i> (New scientific name: <i>Pyrostegia venusta</i> )	炮仗花	Y	Y	Y	Y	Acceptable only on retaining walls at roadside.
<i>Scindapsus aureus</i> (New scientific name: <i>Epipremnum aureum</i> )	綠蘿	Y	Y	Y	Y	Acceptable only on retaining walls at roadside.
<i>Wisteria sinensis</i>	紫藤	N	N	Y	Y	
PALMS/ BAMBOOS/ CYCADS/ RAVENALA						
<i>Bambusa multiplex</i>	鳳尾竹	N	N	Y	Y	
<i>Bambusa ventricosa</i>	佛肚竹	N	N	Y	Y	
<i>Bambusa vulgaris</i>	大佛肚竹	N	N	Y	Y	
<i>Caryota ochlandra</i>	魚尾葵	N	N	Y	Y	Only small scale planting is allowed in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield. The bundle of fruits should be removed regularly.
<i>Chamaedorea elegans</i>	袖珍椰子	N	N	Y	Y	Acceptable in Zone 2, but planted in small-scale.
<i>Chrysalidocarpus lutescens</i>	散尾葵	N	N	Y	Y	Small-scale planting is acceptable with removal of any bunches of fruits throughout the maintenance period. And this species should be planted in areas away from the airfield and runways, or with building blocks between the airfield and the planting area.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Cocos nucifera</i>	椰子樹	N	N	Y	Y	Only small scale planting is allowed in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield. The bundle of fruits should be removed regularly.
<i>Coryota mitis</i>	短穗魚尾葵	N	N	Y	Y	
<i>Cycas revoluta</i>	蘇鐵	N	N	Y	Y	
<i>Elaeis guineensis</i>	油棕	N	N	Y	Y	
<i>Livistona chinensis</i>	蒲葵	N	N	Y		Only small scale planting is allowed in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield. The bundle of fruits should be removed regularly.
<i>Phoenix roebelenii</i>	日本葵	N	Y	Y	Y	Only small scale planting is allowed in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield. The bundle of fruits should be removed regularly.
<i>Ravenala madagascariensis</i>	旅人蕉	N	N	Y	Y	
<i>Rhapis excelsa</i>	棕竹	N	N	Y	Y	
<i>Rhapis excelsa</i> var. <i>rostrifolius</i>	大葉棕竹	N	N	Y	Y	Only small scale planting is allowed in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield. The bundle of fruits should be removed regularly.

Scientific names	Common names	Approved in Zone 1	Approved in Zone 1a	Approved in Zone 2 (Should be reviewed case by case)	Approved in Zone 3 (Should be reviewed case by case)	Remarks for planting and management
<i>Rhapis humilis</i>	細葉棕竹	N	N	Y	Y	Only small scale planting is allowed in Zone 2, as well as the areas in Zone 3 which are immediately next to Zone 2 and the airfield. The bundle of fruits should be removed regularly.
GRASS						
<i>Zoysia</i> sp.	結縷草屬	Y	Y	Y	Y	Regular cutting to prevent seed head production.



**Appendix D – Certification Letter of Landscape Mitigation Measure G9 dated 21 May 2018 Issued by the  
Environmental Team Leader for Contract No. HY/2010/02 HZMB HKBCF – Reclamation Works**



AECOM  
8/F, Grand Central Plaza, Tower  
2, 138 Shatin Rural Committee  
Road, Shatin, Hong Kong  
香港新界沙田鄉事會路 138 號新  
城市中央廣場第 2 座 8 樓  
www.aecom.com

+852 3922 9000 tel  
+852 3922 9797 fax

Your Ref:  
Our Ref: 60249820/rmky18052101

**By Email**

China Harbour Engineering Company Limited  
19/F., China Harbour Building,  
370-374 King's Road,  
North Point,  
Hong Kong

Attn: Mr. LIM Kim-chuan

21 May 2018

Dear Sir,

**Contract No. HY/2010/02**  
**Hong Kong-Zhuhai-Macao Bridge**  
**Hong Kong Boundary Crossing Facilities – Reclamation Works**  
**Environmental Permit EP-353/2009/K and EP-354/2009/D (only for TMCLKL Southern Landfall Reclamation)**

**Implementation Status of Landscape and Visual Mitigation Measure G9**

With reference to Table 14.2 of the Contract Specific EM&A manual, the landscape and visual mitigation measure G9 stated, "Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials .....". Mitigation measure G9 is applicable to the seawall construction under this Contract as indicated by Figure 28 of EP-353/2009/K, except the areas of the vertical seawall.

Based on our on-site observation and sampling review of the material submissions listed in Table 1, the abovementioned landscape and visual mitigation measure G9 has been followed.

Table 1 - Reference material

Source	Contractor's Material Submission	Engineer's response to Contractor's Material Submission
Qiwan 七灣	CHEC273/CMS/000058/D	B06106
Gaolangang DYJS 高欄港第一角山	CHEC273/CMS/000081/C	B06342
Yamen SLHS 崖門石龍坑山	CHEC273/CMS/000090D	B06930
FJS 飛夾石	CHEC273/CMS/000104B	B08031

Please see enclosed Appendix A for sample photos of source materials and Appendix B for sample photos of constructed coastline for your information.

Should you require any further information, please do not hesitate to contact our Mr. Roy Man at 3922 9348.

Yours faithfully,

For and on behalf of  
AECOM Asia Co. Ltd.

Echo Leong  
Environmental Team Leader




Encl.

cc.  
ER (Arup) Mr. Seven Yau  
IEC (Ramboll Hong Kong Limited) Mr. Raymond Dai

by email  
by email



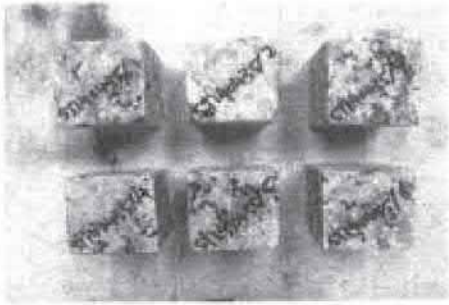
Appendix A: Sample photo of source material from Yamen SLHS 崖門石龍坑山  
(Extracted from Contractor's Material Submission CHEC273/CMS/000090D)

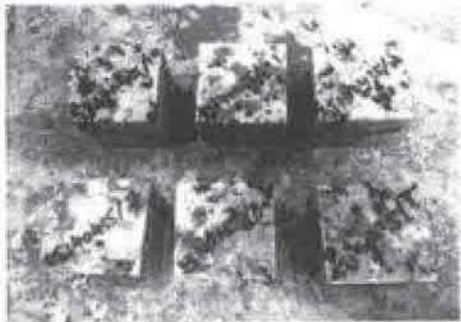
Appendix A: Sample photo of source material from FJS 飛夾石  
(Extracted from Contractor's Material Submission CHEC273/CMS/000104B)



Test Sample (Original Granite)  
Sample I.D.: ST140435/1-12



Test Sample  
Sample I.D.: ST140435/1-6



Test Sample  
Sample I.D.: ST140435/7-12



Test Configuration  
Sample I.D.: ST140435/1-12






Appendix B view direction of sample photos of the constructed coastline





Appendix B Sample photos of constructed coastline

Photo code	Photo record
A	
B	
C	

D	
E	
F	
G	

H





## **Appendix E – Approval Letter of Tree Removal Application and Tree Schedule**

**Urgent by Fax**

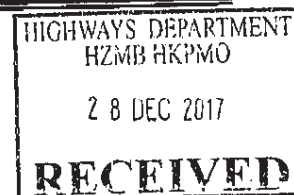
HyD HZMB/11-21 (HY/2013/02) (30/100)

**MEMO**

From District Lands Officer, Islands  
 Ref. (10) in L/M(6) to DLO/IS 16/LMLC/2009  
 Tel. No. 2852 4292  
 Fax. No. 2850 5104  
 Email esisna1@landsd.gov.hk  
 Date 27.12.2017

To CHE/HKBCF, HyD  
 (Attn.: Mr. Kuen MA)  
 Your Ref. ( ) in  
 dated  
 Fax. No. 3188 6614  
 Total Pages 2

Contract No. HY/2013/02  
 Hong Kong-Zhuhai-Macau Bridge (HZMB)  
 Hong Kong Boundary Crossing Facilities (HKBCF) –  
 Infrastructure Works Stage I (Western Portion)  
Tree Removal Application



Hong Kong International Airport  
 Chek Lap Kok Lot No. 3 ("the Lot")

I refer to the captioned Tree Removal Application (the Submission) submitted via letter dated 29.9.2017 from your consultant, AECOM, at the Lot in connection with the above project.

2. Your submission has been checked and we have no objection under Special Condition No. (14) of the lease conditions governing the Lot for felling 10 nos. of trees (T1 to T9 & T17) as marked on Existing Tree Layout Plan No. CHEC/R&D/LA-SE-001 subject to the following conditions :-

- (a) With reference to the tree assessment schedule in Appendix B of the Submission, removal of 10 trees involves the loss of 1665mm in DBH. In general principle, implementation of compensatory tree planting, of a ratio not less than 1:1 in terms of quality and quantity, within the Lot would be acceptable. That is, the total numbers and the aggregated DBH of compensatory trees within the site should not be less than that of the lost trees. While 10 nos. of compensatory trees are proposed to achieve the compensatory ratio of 1:1 in terms of quantity, HyD should clarify if the compensatory ratio of 1:1 in terms of quality will be achieved.
- (b) The schedule of the compensatory trees as shown in the compensatory planting plan in Appendix E of the Submission shall be revised with reference to the information required under Item 4(b)(vii) of Section I, Appendix II of LAO PN No. 7/2007, i.e. to specify the size in terms of DBH, crown spread and overall height. HyD shall also specify the planting spacing and live-crown ratio of the proposed compensatory tree to facilitate compliance checking in due course.

- 2 -

- (c) Regarding the future maintenance of all trees including compensatory trees, you shall submit a maintenance schedule including but not limited to tree risk assessment to be conducted at appropriate time to facilitate proper tree management and maintenance. Useful information on tree management and maintenance including tree risk assessment can be viewed at the *Handbook on Tree Management*, at the greening website (<http://www.greening.gov.hk>).
- (d) HyD shall inform the Airport Authority (AA) of the tree removal works and consult AA on the proposed compensatory planting proposal in particular regarding the location & species of the compensatory trees and maintenance schedule as mentioned in para. No. 2(c) above.
- (e) HyD shall submit details of the proposed compensatory trees as mentioned in para. nos. 2(a) to 2(c) above within three months from the date of this memo.

( Marco LEUNG )  
 for District Lands Officer, Islands

c.c.  
 SLA/Tree Unit (Attn: Ms. May WONG)

Fax: 3151 7870



Tree Schedule

Prepared by Independent Tree Specialist (ISA Certified Arborist (HK-0560A))

Tree no.	Species					Health (Good/Fair/Poor)	Form (Good/Fair/Poor)	Structural condition (Good/Fair/Poor)	Amenity value (High/ Med/ Low)	Suitability for transplanting (High/ Med/ Low)	Conservation Status	Remarks
	Scientific name	Chinese name	DBH (mm)	Overall Height (m)	crown spread (m)							
T1	<i>Broussonetia papyrifera</i>	構樹	153 (multi-trunk)	5	4	Fair	Poor	Poor	Low	Low	Common	Slightly leaning; grew by structure; trunk in conflict with railing
T2	<i>Broussonetia papyrifera</i>	構樹	100	5	2	Fair	Poor	Poor	Low	Low	Common	Leaning trunk; trunk damaged by hoarding
T3	<i>Broussonetia papyrifera</i>	構樹	405 (multi-trunk)	7	6	Fair	Poor	Poor	Low	Low	Common	Low and included bark on branching point
T4	<i>Broussonetia papyrifera</i>	構樹	190 (multi-trunk)	7	4	Fair	Poor	Fair	Low	Low	Common	Slightly leaning; grew close to T3 and structure; wound on crossed branch and sign of wood borers
T5	<i>Broussonetia papyrifera</i>	構樹	130	5	2	Fair	Poor	Poor	Low	Low	Common	Asymmetric canopy; grew by structure
T6	<i>Broussonetia papyrifera</i>	構樹	100 (multi-trunk)	3	1	Fair	Poor	Poor	Low	Low	Common	Exposed dead wood on topped wound; grew close to T5
T7	<i>Broussonetia papyrifera</i>	構樹	120 (multi-trunk)	5	2	Fair	Poor	Fair	Low	Low	Common	Leaning ; close to T5 & T6; vines on branches
T8	<i>Broussonetia papyrifera</i>	構樹	100 (multi-trunk)	5	2	Fair	Poor	Poor	Low	Low	Common	Leaning; trunk damaged by hoarding
T9	<i>Leucaena leucocephala</i>	銀合歡	136 (multi-trunk)	5	3	Fair	Poor	Poor	Low	Low	Common	Leaning; trunk in conflict with railing; low and included bark on branching point
T17	<i>Broussonetia papyrifera</i>	構樹	189 (multi-trunk)	5	5	Fair	Poor	Fair	Low	Low	Common	significantly increased soil level; minor broken branch

NOTES:

路政署  
HIGHWAYS DEPARTMENT  
港珠澳大橋香港工程管理局  
Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

HONG KONG-ZHUHAI-MACAO BRIDGE  
HONG KONG BOUNDARY CROSSING FACILITIES  
- INFRASTRUCTURE WORKS STAGE 1 (WESTERN PORTION)

TREE ASSESSMENT SCHEDULE

**AECOM** **Aedas**  
Rogers Stirk Harbour + Partners  
BURO HAPPOLD ATKINS ADI

DRG.NO. LA-SK003  
圖紙編號


DESIGNED BY HOP CONTRACT NO. HY/2013/02 P. ERF. APPROVED TKH

SCALE A1 : 1 : 500 QUANTITY HEJ STATUS WORKING DRAWING

DIMENSIONS ARE IN METERS © COPYRIGHT RESERVED 版權所有




			
T1 <i>Broussonetia papyrifera</i> 構樹		T1 <i>Broussonetia papyrifera</i> 構樹	
Description : Tree tag		Description : Feature for identification	
			
T1 <i>Broussonetia papyrifera</i> 構樹		T1 <i>Broussonetia papyrifera</i> 構樹	
Description : Root collar condition Conflict with structure		Description : General view	

		Not Used	
T1 <i>Broussonetia papyrifera</i> 構樹			
Description : Middle trunk in conflict with railing		Description :	
Not Used		Not Used	
Description :		Description :	




					
T2	<i>Broussonetia papyrifera</i>	構樹	T2	<i>Broussonetia papyrifera</i>	構樹
Description :		Tree tag	Description :		Feature for identification
					
T2	<i>Broussonetia papyrifera</i>	構樹	T2	<i>Broussonetia papyrifera</i>	構樹
Description :		Root collar condition	Description :		General view


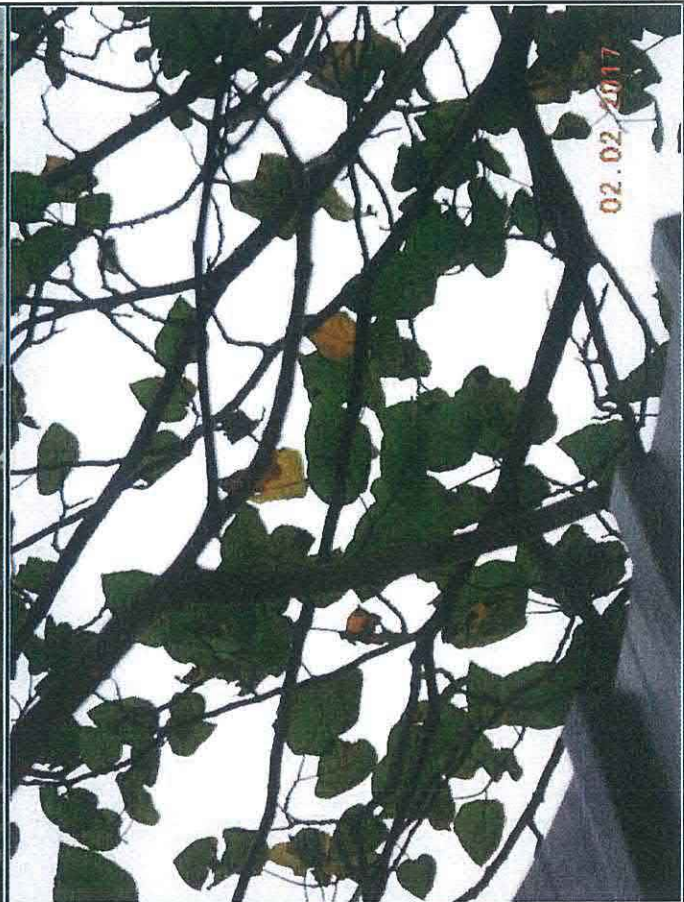


		Not Used	
T2	<i>Broussonetia papyrifera</i>	構樹	
Description :		Description :	
Damaged trunk by hoarding			
Not Used		Not Used	
Description :		Description :	






			
T3 <i>Broussonetia papyrifera</i> 構樹		T3 <i>Broussonetia papyrifera</i> 構樹	
Description : Tree tag		Description : Feature for identification	
			
T3 <i>Broussonetia papyrifera</i> 構樹		T3 <i>Broussonetia papyrifera</i> 構樹	
Description : Root collar condition Included bark		Description : General view	

		Not Used	
T3 <i>Broussonetia papyrifera</i> 構樹			
Description : General view		Description :	
Not Used		Not Used	
Description :		Description :	




			
T4 <i>Broussonetia papyrifera</i> 構樹		T4 <i>Broussonetia papyrifera</i> 構樹	
Description : Tree tag		Description : Feature for identification	
			
T4 <i>Broussonetia papyrifera</i> 構樹		T4 <i>Broussonetia papyrifera</i> 構樹	
Description : Root collar condition Close to T3 and structure		Description : General view	

			
T4 <i>Broussonetia papyrifera</i> 構樹		T4 <i>Broussonetia papyrifera</i> 構樹	
Description : General view		Description : Sign of wood borers on exposed wood	
		Not Used	
T4 <i>Broussonetia papyrifera</i> 構樹			
Description : Damaged by crossed branch with T3		Description :	



					
T5	<i>Broussonetia papyrifera</i>	構樹	T5	<i>Broussonetia papyrifera</i>	構樹
Description : Tree tag		Description : Feature for identification			
					
T5	<i>Broussonetia papyrifera</i>	構樹	T5	<i>Broussonetia papyrifera</i>	構樹
Description : Root collar condition Close to structure		Description : General view			

		Not Used	
T5	<i>Broussonetia papyrifera</i>	構樹	
Description :		Asymmetric canopy	Description :
Not Used		Not Used	
Description :		Description :	





T6	<i>Broussonetia papyrifera</i>	構樹
Description :	Tree tag	

T6	<i>Broussonetia papyrifera</i>	構樹
Description :	Feature for identification	



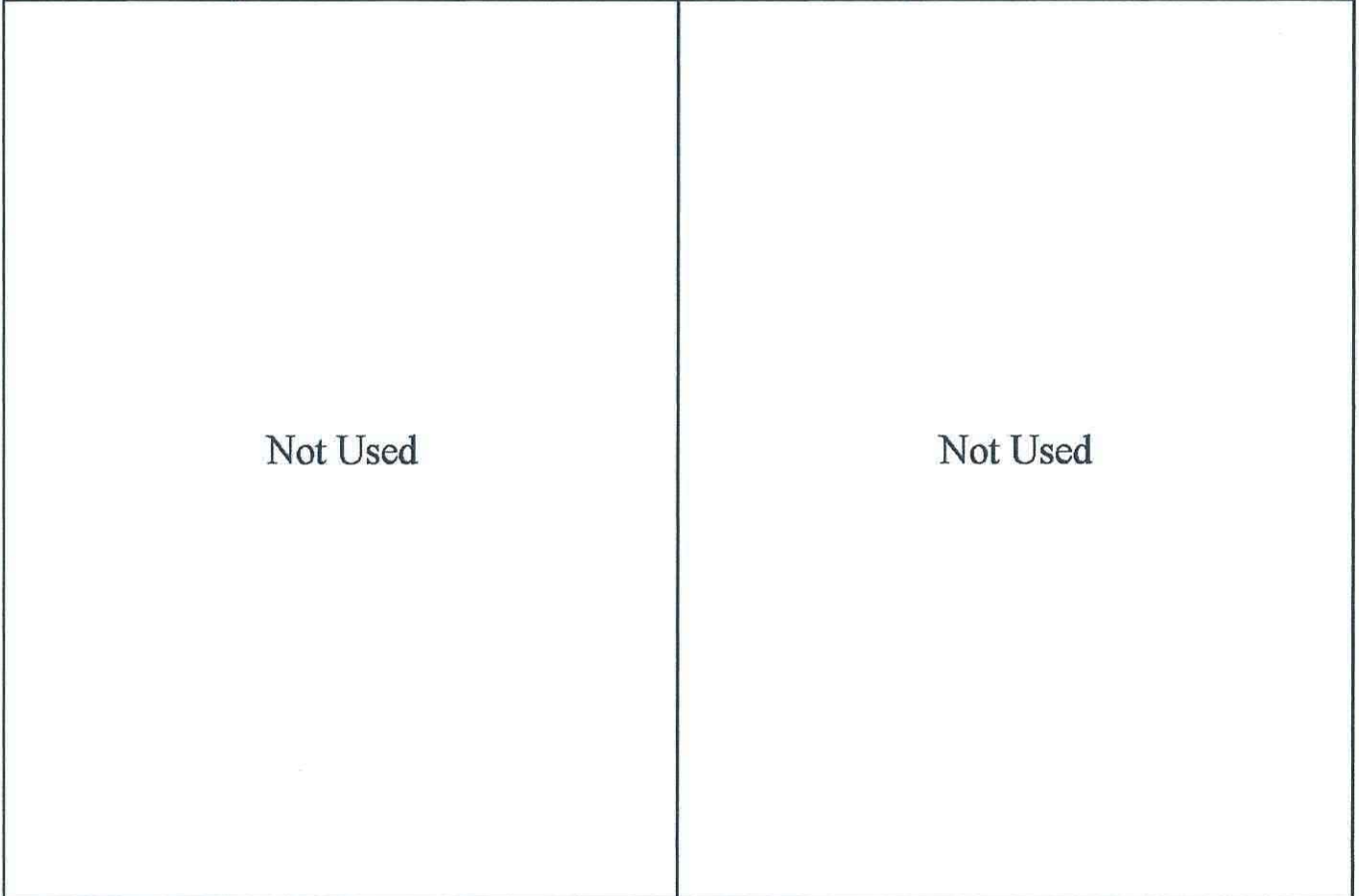
T6	<i>Broussonetia papyrifera</i>	構樹
Description :	Root collar condition Close to T5 and structure	

T6	<i>Broussonetia papyrifera</i>	構樹
Description :	General view	



T6	<i>Broussonetia papyrifera</i>	構樹
Description :	Topped	

T6	<i>Broussonetia papyrifera</i>	構樹
Description :	Exposed dead wood	




Description :	
---------------	--


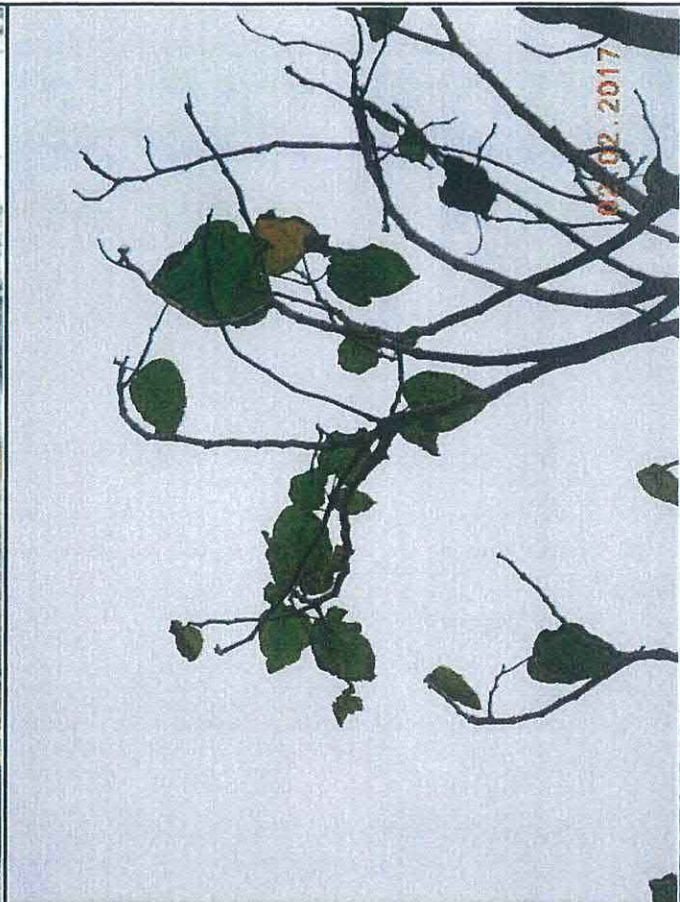

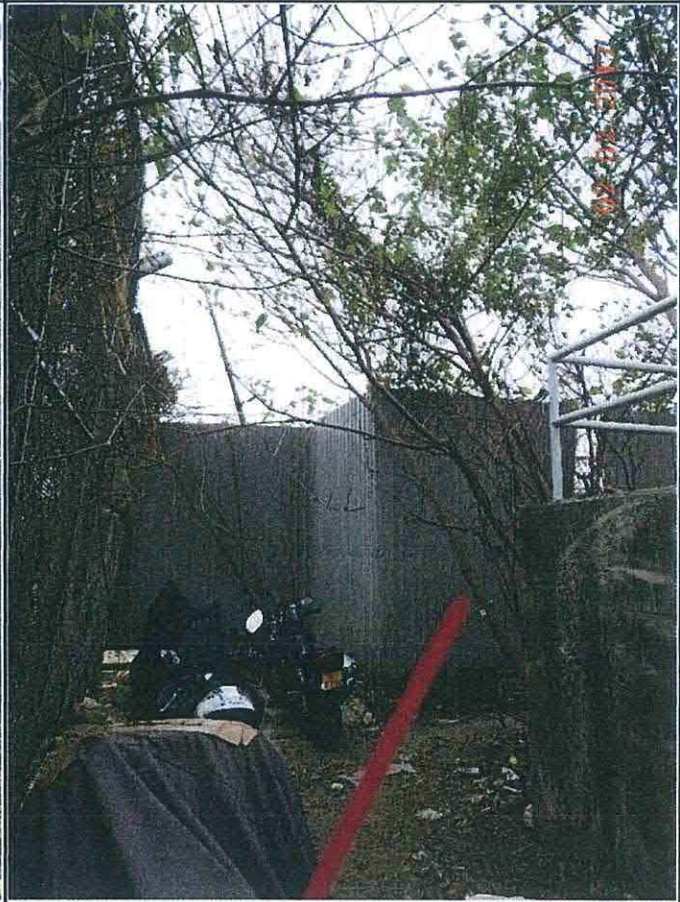
Description :	
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T7 <i>Broussonetia papyrifera</i> 構樹 Description : Tree tag	T7 <i>Broussonetia papyrifera</i> 構樹 Description : Feature for identification
	
T7 <i>Broussonetia papyrifera</i> 構樹 Description : Root collar condition Close to T5 and structure	T7 <i>Broussonetia papyrifera</i> 構樹 Description : General view

	Not Used
T7 <i>Broussonetia papyrifera</i> 構樹 Description : Vines on branches	Description :
Not Used	Not Used
Description :	Description :



			
T8 <i>Broussonetia papyrifera</i> 構樹		T8 <i>Broussonetia papyrifera</i> 構樹	
Description : Tree tag		Description : Feature for identification	
			
T8 <i>Broussonetia papyrifera</i> 構樹		T8 <i>Broussonetia papyrifera</i> 構樹	
Description : Root collar condition Leaned trunk		Description : General view	

		Not Used	
T8 <i>Broussonetia papyrifera</i> 構樹			
Description : Damaged trunk by hoarding		Description :	
Not Used		Not Used	
Description :		Description :	





T9	<i>Leucaena leucocephala</i>	銀合歡
Description :	Tree tag	
T9	<i>Leucaena leucocephala</i>	銀合歡
Description :	Feature for identification	



T9	<i>Leucaena leucocephala</i>	銀合歡
Description :	Root collar condition In conflict with structure	
T9	<i>Leucaena leucocephala</i>	銀合歡
Description :	General view	



T9	<i>Leucaena leucocephala</i>	銀合歡
Description :	Crossed branches and included bark	
T9	<i>Leucaena leucocephala</i>	銀合歡
Description :	Trunk in conflict with hoarding	


Not Used

Not Used

Description :		Description :	
---------------	--	---------------	--



			
T17 <i>Broussonetia papyrifera</i> 構樹		T17 <i>Broussonetia papyrifera</i> 構樹	
Description : Tree tag		Description : Feature for identification	
			
T17 <i>Broussonetia papyrifera</i> 構樹		T17 <i>Broussonetia papyrifera</i> 構樹	
Description : Root collar condition Increased soil level		Description : General view	

		Not Used	
T17 <i>Broussonetia papyrifera</i> 構樹			
Description : Minor broken branch		Description :	
Not Used		Not Used	
Description :		Description :	



AECOM

AECOM  
8/F, Grand Central Plaza, Tower 2,  
138 Shatin Rural Committee Road,  
Shatin, Hong Kong  
香港新界沙田鄉事會路 138 號  
新城市中央廣場第 2 座 8 樓  
www.aecom.com

PRE's Office  
5 Ying Hei Road, Tung Chung  
新界東涌迎禧路 5 號  
Tel: 3958 7200  
Fax: 3152 5100

Your Ref. :  
Our Ref. : HKBCF/(I-WEST)/(HY/2013/02)/C55/100(00113)/B207090

12 March 2018

Lands Department  
Lands Administration Office  
District Lands Office, Islands  
19th floor, Harbour Building,  
38 Pier Road, Central, Hong Kong



Attn: Mr. LEUNG Hok Pang, Marco (Estate Surveyor/NA(1) (District Lands Office, Islands))

Dear Sirs,

**Contract No. HY/2013/02**  
**Hong Kong-Zhuhai-Macao Bridge**  
**Hong Kong Boundary Crossing Facilities – Infrastructure Works Stage I (Western Portion)**

**Tree Removal Application - Hong Kong International Airport Chek Lap Kok Lot No. 3 – Response to Comment**

I refer to the memo from Lands Department, District Lands Office, Islands dated 27 December 2017. (ref. (10) in L/M(6) to DLO/IS 16/LMLC/2009) Please find enclosed the response-to-comment and appendices regarding details of the proposed compensatory trees for your review and approval.

Please be informed that the compensatory tree proposal (i.e. 21 nos. *Bauhinia variegata*) has been accepted by the Airport Authority (AA). I trust this compensatory tree removal application can meet DLO's requirements.

Due to the tight construction progress, your earliest approval is appreciated.

Yours faithfully,  
For and on behalf of  
AECOM Asia Co. Ltd.

Ringo Tso  
Chief Resident Engineer  
HKBCF I-WEST

Encl.

RT/WKH/elk/5

c.c. SE18/HZMB, HyD, - Attn.: Mr. Yu Chee-Kuen  
E31/HZMB, HyD - Attn.: Mr. Derek Chung  
AECOM - Attn.: Mr. Bevis Mak

b.c.c. SRE (3), SQS (2), SRE(P&C), SRLA, SRE (3), RLA (2), RE (6), ARLA (2), ARLA (3), RSFO (1), RSFO (2)

**Contract No. HY/2013/02**  
**Hong Kong-Zhuhai-Macao Bridge**  
**Hong Kong Boundary Crossing Facilities – Infrastructure Works Stage I (Western Portion)**

By Memo:

Date: 27 December, 2017

Department: Lands Department, District Lands Office, Islands

Comment by: Mr. LEUNG Hok Pang, Marco/ T: 2852 4292/ Email: [esisna1@landsd.gov.hk](mailto:esisna1@landsd.gov.hk)

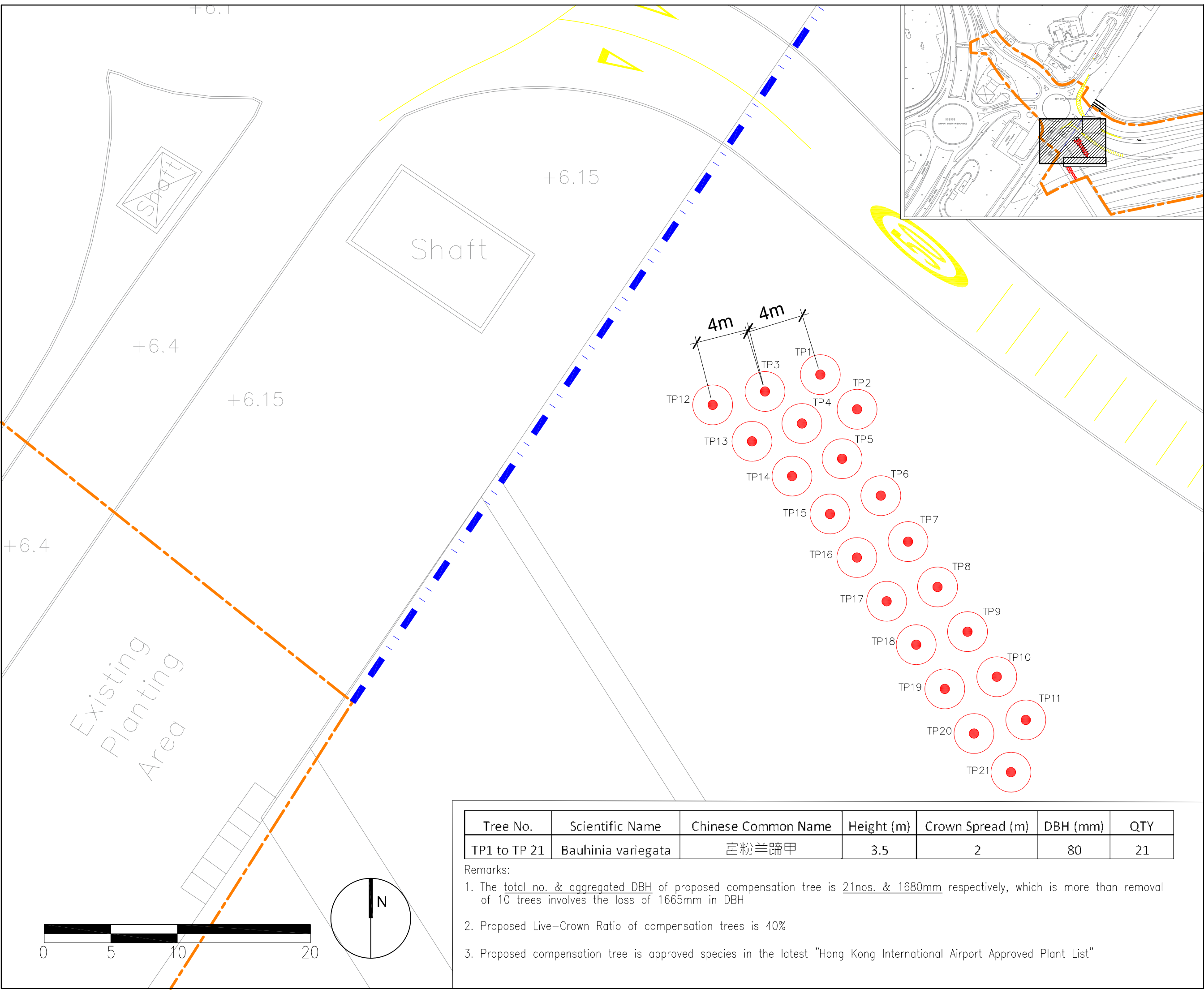
I refer to the memo from District Lands Officer, Islands (ref. (10) in L/M(6) to DLO/IS 16/LMLC/2009). The Consultant's attention is drawn to the following comment:

Item	LandsD/ DLO comment on 28 February 2018	Response to Comment
(a)	With reference to the tree assessment schedule in Appendix B of the Submission, removal of 10 trees involves the loss of 1665mm in DBH. In general principle, implementation of compensatory tree planning, of a ratio of not less than 1:1 in terms of quality and quantity, within the Lot would be acceptable. That is, the total numbers and the aggregated DBH of compensatory trees within the site should not be less than that of the lost trees. While 10 nos. of compensatory trees are proposed to achieve the compensatory ratio of 1:1 in terms of quantity, HyD should clarify if the compensatory ratio of 1:1 in terms of quality will be achieved.	The implementation of compensatory tree planning, of a ratio of not less than 1:1 in terms of quality and quantity is achieved.  The total number and aggregated DBH of compensatory trees are 21 nos. and approximately 1680 mm respectively, which shall not be less than the compensatory ratio of 1:1 in terms of quality and quantity.
(b)	The schedule of the compensatory trees as shown in the compensatory planting plan in Appendix E of the Submission shall be revised with reference to the information required under Item 4(b) (vii) of Section I, Appendix II of LAO PN No. 7/2007, i.e. to specify the size in terms of DBH, crown spread and overall height. HyD shall also specify the planting spacing and live-crown ratio of the proposed compensatory tree to facilitate compliance checking in due course.	The schedule of the compensatory trees as shown in the compensatory planting plan in Appendix E of the Submission is revised with reference to the information required under Item 4(b) (vii) of Section I, Appendix II of LAO PN No. 7/2007. The schedule is summarized as follows: <ul style="list-style-type: none"><li>- DBH: 80 mm</li><li>- Crown spread: 2000 mm</li><li>- Overall height: 3500 mm</li><li>- Planting spacing: 3000 mm</li><li>- Live-crown ratio: 40 %</li></ul> Please refer to Proposed Compensatory Tree Plan (Revision C) and schedule of the compensatory trees at <b>Appendix A</b> as enclosed.



(c)	Regarding the future maintenance of all trees including compensatory trees, you shall submit a maintenance schedule including but not limited to tree risk assessment to be conducted at appropriate time to facilitate proper tree management and maintenance. Useful information on tree management and maintenance including tree risk assessment can be viewed at the Handbook on Tree Management, at the greening website ( <a href="http://www.greening.gov.hk">http://www.greening.gov.hk</a> )	Regarding the future maintenance of all trees including compensatory trees a maintenance schedule has been included in this submission, including but not limited to tree risk assessment to be conducted at appropriate time to facilitate proper tree management and maintenance.  Please refer to <b>Appendix B</b> as enclosed.
(d)	HyD shall inform the Airport Authority (AA) of the tree removal works and consult AA on the proposed compensatory planting proposal in particular regarding the location & species of the compensatory trees and maintenance schedule as mentioned in para. No.2 (c) above.	Airport Authority (AA) was informed on the tree removal works near Sky City Interchange on 15 Nov 2017 at <b>Appendix C</b> as enclosed.  Acceptance from Airport Authority (AA) dated 8 Mar 2018 on the proposed compensatory planting proposal in particular regarding the location & species of the compensatory trees and maintenance schedule. (Please refer to <b>Appendix D</b> )
(e)	HyD shall submit details of the proposed compensatory trees as mentioned in para. nos. 2(a) to 2(c) above within three months from the date of this memo.	Details of the proposed compensatory trees are submitted as mentioned in para. nos. 2(a) to 2(c) above within three months from the date of the memo.  Please refer to above responses to para. nos. 2(a) to 2(c) above and <b>Appendices A &amp; B</b> .





REF:

NOTES:  
1. ALL LEVELS ARE IN METRE ABOVE HONG KONG PRINCIPAL DATUM(mPD).  
2. COORDINATES ARE RELATED TO STATION GRID SYSTEM.  
3. THE EXACT LOCATIONS AND SETTING OUT OF TREE SHALL BE CONFIRMED ON SITE.

LEGEND:  

COMPENSATORY TREE

SITE BOUNDARY

BOUNDARY BETWEEN AA ISLAND AND HY/2013/02

Client

HIGHWAYS DEPARTMENT

Contractor

CHEC CHINA HARBOUR ENGINEERING COMPANY LIMITED  
H. K. REPRESENTATIVE: ZHEN HUA ENGINEERING CO., LTD.

Consultant

AECOM

Project Title

HZMB : HKBCF  
INFRASTRUCTURE WORKS STAGE 1  
(WESTERN PORTION)

Drawing Title

PROPOSED COMPENSATORY  
TREE PLAN  
(REVISION D)

EC Project Drawing No.

Drawing No. 圖號

CHEC/R&D/LA-SE-001D

Designed

Drawn 繪圖

Checked 校核

Scale 比例 AS SHOWN

Approved 審

Date 日期 28/05/18

Status 號

Tree No.	Scientific Name	Chinese Common Name	Height (m)	Crown Spread (m)	DBH (mm)	QTY
TP1 to TP 21	Bauhinia variegata	宮粉蘭蹄甲	3.5	2	80	21

- Remarks:
- The total no. & aggregated DBH of proposed compensation tree is 21nos. & 1680mm respectively, which is more than removal of 10 trees involves the loss of 1665mm in DBH
  - Proposed Live-Crown Ratio of compensation trees is 40%
  - Proposed compensation tree is approved species in the latest "Hong Kong International Airport Approved Plant List"





地政總署  
離島地政處  
DISTRICT LANDS OFFICE, ISLANDS  
LANDS DEPARTMENT  
香港統一碼頭道38號海港政府大樓十九樓  
19/F., HARBOUR BUILDING,  
38 PIER ROAD, HONG KONG.

電話 Tel: 2852 4292  
圖文傳真 Fax: 2850 5104  
電郵地址 Email: esisna1@landsd.gov.hk  
本署檔號 Our Ref.: (20) in L/M(6) to DLO/IS 16/LMLC/2009  
來函檔號 Your Ref.: HKBCF/(I-WEST)/(HY/2013/02)/C55/100  
(0064)/B206176

我們矢志努力不懈，提供盡善盡美的土地行政服務。  
We strive to achieve excellence in land administration.

By fax (3152 5100) & by post

12 June 2018  
12 JUN '18 15:20

AECOM  
8/F, Grand Central Plaza, Tower 2  
138 Shatin Rural Committee Road  
Shatin, N.T.  
(Attn.: Mr. Ringo Tso/Mr Ken Law)

Dear Sir,

**Contract No. HY/2013/02**  
**Hong Kong-Zhuhai-Macau Bridge (HZMB)**  
**Hong Kong Boundary Crossing Facilities (HKBCF) –**  
**Infrastructure Works Stage I (Western Portion)**  
**Tree Removal Application**

**Hong Kong International Airport**  
**Chek Lap Kok Lot No. 3**

Pursuant to our letter and e-mail dated 28 February and 7 May 2018 respectively to you on the captioned, we have no further comments on the revised Compensatory Planting Proposal Revision D (No. CHEC/R&D/LA-SE-001D) vide your e-mail dated 28 May 2018.

12 JUN 2018

Ref: C55/100			
Act	Comp	Info	
USE		ESOW	
USE		SEOS	
SRE (S)		ROS	
SRE (I)		SRLS	
SRE (P&C)		RLS	
SRE (S&E)		RPTOC	
SRE (G)		RSTOC	
SRE (SW)		SRLA	
RE (I)		RLA	
RE (I)		RSFO	
RE (I)		ROO	
Acted taken			
Date			

Yours faithfully,

(Marco LEUNG)  
for District Lands Officer, Islands

c.c. PM/MW (SD), HyD

Fax : 3188 6614

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A213561

TOTAL P.01



## **Appendix F – Implementation Schedule of Landscape and Visual Design and Mitigation Measures**



# Appendix F Implementation Schedule of Landscape and Visual Design and Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation status (as of Mar 2021)
<b>Landscape &amp; Visual (Detailed Design Phase)</b>							
S14.3.3.1	LV1	<u>General design measures include:</u>					
		• Roadside planting and planting along the edge of the reclamation is proposed;	Minimise visual & landscape impact	Detailed designer	HKBCF	Design stage	Fully implemented
		• Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting;	Not applicable to HKBCF				
		• Protection measures for the trees to be retained during construction activities;	Not applicable to HKBCF				
		• Optimizing the sizes and spacing of the bridge columns;	Minimise visual & landscape impact	Detailed designer	HKBCF	Design stage	Fully implemented
		• Fine-tuning the location of the bridge columns to avoid visually sensitive locations;	Minimise visual & landscape impact	Detailed designer	HKBCF	Design stage	Fully implemented
		• Aesthetic design of the bridge form and its structural elements for HKLR, e.g. parapet, soffit, columns, lightings and so on;	Not applicable to HKBCF				
		• Considering the decorative urban design elements for HKLR, e.g. decorative road lightings;	Not applicable to HKBCF				
		• Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed;	Minimise visual & landscape impact	Detailed designer	HKBCF	Design stage	Fully implemented
		• Providing planting area around peripheral of HKLR and HKBCF for tree planting screening effect;	Minimise visual & landscape impact	Detailed designer	HKBCF	Design stage	Fully implemented
		• Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline.	Minimise visual & landscape impact	Detailed designer	HKBCF	Design stage	Fully implemented
		• For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonic atmosphere of the HKBCF.	Minimise visual & landscape impact	Detailed designer	HKBCF	Design stage	Fully implemented
		• Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF,	Minimise visual & landscape impact	Detailed designer	HKBCF	Design stage	Fully implemented



EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation status (as of Mar 2021)
		<ul style="list-style-type: none"> <li>For HKLR, providing aesthetic design on the viaduct, tunnel portals, at-grade roads and reclamation (e.g. subtle colour tone and slim form for viaduct to minimize the bulkiness of the structure and to blend the viaduct better with the background environment, featured form of tunnel portals, roadside planting along at-grade roads and landscape berm on &amp; planting along edge of reclamation area) to beautify the HKLR alignment</li> </ul>			Not applicable to HKBCF		
<b>Landscape &amp; Visual (Construction Phase)</b>							
S14.3.3.3	LV2	<u>Mitigate both Landscape and Visual Impacts</u>					
		G1. Grass-hydroseed bare soil surface and stock pile areas.	Minimise visual & landscape impact	Contractors of C2, C3 and C4	HKBCF	Construction stage	Fully implemented
		G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge or footbridge to screen bridge and traffic.	Minimise visual & landscape impact	Contractors of C1, C2, C3 and C4	HKBCF	Construction stage	Fully implemented
		G3. For HKLR, providing aesthetic design on the viaduct, tunnel portals, at-grade roads and reclamation (e.g. subtle colour tone and slim form for viaduct, featured form of tunnel portals, roadside planting along at-grade roads and landscape berm on & planting along edge of reclamation area) to beautify the HKLR alignment.			Not applicable to HKBCF		
		G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonic atmosphere of the HKBCF (see Figure 14.3.1 for example).	Minimise visual & landscape impact	Contractors of C1, C2, C3, C4 and C8	HKBCF	Construction stage	Fully implemented
		G5. Vegetation reinstatement and upgrading to disturbed areas.	Minimise visual & landscape impact	Contractor of C2	HKBCF	Construction stage	Fully implemented
		G6. Maximize new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed.	Minimise visual & landscape impact	Contractors of C1, C2, C3, C4 and C8; Future Contractor of C4 landscape works (i.e. Contractor of C9)	HKBCF	Construction stage	Works under Contracts C1, C2, C3, C4 and C8 fully implemented; works by future Contractor of C4 landscape works (i.e. Contractor of C9) partially implemented
		G7. Provide planting area around peripheral of and within HKBCF and HKLR for tree screening buffer effect.	Minimise visual & landscape impact	Contractors of C1, C2, and C3	HKBCF	Construction stage	Fully implemented



EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation status (as of Mar 2021)
		G8. Plant salt tolerant native tree and shrubs etc along the planter strip at affected seawall.	Minimise visual & landscape impact	Future Contractor of C4 landscape works (i.e. Contractor of C9)	HKBCF	Construction stage	Partially implemented
		G9. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt “natural-look” by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance “natural-look” of the new coastline.	Minimise visual & landscape impact	Contractors of C2, C3, and C4; Future Contractor of C4 landscape works (i.e. Contractor of C9)	HKBCF	Construction stage	Works under Contracts C2, C3 and C4 fully implemented; works by future Contractor of C4 landscape works (i.e. Contractor of C9) partially implemented
S14.3.3.3	LV3	<u>Mitigate Visual Impacts</u>					
		V1. Minimize time for construction activities during construction period.	Minimise visual impact	Contractors of C1, C2, C3, C4 and C8; Future Contractor of C4 landscape works (i.e. Contractor of C9)	HKBCF	Construction stage	Works under Contracts C1, C2, C3, C4 and C8 fully implemented; works by future Contractor of C4 landscape works (i.e. Contractor of C9) partially implemented
		V2. Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKLR & HKBCF construction.	Not applicable to HKBCF				
<b><i>Landscape &amp; Visual (Operation Phase)</i></b>							
S14.3.3.3	LV4	<u>Mitigate both Landscape and Visual Impacts</u>					
		G10. Provide proper planting maintenance on the new planting areas to enhance the aesthetic degree.	Minimise visual & landscape impact	Contractors of C1, C2, C3, C4 and C8; Future Contractor of C4 landscape works (i.e. Contractor of C9)	HKBCF	Operation stage	Works under Contracts C1, C2, C3, C4 and C8 fully implemented; works by future Contractor of C4 landscape works (i.e. Contractor of C9) to be implemented
		<u>Mitigate Visual Impacts</u>					



EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation status (as of Mar 2021)
		V3. Lighting design to minimize glare at night. Decorative road lighting to be considered during detailed design stage.	Minimise visual impact	Contractors of C1, C2, C3, C4 and C8	HKBCF	Operation stage	Fully implemented