

Environmental Permit No. EP-388/2010

Development of a Bathing Beach at Lung Mei, Tai Po

Independent Environmental Checker Verification

Reference Document/Plan

Document/ Plan to be Certified/ Verified:	Mangrove Seedling Planting Proposal
Date of Report:	4 March 2021
Date received by IEC:	12 March 2021

Reference EP Condition / Updated EM&A Manual Requirement

Environmental Permit Condition / Updated EM&A Manual Reference	Condition 3.12
<p>To mitigate the loss of mangrove seedlings/plants within the site boundary during construction, mangrove seedling plantings of plant species, namely <i>Aegiceras corniculatum</i>, <i>Avicennia marina</i> and <i>Kandelia obovata</i> shall be provided before the commencement of operation. The Permit Holder shall, no later than three months before commencement of mangrove seedling planting works, deposit with the Director three hard copies and one electronic copy of mangrove seedling planting proposal. Before submission to the Director, the proposal shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the approved EIA report (Register No. AEIAR-123/2008). The detailed mangrove seedling planting proposal shall include the following information:</p> <ul style="list-style-type: none">(a) qualification of the specialist(s) to supervise the planting works;(b) number and species of planting;(c) locations of the planting sites;(d) methodology and implementation programme; and(e) detailed schedule for post-plantation maintenance and monitoring of plants. <p>The mangrove seedling planting works shall be implemented according to the planting proposal.</p>	

IEC Verification

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-388/2010.

Mr Terence Fong

Date:

12 March 2021

Independent Environmental Checker



Our ref: P:\Projects\0206709 IEC for Lung Mei EM&A\07_ET Submission\38_Mangrove Planting Proposal

Our Ref: TCS00874/16/300/L0693

Welcome Construction Co., Ltd.

Flat 01, 19/F, Westley Square,
48 Hoi Yuen Road,
Kwun Tong, Kowloon.

Attn: Mr. William Lam

12 March 2021

By e-mail

Dear Sir,

**Re: CEDD Contract No. CV/2012/05 - Bathing Beach at Lung Mei, Tai Po
Mangrove Seedling Planting Proposal (Rev.2)**

With reference to the Mangrove Seedling Planting Proposal (Rev.2), we have no adverse comment on the Proposal. We herewith certify the captioned submission in accordance with EP-388/2010 Condition 3.12.

Should you have any queries, please feel free to contact the undersigned at Tel: 2959-6059 or Fax: 2959-6079 or E-mail: twtam@fordbusiness.com.

Yours sincerely,

For and on Behalf of

Action-United Environmental Services & Consulting



T. W. Tam
Environmental Team Leader
TW/nh

CEDD
ERM

Mr. K F Chan
Mr. Terence Fong

via email
via email



偉金建築有限公司
Welcome Construction Co., Ltd.

(偉金企業成員)
(A member of Welcome Enterprises)

安全環保齊用心 • 優質工程在偉金

Our Ref : (1579d) in DPI-WCCL-CV201205-21-101

Your Ref :

By Hand

4 March 2021

Port Works Division, Civil Engineering Office, CEDD
4/F, Civil Engineering and Development Building
101 Princess Margaret Road
Kowloon, Hong Kong

Attn.: Mr. K.F. Chan (The ER) and Mr. Jason Cheung (The ER)

Dear Sir,

Contract No. CV/2012/05

Bathing Beach at Lung Mei, Tai Po

Proposal of Mangrove Seedlings/Plants at Lung Mei rev 2

Pursuant to PS3.12, we would like to submit the Proposal of Mangrove Seedlings/
Plants at Lung Mei and request ET Leader and IEC to certify and verify the Proposal
of Mangrove Seedlings/Plants for commencement of works.

Yours Faithfully,

For and on behalf of

Welcome Construction Co. Ltd.

William Lam

Site Agent

WL/wl

c.c. ER's Site Office

Contract No. CV/2012/05 Bathing Beach at Lung Mei, Tai Po

Proposal of Mangrove Seedling Planting rev 2

1. Introduction

1.1 Refer to EP condition 3.12, a detailed mangrove seedling planting proposal shall be submitted to mitigate the loss of mangrove seedlings/ plants within the site boundary during construction, mangrove seedling plant of plant species, namely *Aegiceras corniculatum*, *Avicennia marina* and *Kandelia obovata* shall be provided.

2. Qualification of the specialists to supervise the planting works

2.1 Hong Kong Landscape Company Limited who is an approved supplier of material and specialist contractors for Public Works will be undertaken to supervise the planting works with Mangrove planting experience (see Appendix 1).

3. Number and species of planting

3.1 Refer to EIA Report Clause 8.10.3- Compensation, approximately 80 mangrove seedlings/plants (with a height below 0.5m) within the Project Site may be removed during construction. As an additional measure to further minimize the ecological impact, the mangrove seedling planting is proposed to be undertaken along the outsides of the groynes and western drainage channel at a level of about 1.2 to 1.6 mPD. The planting mix was recommended at a ratio 1:1:1 for *Aegiceras corniculatum*, *Avicennia marina* and *Kandelia obovata*. Assuming the planting distance between each planting individual will be 0.9m, a total of approximately 382 mangrove seedlings will be provided.

3.2 The number and species of planting as shown in Appendix 2, i.e.

- a. 127 nos of *Aegiceras Corniculatum*
- b. 127 nos of *Avicennia Marina*
- c. 128 nos of *Kandelia Obovata*

4. Location of the planting sites

4.1 There are 3 planting locations that are at Portion B near Western Open Channel and Western Groyne and also near Eastern Groyne at the tidal zone of 1.2 to 1.6 mPD as shown in Appendix 3.

5. Methodology and implementation programme

- i. The mangrove seedling/plants will be delivered and inspected before planting;
- ii. The planting will be spaced out with about 0.5m centre to centre in accordance to the planting layout (see Appendix 2);
- iii. The planting will be scheduled when it is at low tide of about 0.5 to 1.0 mPD;
- iv. A hole of about 75mm diameter and 100mm deep will be dug onto the ground for planting the mangrove seedling/plant then tamper lightly until the mangrove is securely upright on the ground and not easily washed out by the tide;
- v. The planting is scheduled in late March 2021 or earlier if consent is given by EPD which will be completed in 2 days.

6. Detailed schedule for post plantation maintenance and monitoring of plants

6.1 After planting, 1-year monitoring will be undertaken to check the performance and health conditions of the planted individuals on a monthly basis. Remedial actions will be discussed with AFCD in the event of unsuccessful mangrove seedling planting and follow an approved Event and Action Plan as indicated in Table 7.1. of the EM&A Manual. (refer to Appendix 4)

6.2 The mangroves will be monitored monthly at the 4th week to ensure they are in good condition by the Hong Kong Landscape Co. Ltd.

6.3 The monitoring will be by visual inspection and the seedlings will be fixed and kept it in position should it be affected by the tidal wave or physical disturbance;

6.4 Manual removal of the weed Mikania Micrantha will be carried out as needed;

6.5 Event and Action Plan for Mangrove Seedling Planting under the EM&A Manual Table 7.1 will be followed:

- a. Monthly monitoring will be stepped up to bi-weekly when more than 25% of mortality of mangrove seedling is observed and will notify the relevant government departments (i.e EPD & AFCD);
- b. Bi-weekly monitoring will be stepped up to weekly when 50% mortality mangrove seedling is recorded during the establishment of planting. A proposal for remedial measure and action plant will be submitted to EPD or AFCD for approval.

Prepared by

William Lam (Site Agent)

Contract No. CV/2012/05

4/3/2021

Appendix 1

HONG KONG LANDSCAPING CO., LTD.

JOB REFERENCES FOR MANGROVES

CONTRACT NO.	SITE OF WORKS	MAIN CONTRACTOR	WORKING YEARS
CV/2013/08	Liantang / Heung Yuen Wai Boundary Control Point, Site Formation and Infrastructure Works - Contract 6 Landscaping Works (wetland planting)	CRBC - CEC - Kaden Joint Venture	2015 - New
DC/2011/04	Reconstruction, Improvement and Rehabilitation of Kai Tak River from Wong Tai Sin Police Station to Tung Tau II Estate Landscaping Works	Leader Civil Engineering Corporation Ltd.	2012 - New



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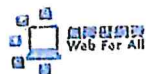
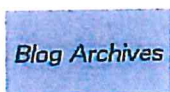
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List of Approved Suppliers of Materials and Specialist Contractors for Public Works

Firms included in the List are published below for general information. The List may include suppliers/specialist contractors who at the present time are suspended from tendering for public works contracts. Suppliers/specialist contractors in the List, unless suspended, may tender for public works contracts only in the works categories, classes and groups for which they are approved.

Category, Class and Group Description

Category: Landscaping

Group: All

Class: All

Search

Position as at 29 Nov 2020

Total No. of Matched: 19

Name of Supplier/Specialist Contractor	Category/Categories in which Supplier/Specialist Contractor is included
Asia Landscaping Limited	Landscaping (Class I) (Group II)
	Landscaping (Class II) (Group II)
Bluet Garden Limited	Landscaping (Class I) (Group I)
	- On probation
Bluet Hydroseeding Limited	Landscaping (Class II) (Group II)
Chun Hing Landscaping Company Limited	Landscaping (Class I) (Group I)
	- On probation
City Landscaping Co. Limited	Landscaping (Class I) (Group II)
Greenland Resources Limited	Landscaping (Class I) (Group II)
	- On probation
	Landscaping (Class II) (Group II)
	- On probation
Hong Chui Landscape Company Limited	Landscaping (Class I) (Group I)
	- On probation
Hong Da Landscaping Limited	Landscaping (Class I) (Group I)
	- On probation
Hong Kong Landscaping Company Limited	Landscaping (Class I) (Group II)
	Landscaping (Class II) (Group II)
Meloffield Nursery and Landscape Contractor Limited	Landscaping (Class I) (Group II)
Oriental Landscapes Limited	Landscaping (Class I) (Group II)
	Landscaping (Class II) (Group II)
Pegasus Greenland Limited	Landscaping (Class I) (Group II)
	Landscaping (Class II) (Group II)
Tak Tai Enviroscap Limited	Landscaping (Class I) (Group II)
Tarzan Landscape Contractors Limited	Landscaping (Class I) (Group II)
Toyo Greenland Company Limited	Landscaping (Class I) (Group II)
	Landscaping (Class II) (Group II)
Tung Kee Garden Horticulture Limited	Landscaping (Class I) (Group II)
Wah On Garden Landscaping Limited	Landscaping (Class I) (Group II)

Wing Ho Yuen Landscaping Company Limited
Yee Sun Garden Limited

Landscaping (Class I) (Group II)
Landscaping (Class I) (Group II)
Landscaping (Class II) (Group I)

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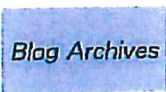
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Category, Class and Group Description

Categories	Suppliers	Specialist Contractors
Air-conditioning Installation		X
Audio Electronics Installation		X
Broadcast Reception Installation		X
Burglar Alarm and Security Installation		X
Catering Equipment Installation		X
Design, Manufacture and Installation of Glass (or Fibre) Reinforced Plastic Units		X
Diesel Generator Installation		X
Electrical and Mechanical Installation for Sewage Treatment and Screening Plant		X
Electrical Installation		X
Electronic Timing and Display Installation		X
Fabrication of Steel Pipe Specials		X
Fabrication of Unfired Pressure Vessels		X
Fire Service Installation		X
Fountain Installation		X
Ground Investigation Field Work		X
Industrial Type Electrical Installation		X
Land Piling		X
Land, Engineering and Hydrographic Survey Services		X
Landscaping		X
Landslip Preventive/Remedial Works to Slopes/Retaining Walls		X
Lift, Escalator and Passenger Conveyor Installation		X
Liquefied Petroleum Gas Installation		X
Low Voltage Cubicle Switchboard Installation		X
Mechanical Handling and Lifting Installation		X
Mechanical Plant and Equipment Installation		X
Motor Vehicle Body-Building and Painting		X
Plumbing Installation		X
Prestressed Concrete Works for Highway Structures	X	X
Radio Electronics Installation		X
Repair and Restoration of Historic Buildings		X
Repair of Motors, Transformers and Switchgear		X
Road Marking		X
Soil and Rock Testing		X
Space Frame Systems	X	X
Specialized Operations for Highway Structures		X
Steam and Compressed Air Installation		X
Structural Steelwork		X
Supply and Installation of Bearings for Highway Structures		X
Supply and Installation of Expansion Joints for Highway Structures		X
Supply and Installation of Pumpssets and Associated Pipework		X

Supply and Installation of Water Treatment Plant		X
Supply of Bituminous Pavement Materials and Construction of Special Bituminous Surfacing	X	X
Survey of Government Land Pressure Receivers subject to Steam and Air Pressure (but excluding Steam Boilers)		X
Survey of Government Land Steam Boilers		X
Survey of Lifting Appliances and Lifting Gear		X
Swimming Pool Water Treatment Installation		X
Transparent Panels for Noise Barriers on Highways [formerly named as "Prefabricated Architectural Walls and Finishes (Screens, Sound Barriers and Retaining Walls)"]	X	
Turn-key Interior Design and Fitting-out Works		X
Uninterruptible Power Supply Installation		X
Video Electronics Installation		X

Class and Group Description

Air-conditioning Installation,
 Group I - Contracts/Sub-contracts up to \$5.7 million
 Group II - Contracts/Sub-contracts of unlimited value

Electrical Installation,
 Group I - Contracts/Sub-contracts up to \$2.3 million
 Group II - Contracts/Sub-contracts up to \$5.7 million
 Group III - Contracts/Sub-contracts of unlimited value

Fire Service Installation,
 Group I - Contracts/Sub-contracts up to \$2.3 million
 Group II - Contracts/Sub-contracts of unlimited value

Ground Investigation Field Work,
 Group I - Contracts/Sub-contracts up to \$2.3 million
 Group II - Contracts/Sub-contracts of unlimited value

Land Piling,
 Group I - Contracts/Sub-contracts up to \$3.4 million
 Group II - Contracts/Sub-contracts of unlimited value

Landscaping,
 Class I - General Landscape work
 Class II - Hydroseeding
 Group I - Contracts/Sub-contracts up to \$2.3 million
 Group II - Contracts/Sub-contracts of unlimited value

Mechanical Plant and Equipment Installation,
 Group I - Contracts/Sub-contracts up to \$1.1 million
 Group II - Contracts/Sub-contracts of unlimited value

Plumbing Installation,
 Group I - Contracts/Sub-contracts up to \$2.3 million
 Group II - Contracts/Sub-contracts of unlimited value

Prestressed Concrete Works for Highway Structures,
 Class I - Supply and Installation of Prestressing Systems
 Class II - Supply of Prestressed Concrete Units

Specialized Operations for Highway Structures,
 Class I - Guniting
 Class II - Waterproofing of concrete surfaces
 Class III - Repair of cracked concrete by resin injection
 Class IV - Non-destructive testing of welds
 Class V - Hot dip galvanising

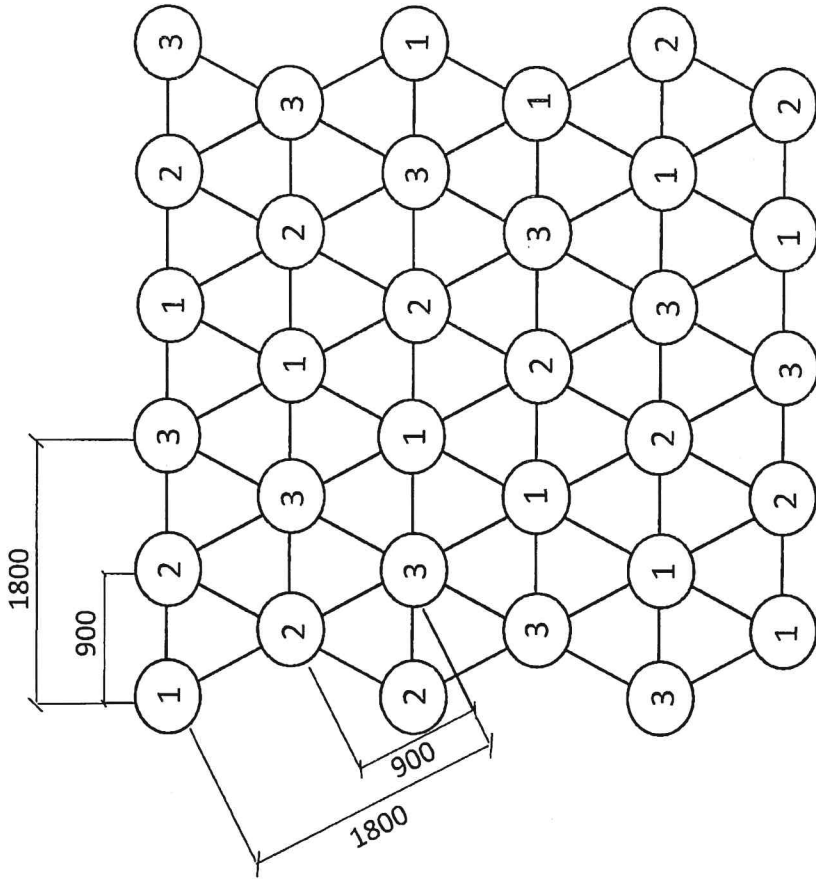
Supply and Installation of Bearings for Highway Structures,
 Class I - Mechanical bearings
 Class II - Elastomeric bearings

Turn-key Interior Design and Fitting-out Works,
 Group I - Eligible to be awarded one contract as a Trade Test
 Group II - Eligible to be awarded more than one contract at any one time

Note: Suppliers/specialist contractors in the List, unless suspended, may tender for public works contracts only in the works categories, classes and groups for which they are approved.

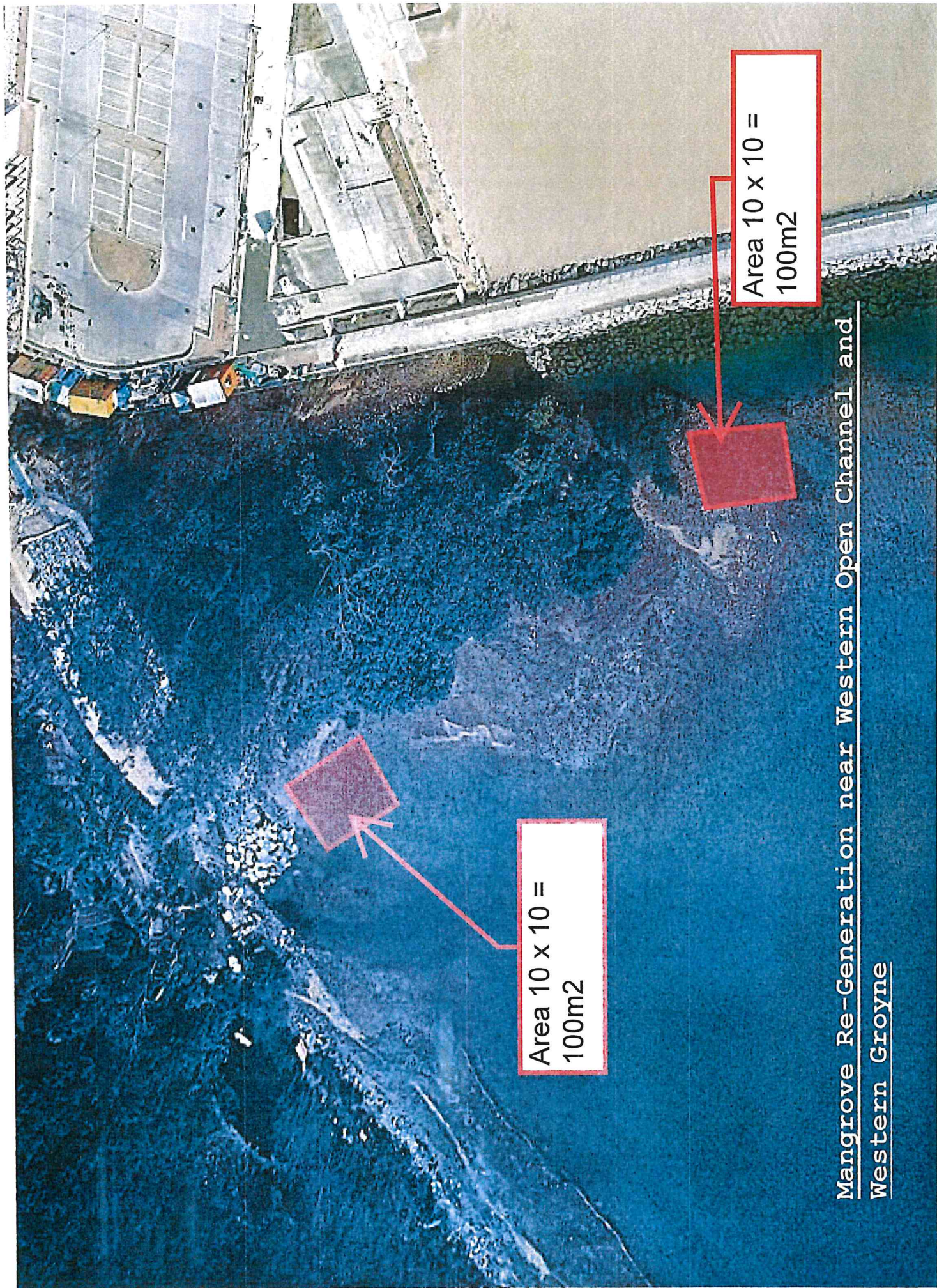
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Appendix 2



PLANTING MATRIX FOR
MANGROVE MIX PLANTING

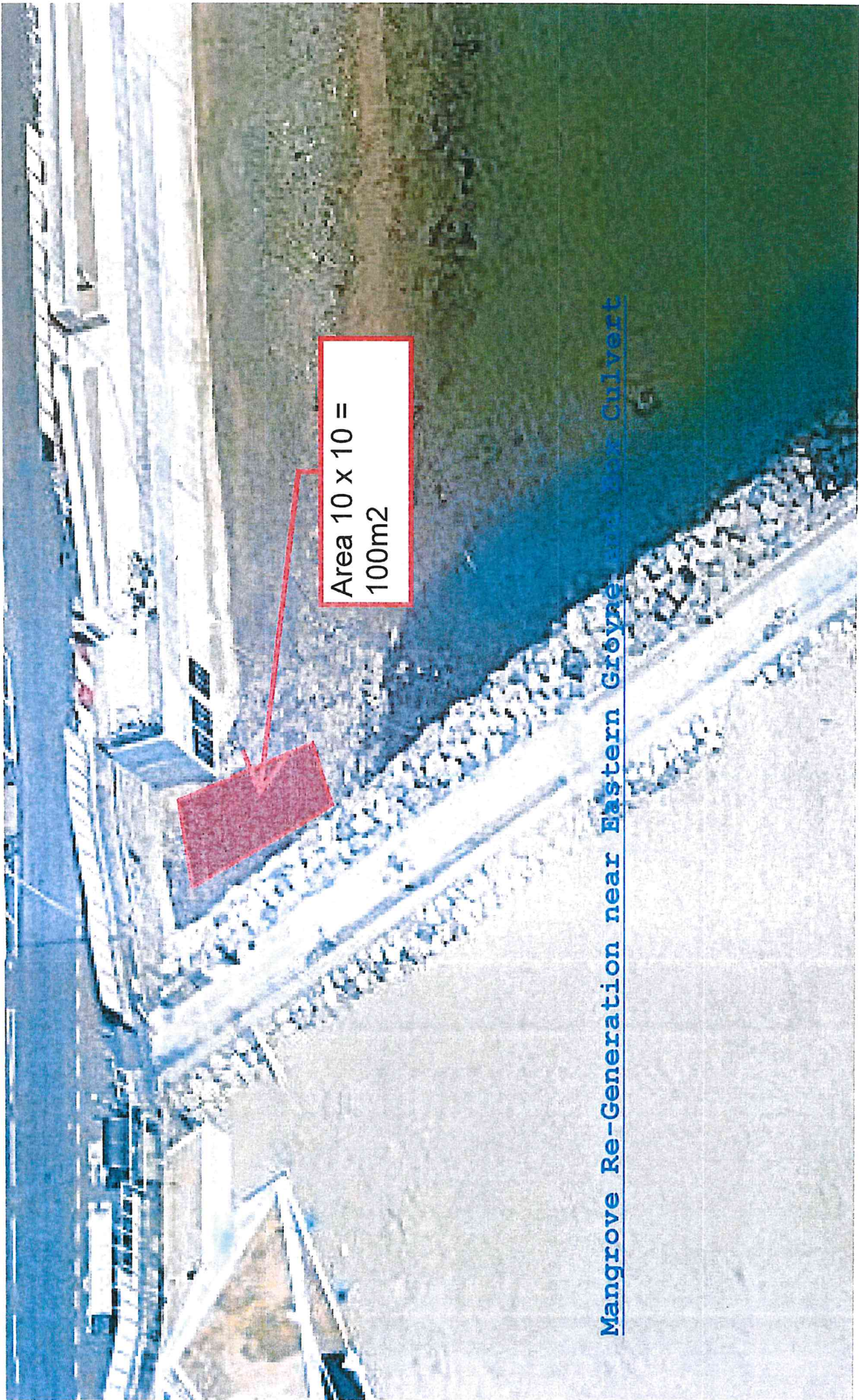
CODE	NAME	QTY
1	Avicennia Marina	127
2	Aegiceras Corniculatum	127
3	Kandelia Obovata	128



Area 10 x 10 =
100m²

Area 10 x 10 =
100m²

Mangrove Re-Generation near Western Open Channel and Western Groyne



Area 10 x 10 =
100m²

Mangrove Re-Generation near Eastern Groynes and Box Culvert

Appendix 3

NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETRES.
 2. ALL CO-ORDINATES REFER TO KING LONG.
 3. GEODETIC DATUM 1980 AND ARE IN METRES.

LEGEND:
 - - - - - SITE BOUNDARY
 [Pattern] PORTION A
 [Pattern] PORTION B
 [Pattern] PORTION C

NO.	DATE	DESCRIPTION	DESIGNED BY	DATE
REVISION				
1		DESIGNED	A. H. CHENG	17.04.2012
2		DRAWN	S. P. LEUNG	27.04.2012
3		REVISED	S. P. LEUNG	27.04.2012
4		CHECKED	T. W. POON	27.04.2012
5		APPROVED		

STAGED
 1:500
 DATE 27.04.2012

drawing no. 017/2012/05
 title no. _____
 project no. 524816
 contract _____

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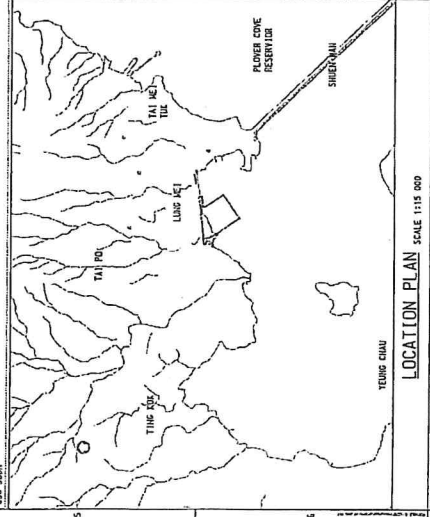
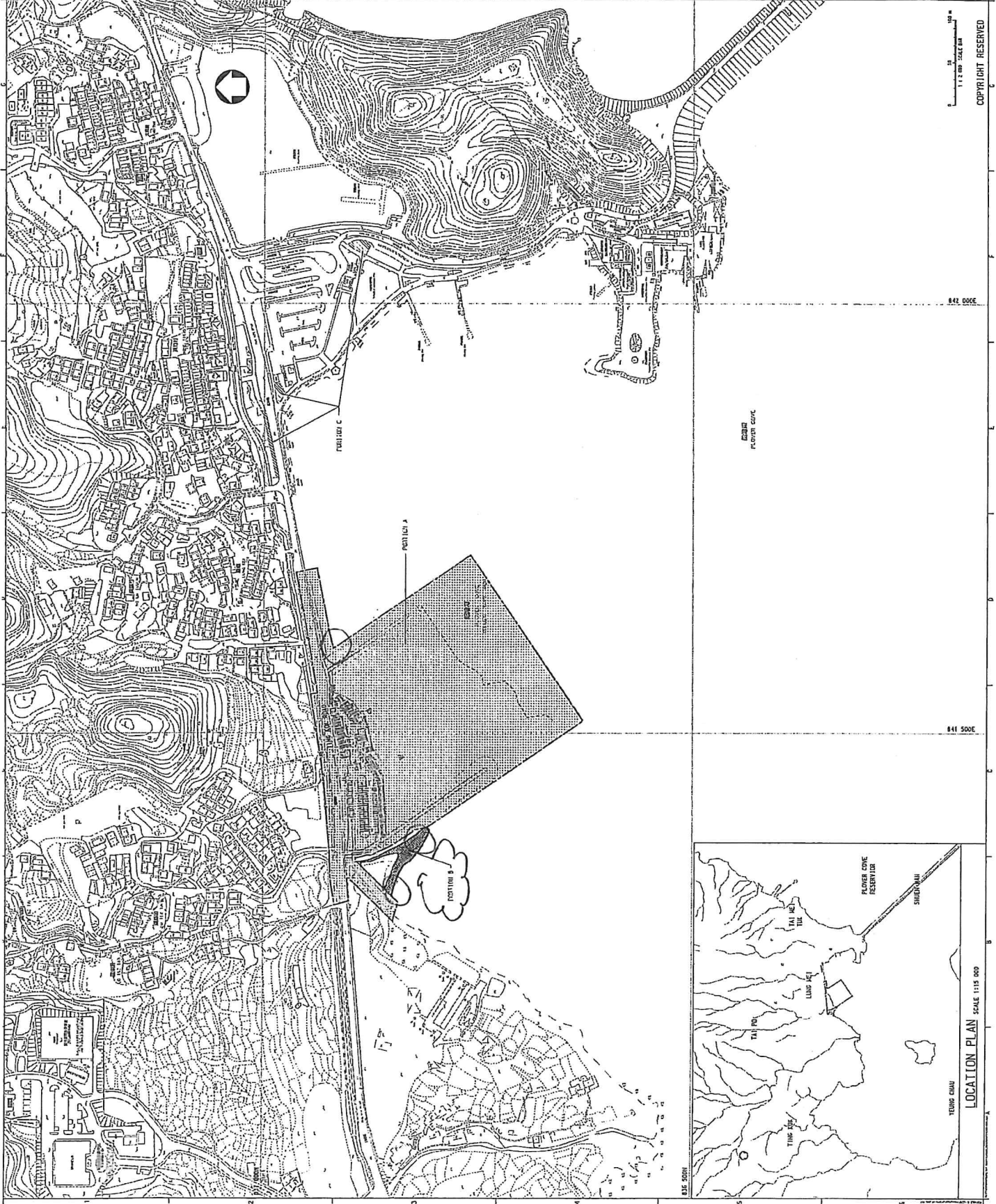
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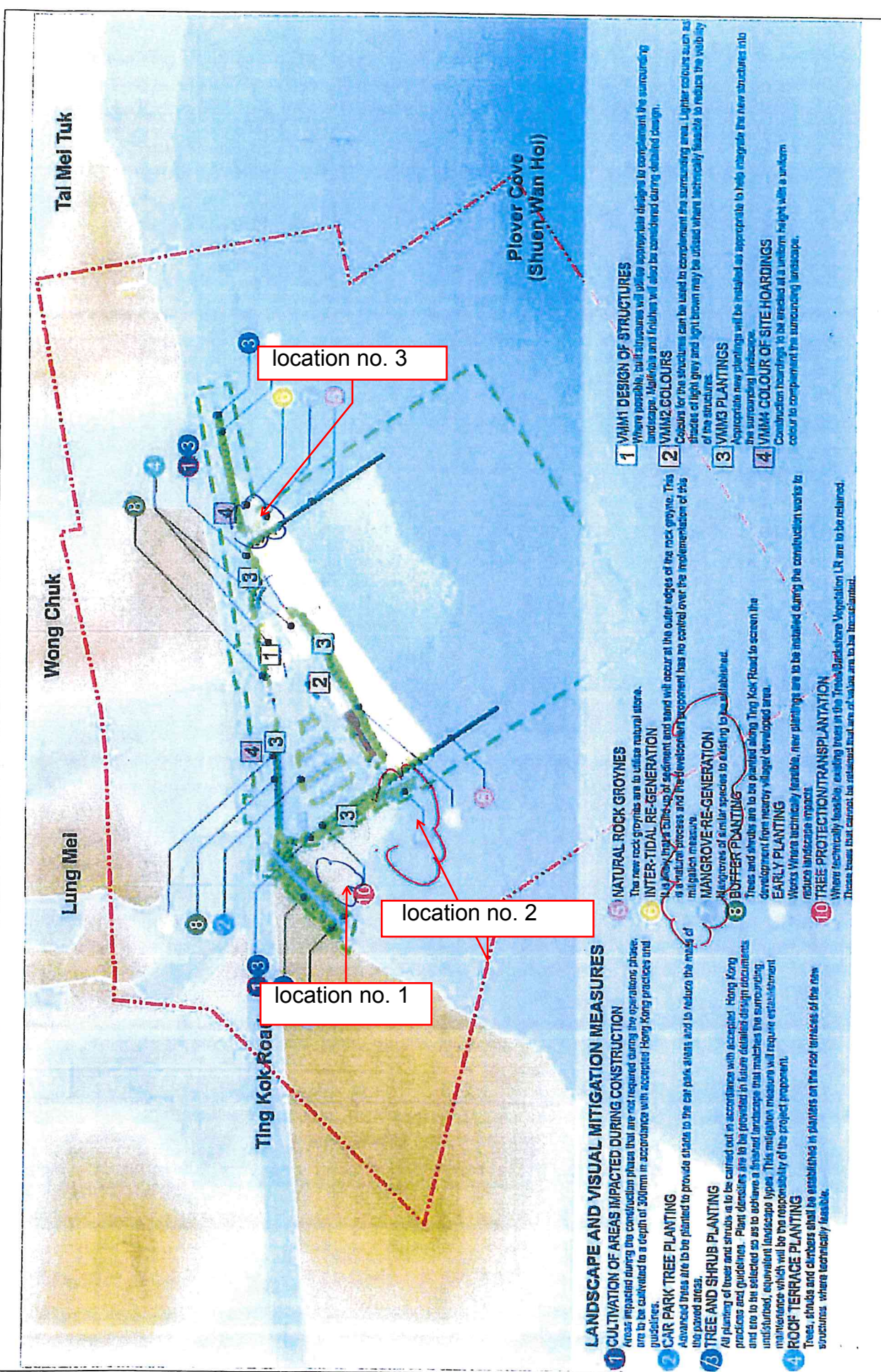
PORTIONS OF THE SITE

sheet 1 of 2
 PW-1205-003

office PORT WORKS DIVISION
 CIVIL ENGINEERING OFFICE

CEDD
 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT





LANDSCAPE AND VISUAL MITIGATION MEASURES

- 1 CULTIVATION OF AREAS IMPACTED DURING CONSTRUCTION**
Areas impacted during the construction phase that are not required during the operations phase, are to be cultivated to a depth of 300mm in accordance with accepted Hong Kong practices and guidelines.
- 2 CAR PARK TREE PLANTING**
Advanced trees are to be planted to provide shade to the car park areas and to reduce the impact of the paved areas.
- 3 TREE AND SHRUB PLANTING**
All planting of trees and shrubs is to be carried out in accordance with accepted Hong Kong practices and guidelines. Plant densities are to be provided in future detailed design documents and are to be selected so as to achieve a finished landscape that matches the surrounding undisturbed, equivalent landscape types. This mitigation measure will require establishment maintenance which will be the responsibility of the project proponent.
- 4 ROOF TERRACE PLANTING**
Trees, shrubs and climbers are to be established in planters on the roof terraces of the new structures, where technically feasible.
- 5 NATURAL ROCK GROYNES**
The new rock groynes are to utilize natural stone.
- 6 INTER-TIDAL RE-GENERATION**
Any new higher build-up of sediment and sand will occur at the outer edges of the rock groyne. This is a natural process and the development component has no control over the implementation of this mitigation measure.
- 7 MANGROVE RE-GENERATION**
Remnants of a similar species to existing to be established.
- 8 BUFFER PLANTING**
Trees and shrubs are to be planted along Ting Kok Road to screen the development from nearby village developed area.
- 9 EARLY PLANTING**
Works where technically feasible, new plantings are to be installed during the construction works to reduce landscape impacts.
- 10 THREE PROTECTION/TRANSPLANTATION**
Where technically feasible, existing trees in the Ting Kok Road Vegetation LR are to be retained. Those trees that cannot be retained outside of works area to be transplanted.

- 1 VMM1 DESIGN OF STRUCTURES**
Where possible, building facades will utilize appropriate designs to complement the surrounding landscape. Materials and finishes will also be considered during detailed design.
- 2 VMM2 COLOURS**
Colours for the structures can be used to complement the surrounding area. Lighter colours such as shades of light grey and light brown may be used where technically feasible to reduce the visibility of the structures.
- 3 VMM3 PLANTINGS**
Appropriate new plantings will be installed as appropriate to help integrate the new structures into the surrounding landscape.
- 4 VMM4 COLOUR OF SITE HOARDINGS**
Construction hoardings to be erected at a uniform height with a uniform colour to complement the surrounding landscape.

	CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	 Halcrow China Ltd.	 Environmental Resources International as sub-consultant	Agreement No: CE 59/2005(EP)	Figure Title: DEVELOPMENT OF A BATHING BEACH AT LUNG MEI, TAI PO	ENVIRONMENTAL IMPACT ASSESSMENT REPORT	FIGURE 10.19
				Project No:	Scale: 1:2500 @ A3	Rev: 2	
				Designer: SL	Checker: SL	Date: 31/05/2007	

Appendix 4

Development of a Bathing Beach at Lung Mei, Tai Po

7.2.3.9 Post-Translocation Monitoring

After translocation is completed, the reception site shall be monitored regularly by the qualified Fish Specialist over a period of one year, following the same survey methodology for the pre-translocation monitoring.

The Post-translocation Monitoring Report shall be submitted monthly which shall present findings of all seahorse surveys undertaken in the reporting month. Each monthly Post-translocation Monitoring Report shall be submitted within two weeks of completion of the last seahorse survey in the reporting month.

7.2.3.10 Post-construction Monitoring

Post-construction monitoring shall be undertaken at the installed shark net during the maintenance period of the Project. The shark net shall be inspected by the qualified Fish Specialist using SCUBA to search for the presence of any seahorse species. Monitoring shall commence three months after installation of the shark net. Quarterly monitoring shall be undertaken until the end of the maintenance period of the Contract. A Quarterly Post-construction Monitoring Report shall be submitted within two weeks of completion of the quarterly monitoring survey to present ecological information of the seahorse found, if any, along the shark net.

7.3 Construction Phase

For the mitigation measures and monitoring requirement to minimise the water quality impact to the marine ecology during the construction phase of the Project, details should be referred to *Appendix E*.

Good construction site practices (*Appendix E*) should be adopted to minimise the potential ecological impacts during the construction phase of the Project.

7.4 Operational Phase

Due to the loss of some mangrove plants and seedlings recorded within the Proposed Beach Development, EIA has recommended mangrove seedling planting should be implemented before the operation of the beach. The mangrove seedling planting location is proposed along the diverted eastern box culvert (Figure 10.19 of EIA Report Section 10) with a total of approximately 382 mangrove seedlings to be provided. The planting mix is proposed to be at a ratio 1:1:1 for *Aegiceras corniculatum*, *Avicennia marina* and *Kandelia obovata*. Detailed mangrove planting proposal providing information of planting methodology, recipient site, planting species and mix, implementation programme, post-planting monitoring and personnel involved shall be submitted to and approved by EPD and AFCD. Mangrove seedling planting would be undertaken and supervised by a suitably qualified botanist/horticulturist.

After planting, 1 year monitoring will be undertaken to check the performance and health conditions of the planted individuals on a monthly basis. Remedial actions will

Development of a Bathing Beach at Lung Mei, Tai Po

be discussed with AFCD in the event of unsuccessful mangrove seedling planting and follow an approved Event and Action Plan as indicated in *Table 7.1*.

Development of a Bathing Beach at Lung Mei, Tai Po

Table 7.1 Event and Action Plan for Mangrove Seedling Planting

Monitoring Criteria	Event	Action	
		Environmental Team Leader/ Environmental Manager (employed by CEDD)	CEDD
Mangrove Seedling Survival	More than 25% of mortality of mangrove seedling recorded during the establishment of planting.	1. Notify CEDD and check with horticulturist to find out the cause of the event(s).	1. Identify and report the cause(s) of the event.
		2. Undertake bi-weekly monitoring to observe the growth performance of the seedling. The normal monitoring schedule will be resumed if the cause(s) of the event have been identified.	2. Notify relevant government departments (ie EPD and AFCD).
	More than 50% of mortality of mangrove seedling recorded during the establishment of planting.	1. Notify CEDD and check with horticulturist to find out the cause of the event(s).	1. Identify and report the cause(s) of the event.
		2. Undertake weekly monitoring to observe the growth performance of the seedling. The normal monitoring schedule will be resumed if the cause(s) of the event have been identified.	2. Submit proposals to relevant government departments (ie EPD and AFCD) for remedial action and implement the action to solve the event.