MTR Corporation Limited

South Island Line (East)

Ecological Planting & Landscape Plan

December 2011

Verified by:

Thomas Chan

Independent Environmental Checker

Date:

6 December 2011

MTR Corporation Limited

South Island Line (East)

Ecological Planting & Landscape Plan

December 2011

Certified by:

Richard Kwan

Environmental Team Leader

Date: - 6 DEC 2011

MTR Corporation Limited

South Island Line (East)

Ecological Planting & Landscape Plan

December 2011

Prepared by:

Ida YU
Qualified Ecologist

LO Sai Cheung
Qualified Ecologist

Date: - 6 DEC 2011

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List of Contents Page

Chapters

1 INTRODUCTION

The SIL(E) Environmental Permit (EP) Condition 2.13(a) specifies that the Permit Holder / Qualified Ecologist shall deposit with EPD a Ecological Planting and Landscape Plan showing the compensatory planting at the lower course of Wong Chuk Hang (WCH) nullah, habitat compensation / enhancement works at the nullah side and a 3-year post-planting care and maintenance plan.

This Ecological Planting and Landscape Plan is prepared in accordance with the requirements of the above mentioned EP Condition. The general objective of this plan is to mitigate and compensate ecological impacts to ardeid roosting sites resulting from the construction at WCH nullah.

2 COMPENSATORY PLANTING & HABITAT ENHANCEMENT

The degraded woodland area beside WCH Nullah was used by ardeid as a night roosting site. As mentioned in the EIA, six ardeid species including Little Egret, Great Egret, Cattle Egret, Chinese Pond Heron, Grey Heron and Black-crowned Night Heron were recorded at the site but it was primarily used by Little Egret for night roosting.

The habitat quality of the degraded woodland along WCH Nullah is not high for its isolated location, fragmented profile and large interface with urbanized environments. These slopes along the nullah are relics of isolated hills after the urbanisation of the region. Dominant plants are common native plant species which includes *Celtis timorensis*, *Microcos paniculata*, *Cratoxylum cochinchinense, Sterculia lanceolata*.

The current design is to retain most of these woodland trees at the existing roosting site. It is noted that some of the trees on slope subject to slope works might be unstable and felling of these trees might be required for safety concern. The proposed new planting along the nullah side is designed to complement the existing degraded woodland and consists of native woodland tree and shrub mix on the slopes. Though only a very small portion of the night roost area would be cleared for the construction of viaduct, the compensatory plantation for the ardeid night roost has been proposed at the lower course of the WCH Nullah, approximately 200m to the west of the existing night roost.

2.1 Design Considerations

The design of the habitat enhancement and compensatory planting is dependent on the following factors:

Existing features of habitats –
Habitat will be designed to reinstate temporarily affected habitat, provide compensatory planting area for mitigating the loss of ardeid night roost and enhance the ecological value of existing habitats at the site.

Habitat requirement of avifauna –
Habitat design will be guided by the known habitat requirement of avifauna.

Site Constraints –
The size, shape and location of habitat enhancement and compensatory planting will follow the mitigation measures proposed in the approved EIA.

Engineering constraints –
The geological, soil and local condition of slope will be taken in account during the development of habitat enhancement and compensatory planting.

2.2 Selection of Flora Species

Native trees are important elements of the Hong Kong ecosystem. Compared with exotic species, native trees have significantly higher ecological value in providing food and shelter for local wildlife. Native species are anticipated to require less care than non-native plants and will be suited to provide appropriate habitat for native wildlife.

A mixture of plants are selected to provide more diverse habitat and a prolonged and varied leaf fall to meet the energy and pupation needs of aquatic insects. It will help avoid trouble with pests that attack specific plants. Deciduous plants are also selected as the leaf litter is important for trapping nitrogen. For example, *Liquidambar formosana* and *Bauhinia* spp. provide lots of leaf litter for detritivore such as Forest Cockroach (*Opisthoplatia orientalis*) and herbivory Grasshopper (*Acrididae spp.*) which are the one of food sources of Cattle Egret and Chinese Pond Heron.

The proposed planting will avoid monoculture plantation which may provide ineffective soil and water protection, poor in nutrient recycling and enrichment, low in biodiversity and susceptible to pest attack. Species will be selected for multiple uses such as erosion control, attraction of fauna and aesthetics including seasonal foliage color, flowers, fruits and branching habit. It is also important that the species selected for the replanting is hardy and commercially available.

Potentially invasive species are not recommended including species listed by the Invasive Species Specialist Group (ISSG) of IUCN (i.e. "One Hundred of the World's Worst Invasive Alien Species" identified by ISSG of IUCN).

Leucaena leucocephala is recommended not to be used in habitat planting and for ecological or landscaping purpose. *Leucaena leucocephala* is an infamous invasive plant species that could cause adverse ecological impact on local vegetation and ecological value of the affected habitat by outcompete the native plant species. Thus this species has been excluded by replacing with other native tree species that are beneficial to the local ecology such as *Celtis sinensis*.

The proposed compensatory planting for the loss of ardeid roosting site is designed with reference to the plant composition of the existing ardeid roosting site and the plant species often used by ardeid for roosting. *Celtis sinensis* and *Ficus microcarpa* are the major plant species used by ardeid as nesting habitat in

egretry as observed by the Hong Kong Bird Watching Society (HKBWS) though none of this plant species in the WCH night roosting site was used for nesting. In addition, *Ficus variegata*, *Ficus hispida*, *Macaranga tanarius* and *Mallotus paniculatus* are the tree species identified in or adjacent to the existing ardeid roosting site. Planting of these species can restore and enhance the ecological function of existing roosting site and the neighborhood area.

Plant species used for the replanting have been based on those recorded in existing woodlands within the project area as well as make reference to those tree species currently utilized by ardeid. As some of the degraded woodland areas currently are intensively covered by self-seeded invasive weedy plants especially those *Leucaena leucocephala* in some areas along WCH Nullah, the replacement of these undesirable plants by species native to natural woodland and shrubland in Hong Kong could enhance the ecological value of originally degraded habitat.

2.3 Habitat Enhancement by Nullah Side

Woodland planting is proposed on slopes on the south side of WCH Nullah. These slope areas will be planted using smaller plant stock comprising a mix of whip trees and shrubs. Primarily native species will be selected. The whip tree and shrub spacing recommended is approximately 1m to 1.5m apart. This spacing will result in a dense buffer at maturity, assuming that all plants survive. Approximately 6,500 whip trees and shrubs will be planted on slope of about 0.9ha.

In addition, it is proposed to plant approximately 100 trees and palms comprising an appropriate combination of heavy standard trees and heavy / multi stem palms along the pedestrian link by the nullah side underneath the viaduct and Ap Lei Chau Bridge Road. Palms are proposed surrounding the viaduct columns to visually soften the vertical concrete base of the structure. Heavy standard trees will be planted with spacing approximately 3m to 4m apart, while palms will be planted approximately 2m to 3m apart along the pedestrian link.

The new planting will complement the retained trees and consist of native tree and shrub species to enhance the ecological function of the woodland along WCH Nullah, see **Figures 1a and 1b**.

Table 2.1 below lists the suggested tree / palm / shrub species to be used which are based on planting consideration outlined in Section 2.2 above. This plant list is designed to enhance ecological and amenity values along the pedestrian link and the woodland mix on the slope by the nullah side. The list is also prepared in accordance with the plant composition requirement stipulated in the SIL(E) EP Condition 2.13(a)ii.

Table 2.1
Proposed Tree / Palm / Shrub Species for Planting along the Nullah and on Slope

Species	Type	Location
Bauhinia blakeana (BAU. BLA.)*	Heavy Standard Tree	Nullah side
Celtis sinensis (CEL. SIN.)*†	Heavy Standard Tree	Nullah side
Cratoxylum cochinchinense (CRA. COC.)*	Heavy Standard Tree	Nullah side
Ficus hispida (FIC. HIS.)* †	Heavy Standard Tree	Nullah side
Ficus variegata (FIC. VAR.)* †	Heavy Standard Tree	Nullah side
Liquidambar formosana (LIQ. FOR.) *	Heavy Standard Tree	Nullah side
Macaranga tanarius (MAC. TAN.)* †	Heavy Standard Tree	Nullah side
Mallotus paniculatus (MAL. PAN.)*†	Heavy Standard Tree	Nullah side
Sapium discolor (SAP. DIS.)* †	Heavy Standard Tree	Nullah side
Schima superba (SCH. SUP.)* †	Heavy Standard Tree	Nullah side
Caryota ochlandra (CAR. OCH.) †	Palm	Nullah side
Chrysalidocarpus lutescens (CHR. LUT.) †	Palm	Nullah side
Roystonea regia (ROY. REG.) †	Palm	Nullah side
Aquilaria sinensis *	Whip	On Slope
*Ficus microcarpa** †	Whip	On Slope
Reevesia thyrsoidea *	Whip	On Slope
Schefflera heptaphylla *†	Whip	On Slope
Sterculia lanceolata *†	Whip	On Slope
Ilex asprella *†	Shrub	On Slope
Litsea rotundifolia var. oblongifolia *†	Shrub	On Slope
Psychotria asiatica *†	Shrub	On Slope
Rhaphiolepis indica *†	Shrub	On Slope
Rhodomyrtus tomentosa *†	Shrub	On Slope

Notes:
1. * Native species
2. Except *Bauhinia blakeana*, all tree, palm and shrub species in Table 2.1 are fruit-bearing plants (i.e. plant that produces fruits). Tree/palm/shrub species with "†" are plant that produces fleshy fruits.
3. The plant composition includes the proposed heavy standard trees to be planted in compensatory planting

2.4 Compensatory Planting

Compensatory plantation for the ardeid night roost has been proposed at the lower course of the WCH Nullah, approximately 200m to the west of the existing

night roost, though only a very small portion of the night roost area would be cleared for the construction of viaduct. The tree species currently used for night roosting are mostly amenity species. Based on planting consideration outlined in Section 2.2, it is proposed to replant over 70 heavy standard trees, with spacing of approximately 3m to 4m apart, to fulfill as far as possible the function for ardeid roosting and to enhance the ecological value of originally degraded woodland habitat, see **Figures 1a and 1b**. The compensation planting will commence upon completion of construction phase.

Table 2.2 below lists the suggested tree species to be used which are based on planting consideration outlined in Section 2.2 above. The plant list is designed with reference to the plant composition identified in or adjacent to the existing ardeid roosting site. The list is also prepared in accordance with the plant composition requirement stipulated in the SIL(E) EP Condition 2.13(a)i.

It should be noted that the list is not exhaustive or exclusive, and qualified ecologists / landscape designers shall be permitted to propose suitable alternative species that meet the functional requirements of the ecological planting and landscape plan for due consideration by the relevant authorities on individual merit.

Table 2.2
Proposed Tree Species for Compensatory Planting at lower course of the Nullah

Species	Type	Location
Bauhinia blakeana (BAU. BLA.)*	Heavy Standard Tree	Lower course of Nullah side
Celtis sinensis (CEL. SIN.)*†	Heavy Standard Tree	Lower course of Nullah side
Cratoxylum cochinchinense (CRA. COC.)*	Heavy Standard Tree	Lower course of Nullah side
Ficus hispida (FIC. HIS.)*†	Heavy Standard Tree	Lower course of Nullah side
Ficus variegata (FIC. VAR.)*†	Heavy Standard Tree	Lower course of Nullah side
Liquidambar formosana (LIQ. FOR.) *	Heavy Standard Tree	Lower course of Nullah side
Macaranga tanarius (MAC. TAN.)*†	Heavy Standard Tree	Lower course of Nullah side
Mallotus paniculatus (MAL. PAN.)*†	Heavy Standard Tree	Lower course of Nullah side
Schima superba (SCH. SUP.)*	Heavy Standard Tree	Lower course of Nullah side

1. * Native species
2. Except *Bauhinia blakeana*, all tree species in Table 2.2 are fruit-bearing plants (i.e. plant that produces fruits). Tree species with "†" are plant that produces fleshy fruits.

3 IMPLEMENTATION & MAINTENANCE

The ecological planting and landscaping will be programmed to be undertaken at the earliest possible time upon completion of the construction of the concerned sections. A specialist landscape contractor with solid experience in landscape enhancement and planting would be appointed to carry out the establishment works. The Qualified Ecologist will be responsible for supervising the planting works as set out in this plan. The progress and the completion of the planting works will also be checked against the requirements of this plan.

Liaison on the long-term soft landscape maintenance with the relevant parties has been undertaken. At the time of submitting this revised Ecological Planting and Landscape Plan, it is agreed that LCSD will be responsible for managing and maintaining the tree and palm planting by the nullah side in the habitat enhancement and compensatory plantation area (including planting around columns of the built viaduct). Irrigation of the planted vegetation will also be maintained by LCSD. As for the planting on slope, it will be managed and maintained by respective government authorities including ASD or by private lot owner, apart from the site formation slope outside the Holy Spirit Seminary which will be managed and maintained by MTRCL. The concerned areas will handover to respective parties following the completion of construction works (**Figures 2a and 2b**). Nevertheless, MTRCL will take up the responsibility of the 3-year post planting monitoring and maintenance as per the requirements of the EP. Agreement will be made with respective parties prior to the handover to ensure the access to the planting sites for maintenance where required.

3.1 Post Planting Monitoring & Maintenance

The success of the compensatory planting will be monitored by the Qualified Ecologist for three years after completion of the planting works. The post-planting monitoring will be carried out on monthly basis and the monitoring parameters will include the overall survival rate of the planted vegetation, percentage of the planted vegetation cover and any invasive species in the compensatory plantation. A monthly monitoring on the ardeid species along the Wong Chuk Hang Nullah will be carried out. The survey will record the species, numbers and locations of the roost. The timing of this ardeid monitoring on using the compensatory plantation shall be commenced approximately one hour before sunset and continue for 20 minutes after sunset, or until nightfall, which comes sooner. Suitable adjustment can be identified to refine the planting design where required. Findings from the vegetation monitoring will be separated at the lower course of Wong Chuk Hang Nullah (i.e. the compensatory plantation) and along the nullah side (i.e. the habitat enhancement area).

The Qualified Ecologist will identify any defective plants and the maintenance requirements on site to ensure the establishment and survival of plants which may be necessary. Maintenance by a suitably contractor should include watering during dry periods and during the first two months after planting. In addition to the regular watering requirement, the key maintenance works to be carried out, all as agreed with and instructed by the Qualified Ecologist, will follow the

contingency plan as below. The remedial actions taken if any will be reported in the subsequent quarterly compensatory planting monitoring report to EPD.

Table 3.1
Contingency Plan for Remedial Actions

TRIGGER	ACTION
Presence of damaged, diseased or dying plants or invasive weedy plants	– Qualified Ecologist to establish the need for weeding, pruning, securing stakes and ties, replacing dead plants and treatment of insect or fungal infestations. – As required, Contractor to take corrective measures.
Typhoon warning (No. 8 or above) or red or black rain storm event hoisted by the Hong Kong Observatory	– Qualified Ecologist to check the planting sites and the planted vegetation in the habitat enhancement area and compensatory planting along the Nullah after the cancellation of typhoon warning of No. 8 or above, or red or black rain storm event ceases. – As required, Contractor to firm up loosened plants. – As required, Contractor to take corrective measures if erosion of re-vegetated areas occur.

3.2 Reporting

The results and findings of the monitoring along with the follow up action identified and undertaken, if any, will be recorded in quarterly compensatory planting monitoring report to EPD.

A final monitoring report will also be submitted upon the completion of the maintenance period which should include a summary record of the monitoring results (including the survival rate and percentage coverage of the planted vegetation, any invasive species in the compensatory plantation, and monitoring of ardeid species using the planted vegetation along the Wong Chuk Hang Nullah), and a summary record of the monitoring and maintenance works undertaken. The monitoring results and records will be reviewed for the effectiveness of the planting measures in enhancing the ecological and amenity values of the areas along the Wong Chuk Hang Nullah. The effectiveness of the planting measures will be assessed based on the health condition and survival rate of the planted vegetation. Assessment on the effectiveness of the compensatory planting in attracting the ardeid could not be adjusted at this early stage of planting design as the relocation of the ardeid roosting sites is unpredictable. This could be influenced by factors such as the type, frequency and intensity of any anthropogenic disturbance, and preference by ardeid in selecting other vegetated area along the Nullah. The attractiveness of the compensatory plantation to the ardeid will be assessed throughout the post-planting monitoring period, and the evaluation and recommendation will be presented in the final monitoring report.

4 REFERENCES

Captain, LC. Wong, Vicky, W.Y.Lam and Gary, W.J.Ades. Eds. 2009. Ecology of the Birds of the Hong Kong. Kadoorie Farm and Botanic Garden, HKSAR.

David Dudgeon and Richard Corlett. Eds 2004. The Ecology and Biodiversity of Hong Kong. Friend of The CountryPark, HKSAR.

C.T.Shek. Eds 2006. A Field Guide to the Terrestrial Mammals of Hong Kong, Friend of the Country Park, HKSAR.

HKBWS Ltd. Eds 2010. A Photographic Guide to the Birds of Hong Kong (Revised Edition), Hong Kong Bird Watching Society, HKSAR.

LEGEND:
- GAZETTAL BOUNDARY
- TREE SURVEY BOUNDARY
- SIMAR SLOPES BOUNDARY
- EXISTING TREES TO BE RETAINED
- EXISTING TREES OUTSIDE GAZETTAL BOUNDARY (TO BE RETAINED)
- PROPOSED COMPENSATORY TREE PLANTING
- PROPOSED COMPENSATORY PALM PLANTING
- HYDROSEEDING
- WOODLAND WHIP MIX

NOTE:
THE EXACT LOCATIONS AND SPACING FOR THE TREE TRANSPLANTATION ARE TO BE DETERMINED ON SITE.

KEYPLAN

608 607

0 5 10 15 20 25
METRES
1 : 500

MATCH LINE
FOR CONTINUATION
SEE DWG 903/B/000/ATK/C04/605

MATCH LINE
FOR CONTINUATION
SEE DWG 903/B/000/ATK/C04/608

STAUNTON CREEK NULLAH

NEW PEDESTRIAN LINK

LINE OF OVERHEAD VIADUCT

SLOPE STABILISATION WORKS

JOINT (GOVERNMENT & PRIVATE) SIMAR SLOPE FEATURE NO. 11SW-D/F13

3 NOS. CEL.SIN.
5 NOS. FIC.VAR.
3 NOS. CHR.LUT.
9 NOS. MAL.PAN.
5 NOS. CHR.LUT.
5 NOS. CAR.OCH.
WOODLAND MIX 3064.94 sq.m
5 NOS. CHR.LUT.
5 NOS. CAR.OCH.
6 NOS. CHR.LUT.
6 NOS. CHR.LUT.
5 NOS. CAR.OCH.
6 NOS. CHR.LUT.
6 NOS. CHR.LUT.
5 NOS. CHR.LUT.
WOODLAND MIX 187.66 sq.m
WOODLAND MIX 703.95 sq.m
WOODLAND MIX 144.06 sq.m
WOODLAND MIX 17.93 sq.m

PCCW Telephone Exchange
United Industrial Bldg
Heung Wah Industrial Building
Bus Depot
Express Industrial Building
Nullah
Heung Yip Road Sitting-out Area
Reliance Manufactory Building
Kin Tack Industrial Building
Pa Chai Industrial Building
Cheung Tak Industrial Building
Wah Ming Building
Hung Yip Road
Rita Tower
Lee Fund Centre
Block A
Block B
Block C
Block D
Block E
Chapel
Tung Wah Group of Hospitals Jockey Club Rehabilitation Complex
Little Sisters of St. Mary's Home

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B	SECOND ISSUE	TO	20OCT10	BG
A	FIRST ISSUE	TO	15DEC09	BG

DRAWN	IY
DESIGNED	IY
CHECKED	MRL
APPROVED	
DATE	8/NOV/2011

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MTR

SOUTH ISLAND LINE (EAST)

ORIGINATOR
Asia Ecological Consultants Ltd

CADD REF. 903_B_000_ATK_C04_607.dgn

TITLE
Ecological Planting and Landscape Plan along Wong Chuk Hang Nullah

SCALE 1 : 500 (A1)
DRAWING NO. Figure 1a
REV. 0

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PRINTED BY: $USER$ $DATE$ $TIME$

FOR CONTINUATION SEE DWG. 903/B/000/ATK/C04/607

MATCH LINE

NEW PEDESTRIAN LINK

LINE OF OVERHEAD VIADUCT

SLOPE STABILISATION & REINSTATEMENT WORKS

ABERDEEN HARBOUR NEW PEDESTRIAN LINK BRIDGE

ABERDEEN CHANNEL RAILWAY BRIDGE

AP LEI CHAU BRIDGE ROAD

5 NOS. MAC.TAN.
13 NOS. SCH.SUP.
3 NOS. SAP.DIS.
4 NOS. MAC.TAN.
1 NOS. FIC.HIS.
3 NOS. SCH.SUP.
3 NOS. FIC.VAR.
5 NOS. LIO.FOR.
3 NOS. CEL.SIN.
5 NOS. CRA.COC.
3 NOS. FIC.VAR.
3 NOS. LIO.FOR.
2 NOS. CEL.SIN.
3 NOS. CEL.SIN.
7 NOS. FIC.HIS.
1 NOS. SAP.DIS.
1 NOS. FIC.HIS.
3 NOS. CHR.LUT.
3 NOS. SAP.DIS.
WOODLAND MIX 1734.26 sq.m
3 NOS. BAU.BLA.
3 NOS. BAU.BLA.
3 NOS. CHR.LUT.
3 NOS. CHR.LUT.
4 NOS. LIO.FOR.
WOODLAND MIX 559.85 sq.m
3 NOS. CHR.LUT.
3 NOS. CHR.LUT.
2 NO. ROY.REG.
9 NOS. LIO.FOR.
WOODLAND MIX 526.00 sq.m
WOODLAND MIX 23.77 sq.m
HYD'S SIMAR SLOPE FEATURE NO. 15NW-B/F141
HYD'S SIMAR SLOPE FEATURE NO. 15NW-B/C212

LEGEND:
- GAZETTAL BOUNDARY
- TREE SURVEY BOUNDARY
- SIMAR SLOPES BOUNDARY
- EXISTING TREES TO BE RETAINED
- EXISTING TREES OUTSIDE GAZETTAL BOUNDARY (TO BE RETAINED)
- PROPOSED COMPENSATORY TREE PLANTING
- PROPOSED COMPENSATORY PALM PLANTING
- HYDROSEEDING
- WOODLAND WHIP MIX

0 5 10 15 20 25 METRES
1 : 500

KEYPLAN

NOTE:
THE EXACT LOCATIONS AND SPACING FOR THE TREE TRANSPLANTATION ARE TO BE DETERMINED ON SITE.

REV	DESCRIPTION	BY	DATE	APPROVED
C	THIRD ISSUE	TO	21APR11	LI
B	SECOND ISSUE	TO	20OCT10	BG
A	FIRST ISSUE	TO	15DEC09	BG

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DESIGNED	IY
CHECKED	MRL
APPROVED	
DATE	8/NOV/2011

MTR

SOUTH ISLAND LINE (EAST)

ORIGINATOR
Asia Ecological Consultants Ltd

CADD REF. 903_B_000_ATK_C04_608.dgn

TITLE
Ecological Planting and Landscape Plan along Wong Chuk Hang Nullah

SCALE 1 : 500 (A1)

DRAWING NO. Figure 1b

REV. 0

LEGEND:

- GAZETTAL BOUNDARY
- TO BE M&M BY LCSD INCLUDING IRRIGATION
- TO BE M&M BY MTR
- SLPOE TO BE M&M BY MTR
- HYDROSEEDING
- WOODLAND WHIP MIX
- PROPOSED CONPENSATORY TREE PLANTING
- PROPOSED CONPENSATORY PALM PLANTING

NOTE:
THE EXACT LOCATIONS AND SPACING FOR THE TREE TRANSPLANTATION ARE TO BE DETERMINED ON SITE.

KEYPLAN

0 5 10 15 20 25 METRES
1 : 500

STAUNTON CREEK NULLAH

NEW PEDESTRIAN LINK

LINE OF OVERHEAD VIADUCT

SLOPE STABILISATION WORKS

3 NOS. CEL.SIN.
5 NOS. FIC.VAR.
3 NOS. CHR.LUT.
9 NOS. MAL.PAN.
5 NOS. CHR.LUT.
5 NOS. CAR.OCH.
WOODLAND MIX 3064.94 sq.m
6 NOS. CHR.LUT.
5 NOS. CHR.LUT.
5 NOS. CAR.OCH.
6 NOS. CHR.LUT.
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6 NOS. CHR.LUT.
5 NOS. CHR.LUT.
WOODLAND MIX 187.66 sq.m
WOODLAND MIX 703.95 sq.m
WOODLAND MIX 144.06 sq.m
WOODLAND MIX 17.93 sq.m

SLOPE BY EXISTING GOVERNMENT AUTHORITY
SLOPE TO BE MANAGED AND MAINTAINED BY EXISTING GOVERNMENT AUTHORITY
SLOPE BY EXISTING GOVERNMENT AUTHORITY
PLANTING AND CLIMBERS AROUND COLUMN TO BE MANAGED AND MAINTAINED BY LCSD
SLOPE TO BE MANAGED AND MAINTAINED BY ASD
SLOPE TO BE MANAGED AND MAINTAINED BY LITTLE SISTER PRIVATE LOT
RETAINING WALLS TO BE MANAGED AND MAINTAINED BY MTR

JOINT (GOVERNMENT & PRIVATE) SIMAR SLOPE FEATURE NO. 11SW-D7F73

MATCH LINE
FOR CONTINUATION
SEE DWG 903/B/000/ATK/C04/606

MATCH LINE
FOR CONTINUATION
SEE DWG 903/B/000/ATK/C04/608

PCCW Telephone Exchange
United Industrial Bldg
Heung Wah Industrial Building
Bus Depot
Express Industrial Building
Heung Yip Road Sitting-out Area
Reliance Manufactory Building
Kin Teck Industrial Building
Po Chai Industrial Building
Cheung Tak Industrial Building
Wah Ming Building
Lee Fund Centre
Nullah
Chapel
Tung Wah Group of Hospitals Jockey Club Rehabilitation Complex
Block A
Block B
Block C
Block D
Block E
Podium
HEUNG YIP ROAD

812200 N
812150 N
812100 N
834750 E
834800 E
834850 E
834900 E
834950 E
835000 E
835050 E
835100 E

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A	FIRST ISSUE	TO	15DEC09	BG

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DESIGNED	IY
CHECKED	MRL
APPROVED	
DATE	8/NOV/2011

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SOUTH ISLAND LINE (EAST)
ORIGINATOR
Asia Ecological Consultants Ltd
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TITLE
Management and Maintenance Matrix of the Ecological Planting and Landscape Area along Wong Chuk Hang Nullah

SCALE 1 : 500 (A1)
DRAWING NO. Figure 2a
REV. 0

NEW PEDESTRIAN LINK

MATCH LINE
FOR CONTINUATION
SEE DWG 903/B/000/ATK/C04/607

MATCH LINE
FOR CONTINUATION
SEE DWG 903/B/000/ATK/C04/609

ABERDEEN HARBOUR NEW PEDESTRIAN LINK BRIDGE

LINE OF OVERHEAD VIADUCT

SLOPE STABILISATION & REINSTATEMENT WORKS

ABERDEEN CHANNEL RAILWAY BRIDGE

AP LEI CHAU BRIDGE ROAD

5 NOS. MAC.TAN.
13 NOS. SCH.SUP.
3 NOS. SAP.DIS.
4 NOS. MAC.TAN.
1 NOS. FIC.HIS.
3 NOS. SCH.SUP.
3 NOS. FIC.VAR.
5 NOS. LIQ.FOR.
3 NOS. CEL.SIN.
5 NOS. CRA.COC.
3 NOS. FIC.VAR.
3 NOS. LIQ.FOR.
2 NOS. CEL.SIN.
3 NOS. CEL.SIN.
7 NOS. FIC.HIS.
1 NOS. SAP.DIS.
1 NOS. FIC.HIS.
3 NOS. CHR.LUT.
3 NOS. SAP.DIS.
WOODLAND MIX 1734.26 sq.m
3 NOS. BAU.BLA.
3 NOS. BAU.BLA.
3 NOS. CHR.LUT.
3 NOS. CHR.LUT.
4 NOS. LIO.FOR.
3 NOS. CHR.LUT.
3 NOS. CHR.LUT.
WOODLAND MIX 559.85 sq.m
2 NO. ROY.REG.
9 NOS. LIO.FOR.
WOODLAND MIX 526.00 sq.m
WOODLAND MIX 23.77 sq.m
HYD'S SIMAR SLOPE FEATURE NO. 15NW-B/F141
HYD'S SIMAR SLOPE FEATURE NO. 15NW-B/C212
SLOPE TO BE MANAGED AND MAINTAINED BY MTR
SLOPE TO BE MANAGED AND MAINTAINED BY EXISTING GOVERNMENT AUTHORITY
RETAINING WALLS TO BE MANAGED AND MAINTAINED BY MTR

LEGEND:

- GAZETTAL BOUNDARY
- TO BE M&M BY LCSD INCLUDING IRRIGATION
- TO BE M&M BY MTR
- SLPOE TO BE M&M BY MTR
- HYDROSEEDING
- WOODLAND WHIP MIX
- PROPOSED COMPENSATORY TREE PLANTING
- PROPOSED COMPENSATORY PALM PLANTING

NOTE:
THE EXACT LOCATIONS AND SPACING FOR THE TREE TRANSPLANTATION ARE TO BE DETERMINED ON SITE.

0 5 10 15 20 25
METRES
1 : 500

KEYPLAN

REV	DESCRIPTION	BY	DATE	APPROVED
C	THIRD ISSUE	TO	21APR11	LI
B	SECOND ISSUE	TO	20OCT10	BG
A	FIRST ISSUE	TO	15DEC09	BG

DRAWN	IY
DESIGNED	IY
CHECKED	MRL
APPROVED	
DATE	8/NOV/2011

MTR

SOUTH ISLAND LINE (EAST)

ORIGINATOR
Asia Ecological Consultants Ltd

CADD REF. 903_B_000_ATK_C04_608.dgn

TITLE
Management and Maintenance Matrix of the Ecological Planting and Landscape Area along Wong Chuk Hang Nullah

SCALE	DRAWING NO.	REV.
1 : 500 (A1)	Figure 2b	0

PLOT DRV: $PLTDRV$
MODEL NAME: $MODEL$
FILENAME: $FILE$
PRINTED BY: $USER$
$DATE$
$TIME$