Contract No. EP/SP/66/12

Integrated Waste Management Facilities, Phase 1

吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Landscape and Visual Plan

(Clause 2.11, Further Environmental Permit No. FEP-01/429/2012/A)

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CONTENTS

1 INTRODUCTION 4

1.1 Background 4
1.2 Scope of this Landscape and Visual Plan 5
1.3 Abbreviations 6

2 LEGISLATION, STANDARDS AND GUIDLEINES 7

2.1 Government Technical Circulars, Publications, Guidelines and Reports 7
2.2 Ordinances and Regulations 7

3 BASELINE REVIEW 8

4 DETAILED TREE PRESERVATION, TRANSPLANTING AND FELLING PROPOSALS, COMPENSATORY PLANTING PROPOSAL 9

4.1 Tree Preservation, Transplanting and Felling Proposals 9
4.2 Master Landscape Layout Plan 9

5 LANDSCAPE WORKS TO BE CONSTRUCTED UNDER THIS PROJECT 10

5.1 Landscape Design Considerations 10
5.2 Landscape Area at Grade Level (See Annex B) 10
5.3 Landscape Areas Above Grade Level (See Drawing nos. IWMF1-LVP-01 and IWMF1_10-130_990_000250 in Annex B) 11
5.4 Hard Landscaping 11
5.5 Soft Landscape (See Annex B, Figures 5.1 and 5.2) 12
5.6 Vertical Greening (See Annex B and Figures 6.2 and 6.3) 14
5.7 Roof Greening 14

6 AESTHETIC DESIGN OF THE BUILDING STRUCTURES, CHIMNEY AND BREAKWATER 24

6.1 Human Architectural and Landscape Schemes will be developed to blend into the Environment, the inspiration being provided by the Shek Kwu Chau Coastline 24
6.2 Subtle Variegation in Colours of the Façades to Rhyme with Nature 25
6.3 Variety in Form of the Façade to Rhyme with Nature 25
6.4 Vertical Greening to be an Integral Part of the Architecture 26
6.5 Borrowed Views of the Surrounding Geography and Landscape Provide Visual Connections to Shek Kwu Chau 27
6.6 Avoidance of Industrial Impression in Chimney Design 28
6.7 Aesthetic design of breakwater 29
6.8 Aesthetic design building structures 32
6.8.1 Main Process Building 32
6.8.2 Materials Treatment Building and Water Treatment Plant Building 34
6.8.3 Administration Building 36
6.8.4 Turbine Hall, ACC and CCCW 36
6.8.5 IWMF Substation Building 37
6.8.6 Reception Pavilion 38

7 LANDSCAPE AND VISUAL IMPACT AND MITIGATION MEASURES 40

7.1 Landscape and Visual Design Measures in EIA & EM&A 40
7.2 Monitoring and Audit 47
7.3 Implementation Programme 47
7.4 Maintenance and Management Schedule 52
7.5 Maintenance Responsibilities for Landscape Works 54

8 CONTAINER STORAGE 55

9 CONCLUSION 57

APPENDICES

Annex A

Part 1 Photographs of existing reference Landscape Resources, Landscape Character Area and Visual Sensitive Receivers

Annex A

Part 2 Updated Photomontages presenting the updated Visual Impacts

Annex B Preliminary Landscape Masterplan & Landscape Design for Water Feature including Design Drawings

Annex C Seawall and Breakwater Details

Annex D Comments and Responses

1 INTRODUCTION

1.1 Background

The Environmental Protection Department (EPD) Contract No. EP/SP/66/12, "Integrated Waste Management Facilities (IWMF) Phase 1", was awarded to Keppel Seghers–Zhen Hua Joint Venture (the JV) in November 2017 under a design-build-operate (DBO) arrangement. The IWMF comprises: (a) an advanced thermal incineration plant with design capacity of 3,000 tonnes per day (tpd) and (b) a mechanical sorting and recycling plant with design capacity of 200 tpd. The non-recyclables sorted from the mechanical plant will be sent to the thermal incineration plant for further treatment. Under any conditions, the total MSW feeding to the thermal incineration plant and the mechanical plant will not exceed 3,000 tpd. The project will be located on an artificial island to the south of Shek Kwu Chau (SKC) as shown in **Figure 1-1**.

Arcadis Design & Engineering Limited (Arcadis) including their sister company ACLA were engaged by the JV as their designer to undertake the design of the civil, structural, geotechnical, MEP, landscape architecture and marine works. Subconsultant to Arcadis, DLN Architects (DLN) have been engaged to undertake architectural design, while subconsultant Adrian L. Norman Limited (ALN) has also been engaged to undertake the detailed landscape architectural design.

A full list of Figures is included at the back of the Report, with the some of the rendering figures being "Artist's Impressions" as the design are being continually developed and refined.

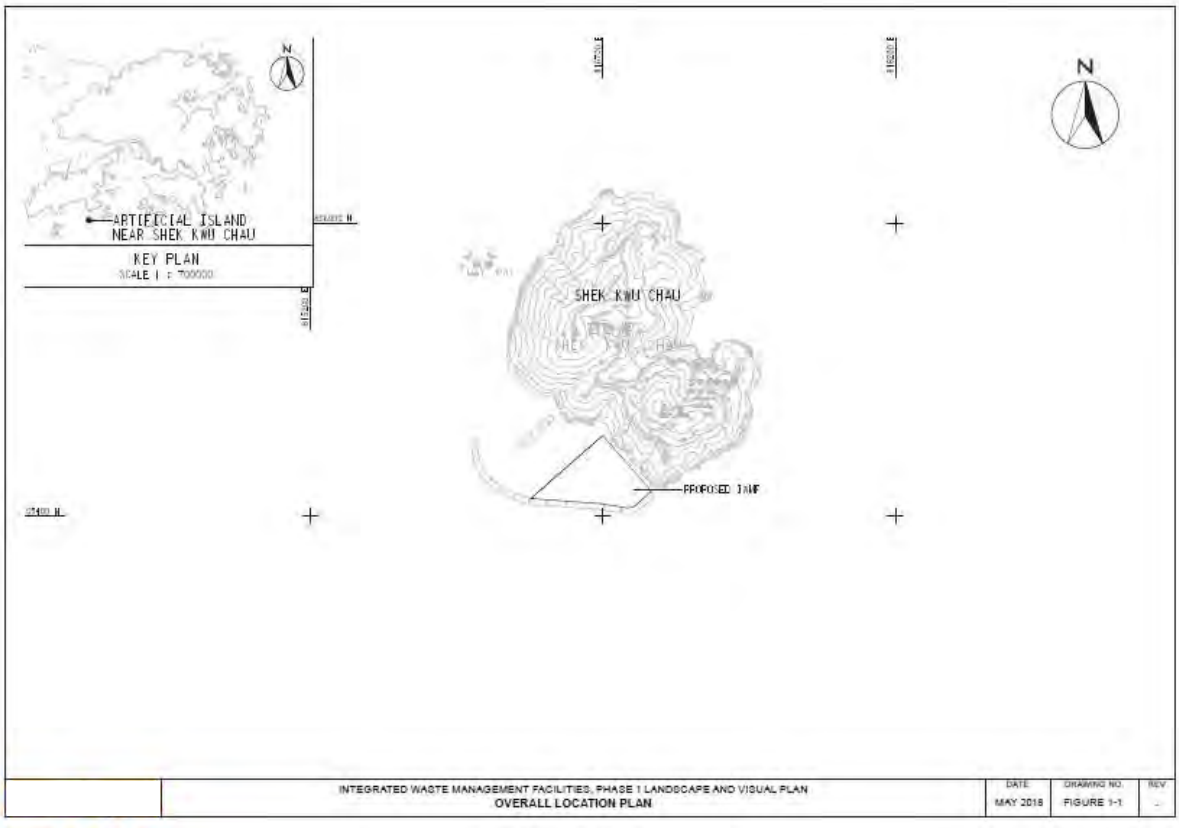


Figure 1.1 Overall Site Configuration / Layout

1.2 Scope of this Landscape and Visual Plan

This Landscape and Visual Plan is prepared in accordance with Clause **2.11** of EP No. **FEP-01/429/2012/A**. The Landscape and Visual Plan for the entire Project is required to address the following aspects: -

(i) aesthetic architectural designs for building structures, chimney and breakwater;
(ii) locations, size, number and plant species of trees to be transplanted and their final transplanting locations;
(iii) locations, size, number and plant species to be felled;
(iv) locations, size, number and plant species to be provided or compensated; and
(v) implementation programme, maintenance and management schedules.

The site is currently un-reclaimed foreshore adjacent to Shek Kwu Chau. No existing landscaping plant species will therefore be affected by the works associated with the IWMF Phase 1 development.

This report also presents the landscaping design concept for the development. This Plan will be developed further during the ongoing detailed design of the Project and may subject to further changes or variations as requested by EPD. A general overview of the site is presented below in **Figures 1.2 and 1.3**. Full details of the proposed Landscape Masterplan are included in **Annex B**. The landscape masterplan includes a full description of the proposed landscaping features including large scale drawings (Nominally not less than 1:1000 and mainly 1:200 for the whole site.)



Figure 1.2 General overview of the IWMF development and adjacent Shek Kwu Chau Island from the South.



Figure 1.3 General overview of the IWMF development and adjacent Shek Kwu Chau Island from the West.

1.3 Abbreviations

Government Bureaux, Departments and Related Organisations / Authorities

EPD	Environmental Protection Department

Locations / Places

IWMF	Integrated Waste Management Facilities
SKC	Shek Kwu Chau

Others

DBO	Design-build-operate
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
FEP	Further Environmental Permit
LCA	Landscape Character Area
LR	Landscape Resource
MT	Mechanical Treatment
VSR	Visual Sensitive Receiver
WTP	Water Treatment Plant

2 LEGISLATION, STANDARDS AND GUIDLEINES

2.1 Government Technical Circulars, Publications, Guidelines and Reports

Government Technical Circulars, Publications, Guidelines and Reports related to Landscape Design include:-

- Practice Notes for Authorized Persons and Registered Structural Engineers and Registered Geotechnical Engineers, APP-152: Sustainable Building Design Guidelines
- Protection of natural streams/rivers from adverse impacts arising from construction works (PNAP No. 295)
- GEO Publication No. 1/2011: Technical Guidelines on Landscape Treatment for Slopes
- ETWB TCW No. 13/2003: Guidelines and Procedures for Environmental Impact Assessment of Government Projects and Proposals
- DEVB TC(W) No. 5/2017: Community Involvement in Planting Works
- DEVB TC(W) No. 6/2015: Maintenance of Vegetation and Hard Landscape Features
- DEVB TC(W) No. 5/2020: Registration and Preservation of Old and Valuable Trees
- ETWB TCW No. 36/2004 The Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS)
- DEVB TC(W) No. 02/2012 Allocation of Space for Quality Greening on Roads
- DEVB TC(W) No. 03/2012 Site Coverage of Greenery for Government Building Projects
- DEVB TC(W) No. 02/2013 Greening on Footbridges and Flyovers
- DEVB TC(W) No. 4/2020 Tree Preservation
- Technical Memorandum on Environmental Impact Assessment Process (EIA Ordinance, Chapter 499, section 19) 1st ed, September 1997
- EIAO Guidance Note Nos. 1/2010, 3/2010, 5/2010 and 8/2010
- A Guide to the Environmental Impact Assessment Ordinance, 1999

2.2 Ordinances and Regulations

Ordinances and Regulations related to Tree Survey and Tree Risk Assessment include:

- Forests and Countryside Ordinance (Cap. 96) and its subsidiary legislations
- Plant Varieties Protection Ordinance (Cap. 490)
- Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)

3 BASELINE REVIEW

A baseline review has been undertaken prior to the commencement of the construction works, the purpose of the baseline review is as follows:-

- To check the status and any changes to the baseline Landscape Resources, Landscape Character areas and Visually Sensitive Receivers (VSRs) within and immediately adjacent to the works areas;
- To determine whether amendments to the design of the landscape and visual mitigation measures will be required; and
- To recommend any necessary amendments to the design of the landscape and visual mitigation measures due to the above changes, if any.

The baseline review survey was conducted between February and April 2018. The review survey was directed towards assessing the Landscape Resources, Landscape Character Area and the impact on Visually Sensitive Receivers (VSRs) as identified in the EIA Report. The current condition of the site, the VSRs and their outlook and current conditions have been identified and are presented in photographs as attached in **Annex A Part 1**. The views presented correspond to those views applicable to the VSRs and are as presented in the approved EIA.

Photomontages depicting the proposed changes to the views from the VSRs are presented in **Annex A Part 2.**

In general, a comparison of the current conditions as presented in photographs included in **Annex A Part 1** of the assessment and the updated proposed changes as presented in the photomontages included in **Annex A Part 2** can be undertaken. It can be concluded that no significant changes will be observed from any of the VSRs. It is important to note that the site is remote and the VSRs identified in the EIA are located at some distance from the site. It can therefore be concluded that the visual impact of the site and its landscaping will have only a distant and therefore very small impact on the visual outlook from the VSRs.

4 DETAILED TREE PRESERVATION, TRANSPLANTING AND FELLING PROPOSALS, COMPENSATORY PLANTING PROPOSAL

4.1 Tree Preservation, Transplanting and Felling Proposals

The reclamation area to be occupied by the IWMF Phase 1 development is isolated from SKC island. The site is currently un-reclaimed and no part of the IWMF site extends above low tide level at the present time. There will therefore be no direct impact on existing trees. As a consequence of the marine nature of the site no Tree Preservation, Transplanting and Felling Proposal will be required. Similarly, no Old and Valuable Trees will be affected by the proposed development, the site currently being covered by the sea.

The project land allocation includes a series of offsite short term works areas for use by the JV during the construction works phase. It is confirmed that these areas have already been cleared of trees under previous allocation for other projects. At the time of handover of these parcels of land it can be confirmed that no tree felling or transplanting of trees will be required.

4.2 Master Landscape Layout Plan

The proposed landscaping for the site is presented in the master landscape layout plan and a series of large-scale detailed landscaping plans as presented in **Annex B.** The location, size, number and plant species to be provided as part of the landscaping works are illustrated and described in the master landscape layout plan as included in **Annex B**.

5 LANDSCAPE WORKS TO BE CONSTRUCTED UNDER THIS PROJECT

5.1 Landscape Design Considerations

The landscaping developed for the IWMF will address the following concerns in terms of the landscape design:

1 The need for effective pedestrian and vehicle circulation within the development.

2 Security of the site should form an integral part of the design in terms of access control and ensuring visibility of the at grade areas.

3 Landscaped areas at grade and on upper levels should be accessible and safe for public and staff to promote a comfortable and welcoming environment.

4 Double structural slabs under planters will be considered where necessary to ensure no water leakage to the floors of buildings underneath.

5 The height of parapet walls and railings at roof levels will be carefully considered to avoid objects falling and to avoid adverse or potentially dominating visual effects.

6 Maintenance requirements should be kept to a practical minimum without compromising the operation of the facilities and their aesthetic design.

7 The choice of hard landscape materials (i.e. paving, pergolas, seating, etc.) should take into account sustainability, recyclability and durability.

8 Planting should be varied and stimulating, while endeavouring to be sustainable while not being unduly maintenance-intensive.

9 The landscaping should be designed to reduce the visual impact of the sea defence works and particularly the extensive seawalls and breakwater surrounding the site.

10 For a summary table of showing the approximate numbers of new trees, areas of shrubs, ground cover and vertical greening proposed, refer to Table 5. Below.

5.2 Landscape Area at Grade Level (**See Annex B**)

The site will be divided into a discrete Visitor Zone and an Operation Zone. The Visitor Zone will be located along the southwestern side of the site and will follow a parallel route along the shoreline to enhance the visual impact of the tall seawalls. The Operation Zone will be located towards the northern part of the island and will remain out of bounds but visible for visitors for reasons of operational security and safety. A “Dense Forest Journey” has been selected as the theme for the Visitor Zone, aiming to provide a rich green environment for visitors and to improve the microclimate of the island. The theme has been selected to mitigate the visual impact associated with the sea defences which have necessarily been robustly designed to ensure the security of the facility from potentially severe wave action and flooding during typhoon events.

The Visitors’ Journey will start from the Passenger Ferry Pier and the associated Reception Pavilion located at the northwestern corner of the shoreline. Following security clearance visitors will be directed to a shuttle bus which will travel along a dedicated visitor vehicle access route along the sea wall towards the east. Visitors will enjoy the sea view from the shuttle bus, with a textured and sympathetically coloured wave themed mural along the landward side of the road, including a welcoming reception at the Administration Building with an adjacent water feature located close to the arrival as the bus turns the corner to the Administration Building. The Administration Building will include reception facilities at ground floor level and educational facilities as part of a Visitor Experience, including presentation spaces and views from galleries into the

waste management processes at the operational floors within the Administration Building. The design has been developed to enhance the sense of arrival before entering the Viewing Gallery and presentation/ educational spaces within the Administration Building.

After finishing their visit, visitors can either return to the visitor pavilion by the shuttle bus or alternatively take a short gently descending walk across the pedestrian linkage from the 2/F of Administration Building roof garden. This arrangement will provide a chance for visitors to enjoy the outdoor environment. A Skybridge will start from the roof garden and will pass over/through the ”Dense Forested and Landscaped Area” along a “Tree Top Walk”, which will include a “Viewing Platform” to enjoy the panoramic sea view contrasting with the plant buildings on the landward side of the path. A gentle slope down the sheltered side of the sea wall through the woodland pathway will provide a lush greened experience. A water feature towards the end of the journey will be used to demonstrate the effective reuse of treated water from the facility.

A row of tree planting with dense foliage has been introduced along the northeast edge of the development to screen the road and mitigate visual impact to VSRs from SKC island.

5.3 Landscape Areas Above Grade Level (**See Drawing nos. IWMF1-LVP-01 and IWMF1_10-130_990_000250 in Annex B**)

Accessible green roofs within this project will be designed to act as an elevated park feature. This is intended for use by operations staff and visitors. This feature will act as a garden, with shrubs and small tree planting, pathways, seating and shade structures. Roofs will be selectively opened to visitors for security reasons and will be provided with irrigation, drainage and root protection layers to optimise the vegetative coverage.

The roof above the waste reception hall within the Main Process building will however be provided with comprehensive greening. The turbine hall, CCCW building and Air cooled condensers comprise plant and equipment enclosures. These structures will not be equipped with green roofs to avoid a conflict with the plant and equipment mounted on the roofs. Green roofs will be provided for all other building structures except in areas affected by the helicopter landing pad and road access. The helicopter landing pad has been located to comply with the specified flight path constraints and will be surrounded by lawn style green roof areas. The drawings have been annotated to identify the various building functions.

As a part of the visitor path, the roof garden of the Process Building will demonstrate the use of both treated water and harvested rainwater for irrigating the coastal plants which will be selected for their hardiness and suitability for the location. The display garden will be enhanced by exhibits and interactive features for educational purposes.

Various levels of roof garden at the Mechanical Treatment Plant Building will facilitate viewing along the gallery corridor. Tree planting will be restricted so as not to interfere with the emergency helicopter landing platform.

A Second Floor of the roof garden at the Administration Building will provide the connection with the Skybridge and the connection with the pedestrian link to the Ferry Pier.

5.4 Hard Landscaping

The landscape design within the visitor route will cater for visitors having different levels of mobility. Ramps and barrier free access design will be incorporated throughout the whole length of the visitor pathway. Sensory elements such as tactile, auditory, olfactory and visual enhancement to facilitate use by visitors with differing abilities and age groups. Specific consideration has been

given to the whole spectrum of both visitors and operations staff in developing the landscape features.

Hard landscape materials selections will emphasise durability, ease of maintenance and sustainability (i.e. paving, pergola, seats, etc.). Adequate slip resistance (of R12 or equivalent) will be specified throughout to ensure users' safety. Hard landscape materials have been chosen specifically for ease of maintenance and to be readily available in the local market. (**See Annex B**)

5.5 Soft Landscape (**See Annex B, Figures 5.1 and 5.2**)

The design theme for the landscape is "Dense Forest". The planting design has considered the special conditions associated with the coastal environment. Coastal buffer planting such as *Syzygium jambos* are proposed due to their high salinity tolerance and their ability to thrive in shoreline conditions.

The planting palette has been selected using grouping into 4 distinct and different planting zones, namely the Woodland Mass Planting, Coastal Green Buffer, Roof Garden Ornamental Planting and Leisure Gardens (see Drawing No. IWMF-LVP-02 in Annex B).

The main palette type will comprise Woodland Mass Planting, which will be a mixture of native tree species with high salinity tolerance that will be able to thrive in sea shore conditions. Native trees naturally fitting with the local environment will be selected to be supportive of the local ecology. Dense foliage of Woodland Mass Planting will also serve as a visual barrier to mitigate visual impacts, in particular along the southern and north-eastern periphery of the project site. Figures 5.1 and 5.2 showcase the East and West Courtyards whereby the design theme are illustrated.

Woodland Mass Planting (also known as "Dense Forest" in the AIP submission) is located within the on-grade large open spaces behind the seawall in the east and west courtyard areas. The planting of trees in this area is relatively more "dense" and "woodland" type trees provide a "forest-like" character compares with the remaining 3 planting zones.

The "Coastal Green Buffer" as the name implies are beside the coast and acts as "buffer" planting. This refers to the row of Hibiscus tiliaceus trees located along a northwest and southeast direction facing Shek Kwu Chau Island.

Roof Garden Ornamental Planting as the name implies are located within the "Roof" podium planters.

Leisure Gardens are located in the more open "less dense forest" area at-grade within the East and West Courtyard area (near the ponds).



Figure 5.1 East Courtyard

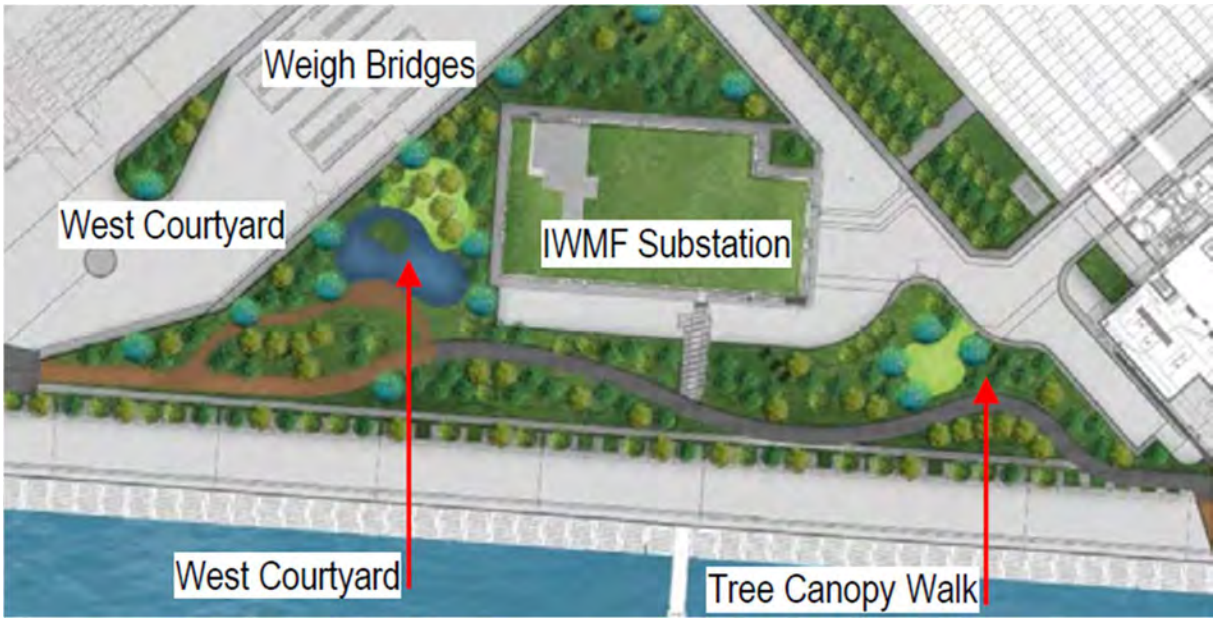


Figure 5.2 West Courtyard

5.6 Vertical Greening (**See Drawing nos. IWMF1_14-136_990_124101, IWMF1_14-136_990_124102, IWMF1_14-136_610_014201, IWMF1_14-136_500_114201, IWMF1_14-136_500_114202, IWMF1_14-136_500_114203, IWMF1_14-136_700_114201, IWMF1_14-136_700_114202, IWMF1_14-136_700_014203, IWMF1_14-136_300_114201 , IWMF1_14-136_300_114202 , IWMF1_14-136_300_114203, IWMF1_14-136_500_114201, IWMF1_14-136_800_114202, and IWMF1_14-136_800_114203 in Annex B)**

Vertical greening will be provided on the façades of the buildings and has been selected to maximize environmental and amenity values. The location of vertical greening will take into account façade orientation and the sun path especially for the wintertime to allow a variety of plant species choices and healthy growth of the vegetation.

The vertical greening system will integrate planter boxes into the building façade. These modular panels will be of standardized size and will provide an overall green and lush appearance for the whole site. Planting species with wind and salinity tolerance have been chosen for their low maintenance requirements.

5.7 Roof Greening

The selected vegetated green roof systems have been selected to reduce storm water runoff, encourage lower cooling costs and to enhance the outlook of the project. Both inaccessible and accessible green roofs will be incorporated into this project.

Inaccessible green roofs will be accessible for periodic maintenance. These will have 0.3m planting soil allowing the growth of groundcover. Automatic irrigation systems will be provided for low maintenance and efficient watering. Inaccessible roofs will be located at the Reception Pavilion, IWMF Substation and the gallery walkway.

A green roof will not be incorporated in the Main Turbine Hall as the roof of the building will need to accommodate process related pipework and equipment. To ensure the effective air exchange, air cooled condensers building and turbine hall buildings will also not incorporate green roof designs.

Green roof is provided on top of the Bunker portion of the Process Building, rather than the whole of the Process Building. Careful considerations have been made by taking into account the various operational requirements to enable the efficiency and function of the IWMF. For instance, therein lies multiple ventilation openings, access openings, smoke outlets, etc. on top of the roof to provide a coherence and efficient roof greening system. These ventilation openings will also potentially affect the healthy growth of the surrounding vegetation by the high temperature that they induce during operation. Moreover, the contractual requirement that the waste crane within the building to have the ability to be removed (for operational/maintenance/replacement functions) would mean the roof has to be sufficiently functional and flexible to be dismantled, in order to facilitate the removal such a large piece of equipment. Nevertheless, it is noted that the overall site coverage of greenery meets the contractual requirement, including the roof greening.

For details of accessible green roofs, refer to **Section 5.3** above. 0.3m, 0.6m and 1.2m soil depths will be provided for groundcover, shrub and tree planting respectively.

Tables 5.1 and 5.2 below provide a snapshot of the proposed greening information.

Table 5.1 Proposed Greening Summary Table

Item	Description	Quantity
1	Numbers of Trees	595 nos.
2	Area of Shrub and Ground Cover	27,186 m^2
3	Area of Vertical Greening	12,693 m^2

Table 5.2 Proposed Greening Tables (Extracts from Annex B)

Landscape Master Plan

Trees

Code	Botanical Name	Chinese Name	Spacing (mm)	Height (mm)	Spread (mm)	DBH (mm)	Native / Exotic	QTY (Nos.)
AF	Alanthus fordii	臭椿屬種	Min. 2000	4000	2000	100	N	9
BB	Bauhinia x blakeana	洋紫荊	Min. 2000	4000	2000	100	N	34
BJ	Bischofia javanica	秋楓	Min. 2000	4000	2000	100	N	18
BV	Bauhinia variegata candida	宮粉羊蹄甲	Min. 2000	4000	2000	100	E	43
CB	Cinnamomum burmannii	陰香	Min. 2000	4000	2000	100	N	69
CC	Cinnamomum camphora	樟	Min. 3000	5000	3000	150	N	35
CF	Castanopsis fissa	黧蒴栲	Min. 2000	4000	2000	100	N	2
CHS	Chorisia speciosa	絲木棉（美人樹）	Min. 3000	5000	3000	150	N	6
CM	Citrus maxima	柚	Min. 3000	4000	3000	100	E	1
CS	Celtis sinensis	朴樹	Min. 2000	4000	2000	100	N	9
CU	Crateva unilocularis	樹頭菜	Min. 2500	4000	2500	120	E	3
HT	Hibiscus tiliaceus	黃槿	Min. 2000	3000	2000	95	N	128
IR	Ilex rotundifolia microcarpa	小果鐵冬青	Min. 3000	5000	3000	150	N	10
JM	Jacaranda mimosifolia	藍花楹	Min. 3000	6000	3000	120	E	2
KB	Koelreuteria bipinnata	複羽葉欒樹	Min. 3000	6000	3000	150	E	11
LF	Liquidambar formosana	楓香	Min. 2000	4000	2000	100	N	1
MA	Melia azedarach	苦楝	Min. 2000	4000	2000	100	E	5
PM	Podocarpus macrophyllus	羅漢松	Min. 1500	5000-5500	1200-1500	120	N	4
PP	Pongamia pinnata	水黃皮	Min. 2000	4000	2000	100	N	3
PR	Plumeria rubra 'Acutifolia'	緬梔花	Min. 3000	3500	3000	150	E	13
SD	Sapium discolor	山烏桕	Min. 1750	3000	1750	100	N	8
SJ	Syzygium jambos	蒲桃	Min. 3000	4000	3000	120	E	7
SL	Sterculia lanceolata	假蘋婆	Min. 2000	4000	2000	100	N	62
SS	Sapium sebiferum	烏桕	Min. 2000	4000	2000	100	N	7
SSU	Schima superba	木荷	Min. 2000	4000	2000	100	N	20
TC	Tabebuia chrysantha	黃花風鈴木	Min. 2000	4000	2000	100	E	10
TM	Terminalia mantaly	小葉欖仁	Min. 2000	4000	2000	100	E	29
TR	Tabebuia rosea	紅花風鈴木	Min. 2000	4000	2000	1000	E	6
								555

Aquatics

Code	Botanical Name	Chinese Name	Height (mm)	Spread (mm)	Spacing (mm)	Native / Exotic	QTY (Nos.)
Cpa	Cyperus papyrus	紙莎草	500	300	500	E	96
Cyp	Cyperus involucratus	風車草	500	300	500	E	268
Jef	Juncus effusus	燈心草	500	300	500	N	126
Nnu	Nelumbo nucifera	荷花	300	300	600	E	68
Nsp	Nymphaea alba var. rubra	紅睡蓮	300	300	600	E	90
							554

Turf

Code	Botanical Name	Chinese Name	Height (mm)	Spread (mm)	Spacing (mm)	Native / Exotic	QTY (Nos.)
Ax	Axonopus compressus	地毯草	100	300	300	E	1280
Ec	Eragrostis curvula	彎葉畫眉草	100	300	300	E	31425
Zm	Zoysia matrella	溝葉結縷草	100	300	300	N	27275
							59980

Climbers

Code	Botanical Name	Chinese Name	Size (mm)	Spacing (mm)	Native / Exotic	QTY (Nos.)
Ea	Epipremnum aureum	綠蘿 (芋葉藤)	1000 x 4 Shoots	500	E	874
Lja	Lonicera japonica	忍冬(金銀花)	1000 x 4 Shoots	500	N	331
Tj	Trachelospermum jasminoides	絡石	1000 x 4 Shoots	500	N	1205
						2410

Bamboo

Code	Botanical Name	Chinese Name	Height (mm)	Size (mm)	Native / Exotic	QTY (Nos.)
Paur	Phyllostachys aurea	羅漢竹	2500	5 Shoot per plant @750	N	25
						25

Shrubs / Groundcovers / Ornamental Grass

Code	Botanical Name	Chinese Name	Height (mm)	Spread (mm)	Spacing (mm)	Native / Exotic	QTY (Nos.)
Ac	Asparagus cochinchinensis	天門冬	300	300	300	N	423
Ago	Acorus gramineus 'Ogon'	金葉石菖蒲	300	300	300	N	845
Am	Alocasia macrorrhizos	海芋	600	500	600	N	1614
An	Asplenium nidus	鳥巢蕨	300	300	400	N	2044
Ap	Arachis pintoi	多年生花生	200	200	250	E	5477
Api	Aslina pilulifera	水團花	300	300	400	E	227
Bc	Belamcanda chinensis	射干	400	200	300	E	1465
Bp	Brunfelsia pauciflora	大花鬱香茄科	400	400	500	E	530
Cas	Crinum asiaticum	文珠蘭	300	250	300	N	761
Cb	Calliandra brevipes	香水合歡	500	300	500	E	533
Cf	Clerodendrum fortunatum	白花燈籠	600	400	500	N	361
Ch	Calliandra haematocephals	朱櫻花	600	400	400	E	7235
Chy	Cuphea hyssopifolia	細葉萼距花	200	200	250	E	2879
Cin	Clerodendrum inerme	苦郎樹	600	400	500	N	206
Cj	Clerodendrum japonicum	赪桐	300	300	500	E	1755
Csa	Camellia sasanqua	茶梅	600	400	400	E	761
Db	Dietes bicolor	雙色野鳶尾	600	300	300	E	4480
Din	Dendranthema indicum	野菊	400	300	250	N	975
Drs	Duranta repens Sapphire Showers	藍絲金露花	600	400	500	E	5149
Ed	Ervatamia divaricata	狗牙花	600	400	500	E	1713
Ef	Eupatorium fortunei	佩蘭	300	300	300	E	2351
Fc	Fagraea ceilanica	非洲茉莉	600	600	600	E	368
Fc1	Fagraea ceilanica	非洲茉莉	1800	750	750	E	170
Fj	Fatsia japonica	八角金盤	700	500	600	E	2451
Ga	Gordonia axillaris	大頭茶	300	300	400	N	1288
Gj	Gardenia jasminoides	水梔子	600	400	500	N	2612
Hco	Hedychium coronarium	蝴蝶花	400	200	300	E	806
Hf	Hemerocallis fulva	萱草	300	200	300	E	4675
Ic	Ixora chinensis	仙丹花	300	300	300	N	1803
Icy	Imperata cylindrica 'Rubra'	白茅	300	300	300	N	1205
It	Iris tectorum	鳶尾	300	200	300	E	6226
Jm	Jasminum mesnyi	雲南素馨	600	400	500	E	626
Lar	Lepironia articulata	石龍蒻	200	200	200	E	300
Lca	Lantana camara	馬纓丹	200	200	300	E	5169
Lsa	Lythrum salicaria	千屈菜	200	200	300	E	749
Ls	Liriope spicata	山麥冬	200	200	200	N	722
Lsi	Ligustrum sinense	山指甲	600	400	500	N	787
Md	Monstera deliciosa	龜背芋	600	400	500	E	1060
Mma	Melastoma malabathricum	野牡丹	300	300	400	N	912
Ms	Melastoma sanguineum	毛菍	300	300	400	N	1859
Msg	Miscanthus sinensis 'Gracillimus'	細葉芒	500	300	300	N	1744
Nau	Nephrolepis auriculata	腎蕨	300	300	300	E	9403
Oj	Ophiopogon jaburan	麥冬 (生階段)	200	200	250	E	3419
Pa	Pennisetum alopecuroides	狼尾草	500	300	400	N	2811
Pas	Psychotria asiatica	九節	300	300	300	N	217
Pau	Phragmites australis	蘆葦	500	300	500	N	1161
Pmy	Phyllanthus myrtifolius	細葉葉下珠	300	300	300	E	5176
Poa	Poaranea ricasoliana	紫雲藤	400	300	400	E	1206
Ppy	Pandanus pygmaeus	金邊露兜	300	200	300	E	1354
Pr	Pennisetum sateceum rubrum	紫葉狼尾草	500	300	400	E	5621
Pvi	Physostegia virginiana	假龍頭	250	300	300	E	1190
Roo	Ruellia coerulea	翠蓮科	500	300	300	E	1010
Rin	Rhaphiolepis indica	車輪梅	300	250	300	N	1207
Rto	Rhodomyrtus tomentosa	桃金娘	300	250	400	N	963
Re	Russelia equisetiformis	爆仗竹	300	300	300	E	302
Rsp	Rhododendron spp (purple, white& pink)	杜鵑	300	250	300	E	11365
Sar	Scheffera arboricola	鵝掌藤	600	400	500	E	7799
Sn	Strelitzia nicolai	大鶴望蘭	1750	500	500	E	112
Tp	Thevetia peruviana	黃花夾竹桃	750	500	600	E	1856
Tu	Tibouchina urvilleana	紫花野牡丹	300	300	400	E	5431
Vne	Vitex negundo	黃荊	300	250	300	N	225
Vtp	Vitex trifolia 'Purpurea'	紫花三葉蔓荊	750	500	600	E	161
Zc	Zephyranthes candida	葱蓮	150	150	200	E	1555
Zg	Zephyranthes grandiflora	韭蓮	150	150	200	E	2009

Reception Pavilion

Shrubs

Code	Botanical Name	Chinese Name	Height	Spread	Spacing	QTY (Nos.)	Native/ Exotic
Ap	*Arachis pintoi*	多年生花生	200	200	250	488	Native/ Exotic
Icy	*Imperata cylindrica 'Rubra'*	血草	300	300	300	553	Native/ Exotic
Pmy	*Phyllanthus myrtifolius*	錫蘭葉下珠	300	300	300	3815	Native/ Exotic

IWMF Substation

Herbaceous Plants / Groundcovers

Code	Botanical Name	Chinese Name	Height	Spread	Spacing	QTY (Nos.)	Image	Remarks
Ad	*Alternanthera dentat f. rubiginosa*	紅龍草	200	200	250	5666		~~NATIVE~~/EXOTIC
Ap	*Arachis pintoi*	多年生花生	200	200	150	18015		~~NATIVE~~/EXOTIC
Apa	*Alternanthera paronychioides*	星星蝦鉗菜	300	200	250	9675		~~NATIVE~~/EXOTIC
Hl	*Hymenocallis littoralis*	水鬼蕉	300	300	300	4123		~~NATIVE~~/EXOTIC
Oj	*Ophiopogon japonicus*	麥冬	150	150	200	9672		NATIVE/~~EXOTIC~~

Sub-Station Vertical Greenery Planter Summary

Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Ea	*Philodendron scandens*	蔓綠絨	1000 x 4 Shoots	500	58		~~NATIVE~~/EXOTIC
C2	Lja	*Lonicera japonica*	忍冬(金銀花)	1000 x 4 Shoots	500	116		NATIVE/~~EXOTIC~~
C3	Tj	*Trachelospermum jasminoides*	絡石	1000 x 4 Shoots	500	135		NATIVE/EXOTIC
C4	Pal	*Pseudocalymma alliaceum*	蒜香藤	1000 x 4 Shoots	500	133		~~NATIVE~~/EXOTIC
C5	Pve	*Pyrostegia venusta*	炮仗花	1000 x 4 Shoots	500	160		~~NATIVE~~/EXOTIC

Turbine Hall

Turbine Building Vertical Greenery Planter Summary

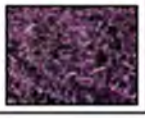
Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Pal	*Pseudocalymma alliaceum*	蒜香藤	1000 x 4 Shoots	500	45		~~NATIVE~~/EXOTIC
C2	Qin	*Quisqualis indica*	使君子	1000 x 4 Shoots	500	48		~~NATIVE~~/EXOTIC
C3	Tj	*Trachelospermum jasminoides*	絡石	1000 x 4 Shoots	500	186		NATIVE/~~EXOTIC~~

Process Building

Trees

CODE	BOTANICAL NAME	CHINESE NAME	HEIGHT (mm)	SPREAD (mm)	DBH (mm)	SPACING (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
Ht	*Hibiscus tiliaceus*	黃槿	3000	2000	100	As Shown (MIN. 5000)	3		NATIVE/ ~~EXOTIC~~
PP	*Pongamia pinnata*	水黃皮	4000	2000	100	As Shown (MIN. 5000)	24		NATIVE/ ~~EXOTIC~~

Shrubs/ Groundcover

CODE	BOTANICAL NAME	CHINESE NAME	HEIGHT (mm)	SPREAD (mm)	SPACING (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
Ad	*Arachis duranensis*	美生花	200	200	250	7560		~~NATIVE/~~ EXOTIC
Fc	*Fagraea ceilanica*	灰莉	2000	700	700	150		~~NATIVE/~~ EXOTIC
Gj	*Gardenia jasminoides*	水橫枝	600	400	500	1441		NATIVE/ ~~EXOTIC~~
Ic	*Ixora chinensis*	龍船花	300	300	300	3701		NATIVE/ ~~EXOTIC~~
Ms	*Melastoma sanguineum*	毛地	300	300	400	3826		NATIVE/ ~~EXOTIC~~
Nsu	*Nephrolepis auriculata*	腎蕨	300	300	300	2722		~~NATIVE/~~ EXOTIC
Pr	*Pennisetum setaceum 'rubrum'*	紫葉狼尾草	500	300	400	11511		~~NATIVE/~~ EXOTIC
Sar	*Schefflera arboricola*	鵝掌藤	600	400	500	2456		~~NATIVE/~~ EXOTIC
Tp	*Tradescantia pallida*	紫鴨跖草	200	200	250	5408		~~NATIVE/~~ EXOTIC

Process Building Vertical Greenery Planter Summary

Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Ea	*Epipremnum aureum*	綠蘿 (芋葉藤)	1000 x 4 Shoots	500	172		~~NATIVE~~/EXOTIC
C2	Lja	*Lonicera japonica*	忍冬(金銀花)	1000 x 4 Shoots	500	344		NATIVE/~~EXOTIC~~
C3	Tj	*Trachelospermum jasminoides*	絡石	1000 x 4 Shoots	500	2893		NATIVE/~~EXOTIC~~
C4	Pal	*Pseudocalymma alliaceum*	蒜香藤	1000 x 4 Shoots	500	2652		~~NATIVE~~/EXOTIC
C5	Pve	*Pyrostegia venusta*	炮仗花	1000 x 4 Shoots	500	3134		~~NATIVE~~/EXOTIC

Turf / Grass

CODE	BOTANICAL NAME	CHINESE NAME	SIZE (mm)	QTY (SQ.M)	REFERENCE IMAGE	REMARKS
Zm	*Zoysia matrella*	溝葉結縷草	TURF SIZE 500x300x50mm THK.	835sq.m		NATIVE/ ~~EXOTIC~~

MTP/WTP Building

MTP and WTP Building Vertical Greenery Planter Summary

Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Ea	*Philodendron scandens*	蔓綠絨	1000 x 4 Shoots	500	80		~~NATIVE~~/EXOTIC
C2	Lja	*Lonicera japonica*	忍冬(金銀花)	1000 x 4 Shoots	500	160		NATIVE/~~EXOTIC~~
C3	Ea	*Epipremnum aureum*	綠蘿 (芋葉藤)	1000 x 4 Shoots	500	207		~~NATIVE~~/EXOTIC
C4	Cgr	*Campsis grandiflora*	凌霄	1000 x 4 Shoots	500	414		~~NATIVE~~/EXOTIC
C5	Pve	*Pyrostegia venusta*	炮仗花	1000 x 4 Shoots	500	160		~~NATIVE~~/EXOTIC

Shrubs

CODE	BOTANICAL NAME	CHINESE NAME	HEIGHT (mm)	SPREAD (mm)	SPACING (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
Ac	*Asparagus cochinchinensis*	天門冬	300	300	300	6500		NATIVE/ ~~EXOTIC~~
Ap	*Arachis Pintoi*	多年生花生	200	200	250	7306		~~NATIVE~~/ EXOTIC
Ch	*Calliandra haematocephala*	朱櫻花	600	400	400	1026		~~NATIVE~~/ EXOTIC
Chy	*Cuphea hyssopifolia*	細葉萼距花	200	200	250	11437		~~NATIVE~~/ EXOTIC
Jm	*Jasminum mesnyi*	雲南素馨	600	400	500	38		~~NATIVE~~/ EXOTIC
Neb	*Nephrolepis exaltata bostoniensis*	波士頓腎蕨	300	300	300	950		NATIVE/ ~~EXOTIC~~
Oj	*Ophiopogon japonicus*	麥冬	150	150	200	9686		NATIVE/ ~~EXOTIC~~
Pa	*Pennisetum alopecuroides*	狼尾草	500	300	400	4542		NATIVE/ ~~EXOTIC~~
Pr	*Pennisetum setaceum rubrum*	紫葉狼尾草	500	300	400	9342		~~NATIVE~~/ EXOTIC
Rco	*Ruellia coerulea*	翠蘆莉	500	300	300	1775		~~NATIVE~~/ EXOTIC

Turf / Grass

CODE	BOTANICAL NAME	CHINESE NAME	SPACING (mm)	QTY (sqm)	REFERENCE IMAGE	REMARKS
Zm	*Zoysia matrella*	溝葉結縷草	fully cover	493 m²		NATIVE/ ~~EXOTIC~~

Administration Building

Admin Building Vertical Greenery Planter Summary

Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Bco	*Bauhinia corymbosa*	首冠藤	1000 x 4 Shoots	500	78		NATIVE/~~EXOTIC~~
C2	Cgr	*Campsis grandiflora*	凌霄	1000 x 4 Shoots	500	39		~~NATIVE~~/EXOTIC
C3	Ea	*Epipremnum aureum*	綠蘿（芋葉藤）	1000 x 4 Shoots	500	148		~~NATIVE~~/EXOTIC
C4	Lja	*Lonicera japonica*	忍冬(金銀花)	1000 x 4 Shoots	500	321		NATIVE/~~EXOTIC~~
C5	Pv	*Pyrostegia venusta*	炮仗花	1000 x 4 Shoots	500	25		~~NATIVE~~/EXOTIC

Trees

CODE	BOTANICAL NAME	CHINESE NAME	SPACING (mm)	HEIGHT (mm)	SPREAD (mm)	DBH (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
CL	Citrus limonia	檸檬	As Shown	3000	2200	100	3		~~NATIVE~~ EXOTIC
CM	Citrus medica	枸橼	As Shown	4000	3000	100	3		~~NATIVE~~ EXOTIC NOTE MULTI-STEMMED FOR CITRUS MEDICA
HT	Hibiscus tiliaceus	黃槿	As Shown	3000	2000	95	7		NATIVE/ ~~EXOTIC~~

Shrubs and Herbs

CODE	BOTANICAL NAME	CHINESE NAME	HEIGHT (mm)	SPREAD (mm)	SPACING (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
Ago	Azorella grandiflora 'Ogon'		300	300	300	1113		NATIVE/ EXOTIC
Ap	Arachis Pintoi		600	400	400	2646		NATIVE/ EXOTIC
Ar	Arthraxon roddianum		300	300	250	773		NATIVE/ EXOTIC
Cc	Cymbopogon citratus		500	300	200	344		NATIVE/ EXOTIC
Chy	Cuphea hyssopifolia		200	200	250	2767		NATIVE/ EXOTIC
Cj	Camellia japonica		400	400	300	992		NATIVE/ EXOTIC
Icy	Imperata cylindrica 'Ubiv'		300	300	300	1384		NATIVE/ EXOTIC
Jm	Jasminum mesnyi		600	400	500	1028		NATIVE/ EXOTIC
Mca	Mentha canadensis		300	300	250	344		NATIVE/ EXOTIC
Ma	Melastoma sanguineum		300	300	400	410		NATIVE/ EXOTIC
Neb	Nephrolepis exaltata bostoniensis		300	300	300	1380		NATIVE/ EXOTIC
Ob	Ocimum basilicum		300	200	250	172		NATIVE/ EXOTIC
Pa	Pennisetum alopecuroides		500	300	300	403		NATIVE/ EXOTIC

Shrubs

CODE	BOTANICAL NAME	CHINESE NAME	HEIGHT (mm)	SPREAD (mm)	SPACING (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
Pc	[illegible]	[illegible]	300	200	350	172		NATIVE/ EXOTIC
Pf	[illegible]	[illegible]	600	400	300	313		NATIVE/ EXOTIC
Pod	[illegible]	[illegible]	400	300	400	417		NATIVE/ EXOTIC
Ro	[illegible]	[illegible]	300	200	350	172		NATIVE/ EXOTIC
Sl	[illegible]	[illegible]	300	300	400	172		NATIVE/ EXOTIC
Te	[illegible]	[illegible]	300	200	350	172		NATIVE/ EXOTIC
Tv	[illegible]	[illegible]	300	200	350	172		NATIVE/ EXOTIC

Turf / Grass

CODE	BOTANICAL NAME	CHINESE NAME	SIZE (mm)	QTY (SQ.M)	REFERENCE IMAGE	REMARKS
Zm	[illegible]	[illegible]	TURF SIZE 500x300x50mm THK	3600Q.M		NATIVE/ EXOTIC

Climber mix for Trellis and External Staircase

Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
Ct + Lj	[illegible] / Lonicera japonica	[illegible] / [illegible]	1000 x 4 Shoots	500	78		EXOTIC/ NATIVE / EXOTIC/ NATIVE
Ea	[illegible]	[illegible]	1000 x 4 Shoots	500	20		EXOTIC NATIVE

6

6 AESTHETIC DESIGN OF THE BUILDING STRUCTURES, CHIMNEY AND BREAKWATER

6.1 Human Architectural and Landscape Schemes will be developed to blend into the Environment, the inspiration being provided by the Shek Kwu Chau Coastline

The context of Shek Kwu Chau and its steeply sloping densely vegetated and rugged coastline with large outcrops of yellowish decomposed granite has been the point of inspiration for the development of the aesthetic design language for the IWMF.

The IWMF exteriors have been devised to mimic the variable outlook of the island and blend into the surrounding green environment in a similar manner to that which can be observed on Shek Kwu Chau island where this occurs naturally. The aesthetic treatment of the new construction will therefore respond to its natural setting and scenery in a manner which is already established and apparent. Refer to **Figure 6.1**.

The building layout/height in the current submission defers from that in the Approved EIA Report due to further design developments to the proposed enhancement of the seawall/wavewall and visitor path, which will have the aim to provide a more close-up experience for the visitors to the seafront. Therefore, the proposed buildings/structures have been further designed to supplement this aim. Furthermore, the seawall/wavewall has now introduced the timber-colored hull-liked pattern (refer to Figure **6.1**) to amplify the sailboat/marine theme of the whole aesthetic design of the IWMF, in order to enhance the blending into the surrounding environment. To compliment this marine feature, both sides of this timber hull will feature undulating patterns with varying shades of blue color to mimic a vibrant sea.

Furthermore, the Administration Building has been reorientated 90 degrees such that the landscape courtyard will be combined and enlarged as one. The visitor path that connects to the Administration Building was realigned and incorporated with the landscape Sky Deck projected from the high seawall to create an interesting landscape design. The helipad at the MTP/WTP Building adjacent to the Administration Building is adjusted according to the current building design and comments from the Civil Aviation Department and Government Flying Services.

Landscape features and observation deck of the Chimney are proposed to be relocated and incorporated into the south facing seawall forming part of the external visitor's path, named as "Sky Deck". The current design is considered to be more environmentally friendly, in which the configuration of the Chimney stack is streamlined into an aerodynamic form to address the wind load effectively. Furthermore, the landscaped Sky Deck is more accessible for the public and from the maintenance point of view. Other design intents are elaborated below:

- To accentuate the iconic form of the Chimney, asymmetrical external aluminum panels are cladded on its concrete structure to resemble a sail of a boat to form a feature in order to symbolise the Hong Kong spirit overcoming high and low tides for a better future. Being the first facility of its kind, the endorsed concept of IWMF1 is "一帆風順 領航前行" (aka "smooth sailing, with great stewardship forward");

- The cladding is slightly projected from the concrete structure, so that its shadow will be cast on the stack with slightly varied under different weather conditions and time of day, thus creating interesting visual impressions;

- For the front and back of the seawalls facing the South China Sea, various shades of blue in a wavy pattern and a brown paint will be applied on the back and part of the front seawall respectively to represent a timber boat sailing on the sea;

- Color pattern of the wavewall will breakdown the scale of the facility's enormity when visitors come near to the artificial island during a visit;

- The said design concept and images of the Chimney have been presented to the stakeholders, including the Community Liaison Group, who have no objections on the updated design intention; and

- The avoid maintenance issues on the external paint, budget consideration and to facilitate the programme, it is proposed to utilise the cladding and painted seawall rather than the gradual paint on the stack to enhance the overall visual impact of the complex.



Figure 6.1 General Aesthetic treatment of the IWMF development featuring the timber hull-like seawall/wavewall in the foreground, landscaped development with vertical greening in the midfield and the iconic sail format chimney structure.

6.2 Subtle Variegation in Colours of the Façades to Rhyme with Nature

The façade cladding of the IWMF will comprise prefabricated cladding panels and precast concrete panels finished in subtly-different shades of yellowish grey that will match precisely the weathering colours of the existing granite out-crops of Shek Kwu Chau. In order to complement the variety of the surrounding environment, the applications of aluminium cladding for the Chimney and precast concrete façade panels for other buildings on the IWMF Campus have been designed for.

6.3 Variety in Form of the Façade to Rhyme with Nature

The façade cladding of the IWMF has been developed to provide a deep textural surface. It will not simply comprise a uniform panel but will comprise a modular system of cantilevered planters that will create an apparently random façade mimicking the outcrops and weathered recesses that evoke the natural coastline of Shek Kwu Chau.

6.4 Vertical Greening to be an Integral Part of the Architecture

Finally, a façade expressing extensive vertical greening, which will comprise not just a single species but a variety of climbers will be presented in the array of surface mounted planter boxes. The variety of species will generate an arrangement of varied and semi random colours to provide a rich, lush and verdant envelope of dense vegetation that will closely echo the varied range of natural vegetation currently present on Shek Kwu Chau. The vertical greening system is served by a drip-fed recycled water irrigation system located on the planter surface, with a vertical drainage system that is concealed within the precast concrete panel (openable for maintenance). The vertical greening façade is also accessible by cherry pickers, and cat ladders from the roof to connected maintenance platforms (of no less than 600mm wide) for maintenance purposes.

Over time and, as the greening becomes established, the visual affinity of the IWMF and with Shek Kwu Chau will become enhanced. The natural and built components of the newly created visage will become fully integrated and a trend towards interdependence will become established. Refer to **Drawing nos. IWMF1_14-136_990_124101, IWMF1_14-136_990_124102, IWMF1_14-136_610_014201, IWMF1_14-136_500_114201, IWMF1_14-136_500_114202, IWMF1_14-136_500_114203, IWMF1_14-136_700_114201, IWMF1_14-136_700_114202, IWMF1_14-136_700_014203, IWMF1_14-136_300_114201 , IWMF1_14-136_300_114202 , IWMF1_14-136_300_114203, IWMF1_14-136_500_114201, IWMF1_14-136_800_114202, and IWMF1_14-136_800_114203 in Annex B** for the building elevations demonstrating the prescribed theme of the vertical greening.

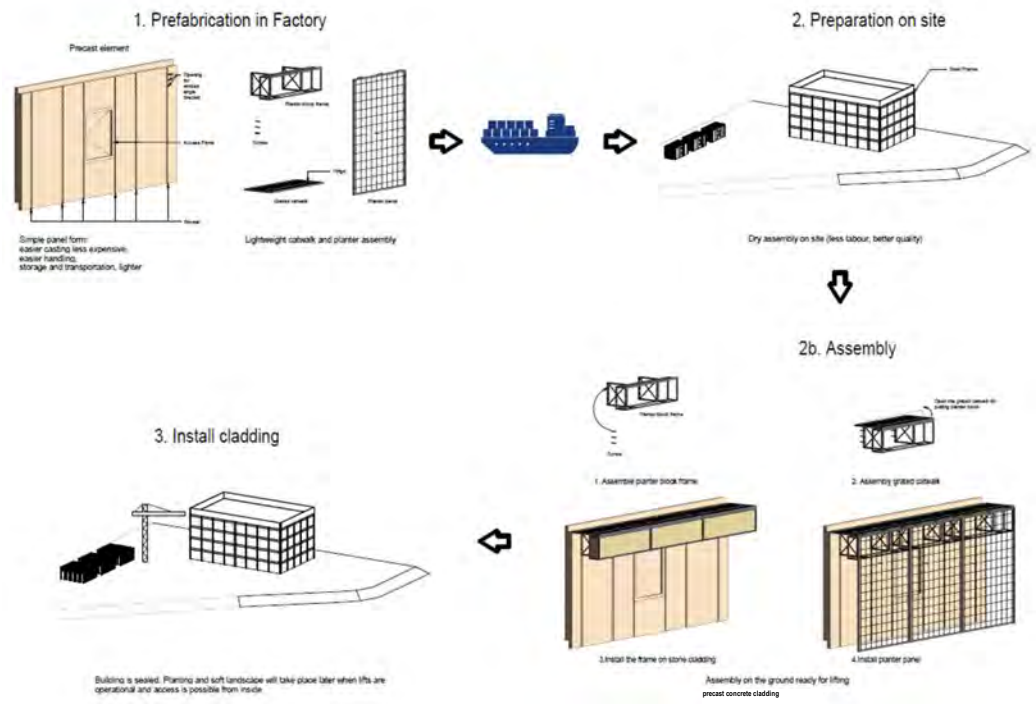


Figure 6.2 Green wall modular concept



Figure 6.3 Mature green wall overall impression

6.5 Borrowed Views of the Surrounding Geography and Landscape Provide Visual Connections to Shek Kwu Chau

Public spaces throughout the interior of the IWMF will be provided with windows designed to capture panoramic views looking towards both the South China Sea and the coastline of Shek Kwu Chau. The views towards the Island will flood into the spacious and bright viewing arenas to form an integral and unforgettable part of the visitor experience to the facility. This will provide a sense of the connection between the IWMF and its neighbouring context. Through experiencing the building the visitors will conclude that the IWMF does not turn its back on Shek Kwu Chau but, through its design, it will deferentially acknowledge and blend in with Shek Kwu Chau as an indispensable and indistinguishable natural and green neighbour.



Figure 6.4 General outlook from the visitor viewing gallery

6.6 Avoidance of Industrial Impression in Chimney Design

The incorporation of a cladding system has been key to the development of the aesthetic model for the chimney. A curved profile in the apparent form of a large sail has been selected to soften the vertical form of the chimney. Contrasting colours to the green building facades have been selected to provide a wide contrast and nautical flavour to the structure. The facility will be a functional component of the development and will incorporate a maintenance staircase. The chimney design will concurrently transform the chimney into an attractive and iconic architectural feature.

Although the functional requirements of the multi stack chimney are completely fulfilled the clean modern design of the elliptical wind shield will impart an impression of purposeful, welcoming, civic elegance that is antithetical to the impression of a purely industrial facility.



Figure 6.5 Chimney concept

6.7 Aesthetic design of breakwater

The breakwater structure is required to provide protection from the marine environment at the site. Wave activity can be intense during typhoon conditions and the structure has been designed to be robust. The top surface of the structure will be armoured with interlocking prefabricated concrete armouring units designed to minimize the demand for large quarried armourstone which could not otherwise be achieved without significant environmental impact. The proposed visual appearance of the armoured breakwater structures is illustrated in **Figures 6.6.** Acc ordingly, interlocking concrete armouring units similar to those adopted at High Island Reservoir will be deployed (for reference photos of these interlocking concrete armouring units please refer to www.wsd.gov.hk/filemanager/common/pdf/PublicRelation/High%20Island%20Reservoir.pdf Section 7 – Cofferdam). The units will weather and be colonized by a diverse shoreline flora and fauna to match the adjacent exposed rocky shoreline in a manner similar to the units at High Island where this type of armouring unit is deemed to be compatible with the rugged country park environment.

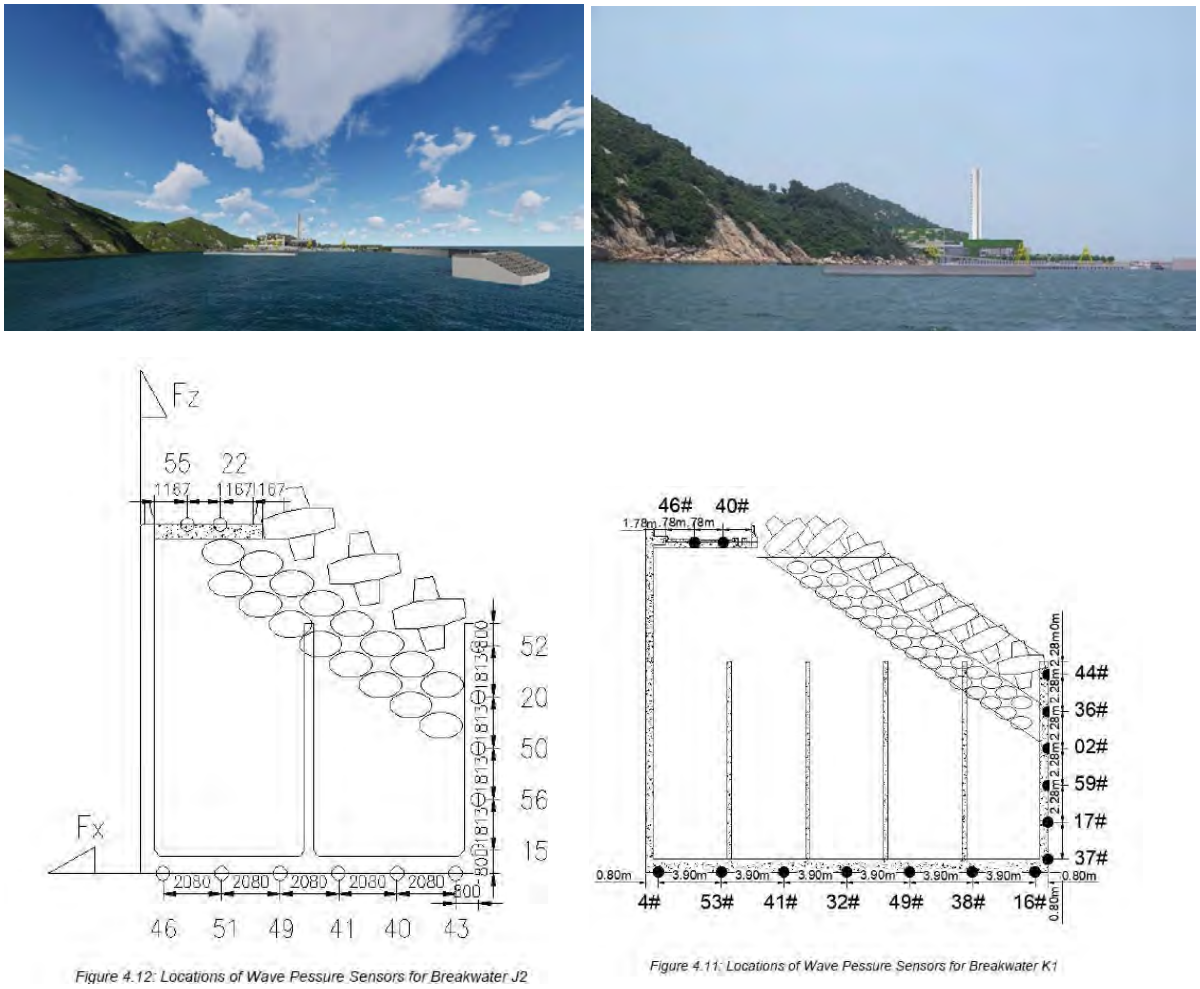


Figure 4.12: Locations of Wave Pessure Sensors for Breakwater J2

Figure 4.11: Locations of Wave Pessure Sensors for Breakwater K1

Figure 6.6 Visual appearance of the Breakwaters

In accordance with the approved Fisheries Enhancement Programme of the Further Environmental Permit No. FEP-01/429/2012/A, ecological enhancement design features for breakwater and Eco-

shoreline will be adopted. Below tidal level the design will introduce numerous horizontal crevices into the pre-casted concrete blockwork to make the breakwater and shoreline more harmonised with the natural shoreline. Development of a sustained and diverse marine ecology is expected to arise as a result.

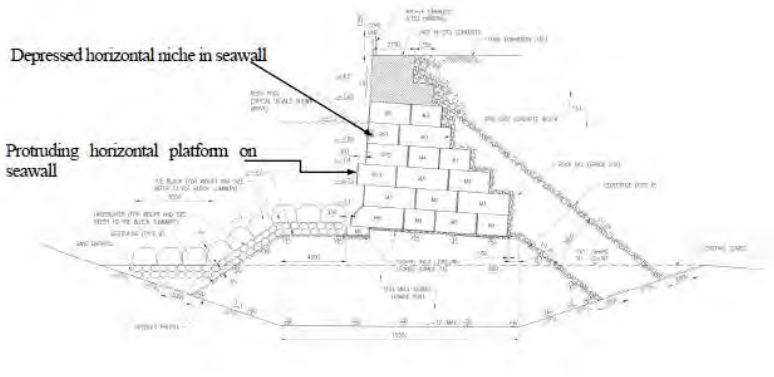


Figure 6.7 a) Eco-shoreline concept along the seawall facing Shek Kwu Chau Island

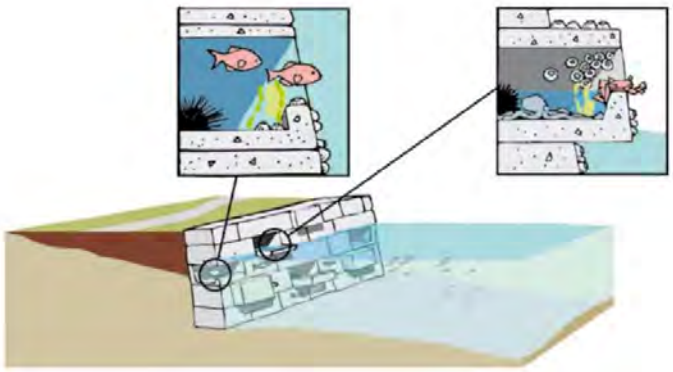


Figure 6.7 b) Eco-shoreline concept along the seawall facing Shek Kwu Chau Island

The blockwork seawalls facing SKC island will be specifically developed as an eco-friendly shoreline. As noted above, for areas located below tidal level the design has been developed to introduce numerous horizontal crevices and pockets into the pre-casted concrete blockwork to make the seawall and breakwater landward shorelines more ecologically friendly. The enhanced surface of the seawall is aimed at developing a sustained and diverse marine ecology. Refer to **Figures 6.8 and 6.9.**



Figure 6.8 Overhead view of Seawalls and Breakwater

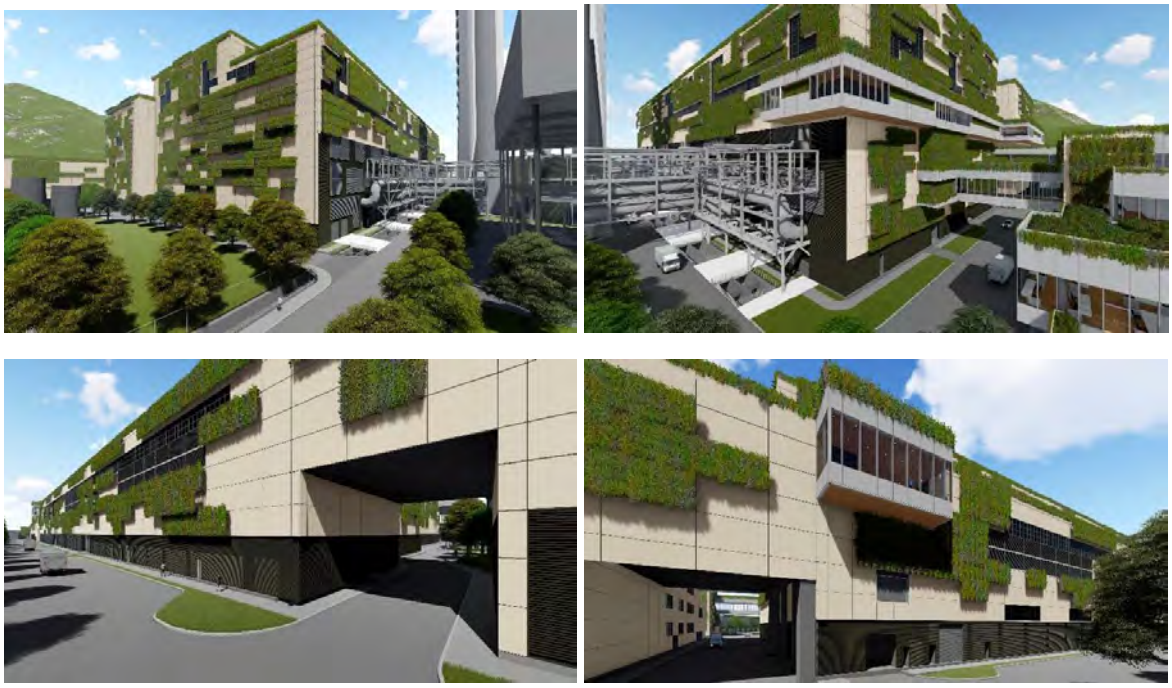


Figure 6.9 Seawall Configuration

6.8 Aesthetic design building structures

6.8.1 Main Process Building

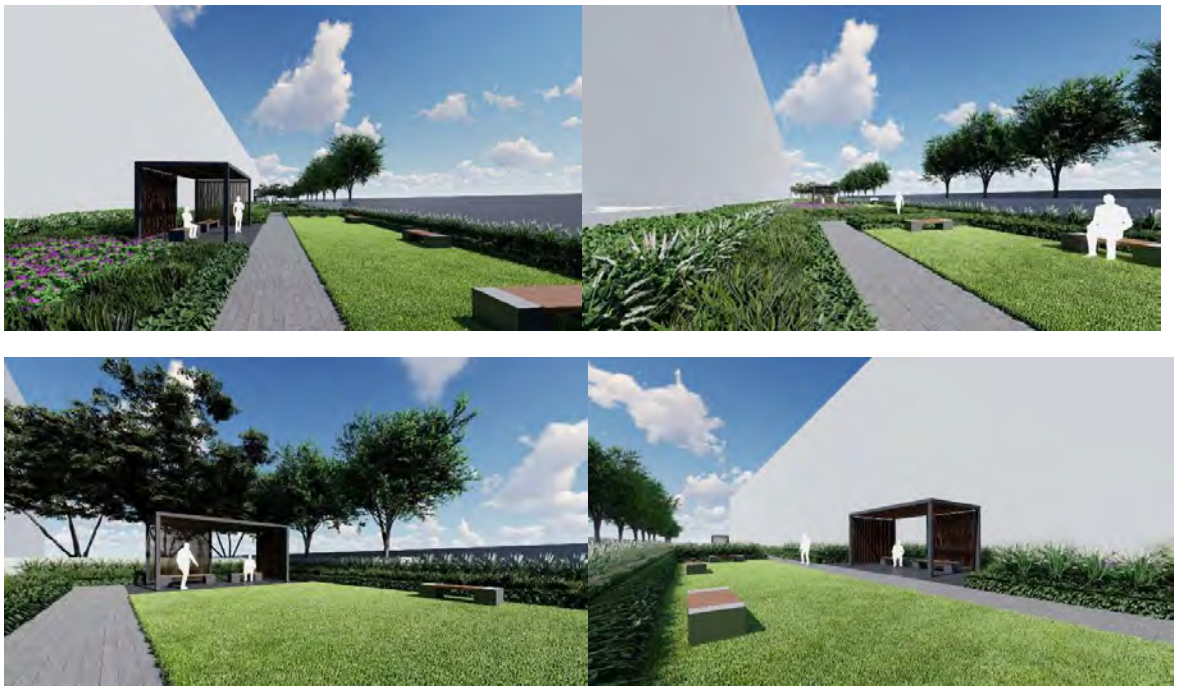
The dominant building structure within the development will be the main process building. This structure will be large and will house the main incineration plant, equipment, boilers and flue gas processing equipment. The proposed aesthetic outlook of the building is illustrated in **Figures 6.10.** Green façades and a green roof at the lower floor will be adopted to soften the impact and massing of the structure. The proposed aesthetic outlook of the green roof is illustrated in **Figures 6.11.**



Figures 6.10 depicting *(clockwise from top left corner)* the a) Southeast, b) Northwest, c) North and d) South elevations of the Main Process Building



Figures 6.10 depicting southwest elevations of the Main Process Building



Figures 6.11 Green roof of the Main Process Building

6.8.2 Materials Treatment Building and Water Treatment Plant Building

The Materials Treatment Building (MT) and Water Treatment Plant Building (WTP) form the primary backup plant enclosures supporting the process. This building will have the second largest footprint on the site. The building will be treated with the same aesthetic approach as the main building to provide a matching and consistent visual appearance to the architecture on the site.

The proposed aesthetic outlook of the building is illustrated in **Figures 6.12**.



Figures 6.12 Views of the MT and WTP Building







Figures 6.12 Views of the MT and WTP Building

6.8.3 Administration Building

The administration building will be interconnected with the main process building, MT and WTP buildings by means of elevated footbridges. These will provide a focused path for visitors. The building will be integrated with these interfacing buildings being treated with a sympathetic aesthetic approach to the main building.

The proposed aesthetic outlook of the building is illustrated in **Figures 6.13.**



Figures 6.13 Administration Building

6.8.4 Turbine Hall, ACC and CCCW

The Turbine Hall, ACC and CCCW structures comprise supporting plant enclosures within the facility. These structures will have a differing and more industrial outlook as a result of their functionality. The Turbine Hall, ACC and CCCW will be functional plant enclosures rather than being building structures. They will be intimately endowed with external interconnecting pipework as an integral part of their operational requirements. Their architectural treatment will necessarily be influenced by the connecting piping and cabling making them less receptive to the architectural

detailing adopted for the other building structures across the site. The plant enclosures will adopt a styled aesthetic approach to blend in with the main building to provide a complementary visual appearance to the architecture on the site. Furthermore, heavy standard/semi-mature standard trees are specially selected to be planted adjacent to the side of the ACC that faces the Visitor Path. Therefore these trees, which when matured will have a height of no less than 15m, will provide the visitor a view that begins at the biologically diverse and colorful west courtyard, followed by the ornamental roof garden of the IWMF Substation, then finally arriving at the lush greenery beset by these tall trees. An indication of the approach is provided in the overall image included in **Figure 1.2.** For the wind wall of the ACC, a paint finish (of RAL7035) will be provided to complement the aforesaid more industrial outlook.

6.8.5 IWMF Substation Building

The IWMF Substation Building will be key to the power from waste focus of the project and will house the interfacing connection to the CLP grid. This building will have a small footprint on the site but will be a key feature. The building will be treated with the same aesthetic approach as the main building to provide a matching and consistent visual appearance to the architecture on the site.

The proposed aesthetic outlook of the building is illustrated in **Figures 6.14.**





Figures 6.14 IWMF Substation building

6.8.6 Reception Pavilion

The reception pavilion will be located adjacent to the marine access facilities and passenger berth. The structure will generate the first view of the IWMF facility and will house waiting and educational exhibits to introduce the power from waste focus of the project. This building will have a small footprint on the site but will be a key feature. The building will have an open and inviting architectural aesthetic approach.

The proposed aesthetic outlook of the building is illustrated in **Figures 6.15.**





Figures 6.15 Reception Pavilion

7 LANDSCAPE AND VISUAL IMPACT AND MITIGATION MEASURES

7.1 Landscape and Visual Design Measures in EIA & EM&A

In **Section 10b.10** of the approved EIA report and **Section 13.2.8** of the EM&A Manual, the following design measures as listed in **Table 7.1** below are proposed as landscape and visual impact mitigation measures. These mitigation measures have been considered and will be adopted as far as practicable.

Table 7.1 Mitigation Measures (See Figure 6-1 & 6-2 and Annex B Drawing no. IWMF1-LVP-01)

ID No.	Construction Phase Mitigation Measures in the Approved EIA	Implementation Details under this Plan
Mitigation for both Landscape & Visual Impacts		
MLVC-01	Grass-hydroseeded bare soil surface and stockpile area	KSZHJV will grass-hydroseeded bare soil surface and stockpile areas as appropriate during the construction period.
MLVC-02	Landscape Design 1) Early planting using fast grow trees and tall shrubs at strategic locations within site as buffer to block view corridors to the site from the VSRs, and to locally screen haul roads, excavation works and site preparation works.	Early planting using fast growing trees and tall shrubs in the visitor zone with the theme of Dense Forest Journey will provide a rich green environment for the visitors and will mitigate visual impact from the seawalls. (**See Figure 6-1, 12, 13 and 14,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01) A row of tree planting will be introduced along the north-east edge to screen road and mitigate visual impact to VSR from SKC.
	2) Use of tree species of dense tree crown to serve as visual barrier.	Use of tree species with dense tree crowns (e.g. *Cinnamomum burmannii, Hibiscus tiliaceus*, etc.) will serve as a visual barrier. (**See Figure 6.13,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01)
	3) Hard and soft landscape treatment (e.g. trees and shrubs) of open areas within development to provide a background for the outdoor containers from open view, shade and shelter, and a green appearance from surrounding viewpoints.	Accessible green roofs will act as an elevated park intended for use by visitors and staff a garden, with vertical greening, shrubs and tree planting, pathways, seating and shade structures. Dense tree planting will provide a lush and green appearance whilst the Tree Top Walk and Viewing Platform will offer panoramic ocean views for the visitors. (**See Figure 6.12,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01)
	4) Planting strip along the periphery of the project site.	A planting strip is proposed along the southern and north-eastern periphery of the project site to mitigate visual impact to VSRs as identified in the approved EIA report.
	5) Select tree species suitable for the coastal condition.	Coastal buffer planting such as the *Syzygium jambos & Hibiscus tiliaceus* are proposed due to their high salinity tolerance and their ability to thrive under sea shore conditions.

ID No.	Construction Phase Mitigation Measures in the Approved EIA	Implementation Details under this Plan
MLVC-03	Adoption of Natural Features of the Existing Shoreline 1) Use of boulders in different sizes and with the similar textures of the existing rocky shores for the construction of breakwater and artificial shoreline in order to blend into the existing natural shoreline.	Ecologically enhanced design features will be constructed for the breakwater and seawall facing the existing shoreline of Shek Kwu Chau. These will make reference to the conceptual design of eco-shoreline as described in Section 6.7 (**see Figure 6.7,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01). Details of the seawall and breakwater configuration are included in **Annex C.** Whilst natural boulders cannot be practically implemented as sea defences for the breakwater under such a hostile wave climate interlocking armouring units similar to those at High Island Reservoir will be adopted to facilitate colonisation by a rich biodiverse flora and fauna whilst providing robust wave resistant sea defences.
	2) Use of cellular cofferdam together with the natural boulders to form a curvature shoreline for the reclamation area to echo with the natural shoreline of SKC.	
MLVC-04	Greening Design (Rooftop & Vertical Greening) 1) Implementation of rooftop and vertical greening (vertical building envelope) along the periphery of each building block to increase the amenity value of the work, moderate temperature extremes and enhance building energy performance. The greening appearance of the building shall enhance its visual harmony with the natural surroundings as well as reduce the apparent visual mass of the structure.	Green roofs are proposed on the roofs of buildings within the Visitor Zone, many of which will be designed as accessible green roofs. These green roofs not only increase amenity value, enhance micro-climate and visual harmony with the surroundings, but also provide recreational value as roof garden and function as connections between buildings. (**See Figure 6.10 b,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01) For details of the green roofing refer to **Annex B** The vertical greening system integrates planter boxes into the building façade. These modular panels of standard size will provide overall green and lush appearance for the whole site. (**See Figures 6-2 and 6-3,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01) Green roofing will not be incorporated in the Main Process Building, Air Cooled Condensers Building and Turbine Hall due to equipment and operational constraints explained in Section 5.7. Refer also to **Annex B.**
	2) Sufficient space between concrete enclosure and stack to minimize heat transfer.	Wide circulation accesses have been provided between the main process building enclosure and the chimney to minimize heat transfer and accumulation. Refer to **Annex B**.
	3) Introduction of landscape decks at the stack to further enhance the overall natural and green concept	Sky gardens are introduced at the seaward facing portion of the Administration Building and the MTP/WTP Building to allow for

ID No.	Construction Phase Mitigation Measures in the Approved EIA	Implementation Details under this Plan
	unique for this site.	additional greening for enhancing the aesthetic quality and the overall natural and green concept unique to this site (see **Figures 1.2, 1.3, 6.11 and 6.12,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01).
Mitigation for Visual Impacts		
MVC-01	Visual Mitigation and Aesthetic Design 1) Use of natural materials with recessive colour to minimize the bulkiness of the building.	The Façade cladding of the IWMF will comprise prefabricated cladding panels finished in subtly different shades of yellowish grey that will match precisely the weathering colours of the existing granite out-crops of Shek Kwu Chau. KSZHJV will adopt natural materials for construction of cladding panels wherever possible (see **Figures 6.8.2, 6.11 and 6.12,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01)
	2) Adoption of innovative aesthetic design to the chimney to minimize or visually mitigate the massing of the chimney so as to reduce its visual impact to the surroundings.	The incorporation of an iconic and contrasting sail resembling structure will provide a themed distraction from industrial context of the chimney structure. This approach has achieved approval from stakeholders by relating to the maritime communities. . The structure will provide an important amenity feature and concurrently transforms the chimney into an attractive architectural feature (see **Figures 1.3, 6.1, 6.6, 6.8, 6.9 and 6.10,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01).
	3) Colour of the chimney in a gradual changing manner to match with the colour of the sky.	The cladding of the chimney is designed to be held by a steel subframe at a horizontal distance away from the main concrete structure, which will provide a shading projected onto the main concrete structure at different hours of the day, its shadow will thus providing the gradual changing manner (see **Figures 1.3, 6.1, 6.6, 6.8, 6.9 and 6.10,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01). The cladding is slightly projected from the concrete structure, so that its shadow will be cast on the stack with slightly varied under different weather conditions and time of day, thus creating interesting visual impressions;

ID No.	Construction Phase Mitigation Measures in the Approved EIA	Implementation Details under this Plan
	4) Provision of observation deck for public enjoyment at the top of the chimney to diminish the feeling of chimney.	The design of the chimney has incorporated a contrasting sail like concept to provide a varied and aesthetically pleasing outlook matching the sailboat/marine theme to diminish the feeling of a chimney which has been endorsed by the local community. Furthermore, the visitors will now have more observation deck areas at the Administration Building and MTP/WTP Building as mentioned in item 5 below (see **Figures 1.3, 6.1, 6.6, 6.8, 6.9 and 6.10,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01). Landscape features and observation deck of the Chimney are proposed to be relocated and incorporated into the south facing seawall forming part of the external visitor's path, named as "Sea Deck with Sea Pavilion". The current design is considered to be more environmentally friendly, in which the configuration of the Chimney stack is streamlined into an aerodynamic form to address the wind load effectively. Furthermore, this landscaped Sky Deck with Sea Pavilion is more accessible for the public and from the maintenance point of view;
	5) Provision of sky gardens between the two stacks to allow additional greening for enhancing the aesthetic quality. Maintenance access (elevator and staircase) from the ground floor to the sky gardens will be provided to allow maintenance of the sky gardens.	Sky gardens are introduced at the seaward facing portion of the Administration Building and the MTP/WTP Building to allow for additional greening for enhancing the aesthetic quality. Elevator inside the Administration Building and an external staircase will provide maintenance access from the ground floor to the sky gardens (see **Figures 1.2, 1.3, 6.11 and 6.12,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01).
Mitigation for Visual Impacts		
MVC-01	6) Integration of the visitor's walkway with different material façade design of incinerator plant to enhance the aesthetic quality.	The Administration Building, the Mechanical Treatment Building and viewing gallery linking the Reception Hall and Main Process Building will comprise over a number of different levels of terraces resulting in an undulating building form that is highly sympathetic to the natural topography of Shek Kwu Chau (see **Figures 6.1, 6.8, 6.10, 6.11 and 6.12,** and drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-

ID No.	Construction Phase Mitigation Measures in the Approved EIA	Implementation Details under this Plan
		01). The pedestrian pathway and Sky Garden structure that has been designed to connect the administration building with the reception pavilion at the passenger reception pier will start at the second-floor roof garden of the Administration Building before continuing as a gentle slope set atop landscaped berms all the way to the ferry pier at +6.00mPD. This will provide a physical connection between the IWMF's natural (forested berms) and building (landscaped terrace roofs green walls) topographies. Refer to **Annex B**. In this way the building forms will integrate with the natural topography of Shek Kwu Chau and the sea.
MVC-02	Control of the security floodlight for construction areas at night to avoid excessive glare to the surrounding receiver.	KSZHJV will restrict and control the security floodlighting by adjusting the angle of floodlight so as to minimise possible glare as far as possible.
MVC-03	Optimization of the construction sequence and construction programme to minimize the duration of impact.	KSZHJV propose to optimize the construction sequence and construction programme to minimize the duration of construction impacts.
MVC-04	Storage of the backfilling materials for site formation & construction materials / wastes on site at a maximum height of 2m, covered with an impermeable material of visually un-obtrusive material (in earth tone).	KSZHJV will cover the backfilling materials during site formation & construction materials / wastes with green tarpaulins or by using hydroseeding. Refer to **Annex B**.
MVC-05	Reduction of the number of construction traffic at the site to practical minimum.	KSZHJV will minimise construction traffic on the site within practical limitations.
ID No.	**Operation Phase Mitigation Measures**	**Implementation Details under this Plan**
Mitigation for both Landscape & Visual Impacts		
MLVO-01	Planting Maintenance	Proper intervention and planting maintenance will be provided to ensure

ID No.	Construction Phase Mitigation Measures in the Approved EIA	Implementation Details under this Plan
	Provision of proper planting maintenance and replacement of defective plant species on the new planting areas to enhance aesthetic and landscape quality.	the landscaping planting works thrive. Refer to principles and schedule in **Sections 7.4 and 7.5**.
Mitigation for Visual Impacts		
MVO-01	Environmental Education Centre Development of an Environmental Education Center, in which regular exhibitions and lectures to promote environmental awareness and waste reduction concept would be provided, as a part of the IWMF for the general public to alleviate negative public perceptions of the development.	An Environmental and Waste Management Education Centre located inside the Administration Building will be established as a part of the IWMF for the general public. This should help to alleviate possible negative public perceptions of the development.
MVO-02	Control of Light Control the numbers of lights and their intensity to a level that is good enough to meet the safety requirements at night but not excessive.	KSZHJV will control the numbers of lights and their intensity to a level that is adequate to meet the safety requirements at night to avoid excessive glare to the surrounding receivers.
ID No.	**Operation Phase Mitigation Measures**	**Implementation Details under this Plan**
MVO-03	Control of Operation Time Minimization of the frequency of waste transportation to practical minimum (e.g. limit the reception of MSW from 8 am to 8 pm)	KSZHJV will optimise the frequency of waste transportation to a practical minimum (e.g. limit the reception of MSW from 8am to 8pm).

7.2 Monitoring and Audit

Weekly site audits will be conducted by the project Environmental Team (ET) in accordance with EM&A manual **Section 13.2.8** to ensure appropriate mitigation measures are properly implemented.

The ET will monitor the implementation of environmental mitigation measure and will assess their effectiveness. They will advise the Contractor on environmental awareness and enhancement matters.

7.3 Implementation Programme

An implementation programme as required by TM-EIAO is presented below:

Table 7.2 Project Implementation Schedule

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			
				Des	C	O	Dec
S10b.10 MLVC- 01	Grass-hydroseeded bare soil surface and stock pile area	Work site / During construction phase	Contractor		✓		
S10b.10 MLVC-02	<u>Landscape Design</u> 1) Early planting using fast grow trees and tall shrubs at strategic locations within site as buffer to block view corridors to the site from the VSRs, and to locally screen haul roads, excavation works and site preparation works. 2) Use of tree species of dense tree crown to serve as visual barrier. 3) Hard and soft landscape treatment (e.g. trees and shrubs) of open areas within development to provide a background for the outdoor containers from open view, shade and shelter, and a green appearance from surrounding viewpoints. 4) Planting strip along the periphery of the project site. 5) Selected tree species suitable for the coastal condition.	Work site / During design & construction phases	Contractor	✓	✓		
S10b.10 MLVC-03	<u>Adoption of Natural Features of the Existing Shoreline</u> 1) Use of boulders in different sizes and with the similar textures of the existing rocky shores for the construction of breakwater and artificial shoreline in order to blend into the existing natural shoreline. 2) Use of cellular cofferdam together with the natural boulders to form a curvature shoreline for the reclamation area to echo with the natural shoreline of SKC.	Work site / During construction phase	Contractor		✓		

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			
				Des	C	O	Dec
S10b.10 MLVC-04	Greening Design (Rooftop & Vertical Greening) 1) Implementation of rooftop and vertical greening (vertical building envelope) along the periphery of each building block to increase the amenity value of the work, moderate temperature extremes and enhance building energy performance. The greening appearance of the building shall enhance its visual harmony with the natural surroundings as well as reduce the apparent visual mass of the structure. 2) Sufficient space between concrete enclosure and stack to minimize heat transfer. 3) Introduction of landscape decks at the stack to further enhance the overall natural and green concept unique for this site.	Work site / During design & construction phases	Contractor	✓	✓		

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			
				Des	C	O	Dec
S10b.10 MVC-01	Visual Mitigation and Aesthetic Design 1) Use of natural materials with recessive color to minimize the bulkiness of the building. 2) Adoption of innovative aesthetic design to the chimney to minimize or visually mitigate the massing of the chimney so as to reduce its visual impact to the surroundings. 3) Color of the chimney in a gradual changing manner to match with the color of the sky. 4) Provision of observation deck for public enjoyment at the top of the chimney to diminish the feeling of chimney. 5) Provision of sky gardens between the two stacks to allow additional greening for enhancing the aesthetic quality. Maintenance access (elevator and staircase) from the ground floor to the sky gardens will be provided to allow maintenance of the sky gardens. 6) Integration of the visitor's walkway with different material façade design of incinerator plant to enhance the aesthetic quality.	Structures in IWMF / During design & construction phases	Contractor	✓	✓		
S10b.10 MVC-02	Control of the security floodlight for construction areas at night to avoid excessive glare to the surrounding receiver.	Work site / During construction phase	Contractor		✓		
S10b.10 MVC-03	Optimization of the construction sequence and construction programme to minimize the duration of impact.	Work site / During design & construction phases	Contractor	✓	✓		
S10b.10 MVC-04	Storage of the backfilling materials for site formation & construction materials / wastes on site at a maximum height of 2m, covered with an impermeable material of visually un-obtrusive material (in earth tone).	Work site / During construction phase	Contractor		✓		
S10b.10 MVC-05	Reduction of the number of construction traffic at the site to practical minimum.	Work site / During construction phase	Contractor		✓		

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			
				Des	C	O	Dec
S10b.10 MLVO-01	Planting Maintenance Provision of proper planting maintenance and replacement of defective plant species on the new planting areas to enhance aesthetic and landscape quality.	Project site / During Operation phase	Contractor			✓	
S10b.10 MVO-01	Environmental Education Centre Development of an Environmental Education Center, in which regular exhibitions and lectures to promote environmental awareness and waste reduction concept would be provided, as a part of the IWMF for the general public to alleviate negative public perceptions of the development.	Project site / During Operation phase	Contractor			✓	
S10b.10 MVO-02	Control of Light Control the numbers of lights and their intensity to a level that is good enough to meet the safety requirements at night but not excessive.	Project site / During Operation phase	Contractor			✓	
S10b.10 MVO-03	Control of Operation Time Minimization of the frequency of waste transportation to practical minimum (e.g. limit the reception of MSW from 8 am to 8 pm)	Project site / During Operation phase	Contractor			✓	

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

7.4 Maintenance and Management Schedule

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 for both hard and soft landscape element are illustrated in the following tables:

Table 7.3 Hard Landscape Maintenance Principles

Irrigation System	
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
Lighting	
Repair :	Fittings as required
Replace :	Replace bulbs as required
Hard Paving	
Repair :	Check and maintain all paving and repair as required
Clear :	Remove debris from drains twice a year and routinely check after storms
Water Features	Maintenance contract/ program should be arranged and agreed with a program to be prepared by Water Feature Contractor. Additional maintenance visits as required.

Table 7.4 Hard Landscape Maintenance Schedule

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Irrigation System												
Operation	*	*	*	*	*	*	*	*	*	*	*	*
Adjust valves			*							*		
Repair	*	*	*	*	*	*	*	*	*	*	*	*
Lighting												
Repair	*	*	*	*	*	*	*	*	*	*	*	*
Replace	*	*	*	*	*	*	*	*	*	*	*	*
Hard Paving												
Repair	*	*	*	*	*	*	*	*	*	*	*	*
Clear	*	*	*	*	*	*	*	*	*	*	*	*
Water Features		*						*				

Table 7.5 Soft Landscape Maintenance Principles

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 monthly intervals with approved non-toxic pesticides
Weeding :	To be carried out by hand or by mechanical means in such a manner that damage to the grass and planted areas will not be caused.
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
Removal :	Remove all litter and debris
Pruning :	Prune Shrubs and ground covers twice a year in March and November
Pruning :	Prune trees/limb overhanging branches, as required for safety
Mowing :	Mow grass twice a year in March and October
Pest / Fungal Check and Control	Conduct in a monthly basis
Inspection post Typhoon or inclement weather	Conduct after typhoon and inclement weather
Tree Risk Assessment	Conduct once in a year

Table 7.6 Soft Landscape Maintenance Schedule

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Watering	●	●	●	●	●	●	●	●	●	●	●	●
Fertilizing			●								●	
Fungicide / Insecticide			●						●			●
Weeding	●	●	●	●	●	●	●	●	●	●	●	●
Securing*	●	●	●	●	●	●	●	●	●	●	●	●
Repairing*	●	●	●	●	●	●	●	●	●	●	●	●
Cleaning*	●	●	●	●	●	●	●	●	●	●	●	●
Pruning Shrubs / Ground Covers			●								●	
Pruning Trees*	●	●	●	●	●	●	●	●	●	●	●	●
Mowing			●							●		

Note:

* - Conduct when necessary

7.5 Maintenance Responsibilities for Landscape Works

Maintenance of Vegetation and Hard Landscape Features will be undertaken by the JV as a contractual requirement for the project prior to it being handed over to EPD for future maintenance after the expiration of the operation stage.

8 CONTAINER STORAGE

As part of the operational requirements of the facility it is necessary to make provision for storage of a significant number of containers. These containers will be stored in the area adjacent to the vessel offloading berths to be within reach of the 4 main offloading cranes. The EIA made recommendations to limit the height of container storage to stacking not exceeding 2 tiers in height. This requirement was proposed to limit the visual impact of the container storage. However, the limited size of the site dictates that storage of containers to 3 tiers high in selected areas will be required to meet operational requirements. The visual appearance of the container stacking arrangement whether 2 or 3 tiers when assessed from the EIA designated visually sensitive receivers VSR1 – VSR14 incl. will be minimal as the effect will be observed from just too far away.

Accordingly, photomontages illustrating the changes brought about by increasing the container stacking height from 2 to 3 tiers at closer range are presented in **Figures 8.1 to 8.4**. It can clearly be seen that the impact of increasing the container stacking height from 2 to 3 tiers will be minimal and acceptance for this amendment is made accordingly.



Figure 8.1 Visual impact associated with stacking containers to 2 and 3 tiers



Figure 8.2 Visual impact associated with stacking containers to 2 and 3 tiers

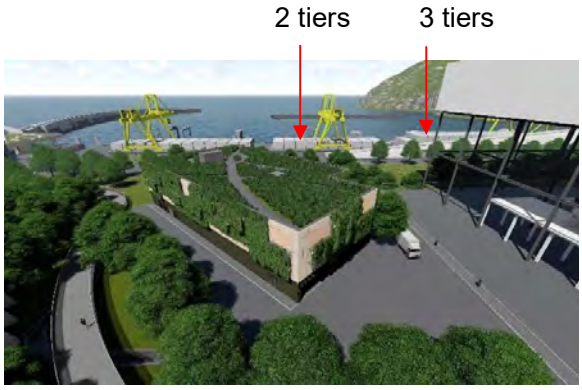


Figure 8.3 Visual impact associated with stacking containers to 2 and 3 tiers



Figure 8.4 Visual impact associated with stacking containers to 3 tiers

(3 tiers not visible from VSR2)

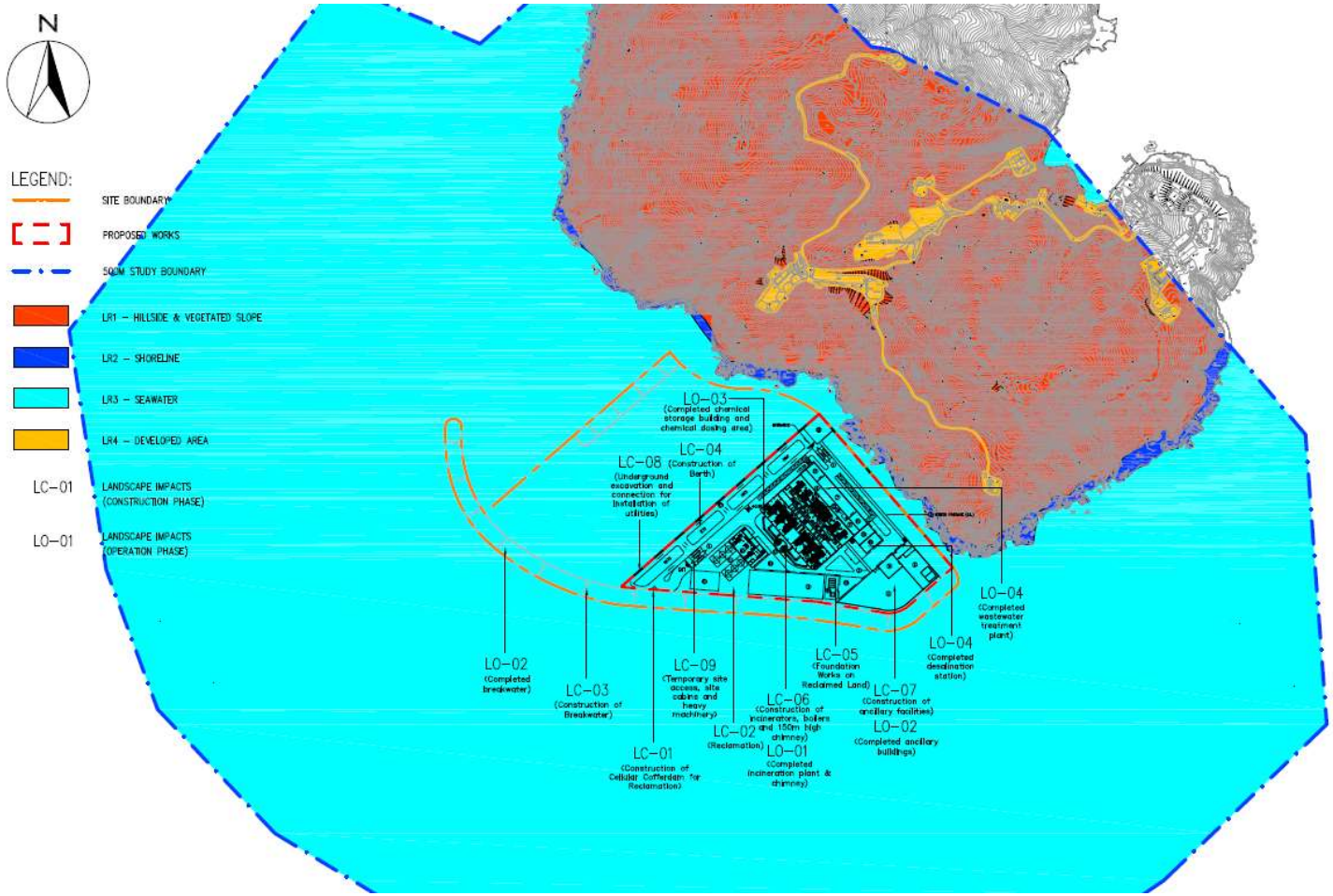
9 CONCLUSION

Landscape and visual mitigation measures proposed in the approved EIA and FEP have been considered and adopted in the current scheme with strategic hard and soft landscape design, in particular on vertical surfaces and their edge treatment, green roofs and vertical greening. These design elements are still under the design and development process. They will be submitted separately once available and prior to the construction of the works. It has been demonstrated that the increase of container stacking in selected areas from 2 to 3 tiers will generate an almost imperceptible visual impact from the EIA VSR locations and a minimal impact from closer range. Endorsement of the increase from 2 to 3 tiers is therefore sought.

Annex A

Part 1

Photographs of existing reference Landscape Resources, Landscape Character Area and Visual Sensitive Receivers



Location Plan for Landscape Resources



LR 1 – Hillside & Vegetated Slope



LR 2 - Shoreline

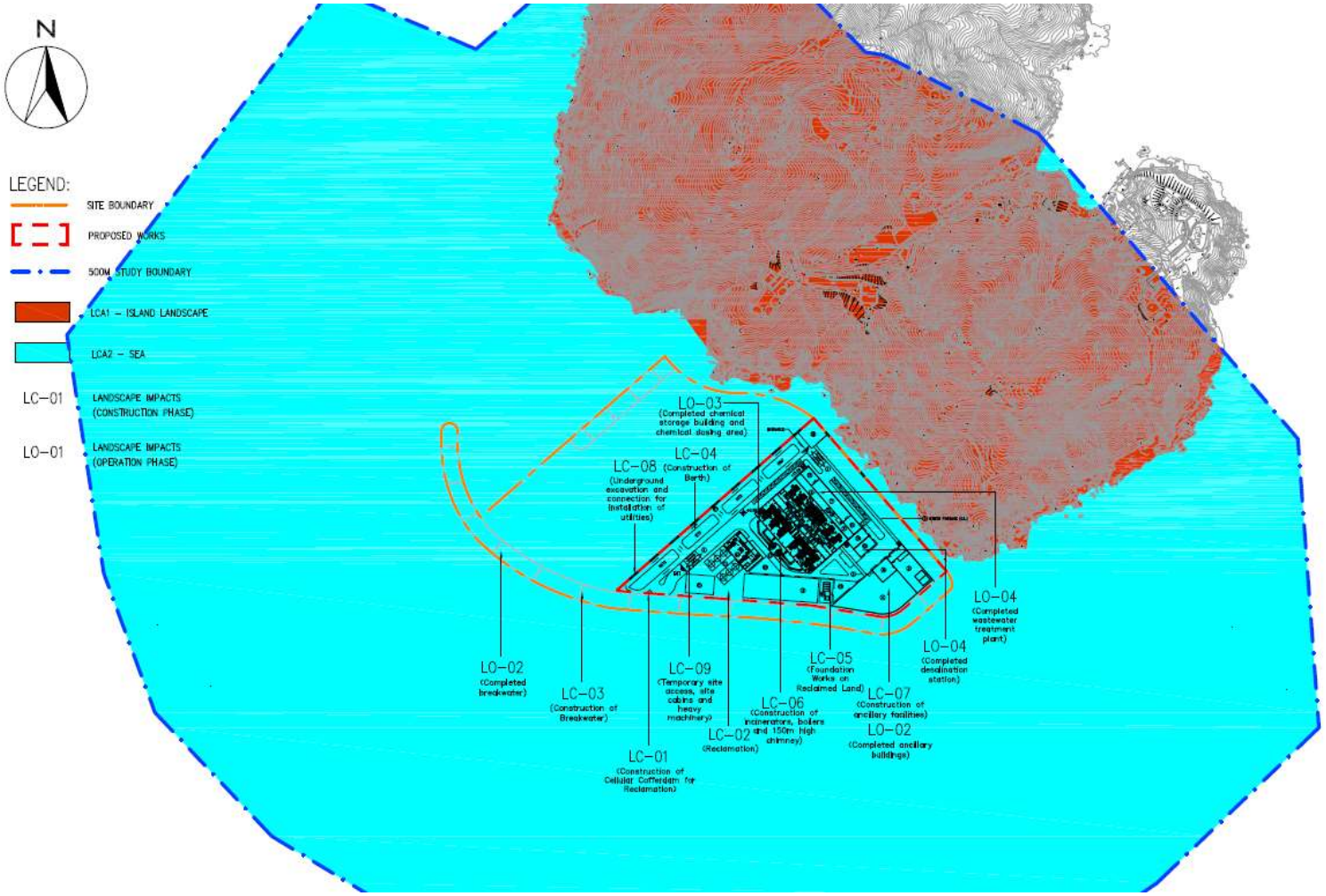


LR 3 - Seawater



LR 4 – Developed Area

Photographs of latest Landscape Resources



Location Plan for Landscape Character Area

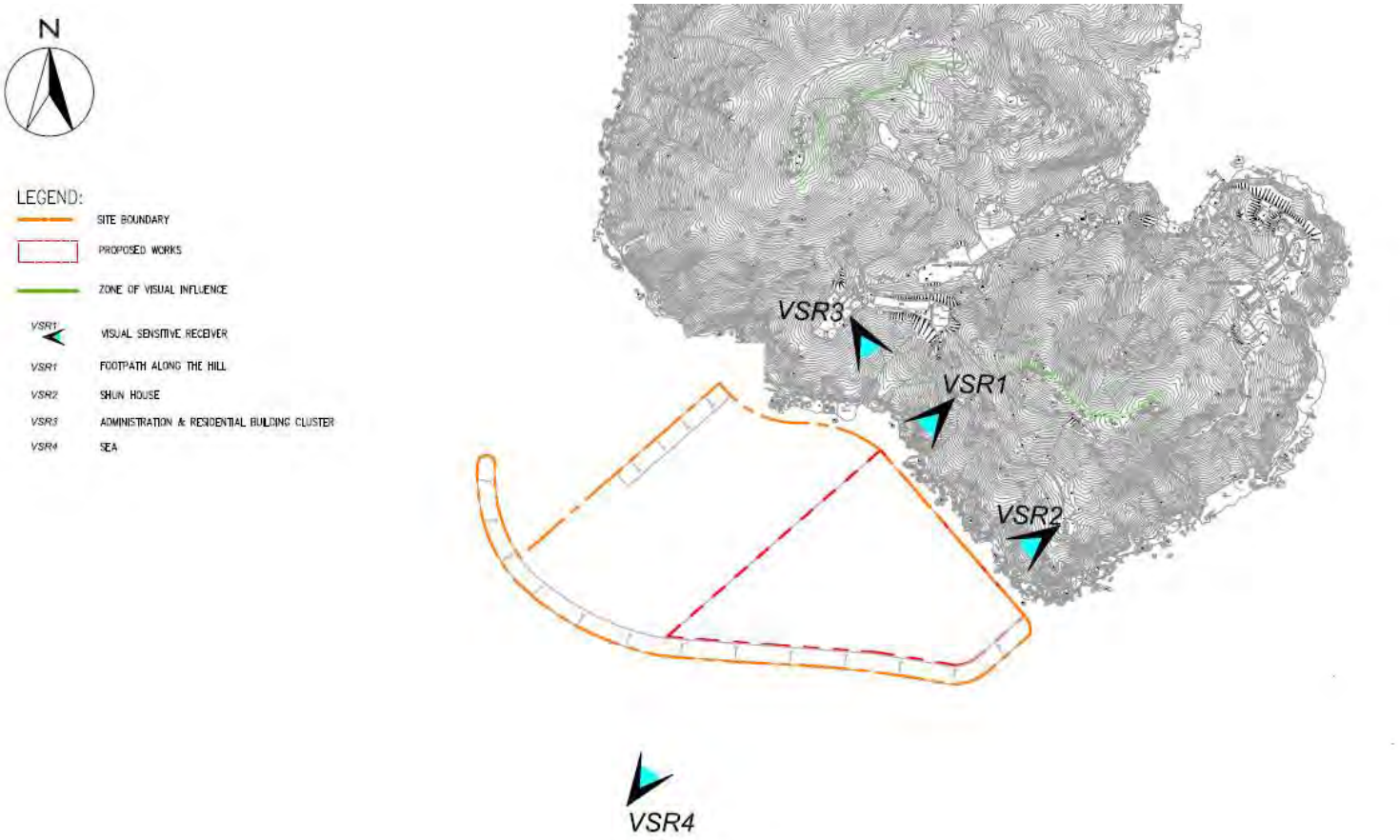


LCA 1 – Island Landscape

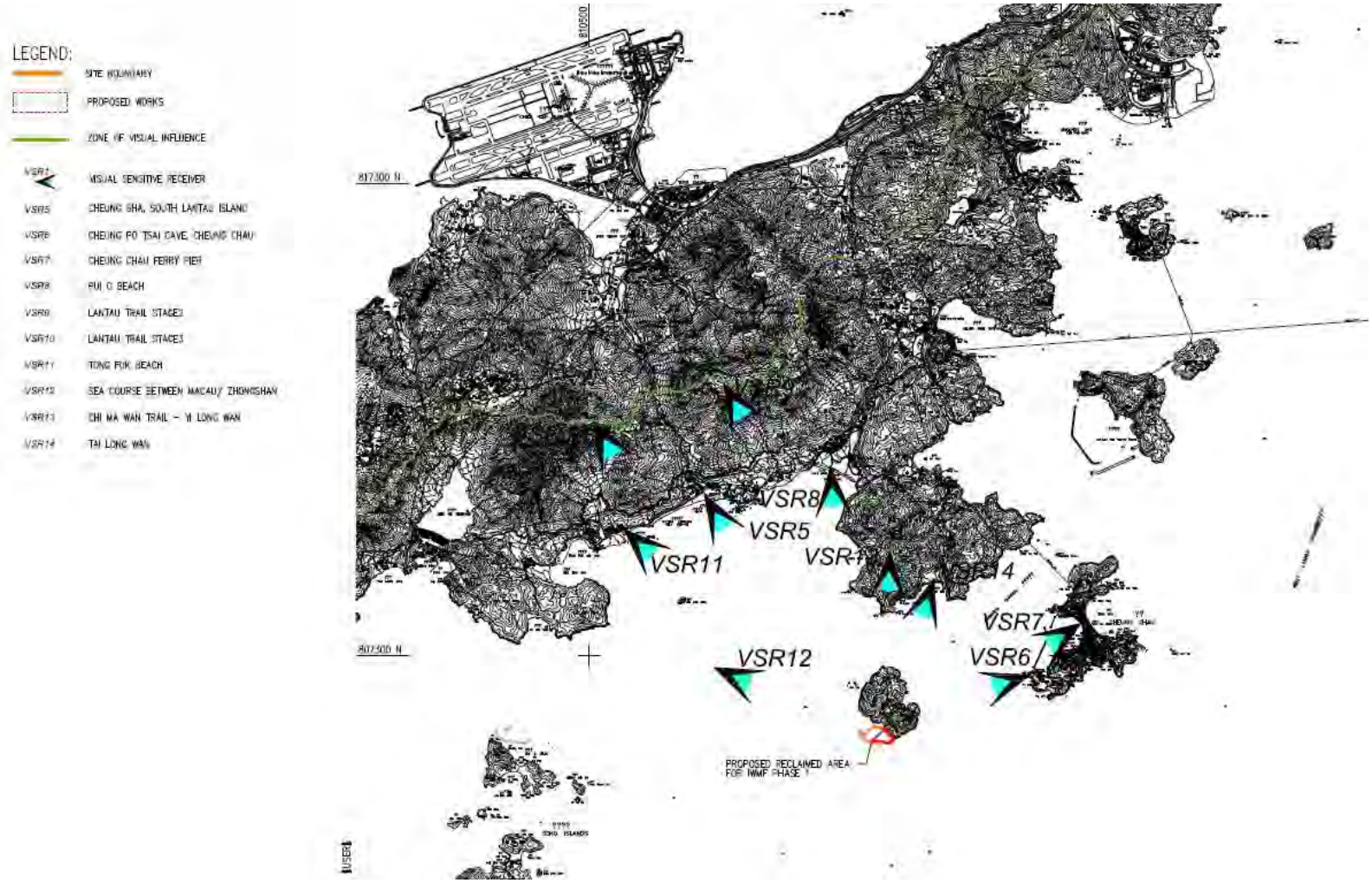


LCA 2 - Sea

Photographs of latest Landscape Character Area



Location Plan for Visual Sensitive Receivers (VSR 1 – 4)



Location Plan for Visual Sensitive Receivers (VSR 5 – 14)



VSR 1 – Footpath along the Hill



VSR 2 – Shun House



VSR 3 – Administration & Residential Building Cluster



VSR 4 – Sea

Photographs of latest (2018) and proposed Visual Sensitive Receivers (VSR 1 – 4)



VSR 5 – Cheung Sha, South Lantau Island



VSR 6 – Cheung Po Tsai Cave, Cheung Chau



VSR 7 – Cheung Chau Ferry Pier



VSR 8 – Pui O Beach

Photographs of latest (2018) and proposed Visual Sensitive Receivers (VSR 5 – 8)



VSR 9 – Lantau Trail Stage 2



VSR 10 – Lantau Trail Stage 3



VSR 11 – Tong Fuk Beach



VSR 12 – Sea Course Between Macau / Zhongshan

Photographs of latest 2018) and proposed Visual Sensitive Receivers (VSR 9 – 12)



VSR 13 – Chi Ma Wan Trail – Yi Long Wan



VSR 14 – Tai Long Wan

Photographs of latest (2018) and proposed Visual Sensitive Receivers (VSR 13 – 14)

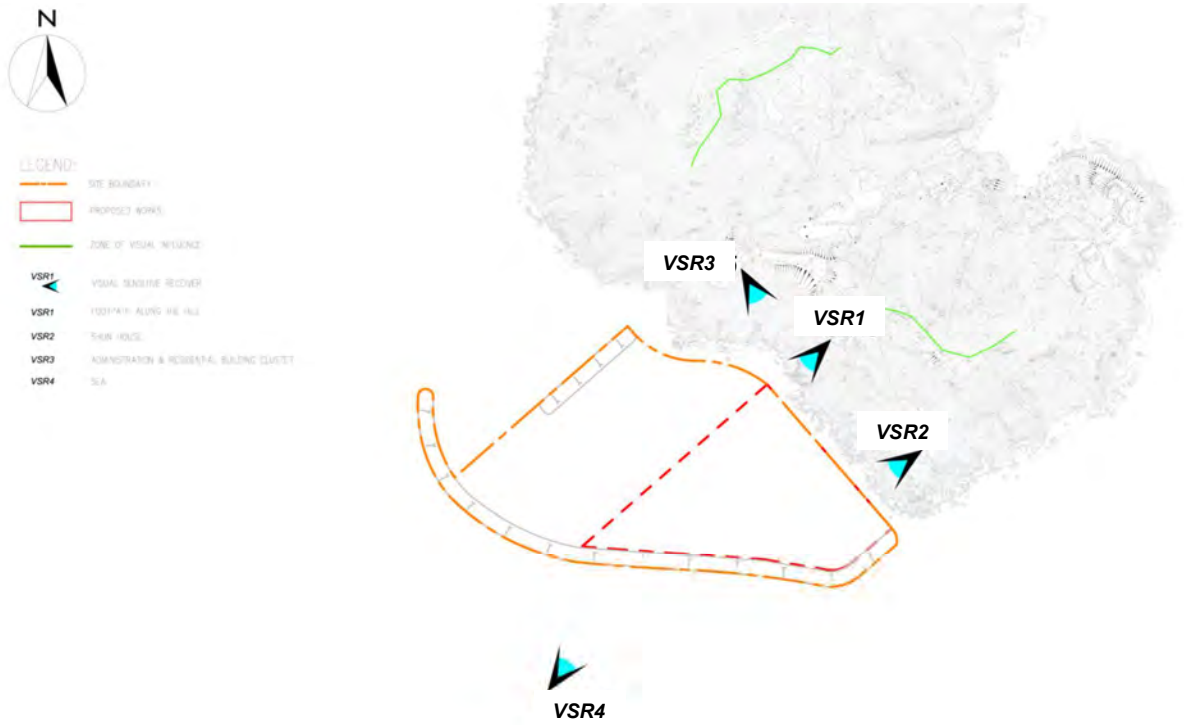
The review of the reference photographs (2018) and the proposed views can be seen to be minimally different as observed from the reference VSRs.

Annex A

Part 2

Photomontages based on existing reference Landscape Resources, Landscape Character Area and Visual Sensitive Receivers

Including the proposed IWMF



Location Plan for Visual Sensitive Receivers (VSR 1 – 4)



VSR 1 Footpath along the hill – Shek Kwu Chau



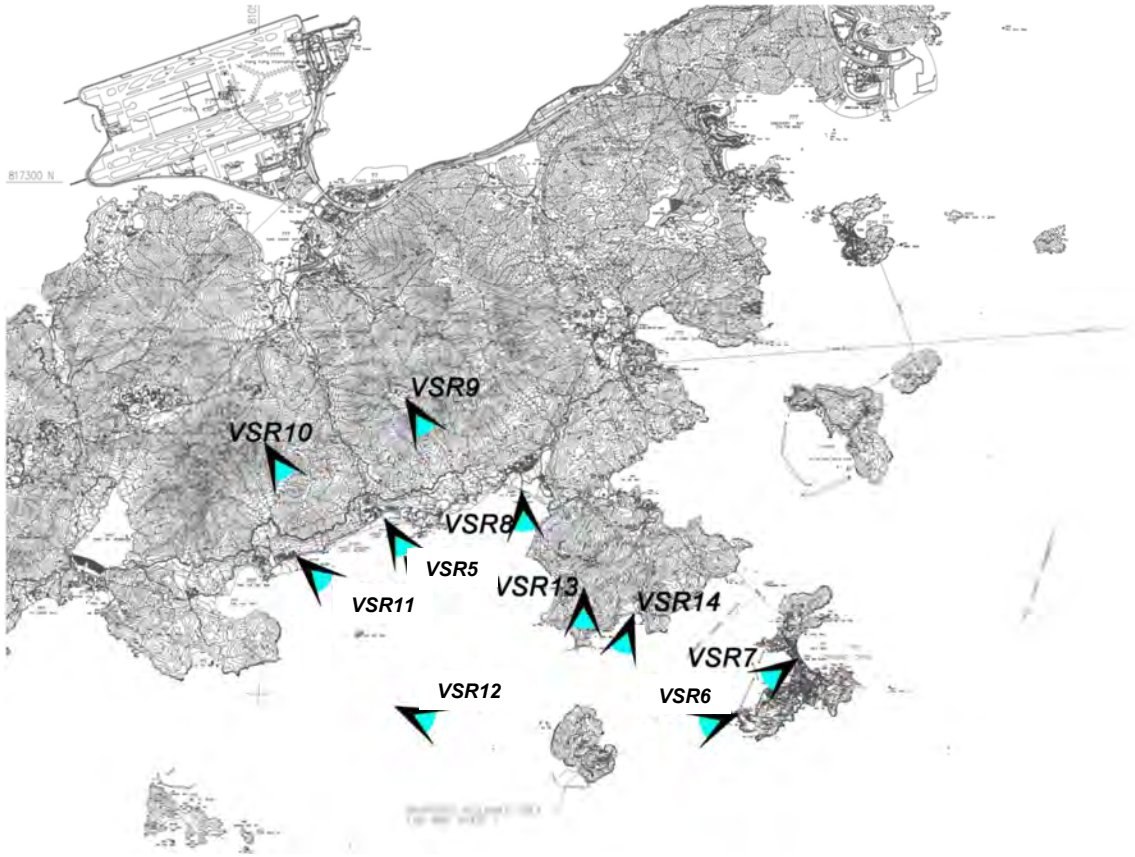
VSR 2 Shun House



VSR 3 Administration and Residential Building Cluster



VSR 4 Sea



Location Plan for Visual Sensitive Receivers (VSR 5 – 14)



VSR 5 Cheung Sha, South Lantau Island



VSR 6 Cheung Po Tsai Cave, Cheung Chau



VSR 7 – Cheung Chau Ferry Pier



VSR 8 – Pui O Beach



VSR 9 Lantau Trail Stage 2



VSR10 Lantau Trail Stage 3



VSR11 Tong Fuk Beach



VSR 12 Sea passage between Macau and Zhongshan



VSR 12A Sea passage between Macau and Zhongshan (close up at breakwater)



VSR 13 Chi Ma Wan Trail – Yi Long Wan



VSR 14 – Tai Long Wan

The review of the photomontages of the IWMF development against the reference photographs (2018) indicates that the proposed views will be minimally different as observed from the reference VSRs.

Annex B

Preliminary Landscape Masterplan & Landscape Design for
Water Feature including Design Drawings

DESIGN I PARK OVERALL LANDSCAPE MASTERPLAN - CURRENT

DRAWING No. IWMF1-LVP-01

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

LEGEND:

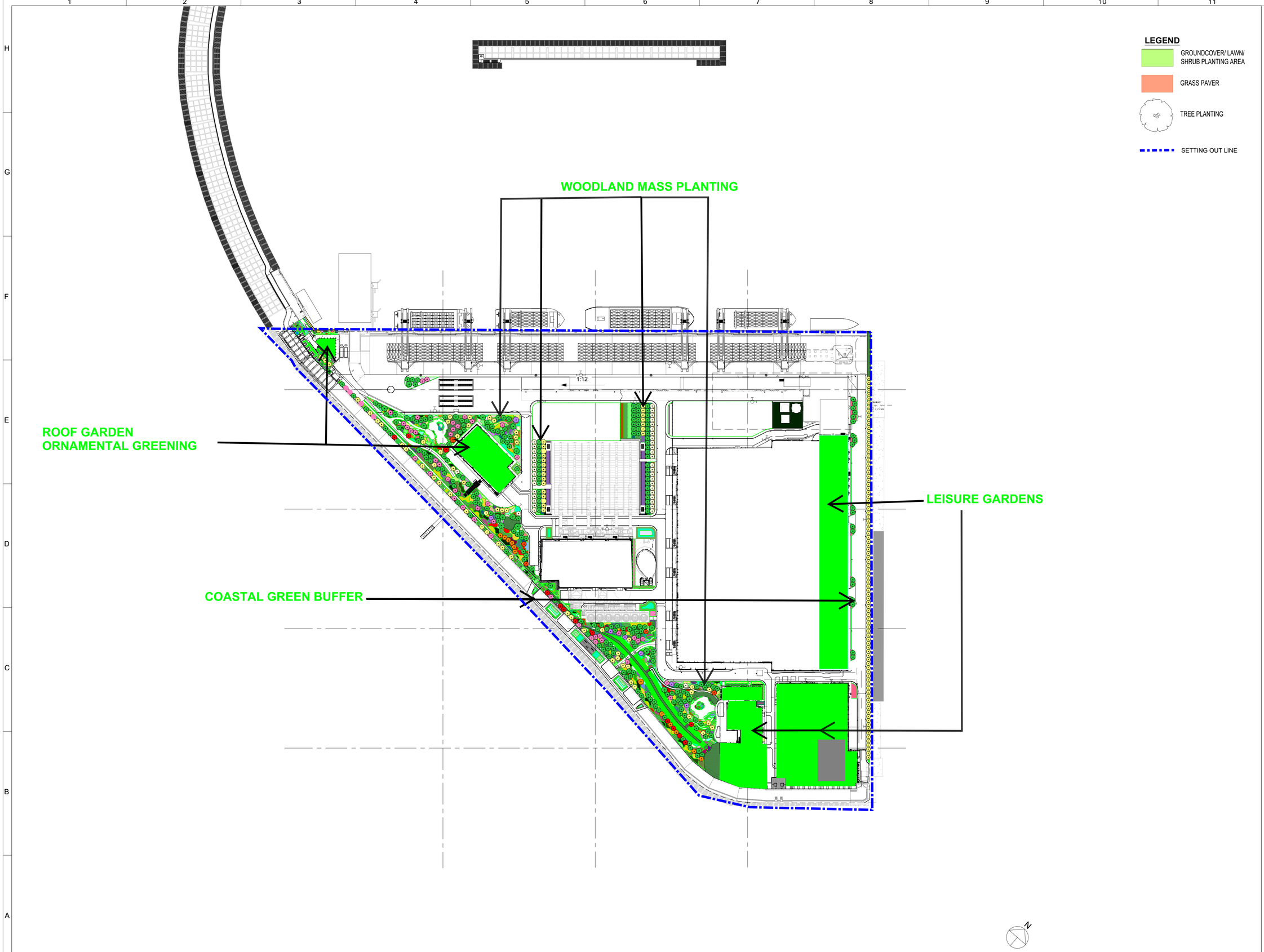
- PROJECT LIMIT
- SETTING OUT LINE
- LANDSCAPE TREE
- LAWN
- SHRUBS/GROUNDCOVER
- MVC- ## MITIGATION MEASURES
- +9.650 GREEN ROOF HEIGHT(mPD)
- SCULPTURE

MLVC-03
MLVC-02
MLVC-03
MLVC-02
MLVO-01
MLVC-02
MLVC-01
Furture Development Area 1
+6.500
+28.480
MLVC-04
MLVO-01
MLVC-01
Furture Development Area 2
+6.500
Process Building
MVC-01
MVC-01
Air Cooled Condensers
MLVC-03
Weight Bridges
+6.300
Chimney
MVO-01
+27.280
MVC-01
MLVC-04
+18.945
Reception Pavilion
IWMF Substation
ENVIRONMENTAL EDUCATION CENTRE
East Courtyard
West Courtyard
Turbine Hall
Admin Buildng + MT Building
+9.650
+6.300
+6.900
+28.500
+17.550
+23.800
CCCW Bldg
+6.300
MVC-01
+6.300
MLVC-04
MLVO-01
West Courtyard
MLVC-02
Tree Canopy Walk
Sea Deck with Sea Pavilion
Sky Bridge
Sky Garden
MLVC-02
Passageway/Elevated Walkway for Visitor
MLVC-02
MLVC-02
Passageway/Elevated Walkway for Visitor

0 10 20 30 40 50 100M

SCALE 1:1000

NOTE:
REFER TO IWMF1_10-130_990_000200, 250 AND 044011 FOR BREAKWATER,SEAWALL AND CHIMNEY LOCATIONS



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	14 OCT 22	1ST ISSUE	-	-

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

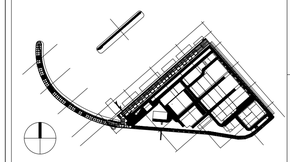
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

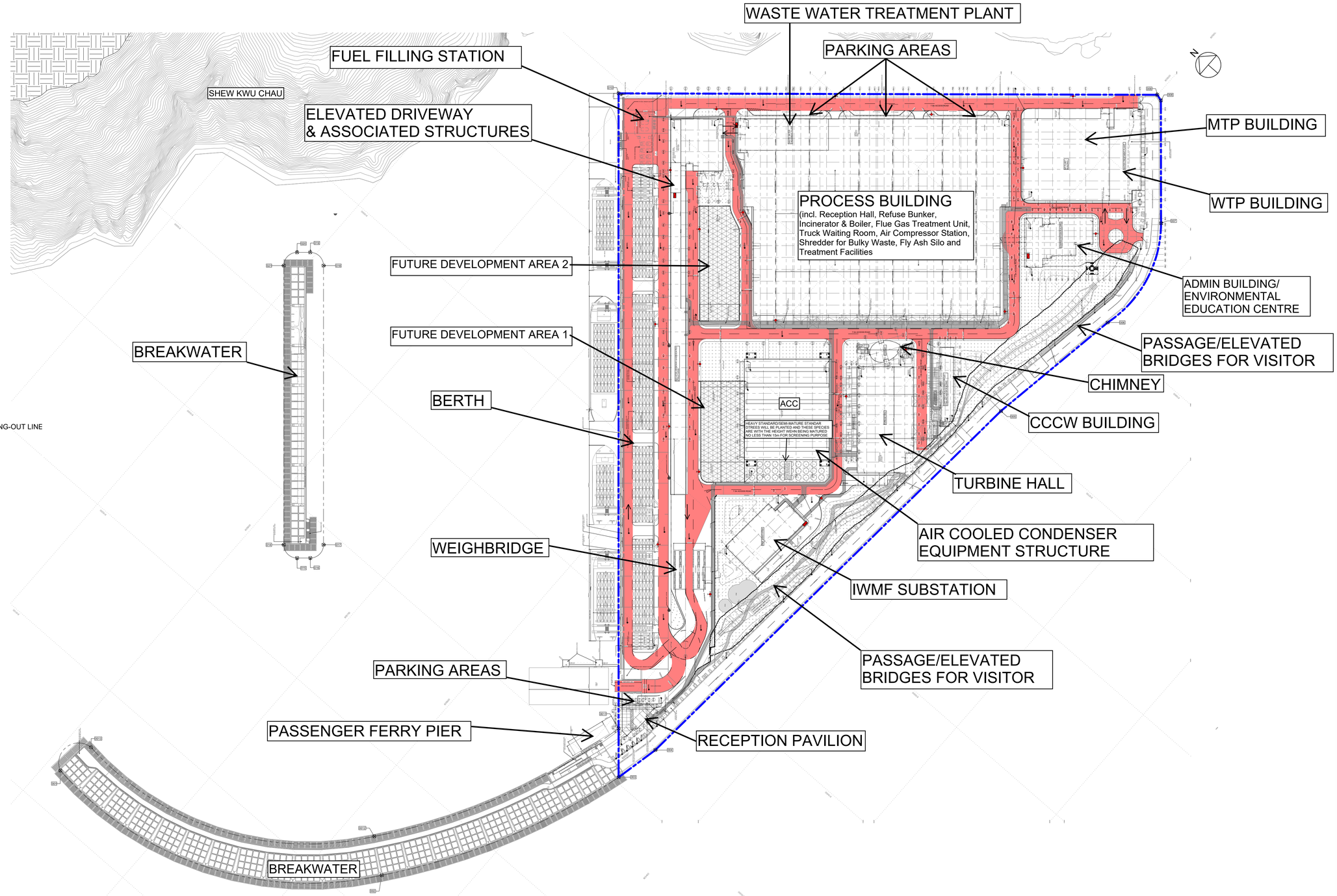
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

Landscape Zoning Plan

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Date: 14 OCT 22	Scale (at A1)	Format
Drawn by: DC	1:200	A1
Checked by: MN		Status
Approved by:KENNY YU		



LEGEND:

SETTING-OUT LINE

NUMBER OF STOREYS

BUILDING	STOREYS
PROCESS BUILDING AND WWTP	7
RECEPTION PAVILION	1
ADMINISTRATION BUILDING	4
MT AND WT PLANT BUILDING	4
CHIMNEY	1
CCCW	2
ELEVATED DRIVEWAY AND ASSOCIATED STRUCTURES	2
SUBSTATION	2
TURBINE HALL	4

BUILDING	SITE COVERAGE AREA PER BUILDING (GBO) (m^2)	SITE COVERAGE AREA PER BUILDING (ACTUAL) (m^2)
ADMINISTRATION BUILDING	676.713	3,106.689
MT AND WT PLANT BUILDING	1,986.092	6,427.295
PROCESS BUILDING	11,264.795	29,642.328

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	16/08/19	Submission to CHEC	ARDL	CHEC
1	12/05/21	Submission to CHEC	ARDL	CHEC
2	30/12/21	Submission to CHEC	ARDL	CHEC

Employer

環境保護署
Environmental Protection Department

Supervising Officer

AECOM

Main Contractor

Keppel Seghers

吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
AGLA

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

LEGEND:

- NOTIONAL ARTIFICIAL ISLAND AREA = 132,740 m^2
- ACCESS ROAD FOR FIRST RESPONSE VEHICLE
- STREET FIRE HYDRANT
- FIREFIGHTING EQUIPMENT CABINET
- FENCE
- PROPOSED TREE
- GREEN AREA
- POND
- ROCK FILL
- FUTURE DEVELOPMENT WITH SOFT LANDSCAPE
- ROADS
- UTILITIES TRENCH
- VISITOR PATH

Project Name

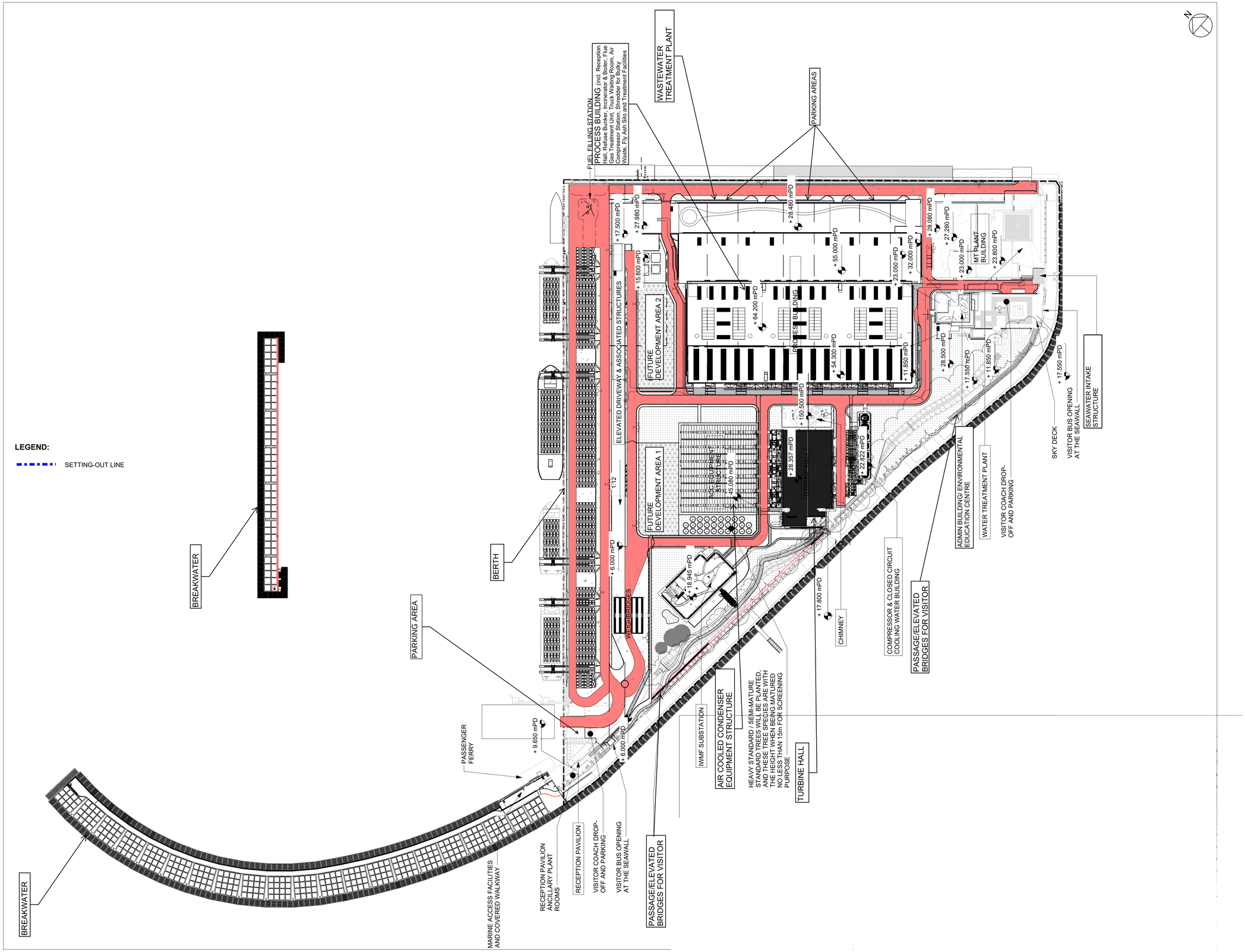
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

CIVIL & EXTERNAL WORKS
SITE PLAN OVERALL LAYOUT
GROUND LEVEL

Drawing Number	Revision
IWMF1_10-130_990_000200	2
Date: 03/05/19	Scale (at A1): 1 : 1500 / Format: A1
Drawn by: Nick A	
Checked by: Martin H	Status: PRE
Approved by: Kenny Yu	



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	13/08/21	Submission to CHEC	ARDL	CHEC
1	30/12/21	Submission to CHEC	ARDL	CHEC

Employer

環境保護署
Environmental Protection Department

Supervising Officer

AECOM

Main Contractor

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KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
AGLA

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

LEGEND:

- NOTIONAL ARTIFICIAL ISLAND AREA = 132,740 m²
- ACCESS ROAD FOR FIRST RESPONSE VEHICLE
- STREET FIRE HYDRANT
- FIREFIGHTING EQUIPMENT CABINET
- PROPOSED TREE
- GREEN AREA
- FUTURE DEVELOPMENT WITH SOFT LANDSCAPE

Project Name

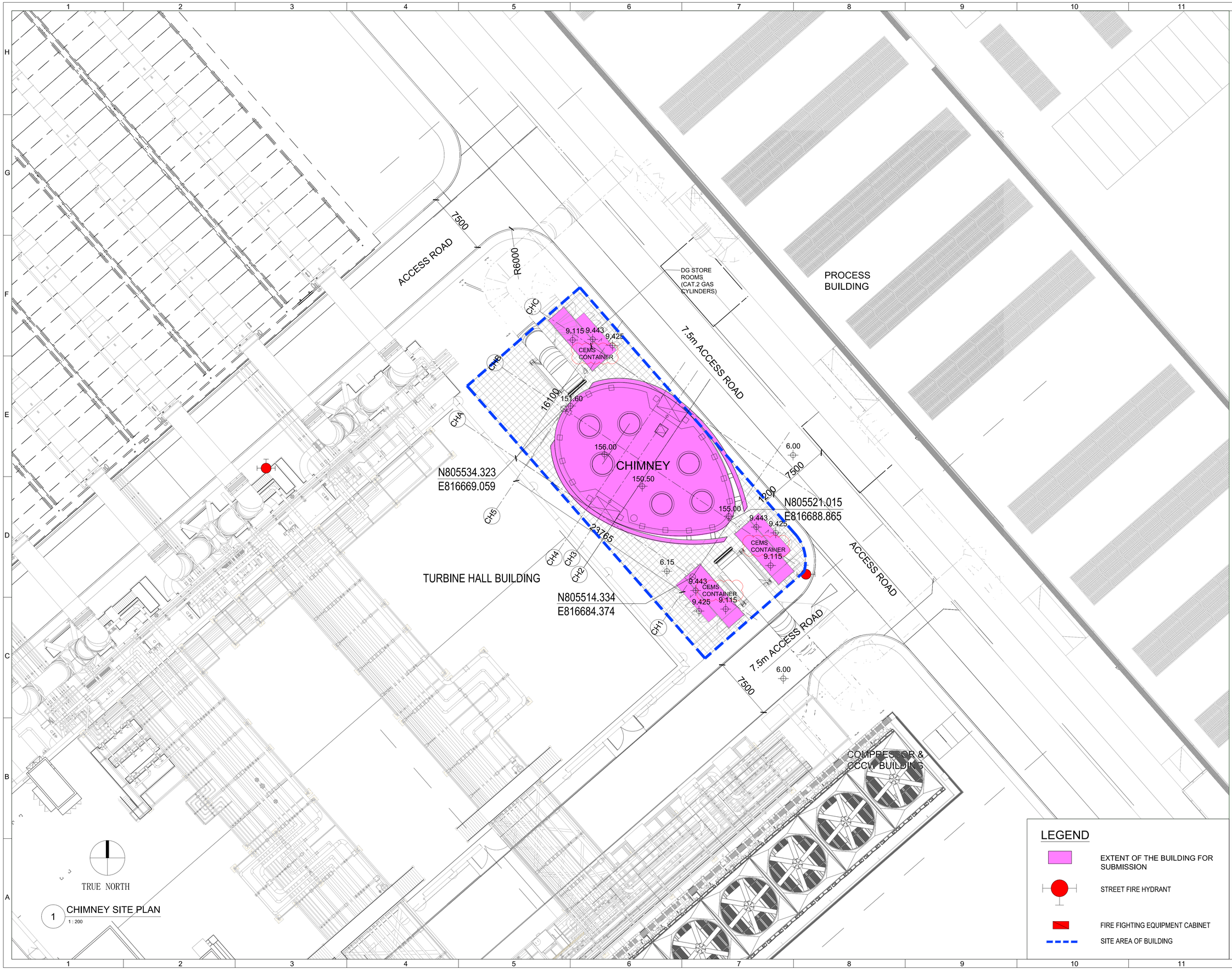
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

CIVIL & EXTERNAL WORKS
SITE ROOF OVERALL LAYOUT

Drawing Number		Revision
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Date: 13 AUG 21	Scale (at A1)	Format
Drawn by: Nick A	1 : 1500	A1
Checked by: Martin H		Status
Approved by:Kenny Yu		PRE



1 CHIMNEY SITE PLAN
1 : 200

LEGEND

- EXTENT OF THE BUILDING FOR SUBMISSION
- STREET FIRE HYDRANT
- FIRE FIGHTING EQUIPMENT CABINET
- SITE AREA OF BUILDING

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	31-MAR-2022	DDA SUBMISSION	MH	KY
1	15-AUG-2022	DDA SUBMISSION	MH	KY

Employer
環境保護署
Environmental Protection Department

Supervision Officer
AECOM

Main Contractor
Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
ARCADIS
DLN

Design Checker
SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

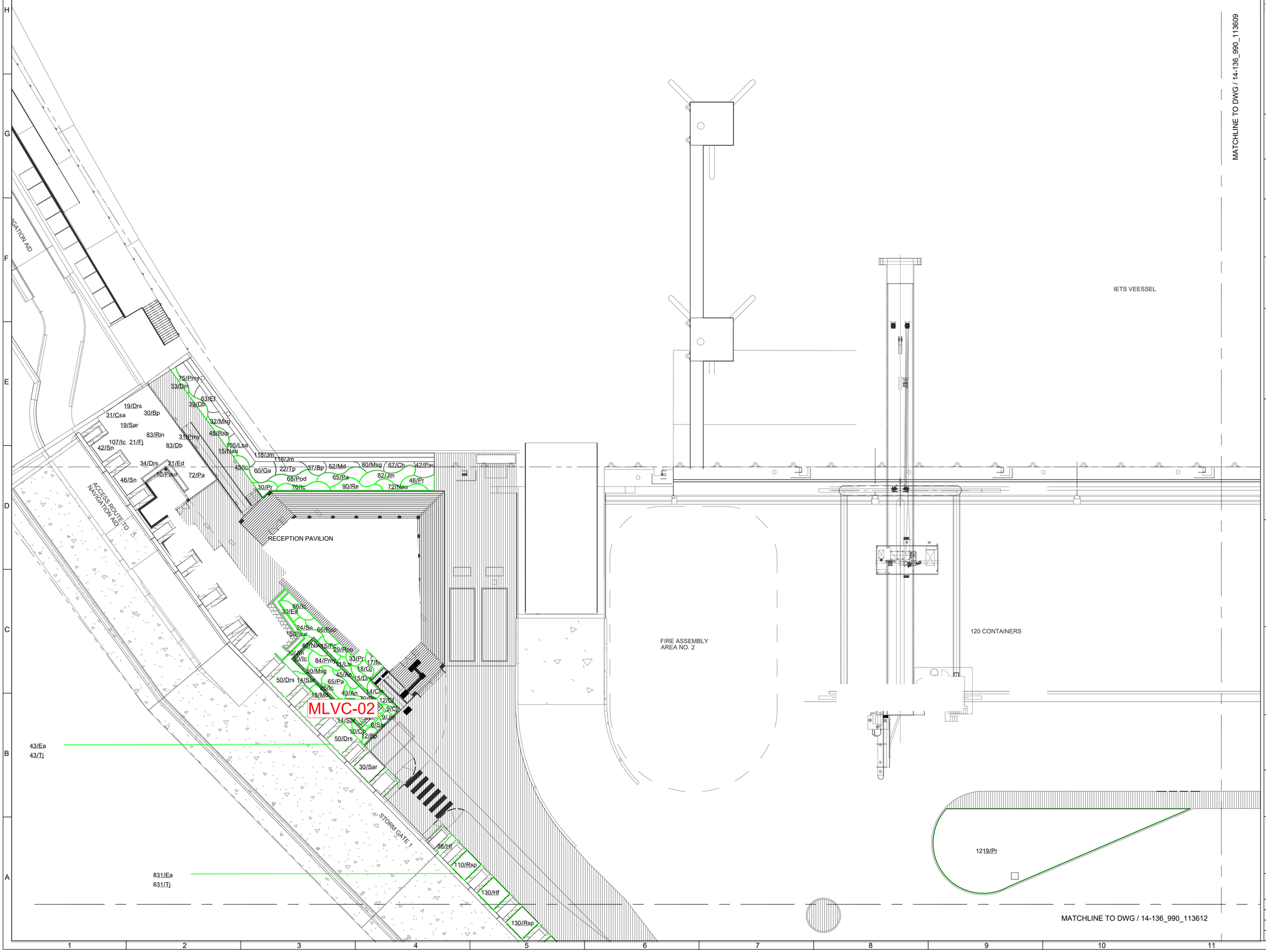
Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package
2.3.25.04
CHIMNEY
ARCHITECTURAL DESIGN

Drawing Title
CHIMNEY SITE PLAN

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Date: 31/03/22	Scale (at A1)	Format
Drawn by: DANNY W	1:200	A1
Checked by: MARTIN H		Status
Approved by:KENNY Y		DES

Landscape Master Plan
&
Design of Water Feature



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

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Designers

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Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S8

Drawing Number		Revision
IWMF1_14-136_990_113608		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status
Approved by:KENNY YU		DDA

MATCHLINE TO DWG / 14-136_990_113608

MATCHLINE TO DWG / 14-136_990_113610

IWMF VESSEL

WASTE RECEPTION QUAYS

120 CONTAINERS

120 CONTAINERS

IWTS VESSEL

WEIGH BRIDGE

MATCHLINE TO DWG / 14-136_990_113613

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

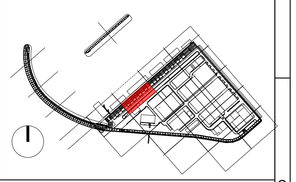
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S9

Drawing Number		Revision
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Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113609

WKTS VESSEL

252 CONTAINERS

MATCHLINE TO DWG / 14-136_990_113611

IWTS VESS

120 CONTAINERS

MATCHLINE TO DWG / 14-136_990_113614

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

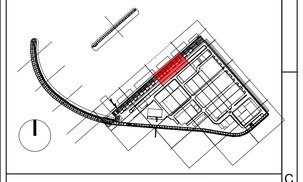
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

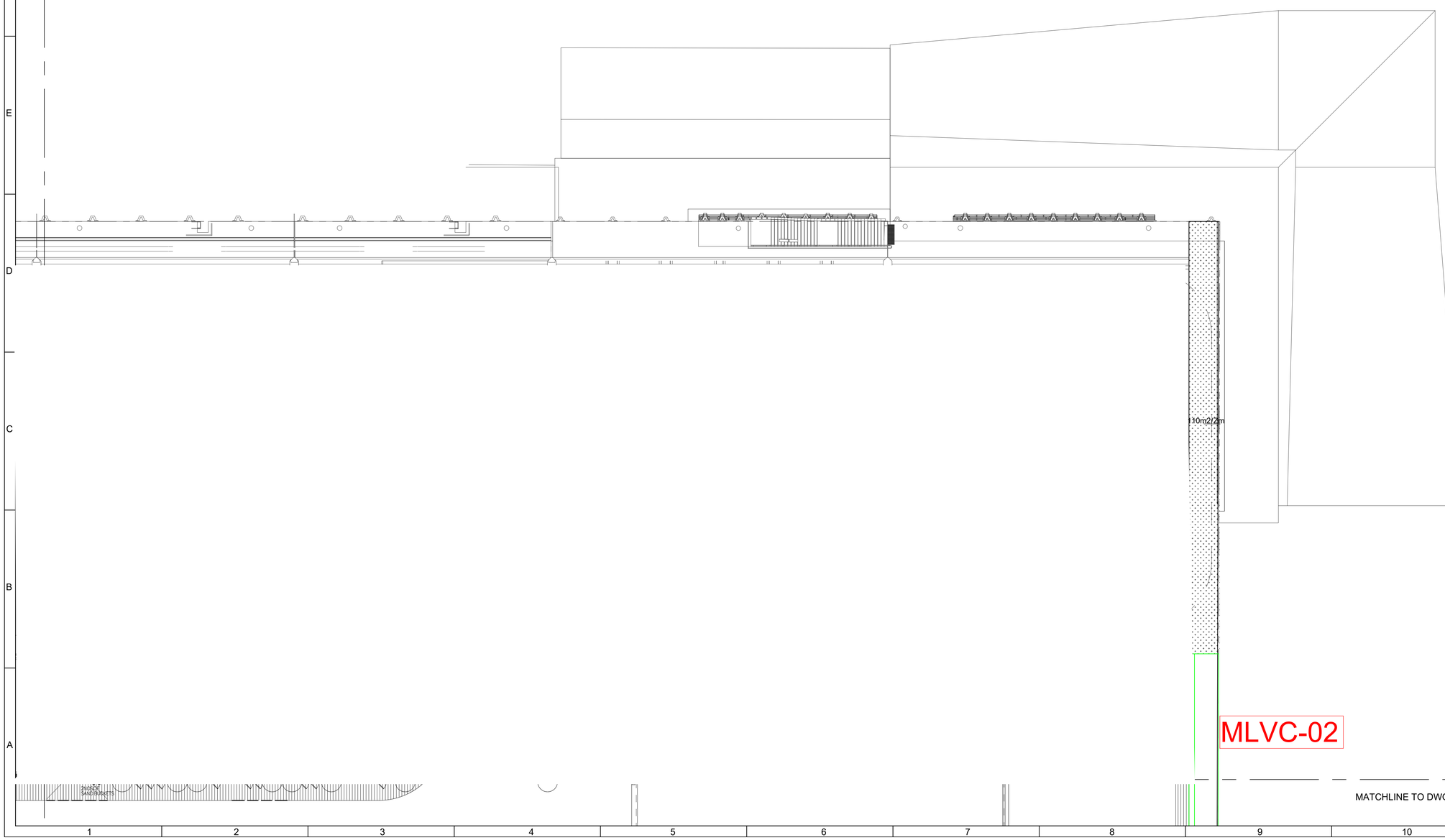
Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S10

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Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113610

IWTS VESSEL



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

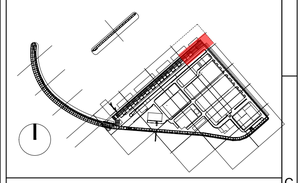
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S11

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Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113608

MATCHLINE TO DWG / 14-136_990_113613

831/Ea
831/Tj
110/Rsp
130/Hf
130/Rsp
130/Hf
32/Sar
42/Tp
62/Fj
36/Am
36/Fj
57/Sar
39/Fj
30/Am
56/Sar
30/Fj
134/Lca
35/Am
48/Sar
42/Fj
115/Lca
34/Fj
34/Am
38/Fj
36/Sar
16/Am
29/Am
30/Fj
143/Lca
82/Fj
370/Ic
233/Rmy
260/Csa
PEDESTRIAN ACCESS GATE
69/Sar
66/Tp
270/Rc
6.60
70/Fc
6.30
128/Pr
127/Mma
64/Rco
282/Ls
74/It
105/Db
136/Lja
136/Tj
166/Pa
167/Sar
93/Cj
76/Pr
53/Ef
160/Hf
158/Ic
137/Rsp
6.30
115/Cf
152/Ga
6.60
68/Tp
121/Csa
27/Cpa
62/Lar
163/Ic
104/Pr
173/Ls
6.30
98/Ch
135/Lsa
55/Mma
97/Lsi
233/Ms
46/Cyp
100/Nau
82/It
95/Pr
75/Ppy
98/Ppy
94/It
380/Din
6.60
217/Ga
131/Rsp
137/Bc
59/Ls
37/Jef
104/Sbk
178/Ef
142/It
MLVC-02
64/Db
126/Pa
21/Nsp
34/Nsp
64/Fc
30/Jm
114/Md
435/Zg
272/Hf
74/Mma
23/Bp
56/Lar
1957/OU
PEDESTRIAN LINK
127/Ch
48/Tp
400/Rto
32/Nnu
176/Nau
127/It
112/Ed
49/Pa
227/Db
89/Cin
108/Ms
65/Dra
73/Cyp
BUS ROUTE
470/Rsp
48/Api
331/It
6.30
320/Nau
113/Hf
103/Cj
84/Pr
77/Ga
359/Db
108/Md
293/Sar
217/Csa
130/Lsi
6.60
209/Drs
180/Ed
119/Am
153/Hoo
411/Lca
155/Drs
158/

B

KEY PLAN

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer
環境保護署
Environmental Protection Department

Supervision Officer
AECOM

Main Contractor
Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
ARCADIS
DLN
QLN

Design Checker
SMEC
Member of the Surbana Jurong Group

Certification

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S12

Drawing Number	Revision
IWMF1_14-136_990_113612	0
Date: 22 DEC 22	Scale (at A1): 1:200
Drawn by: DC	Format: A1
Checked by: MN	Status: DDA
Approved by: KENNY YU	

MATCHLINE TO DWG / 14-136_990_113612

MATCHLINE TO DWG / 14-136_990_113609

MATCHLINE TO DWG / 14-136_990_113614

WEIGH BRIDGE

FUTURE DEVELOPMENT AREA 1

FUTURE DEVELOPMENT WILL BE HYDROSEEDED WITH GRASS

MLVC-01

MLVC-02

MLVC-04

MLVC-01

MLVC-02

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S13

Drawing Number	Revision
IWMF1_14-136_990_113613	0
Date: 22 DEC 22	Scale (at A1) 1:200 / Format A1
Drawn by: DC	
Checked by: MN	Status DDA
Approved by: KENNY YU	

MATCHLINE TO DWG / 14-136_990_113610

MATCHLINE TO DWG / 14-136_990_113609

MATCHLINE TO DWG / 14-136_990_113615

FUTURE DEVELOPMENT WILL BE HYDROSEEDED WITH GRASS

FUTURE DEVELOPMENT AREA 1

1380/Rsp 355/Fj 506/Gj 798/Tu 355/Fj 952/Drs 1196/Tu 2070/Rsp

573/Sar

MLVC-01

MLVC-04

29/Fc1

H10/Fc1

158/Drs

54/Fc1

828/Drs 1088/Tu 1780/Rsp

524/Sar

6/Fc1

FUTURE DEVELOPMENT WILL BE HYDROSEEDED WITH GRASS

FUTURE DEVELOPMENT AREA 2

MLVC-01

MLVC-04

PROCESSING BUILDING
MODULE 3

MATCHLINE TO DWG / 14-136_990_113617

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers

古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS

DLN

QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S14

Drawing Number	Revision
IWMF1_14-136_990_113614	0
Date: 22 DEC 22 / Scale (at A1): 1:200	Format: A1
Drawn by: DC	
Checked by: MN	Status: DDA
Approved by: KENNY YU	

MATCHLINE TO DWG / 14-136_990_113614

MATCHLINE TO DWG / 14-136_990_113611

MLVC-01

MLVC-04

FUTURE DEVELOPMENT WILL BE HYDROSEEDED WITH GRASS

TANKS

1940/SAR

728/Ch 191/Pmy

2171/Pmy

4067/Ch

308/Ch 546/Pmy

WASTE WATER TREATMENT PLANT

VEHICLE LAY-BY

168/Ch

MATCHLINE TO DWG / 14-136_990_113618

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S15

Drawing Number	Revision
IWMF1_14-136_990_113615	0
Date: 22 DEC 22	Scale (at A1): 1:200
Drawn by: DC	Format: A1
Checked by: MN	Status: DDA
Approved by: KENNY YU	



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S16

Drawing Number		Revision
IWMF1_14-136_990_113616		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113616

MATCHLINE TO DWG / 14-136_990_113614

MATCHLINE TO DWG / 14-136_990_113618

MLVC-04

1932/Ap

996/Nau

489/Pr

MLVC-04

170/Chy

CHIMNEY

PROCESSING BUILDING
MODULE 2

1035/Ap

MLVC-04

1462/Ap

1153/Nau

709/Chy

COMPRESSOR &
CLOSED CIRCUIT
COOLING WATER
BUILDING

178/It

83/Sar

63/Tp

134/Pau

69/Fj

541/Lca

68/Cj

52/Pau

97/Cj

6.30

147/Drs

317/Pvi

122/Gjs

62/Pr

6.60

139/Cj

66/Sar

152/Ga

49/Fj

517/Fp

109/Ed

119/Md

200/Ef

138/Ac

188/It

37/Api

MATCHLINE TO DWG / 14-136_990_113620

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S17

Drawing Number	Revision
IWMF1_14-136_990_113617	0
Date: 22 DEC 22	Scale (at A1) 1:200
Drawn by: DC	Format A1
Checked by: MN	Status DDA
Approved by: KENNY YU	

MATCHLINE TO DWG / 14-136_990_113617

MATCHLINE TO DWG / 14-136_990_113615

168/Ch

175/Ch 429/Pmy

CHEMICAL PREPARATION YARD

VEHICLE LAY-BY

GENERAL STORE

168/Ch

175/Ch 416/Pmy

WORKSHOP

VEHICLE LAY-BY

MLVC-02

MATCHLINE TO DWG / 14-136_990_113621

LEGEND

- HARD PAVED AREA
- CONCRETE FINISH
- POND AREA
- PLANTING AREA (SHRUBS)
- PLANTING AREA (LAWN)
- BE — BENCH

LEVEL LEGEND

- FFL +X.XX — FINISH FLOOR LEVEL
- TOK +X.XX — TOP OF KERB
- TOW +X.XX — TOP OF WALL
- TOS +X.XX — TOP OF SOIL
- BOS +X.XX — BOTTOM OF SOIL
- WL +X.XX — WATER LEVEL
- TOP +X.XX — TOP OF POND
- BOP +X.XX — BOTTOM OF POND

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

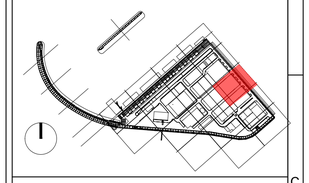
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

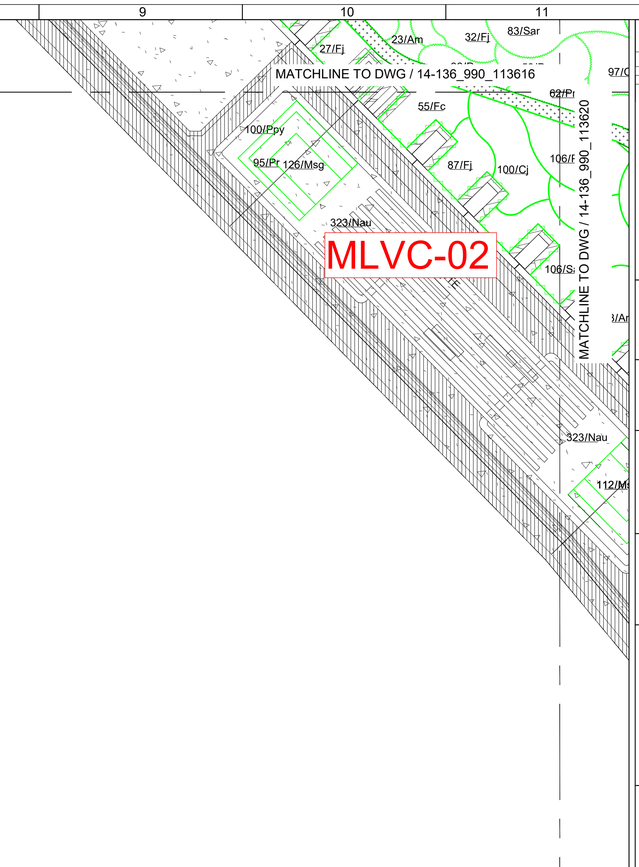
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S18

Drawing Number		Revision
IWMF1_14-136_990_113618		0
Date: 22 DEC 22	Scale (at A1)	Format
Drawn by: **DC**	1:200	A1
Checked by: **MN**		Status
Approved by:**KENNY YU**		DDA



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

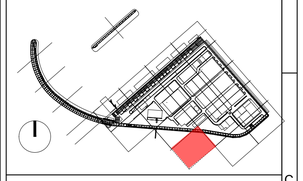
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S19

Drawing Number		Revision
IWMF1_14-136_990_113619		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113619

MATCHLINE TO DWG / 14-136_990_113617

MATCHLINE TO DWG / 14-136_990_113621

MATCHLINE TO DWG / 14-136_990_113622

PROCESSING BUILDING
MODULE 1

ADMINISTRATION BUILDING

MLVC-02

MLVC-02

PEDESTRIAN LINK

BUS ROUTE

1209/Db
1209/Ec
1209/Hf
1209/It
1209/NAU

1297/Db
1297/Ec
1297/Hf
1297/It
1297/NAU

REFER TO
ADMIN BUILDING
AIP SUBMISSION

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S20

Drawing Number		Revision
IWMF1_14-136_990_113620		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113620

WORKSHOP

VEHICLE LAY-BY

161/Ch

MATCHLINE TO DWG / 14-136_990_113618

MLVC-02

293/Nau

149/An

111/Sar

287/Ch

97/Pmy

REFER TO
ADMIN BUILDING
AIP SUBMISSION

N

MT & WATER
TREATMENT
PLANT BUILDING

MATCHLINE TO DWG / 14-136_990_113623

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

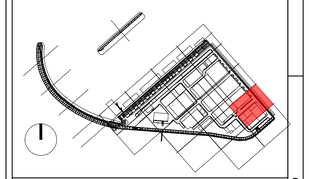
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

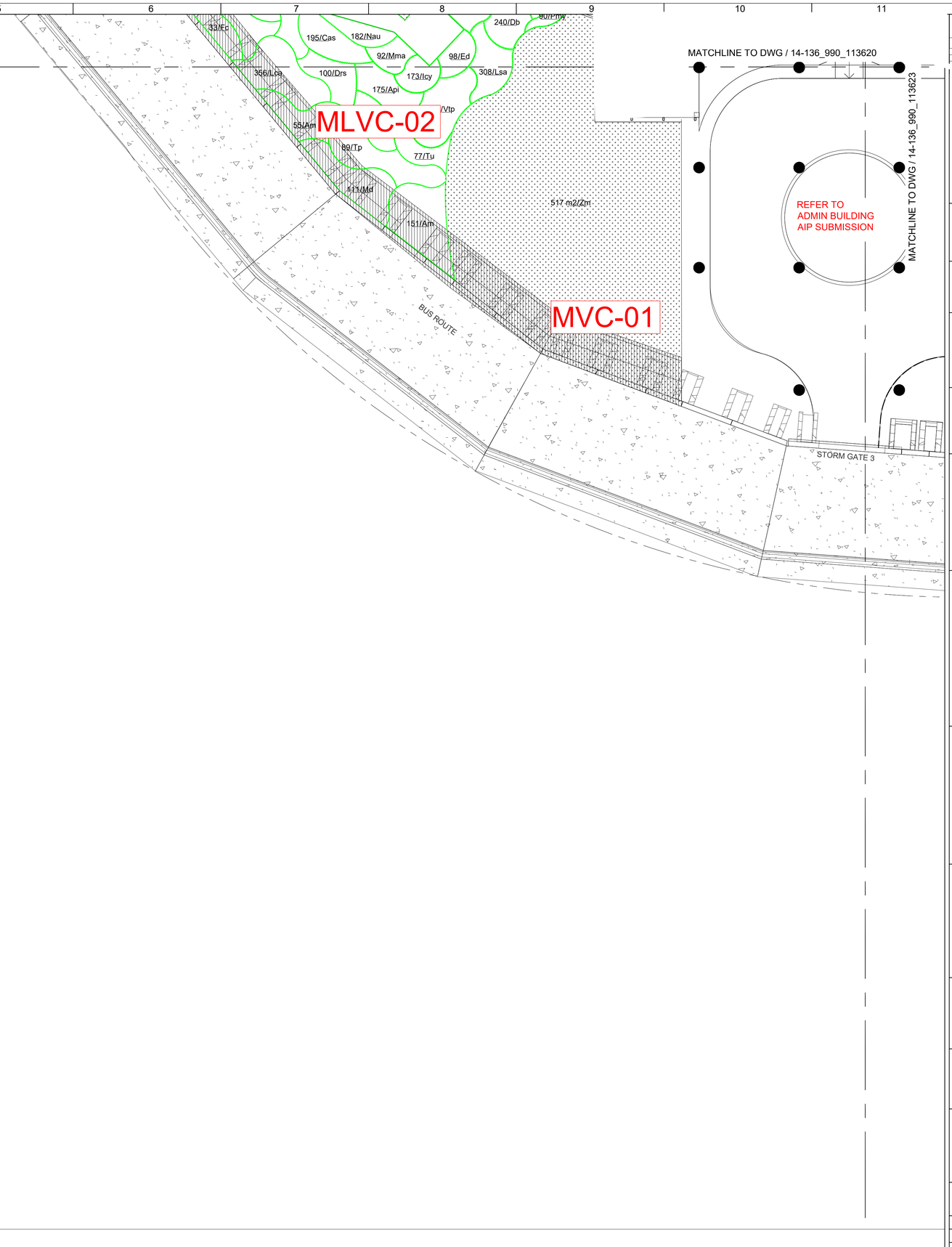
Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S21

Drawing Number		Revision
IWMF1_14-136_990_113621		0
Date: 22 DEC 22	Scale (at A1)	Format
Drawn by: DC	1:200	A1
Checked by: MN		Status
Approved by: KENNY YU		DDA



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

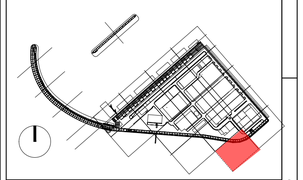
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

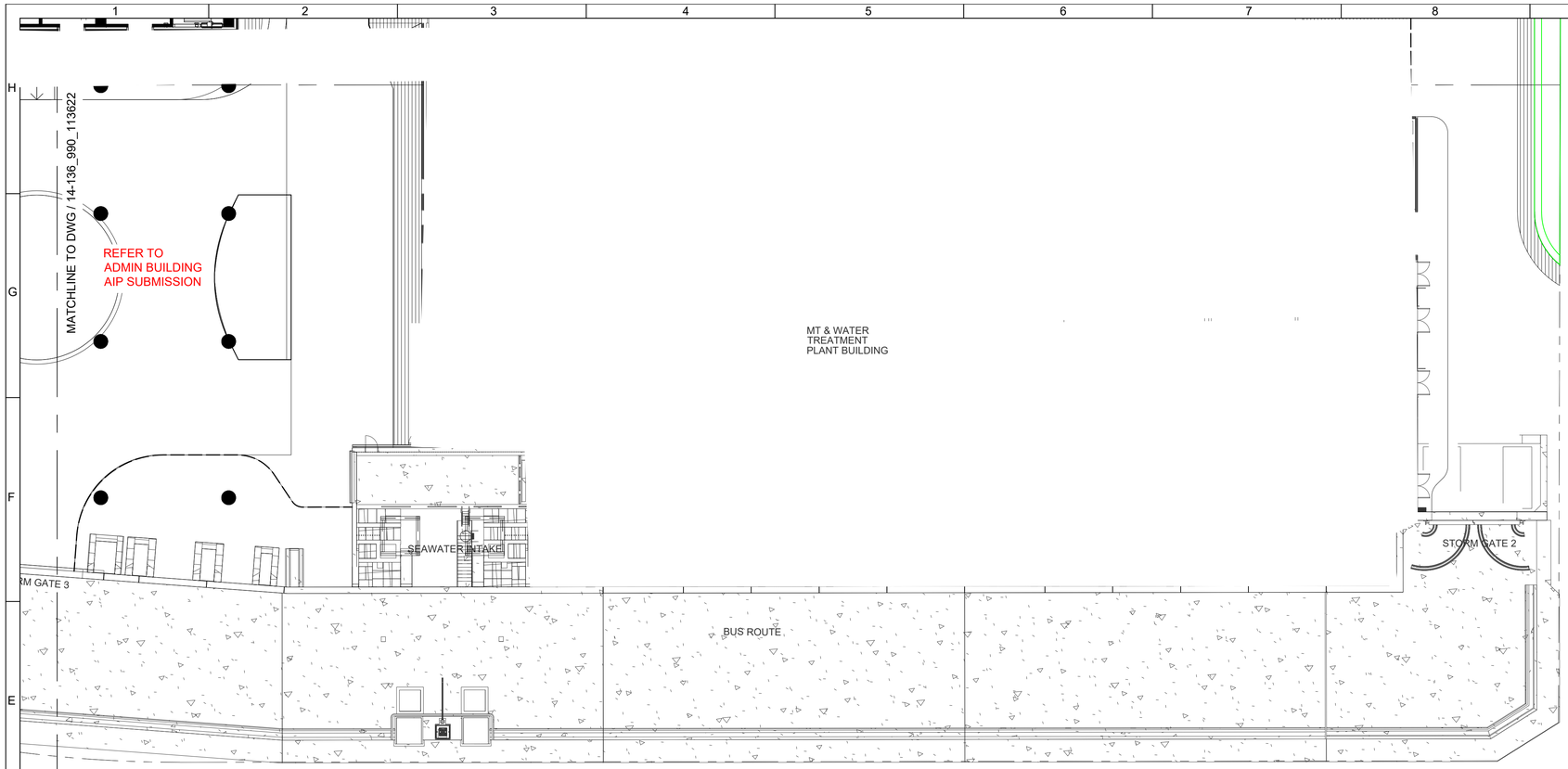
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S22

Drawing Number		Revision
IWMF1_14-136_990_113622		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

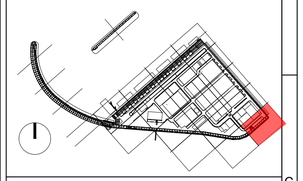
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE SHRUB PLANTING PLAN S23

Drawing Number		Revision
IWMF1_14-136_990_113623		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		

MATCHLINE TO DWG / 14-136_990_113709

IETS VEESSEL

ACCESS ROUTE TO NAVIGATION AID

RECEPTION PAVILION

FIRE ASSEMBLY AREA NO. 2

120 CONTAINERS

PR 3

SJ 1

BB 1

BB 1

CC 1

SL 2

CB 2

CC 1

BB 1

MATCHLINE TO DWG / 14-136_990_113712

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S8

Drawing Number		Revision
IWMF1_14-136_990_113708		0
Date: 22 DEC 22	Scale (at A1)	Format
Drawn by: DC	1:200	A1
Checked by: MN		Status
Approved by:KENNY YU		DDA

MATCHLINE TO DWG / 14-136_990_113708

MATCHLINE TO DWG / 14-136_990_113710

IWMF VESSEL

WASTE RECEPTION QUAYS

120 CONTAINERS

120 CONTAINERS

IWTS VESSEL

WEIGH BRIDGE

MATCHLINE TO DWG / 14-136_990_113713

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

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AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

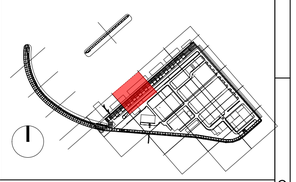
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S9

Drawing Number		Revision
IWMF1_14-136_990_113709		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113709

WKTS VESSEL

252 CONTAINERS

IWTS VESS

120 CONTAINERS

MATCHLINE TO DWG / 14-136_990_113711

MATCHLINE TO DWG / 14-136_990_113714

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

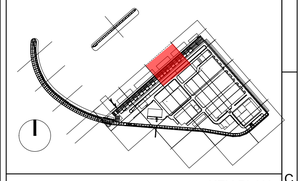
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

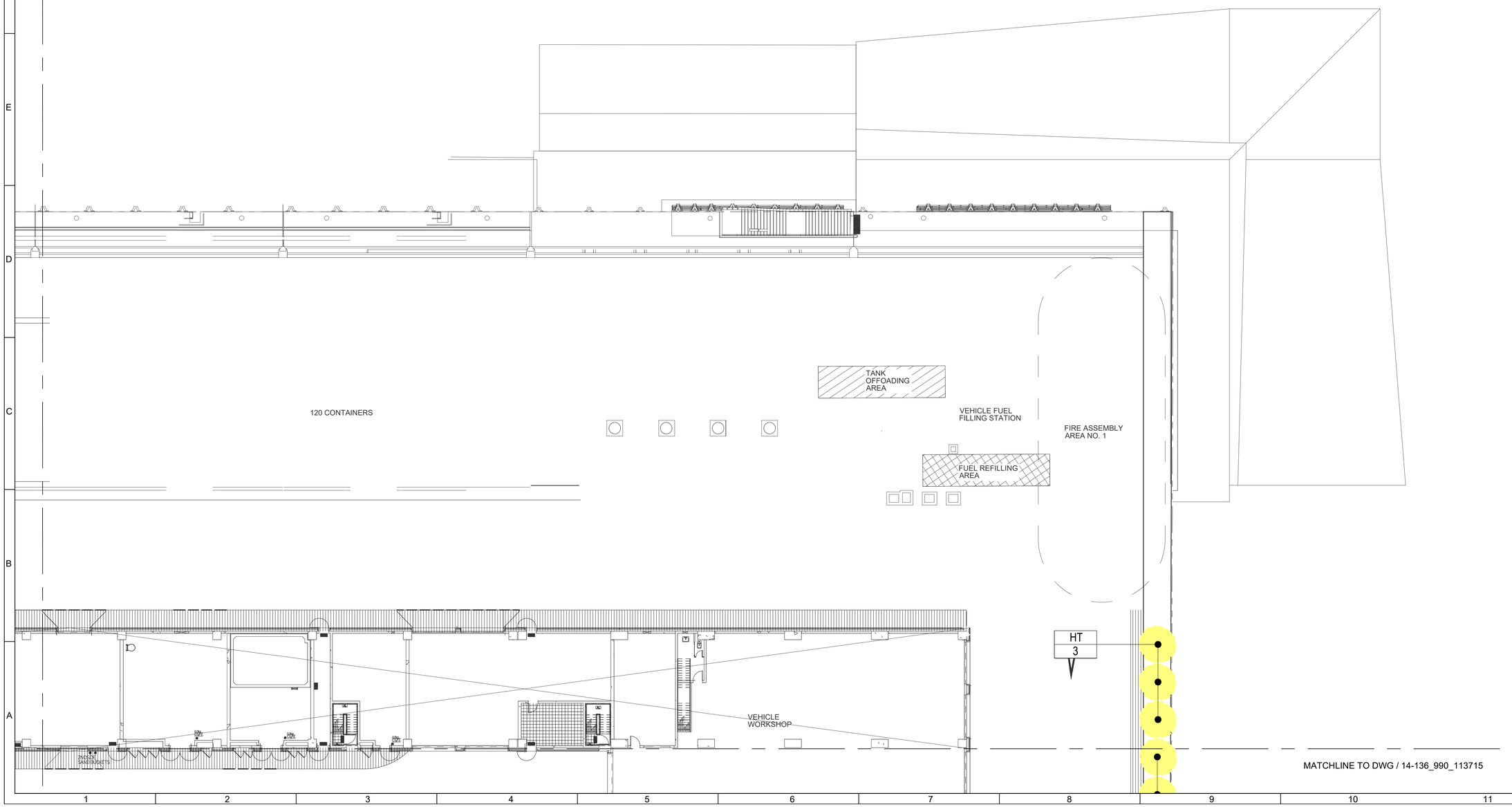
Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S10

Drawing Number	Revision
IWMF1_14-136_990_113710	0
Date: 22 DEC 22	Scale (at A1): 1:200
Drawn by: DC	Format: A1
Checked by: MN	Status: DDA
Approved by: KENNY YU	

MATCHLINE TO DWG / 14-136_990_113710

IWTS VESSEL



MATCHLINE TO DWG / 14-136_990_113715

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

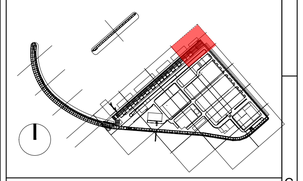
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S11

Drawing Number		Revision
IWMF1_14-136_990_113711		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113708

MATCHLINE TO DWG / 14-136_990_113713

PEDESTRIAN LINK

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S12

Drawing Number		Revision
IWMF1_14-136_990_113712		0
Date: 22 DEC 22	Scale (at A1)	Format
Drawn by: DC	1:200	A1
Checked by: MN		Status
Approved by:KENNY YU		DDA

MATCHLINE TO DWG / 14-136_990_113712

WEIGH BRIDGE

MATCHLINE TO DWG / 14-136_990_113709

MATCHLINE TO DWG / 14-136_990_113714

FUTURE DEVELOPMENT AREA 1

FUTURE DEVELOPMENT WILL BE HYDROSEEDED WITH GRASS

CB 2 | CS 1 | PR 1 | CC 1 | BB 1 | PR 1 | SL 1 | CC 1 | SL 2 | TC 2 | BB 1 | CB 3

TC 1 | TR 1 | PR 1 | BJ 1 | SL 1 | PR 1 | BJ 1 | CHS 4 | CB 2 | TC 1 | SD 1 | BJ 1 | CB 2 | BJ 2

PP 1 | CC 1 | SL 3 | SSU 3 | CB 3 | CC 1 | BB 1 | TM 1

6.30 | 6.60 | 6.90

IR 1 | SSU 1 | SL 1 | SL 2 | TC 1 | BV 1 | CB 2 | BJ 1 | CHS 2 | BB 1 | TC 1 | CB 2 | AF 1 | TR 1 | BJ 2 | SSU 1 | SL 3 | BB 1 | CB 2 | AF 1 | BB 1 | TR 1 | HT 1 | TC 1 | CB 2 | BV 1

PEDESTRIAN LINK

BV 10 | SL 10 | HT 10

BV 5 | SL 5 | HT 5

MATCHLINE TO DWG / 14-136_990_113716

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer: 環境保護署 Environmental Protection Department

Supervision Officer: AECOM

Main Contractor: Keppel Seghers 吉寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS DLN QLN

Design Checker: SMEC Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S13

Drawing Number	Revision
IWMF1_14-136_990_113713	0
Date: 22 DEC 22 / Scale (at A1): 1:200	Format: A1
Drawn by: DC	
Checked by: MN	Status: DDA
Approved by: KENNY YU	

MATCHLINE TO DWG / 14-136_990_113710

MATCHLINE TO DWG / 14-136_990_113709

MATCHLINE TO DWG / 14-136_990_113715

CB 14

HT 7

SL 12

BV 12

FUTURE DEVELOPMENT
WILL BE HYDROSEEDED
WITH GRASS

FUTURE DEVELOPMENT AREA 1

FUTURE DEVELOPMENT
WILL BE HYDROSEEDED
WITH GRASS

FUTURE DEVELOPMENT AREA 2

SL 11

BV 11

PROCESSING BUILDING
MODULE 3

MATCHLINE TO DWG / 14-136_990_113717

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers

古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

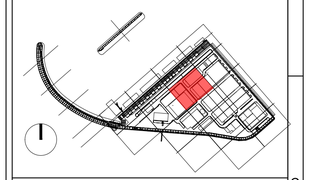
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S14

Drawing Number		Revision
IWMF1_14-136_990_113714		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

VEHICLE WORKSHOP

MATCHLINE TO DWG / 14-136_990_113711

MATCHLINE TO DWG / 14-136_990_113714

TM 6

FUTURE DEVELOPMENT WILL BE HYDROSEEDED WITH GRASS

TANKS

SHOWERS

TM 3

WASTE WATER TREATMENT PLANT

VEHICLE LAY-BY

TM 1

HT 30

TM 1

MATCHLINE TO DWG / 14-136_990_113718

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

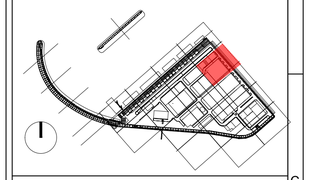
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

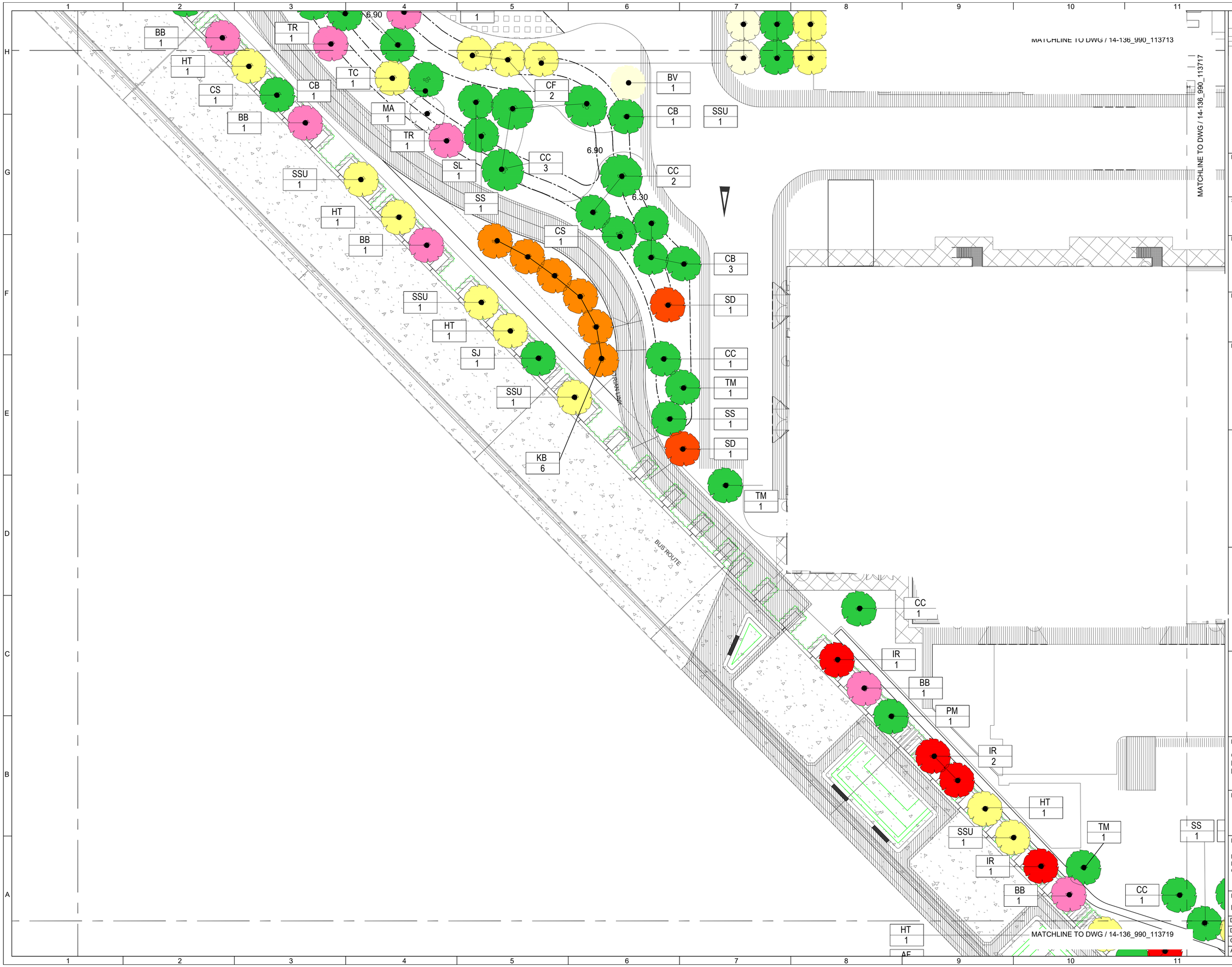
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S15

Drawing Number		Revision
IWMF1_14-136_990_113715		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

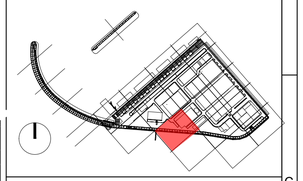
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S16

Drawing Number		Revision
IWMF1_14-136_990_113716		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113716

MATCHLINE TO DWG / 14-136_990_113714

MATCHLINE TO DWG / 14-136_990_113718

CHIMNEY

PROCESSING BUILDING
MODULE 2

SS	TM	BJ	CS	CC	SL	SL	CS	CB
1	1	3	1	1	1	2	1	1

CC 1

CB 2

TC

MATCHLINE TO DWG / 14-136_990_113720

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

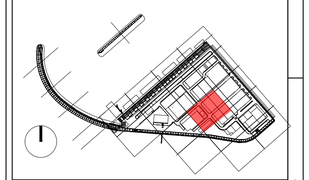
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S17

Drawing Number		Revision
IWMF1_14-136_990_113717		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113717

MATCHLINE TO DWG / 14-136_990_113715

CHEMICAL PREPARATION YARD

GENERAL STORE

WORKSHOP

VEHICLE LAY-BY

VEHICLE LAY-BY

TM 1

TM 2

TM 2

TM 2

HT 30

HT 29

MATCHLINE TO DWG / 14-136_990_113721

LEGEND

- HARD PAVED AREA
- CONCRETE FINISH
- POND AREA
- PLANTING AREA (SHRUBS)
- PLANTING AREA (LAWN)
- BE — BENCH

LEVEL LEGEND

- FFL +X.XX — FINISH FLOOR LEVEL
- TOK +X.XX — TOP OF KERB
- TOW +X.XX — TOP OF WALL
- TOS +X.XX — TOP OF SOIL
- BOS +X.XX — BOTTOM OF SOIL
- WL +X.XX — WATER LEVEL
- TOP +X.XX — TOP OF POND
- BOP +X.XX — BOTTOM OF POND

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

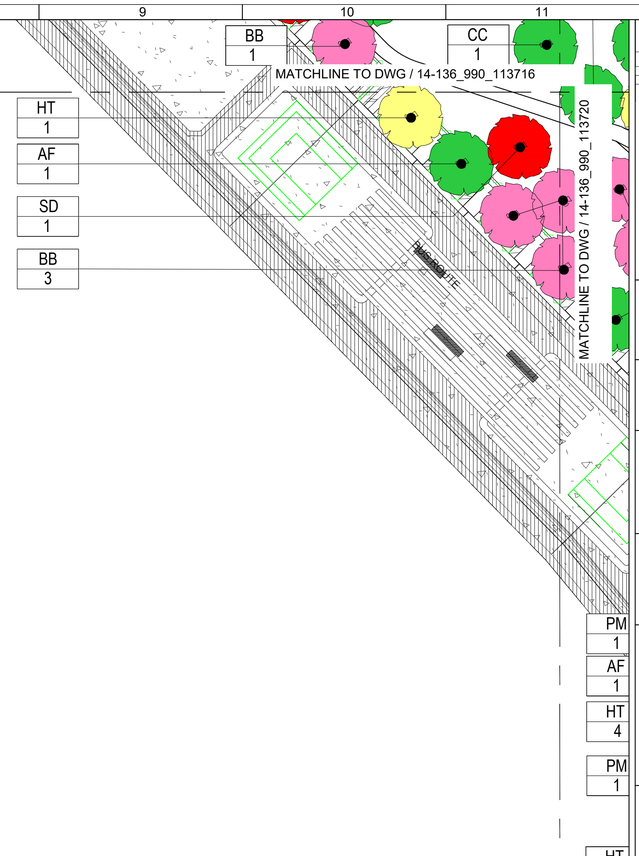
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S18

Drawing Number		Revision
IWMF1_14-136_990_113718		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

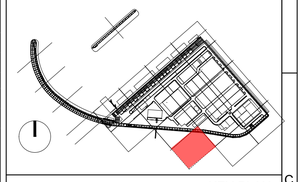
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S19

Drawing Number		Revision
IWMF1_14-136_990_113719		0
Date: 22 DEC 22	Scale (at A1)	Format
Drawn by: DC	1:200	A1
Checked by: MN		Status
Approved by:KENNY YU		DDA

MATCHLINE TO DWG / 14-136_990_113719

MATCHLINE TO DWG / 14-136_990_113721

MATCHLINE TO DWG / 14-136_990_113722

PROCESSING BUILDING
MODULE 1

ADMINISTRATION
BUILDING

PEDESTRIAN LINK

BUS ROUTE

6.60

6.90

REFER TO
ADMIN BUILDING
AIP SUBMISSION

TC 1
BB 2
SS 1
TR 1
BJ 3
MA 2
SSU 1
CB 3
MA 1
CB 1
AF 1
SSU 1
SS 1
PP 1
BB 1
CS 1
CB 2
PM 1
AF 1
BJ 1
HT 4
PM 1
HT 2
PM 1
SJ 1
CB 1
BJ 1
KB 1
CC 1
CC 1
BJ 1
CC 1
TM 1
BV 1
TR 1
CU 1
IR 1
CC 3
SL 3
CC 1
KB 1
CS 1
IR 1
KB 1
IR 1
LF 1
SS 1
IR 1
TM 1
KB 1
CC 1
CC 1
CB 2
DR 1
BV 1
BB 3
TM 1
CC 4
BB 1
JM 1
CB 3
BV 1
CS 1
CU 1
SSU 1
CC 1
CB 2
BJ 1
TM 1
CB 1
PR 1
MA 1
CC 1
PR 1
JM 1
SD 1
CS 1
PR 1
CC 1
PR 2
SD 1
CU 1
SJ 1
CB 3
PR 1
SL 1
SL 1
CC 1
BB 1
JM 1
CB 3
BV 1
SSU 1
CC 1
CB 2
BJ 1
TM 1
CS 1
CU 1
CB 1

Revision Schedule				
No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer
環境保護署
Environmental Protection Department

Supervision Officer
AECOM

Main Contractor
Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
ARCADIS
DLN
QLN

Design Checker
SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S20

Drawing Number		Revision
IWMF1_14-136_990_113720		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

MATCHLINE TO DWG / 14-136_990_113720

MATCHLINE TO DWG / 14-136_990_113718

HT
29

WORKSHOP

VEHICLE LAY-BY

TM
2

REFER TO
ADMIN BUILDING
AIP SUBMISSION

N

HT
29

MATCHLINE TO DWG / 14-136_990_113723

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

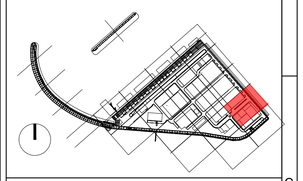
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

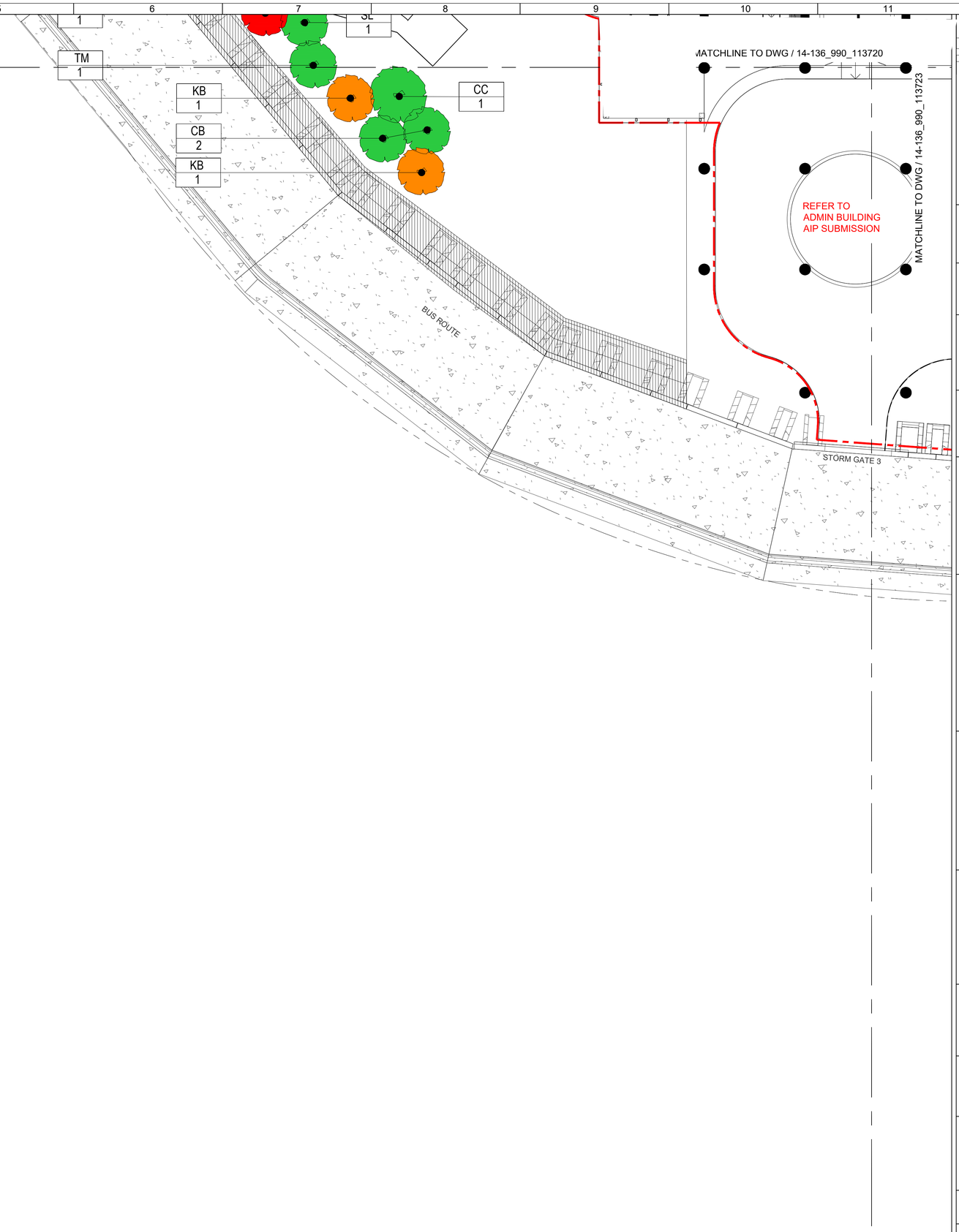
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S21

Drawing Number		Revision
IWMF1_14-136_990_113721		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

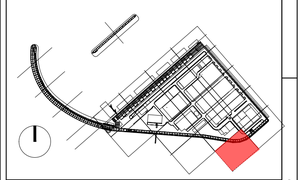
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

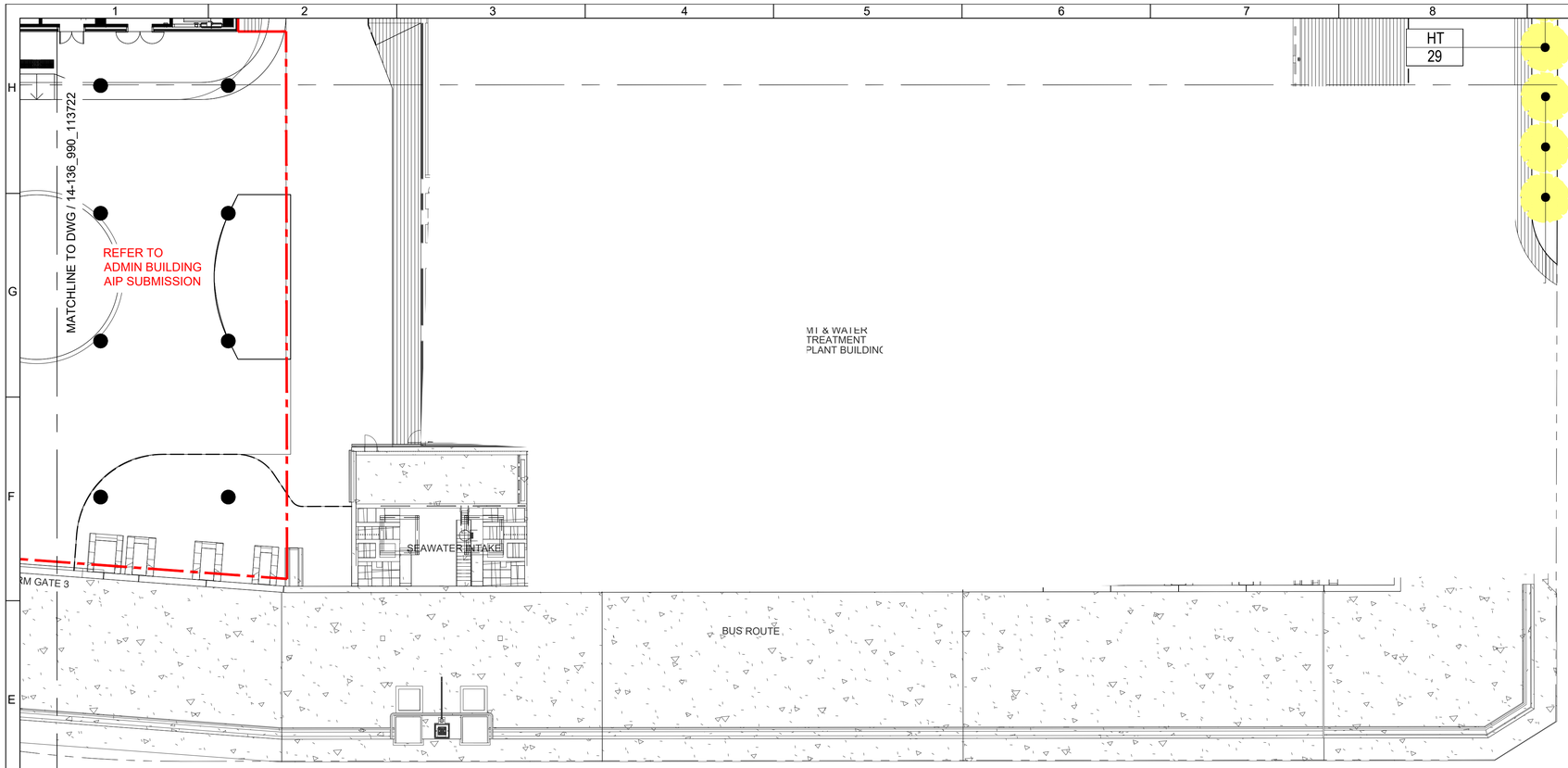
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S22

Drawing Number		Revision
IWMF1_14-136_990_113722		0
Date: 22 DEC 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

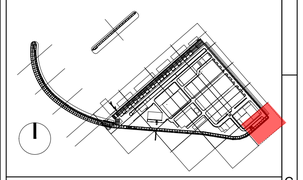
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE
DESIGN FOR WATER FEATURE
G/F LANDSCAPE TREE PLANTING PLAN S23

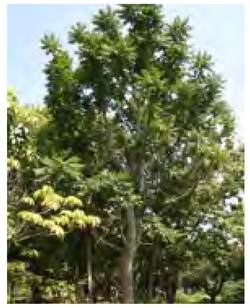
Drawing Number	Revision
IWMF1_14-136_990_113723	0

Date: 22 DEC 22	Scale (at A1)	Format
Drawn by: DC	1:200	A1
Checked by: MN		Status
Approved by:KENNY YU		DDA

TREES

Trees

Code	Botanical Name	Chinese Name	Spacing (mm)	Height (mm)	Spread (mm)	DBH (mm)	Native / Exotic	QTY (Nos.)
AF	Ailanthus fordii	常綠臭椿	Min. 2000	4000	2000	100	N	9
BB	Bauhinia x blakeana	洋紫荊	Min. 2000	4000	2000	100	N	34
BJ	Bischofia javanica	秋楓	Min. 2000	4000	2000	100	N	18
BV	Bauhinia variegata candida	宮粉羊蹄甲	Min. 2000	4000	2000	100	E	43
CB	Cinnamomum burmannii	陰香	Min. 2000	4000	2000	100	N	69
CC	Cinnamomum camphora	樟	Min. 3000	5000	3000	150	N	35
CF	Castanopsis fissa	鬆蒴栲	Min. 2000	4000	2000	100	N	2
CHS	Chorisia speciosa	絲木棉（美人樹）	Min. 3000	5000	3000	150	N	6
CM	Citrus maxima	柚	Min. 3000	4000	3000	100	E	1
CS	Celtis sinensis	朴樹	Min. 2000	4000	2000	100	N	9
CU	Crateva unilocularis	樹頭菜	Min. 2500	4000	2500	120	E	3
HT	Hibiscus tiliaceus	黃槿	Min. 2000	3000	2000	95	N	128
IR	Ilex rotundifolia microcarpa	小果鐵冬青	Min. 3000	5000	3000	150	N	10
JM	Jacaranda mimosifolia	藍花楹	Min. 3000	6000	3000	120	E	2
KB	Koelreuteria bipinnata	複羽葉欒樹	Min. 3000	6000	3000	150	E	11
LF	Liquidambar formosana	楓香	Min. 2000	4000	2000	100	N	1
MA	Melia azedarach	苦楝	Min. 2000	4000	2000	100	E	5
PM	Podocarpus macrophyllus	羅漢松	Min. 1500	5000-5500	1200-1500	120	N	4
PP	Pongamia pinnata	水黃皮	Min. 2000	4000	2000	100	N	3
PR	Plumeria rubra 'Acutifolia'	雞蛋花	Min. 3000	3500	3000	150	E	13
SD	Sapium discolor	山烏桕	Min. 1750	3000	1750	100	N	8
SJ	Syzygium jambos	蒲桃	Min. 3000	4000	3000	120	E	7
SL	Sterculia lanceolata	假蘋婆	Min. 2000	4000	2000	100	N	62
SS	Sapium sebiferum	烏桕	Min. 2000	4000	2000	100	N	7
SSU	Schima superba	木荷	Min. 2000	4000	2000	100	N	20
TC	Tabebuia chrysantha	黃花風鈴木	Min. 2000	4000	2000	100	E	10
TM	Terminalia mantaly	小葉欖仁	Min. 2000	4000	2000	100	E	29
TR	Tabebuia rosea	紅花風鈴木	Min. 2000	4000	2000	1000	E	6
								555


AF - Ailanthus fordii


BB - Bauhinia x blakeana


BJ - Bischofia javanica


BV - Bauhinia variegata candida


CB - Cinnamomum burmannii


CC - Cinnamomum camphora


CF - Castanopsis fissa


CHS - Chorisia speciosa


CM - Citrus maxima


CS - Celtis sinensis


CU - Crateva unilocularis


HT - Hibiscus tiliaceus


IR - Ilex rotunda


JM - Jacaranda mimosifolia


KB - Koelreuteria bipinnata


LF - Liquidambar formosana


MA - Melia azedarach


PM - Podocarpus macrophyllus


PP - Pongamia pinnata


PR - Plumeria rubra 'Acutifolia'


SD - Sapium discolor


SJ - Syzygium jambos


SL - Sterculia lanceolata


SS - Sapium sebiferum


SSU - Schima superba


TC - Tabebuia chrysantha


TM - Terminalia mantaly


TR - Tabebuia rosea

Revision Schedule

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環境保護署 Environmental Protection Department

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KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

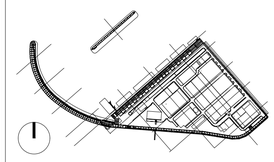
Designers

ARCADIS DLN ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE PLANTING SCHEDULE & IMAGES (SHEET 1 OF 3)

Drawing Number		Revision
IWMF1_14-136_990_117600		0
Date: 22 DEC 22	Scale (at A1)	Format
Drawn by: DC	N.T.S.	A1
Checked by: MN		Status
Approved by:KENNY YU		DDA

SHRUBS

Shrubs / Groundcovers / Ornamental Grass

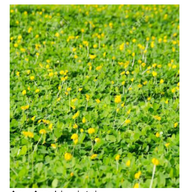
Code	Botanical Name	Chinese Name	Height (mm)	Spread (mm)	Spacing (mm)	Native / Exotic	QTY (Nos.)
Ac	Asparagus cochinchinensis	天門冬	300	300	300	N	423
Ago	Acorus gramineus 'Ogon'	金葉石菖蒲	300	300	300	N	845
Am	Alocasia macrorrhizos	海芋	600	500	600	N	1614
An	Asplenium nidus	雀巢芒	300	300	400	N	2044
Ap	Arachis pintoi	多年生花生	200	200	250	E	5477
Api	Adina pilulifera	水團花	300	300	400	E	227
Bc	Belamcanda chinensis	射干	400	200	300	E	1465
Bp	Brunfelsia pauciflora	大花鴛鴦茉莉	400	400	500	E	530
Cas	Crinum asiaticum	文殊蘭	300	250	300	N	761
Cb	Calliandra brevipes	香水合歡	500	300	500	E	533
Cf	Clerodendrum fortunatum	白花燈籠	600	400	500	N	361
Ch	Calliandra haematocephals	朱纓花	600	400	400	E	7235
Chy	Cuphea hyssopifolia	細葉萼距花	200	200	250	E	2879
Cin	Clerodendrum inerme	苦郎樹	600	400	500	N	206
Cj	Clerodendrum japonicum	赪桐	300	300	500	E	1755
Csa	Camellia sasanqua	茶梅	600	400	400	E	761
Db	Dietes bicolor	雙色野鳶尾	600	300	300	E	4480
Din	Dendranthema indicum	野菊	400	300	250	N	975
Drs	Duranta repens Sapphire Showers	蕾絲金露花	600	400	500	E	5149
Ed	Ervatamia divaricata	狗牙花	600	400	500	E	1713
Ef	Eupatorium fortunei	佩蘭	300	300	300	E	2351
Fc	Fagraea ceilanica	非洲茉莉	600	600	600	E	388
Fc1	Fagraea ceilanica	非洲茉莉	1800	750	750	E	170
Fj	Fatsia japonica	八角金盤	700	500	600	E	2451
Ga	Gordonia axillaris	大頭茶	300	300	400	N	1288
Gj	Gardenia jasminoides	水橫枝	600	400	500	N	2612
Hco	Hedychium coronarium	薑花	400	200	300	E	806
Hf	Hemerocallis fulva	萱草	300	200	300	E	4675
Ic	Ixora chinensis	華鳳仙	300	300	300	N	1883
Icy	Imperata cylindrica 'Rubra'	血草	300	300	300	N	1205
It	Iris tectorum	鳶尾	300	200	300	E	6226
Jm	Jasminum mesnyii	雲南素馨	600	400	500	E	626
Lar	Lepironia articulata	石龍芻	200	200	200	E	380
Lca	Lantana camara	馬纓丹	200	200	300	E	5169
Lsa	Lythrum salicaria	千屈菜	200	200	300	E	749
Ls	Liriope spicata	山麥冬	200	200	200	N	722
Lsi	Ligustrum sinense	山指甲	600	400	500	N	787
Md	Monstera deliciosa	龜背芋	600	400	500	E	1060
Mma	Melastoma malabathricum	野牡丹	300	300	400	N	912
Ms	Melastoma sanguineum	毛菝	300	300	400	N	1859
Msg	Miscanthus sinensis 'Gracillimus'	細葉芒	500	300	300	N	1744
Nau	Nephrolepis auriculata	腎蕨	300	300	300	E	9403
Oj	Ophiopogon jaburan	麥冬 (沿階草)	200	200	250	E	3419
Pa	Pennisetum alopecuroides	狼尾草	500	300	400	N	2811
Pas	Psychotria asiatica	九節	300	300	300	N	217
Pau	Phragmites australis	蘆葦	500	300	500	N	1161
Pmy	Phyllanthus myrtifolius	錫蘭葉下珠	300	300	300	E	5176
Pod	Podranea ricasoliana	紫雲藤	400	300	400	E	1206
Ppy	Pandanus pygmaeus	金邊露兜	300	200	300	E	1354
Pr	Pennisetum sateceum rubrum	紫葉狼尾草	500	300	400	E	5621
Pvi	Physostegia virginiana	隨意草	250	300	300	E	1190
Rco	Ruellia coerulea	翠蘆莉	500	300	300	E	1010
Rin	Rhaphiolepis indica	車輪梅	300	250	300	N	1207
Rto	Rhodomyrtus tomentosa	桃金娘	300	250	400	N	963
Re	Russelia equisetiformis	爆仗竹	300	300	300	E	302
Rsp	Rhododendron spp (purple, white& pink)	杜鵑	300	250	300	E	11365
Sar	Schefflera arboricola	鵝掌藤	600	400	500	E	7799
Sn	Strelitzia nicolai	大鶴望蘭	1750	500	500	E	112
Tp	Thevetia peruviana	黃花夾竹桃	750	500	600	E	1856
Tu	Tibouchina urvilleana	紫花野牡丹	300	300	400	E	5431
Vne	Vitex negundo	黃荊	300	250	300	N	225
Vtp	Vitex trifolia 'Purpurea'	紫荊三葉蔓荊	750	500	600	E	161
Zc	Zephyranthes candida	蔥蘭	150	150	200	E	1555
Zg	Zephyranthes grandiflora	韭蘭	150	150	200	E	2009
							143049


Ac - Asparagus cochinchinensis


Ago - Acorus gramineus 'Ogon'


Am - Alocasia macrorrhizos


An - Asplenium nidus


Ap - Arachis pintoi


Api - Adina pilulifera


Bc - Belamcanda chinensis


Bp - Brunfelsia pauciflora


Cas - Crinum asiaticum


Cb - Calliandra brevipes

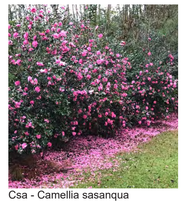

Cf - Clerodendrum fortunatum


Ch - Calliandra haematocephals


Chy - Cuphea hyssopifolia


Cin - Clerodendrum inerme


Cj - Clerodendrum japonicum


Csa - Camellia sasanqua


Db - Dietes bicolor


Din - Dendranthema indicum


Drs - Duranta repens Sapphire Showers

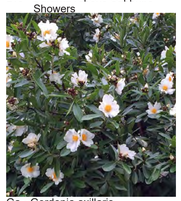

Ed - Ervatamia divaricata


Ef - Eupatorium fortunei

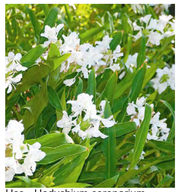

Fc - Fagraea ceilanica


Fc1 - Fagraea ceilanica


Fj - Fatsia japonica


Ga - Gordonia axillaris

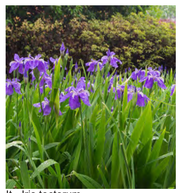

Gj - Gardenia jasminoides

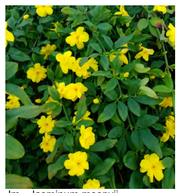

Hco - Hedychium coronarium


Hf - Hemerocallis fulva


Ic - Ixora chinensis


Icy - Imperata cylindrica 'Rubra'


It - Iris tectorum


Jm - Jasminum mesnyii


Lar - Lepironia articulata

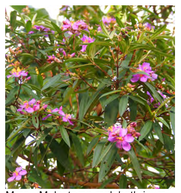

Lca - Lantana camara


Lsa - Lythrum salicaria


Ls - Liriope spicata


Lsi - Ligustrum sinense


Md - Monstera deliciosa


Mma - Melastoma malabathricum


Ms - Melastoma sanguineum


Msg - Miscanthus sinensis 'Gracillimus'


Nau - Nephrolepis auriculata


Oj - Ophiopogon jaburan


Pa - Pennisetum alopecuroides


Pas - Psychotria asiatica


Pau - Phragmites australis


Pmy - Phyllanthus myrtifolius


Pod - Podranea ricasoliana


Ppy - Pandanus pygmaeus


Pr - Pennisetum sateceum rubrum


Pvi - Physostegia virginiana

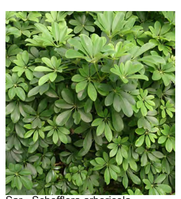

Rco - Ruellia coerulea


Rin - Rhaphiolepis indica


Rto - Rhodomyrtus tomentosa


Re - Russelia eauisetiformis


Rsp - Rhododendron spp (purple, white&pink)


Sar - Schefflera arboricola


Sn - Strelitzia nicolai


Tp - Thevetia peruviana


Tu - Tibouchina urvilleana


Vne - Vitex negundo


Vtp - Vitex trifolia 'Purpurea'


Zc - Zephyranthes candida


Zg - Zephyranthes grandiflora

Revision Schedule

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0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

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Designers

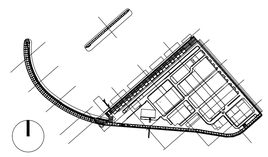
ARCADIS DLN ALN

Design Checker

SMEC

Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE PLANTING SCHEDULE & IMAGES (SHEET 2 OF 3)

Drawing Number		Revision
IWMF1_14-136_990_117601		0
Date: 22 DEC 22	Scale (at A1)	Format
Drawn by: DC	N.T.S.	A1
Checked by: MN		Status
Approved by:KENNY YU		DDA

Aquatics

Code	Botanical Name	Chinese Name	Height (mm)	Spread (mm)	Spacing (mm)	Native / Exotic	QTY (Nos.)
Cpa	Cyperus papyrus	紙莎草	500	300	500	E	96
Cyp	Cyperus involucratus	風車草	500	300	500	E	268
Jef	Juncus effusus	燈心草	500	300	500	N	126
Nnu	Nelumbo nucifera	荷花	300	300	600	E	68
Nsp	Nymphaea alba var. rubra	紅睡蓮	300	300	600	E	90
							554

Turf

Code	Botanical Name	Chinese Name	Height (mm)	Spread (mm)	Spacing (mm)	Native / Exotic	QTY (Nos.)
Ax	Axonopus compressus	地毯草	100	300	300	E	1280
Ec	Eragrostis curvula	彎葉畫眉草	100	300	300	E	31425
Zm	Zoysia matrella	溝葉結縷草	100	300	300	N	27275
							59980

Climbers

Code	Botanical Name	Chinese Name	Size (mm)	Spacing (mm)	Native / Exotic	QTY (Nos.)
Ea	Epipremnum aureum	綠蘿 (竿葉藤)	1000 x 4 Shoots	500	E	874
Lja	Lonicera japonica	忍冬(金銀花)	1000 x 4 Shoots	500	N	331
Tj	Trachelospermum jasminoides	絡石	1000 x 4 Shoots	500	N	1205
						2410

Bamboo

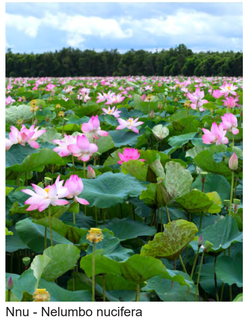
Code	Botanical Name	Chinese Name	Height (mm)	Size (mm)	Native / Exotic	QTY (Nos.)
Paur	Phyllostachys aurea	羅漢竹	2500	5 Shoot per plant @750	N	25
						25

AQUATICS


Cpa - Cyperus papyrus


Cyp - Cyperus involucratus


Jef - Juncus effusus

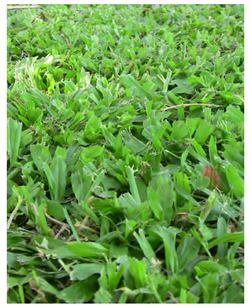

Nnu - Nelumbo nucifera


Nsp - Nymphaea alba var. rubra

TURF

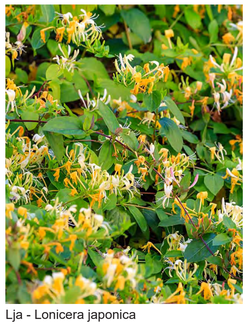

Ec - Eragrostis curvula


Zm - Zoysia matrella


Ax - Axonopus compressus

CLIMBERS


Ea - Epipremnum aureum


Lja - Lonicera japonica


Tj - Trachelospermum jasminoides

HYDROSEEDING

HYDROSEEDING MIX IN ACCORDANCE WITH GENERAL SPECIFICATION FOR BUILDING WORKS, 2012 EDITION CLAUSE 25.45(C).

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer
環境保護署
Environmental Protection Department

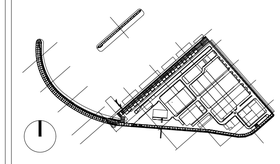
Supervision Officer
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吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
ARCADIS
DLN
ALN

Design Checker
SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

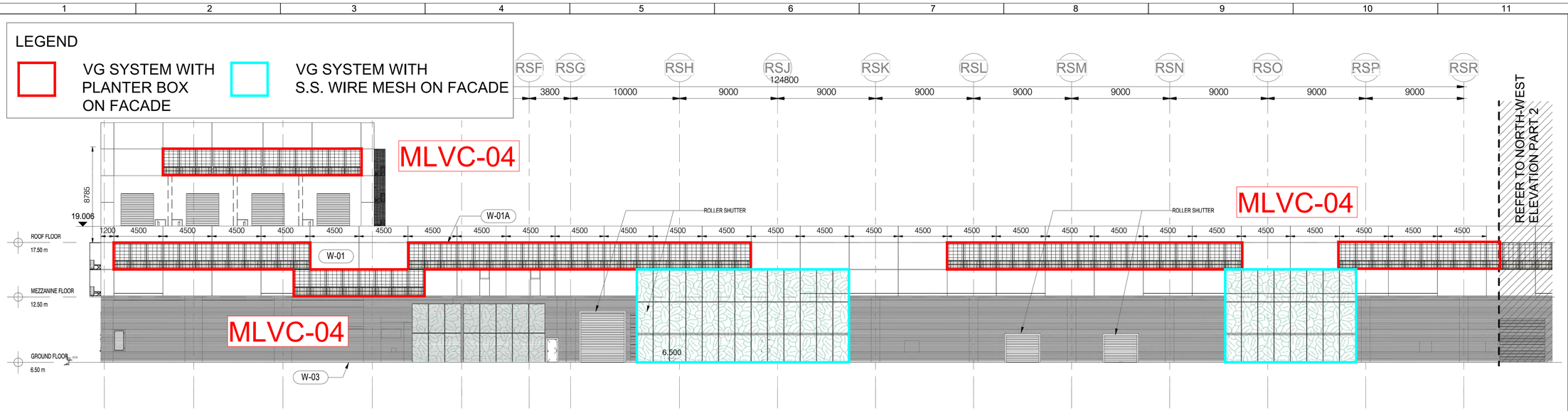
LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE PLANTING SCHEDULE & IMAGES (SHEET 3 OF 3)

Drawing Number		Revision
IWMF1_14-136_990_117602		0
Date: 22 DEC 22	Scale (at A1) N.T.S.	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		

LEGEND

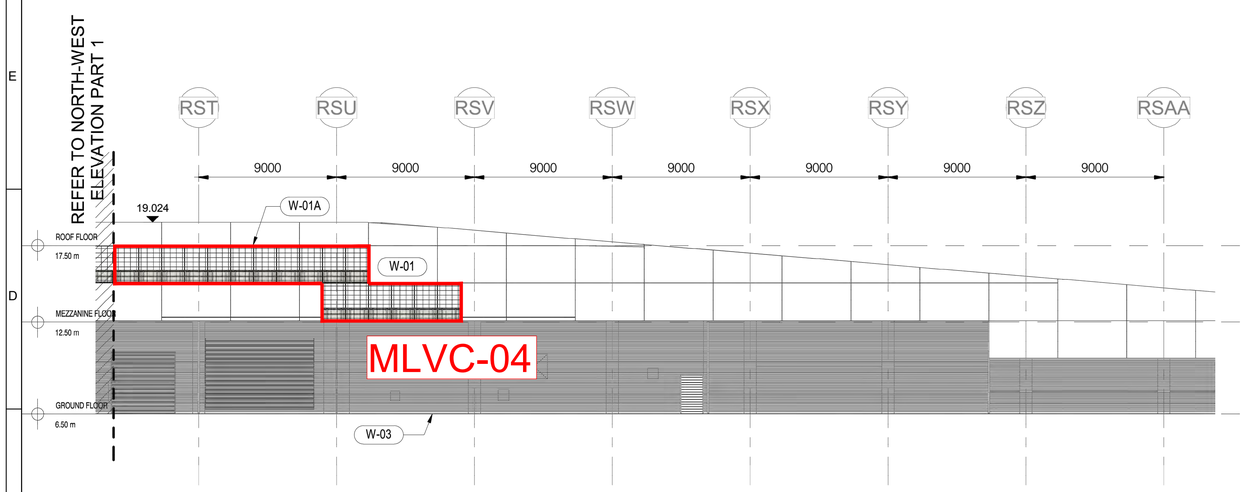
VG SYSTEM WITH PLANTER BOX ON FACADE

VG SYSTEM WITH S.S. WIRE MESH ON FACADE



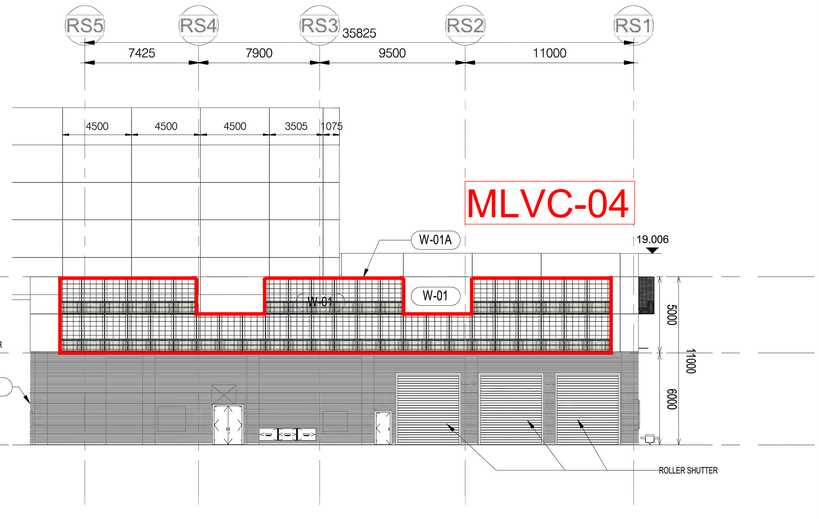
1 ELEVATED DRIVEWAY AND ASSOCIATED STRUCTURE NORTH ELEVATION PART1

1 : 200



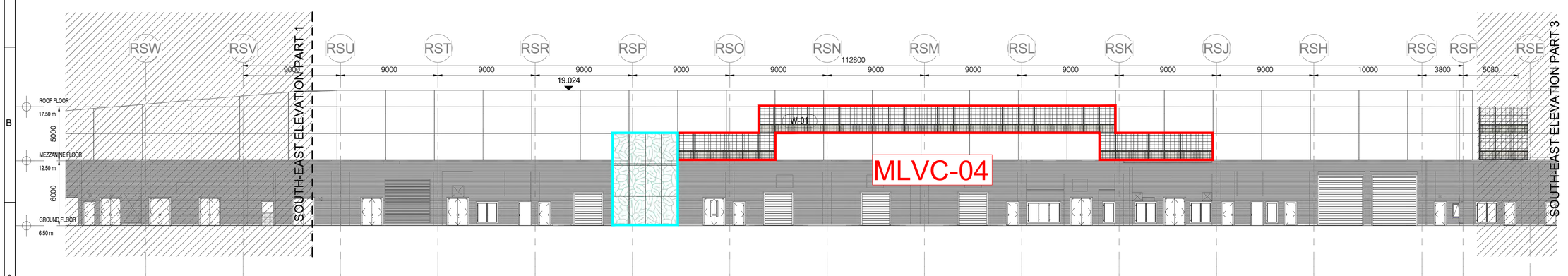
2 ELEVATED DRIVEWAY AND ASSOCIATED STRUCTURE NORTH ELEVATION PART2

1 : 200



3 ELEVATED DRIVEWAY AND ASSOCIATED STRUCTURE BUILDING EAST ELEVATION

1 : 200



4 ELEVATED DRIVEWAY AND ASSOCIATED STRUCTURE SOUTH ELEVATION PART 2

1 : 200

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer: 環境保護署 Environmental Protection Department

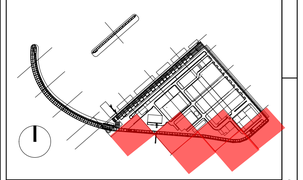
Supervision Officer: AECOM

Main Contractor: Keppel Seghers 古寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS, DLN, QLN

Design Checker: SMEC Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

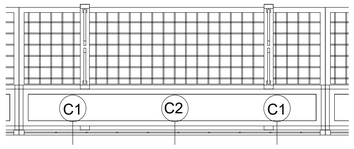
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

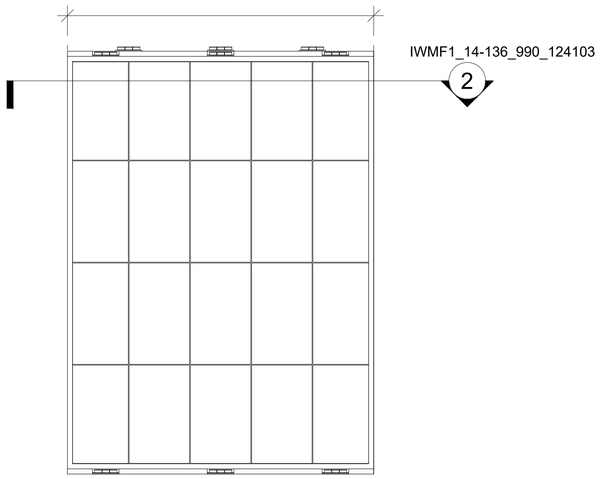
LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
ELEVATED DRIVEWAY
VERTICAL GREEN ON BUILDING FACADE
(SHEET 1 OF 2)

Drawing Number		Revision
IWMF1_14-136_990_124101		0
Date: 11 APR 23	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		



VG PLANTER PLAN (FOR NORTH EAST, NORTH WEST AND SOUTH EAST)

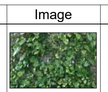
2 — 1 : 15



VG PANEL ELEVATION (FOR NORTH EAST, NORTH WEST AND SOUTH EAST)

1 — 1 : 15

Elevated Driveway Vertical Greenery Planter Summary

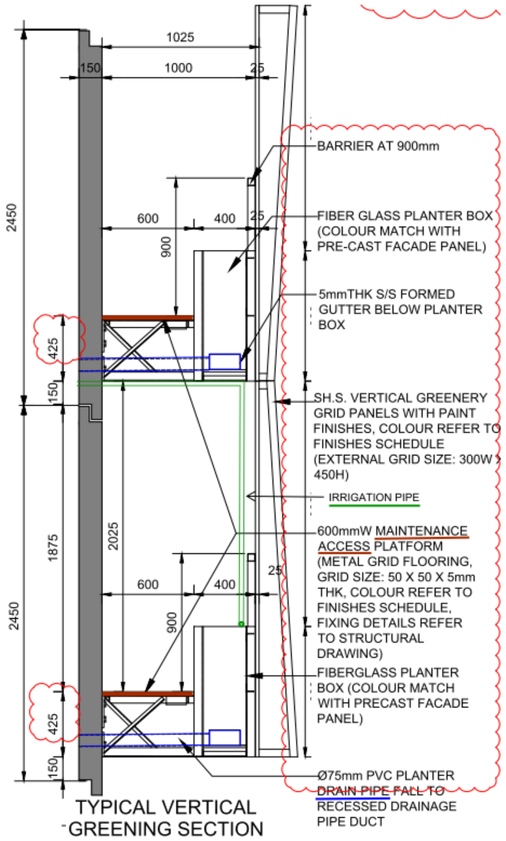
Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Ea	*Epipremnum aureum*	綠蘿（芋葉藤）	1000 x 4 Shoots	500	414		~~NATIVE/EXOTIC~~
C2	Tj	*Trachelospermum jasminoides*	絡石	1000 x 4 Shoots	500	207		NATIVE/~~EXOTIC~~



VERTICAL GREENERY REFERENCE IMAGE OF
Epipremnum aureum
IN SHA TIN SEWAGE TREATMENT PLANT



VERTICAL GREENERY REFERENCE IMAGE OF
Trachelospermum jasminoides
IN SHA TIN SEWAGE TREATMENT PLANT



TYPICAL VERTICAL GREENING SECTION

N.T.S.

NOTE:
1. DETAILS OF THE VG PANEL SYSTEM AND S.S. WIRE MESH ON FACADE PLEASE REFERENCE TO THE ELEVATED DRIVEWAY EXTERNAL FACADE FINISHES PACKAGE.
2. TYPICAL PLANTER DETAIL SHOULD BE REFEREED TO DDA- ELEVATED DRIVEWAY EXTERNAL AND INTERNAL FINISH
3. MATERIAL AND SPACING OF THE SUPPORTING FRAME IS UNDER THE COORDINATION WITH ARCHITECTURAL DESIGN.
4. LOCATION OF IRRIGATION POINT AND DRAINAGE PROVISION FOR VERTICAL GREENING IS UNDER COORDINATION WITH BUILDING SERVICE DESIGN.

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	22 DEC 22	1ST ISSUE	MN	KENNY YU

Employer: 環境保護署 Environmental Protection Department

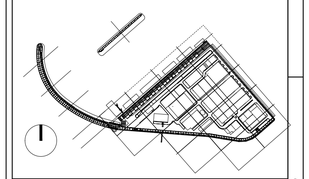
Supervision Officer: AECOM

Main Contractor: Keppel Seghers 古寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS, DLN, QLN

Design Checker: SMEC Member of the Surbana Jurong Group

Certification



KEY PLAN

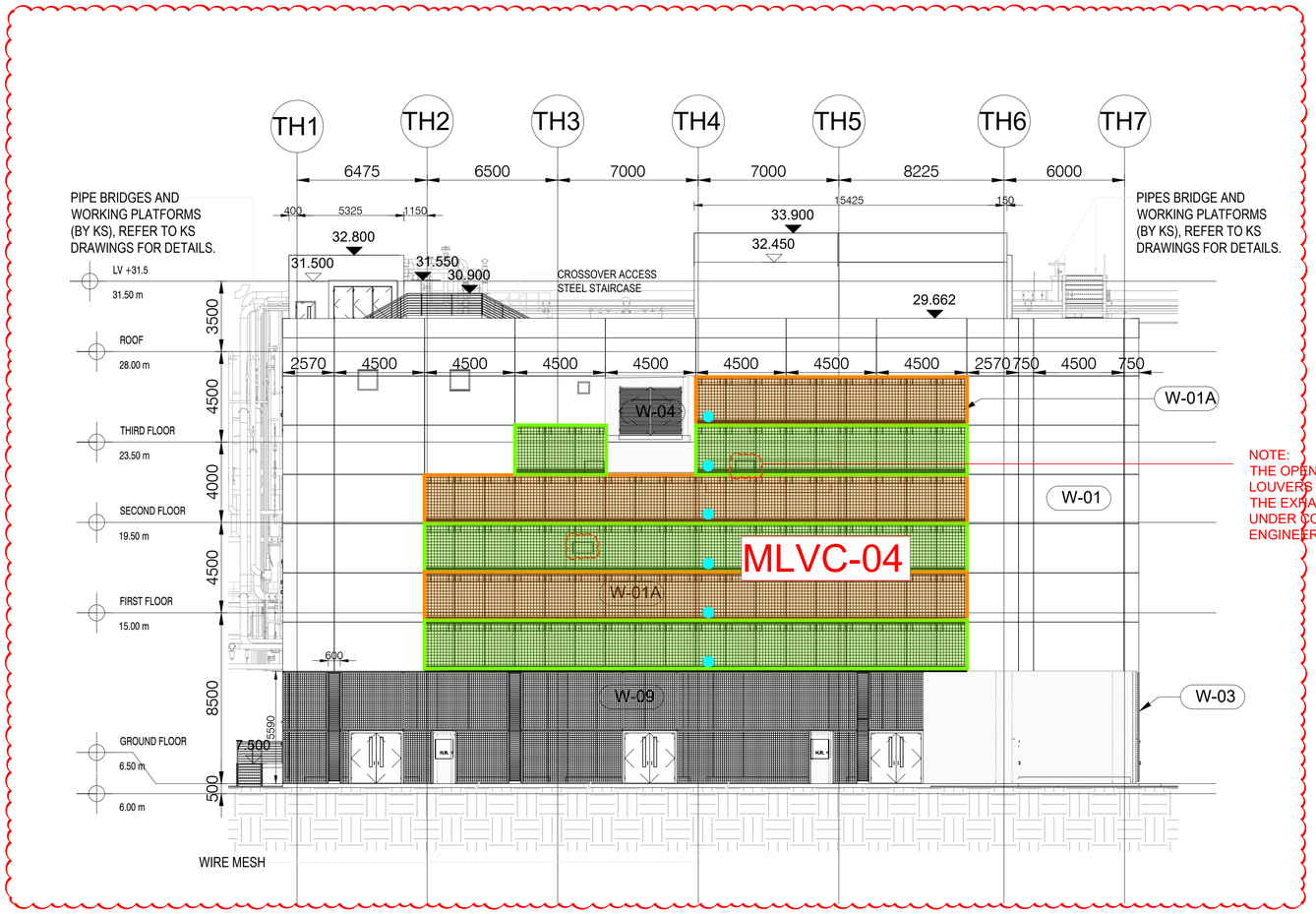
Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
LANDSCAPE MASTER PLAN & LANDSCAPE DESIGN FOR WATER FEATURE
ELEVATED DRIVEWAY
VERTICAL GREEN ON BUILDING FACADE
(SHEET 2 OF 2)

Drawing Number		Revision
IWMF1_14-136_990_124102		0
Date: 11 APR 23	Scale (at A1)	Format
Drawn by: DC	1:200	A1
Checked by: MN		Status
Approved by:KENNY YU		DDA

Turbine Hall Building



1 TURBINE HALL BUILDING SOUTHWEST ELEVATION

1 : 150

Turbine Building Vertical Greenery Planter Summary

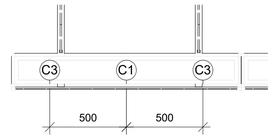
Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Pal	*Pseudocalymma alliaceum*	蒜香藤	1000 x 4 Shoots	500	45		~~NATIVE~~/EXOTIC
C2	Qin	*Quisqualis indica*	使君子	1000 x 4 Shoots	500	48		~~NATIVE~~/EXOTIC
C3	Tj	*Trachelospermum jasminoides*	絡石	1000 x 4 Shoots	500	186		NATIVE/~~EXOTIC~~



VERTICAL GREENERY REFERENCE IMAGE OF *Pseudocalymma alliaceum* IN SHA TIN SEWAGE TREATMENT PLANT

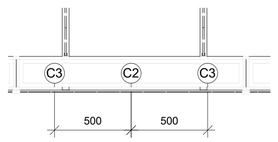
VERTICAL GREENERY REFERENCE IMAGE OF *Quisqualis Indica* IN SHA TIN SEWAGE TREATMENT PLANT

VERTICAL GREENERY REFERENCE IMAGE OF *Trachelospermum jasminoides* IN SHA TIN SEWAGE TREATMENT PLANT



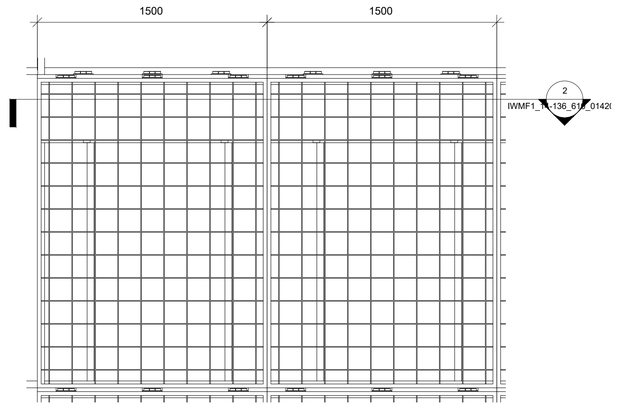
2 VG PLANTER PLAN (TYPE 1)

1 : 20



3 VG PLANTER PLAN (TYPE 2)

1 : 20



3 VG PANEL ELEVATION

1 : 20

NOTE:
1. DETAILS OF THE VG PANEL SYSTEM PLEASE REFERENCE TO THE TURBINE HALL BUILDING EXTERNAL FACADE FINISHES PACKAGE.
2. THE SIZE OF THE OPENING FOR VG SYSTEM IS UNDER REVIEW AND MAYBE INCREASED FROM 150MM X 150MM TO 300MM X 300MM OR 300MM X 500MM. TO BE COORDINATE WITH BS AND ARCHITECTURE TEAM.
3. TYPICAL PLANTER DETAIL SHOULD BE REFEREED TO DDA-TURBINE HALL & COMPRESSOR & CCCW BUILDING-EXTERNAL AND INTERNAL FINISH
4. MATERIAL AND SPACING OF THE SUPPORTING FRAME IS UNDER THE COORDINATION WITH ARCHITECTURAL DESIGN.
5. LOCATION OF IRRIGATION POINT AND DRAINAGE PROVISION FOR VERTICAL GREENING IS UNDER COORDINATION WITH BUILDING SERVICE DESIGN.

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	17 JUN 22	1ST ISSUE	MN	KENNY YU
0	2 SEP 22	2ND ISSUE	MN	KENNY YU

Employer
環境保護署 Environmental Protection Department

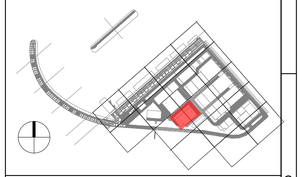
Supervision Officer
AECOM

Main Contractor
Keppel Seghers
古寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
ARCADIS
DLN QLN

Design Checker
SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
TURBINE HALL LANDSCAPE ARCHITECTURAL DESIGN
VERTICAL GREENERY ON BUILDING FACADE

Drawing Number		Revision
IWMF1_14-136_610_014201		1
Date: 2 SEP 22	Scale (at A1)	Format
Drawn by: DC	As indicated	A1
Checked by: MN		Status
Approved by:KENNY YU		DDA

Reception Pavilion

PLANTING LEGEND

Xxx — PLANT CODE
XXX — QUANTITY (nos.) / AREA (m²)

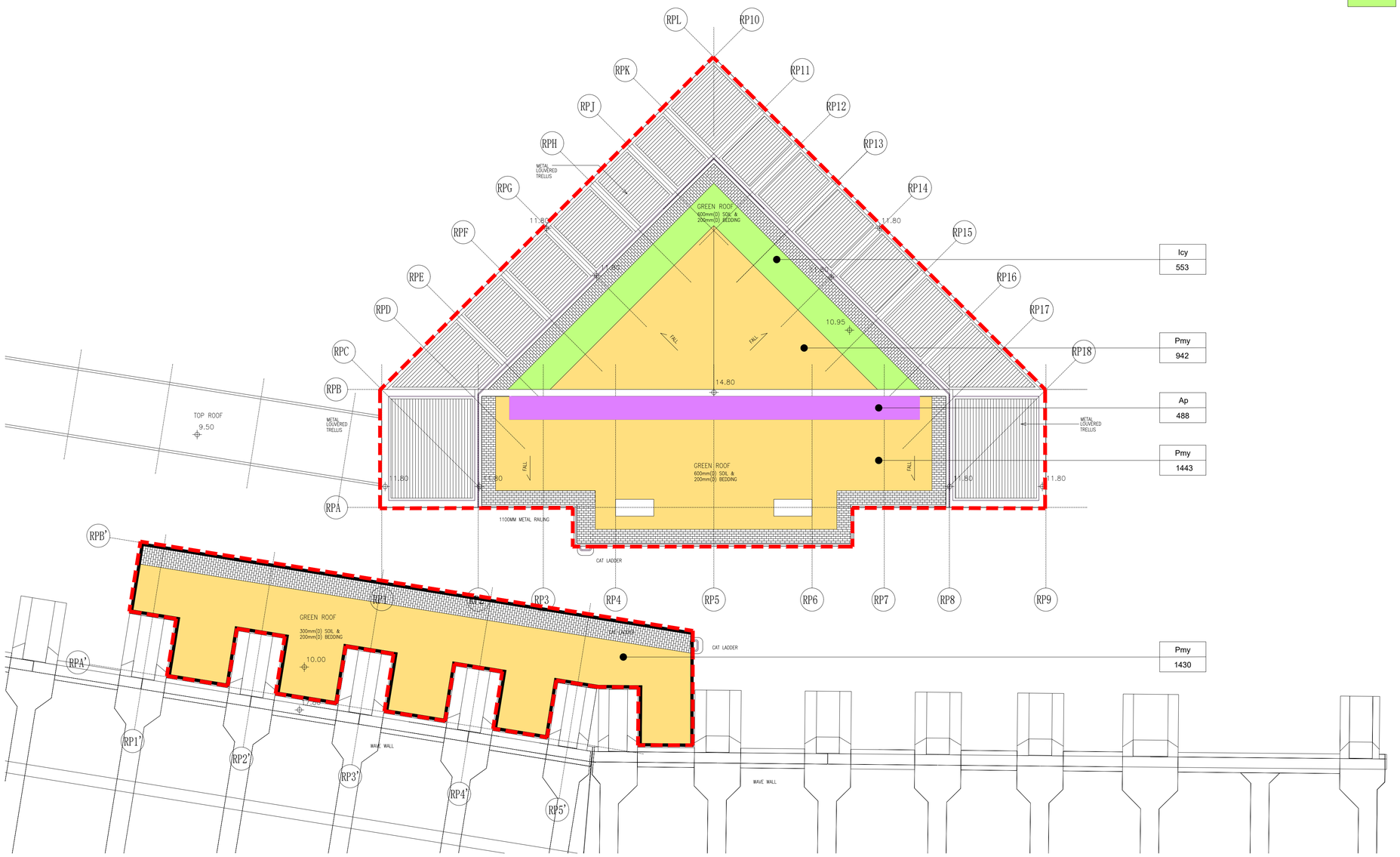
PLANTING AREA

PLANTING SPECIES LEGEND

Ap

Pmy

Icy



RECEPTION PAVILION LANDSCAPE ARCHITECTURAL DESIGN
R/F LANDSCAPE PLANTING PLAN

1 : 100

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	03 OCT 22	1ST ISSUE	MN	KENNY YU

Employer: 環境保護署 Environmental Protection Department

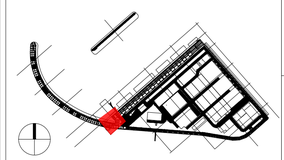
Supervision Officer: AECOM

Main Contractor: Keppel Seghers — 吉寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS, DLN, QLN

Design Checker: SMEC — Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

RECEPTION PAVILION LANDSCAPE ARCHITECTURAL DESIGN
PLANTING PLAN AT ROOF LEVEL

Drawing Number	Revision
IWMF1_14-136_110_123601	0

Date: 03 OCT 22	Scale (at A1)	Format
Drawn by: DC	1 : 100	A1
Checked by: MN		Status
Approved by:KENNY YU		DDA

PLANTING SCHEDULE

Shrubs

Code	Botanical Name	Chinese Name	Height	Spread	Spacing	QTY (Nos.)	Native/ Exotic	Image
Ap	***Arachis pintoi***	多年生花生	200	200	250	488	Native/ Exotic	
Icy	***Imperata cylindrica 'Rubra'***	血草	300	300	300	553	Native/ Exotic	
Pmy	***Phyllanthus myrtifolius***	錫蘭葉下珠	300	300	300	3815	Native/ Exotic	

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	03 OCT 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

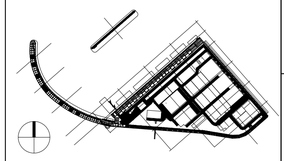
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

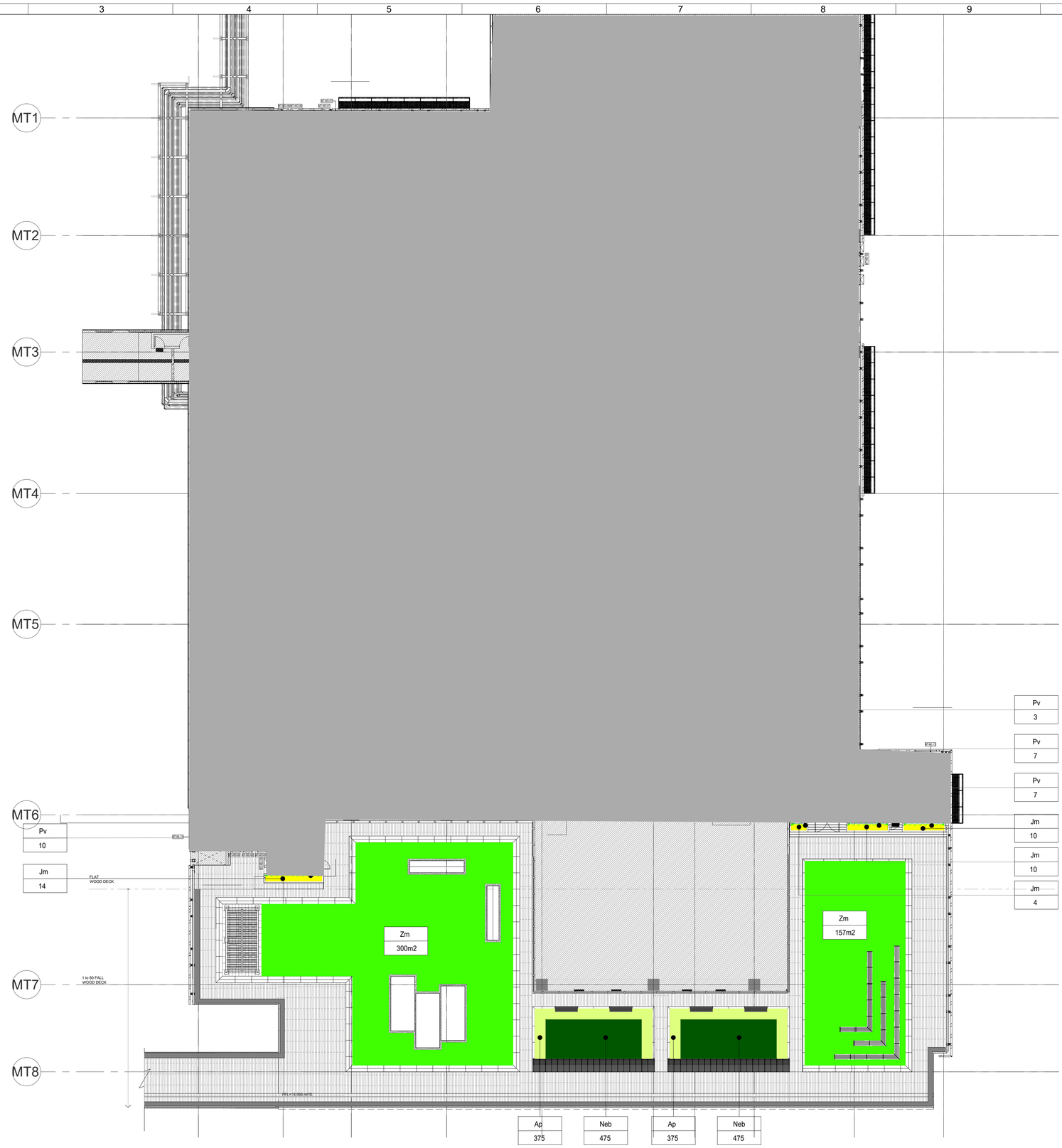
Design Package

Drawing Title

RECEPTION PAVILION LANDSCAPE
ARCHITECTURAL DESIGN
PLANTING SCHEDULE & IMAGES

Drawing Number		Revision
IWMF1_14-136_110_117600		0
Date: 03 OCT 22	Scale (at A1)	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		

MT Plant Building and Water Treatment Plant Building



MT PLANT BUILDING & WATER TREATMENT PLANT BUILDING LANDSCAPE ARCHITECTURAL 2/F PLANTING PLAN

1 : 200

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	20 JAN 23	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

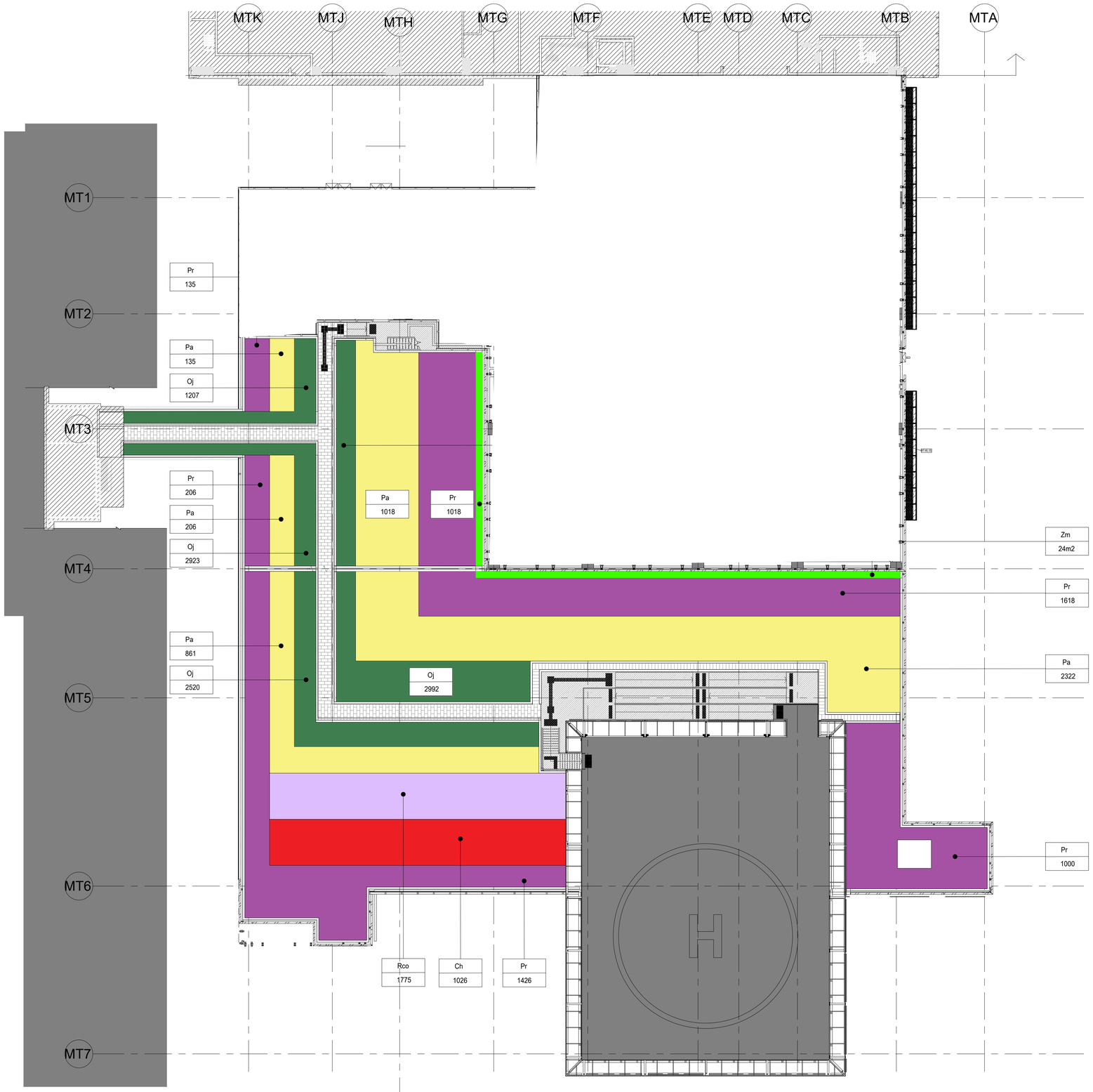
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

MT PLANT BUILDING & WATER TREATMENT PLANT BUILDING LANDSCAPE ARCHITECTURAL
2/F PLANTING PLAN

Drawing Number	Revision
IWMF1_14-136_500_123601	0
Date: 28 FEB 23	Scale (at A1)
Drawn by: DC	Format A1
Checked by: MN	Status
Approved by:KENNY YU	DDA



MT PLANT BUILDING & WATER TREATMENT PLANT BUILDING LANDSCAPE ARCHITECTURAL 3/F PLANTING PLAN

1 : 200

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	20 JAN 23	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

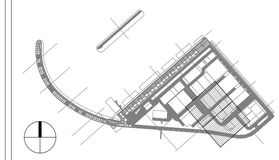
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

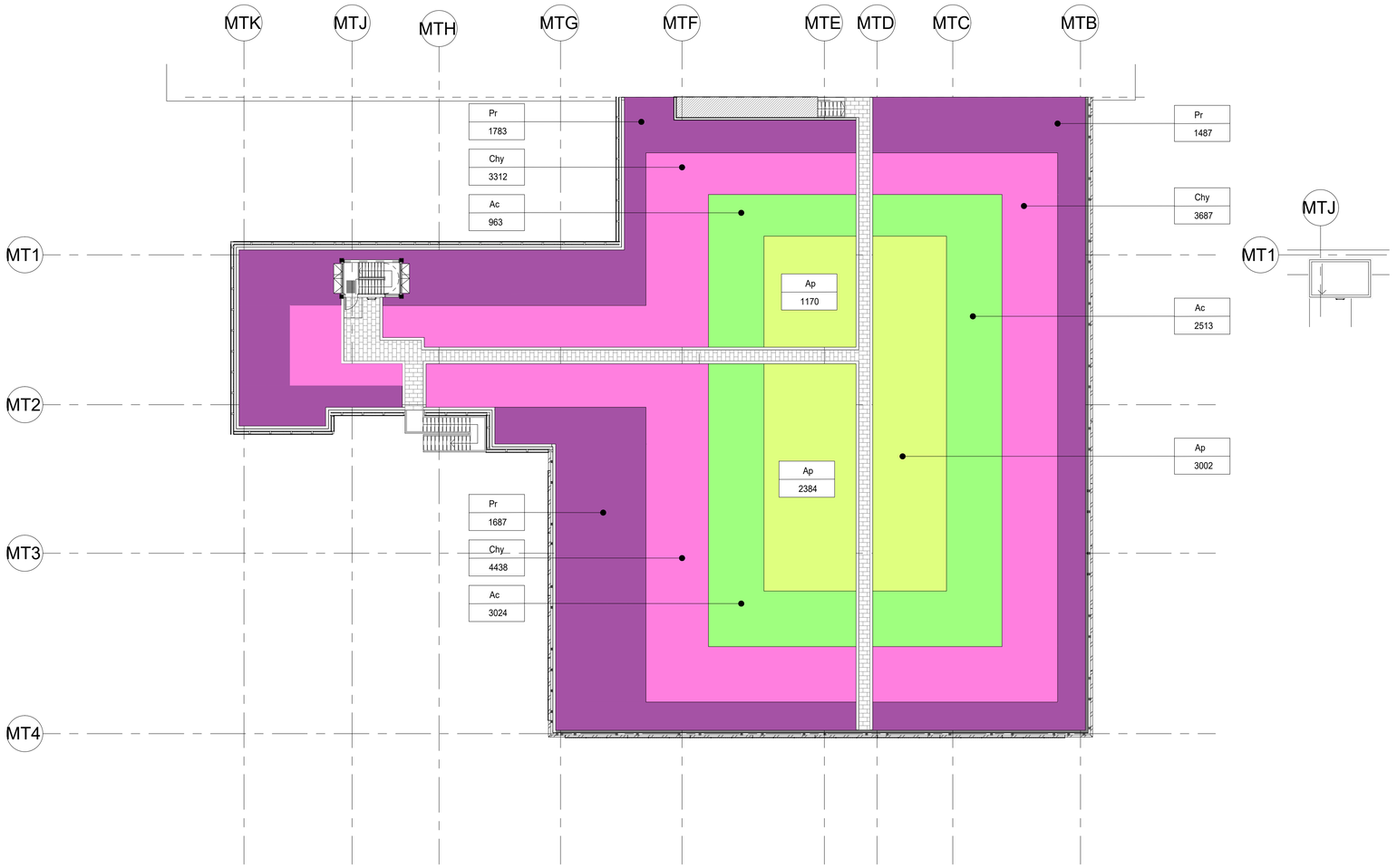
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

MT PLANT BUILDING & WATER TREATMENT PLANT BUILDING LANDSCAPE ARCHITECTURAL 3/F PLANTING PLAN

Drawing Number		Revision
IWMF1_14-136_500_123602		0
Date: 28 FEB 23	Scale (at A1)	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		



MT PLANT BUILDING & WATER TREATMENT PLANT BUILDING LANDSCAPE ARCHITECTURAL ROOF PLANTING PLAN

1 : 200

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	20 JAN 23	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

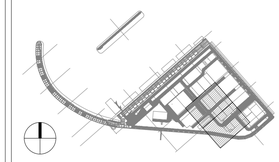
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

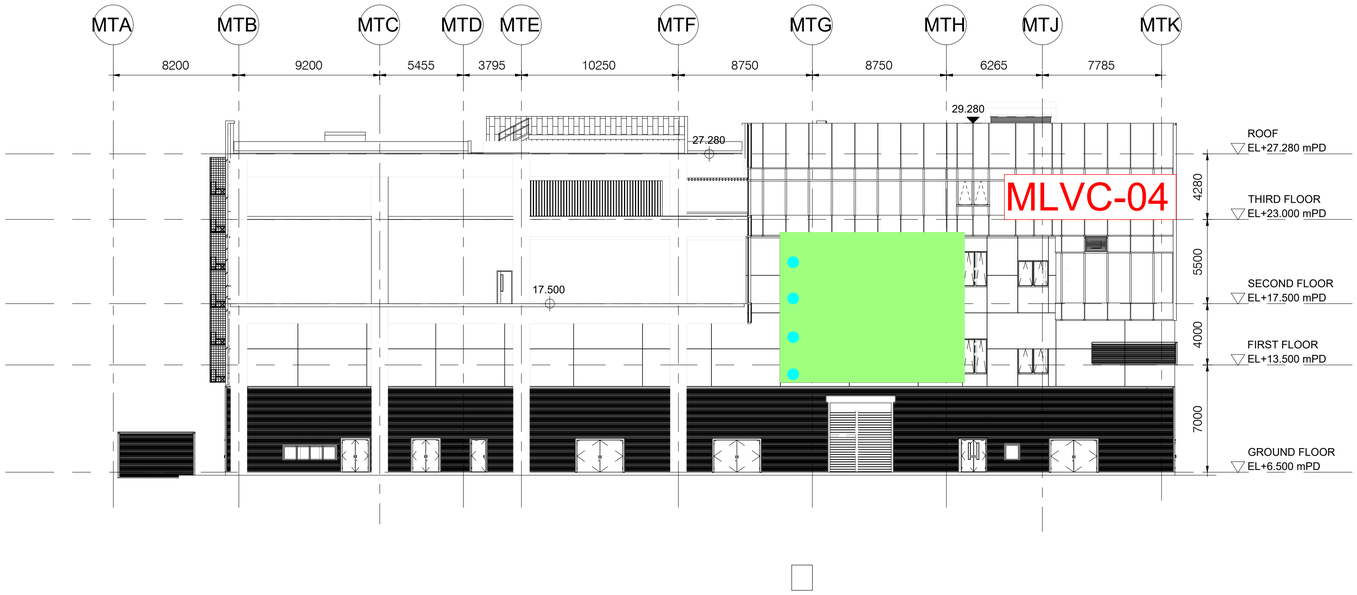
Design Package

Drawing Title

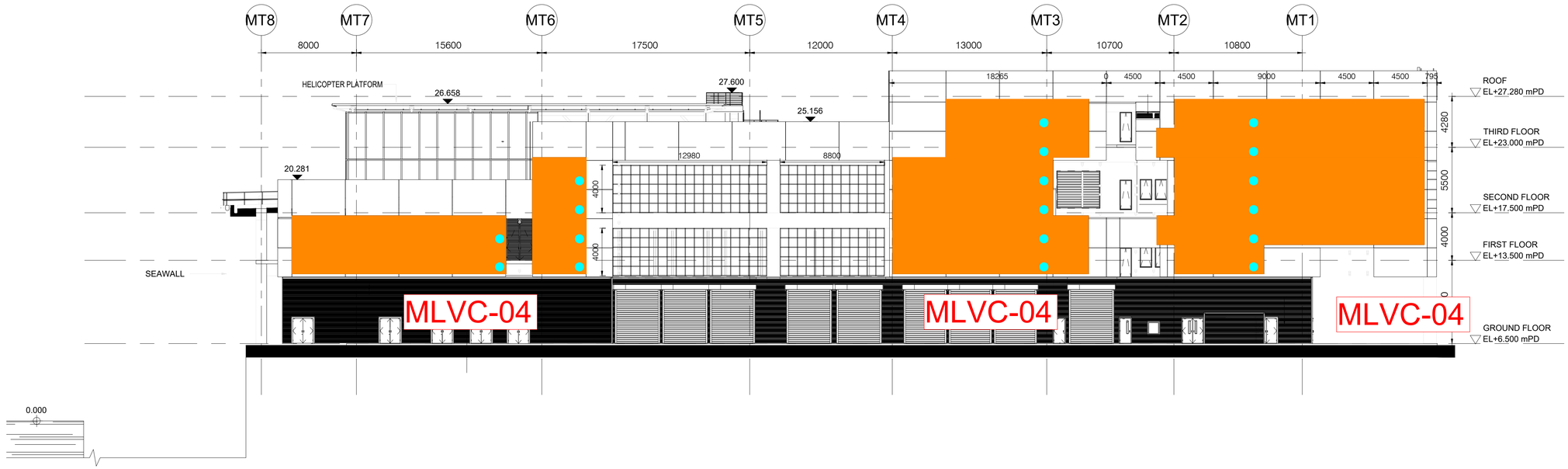
MT PLANT BUILDING & WATER TREATMENT PLANT BUILDING LANDSCAPE ARCHITECTURAL ROOF PLANTING PLAN

Drawing Number	Revision
IWMF1_14-136_500_123603	0
Date: 28 FEB 23 / Scale (at A1)	Format A1
Drawn by: DC	
Checked by: MN	Status DDA
Approved by:KENNY YU	

LEGEND
● MANUAL IRRIGATION POINT
SERVICE AREA=20M RADIUS



1 MT & WTP BUILDING - NORTH WEST ELEVATION
1 : 200



2 MT & WTP BUILDING - NORTH EAST ELEVATION
1 : 200

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	20 JAN 23	1ST ISSUE	MN	KENNY YU

Employer
環境保護署 Environmental Protection Department

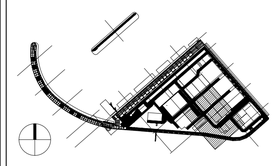
Supervision Officer
AECOM

Main Contractor
Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
ARCADIS
DLN

Design Checker
SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

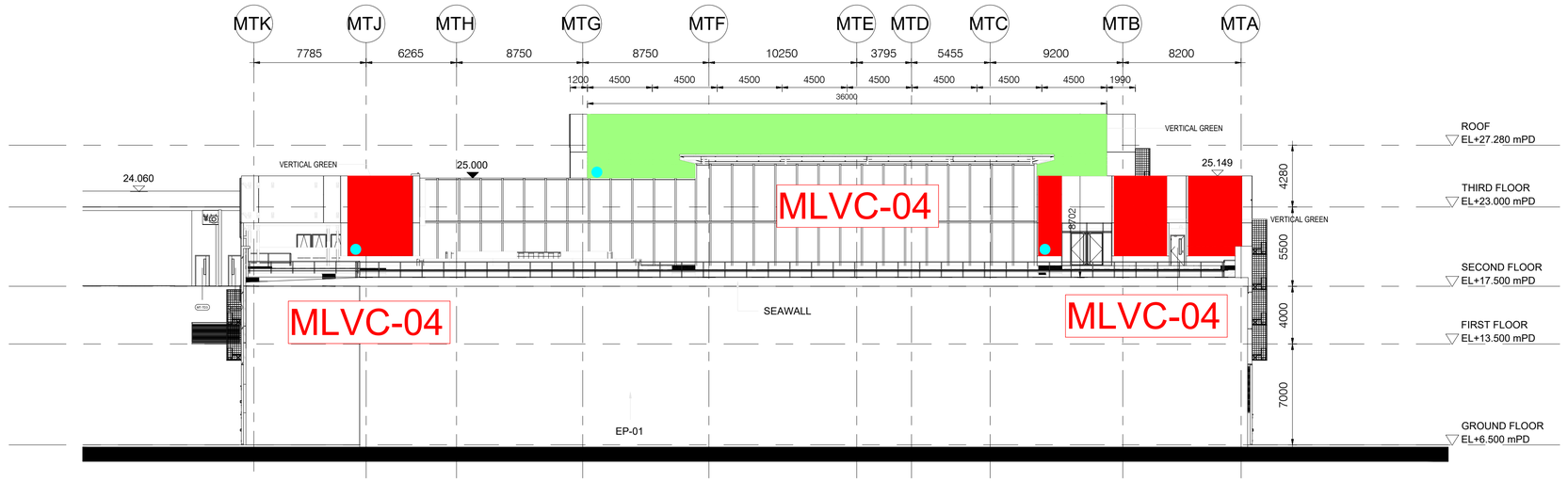
Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
MT PLANT BUILDING & WATER TREATMENT PLANT BUILDING VERTICAL GREENERY ON BUILDING FACADE 01

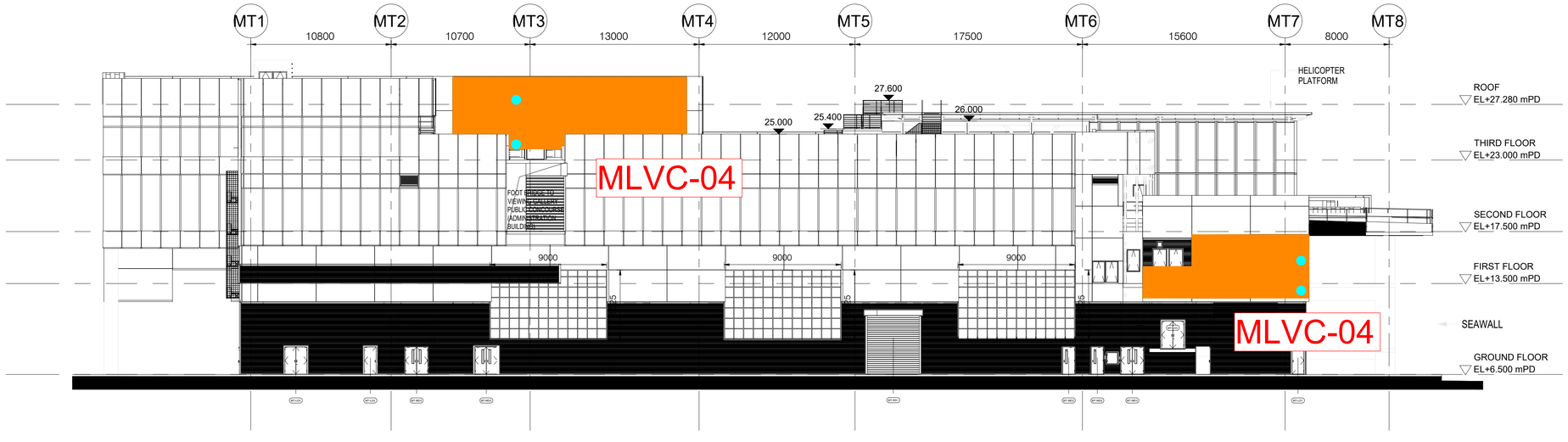
Drawing Number	Revision
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Date: 28 FEB 23	Scale (at A1) 1 : 200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		



1 MT & WTP BUILDING - SOUTH EAST ELEVATION

1 : 200



2 MT & WTP BUILDING - SOUTH WEST ELEVATION

1 : 200

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	20 JAN 23	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

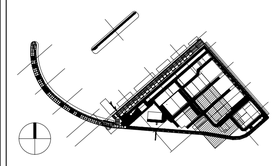
Designers

ARCADIS
DLN
aln

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

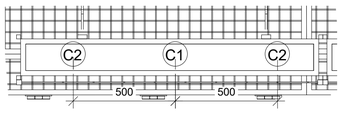
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

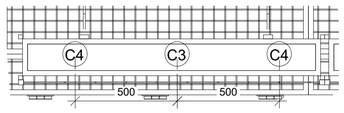
MT PLANT BUILDING & WATER
TREATMENT PLANT BUILDING
VERTICAL GREENERY
ON BUILDING FACADE 02

Drawing Number		Revision
IWMF1_14-136_500_114202		0
Date: 28 FEB 23	Scale (at A1)	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		



VG PLANTER PLAN
(TYPE 1)

2 1 : 15



VG PLANTER PLAN
(TYPE 2)

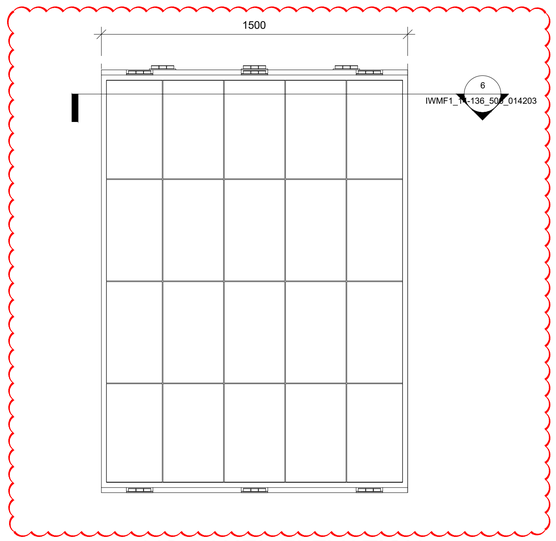
4 1 : 15



Pyrostegia venusta

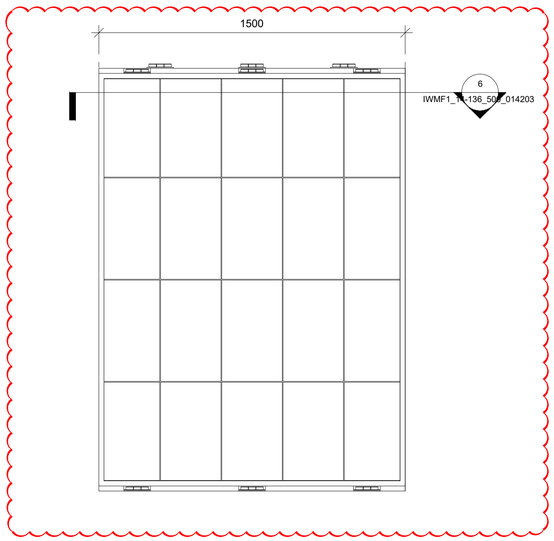
VG MIX
AT 2ND FLOOR (TYPE 3)

5



VG PANEL ELEVATION
(TYPE 1)

1 1 : 15



VG PLANTER ELEVATION
(TYPE 2)

3 1 : 15

MTP and WTP Building Vertical Greenery Planter Summary

Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Ea	*Philodendron scandens*	蔓綠絨	1000 x 4 Shoots	500	80		NATIVE/EXOTIC
C2	Lja	*Lonicera japonica*	忍冬(金銀花)	1000 x 4 Shoots	500	160		NATIVE/EXOTIC
C3	Ea	*Epipremnum aureum*	綠蘿 (芋葉藤)	1000 x 4 Shoots	500	207		NATIVE/EXOTIC
C4	Cgr	*Campsis grandiflora*	凌霄	1000 x 4 Shoots	500	414		NATIVE/EXOTIC
C5	Pve	*Pyrostegia venusta*	炮仗花	1000 x 4 Shoots	500	160		NATIVE/EXOTIC

NOTE:
1. DETAILS OF THE VG PANEL SYSTEM PLEASE REFERENCE TO THE MTP AND WTP BUILDING EXTERNAL FACADE FINISHES PACKAGE.

2. THE SPACING OF SUPPORTING FRAME IS 300MM X 500MM. THE DETAIL DESIGN AND MATERIAL IS UNDER COORDINATION WITH ARCHITECTURAL DESIGN .

3. TYPICAL PLANTER DETAIL SHOULD BE REFEREED TO DDA-SUBSTATION BUILDING-EXTERNAL AND INTERNAL FINISH.

4. LOCATION OF IRRIGATION POINT AND DRAINAGE PROVISION FOR VERTICAL GREENING IS UNDER COORDINATION WITH BUILDING SERVICE DESIGN.



VERTICAL GREENERY REFERENCE IMAGE OF
Bauhinia corymbosa
IN SHA TIN SEWAGE TREATMENT PLANT



VERTICAL GREENERY REFERENCE IMAGE OF
Campsis grandiflora
IN SHA TIN SEWAGE TREATMENT PLANT



VERTICAL GREENERY REFERENCE IMAGE OF
Epipremnum aureum
IN SHA TIN SEWAGE TREATMENT PLANT



VERTICAL GREENERY REFERENCE IMAGE OF
Lonicera japonica
VERTICAL GREENING
AT CENTRAL GOVERNMENT OFFICES



VERTICAL GREENERY REFERENCE IMAGE OF
Pyrostegia venusta
VERTICAL GREEN AT MULTI-STORY CARPARK

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	20 JAN 23	1ST ISSUE	MN	KENNY YU

Employer
環境保護署
Environmental Protection Department

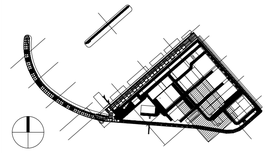
Supervision Officer
AECOM

Main Contractor
Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
ARCADIS
DLN
QLN

Design Checker
SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
MT PLANT BUILDING & WATER TREATMENT PLANT BUILDING
VERTICAL GREENERY
ON BUILDING FACADE 03

Drawing Number		Revision
IWMF1_14-136_500_114203		
Date: 28 FEB 23	Scale (at A1)	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		

PLANTING SCHEDULE

Shrubs

CODE	BOTANICAL NAME	CHINESE NAME	HEIGHT (mm)	SPREAD (mm)	SPACING (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
Ac	*Asparagus cochinchinensis*	天門冬	300	300	300	6500		NATIVE/ EXOTIC
Ap	*Arachis Pintoi*	多年生花生	200	200	250	7306		NATIVE/ EXOTIC
Ch	*Calliandra haematocephals*	朱纓花	600	400	400	1026		NATIVE/ EXOTIC
Chy	*Cuphea hyssopifolia*	細葉萼距花	200	200	250	11437		NATIVE/ EXOTIC
Jm	*Jasminum mesnyii*	雲南素馨	600	400	500	38		NATIVE/ EXOTIC
Neb	*Nephrolepis exaltata bostoniensis*	波士頓腎蕨	300	300	300	950		NATIVE/ EXOTIC
Oj	*Ophiopogon japonicus*	麥冬	150	150	200	9886		NATIVE/ EXOTIC
Pa	*Pennisetum alopecuroides*	狼尾草	500	300	400	4542		NATIVE/ EXOTIC
Pr	*Pennisetum sateceum rubrum*	紫葉狼尾草	500	300	400	9342		NATIVE/ EXOTIC
Rco	*Ruellia coerulea*	翠蘆莉	500	300	300	1775		NATIVE/ EXOTIC

Turf / Grass

CODE	BOTANICAL NAME	CHINESE NAME	SPACING (mm)	QTY (sqm)	REFERENCE IMAGE	REMARKS
Zm	*Zoysia matrella*	溝葉結縷草	fully cover	493 m²		NATIVE/ EXOTIC

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	20 JAN 23	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers

古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

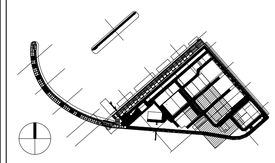
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

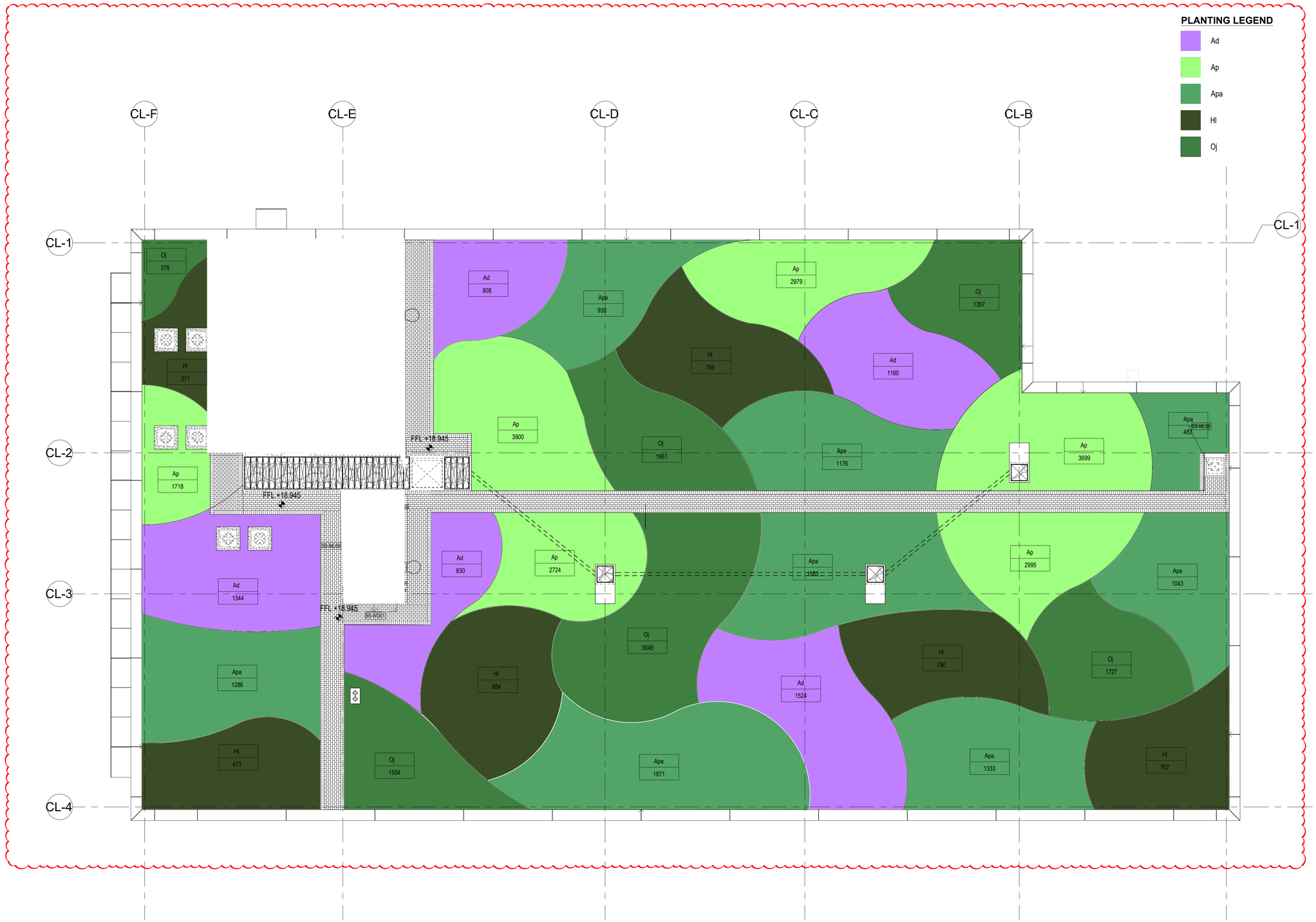
Design Package

Drawing Title

MT PLANT BUILDING & WATER TREATMENT PLANT BUILDING
LANDSCAPE ARCHITECTURAL DESIGN
PLANTING SCHEDULE & IMAGES

Drawing Number		Revision
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Date: 28 FEB 23	Scale (at A1) N.T.S.	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		

Substation



SUBSTATION LANDSCAPE ARCHITECTURAL DESIGN
LANDSCAPE PLANTING PLAN AT ROOF LEVEL

1 : 100

TRUE NORTH

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUN 22	1ST ISSUE	MN	KENNY YU
1	30 SEP 22	2ND ISSUE	MN	KENNY YU

Employer
環境保護署
Environmental Protection Department

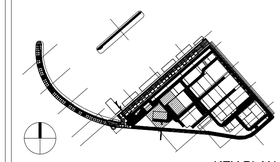
Supervision Officer
AECOM

Main Contractor
Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
ARCADIS
DLN
QLN

Design Checker
SMEC
Member of the Surbana Jurong Group

FOR OFFICIAL USE



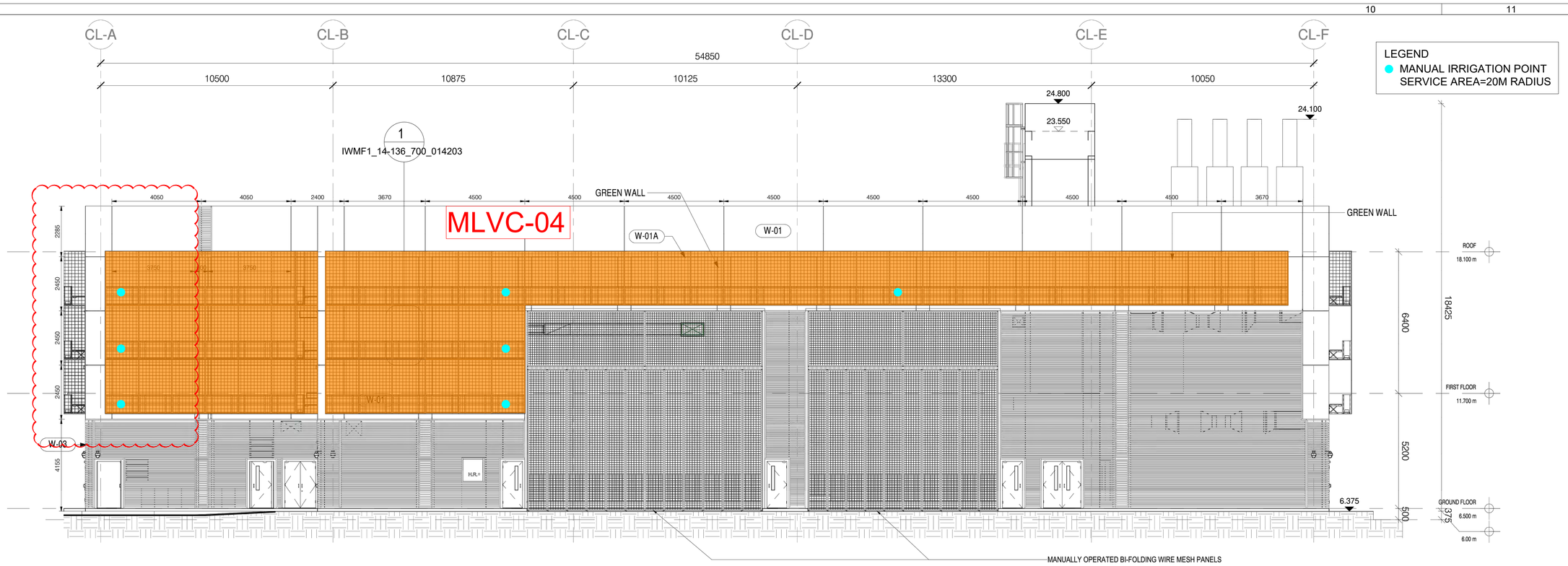
KEY PLAN

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

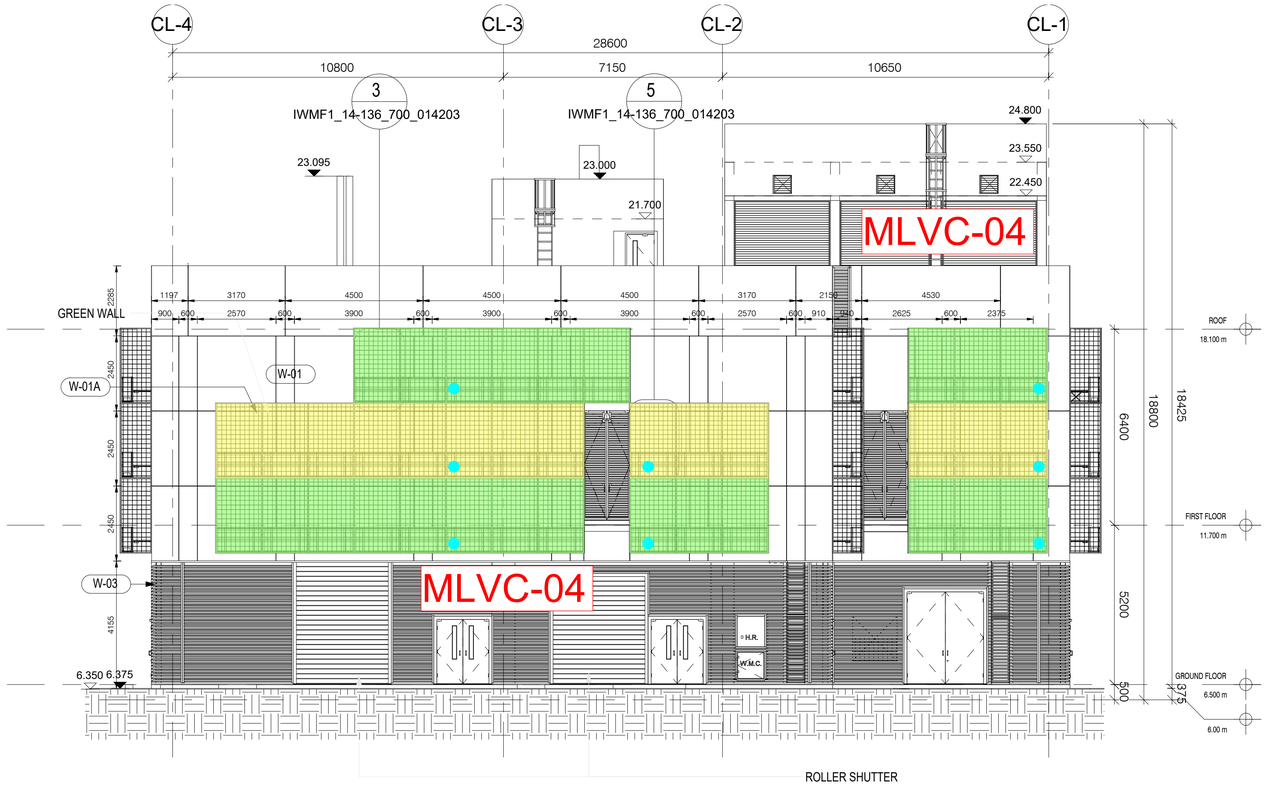
Drawing Title
SUBSTATION LANDSCAPE
ARCHITECTURAL DESIGN
LANDSCAPE PLANTING PLAN
AT ROOF LEVEL

Drawing Number		Revision
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Date: 30 SEP 22	Scale (at A1)	Format
Drawn by: DC	1 : 100	A1
Checked by: MN		Status
Approved by KENNY YU		DDA



1 SUBSTATION - NORTH ELEVATION

1 : 100



2 SUBSTATION - EAST ELEVATION

1 : 100

NOTE:

1. LOCATION OF MANUAL IRRIGATION POINT FOR VERTICAL GREENING IS UNDER COORDINATION WITH BUILDING SERVICE DESIGN.
2. DRAINAGE DESIGN SHALL REFER TO DDA PACKAGE 2.8.18.04.01 FOR SUBSTATION, WHICH WOULD BECOME AVAILABLE FOR SO REVIEW ONCE COMPLETE.

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUN 22	1ST ISSUE	MN	KENNY YU
1	30 SEP 22	2ND ISSUE	MN	KENNY YU

Employer

環境保護署 Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers

古寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

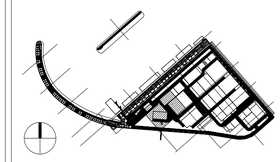
ARCADIS DLN QLN

Design Checker

SMEC

Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

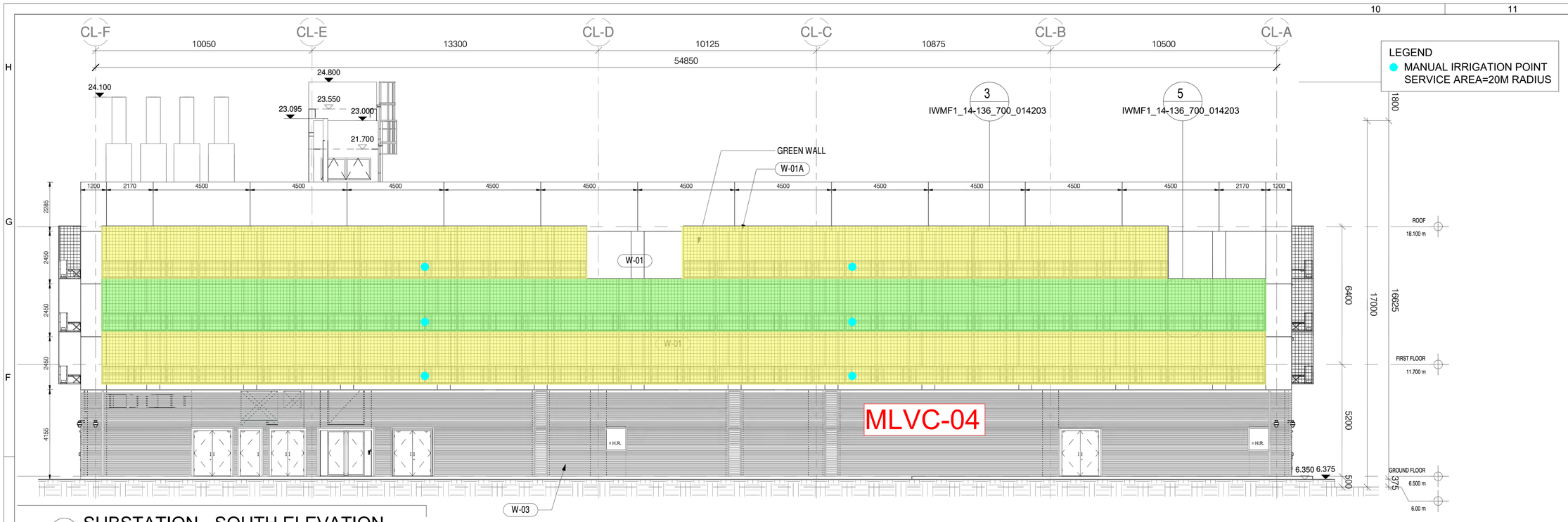
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

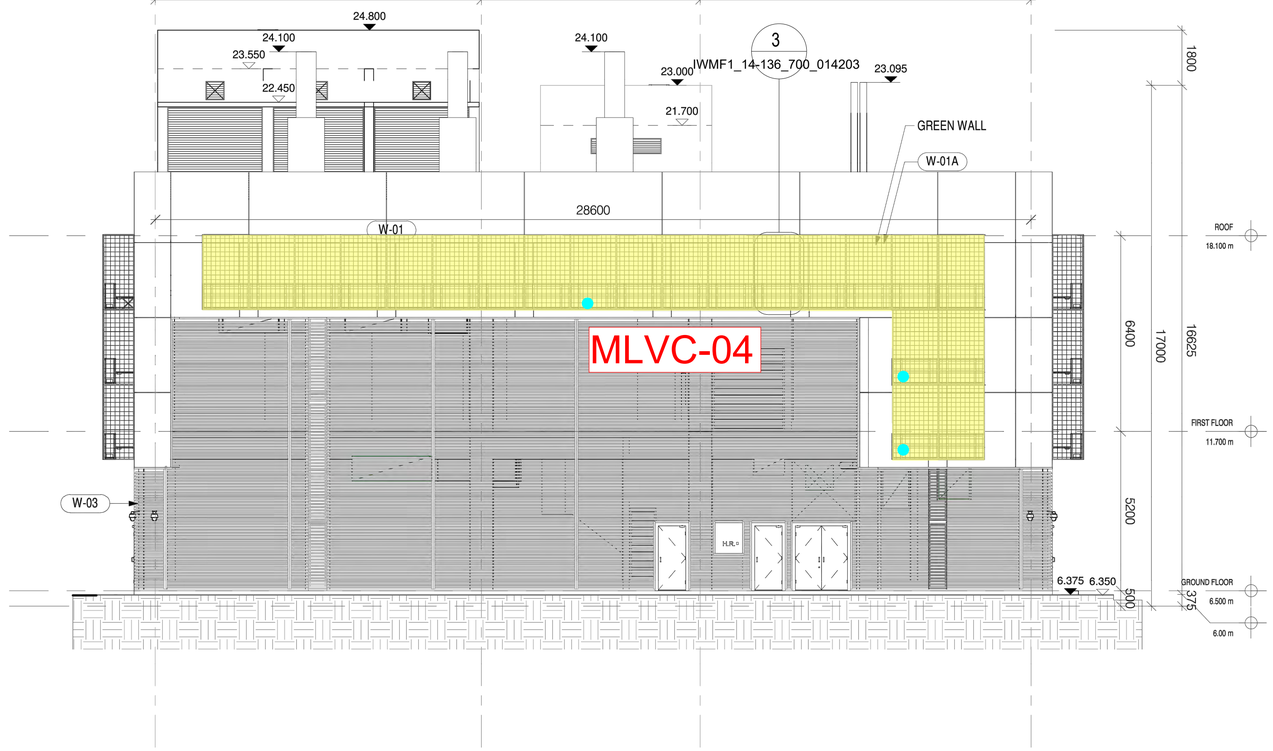
SUBSTATION LANDSCAPE ARCHITECTURAL DESIGN
VERTICAL GREENERY ON BUILDING FACADE (SHEET 1 OF 3)

Drawing Number: IWMF1_14-136_700_114201		Revision: 1
Date: 30 SEP 22	Scale (at A1)	Format: A1
Drawn by: DC		
Checked by: MN		Status: DDA
Approved by: KENNY YU		



1 SUBSTATION - SOUTH ELEVATION

1 : 100



2 SUBSTATION - WEST ELEVATION

1 : 100

NOTE:

1. LOCATION OF MANUAL IRRIGATION POINT FOR VERTICAL GREENING IS UNDER COORDINATION WITH BUILDING SERVICE DESIGN.
2. DRAINAGE DESIGN SHALL REFER TO DDA PACKAGE 2.8.18.04.01 FOR SUBSTATION, WHICH WOULD BECOME AVAILABLE FOR SO REVIEW ONCE COMPLETE.

LEGEND

- MANUAL IRRIGATION POINT SERVICE AREA=20M RADIUS

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUN 22	1ST ISSUE	MN	KENNY YU
1	30 SEP 22	2ND ISSUE	MN	KENNY YU

Employer: 環境保護署 Environmental Protection Department

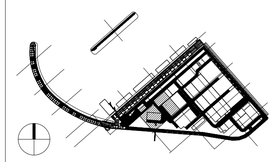
Supervision Officer: AECOM

Main Contractor: Keppel Seghers 吉寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS DLN ALN

Design Checker: SMEC Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

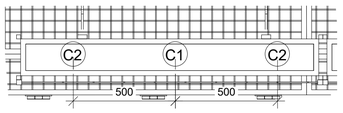
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

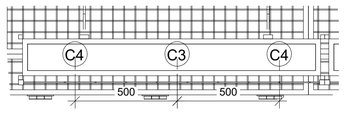
SUBSTATION LANDSCAPE ARCHITECTURAL DESIGN
VERTICAL GREENERY ON BUILDING FACADE (SHEET 2 OF 3)

Drawing Number		Revision
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Date: 30 SEP 22	Scale (at A1)	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		



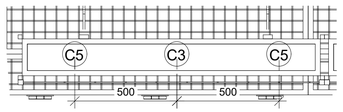
VG PLANTER PLAN
(TYPE 1)

2 1 : 15



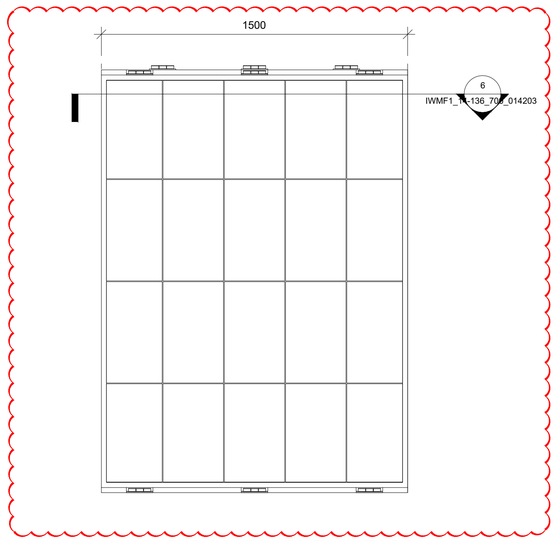
VG PLANTER PLAN
(TYPE 2)

4 1 : 15



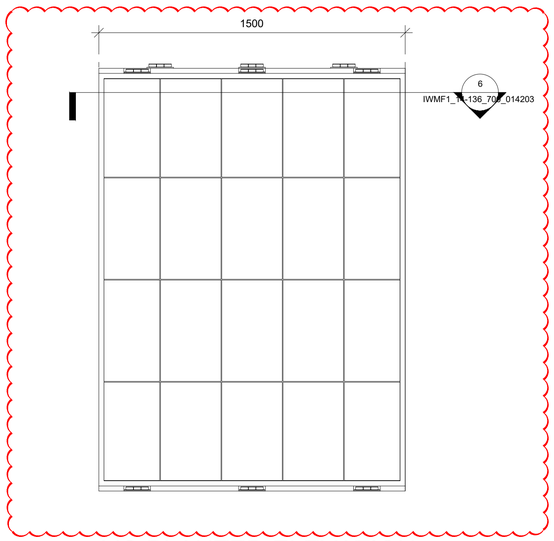
VG PLANTER PLAN
(TYPE 3)

6 1 : 15



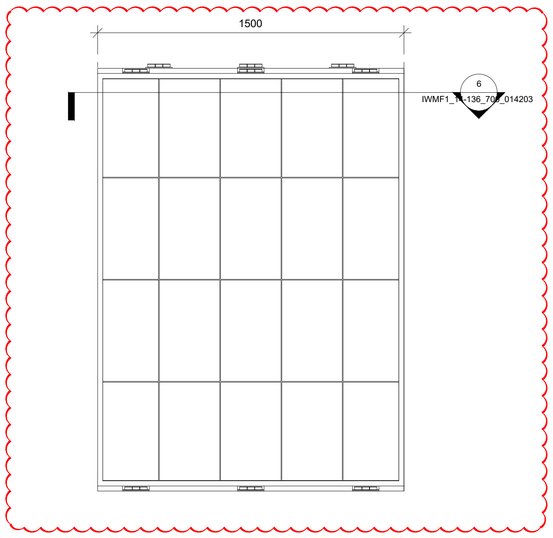
VG PANEL ELEVATION
(TYPE 1)

1 1 : 15



VG PLANTER ELEVATION
(TYPE 2)

3 1 : 15



VG PLANTER ELEVATION
(TYPE 3)

5 1 : 15

Sub-Station Vertical Greenery Planter Summary

Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Ea	*Philodendron scandens*	蔓綠絨	1000 x 4 Shoots	500	58		~~NATIVE~~/EXOTIC
C2	Lja	*Lonicera japonica*	忍冬(金銀花)	1000 x 4 Shoots	500	116		NATIVE/~~EXOTIC~~
C3	Tj	*Trachelospermum jasminoides*	絡石	1000 x 4 Shoots	500	135		NATIVE/~~EXOTIC~~
C4	Pal	*Pseudocalymma alliaceum*	蒜香藤	1000 x 4 Shoots	500	133		~~NATIVE~~/EXOTIC
C5	Pve	*Pyrostegia venusta*	炮仗花	1000 x 4 Shoots	500	160		~~NATIVE~~/EXOTIC

NOTE:
1. DETAILS OF THE VG PANEL SYSTEM PLEASE REFERENCE TO THE SUBSTATION EXTERNAL FACADE FINISHES PACKAGE.

2. THE SPACING OF SUPPORTING FRAME IS 300MM X 500MM. THE DETAIL DESIGN AND MATERIAL IS UNDER COORDINATION WITH ARCHITECTURAL DESIGN .

3. TYPICAL PLANTER DETAIL SHOULD BE REFEREED TO DDA-SUBSTATION BUILDING-EXTERNAL AND INTERNAL FINISH.

4. LOCATION OF IRRIGATION POINT AND DRAINAGE PROVISION FOR VERTICAL GREENING IS UNDER COORDINATION WITH BUILDING SERVICE DESIGN.



VERTICAL GREENERY REFERENCE IMAGE OF
Philodendron scandens
VERTICAL GREENING
AT CENTRAL GOVERNMENT OFFICES



VERTICAL GREENERY REFERENCE IMAGE OF
Lonicera japonica
VERTICAL GREENING
AT CENTRAL GOVERNMENT OFFICES



VERTICAL GREENERY REFERENCE IMAGE OF
Trachelospermum jasminoides
IN SHA TIN SEWAGE TREATMENT PLANT



VERTICAL GREENERY REFERENCE IMAGE OF
Pseudocalymma alliaceum
VERTICAL GREENING AT LAI CHI KOK PARK



VERTICAL GREENERY REFERENCE IMAGE OF
Pyrostegia venusta
VERTICAL GREEN AT MULTI-STORY CARPARK

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUN 22	1ST ISSUE	MN	KENNY YU
1	30 SEP 22	2ND ISSUE	MN	KENNY YU

Employer
環境保護署
Environmental Protection Department

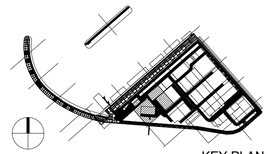
Supervision Officer
AECOM

Main Contractor
Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
ARCADIS
DLN
QLN

Design Checker
SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
SUBSTATION LANDSCAPE
ARCHITECTURAL DESIGN
VERTICAL GREENERY ON BUILDING
FACADE (SHEET 3 OF 3)

Drawing Number		Revision
IWMF1_14-136_700_014203		1
Date: 30 SEP 22	Scale (at A1) As indicated	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		

SUBSTATION PLANTING SCHEDULE

Herbaceous Plants / Groundcovers

Code	Botanical Name	Chinese Name	Height	Spread	Spacing	QTY (Nos.)	Image	Remarks
Ad	*Alternanthera dentat f. rubiginosa*	紅龍莧	200	200	250	5666		NATIVE/EXOTIC
Ap	*Arachis pintoi*	多年生花生	200	200	150	18015		NATIVE/EXOTIC
Apa	*Alternanthera paronychioides*	星星蝦鉗菜	300	200	250	9675		NATIVE/EXOTIC
HI	*Hymenocallis littoralis*	水鬼蕉	300	300	300	4123		NATIVE/EXOTIC
Oj	*Ophiopogon japonicus*	麥冬	150	150	200	9672		NATIVE/EXOTIC

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUN 22	1ST ISSUE	MN	KENNY YU
1	30 SEP 22	2ND ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

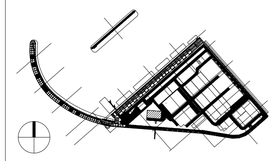
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

SUBSTATION LANDSCAPE
ARCHITECTURAL DESIGN
PLANTING SCHEDULE & IMAGES

Drawing Number		Revision
IWMF1_14-136_700_117600		1
Date: 30 SEP 22	Scale (at A1)	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		

Process Building

PLANTING LEGEND

XX — PLANT CODE
XX — QUANTITY (nos.)

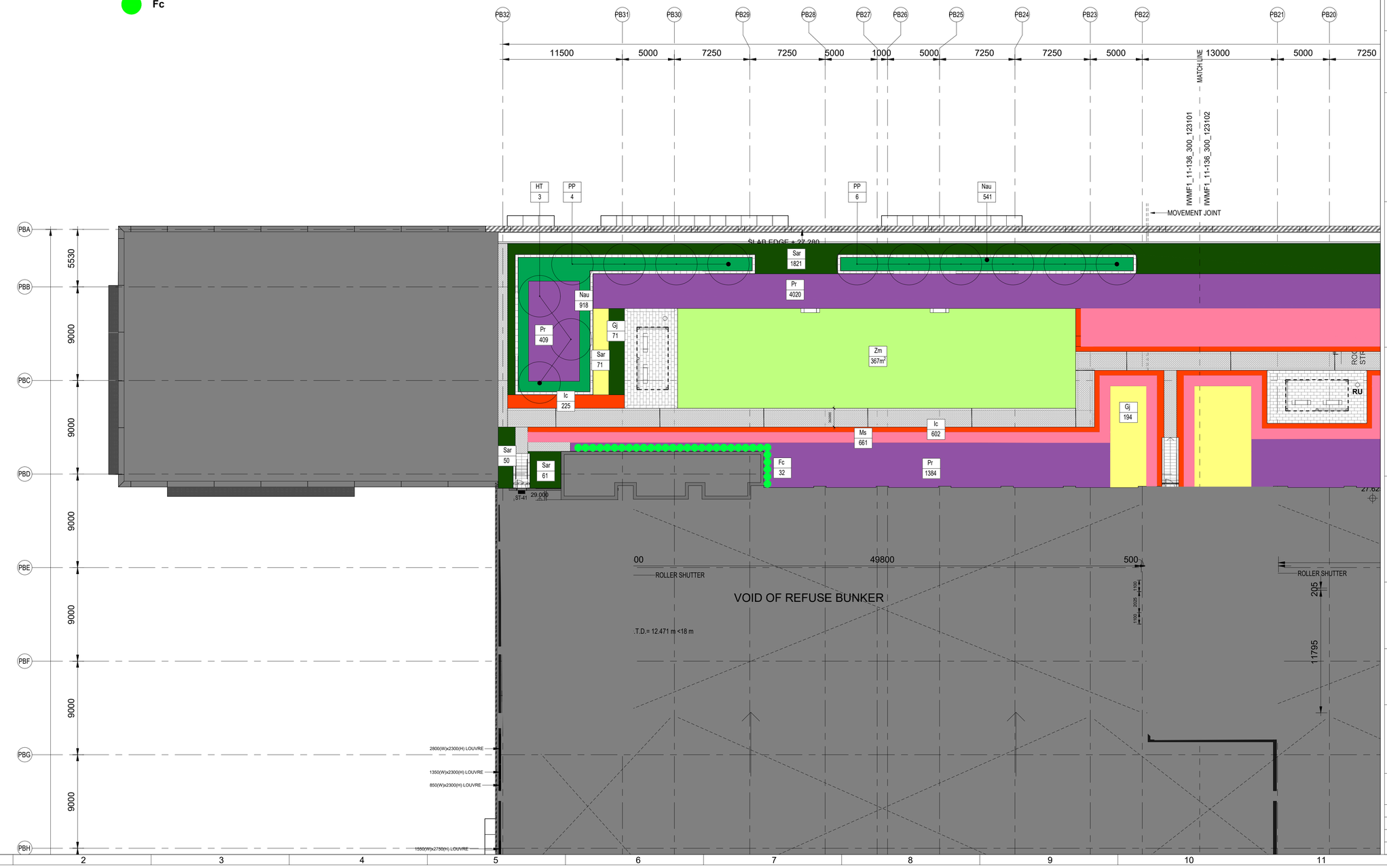
PROPOSED TREE

Xxx — PLANT CODE
XXX — QUANTITY (nos.) / AREA (m

PLANTING AREA

PLANT SPECIES LEGEND

- Ad
- Gj
- Ic
- Ms
- Nau
- Pr
- Tp
- Sar
- Zm
- Fc



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUL 22	1ST ISSUE	MN	KENNY YU
1	25 NOV 22	2ND ISSUE	MN	KENNY YU

Employer
環境保護署
Environmental Protection Department

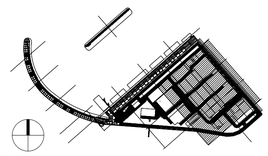
Supervision Officer
AECOM

Main Contractor
Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
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QLN

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KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

PROCESS BUILDING LANDSCAPE
ARCHITECTURAL DESIGN
LANDSCAPE PLANTING PLAN
AT LEVEL +29.5mPD (SHEET 1 OF 3)

Drawing Number		Revision
IWMF1_14-136_300_123601		1
Date: 25 NOV 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		

PLANTING LEGEND

XX — PLANT CODE
XX — QUANTITY (nos.)

PROPOSED TREE

Xxx — PLANT CODE
XXX — QUANTITY (nos.) / AREA (m

PLANTING AREA

PLANT SPECIES LEGEND

- Ad
- Gj
- Ic
- Ms
- Nau
- Pr
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Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUL 22	1ST ISSUE	MN	KENNY YU
1	25 NOV 22	2ND ISSUE	MN	KENNY YU

Employer
環境保護署
Environmental Protection Department

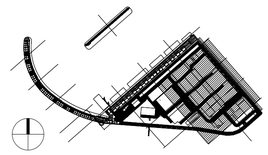
Supervision Officer
AECOM

Main Contractor
Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
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QLN

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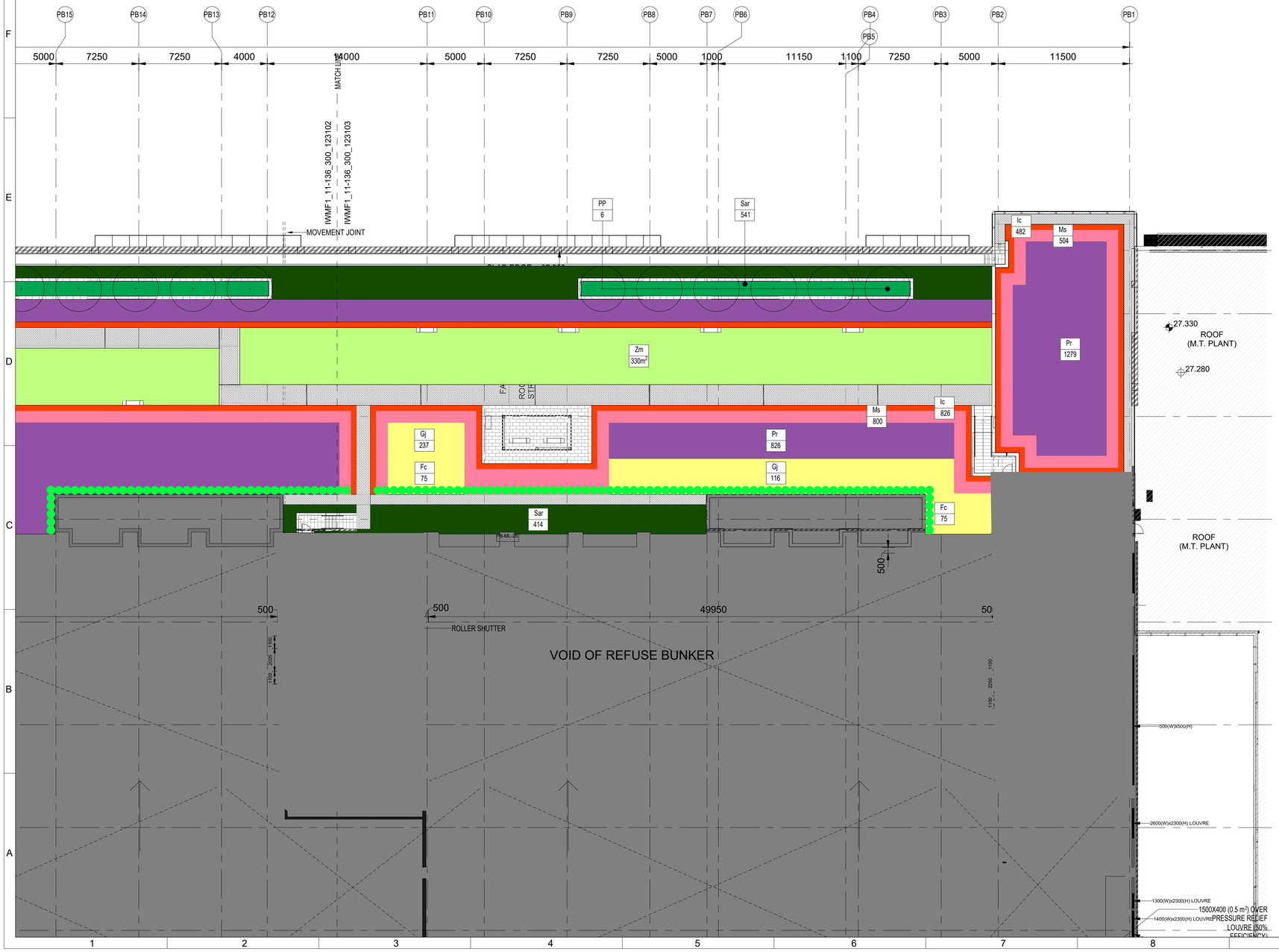
KEY PLAN

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
PROCESS BUILDING LANDSCAPE
ARCHITECTURAL DESIGN
LANDSCAPE PLANTING PLAN
AT LEVEL +29.5mPD (SHEET 2 OF 3)

Drawing Number		Revision
IWMF1_14-136_300_123602		1
Date: 25 NOV 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		



PLANTING LEGEND

XX — PLANT CODE
XX — QUANTITY (nos.)

PROPOSED TREE

Xxx — PLANT CODE
XXX — QUANTITY (nos.) / AREA (m

PLANTING AREA

PLANT SPECIES LEGEND

- Ad
- Gj
- Ic
- Ms
- Nau
- Pr
- Tp
- Sar
- Zm
- Fc

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUL 22	1ST ISSUE	MN	KENNY YU
1	25 NOV 22	2ND ISSUE	MN	KENNY YU

Employer

環境保護署
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古寶西格斯－振華聯營公司
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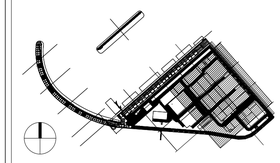
Designers

ARCADIS
DLN
ALN

Design Checker

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KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

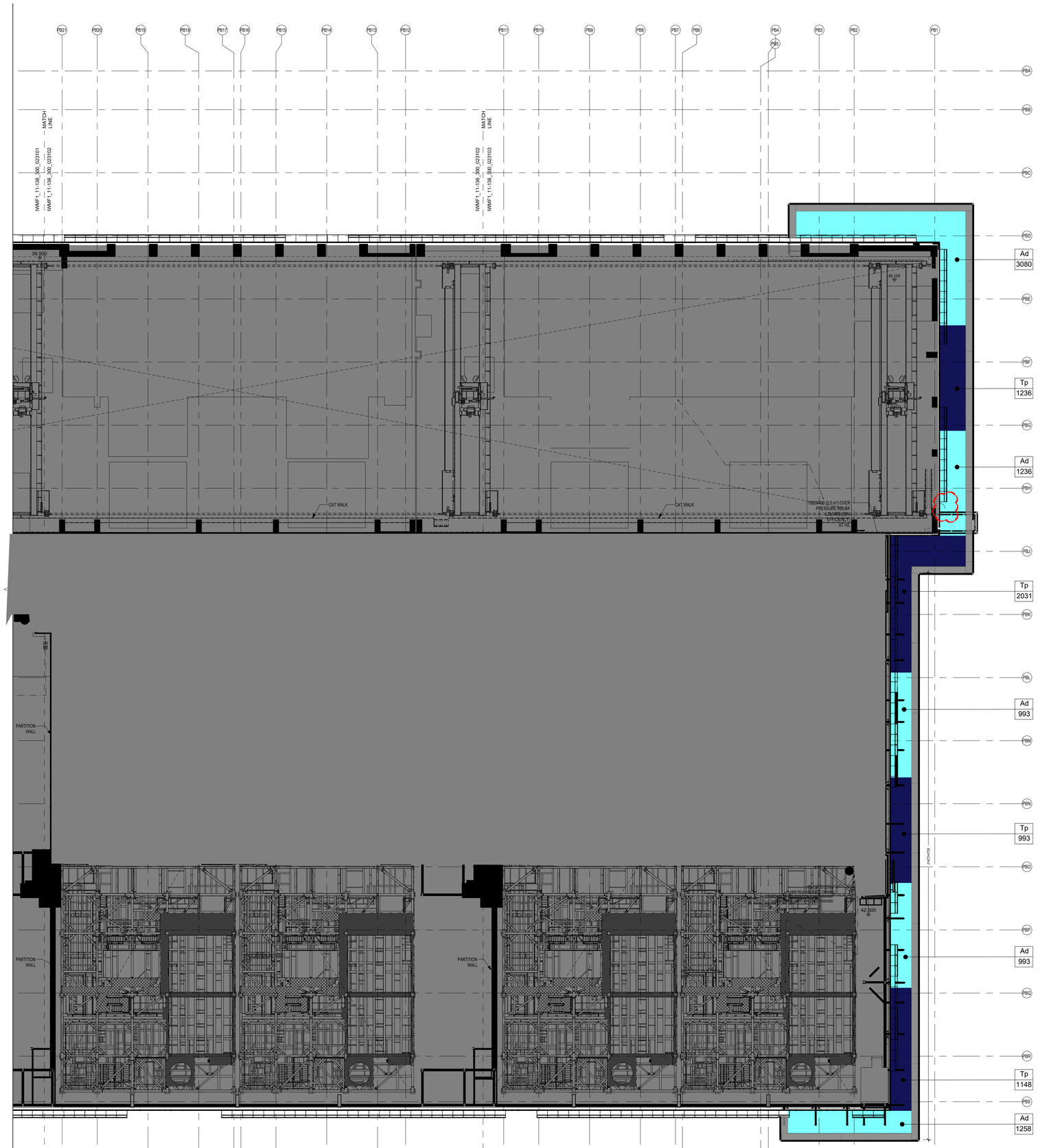
Drawing Title

PROCESS BUILDING LANDSCAPE
ARCHITECTURAL DESIGN
LANDSCAPE PLANTING PLAN
AT LEVEL +29.5mPD (SHEET 3 OF 3)

Drawing Number		Revision
IWMF1_14-136_300_123603		1
Date: 25 NOV 22	Scale (at A1) 1:200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		

PLANT SPECIES LEGEND

- Ad
- Gj
- Ic
- Ms
- Nau
- Pr
- Tp
- Sar
- Zm
- Fc



NOTE
STRUCTURAL SUPPORT BEAMS ON THE VIEWING GALLERY ROOF REFER TO ENGINEER'S DETAIL

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUL 22	1ST ISSUE	MN	KENNY YU
1	25 NOV 22	2ND ISSUE	MN	KENNY YU

Employer

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Environmental Protection Department

Supervision Officer

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Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

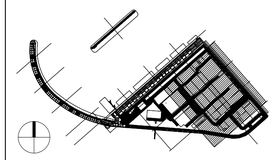
Designers

ARCADIS
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ALN

Design Checker

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Certification



KEY PLAN

Project Name

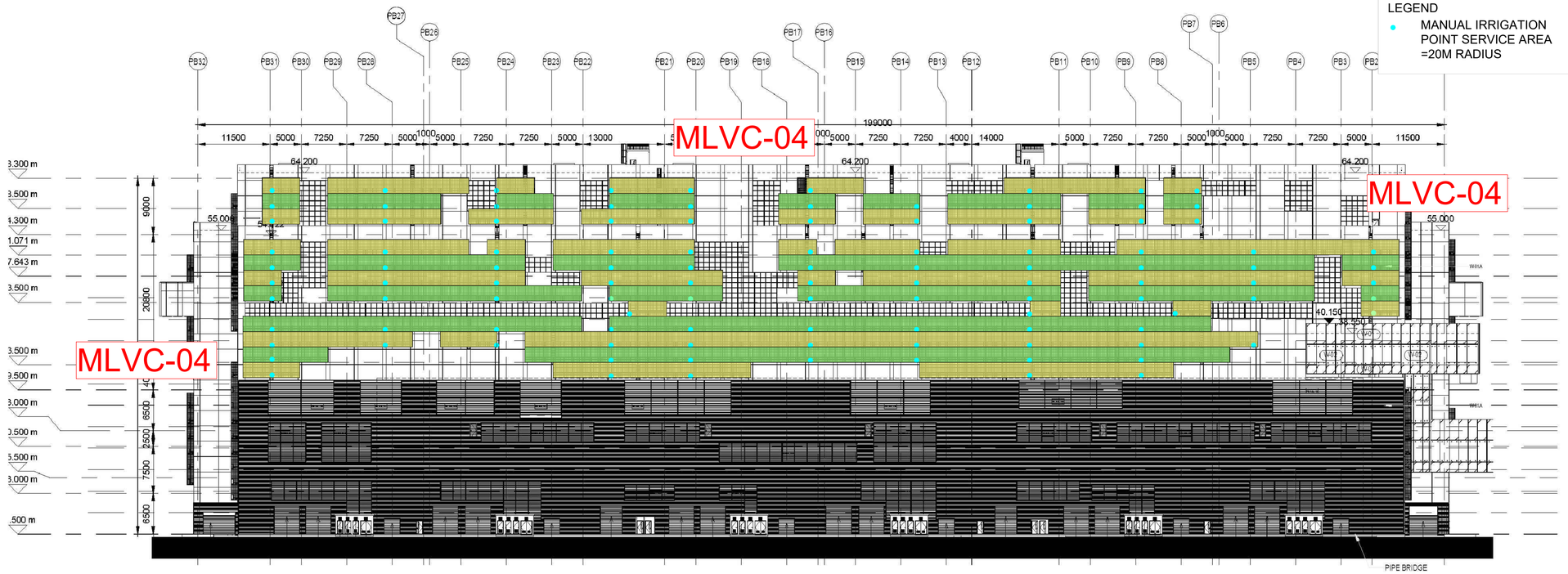
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

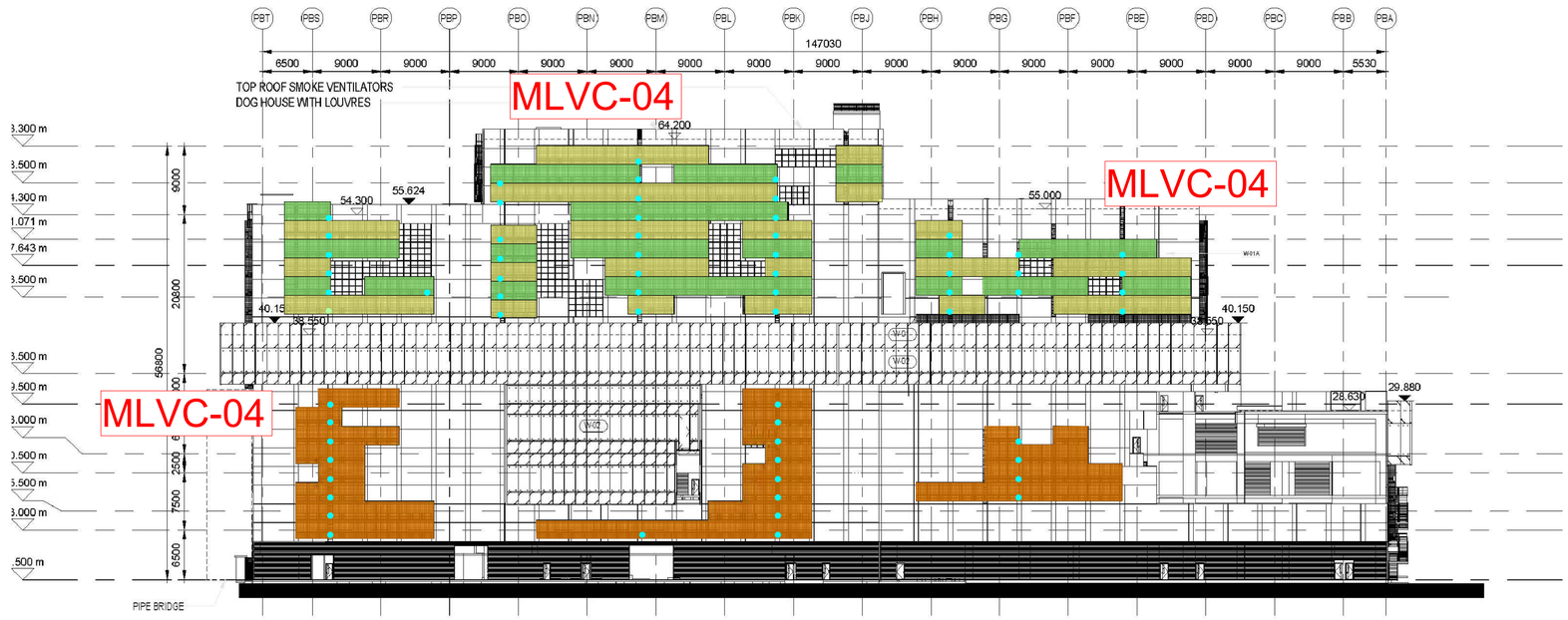
PROCESS BUILDING LANDSCAPE
ARCHITECTURAL DESIGN
LANDSCAPE PLANTING PLAN
AT LEVEL +43.5mPD

Drawing Number		Revision
IWMF1_14-136_300_123604		1
Date: 25 NOV 22	Scale (at A1) 1:300	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		



1 PROCESS BUILDING SOUTH-WEST ELEVATION

1 : 400



2 PROCESS BUILDING SOUTH-EAST ELEVATION

1 : 400

NOTE:

1. THE LOCATION OF MANUAL IRRIGATION POINT FOR VERTICAL GREENING IS UNDER COORDINATION WITH BUILDING SERVICE DESIGN.
2. THE LOCATION OF VERTICAL GREEN SYSTEMS IS UNDER COORDINATION WITH ARCHITECTURAL AND ENGINEER TEAM.

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUL 22	1ST ISSUE	MN	KENNY YU
1	25 NOV 22	2ND ISSUE	MN	KENNY YU

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環境保護署 Environmental Protection Department

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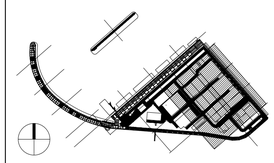
Designers

ARCADIS DLN ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

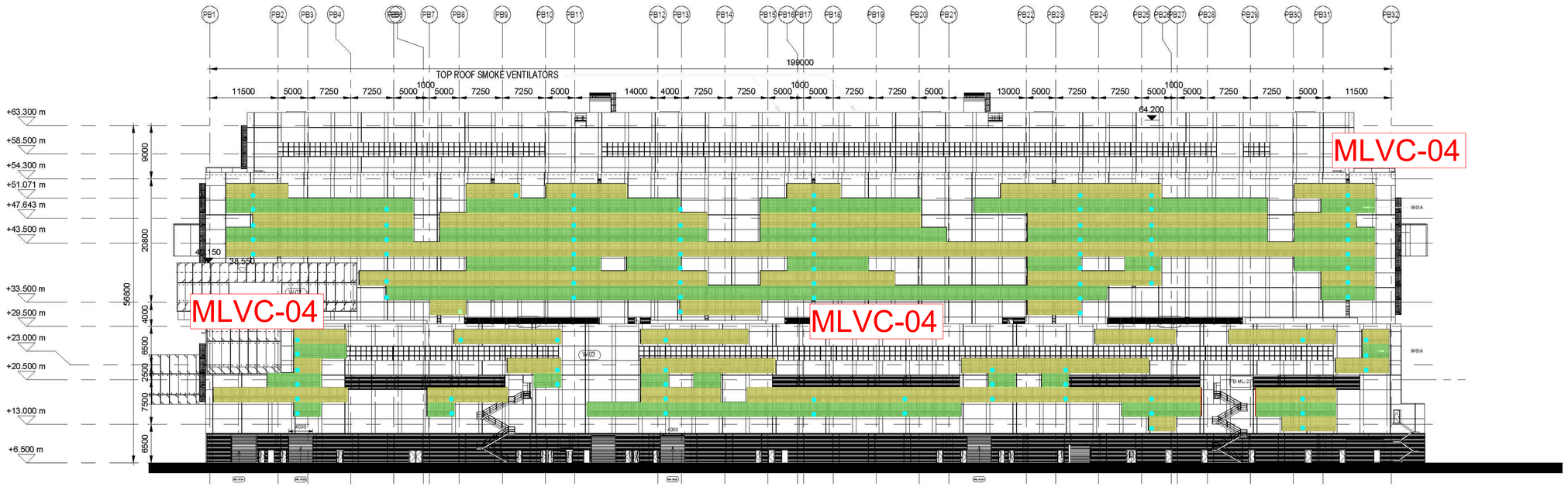
Drawing Title

PROCESS BUILDING LANDSCAPE ARCHITECTURAL DESIGN
VERTICAL GREENERY ON BUILDING FACADE (SHEET 1 OF 3)

Drawing Number	Revision
IWMF1_14-136_300_114201	1
Date: 25 NOV 22	Scale (at A1) AS SHOWN / Format A1
Drawn by: DC	
Checked by: MN	Status DDA
Approved by:KENNY YU	

LEGEND

- MANUAL IRRIGATION POINT SERVICE AREA =20M RADIUS



1 PROCESS BUILDING NORTH-EAST ELEVATION

1 : 400



2 PROCESS BUILDING NORTH-WEST ELEVATION

1 : 400

NOTE:

1. THE LOCATION OF MANUAL IRRIGATION POINT FOR VERTICAL GREENING IS UNDER COORDINATION WITH BUILDING SERVICE DESIGN.
2. THE LOCATION OF VERTICAL GREEN SYSTEMS IS UNDER COORDINATION WITH ARCHITECTURAL AND ENGINEER TEAM.

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	21 JUL 22	1ST ISSUE	TONY C	KENNY YU
1	25 NOV 22	2ND ISSUE	TONY C	KENNY YU

Employer

環境保護署 Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers

吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

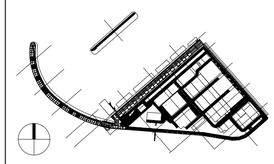
ARCADIS DLN ALN

Design Checker

SMEC

Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

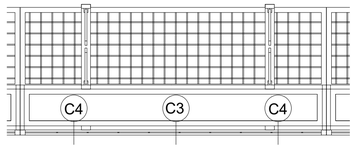
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

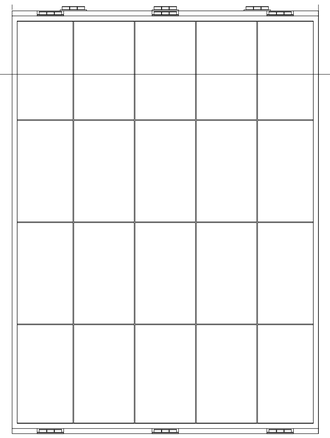
PROCESS BUILDING LANDSCAPE ARCHITECTURAL DESIGN
VERTICAL GREENERY ON BUILDING FACADE
(SHEET 2 OF 3)

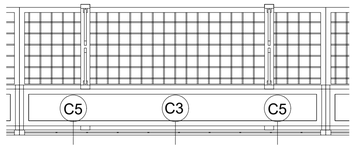
Drawing Number		Revision
IWMF1_14-136_300_114202		1
Date: 25 NOV 22	Scale (at A1) AS SHOWN	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		



VG PLANTER PLAN
(FOR SOUTH WEST, NORTH EAST, NORTH WEST, AND SOUTH EAST (ABOVE +33.50MPD))
(TYPE 1)

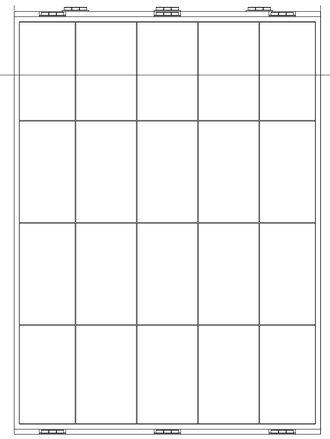
2 — 1 : 15

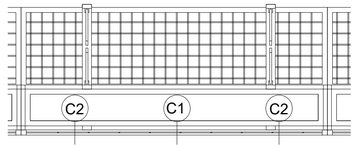




VG PLANTER PLAN
(FOR SOUTH WEST, NORTH EAST, NORTH WEST, AND SOUTH EAST (ABOVE +33.50MPD))
(TYPE 2)

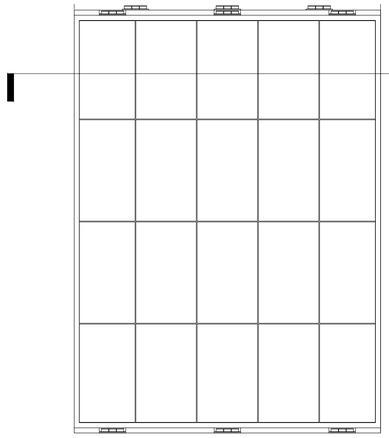
4 — 1 : 15





VG PLANTER PLAN
(SOUTH EAST(BELOW +33.5MPD))
(TYPE 3)

6 — 1 : 15



VG PLANTER ELEVATION
(FOR SOUTH WEST, NORTH EAST, NORTH WEST, AND SOUTH EAST (ABOVE +33.50MPD)) (TYPE 1)

1 — 1 : 15

VG PLANTER ELEVATION
(FOR SOUTH WEST, NORTH EAST, NORTH WEST, AND SOUTH EAST (ABOVE +33.50MPD))(TYPE 2)

3 — 1 : 15

VG PANEL ELEVATION
(SOUTH EAST(BELOW +33.5MPD))
(TYPE 3)

5 — 1 : 15

Process Building Vertical Greenery Planter Summary

Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Ea	*Epipremnum aureum*	綠蘿 (芋葉藤)	1000 x 4 Shoots	500	172		~~NATIVE~~/EXOTIC
C2	Lja	*Lonicera japonica*	忍冬(金銀花)	1000 x 4 Shoots	500	344		NATIVE/~~EXOTIC~~
C3	Tj	*Trachelospermum jasminoides*	絡石	1000 x 4 Shoots	500	2893		~~NATIVE~~/EXOTIC
C4	Pal	*Pseudocalymma alliaceum*	蒜香藤	1000 x 4 Shoots	500	2652		~~NATIVE~~/EXOTIC
C5	Pve	*Pyrostegia venusta*	炮仗花	1000 x 4 Shoots	500	3134		~~NATIVE~~/EXOTIC

NOTE:
1. DETAILS OF THE VG PANEL SYSTEM PLEASE REFERENCE TO THE PROCESS BUILDING EXTERNAL FACADE FINISHES PACKAGE.
2. THE SPACING OF SUPPORTING FRAME IS 300MM X 400MM. THE DETAIL DESIGN AND MATERIAL IS UNDER COORDINATION WITH ARCHITECTURAL DESIGN .
3. TYPICAL PLANTER DETAIL SHOULD BE REFEREED TO DDA-PROCESS BUILDING-EXTERNAL AND INTERNAL FINISH.
4. LOCATION OF IRRIGATION POINT AND DRAINAGE PROVISION FOR VERTICAL GREENING IS UNDER COORDINATION WITH BUILDING SERVICE DESIGN.



VERTICAL GREENERY REFERENCE IMAGE OF
Epipremnum aureum
VERTICAL GREENING
AT CENTRAL GOVERNMENT OFFICES



VERTICAL GREENERY REFERENCE IMAGE OF
Lonicera japonica
VERTICAL GREENING
AT CENTRAL GOVERNMENT OFFICES



VERTICAL GREENERY REFERENCE IMAGE OF
Trachelospermum jasminoides
IN SHA TIN SEWAGE TREATMENT PLANT



VERTICAL GREENERY REFERENCE IMAGE OF
Pseudocalymma alliaceum
VERTICAL GREENING AT LAI CHI KOK PARK



VERTICAL GREENERY REFERENCE IMAGE OF
Pyrostegia venusta
VERTICAL GREEN AT MULTI-STORY CARPARK

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	21 JUL 22	1ST ISSUE	TONY C	KENNY YU
1	25 NOV 22	2ND ISSUE	TONY C	KENNY YU

Employer
環境保護署
Environmental Protection Department

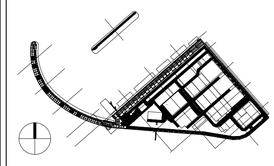
Supervision Officer
AECOM

Main Contractor
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古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
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ALN

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Member of the Surbana Jurong Group

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KEY PLAN

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
PROCESS BUILDING
LANDSCAPE ARCHITECTURAL DESIGN
VERTICAL GREENERY
ON BUILDING FACADE (SHEET 3 OF 3)

Drawing Number		Revision
IWMF1_14-136_300_114203		1
Date: 25 NOV 22	Scale (at A1)	Format
Drawn by: DC	AS SHOWN	A1
Checked by: MN		Status
Approved by:KENNY YU		DDA

PLANTING SCHEDULE

Trees

CODE	BOTANICAL NAME	CHINESE NAME	HEIGHT (mm)	SPREAD (mm)	DBH (mm)	SPACING (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
Ht	*Hibiscus tiliaceus*	黃槿	3000	2000	100	As Shown (MIN. 5000)	3		NATIVE/ EXOTIC
PP	*Pongamia pinnata*	水黃皮	4000	2000	100	As Shown (MIN. 5000)	24		NATIVE/ EXOTIC

Turf / Grass

CODE	BOTANICAL NAME	CHINESE NAME	SIZE (mm)	QTY (SQ.M)	REFERENCE IMAGE	REMARKS
Zm	*Zoysia matrella*	溝葉結縷草	TURF SIZE 500x300x50mm THK.	835sq.m		NATIVE/ EXOTIC

Shrubs/ Groundcover

CODE	BOTANICAL NAME	CHINESE NAME	HEIGHT (mm)	SPREAD (mm)	SPACING (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
Ad	*Arachis duranensis*	蔓生花	200	200	250	7560		NATIVE/ EXOTIC
Fc	*Fagraea ceilanica*	灰莉	2000	700	700	150		NATIVE/ EXOTIC
Gj	*Gardenia jasminoides*	水橫枝	600	400	500	1441		NATIVE/ EXOTIC
Ic	*Ixora chinensis*	龍船花	300	300	300	3701		NATIVE/ EXOTIC
Ms	*Melastoma sanguineum*	毛稔	300	300	400	3826		NATIVE/ EXOTIC
Nau	*Nephrolepis auriculata*	腎蕨	300	300	300	2722		NATIVE/ EXOTIC
Pr	*Pennisetum sateceum 'rubrum'*	紫葉狼尾草	500	300	400	11511		NATIVE/ EXOTIC
Sar	*Schefflera arboricola*	鵝掌藤	600	400	500	2456		NATIVE/ EXOTIC
Tp	*Tradescantia pallida*	紫鴨跖草	200	200	250	5408		NATIVE/ EXOTIC

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	29 JUL 22	1ST ISSUE	MN	KENNY YU
1	25 NOV 22	2ND ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

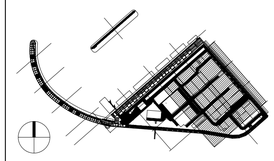
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

PROCESS BUILDING LANDSCAPE
ARCHITECTURAL DESIGN
PLANTING SCHEDULE & IMAGES

Drawing Number		Revision
IWMF1_14-136_300_117600		1
Date: 25 NOV 22	Scale (at A1)	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by: KENNY YU		

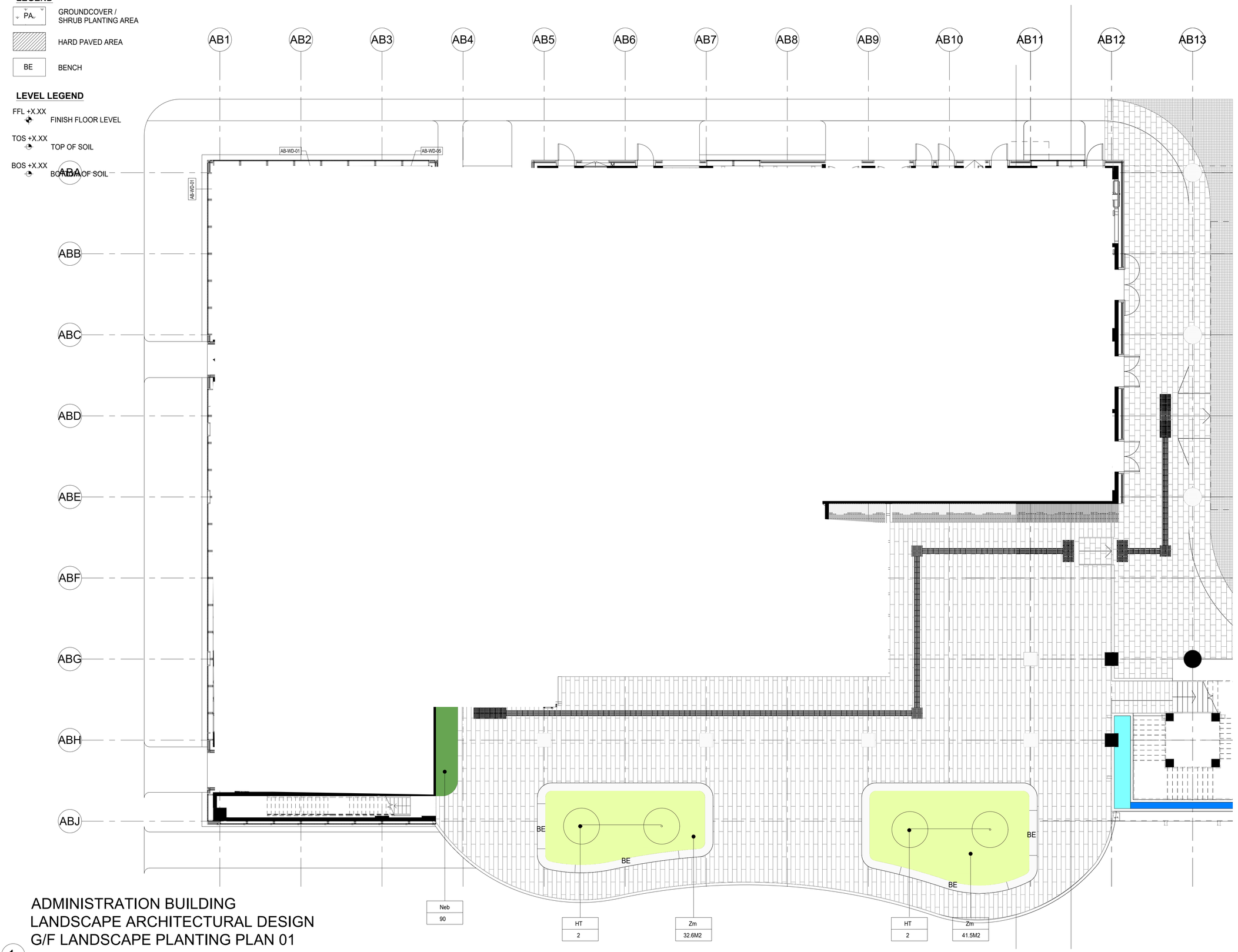
Administration Building

LEGEND

PA	GROUNDCOVER / SHRUB PLANTING AREA
	HARD PAVED AREA
BE	BENCH

LEVEL LEGEND

FFL +X.XX	FINISH FLOOR LEVEL
TOS +X.XX	TOP OF SOIL
BOS +X.XX	BOTTOM OF SOIL



ADMINISTRATION BUILDING
LANDSCAPE ARCHITECTURAL DESIGN
G/F LANDSCAPE PLANTING PLAN 01

1 : 100

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

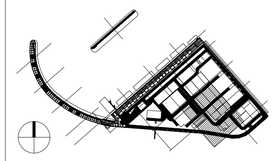
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

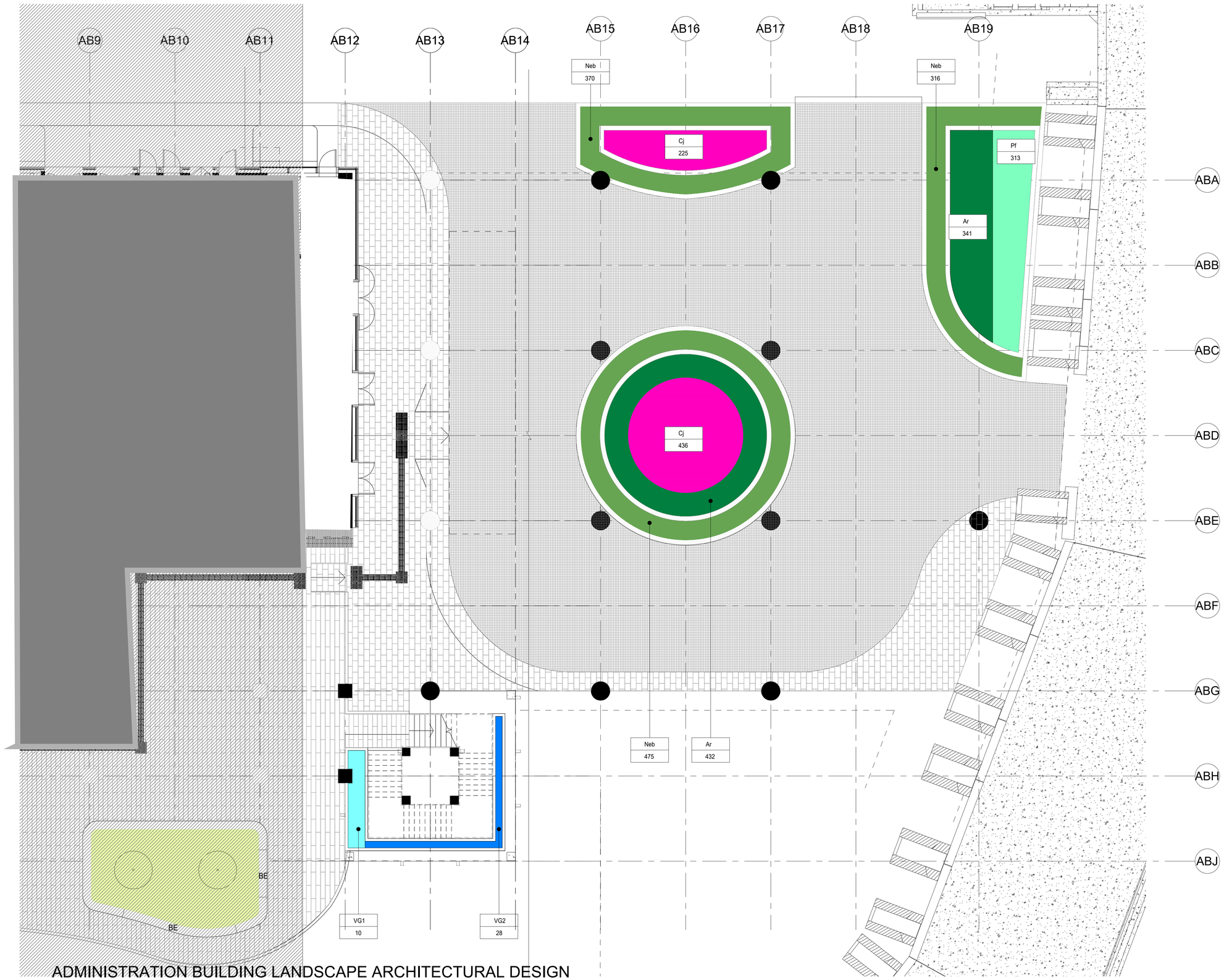
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

ADMINISTRATION BUILDING
LANDSCAPE ARCHITECTURAL
G/F LANDSCAPE PLANTING PLAN 01

Drawing Number: IWMF1_14-136_800_123601		Revision: 0
Date: 30 DEC 22	Scale (at A1): AS SHOWN	Format: A1
Drawn by: DC		
Checked by: MN		Status: DDA
Approved by: KENNY YU		



ADMINISTRATION BUILDING LANDSCAPE ARCHITECTURAL DESIGN
G/F LANDSCAPE PLANTING PLAN 02

1 : 100

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification

KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

ADMINISTRATION BUILDING
LANDSCAPE ARCHITECTURAL
G/F LANDSCAPE PLANTING PLAN 02

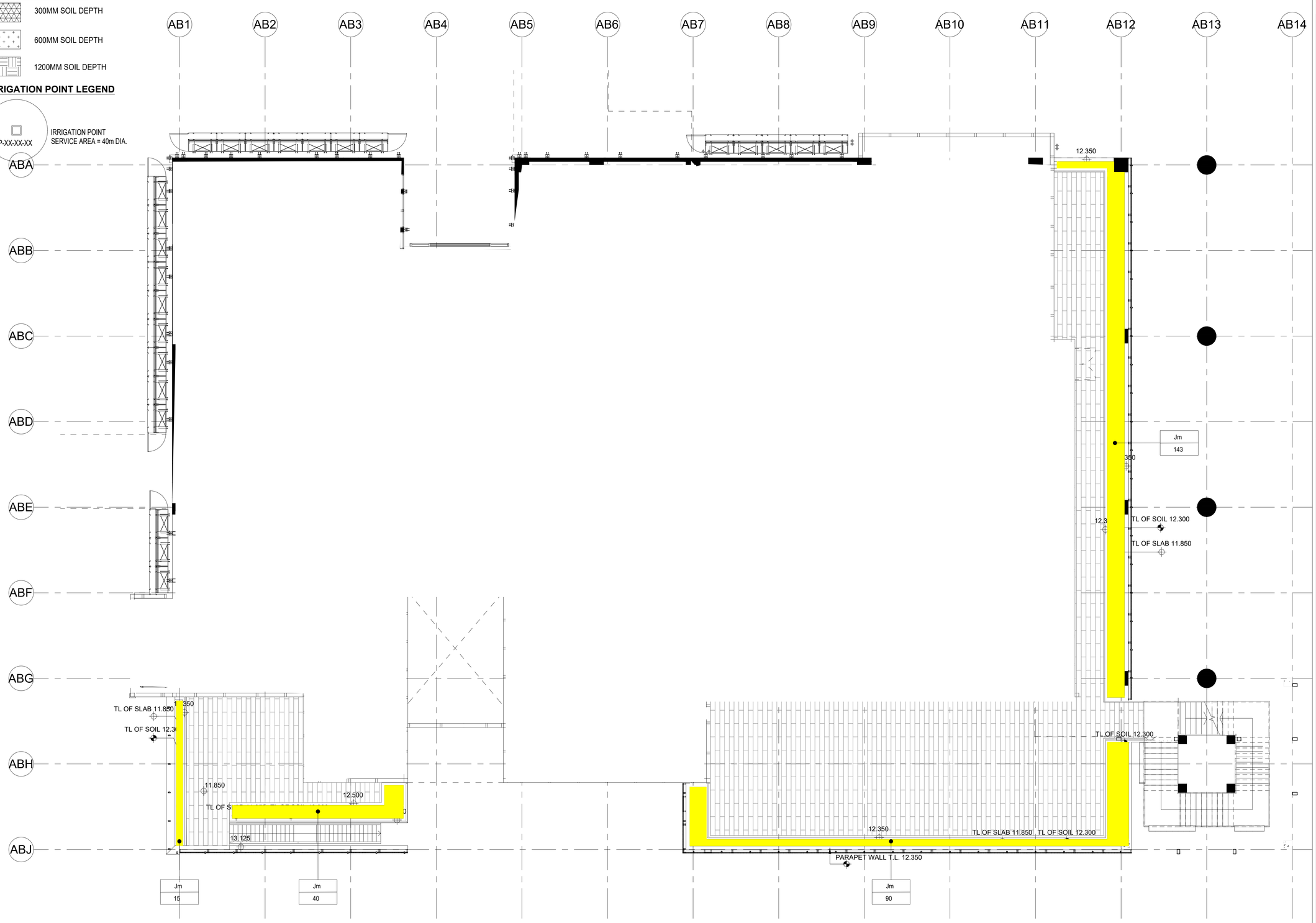
Drawing Number	Revision
IWMF1_14-136_800_123602	0
Date: 30 DEC 22	Scale (at A1): AS SHOWN / Format: A1
Drawn by: DC	
Checked by: MN	Status: DDA
Approved by:KENNY YU	

SOIL DEPTH LEGEND

- 300MM SOIL DEPTH
- 600MM SOIL DEPTH
- 1200MM SOIL DEPTH

IRRIGATION POINT LEGEND

WP-XX-XX-XX — IRRIGATION POINT SERVICE AREA = 40m DIA.



ADMINISTRATION BUILDING LANDSCAPE ARCHITECTURAL DESIGN
1/F LANDSCAPE PLANTING PLAN

1 : 100

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU

Employer: 環境保護署 Environmental Protection Department

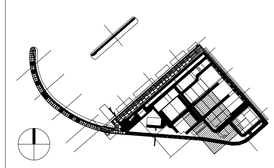
Supervision Officer: AECOM

Main Contractor: Keppel Seghers — 吉寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS, DLN, QLN

Design Checker: SMEC — Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

ADMINISTRATION BUILDING
LANDSCAPE ARCHITECTURAL
1/F LANDSCAPE PLANTING PLAN

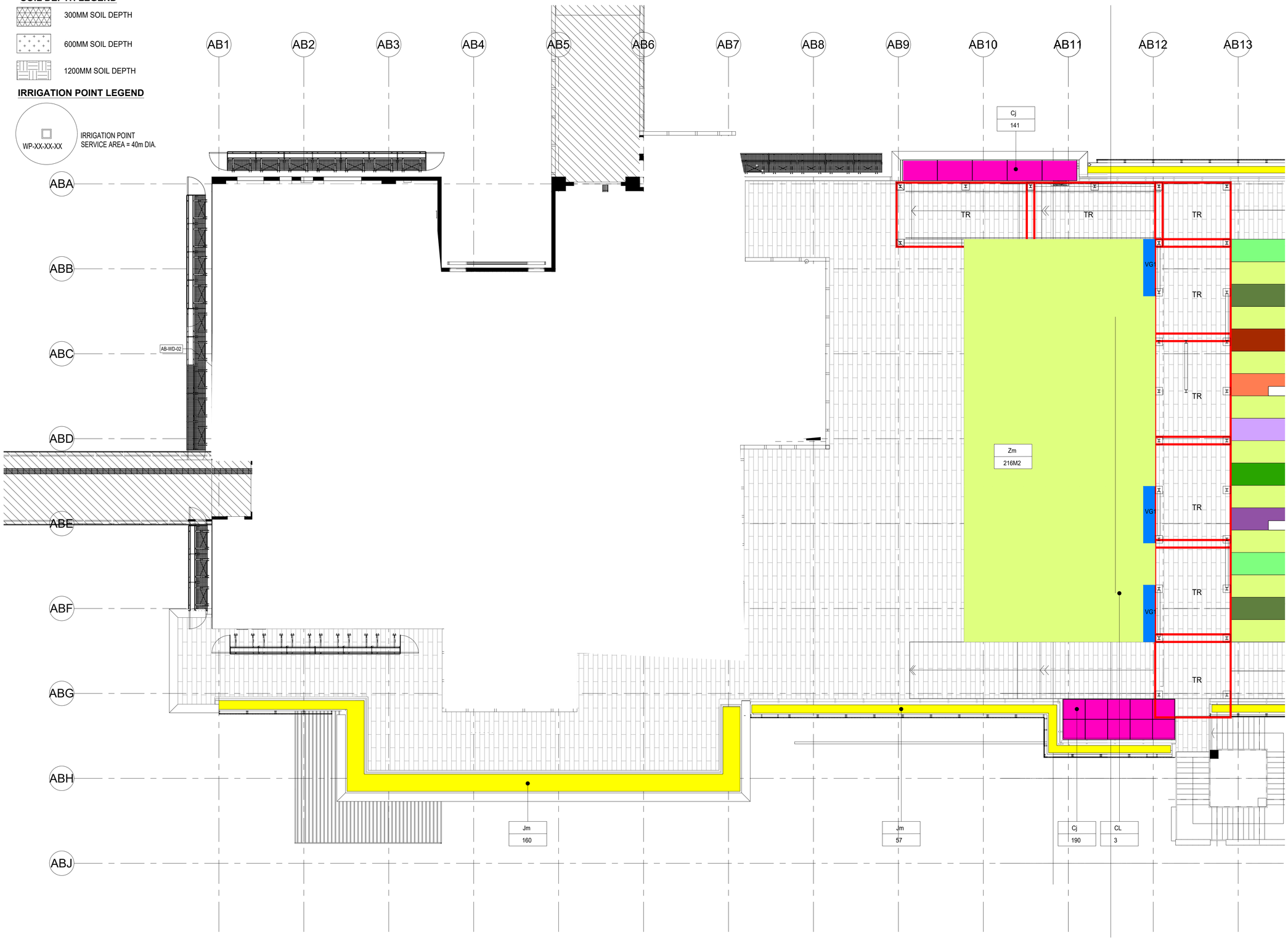
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Date: 30 DEC 22	Scale (at A1): AS SHOWN / Format: A1
Drawn by: DC	
Checked by: MN	Status: DDA
Approved by: KENNY YU	

SOIL DEPTH LEGEND

- 300MM SOIL DEPTH
- 600MM SOIL DEPTH
- 1200MM SOIL DEPTH

IRRIGATION POINT LEGEND

WP-XX-XX-XX — IRRIGATION POINT SERVICE AREA = 40m DIA.



ADMINISTRATION BUILDING LANDSCAPE ARCHITECTURAL DESIGN
2/F LANDSCAPE PLANTING PLAN 01

1 : 100

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU

Employer: 環境保護署 Environmental Protection Department

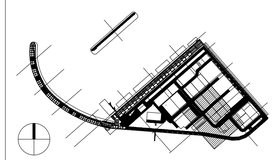
Supervision Officer: AECOM

Main Contractor: Keppel Seghers — 吉寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS, DLN, QLN

Design Checker: SMEC — Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

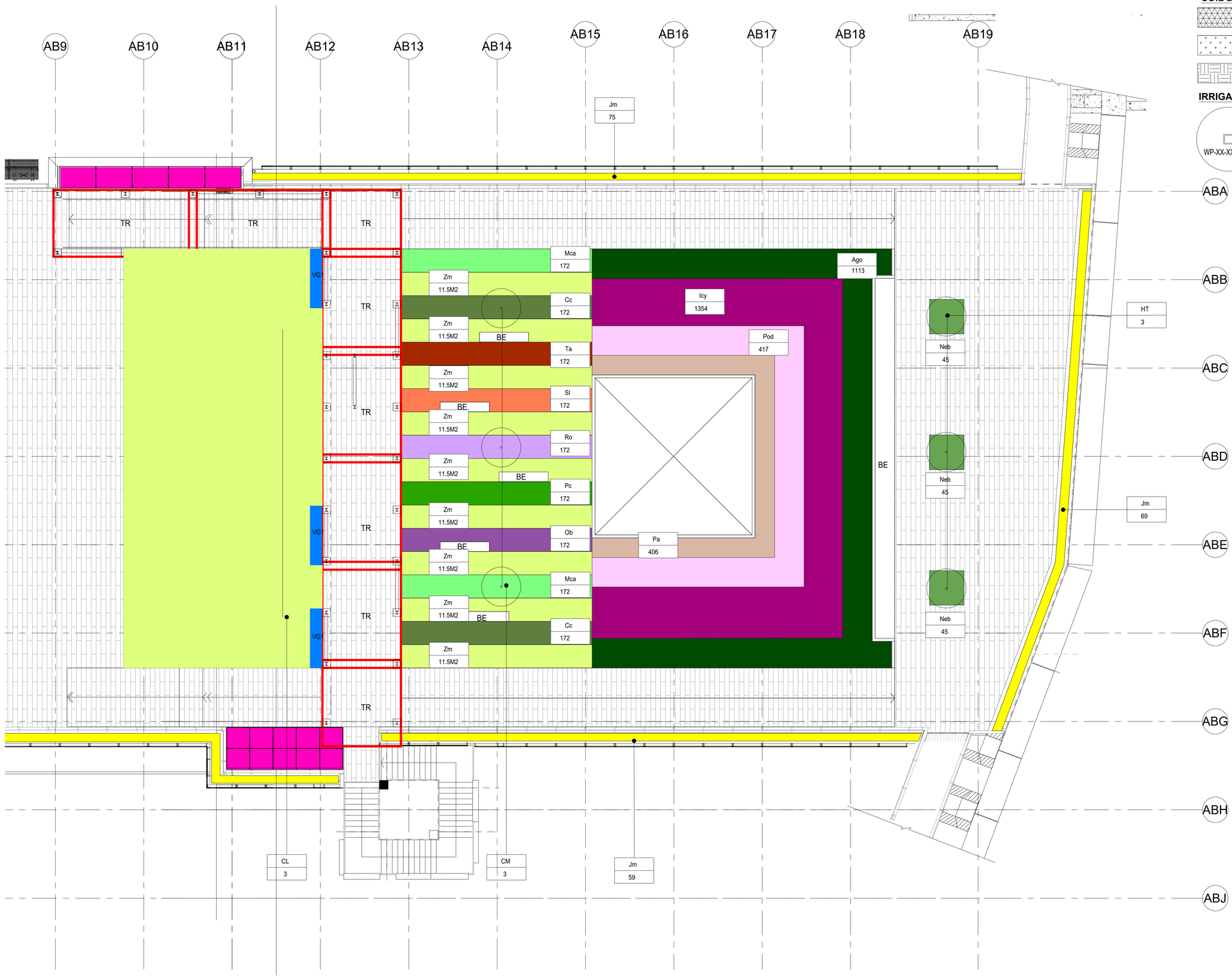
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

ADMINISTRATION BUILDING LANDSCAPE ARCHITECTURAL DESIGN
2/F LANDSCAPE PLANTING PLAN 01

Drawing Number		Revision
IWMF1_14-136_800_123604		0
Date: 30 DEC 22	Scale (at A1): AS SHOWN	Format: A1
Drawn by: DC		
Checked by: MN		Status: DDA
Approved by: KENNY YU		



SOIL DEPTH LEGEND

- 300MM SOIL DEPTH
- 600MM SOIL DEPTH
- 1200MM SOIL DEPTH

IRRIGATION POINT LEGEND

WP-XX-XX-XX — IRRIGATION POINT SERVICE AREA = 40m DIA.

ADMINISTRATION BUILDING LANDSCAPE ARCHITECTURAL DESIGN
2/F LANDSCAPE PLANTING PLAN 02

1 : 100

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU

Employer: 環境保護署 Environmental Protection Department

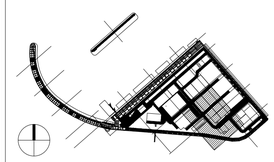
Supervision Officer: AECOM

Main Contractor: Keppel Seghers 吉寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS, DLN, QLN

Design Checker: SMEC Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

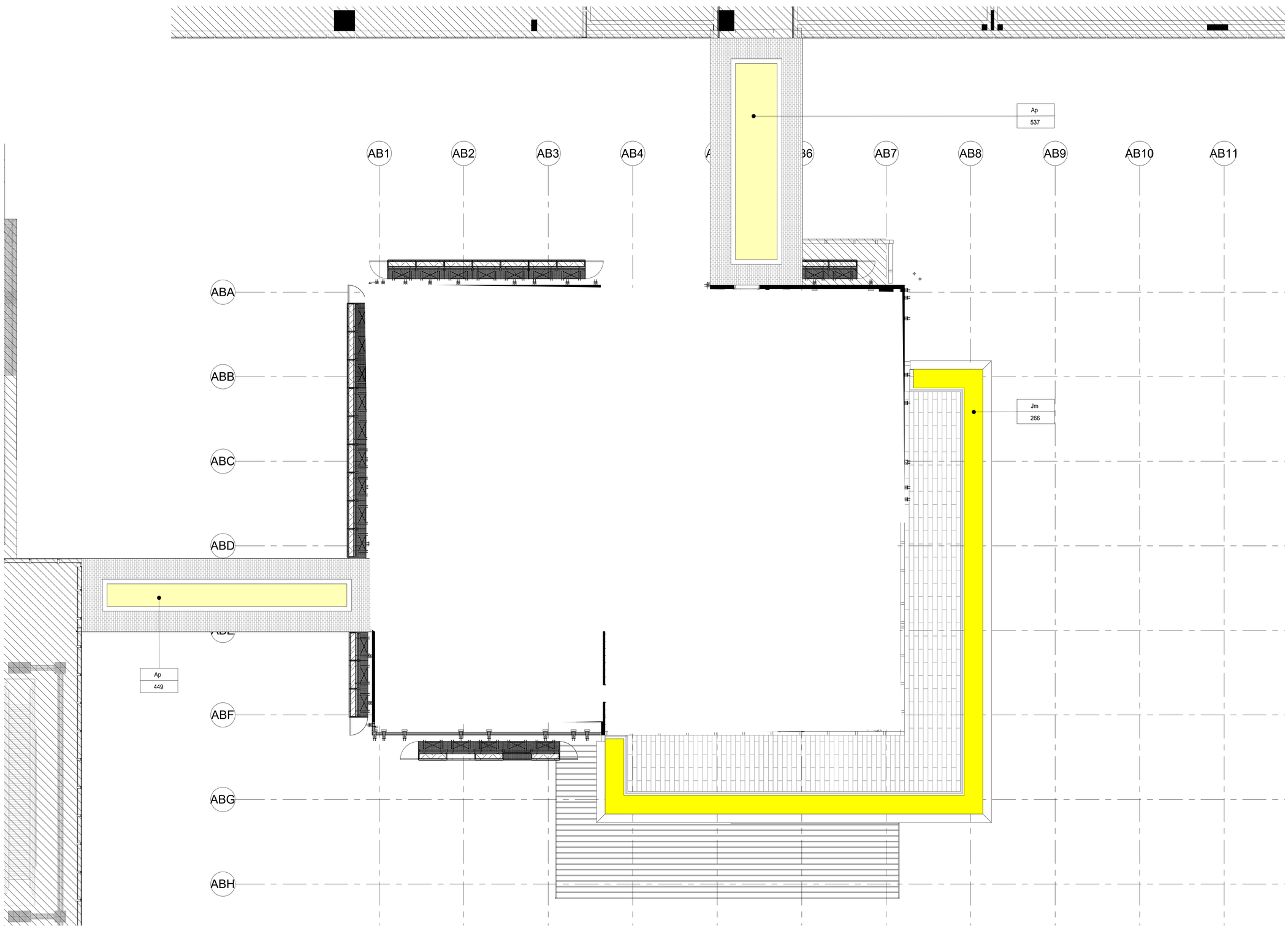
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

ADMINISTRATION BUILDING LANDSCAPE ARCHITECTURAL DESIGN
2/F LANDSCAPE PLANTING PLAN 02

Drawing Number		Revision
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Date: 30 DEC 22	Scale (at A1): AS SHOWN	Format: A1
Drawn by: DC		
Checked by: MN		Status: DDA
Approved by: KENNY YU		



ADMINISTRATION BUILDING LANDSCAPE ARCHITECTURAL DESIGN
3/F LANDSCAPE PLANTING PLAN

1 : 100

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

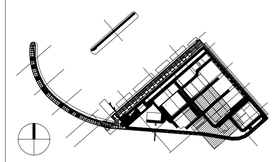
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

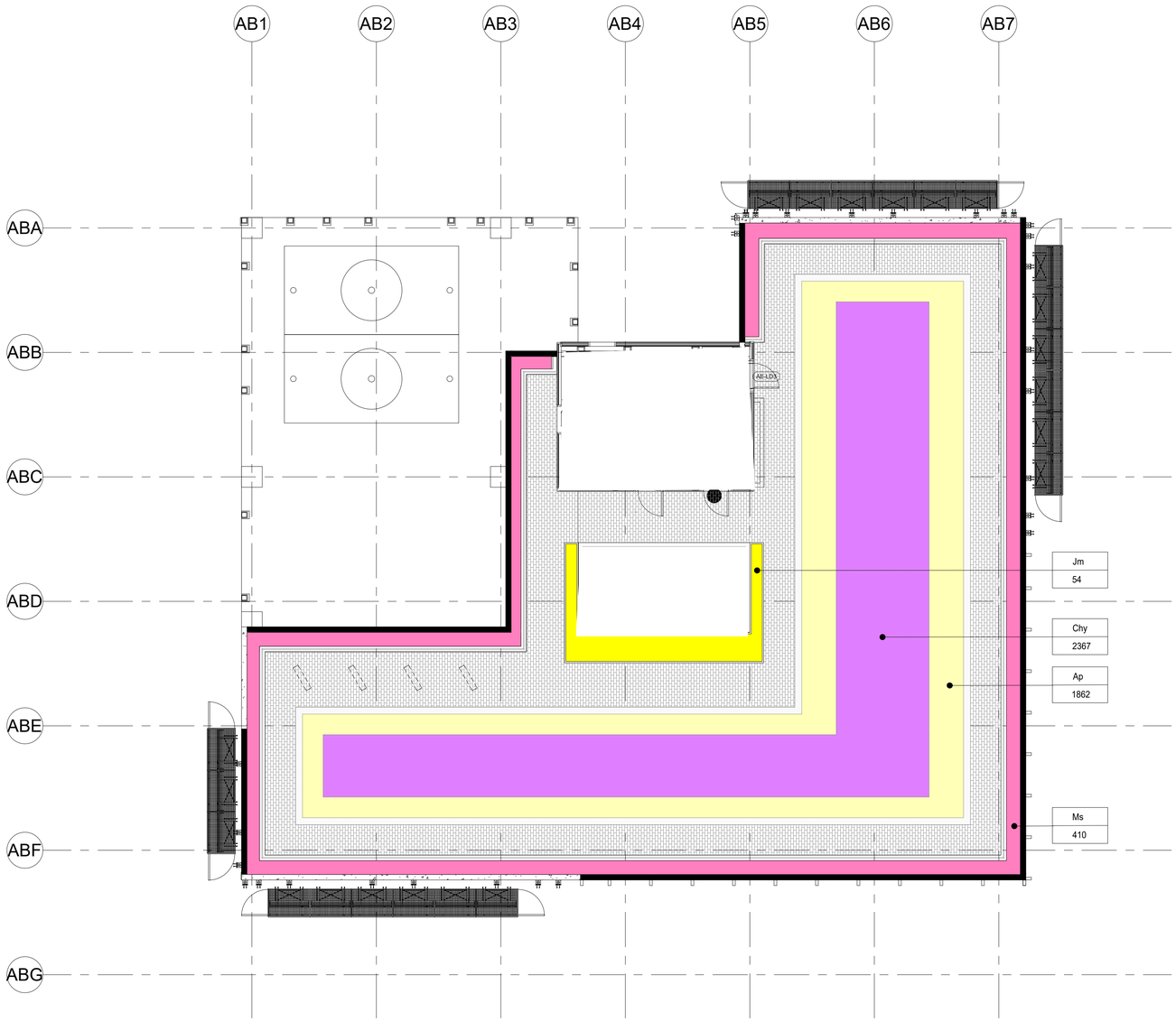
Design Package

Drawing Title

ADMINISTRATION BUILDING
LANDSCAPE ARCHITECTURAL
3/F LANDSCAPE PLANTING PLAN

Drawing Number	Revision
IWMF1_14-136_800_123606	0

Date: 30 DEC 22	Scale (at A1) AS SHOWN	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		



ADMINISTRATION BUILDING LANDSCAPE ARCHITECTURAL DESIGN
ROOF LANDSCAPE PLANTING PLAN

1 : 100

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers
吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

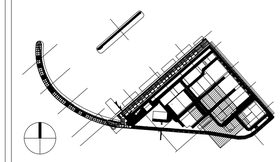
Designers

ARCADIS
DLN
QLN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

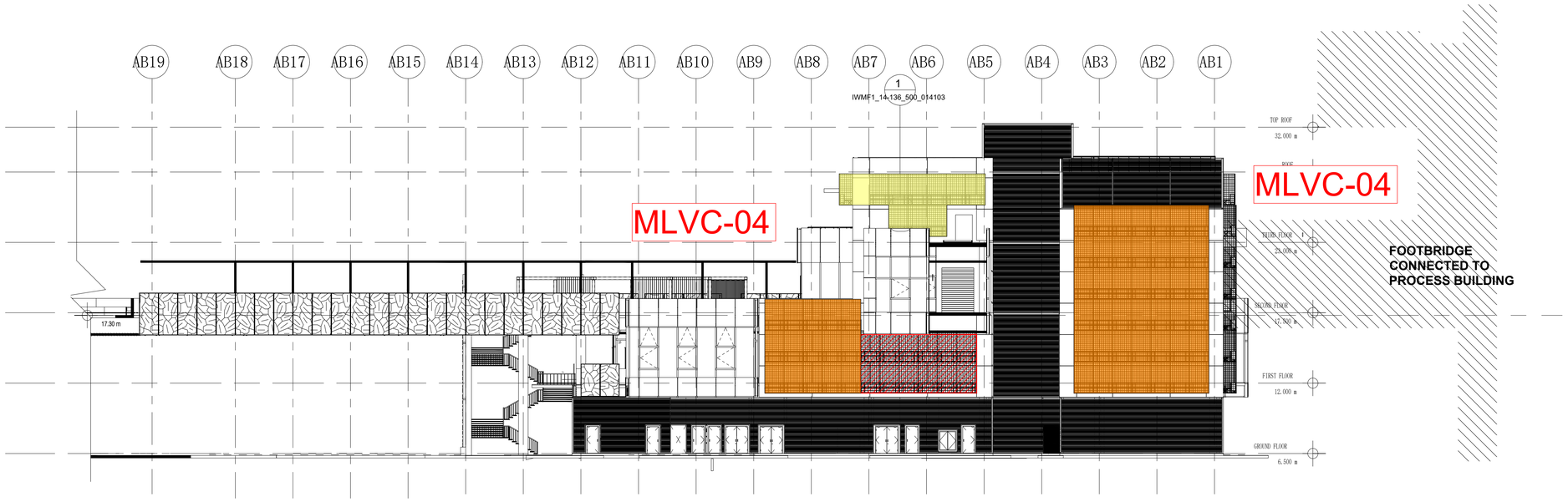
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

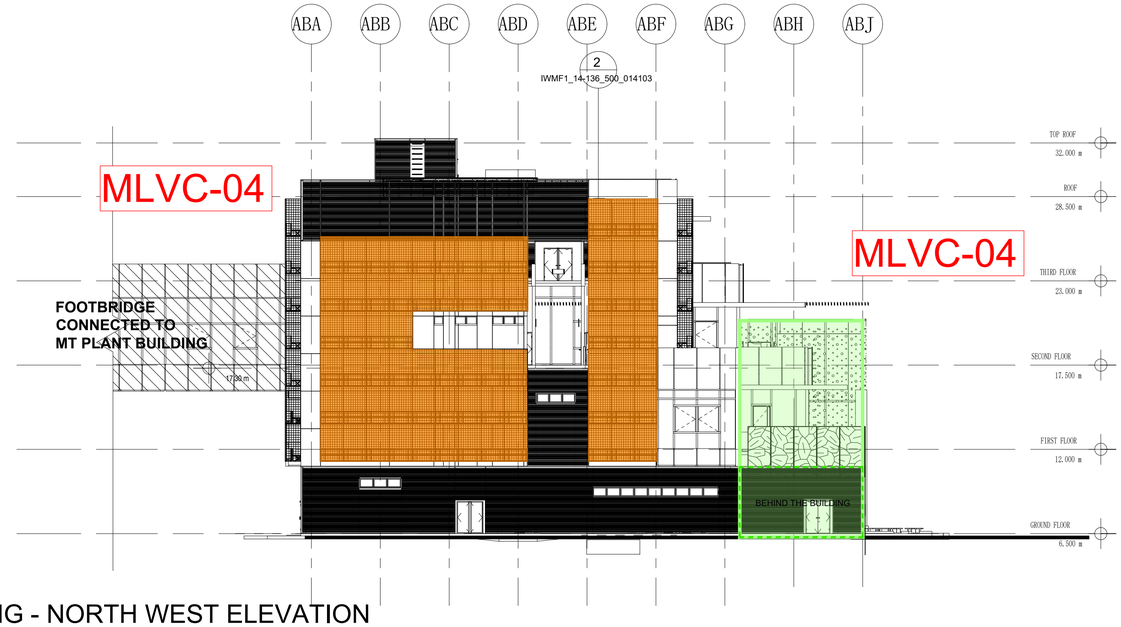
ADMINISTRATION BUILDING
LANDSCAPE ARCHITECTURAL
ROOF LANDSCAPE PLANTING PLAN

Drawing Number		Revision
IWMF1_14-136_800_123607		0
Date: 30 DEC 22	Scale (at A1): AS SHOWN	Format: A1
Drawn by: DC		
Checked by: MN		Status: DDA
Approved by:KENNY YU		



1 ADMIN BUILDING - NORTH EAST ELEVATION

1 : 200



2 ADMIN BUILDING - NORTH WEST ELEVATION

1 : 200

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers

古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

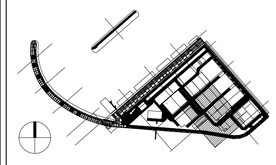
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

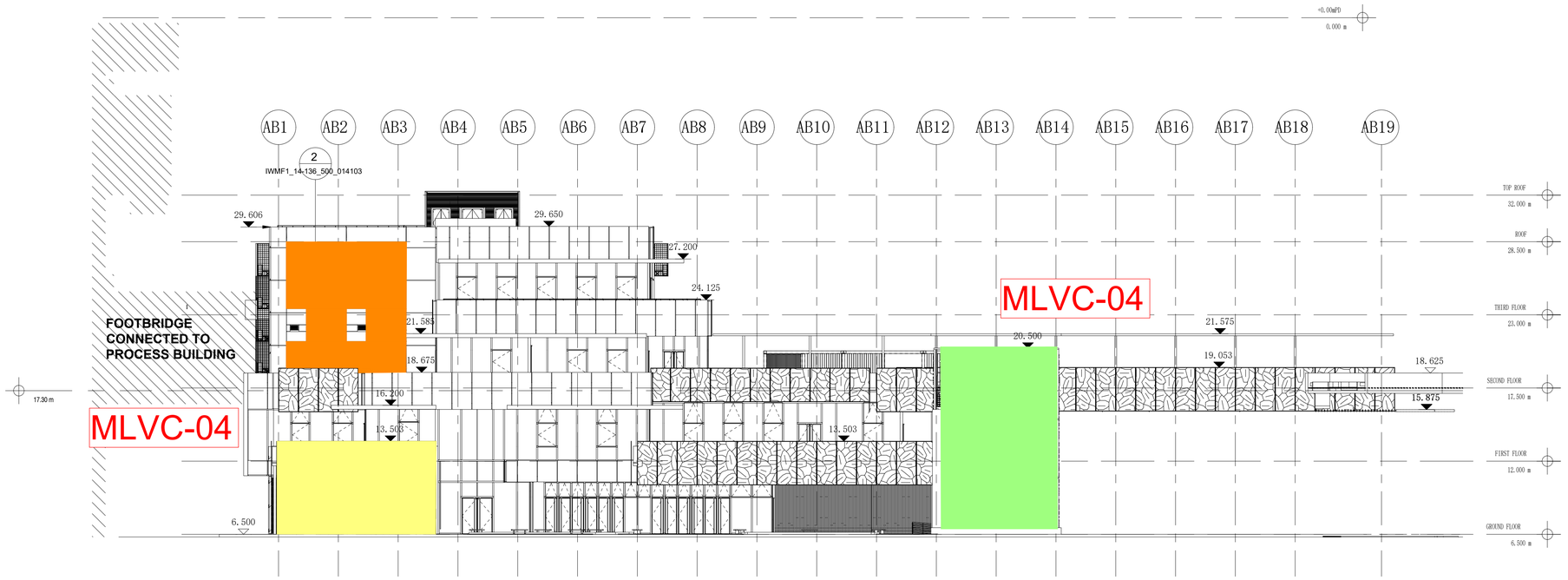
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

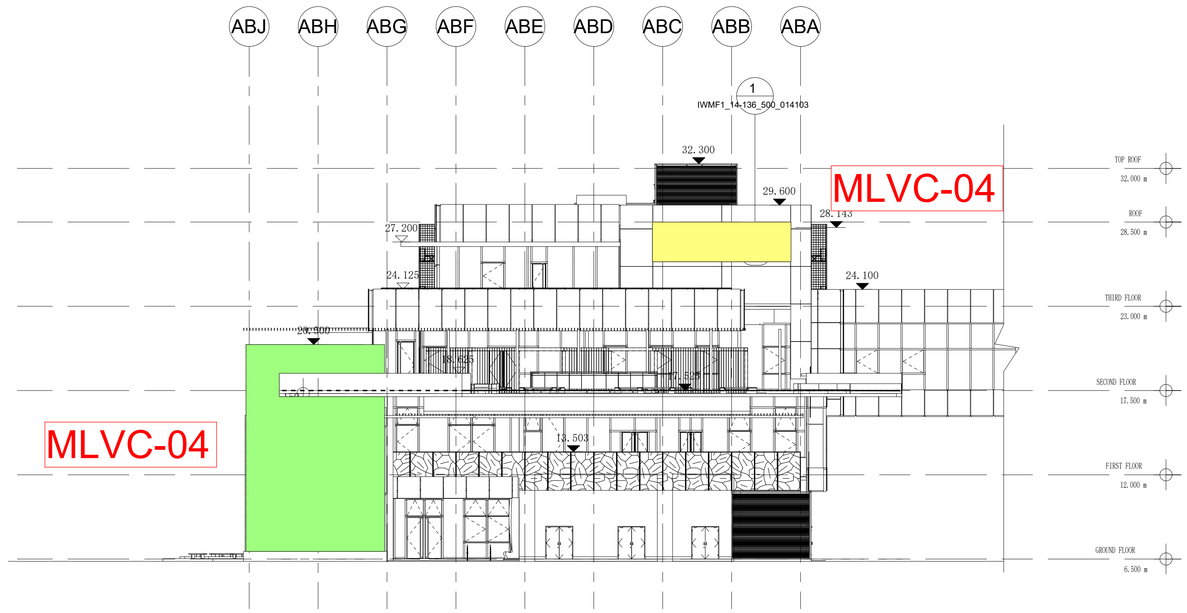
ADMIN BUILDING
VERTICAL GREENERY
ON BUILDING FACADE (SHEET 1 OF 3)

Drawing Number		Revision
IWMF1_14-136_500_114201		0
Date: 30 DEC 22	Scale (at A1) 1 : 200	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		



1 ADMIN BUILDING - SOUTH WEST ELEVATION

1 : 200



2 ADMIN BUILDING - SOUTH EAST ELEVATION

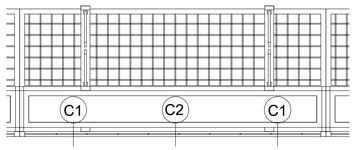
1 : 200

ADMIN BUILDING
VERTICAL GREENERY
ON BUILDING FACADE
(SHEET 2 OF 3)

IWMF1_14-136_800_114202 0

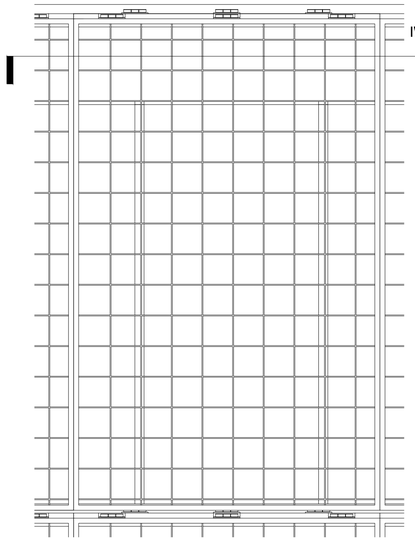
30 DEC 22

1 : 200



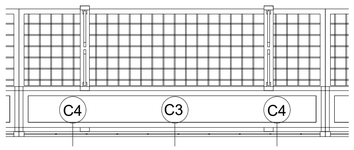
VG PLANTER PLAN (FOR SOUTH EAST AND SOUTH WEST) (TYPE 1)

2 — 1 : 15



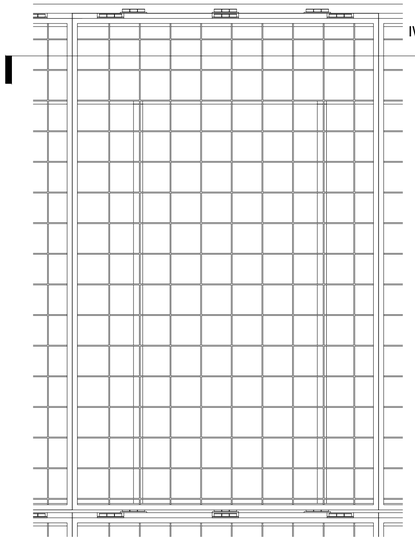
VG PANEL ELEVATION (FOR NORTH EAST AND SOUTH EAST) (TYPE 1)

1 — 1 : 15



VG PLANTER PLAN (FOR NORTH EAST AND NORTH WEST) (TYPE 2)

4 — 1 : 15



VG PANEL ELEVATION (FOR SOUTH WEST AND NORTH WEST) (TYPE 2)

3 — 1 : 15



Lonicera japonica



Pyrostegia venusta

VG MIX ALONG THE STAIRCASE (TYPE 3)

5

Admin Building Vertical Greenery Planter Summary

Climber no.	Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
C1	Bco	*Bauhinia corymbosa*	首冠藤	1000 x 4 Shoots	500	78		NATIVE/~~EXOTIC~~
C2	Cgr	*Campsis grandiflora*	凌霄	1000 x 4 Shoots	500	39		~~NATIVE~~/EXOTIC
C3	Ea	*Epipremnum aureum*	綠蘿（芋葉藤）	1000 x 4 Shoots	500	148		~~NATIVE~~/EXOTIC
C4	Lja	*Lonicera japonica*	忍冬（金銀花）	1000 x 4 Shoots	500	321		NATIVE/~~EXOTIC~~
C5	Pv	*Pyrostegia venusta*	炮仗花	1000 x 4 Shoots	500	25		~~NATIVE~~/EXOTIC

NOTE:
1. DETAILS OF THE VG PANEL SYSTEM PLEASE REFERENCE TO THE ADMINISTRATION BUILDING EXTERNAL FACADE FINISHES PACKAGE.

2. THE SPACING OF SUPPORTING FRAME IS 300MM X 500MM. THE DETAIL DESIGN AND MATERIAL IS UNDER COORDINATION WITH ARCHITECTURAL DESIGN .

3. TYPICAL PLANTER DETAIL SHOULD BE REFEREED TO DDA-ADMINISTRATION BUILDING-EXTERNAL AND INTERNAL FINISH.

4. LOCATION OF IRRIGATION POINT AND DRAINAGE PROVISION FOR VERTICAL GREENING IS UNDER COORDINATION WITH BUILDING SERVICE DESIGN.



VERTICAL GREENERY REFERENCE IMAGE OF *Bauhinia corymbosa* IN SHA TIN SEWAGE TREATMENT PLANT



VERTICAL GREENERY REFERENCE IMAGE OF *Campsis grandiflora* IN SHA TIN SEWAGE TREATMENT PLANT



VERTICAL GREENERY REFERENCE IMAGE OF *Epipremnum aureum* IN SHA TIN SEWAGE TREATMENT PLANT



VERTICAL GREENERY REFERENCE IMAGE OF *Lonicera japonica* VERTICAL GREENING AT CENTRAL GOVERNMENT OFFICES



VERTICAL GREENERY REFERENCE IMAGE OF *Pyrostegia venusta* VERTICAL GREEN AT MULTI-STORY CARPARK

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU

Employer: 環境保護署 Environmental Protection Department

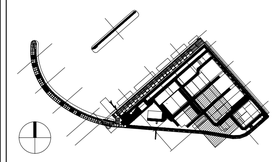
Supervision Officer: AECOM

Main Contractor: Keppel Seghers 吉寶西格斯－振華聯營公司 KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS DLN QLN

Design Checker: SMEC Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

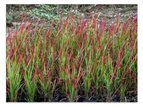
Drawing Title

ADMIN BUILDING VERTICAL GREENERY ON BUILDING FACADE (SHEET 3 OF 3)

Drawing Number	Revision
IWMF1_14-136_800_114203	0
Date: 30 DEC 22	Scale (at A1): 1 : 200
Drawn by: DC	Format: A1
Checked by: MN	Status: DDA
Approved by: KENNY YU	

PLANTING SCHEDULE

Shrubs and Herbs

CODE	BOTANICAL NAME	CHINESE NAME	HEIGHT (mm)	SPREAD (mm)	SPACING (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
Ago	*Acorus gramineus 'Ogon'*	金葉石菖蒲	300	300	300	1113		NATIVE/ EXOTIC
Ap	*Arachis Pintoi*	多年生花生	600	400	400	2848		NATIVE/ EXOTIC
Ar	*Addiantum raddianum*	密葉鐵線蕨	300	300	250	773		NATIVE/ EXOTIC
Cc	*Cymbopogon citratus*	檸檬草	500	300	200	344		NATIVE/ EXOTIC
Chy	*Cuphea hyssopifolia*	細葉萼距花	200	200	250	2767		NATIVE/ EXOTIC
Cj	*Camellia japonica*	山茶花	400	400	300	992		NATIVE/ EXOTIC
Icy	*Imperata cylindrica 'ubra'*	血草	300	300	300	1384		NATIVE/ EXOTIC
Jm	*Jasminum mesnyi*	雲南素馨	600	400	500	1028		NATIVE/ EXOTIC
Mca	*Mentha canadensis*	薄荷	300	300	250	344		NATIVE/ EXOTIC
Ms	*Melastoma sanguineum*	毛茎	300	300	400	410		NATIVE/ EXOTIC
Neb	*Nephrolepis exaltata bostoniensis*	波士頓腎蕨	300	300	300	1386		NATIVE/ EXOTIC
Ob	*Ocimum basilicum*	羅勒	300	200	250	172		NATIVE/ EXOTIC
Pa	*Pennisetum alopecuroides*	狼尾草	500	300	300	403		NATIVE/ EXOTIC

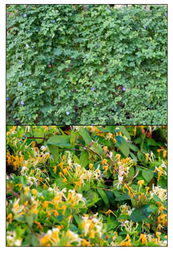
Shrubs

CODE	BOTANICAL NAME	CHINESE NAME	HEIGHT (mm)	SPREAD (mm)	SPACING (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
Pc	*Petroselinum crispum*	歐芹	300	200	250	172		NATIVE/ EXOTIC
Pf	*Polycias fruticosa*	裂葉福祿桐	600	400	300	313		NATIVE/ EXOTIC
Pod	*Podranea ricasoliana*	紫雲藤	400	300	400	417		NATIVE/ EXOTIC
Ro	*Rosmarinus officinalis*	迷迭香	300	200	250	172		NATIVE/ EXOTIC
Sl	*Solanum lycopersicum*	番茄	300	300	400	172		NATIVE/ EXOTIC
Ta	*Tropaeolum majus*	旱金蓮	300	200	250	172		NATIVE/ EXOTIC
Tv	*Thymus vulgaris*	普通百里香	300	200	250	172		NATIVE/ EXOTIC

Turf / Grass

CODE	BOTANICAL NAME	CHINESE NAME	SIZE (mm)	QTY (SQ.M)	REFERENCE IMAGE	REMARKS
Zm	*Zoysia matrella*	溝葉結縷草	TURF SIZE 500x300x50mm THK.	393SQ.M		NATIVE/ EXOTIC

Climber mix for Trellis and External Staircase

Code	Botanical Name	Chinese Name	Shrub Size	Spacing	QTY	Image	Remarks
Ct + Lj	*Clitoria ternatea/* *Lonicera japonica*	蝶豆/ 忍冬金銀花	1000 x 4 Shoots	500	78		EXOTIC/ NATIVE EXOTIC/ NATIVE
Ea	*Epipremnum aureum*	*綠蘿*	1000 x 4 Shoots	500	20		EXOTIC NATIVE

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU

Employer
環境保護署
Environmental Protection Department

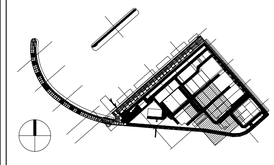
Supervision Officer
AECOM

Main Contractor
Keppel Seghers
古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers
ARCADIS
DLN
ALN

Design Checker
SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
ADMINISTRATION BUILDING LANDSCAPE
ARCHITECTURAL DESIGN
PLANTING SCHEDULE AND IMAGES 02

Drawing Number	Revision
IWMF1_14-136_800_117601	0
Date: 30 DEC 22	Scale (at A1) / Format A1
Drawn by: DC	
Checked by: MN	Status DDA
Approved by:KENNY YU	

PLANTING SCHEDULE

Trees

CODE	BOTANICAL NAME	CHINESE NAME	SPACING (mm)	HEIGHT (mm)	SPREAD (mm)	DBH (mm)	QTY (Nos.)	REFERENCE IMAGE	REMARKS
CL	*Citrus limonia*	檸檬	As Shown	3000	2200	100	3		NATIVE/ EXOTIC
CM	*Citrus medica*	枸櫞	As Shown	4000	3000	100	3		NATIVE/ EXOTIC *NOTE MULTI-STEMMED FOR CITRUS MEDICA
HT	Hibiscus tiliaceus	黃槿	As Shown	3000	2000	95	7		NATIVE/ EXOTIC

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	30 DEC 22	1ST ISSUE	MN	KENNY YU
1	31 MAR 23	2ND ISSUE	MN	KENNY YU

Employer

環境保護署
Environmental Protection Department

Supervision Officer

AECOM

Main Contractor

Keppel Seghers

古寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

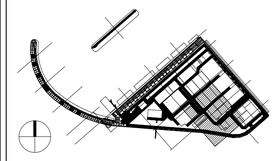
Designers

ARCADIS
DLN
ALN

Design Checker

SMEC
Member of the Surbana Jurong Group

Certification



KEY PLAN

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title

ADMINISTRATION BUILDING LANDSCAPE
ARCHITECTURAL DESIGN
PLANTING SCHEDULE AND IMAGES 01

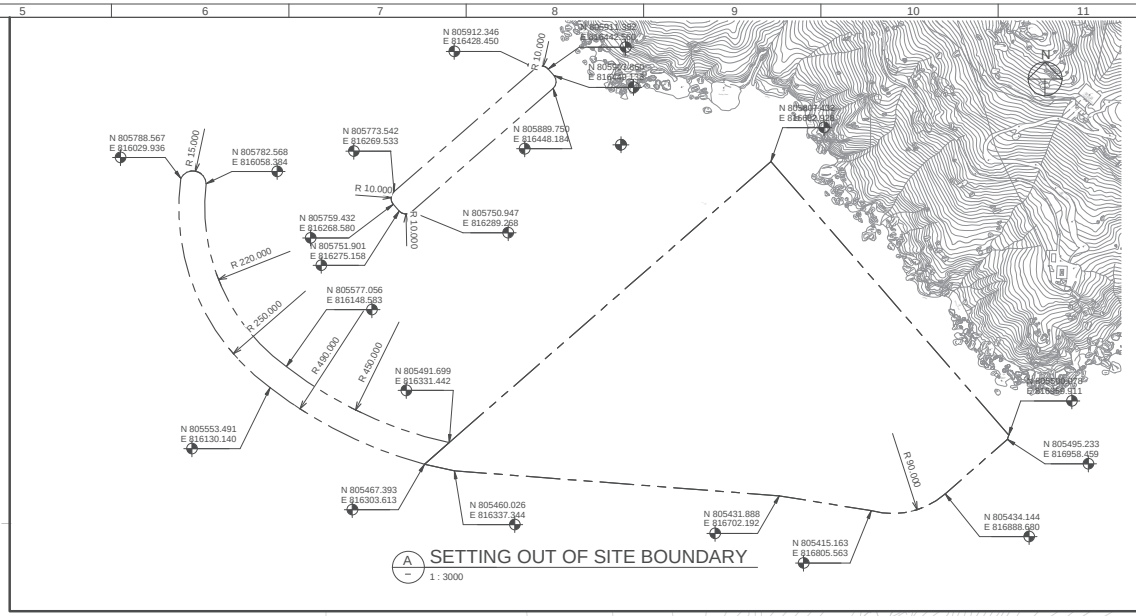
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Date: 31 MAR 23	Scale (at A1)	Format A1
Drawn by: DC		
Checked by: MN		Status DDA
Approved by:KENNY YU		

Annex C

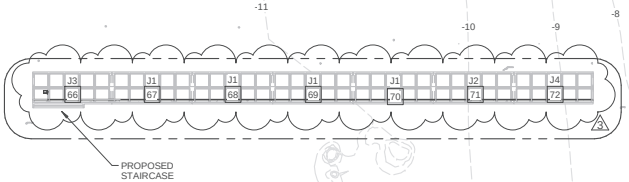
Seawall and Breakwater Details

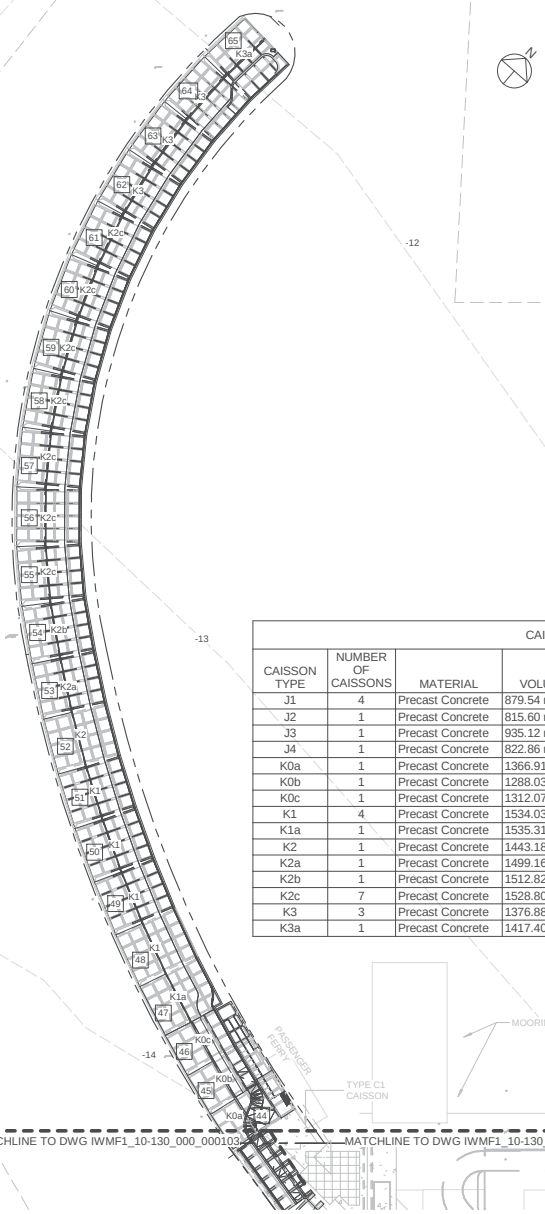
LEGEND:

- SITE BOUNDARY
- CRANE RAIL
- HEAVY LOAD ACCESS ROUTE
- -11 SEABED LEVEL



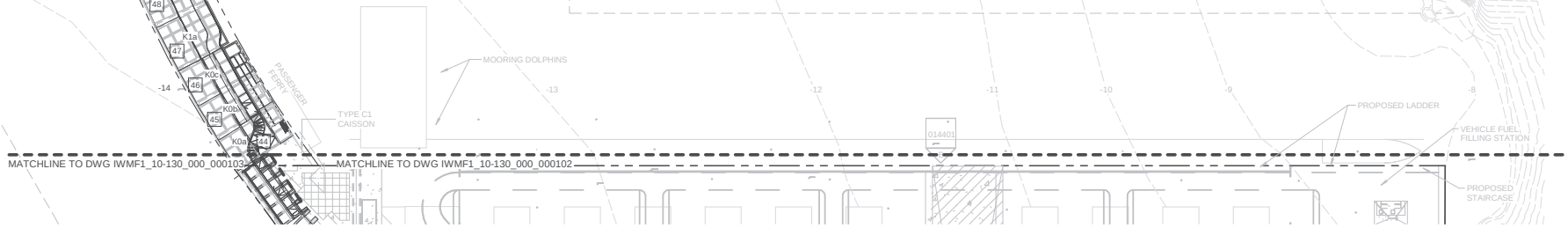
A SETTING OUT OF SITE BOUNDARY
1 : 3000





CAISSON SCHEDULE-BREAKWATER

CAISSON TYPE	NUMBER OF CAISSONS	MATERIAL	VOLUME	WEIGHT (@2500kg/m3)	COMMENTS
J1	4	Precast Concrete	879.54 m³	2198.85 t	
J2	1	Precast Concrete	815.60 m³	2038.99 t	
J3	1	Precast Concrete	935.12 m³	2337.80 t	
J4	1	Precast Concrete	822.86 m³	2057.14 t	
K0a	1	Precast Concrete	1366.91 m³	3417.27 t	
K0b	1	Precast Concrete	1288.03 m³	3220.07 t	
K0c	1	Precast Concrete	1312.07 m³	3280.18 t	
K1	4	Precast Concrete	1534.03 m³	3835.08 t	
K1a	1	Precast Concrete	1535.31 m³	3838.27 t	
K2	1	Precast Concrete	1443.18 m³	3607.95 t	
K2a	1	Precast Concrete	1499.16 m³	3747.91 t	
K2b	1	Precast Concrete	1512.82 m³	3782.04 t	
K2c	7	Precast Concrete	1528.80 m³	3822.01 t	
K3	3	Precast Concrete	1376.88 m³	3442.20 t	
K3a	1	Precast Concrete	1417.40 m³	3543.50 t	



Revision Schedule

No.	Date	Description	Checked by	Approved by
0	25/7/19	Submission to CHEC	ARDL	CHEC
1	09/10/19	Submission to CHEC	ARDL	CHEC
2	10/01/20	Submission to CHEC	ARDL	CHEC
3	07/05/20	Submission to CHEC	ARDL	CHEC

Employer: 環境保護署 Environmental Protection Department

Supervising Officer: AECOM

Main Contractor: Keppel Seghers — KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS, DLN, ATA

Design Checker: SMEC — Member of the Surbana Jurong Group

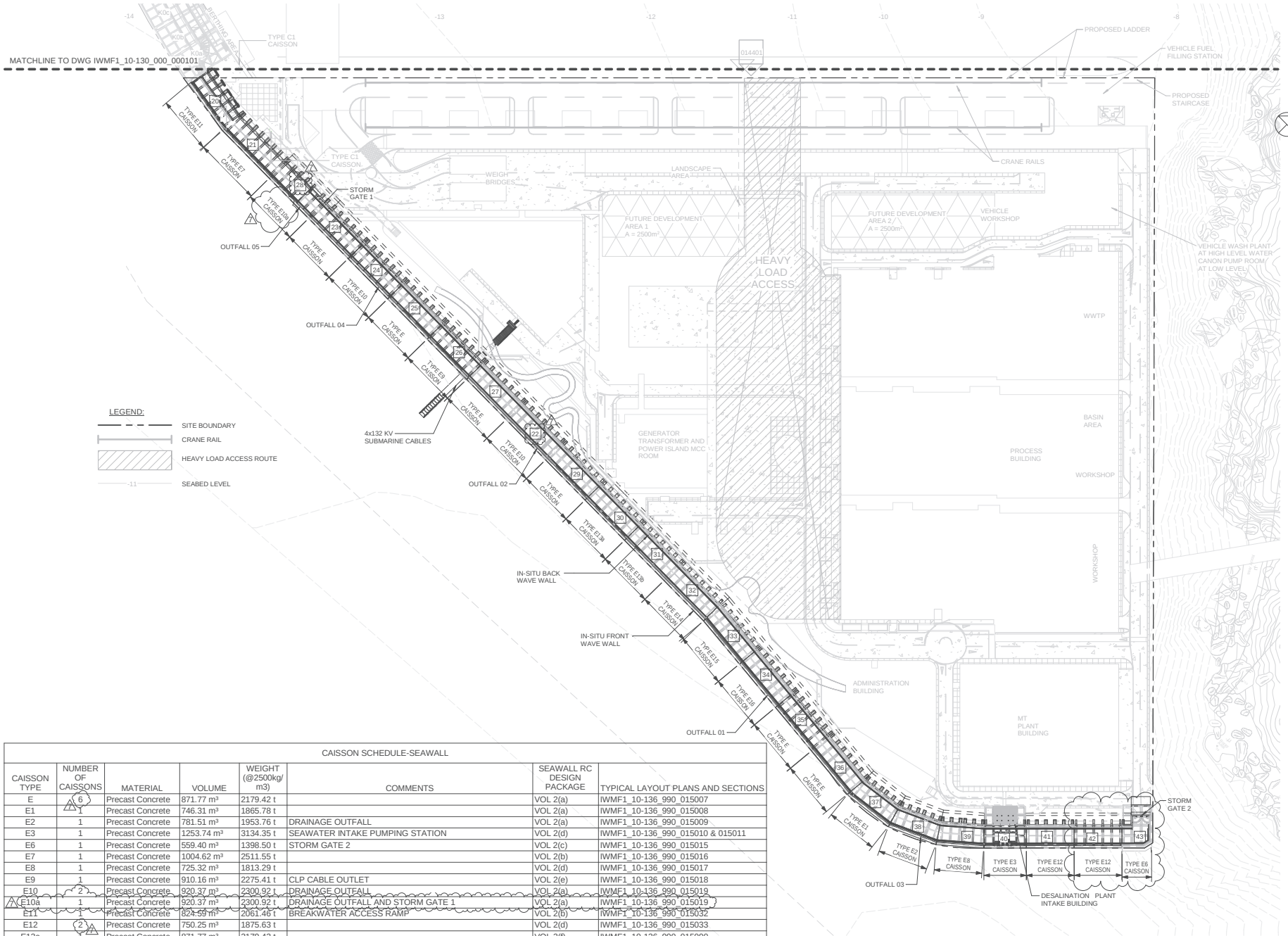
Certification

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
CIVIL & EXTERNAL WORKS
SEAWALL DEFENCES CAISSON
LAYOUT PLAN SHEET 1

Drawing Number	Revision
IWMF1_10-130_000_000101	3
Date: 10 JAN 20	Scale (at A1): 1:1000
Drawn by: Nick A	Format: A1
Checked by: Martin H	Status: PRE
Approved by: Kenny Yu	



CAISSON SCHEDULE-SEAWALL

CAISSON TYPE	NUMBER OF CAISSONS	MATERIAL	VOLUME	WEIGHT (@2500kg/m3)	COMMENTS	SEAWALL RC DESIGN PACKAGE	TYPICAL LAYOUT PLANS AND SECTIONS
E	6	Precast Concrete	871.77 m³	2179.42 t		VOL 2(a)	IWMF1_10-136_990_015007
E1	1	Precast Concrete	746.31 m³	1865.78 t		VOL 2(a)	IWMF1_10-136_990_015008
E2	1	Precast Concrete	781.51 m³	1953.76 t	DRAINAGE OUTFALL	VOL 2(a)	IWMF1_10-136_990_015009
E3	1	Precast Concrete	1253.74 m³	3134.35 t	SEAWATER INTAKE PUMPING STATION	VOL 2(d)	IWMF1_10-136_990_015010 & 015011
E6	1	Precast Concrete	559.40 m³	1398.50 t	STORM GATE 2	VOL 2(c)	IWMF1_10-136_990_015015
E7	1	Precast Concrete	1004.62 m³	2511.55 t		VOL 2(b)	IWMF1_10-136_990_015016
E8	1	Precast Concrete	725.32 m³	1813.29 t		VOL 2(d)	IWMF1_10-136_990_015017
E9	1	Precast Concrete	910.16 m³	2275.41 t	CLP CABLE OUTLET	VOL 2(e)	IWMF1_10-136_990_015018
E10	2	Precast Concrete	920.37 m³	2300.92 t	DRAINAGE OUTFALL	VOL 2(a)	IWMF1_10-136_990_015019
E10a	1	Precast Concrete	920.37 m³	2300.92 t	DRAINAGE OUTFALL AND STORM GATE 1	VOL 2(a)	IWMF1_10-136_990_015019
E11	1	Precast Concrete	824.59 m³	2061.46 t	BREAKWATER ACCESS RAMP	VOL 2(b)	IWMF1_10-136_990_015032
E12	2	Precast Concrete	750.25 m³	1875.63 t		VOL 2(d)	IWMF1_10-136_990_015033
E13a	1	Precast Concrete	871.77 m³	2179.42 t		VOL 2(f)	IWMF1_10-136_990_015090
E13b	1	Precast Concrete	871.77 m³	2179.42 t		VOL 2(f)	IWMF1_10-136_990_015090
E14	1	Precast Concrete	871.77 m³	2179.41 t		VOL 2(f)	IWMF1_10-136_990_015090
E15	1	Precast Concrete	893.03 m³	2232.59 t	BRINE DISCHARGE	VOL 2(f)	IWMF1_10-136_990_015093
E16	1	Precast Concrete	929.03 m³	2322.57 t	DRAINAGE OUTFALL AND STORM GATE 1	VOL 2(f)	IWMF1_10-136_990_015094

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	31/7/18	Submission to CHEC	ARDL	CHEC
1	30/9/19	Submission to CHEC	ARDL	CHEC
2	10/5/19	Submission to CHEC	ARDL	CHEC
3	09/10/19	Submission to CHEC	ARDL	CHEC
4	11/10/19	Submission to CHEC	ARDL	CHEC
5	18/11/19	Submission to CHEC	ARDL	CHEC
6	16/12/19	Submission to CHEC	ARDL	CHEC
7	04/05/20	Submission to CHEC	ARDL	CHEC

Employer: 環境保護署 Environmental Protection Department

Supervising Officer: AECOM

Main Contractor: Keppel Seghers — KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS, DLN

Design Checker: SMEC — Member of the Surbana Jurong Group

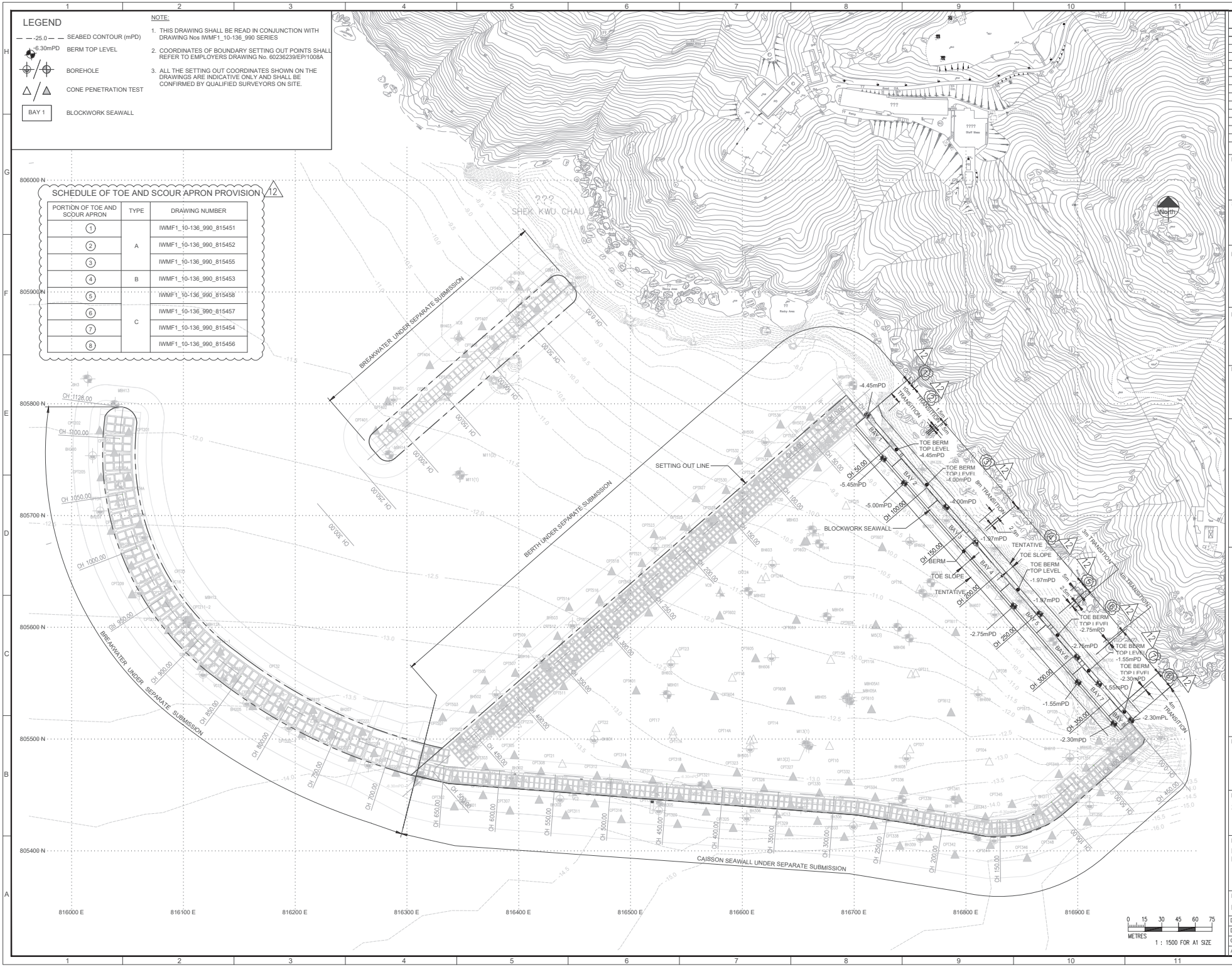
Certification

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities
Phase 1

Design Package

Drawing Title
CIVIL & EXTERNAL WORKS
SEAWALL CAISSON LAYOUT PLAN

Drawing Number	Revision
IWMF1_10-130_000_000103	7
Date: 10 JAN 20	Scale (at A1): As indicated
Drawn by: Nick A	Format: A1
Checked by: Martin H	Status: PRE
Approved by: Kenny Yu	



Revision Schedule

No.	Date	Description	Chk'd	Appr'd
0	15/02/19	DDA SUBMISSION	TC	KY
1	25/04/19	DDA SUBMISSION	TC	KY
2	16/08/19	DDA SUBMISSION	TC	KY
3	22/11/19	DDA SUBMISSION	TC	KY
4	12/12/19	DDA SUBMISSION	TC	KY
5	11/02/20	DDA SUBMISSION	TC	KY
6	12/02/20	DDA SUBMISSION	TC	KY
7	20/02/20	DDA SUBMISSION	TC	KY
8	03/03/20	DDA SUBMISSION	TC	KY
9	10/03/20	DDA SUBMISSION	TC	KY
10	14/05/20	DDA SUBMISSION	TC	KY
11	08/06/20	DDA SUBMISSION	TC	KY
12	17/09/20	DDA SUBMISSION	TC	KY

Employer: 環境保護署 Environmental Protection Department

Supervising Officer: AECOM

Main Contractor: Keppel Seghers

Designers: ARCADIS DLN

Design Checker: SMEC Member of the Surbana Jurong Group

Certification

Project Name: Contract No. EP/SP/66/12 Integrated Waste Management Facilities Phase 1

Design Package: 2.2.20 SEAWALL DESIGN

Drawing Title: RUBBLE MOUND & TOE APRON BLOCKWORK OVERALL LAYOUT

Drawing Number	Revision
IWMF1_10-136_990_800412	12
Date: 15 FEB 2019	Scale (at A1): 1 : 1500
Drawn by: HH	Format: A1
Checked by: TONY C	Status: DES
Approved by:KENNY YU	

TABLE 1: DIMENSIONS FOR CHINESEPOD ARMOUR UNITS

WEIGHT OF CHINESEPOD ARMOUR UNITS	18.5 TON
h (ARMOUR SIZE) (SEE NOTE #)	2.895 m
D_N (=0.698 h)	2.021 m
H1 (ARMOUR THICKNESS)	2.607 m
NOTE # : AS PER DRAWING NO. IWMF1_10-136_000_000601	

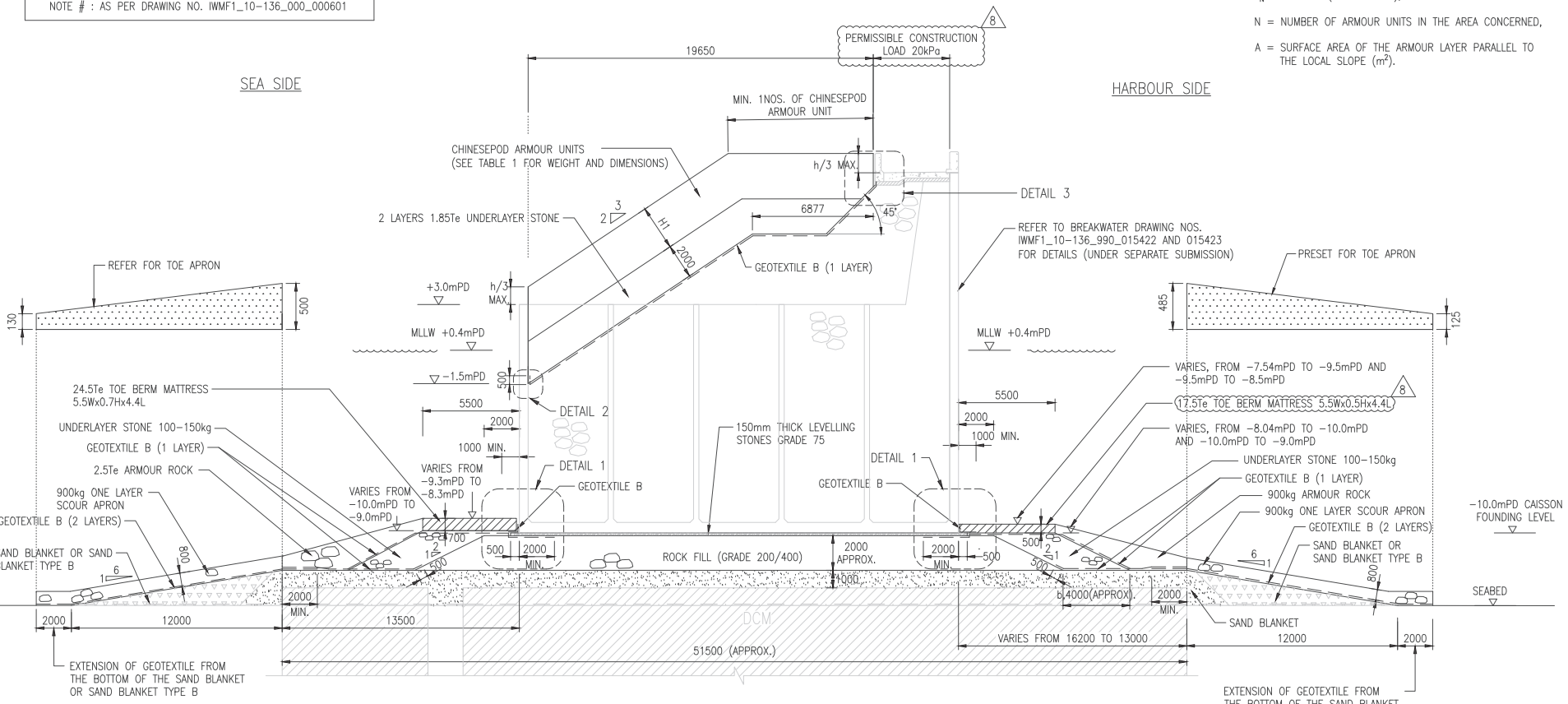
NOTES:

1. UNLESS A WEIGHT RANGE IS SPECIFIED, ROCK ARMOUR, UNDERLAYER, SCOUR APRON ROCK ARE DESIGNATED BY A NOMINAL WEIGHT. WEIGHT OF ROCK SHALL BE NO LESS THAN 0.75 NOR MORE THAN 1.25 TIMES THE NOMINAL WEIGHT WITH 50% OF INDIVIDUAL ROCKS WEIGHING NOT LESS THAN THE NOMINAL WEIGHT IN ACCORDANCE WITH SPECIFICATION (PART B) CLAUSE 21.13S.
2. PACKING DENSITY ($\phi = D_N^2$ N/A) OF CHINESEPOD ARMOUR UNITS SHALL BE 0.637, WHERE

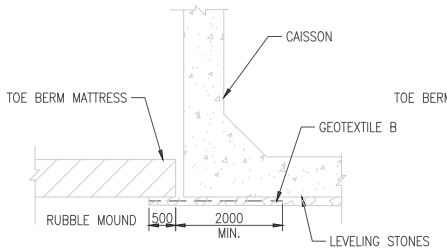
   D_N = 0.698 h (SEE TABLE 1),

   N = NUMBER OF ARMOUR UNITS IN THE AREA CONCERNED,

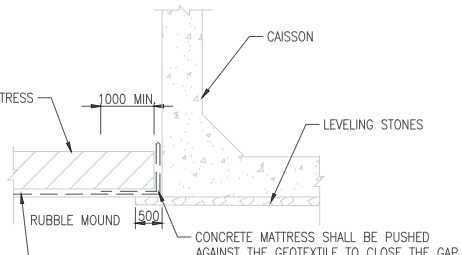
   A = SURFACE AREA OF THE ARMOUR LAYER PARALLEL TO THE LOCAL SLOPE (m^2).

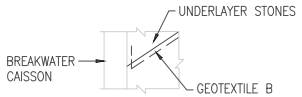


TOE AND SCOUR APRON TYPICAL SECTION AND DETAILS – BREAKWATER K1, K1a (TYPE B)

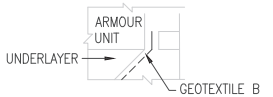


DETAIL 1
N.T.S





DETAIL 2
N.T.S



DETAIL 3
N.T.S

0 2 4 6 METRES
1 : 125 FOR A1 SIZE

Revision Schedule

No.	Date	Description	Chk'd	Appr'd
0	13/06/19	DDA SUBMISSION	TC	KY
1	24/07/19	DDA SUBMISSION	TC	KY
2	20/08/19	DDA SUBMISSION	TC	KY
3	24/09/19	DDA SUBMISSION	TC	KY
4	12/12/19	DDA SUBMISSION	TC	KY
5	11/05/20	DDA SUBMISSION	TC	KY
6	28/07/20	DDA SUBMISSION	TC	KY
7	31/08/20	DDA SUBMISSION	TC	KY
8	07/09/20	DDA SUBMISSION	TC	KY

Employer

Supervising Officer
AECOM

Main Contractor
Keppel Seghers

Designers
ARCADIS
DLN

Design Checker
SMEC
Member of the Surbana Jurong Group

Certification

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities Phase 1

Design Package
2.2.21 BREAKWATER DESIGN

Drawing Title
TOE AND SCOUR APRON
TYPICAL SECTIONS AND DETAILS
BREAKWATER K
SHEET 4 OF 9

Drawing Number	Revision
IWMF1_10-136_990_015633	8
Date: 13 JUNE 2019	Scale (at A1): 1:125
Drawn by: MAKARAND P	Format: A1
Checked by: TONY C	Status: DES
Approved by: KENNY YU	

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TABLE 1: DIMENSIONS FOR CHINESEPOD ARMOUR UNITS

WEIGHT OF CHINESEPOD ARMOUR UNITS	3 TON
h (ARMOUR SIZE) (SEE NOTE #)	1.579 m
D_N (=0.698 h)	1.102 m
H1 (ARMOUR THICKNESS)	(1.422 m)
NOTE # : AS PER DRAWING NO. IWMF1_10-136_000_000701	

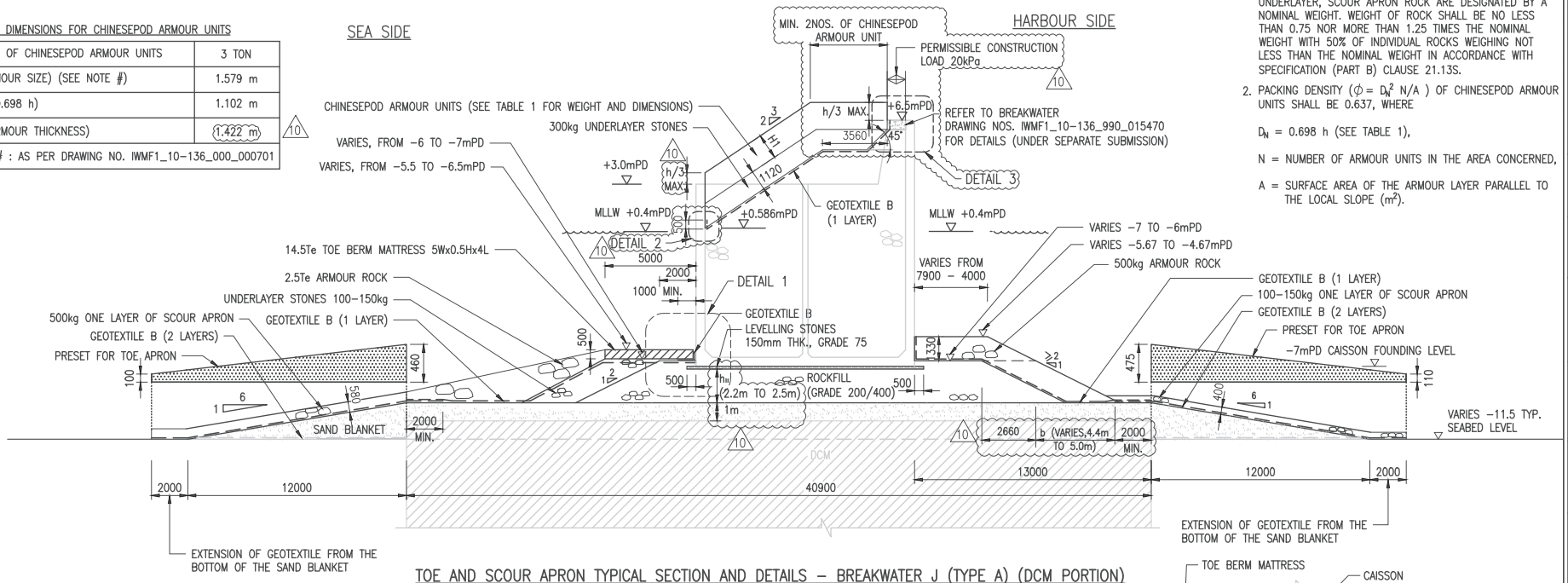
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1. UNLESS A WEIGHT RANGE IS SPECIFIED, ROCK ARMOUR, UNDERLAYER, SCOUR APRON ROCK ARE DESIGNATED BY A NOMINAL WEIGHT. WEIGHT OF ROCK SHALL BE NO LESS THAN 0.75 NOR MORE THAN 1.25 TIMES THE NOMINAL WEIGHT WITH 50% OF INDIVIDUAL ROCKS WEIGHING NOT LESS THAN THE NOMINAL WEIGHT IN ACCORDANCE WITH SPECIFICATION (PART B) CLAUSE 21.13S.
2. PACKING DENSITY ($\phi = D_N^2\ N/A$) OF CHINESEPOD ARMOUR UNITS SHALL BE 0.637, WHERE

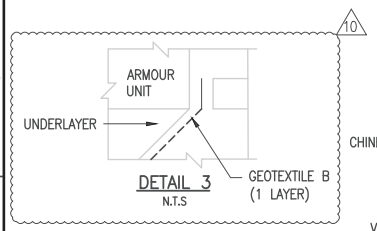
   D_N = 0.698 h (SEE TABLE 1),

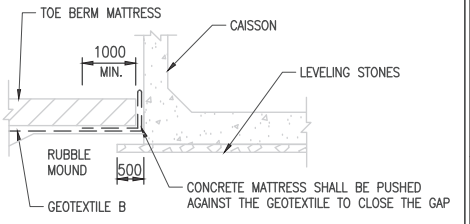
   N = NUMBER OF ARMOUR UNITS IN THE AREA CONCERNED,

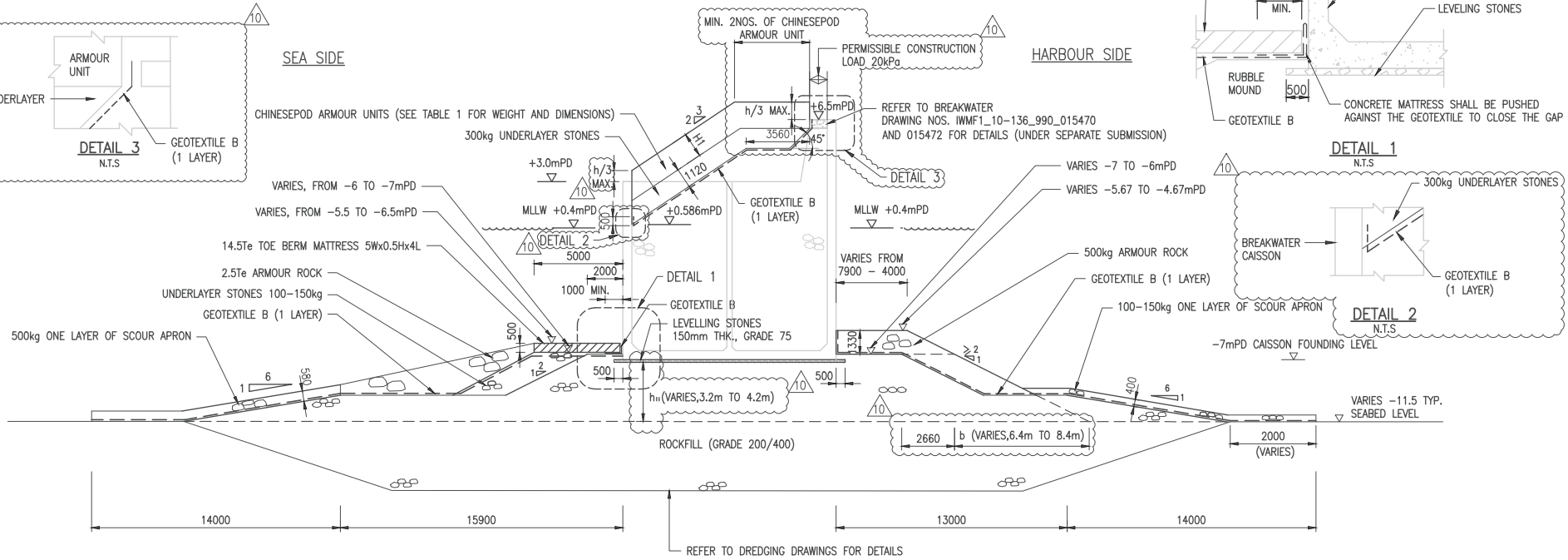
   A = SURFACE AREA OF THE ARMOUR LAYER PARALLEL TO THE LOCAL SLOPE (m^2).



TOE AND SCOUR APRON TYPICAL SECTION AND DETAILS – BREAKWATER J (TYPE A) (DCM PORTION)







TOE AND SCOUR APRON TYPICAL SECTION AND DETAILS – BREAKWATER J (TYPE A) (DREDGED PORTION)

METRES 0 2 4 6

1 : 125 FOR A1 SIZE

Revision Schedule

No.	Date	Description	Chk'd	Appr'd
0	28/09/19	DDA SUBMISSION	TC	KY
1	22/11/19	DDA SUBMISSION	TC	KY
2	02/03/20	DDA SUBMISSION	TC	KY
3	27/04/20	DDA SUBMISSION	TC	KY
4	26/05/20	DDA SUBMISSION	TC	KY
5	23/06/20	DDA SUBMISSION	TC	KY
6	28/07/20	DDA SUBMISSION	TC	KY
7	14/08/20	DDA SUBMISSION	TC	KY
8	19/08/20	DDA SUBMISSION	TC	KY
9	20/08/20	DDA SUBMISSION	TC	KY
10	24/08/20	DDA SUBMISSION	TC	KY

Employer: Environmental Protection Department

Supervising Officer: AECOM

Main Contractor: Keppel Seghers

Designers: ARCADIS, DLN

Design Checker: SMEC, Member of the Surbana Jurong Group

Certification

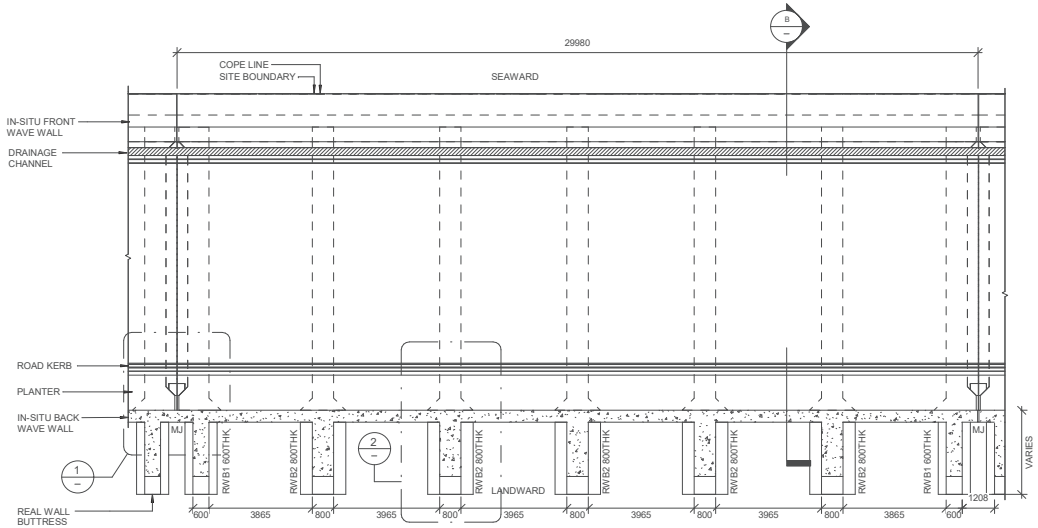
Project Name: Contract No. EP/SP/66/12 Integrated Waste Management Facilities Phase 1

Design Package: 2.2.21 BREAKWATER DESIGN

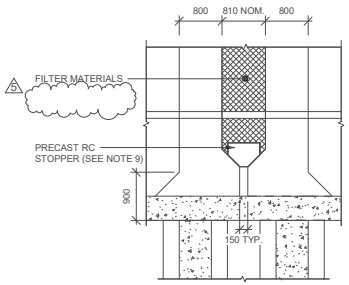
Drawing Title: TOE AND SCOUR APRON TYPICAL SECTIONS AND DETAILS BREAKWATER J SHEET 2 OF 4

Drawing Number	Revision
IWMF1_10-136_990_015731	10
Date: 28 SEPT 2019	Scale (at A1): 1:125
Drawn by: ART V	Format: A1
Checked by: TONY C	Status: DES
Approved by: KENNY YU	

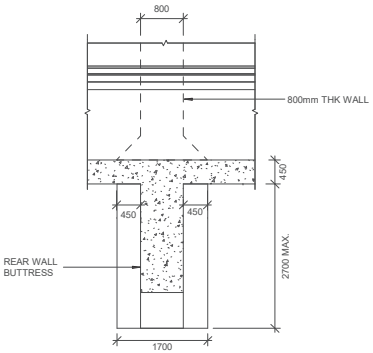
User:SHELKED4246 File:C:\USERS\SHELKED4246\ONEDRIVE - ARCADIS\DESKTOP\CROSS SECTION 18\DATA OUT\27-08-20\S\WMF1_10-136_990_015731_R10\WMF1_10-136_990_015731_R10.DWG Username: Shelke, Dipti; Date: 8/27/2020; Time: 15:21



A TYPICAL PLAN VIEW OF SEAWALL TYPE E (AT +8.0 LEVEL)
1 : 100

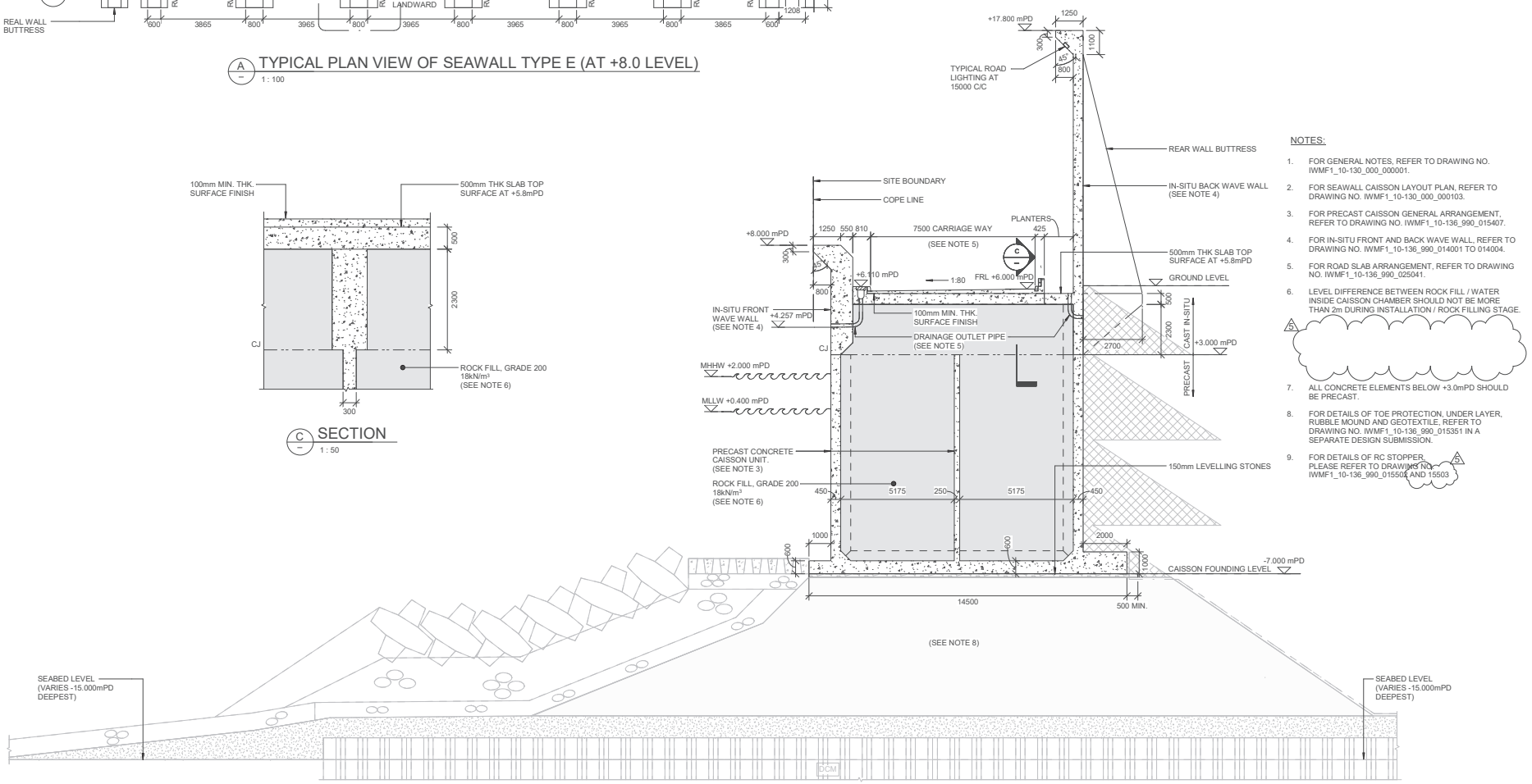


1 DETAIL
1 : 50



2 DETAIL
1 : 50

C SECTION
1 : 50



B SEAWALL TYPE E
1 : 100

NOTES:

1. FOR GENERAL NOTES, REFER TO DRAWING NO. IWMF1_10-130_000_000001.
2. FOR SEAWALL CAISSON LAYOUT PLAN, REFER TO DRAWING NO. IWMF1_10-130_000_000103.
3. FOR PRECAST CAISSON GENERAL ARRANGEMENT, REFER TO DRAWING NO. IWMF1_10-136_990_015407.
4. FOR IN-SITU FRONT AND BACK WAVE WALL, REFER TO DRAWING NO. IWMF1_10-136_990_014001 TO 014004.
5. FOR ROAD SLAB ARRANGEMENT, REFER TO DRAWING NO. IWMF1_10-136_990_025041.
6. LEVEL DIFFERENCE BETWEEN ROCK FILL / WATER INSIDE CAISSON CHAMBER SHOULD NOT BE MORE THAN 2m DURING INSTALLATION / ROCK FILLING STAGE.
7. ALL CONCRETE ELEMENTS BELOW +3.0mPD SHOULD BE PRECAST.
8. FOR DETAILS OF TOE PROTECTION, UNDER LAYER, RUBBLE MOUND AND GEOTEXTILE, REFER TO DRAWING NO. IWMF1_10-136_990_015351 IN A SEPARATE DESIGN SUBMISSION.
9. FOR DETAILS OF RC STOPPER, PLEASE REFER TO DRAWING NO. IWMF1_10-136_990_015501 AND 15503

Revision Schedule

No.	Date	Description	Checked by	Approved by
0	31/7/18	Submission to CHEC	ARDL	CHEC
1	31/1/19	Submission to CHEC	ARDL	CHEC
2	30/4/19	Submission to CHEC	ARDL	CHEC
3	04/9/19	Submission to CHEC	ARDL	CHEC
4	11/10/19	Submission to CHEC	ARDL	CHEC
5	08/05/20	Submission to CHEC	ARDL	CHEC

Employer: 環境保護署 Environmental Protection Department

Supervising Officer: AECOM

Main Contractor: Keppel Seghers — KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Designers: ARCADIS, DLN

Design Checker: SMEC — Member of the Surbana Jurong Group

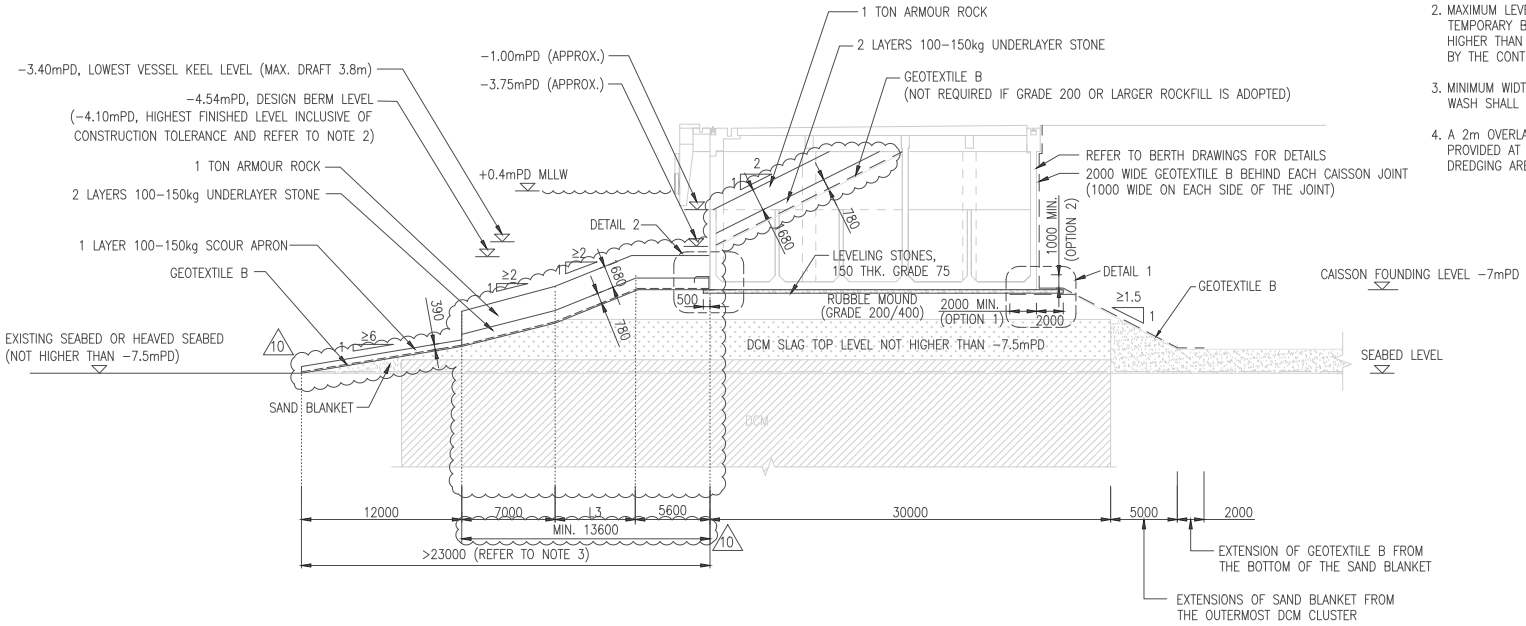
Certification

Project Name
Contract No. EP/SP/66/12
Integrated Waste Management Facilities Phase 1

Design Package

Drawing Title
CIVIL & EXTERNAL WORKS
TYPICAL LAYOUT PLANS AND SECTIONS SEAWALL TYPE E

Drawing Number	Revision
IWMF1_10-136_990_015007	5
Date: 11 OCT 19	Scale (at A1): As indicated
Drawn by: Nick A	Format: A1
Checked by: Martin H	Status: PRE
Approved by: Kenny Yu	



NOTES:

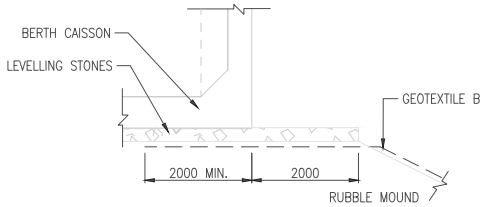
1. UNLESS A WEIGHT RANGE IS SPECIFIED, ROCK ARMOUR, UNDERLAYER, SCOUR APRON ROCK ARE DESIGNATED BY A NOMINAL WEIGHT. WEIGHT OF ROCK SHALL BE NO LESS THAN 0.75 NOR MORE THAN 1.25 TIMES THE NOMINAL WEIGHT WITH 50% OF INDIVIDUAL ROCKS WEIGHING NOT LESS THAN THE NOMINAL WEIGHT IN ACCORDANCE WITH SPECIFICATION(PART B) CLAUSE 21.13S.
2. MAXIMUM LEVEL OF ARMOUR CONSTRUCTION DURING TEMPORARY BARGE DELIVERY PERIOD NOT TO BE HIGHER THAN −5.0mPD OR A LEVEL AS ADVISED BY THE CONTRACTOR.
3. MINIMUM WIDTH OF SCOUR APRON FOR PROPELLER WASH SHALL BE 23m.
4. A 2m OVERLAPPING OF THE GEOTEXTILE SHALL BE PROVIDED AT THE INTERFACE BETWEEN DCM AND DREDGING AREA.

SETTING OUT POINT	L3
B4 to B5	≥1m
B5 to B6	≥3m
B6 to B7	≥6m

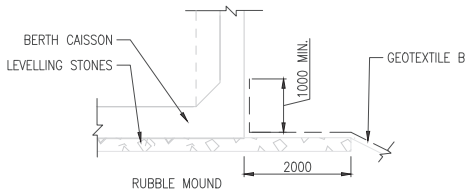
NOTE FOR SETTING OUT:

a. SETTING OUT POINTS B4 TO B7 ARE SHOWN IN DRAWINGS IWMF1_10−136_990_000521 TO 526.

TOE AND SCOUR APRON TYPICAL SECTION AND DETAILS − BERTH (SEABED LEVEL AFFECTED BY DCM HEAVING) (SETTING OUT POINTS B4 TO B7)

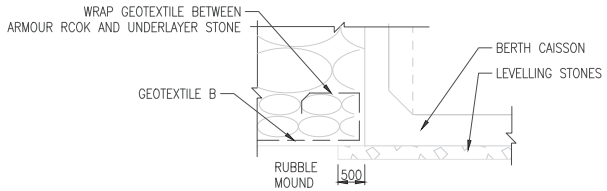


OPTION 1



OPTION 2

DETAIL 1
N.T.S



DETAIL 2
N.T.S

0 2 4 6 8 10
METRES
1 : 200 FOR A1 SIZE

Revision Schedule

No.	Date	Description	Chk'd	Appr'd
0	19/08/19	DDA SUBMISSION	TC	KY
1	18/09/19	DDA SUBMISSION	TC	KY
2	25/09/19	DDA SUBMISSION	TC	KY
3	14/10/19	DDA SUBMISSION	TC	KY
4	10/12/19	DDA SUBMISSION	TC	KY
5	01/04/20	DDA SUBMISSION	TC	KY
6	19/05/20	DDA SUBMISSION	TC	KY
7	27/05/20	DDA SUBMISSION	TC	KY
8	29/05/20	DDA SUBMISSION	TC	KY
9	06/10/20	DDA SUBMISSION	TC	KY
10	12/10/20	DDA SUBMISSION	TC	KY

Employer: Environmental Protection Department

Supervising Officer: AECOM

Main Contractor: Keppel Seghers

Designers: ARCADIS DLN

Design Checker: SMEC

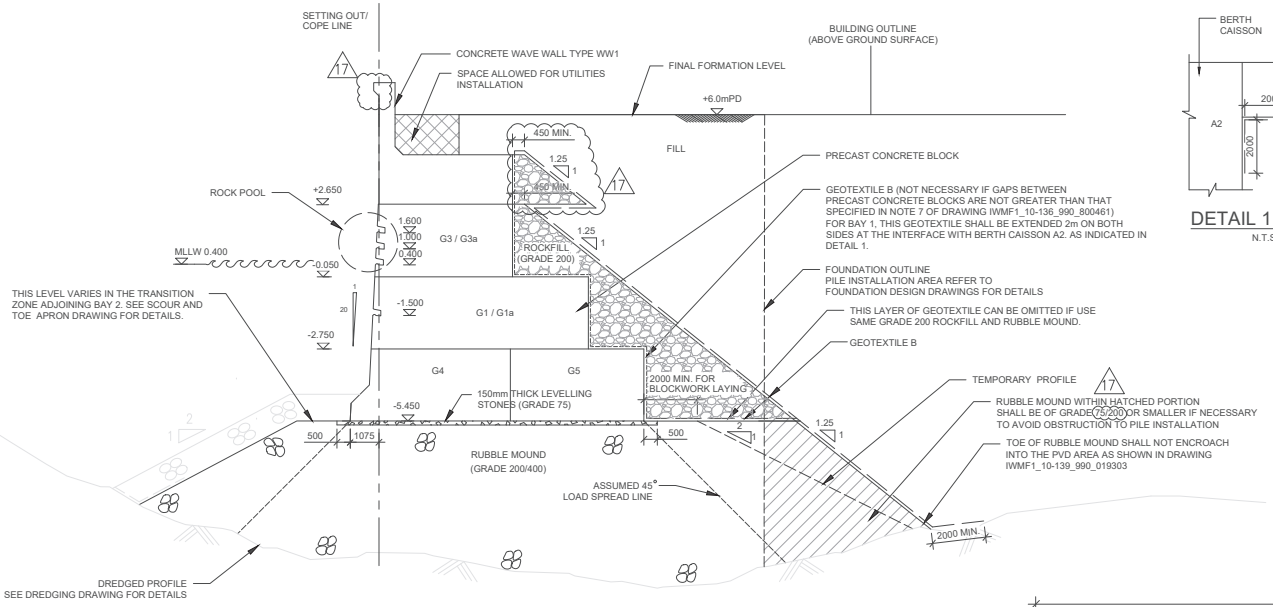
Certification

Project Name: Contract No. EP/SP/66/12 Integrated Waste Management Facilities Phase 1

Design Package: 2.2.22 BERTH DESIGN

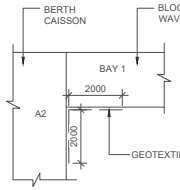
Drawing Title: TOE AND SCOUR APRON TYPICAL SECTION AND DETAILS BERTH (SHEET 3 OF 3)

Drawing Number	Revision
IWMF1_10-136_990_015543	10
Date: 19 AUG 2019	Scale (at A1): 1:200
Drawn by: ART V	Format: A1
Checked by: TONY C	Status: DES
Approved by: KENNY YU	



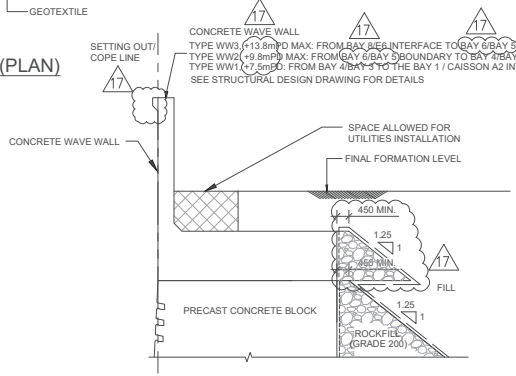
TYPICAL CROSS SECTION - BAY 1

SCALE 1:100



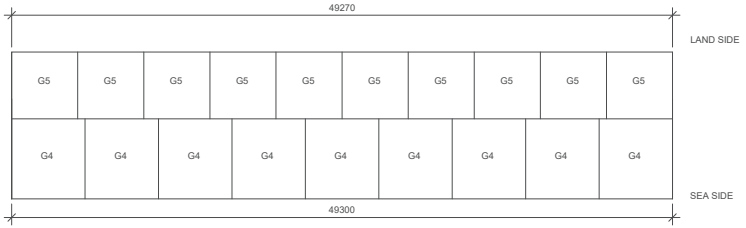
DETAIL 1 (PLAN)

N.T.S



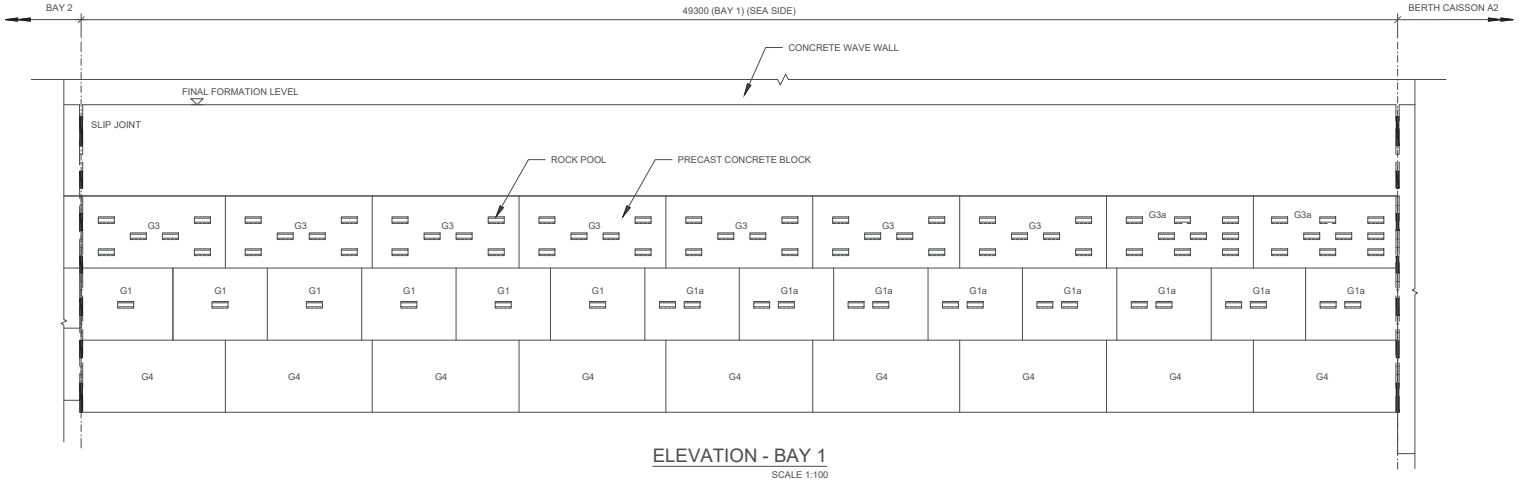
TYPICAL WAVE WALL DETAILS

SCALE 1:100



BLOCKWORK PLAN - BOTTOM LAYER (BAY 1)

SCALE 1:200



ELEVATION - BAY 1

SCALE 1:100

NOTE: WAVE WALL NOT SHOWN FOR CLARITY

Revision Schedule				
No.	Date	Description	Chk'd	Appr'd
0	08/03/19	DDA SUBMISSION	TC	KY
1	14/03/19	DDA SUBMISSION	TC	KY
2	23/04/19	DDA SUBMISSION	TC	KY
3	28/05/19	DDA SUBMISSION	TC	KY
4	05/06/19	DDA SUBMISSION	TC	KY
5	18/08/19	DDA SUBMISSION	TC	KY
6	19/09/19	DDA SUBMISSION	TC	KY
7	26/09/19	DDA SUBMISSION	TC	KY
8	22/11/19	DDA SUBMISSION	TC	KY
9	12/12/19	DDA SUBMISSION	TC	KY
10	11/02/20	DDA SUBMISSION	TC	KY
11	12/02/20	DDA SUBMISSION	TC	KY
12	19/02/20	DDA SUBMISSION	TC	KY
13	05/03/20	DDA SUBMISSION	TC	KY
14	25/03/20	DDA SUBMISSION	TC	KY
15	28/04/20	DDA SUBMISSION	TC	KY
16	04/05/20	DDA SUBMISSION	TC	KY
17	14/05/20	DDA SUBMISSION	TC	KY

Employer

Environmental Protection Department

Supervising Officer

AECOM

Main Contractor

Keppel Seghers

Designers

ARCADIS DLN

Design Checker

SMEC

Member of the Surbana Jurong Group

Certification

Project Name

Contract No. EP/SP/66/12
Integrated Waste Management Facilities Phase 1

Design Package

2.2.20 SEAWALL DESIGN

Drawing Title

TYPICAL SECTIONS AND ELEVATIONS
BLOCKWORK SEAWALL
(SHEET 1 OF 6)

Drawing Number		Revision
IWMF1_10-136_990_800451		17
Date: 29 MAR 2019	Scale (at A1)	Format
Drawn by: CHAITHANYA PR	1:100/1:200	A1
Checked by: TONY C		Status
Approved by: KENNY YU		DES

Annex D

Comments and Responses

Comment from EPD as detailed in letter ref (12) in Ax(1) to EP2/G/G/131 Pt.31 dated 5th August 2022

Item	Comments	Responses
1.	While zoom-in plans on selected portions of the project are provided, a master layout plan (MLP) with appropriate scale and legend clearly indicating the location and height (in meters/mPD) of all proposed buildings/ structures/ features of the project is missing, making the readers difficult to have an overall concept of the development. The Consultant should provide a MLP making reference to Figure 2.4 of the Approved EIA Report.	Please refer to additional drawing nos. IWMF1_10-130_990_000200 and IWMF1_10-130_990_000250 in Annex B which demonstrate the whole site with appropriate scale and legend indicating the locations and heights of all proposed buildings/structures/features of the project, with references made to Figure 2.4 of the Approved EIA Report.
2.	The building layout/height in the current submission seems different from that in the Approved EIA Report. The Consultant should briefly clarify and explain such changes in the main text of the report.	Please refer to the additional drawing nos. IWMF1_10-130_990_000200 and IWMF1_10-130_990_000250 in Annex B with the design building/structure heights. Furthermore, refer to the revised Section 6.1 for additional text briefly explaining such changes and the ideas behind.
3.	While mitigation measures are of utmost concern, the mitigation measures plan is still missing in this current submission despite our previous comment. The Consultant should make reference to Figure 10b.10 of the Approved EIA Report.	Please refer to drawing no. IWMF1-LVP-01 in Annex B for the overall Mitigation Measures Plan based on the current mitigation measures and design, based on Figure 10b.10 of the Approved EIA Report.
4.	The Chimney is the most eye-catching feature of the project from many VSRs, its height and dimensions are, however, missing in the current submission.	The Chimney is 23.765m x 16.10m in elliptical form in its cross section with a height is at around +156.0mPD. Please refer to drawing nos. IWMF1_10-130_990_000250 and IWMF1_11-135_400_044011 for the overall site layout plan with its height and its cross-sectional layout plan for your reference.
5.	It is difficult for us to ascertain the accuracy of the photomontages without the above said information.	The LVP has been revised with the introduction of overall site layout plans to facilitate the presentation of the photomontages.
	Specific comments	
6.	Section 6. 7 - The design of the breakwaters is unclear from the distant view in Figure 6.6. Please provide reference	Section 6.7 is revised to include references to the High Island Reservoir interlocking precast concrete armouring units for reference.

Item	Comments	Responses
	photo at High Island Reservoir to help illustrate the proposed design of interlocking concrete armouring units.	
7.	Figure 6.8 – The brown structure and painting/mural found along the seawall (marked on the Attachment) were not mentioned in the Approved EIA Report nor the current submission. Please describe such feature/design and explain their purposes in the main text.	Section 6.1 has been revised to elaborate on the painting/mural feature which is to depict a sailboat/marine theme to blend in with the surrounding environment.
8.	Table 7.1- a) The Consultant is reminded to indicate the Tree Top Walk, Viewing Platform, green roof, pedestrian pathway, sky deck structure, passenger reception pier, landscaped berms, and forested berms in the MLP and/or Mitigation Measures Plan with proper annotations for clarity sake. b) MLVC-04(3) and MVC-01(3 to 5) - With reference to the Consultant's responses in Annex C (especially Item nos. c, d, e, m), please supplement the table to explain why the features recommended in the Approved EIA Report, including landscape deck at the stack, gradient colour for the chimney, observation deck at the top of the chimney, and sky gardens between the stacks, were not provided/adopted. The Consultant should also justify the effectiveness of the alternative design/mitigation measures adopted in the current submission in minimizing the visual impact from the project. c) MVO-01 - It should read " ..... *Education Centre* **located inside the Administration Building .....** ".	a) Please refer to drawing no. IWMF1_10-130_990_000200 and IWMF1-LVP-01 in Annex B which now indicate the aforementioned features for clarity; b) – Landscape features and observation deck of the Chimney are proposed to be relocated and incorporated into the south facing seawall forming part of the external visitor's path, named as "Sky Deck". The current design is considered to be more environmentally friendly, in which the configuration of the Chimney stack is streamlined into an aerodynamic form to address the wind load effectively. Furthermore, the landscaped Sky Deck is more accessible for the public and from the maintenance point of view; - To mitigate the form of the Chimney, asymmetrical external aluminum panels are cladded on its concrete structure to resemble a sail of a boat to form a feature in order to symbolise the Hong Kong spirit overcoming high and low tides for a better future. Being the first facility of its kind, the endorsed concept of IWMF1 is "一帆風順 領航前行" (aka "smooth sailing, with great stewardship forward"); - The cladding is slightly projected from the concrete structure, so that its shadow will be cast on the stack with slightly varied under different weather conditions and time of day, thus creating interesting visual impressions; - For the front and back of the seawalls facing the South China Sea, various shades of blue in a wavy pattern and a brown paint

Item	Comments	Responses
		represent a timber boat sailing on the sea; - Color pattern of the wavewall will breakdown the scale of the facility's enormity when visitors come near to the artificial island during a visit; - The said design concept and images of the Chimney have been presented to the stakeholders, including the Community Liaison Group, who have no objections on the updated design intention; and - The avoid maintenance issues on the external paint, budget consideration and to facilitate the programme, it is proposed to utilise the cladding and painted seawall rather than the gradual paint on the stack to enhance the overall visual impact of the complex. c) Noted and the text for MVO-01 is revised.
9.	Annex A Part 2 – a) The discrepancies persisted in the current submission. They are marked in the **Attachment**. It should be reminded that it is the Consultant's responsibility to check and ensure the consistency of the report. b) According to the photomontages in the Approved EIA report, portions of the project would be visible from VSR 6 (Cheung Po Tsai Cave, Cheung Chau), VSR 7 (Cheung Chau Ferry Pier), VSR 10 (Lantau Trail Stage 3), and VSR 14 (Tai Long Wan). However, they are not reflected in the current submission (marked in the **Attachment**). Please double check the accuracy of the photomontages and explain such differences.	a) The comment is noted and the Report is reviewed for clarity and consistency, the remarks from your Attachment have been amended; and b) Please refer to the revised photomontages of the VSRs 6, 7, 10 and 14.
10.	Please find below our comments on the revised LVP submission from landscape impact perspective: (a) to facilitate our review, please provide a combined layout plan in legible scale with clear legends illustrating the proposed landscape elements, including new tree planting, shrub planting, ground cover planting, grass paver, vertical greening etc. The corresponding mitigation	a) Please refer to drawing no. IWMF1_10-130_990_000200 in Annex B for the combined layout and no. IWMF1_10-130_990_000200 for the proposed building spot heights; the zoomed-in plans in Annex B illustrating both soft and hard landscape designs of the project; and drawing no. IWMF1-LVP-01 in Annex B for the names of the buildings and other structures, drawing no. IWMF1-LVP-02 provides another

Item	Comments	Responses
	measures proposed under the approved EIA should be annotated on the combined plan. Please add reference information such as names of the buildings and other structures and the proposed spot heights; and (b) please add a summary table under section 5 of the report showing the approx. no. of new tree, area of shrub, ground cover and vertical greening proposed respectively.	layout plan to illustrate the new greenery planting; and b) Please refer to the additional Table 5.1 – summary table.

Comment From EPD as detailed in letter ref (12) in Ax(1) to EPG/G131 Pt.31 dated 16 December 2022

Item	Comments	Responses
1.	Section 2.1 - The following circulars are either superseded or subsumed by updated circulars: i) Please delete WTBC No. 7/2002 ii) ETWB TCW No. 34/2003 to be updated as DEVB TC(W) No. 5/2017 iii) ETWB TCW No. 02/2004 to be updated as DEVB TC(W) No. 6/2015 iv) ETWB TCW No. 29/2004 to be updated as DEVB TC(W) No. 5/2020 v) DEVB TC(W) No. 10/2013 to be updated as DEVB TC(W) No. 4/2020	The circulars are updated in the revised Section. i) Deleted; ii) Amended; iii) Amended; iv) Amended; and v) Amended.
2.	Section 5.5 - It is noted that there are *"4 distant and different planting zones, namely the Woodland Mass Planting, Coastal Green Buffer, Roof Garden Ornamental Planting and Leisure Gardens",* please indicate on Drawing No. LVP_3_017600 (Planting Schedule and Image) the proposed tree species for each of the planting zone and indicate on plan the proposed planting zones.	The 4 nos. different Zones are further elaborated in Section 5.5 in the resubmission. These Zones are also demarcated in the revised drawing no. IWMF-LVP-02 in Annex B. For the sake of clarity, the proposed tree species for each of the planting zone indicated on the following plans and tree schedule: **Zone** / **Tree Planting Plan (Dwg. No.)** / **Tree Schedule (Dwg. No.)** Costal Green Buffer, Woodland Mass Planting: IWMF1_14-136_990_113708 to IWMF1_14-136_990_113723 / IWMF1_14-136_990_117600 Leisure Gardens: Process Building on podium IWMF1_14-136_300_123601 to IWMF1_14-136_300_123603 / IWMF1_14-136_300_117600 Administration Building IWMF1_14-136_800_123601 and IWMF1_14-136_800_123605 / IWMF1_14-136_800_117600 Roof Garden Ornamental Greening: No tree planting proposed
3.	The number of tree planting and tree species of Table 5.1, Table 5.2 and Drawing No. LVP_3_017600 (Planting Schedule and Image) do not tally with each other. Please review.	The comments is noted and please note that the total numbers of tree planting (i.e. 595) correspond in these sections of the report as follows: - Table 5.1: total = 595; - Table 5.2: 555 (LMP) + 27 (Process Building) + 13 (Admin Building) = 595; and Annex B: 555 (IWMF1_14-136_990_117600) + 27 (IWMF1_14-136_300_117600) + 13 (IWMF1_14-136_800_117600) = 595.

Item	Comments	Responses
4.	Noting that large scale vertical greening is proposed for all facade of the Process Building, MT Plant Building & Water Treatment Plant Building and Admin Building. Please provide the proposed planting species, sectional details of the vertical greening with proper drainage and irrigation system to demonstrate the practicability and proper maintenance accesses for long term healthy and sustainable growth of the proposed greening for review.	Whilst the vertical greening (VG) are indicated in red borders in the elevation drawing of individual drawings in the Annex B, the VG typical section showing the drainage, irrigation system and maintenance access is added also in Annex B (Drawing no. IWMF1_14-136_990_124102). Further elaboration of the VG system design is added to Section 6.4, 1st paragraph.
5.	Drawing No. IWMF1-LVP-01 (Overall Landscape Master Plan) i) The drawing is blur and unclear. The drawing should be in the scale of 1:1000 and should include the whole project limit. ii) Clear indication of mitigation measures (i.e. MLVC-01 to 04, MVC-01, MLVO-01 and MVO-01) proposed under the approved EIA should be annotated on plan. iii) Proper legends of landscape elements such as trees, shrubs/groundcover and lawn should be provided. iv) The "Project Limit" and "Setting-out Line" under legend are missing. v) Spot levels for all landscape areas (both at-grade and on-structure) should be provided.	i) The drawing is now in 1:1000 scale with scale bar; ii) Mitigations MLVC-01 to 04, MVC-01, MLVO-01 and MVO-01 are annotated on Drawing No. IWMF1-LVP-01; iii) Landscape element legends are added on Drawing No. IWMF1-LVP-01; iv) The legend has been updated with the missing information in Drawing No. IWMF1-LVP-01; and v) Further spot levels have been added to Drawing no. IWMF1-LVP-01.
6.	Drawing No. IWMF1-LVP-02 i) The drawing title is missing. ii) Separate legends for shrubs/groundcover and lawn should be provided.	i) The Drawing title is now added; and ii) Separate legends are now applicable for shrubs/ground cover, lawn and trees. Reference is also made to drawing no. IWMF1-LVP-01 and the enlarged building-specific drawings contained within Annex B.

Item	Comments	Responses
7.	As advised by the Urban Design Unit, the annotations for mitigation measures seem missing from Drawing No. IWMF1-LVPO-01. Please rectify.	iii) Please note the mitigation measures are included in Drawing No. IWMF1-LVP-01 and other drawings within Annex B.

List of Figures

Figure 1.1 Overall Site Configuration / Layout

Figure 1.2 General overview of the IWMF development and adjacent Shek Kwu Chau Island from the South.

Figure 1.3 General overview of the IWMF development and adjacent Shek Kwu Chau Island from the West.

Figure 5.1 East Courtyard

Figure 5.2 West Courtyard

Figure 6.1 General Aesthetic treatment of the IWMF development featuring the seawall in the foreground, landscaped development with vertical greening in the mid field and the iconic sail format chimney structure.

Figure 6.2 Green wall modular concept.

Figure 6.3 Mature green wall overall impression.

Figure 6.4 General outlook from the visitor viewing gallery

Figure 6.5 Chimney concept

Figure 6.6 Visual appearance of the Breakwaters

Figure 6.7 Eco-shoreline concept along the seawall facing Shek Kwu Chau Island

Figure 6.8 Overall view of Seawalls and Breakwater

Figures 6.9 Seawall Configuration

Figures 6.10 Depicting the a) South East, b) North West, c) North d) South and e) South west elevations at the Main Process Building.MT and WTP Building

Figures 6.11 Green roof of the Main Process Building

Figures 6.12 Views from of the MT and WTP Building.

Figures 6.13 Administration Building

Figures 6.14 IWMF Substation

Figures 6.15 Reception Pavilion