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水務署
Water Supplies Department

Contract No. 13/WSD/17

Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Landscape and Visual Mitigation Proposal

FEP Condition 2.11

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5	Revision according to RSS's and IEC's comments	18 Jan 2022
6	Revision according to EPD's comments	31 Mar 2022
7	Update of implementation schedule of Table 2.1	01 Mar 2024

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1. INTRODUCTION

1.1. BACKGROUND

Pursuant to the Environmental Impact Assessment Ordinance (EIAO), the Director of Environmental Protection granted the Environmental Permit (No. EP-01/503/2015) and Variation of Environmental Permit (No. EP-01/503/2015/A) to Water Supplies Department (WSD); and granted the Further Environmental Permit (No. FEP-01/503/2015/A) to AJCJV for the Contract.

The Acciona Agua, S.A. Trading, Jardine Engineering Corporation, Limited and China State Construction Engineering (Hong Kong) Limited As AJC Joint Venture (AJCJV) is contracted by WSD to carry out the Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant (DPTKO) under Contract No. 13/WSD/17 ("the Contract"). The Further Environmental Permit (No. FEP-01/503/2015/A) to AJCJV to construct the designation contract.

Acuity Sustainability Consulting Limited (ASCL) is commissioned by AJCJV to undertake the Environmental Team (ET) services as required and/or implied, both explicitly and implicitly, in the Environmental Permit (EP), Environmental Impact Assessment Report (EIA Report) (Register No. AEIAR-192/2015) and Environmental Monitoring and Audit Manual (EM&A Manual) for the Contract; and to carry out the Environmental Monitoring and Audit (EM&A) programme in fulfillment of the EIA Report's EM&A requirements and Contract No. 13/WSD/17 Specification requirements.

Before WSD taking over the area for DPTKO development, the construction and demolition (C&D) materials being stockpiled and grown vegetation had been removed for construction projects. Prior to being handed over the area for DPTKO development, the area for the proposed desalination plant had been cleared of the stockpiled C&D materials and grown vegetation. It was then handed over to WSD when the finished ground level reached +5.2mPD.

In 2017, design variations of Contract were proposed, the design variations in relation to landscape and visual impacts are mainly the changes in Contract layouts, which includes; the relocation of building blocks with increase in building height within the original earmarked site defined in the EIA report; the reduction of the site area for desalination plant and; the reduction of slope mitigation works inside the Clear Water Bay Country Park (CWBCP).

The change in magnitude of landscape and visual impacts of the design variations from the EIA report have been thoroughly assessed and discussed in the Environmental Review Report (ERR) prepared by Black & Veatch (now known as Binnies HK Ltd.) on 03 November 2017. The ERR has concluded that the revised Contract layout will not change the overall landscape and visual impact levels presented in the EIA Report with mitigation measures in place. No additional mitigation measures are considered required for the proposed Contract variations. The environmental outcome from landscape and visual perspectives anticipated in the EIA Report will remain valid and applicable to the latest design.

1.2. CONTRACT DESCRIPTION

The Contract includes the following key components/works:-

Stage 1 Desalination Plant works (undertaken by Contract No. 13/WSD/17)

- construction of the seawater treatment components for the First Stage of the proposed desalination plant with a water production capacity at 135,000 cubic metres (m3) per day and with provision for future expansion to the ultimate water production capacity at 270,000 m3 per day when necessary, and associated facilities;
- formation of an eight-hectare site in TKO Area 137 for the construction of the proposed desalination plant and associated facilities with the ultimate water production capacity at 270,000 m3 per day;
- construction of the intake and outfall facilities of the proposed desalination plant to cater for the ultimate water production capacity of the proposed desalination plant at 270,000 m3 per day.
- natural slope mitigation works within the Clear Water Bay Country Park, which overlooks the northeast boundary of the desalination plant at TKO Area 137; and
- associated works including engineering, environmental mitigation works and landscaping works.

Stage 2 Desalination Plant works (to be undertaken in other works contract(s))

- (under planning stage);

Freshwater Main Alignment (undertaken by Contract No. 13/WSD/16)

A dedicated trunk feed system including about 9 km long water mains for the transfer of freshwater output from the desalination plant to the existing Tseung Kwan O Fresh Water Primary Service Reservoir in Po Lam.

1.3. PURPOSE OF THE PLAN

According to Condition 2.11 of the FEP and EP-503/2015/A, a landscape and visual mitigation proposal shall be submitted to the Director of Environmental Protection for approval no later than 1 month before the commencement of construction of the desalination plant of the Contract. The proposal, with drawings in the scale of 1:1000 or other appropriate scales as agreed by the Director, shall show the landscape and visual mitigation measures of the Contract, and shall include at least the following information:

(1) aesthetic landscape and architectural treatment for above ground structures;

(2) tree felling and preservation proposal showing quantity, plant species, location(s) and size of trees to be retained/transplanted/felled/compensated, and location(s) of transplanted trees;

(3) Landscape Plan showing location(s) of greening works including green roofs, roadside planting, vertical greening, screen planting, amenity planting, edge treatment along boundary and any other landscape enhancement to mitigate landscape impact of the Contract.

The scope of this LVMP covers the landscape and visual mitigation measures under Contract No. 13/WSD/17. The site layout plan for Contract No. 13/WSD/17 is shown in **Appendix A**. Before submission to the Director, the Landscape and Visual Mitigation Proposal shall be certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC) as conforming to the requirements and recommendations contained in the EIA Report (Register No. AEIAR-192/2015), EP/FEP and ERR. All measures recommended in the approved Proposal shall be fully and properly implemented and maintained for the Contract.

2. PROPOSED LANDSCAPE AND VISUAL MITIGATION MEASURES

Section 11.10.3 of the approved EIA Report and Annex A of the EM&A Manual recommended the following mitigation measures. Explanations of how the measures are fulfilled are given in **Table 2.1** and subsequent sections. Implementation details of mitigation measures under the Contract and the implementation schedule are described in **Table 2.1** and subsequent sections, a layout plan showing the implementation location of landscape and visual mitigation measures is shown in **Appendix C.**

Table 2.1 Landscape and Visual Mitigation Measures

ID in EIA Report	Recommended Mitigation Measure in Table 11.5 of the approved EIA report	Implementation Stage	Implementation Details of Mitigation Measures under the Contract	Timing for Implementation	Agent for Implementation, maintenance and management
MM1	The construction area and area allowed for temporary structures, such as the contractor's office, will be minimized to a practical minimum. (Clause no. 2.11 (i) of EP)	Construction Stage	The construction area is limited to the contract area allowed in the EP. Three temporary works areas are available in this Contract. All of them are all located in brown field (see **Appendix A**).	Throughout the Construction Stage	AJCJV (The Contractor)
MM2	At the detailed design stage, the design team will seek to minimize the landscape footprint of the Project and above ground facilities, while satisfying all other requirements. (Clause no. 2.11 (i) of EP)	Detailed Design Stage	The landscape footprint is restricted to the contract area allowed in the EP. Please refer to **Section 3** for explanation on how the coverage of ground facilities has been minimized.	During the Design Stage	Design Team of AJCJV

ID in EIA Report	Recommended Mitigation Measure in Table 11.5 of the approved EIA report	Implementation Stage	Implementation Details of Mitigation Measures under the Contract	Timing for Implementation	Agent for Implementation, maintenance and management
MM3	Design principles will be adopted to take into account the surrounding area, particularly Clear Water Bay Country Park behind and the nearby waterfront, with due consideration given to: - green roofs where practical (i.e. without equipment on the roof); - roadside planting; - aesthetic treatment of all structures; - vertical greening; - screen planting along application site; and - landscape enhancement with amenity planting where practical, including planting along the edge (site boundary) fence with native shrubs where feasible, to reduce their visual impact and blend them into the surrounding landscape. (Clause no. 2.11 (iii) of the EP)	Detailed Design Stage, Construction Stage, Operational Stage	Please refer to **Section 3** for aesthetic landscape and aesthetic treatment of all above ground structures and **Section 4** for soft landscape plan.	- During the Design Stage - Throughout the Construction Stage - Complete the mitigation measures before the commencement of operation of the First Stage of the Desalination Plant and maintained throughout the operation stage	Design & Construction Teams of AJCJV, and Operational Stage Contractor/WSD

ID in EIA Report	Recommended Mitigation Measure in Table 11.5 of the approved EIA report	Implementation Stage	Implementation Details of Mitigation Measures under the Contract	Timing for Implementation	Agent for Implementation, maintenance and management
MM4	All trees within the Project Site or the slope mitigation works area will be carefully protected during construction according to DEVB TCW No. 4/2020 – Tree Preservation. (Clause no. 2.11 (ii) of the EP)	Construction Stage	A tree survey was conducted in Feb 2020, 11 nos. of tree are identified tree within the site area, 11 nos. of tree are proposed to be retained on site. Please refer to Section 4 for tree details. For tree located within the proposed slope mitigation works in Clear Water Bay Country Park, the existing trees will be carefully protected during the construction stage in accordance with DEVB TCW No. 4/2020 – Tree Preservation. The details of tree preservation shall refer to the approved Detailed Design Plan for Slope Mitigation Works.	Throughout the Construction Stage	AJCJV

ID in EIA Report	Recommended Mitigation Measure in Table 11.5 of the approved EIA report	Implementation Stage	Implementation Details of Mitigation Measures under the Contract	Timing for Implementation	Agent for Implementation, maintenance and management
MM5	No Tree within the Country Park will be felled. Trees within the Site unavoidably affected by the works will be transplanted where practical. For trees that need to be felled, compensatory planting will be provided to the satisfaction of relevant Government departments. A compensatory tree planting proposal including locations of tree compensation will be submitted to seek relevant government department's approval, in accordance with DEVB TC(W) No. 4/2020. (Clause no. 2.11 (ii) of the EP)	Construction Stage, Operational Stage	The slope behind the proposed Desalination Plant is located within the Clear Water Bay Country Park. For tree located within the proposed slope mitigation works in Clear Water Bay Country Park, as flexible barriers are redesigned and located away from the slope toe of the Clear Water Bay Country Park area, no flexible barriers or soil nailing works are required, thereby no tree felling is proposed. In case of tree felling is necessary for slope mitigation works, a Tree Preservation and Removal Application will be submitted to relevant authorities for approval prior to tree felling works.	- Throughout the Construction Stage - Complete the mitigation measures before the commencement of operation of the First Stage of the Desalination Plant and maintain throughout the operation stage	AJCJV and Operational Stage Contractor/WSD

ID in EIA Report	Recommended Mitigation Measure in Table 11.5 of the approved EIA report	Implementation Stage	Implementation Details of Mitigation Measures under the Contract	Timing for Implementation	Agent for Implementation, maintenance and management
MM6	Any slope mitigation works necessary to address natural terrain hazards, will be minimized to minimize any potential environmental impact to the Country Park e.g. soil nailing and rock stabilization will aim to avoid existing trees e.g. should any restoration of vegetation be necessary, the best planting matrix with native species will be established, with the aim of resembling the existing vegetation. (Clause no. 2.11 (ii) of the EP)	Detailed Design Stage, Construction Stage, Operational Stage	The slope mitigation works have been designed to avoid landscape impact, such as temporary working platform and access to approach unstable boulders will be designed to avoid tree in rock slope stabilization work; wire mesh covering the rock face will be provided with opening to existing trees to avoid the trees. Details shall be referred to the approved Detailed Design Plan for Slope Mitigation Works. Grass hydroseeding will be provided to reinstate vegetation loss and disturbance at the area of slope stabilization works due to construction works (refer to Appendix E for the hydroseeding area and planting matrix), with regular monitoring and appropriate maintenance works carried out for a 12-month establishment period.	- During the Design Stage - Throughout the Construction Stage - Complete the mitigation measures within 1 month of completion of the slope mitigation works and maintained throughout the operation stage	Binnies (SOR), AJCJV and Operational Stage Contractor/WSD

ID in EIA Report	Recommended Mitigation Measure in Table 11.5 of the approved EIA report	Implementation Stage	Implementation Details of Mitigation Measures under the Contract	Timing for Implementation	Agent for Implementation, maintenance and management
MM7	Dredging works for the installation of intake structures and outfall diffusers should be minimized to avoid or reduce any potential environmental impacts to as low as reasonably practicable (ALARP). The intake and outfall structures (e.g. intake openings and diffuser heads) will be prefabricated and transferred to site for installation. (Clause no. 2.11 (iii) of the EP)	Construction Stage	The Contractor will follow the requirement accordingly.	During the construction of the marine works	AJCJV
MM8	All night-time lighting will be reduced to a practical minimum both in terms of number of units and lux level and will be hooded and directional. (Clause no. 2.11 (iii) of the EP)	Construction Stage, Operational Stage	Please refer to **Section 3.4** for lighting arrangement in construction and operational stages.	Throughout the construction stage and maintained throughout the operation stage	AJCJV, and Operational Stage Contractor/WSD

As recommended in the ERR, the following suggestions will be implemented by the Main Contractor:

- to minimise disturbances to vegetation during the construction works and shall be responsible to reinstate the vegetation in all temporary disturbed areas due to construction works to its original condition;
- Where appropriate, hydroseeding shall be applied to restore the green appearance on site;
- For any vegetation reinstatement or hydroseeding works, the appointed landscape contractor shall carry out regular monitoring and appropriate maintenance (e.g. replacement for unsatisfactory plant specimens) for a 12-month establishment period;
- The actual extent of rock slope works will be determined by the Supervising Officer during construction stage

3. AESTHETIC LANDSCAPE AND ARCHITECTURAL TREATMENT FOR ABOVE GROUND STRUCTURES

3.1. MINIMIZATION OF CONSTRUCTION AREA AND AREA FOR TEMPORARY ABOVE GROUND STRUCTURES (MM1)

The construction site is limited to the contract area allowed in the EP. Three temporary works areas are available in this Contract. All of them are located in the brown field (see Appendix A). The dimension of the DPTKO is around 500m long and 180m wide.

3.2. MINIMIZATION OF ABOVE GROUND STRUCTURES (MM2)

The site for the desalination plant is essentially a linear site and is oriented North West – South East along the longer side (Appendix A**)**.

All the buildings setback from the lot boundary for not less than 15m on all sides. Their heights do not exceed 35m above the future ground level, the most of them are mainly one to two storeys high for accommodating the process plants and building services, with the exception of the administration building, which is a five-storey office building with height around 33m. The layout plan and sectional elevation of DPTKO are shown in Appendix D.

Heights of all buildings do not exceed 35m above the future ground level. The roof level over the lift machine room of the Administration Building, the highest building for DPTKO, is +39.975mPD, about 33m above the ground level of +6.65mPD.

The entire development contains two types of buildings – desalination process plants and ancillary buildings. Following the flow of operational layout, the desalination process plant is separated into 4 treatment zones, namely Intake & Outfall Zone (Combined Shaft), Pre-treatment Zone (ActiDAFF), Reverse Osmosis Processing Zone (Reverse Osmosis Building) and Post-Treatment Zone (Post-Treatment Building). They span from southeast seashore toward the northwest side of the site. Processed water will be gone through the final treatment process in the Product Water Storage Tank before fed to the TKO fresh water primary service reservoir.

The elongated site is enveloped by the richly vegetated Tin Ha Shan on the east and faces the sea (Tai Miu Wan) on the southeast. To integrate, blend, and connect/align the design with these surrounding natural environments, DPTKO is divided into 15 building blocks, dispersed around the site to avoid putting a large, single, disproportionate building mass on the site.

3.3. Aesthetic Landscape and Architectural Treatment for Above Ground Structures (MM3)

The aesthetic landscape and architectural treatment of the site are designed to respond to occupational, recreational, and travelling sensitive receivers including the residents in the nearby Tseung Kwan O residential developments. The site has a high proportion of soft landscape (including at-grade greening, roof greening, and vertical greening), and numerous landscape areas are provided at various location of the site. The use of local species for both ornamental and boundary buffer facilitate the attainment of not less than 30% of landscape coverage areas to be planted with local plant species. These soft landscape designs provide a pleasant visual environment for the neighbouring communities is to create a successful destination with attractive external environment for the enjoyment of future visitors/ users. The soft landscape design of the DPTKO is shown in the **Appendix E**.

The key aesthetic landscape (soft landscape) includes the following;

1. Green Roofs

2. Roadside Planting

3. Vertical Greening

4. Screening planting along the site

4. Landscape Areas

3.3.1. Green roof

Six nos. of buildings, namely, Administration Building, Chemical Building, Reverse Osmosis & Electrical Building, Post-treatment Building, On-site Chlorine Generation System Building and CO2 Tanks Area, and Workshop are designed with green roof as showed in **Appendix E**. Groundcover will be the main vegetation provided in green roofs, the planting schedule and the proposed planting pattern for green roofs showed in **Appendix E**. The idea of the soft landscape design is to provide an extensive greening with low maintenance. The avoidance of tall shrubs and trees, especially near the PV panels which is situated in building Reverse Osmosis and Electrical Building are the concern not to block the normal operation of the PV panels.

3.3.2. Roadside planting

Apart from the undisturbed slopes in the periphery, the design incorporates roadside planting verges for ornamental trees, shrubs and groundcovers along the internal vehicular road. This will help provide shade while enhancing the visual amenity to the road users for visitors to the site. The proposed planting location and planting schedule are shown in **Appendix E**.

3.3.3. VERTICAL GREENING

7 no. of building, namely, ~~Administration Building~~, Reverse Osmosis Building, Main Electrical and Chiller Plant Building, ACTIDAFF, Product Waters Storage Tank, Post-treatment Building and Combined Shaft Building are designed with vertical greening. Due to the nature of the industrial site, features of climbers on a vertical fence of 1.5m/ 3.5m high are proposed along its east and west boundary. Along the northern edge abut to WSD reserve, 2.5m high wire mesh fence with vertical green is proposed. A 3.5m high fence wall with vertical green is also proposed to the west of the Site. Stainless steel wire and rope will be installed on wall and will act as the training system for the proposed climbing plant. The proposed planting location and species list are shown in **Appendix E**.

3.3.4. SCREENING PLANTING ALONG THE SITE

A 1.5m setback of fence at the main entrance is provided. In this setback zone, low shrubs and groundcover at a wavy pattern (**Appendix E**) is also provided to enhance the first impression of this particular Contract.

The establishment of functional tree belts to ameliorate external environmental effects such as noise, dust and unpleasant views is important consideration for this site – since it will be surrounded by roads with industrial heavy vehicles.

In addition to the aesthetic considerations the proposed trees, shrubs and groundcover planting will perform a number of functional roles. This will also provide a physical barrier between the hillside environment outside the site boundary and the areas inside the grounds of the facility, particular those adjacent to the main building blocks.

The plantation of heavy standard trees is extensively proposed on site as shown **Appendix E**. This will realize multiple environmental benefits including the provision of shade. Apart from the physical screening, the green buffer also functions as a noise barrier psychologically.

3.3.5. LANDSCAPE AREAS

Numerous landscape areas are provided at various locations such as, Main Entrance, Drop-off Plaza, Main Plaza, Landscape Plaza, Rain Garden, Courtyard area in Administration Building. Landscape designs at these locations are showed in **Appendix E**.

3.3.6. AESTHETIC TREATMENT OF ALL STRUCTURES

The siting and configuration of the DPTKO is designed to achieve a coherent suburban development consistent with the planning vision for TKO, and to create a compatible visual identity with the surrounding especially the adjacent Country Park (Clear Water Bay). The visual identity will focus on vigour and liveliness of TKO by identifying a family of façade materials, visual permeability at waterfront, matching of colour schemes, and fenestration control. The intervention of this contract activates the neighbourhood, inviting people to appreciate the built environment in the suburban distract.

The architectural design theme is a linear interpretation of water wave in macroscopical scale, which enhance/blend in with the surrounding environment and promote the green image of DPTKO. As "water" is the essence of the desalination plant, the character of water will be expressed throughout the design. The proposed construction materials and surface finishes will enhance/ blend in with the surrounding environment.

The key aesthetic treatment (hard landscape) includes the following;

1. Fairface concrete finishing for building structures;
2. Prefabricated fairface concrete façade cladding for building structures;
3. Paving materials of grey-tone colors in random mix as main floor finishes;
4. Permeable perimeter fence;
5. Architectural feature fins

3.3.7. FAIRFACE FINISHING

The buildings of DPTKO primarily use reinforced concrete with fairface concrete finish. The roofs are green or paved with light-colour materials and installed with solar panels. For the Administration Building, full-height glazing is designed to face north to maximise and diffuse natural light.

External façade deliberately uses fairface concrete as finish. The light grey colour of fairface concrete is a mixture of the natural colour of its ingredients, including aggregates, sand and cement. It is a neutral colour that blend in with other building materials and natural vegetation superbly. Architects world-wide are fond of using fairface concrete, to create creative identity to their buildings. With the combination of fairface concrete softened by vertical greening, the buildings blend into the surroundings, minimising the visual impact to both the neighbourhood and building users.

Some of the water storage tank and ancillary buildings will be appeared in traditional on-site cast fairfaced concrete façade. To enrich the façade and reduce the dullness along the site, texture paint finish is introduced to the buildings to echo with the rhythmic pattern for the DfMA façade building.

3.3.8. PREFABRICATED FAIRFACE CONCRETE FAÇADE CLADDING

Prefabricated fairface concrete façade cladding through DfMA system would be adopted for five buildings: ActiDAFF (a building in Pre-treatment Zone), Reverse Osmosis Building & Electrical Building, Post-Treatment Building, On-Site Chlorine Generation System Building and Product Water Storage Tank & Electrical Building. Typical building elevation with prefabricated fairface concrete

cladding and colors selected for the facade panels are shown in **Appendix F**. Arrangement of DfMA façade on these buildings is shown in **Appendix F**.

3.3.9. PAVING MATERIALS

Paving materials (mainly Paving Blocks) shall be hard wearing, durable and of low maintenance. Concrete paver in grey tone (dark grey, light grey, and brown) mix in a random manner will be employed as the main floor finishes for the pavement, the material schedule and paving module plan are as shown in **Appendix F.**

3.3.10. PERMEABLE PERIMETER FENCE

Two area of the fence will adopt permeable perimeter fence to capture sea breeze, the linear arrangement of the building blocks creates "cooling corridors" in the complex by facilitating air flow and maximising natural breezes during summer. This corridor cooling effect helps create more effective cross ventilations and avoid heat accumulation in the summer days. The design details are shown in **Appendix F**.

3.3.11. ARCHITECTURAL FEATURE FINS

Architectural feature fins with blue color tone at ActiDAFF Building Shades of blue color tones were adopted along the visitors' route. The selected colors will be applied to water pipes, GRP covers and architectural fins, to enrich the grey color of the fairface concrete. Most of the architectural fins articulated to form a wavy form in representing the relationship of the desalination plant and the sea. The rendering of feature fins is shown in **Appendix F.**

3.4. SLOPE MITIGATION WORKS (MM6)

The *Detailed Design Plan for Slope Mitigation Works* at Clear Water Bay Country Park have recommended protection/ mitigation measures to be implemented on site during the construction stage of this Project. All recommended protection/ mitigation measures shall be fully and properly implemented. No site clearance works for slope mitigation works of this Project shall be allowed prior to the completion of such protection/ mitigation works on site. The key slope mitigation measures extracted from Detailed Design Plan for Slope Mitigation Works include:

Flexible Barrier

The flexible barriers will be located away from the slope toe of the Clear Water Bay Country Park area. Thus, no flexible barriers will be installed within the Clear Water Bay Country Park area.

Rock Slope Stabilisation/ Improvement Works

Rock stabilization works shall be adjusted such that no tree will be felled, and no plant species of conservation importance shall be affected. The anchorage for the temporary working platform and access to be erected will be designed to avoid the plant species of conservation importance.

Hydroseeding and/or planting shrub seedlings will be provided to reinstate vegetation loss and disturbance at the area of slope stabilization works due to construction works, with regular monitoring and appropriate maintenance works to be carried out for a 12-month establishment period. Stone facing and tree rings to constructed hard surfaces (such as buttress wall and dentition) at the rock slope will be provided as landscaping measures to restore the natural finishes of the slopes. Wire mesh covering the rock face will be provided with opening to existing trees to avoid the trees.

Boulder Removal/ Break-off

The proposed boulder removal works will involve provision of temporary working platform and access of 600 mm around the boulder. To avoid direct conflict between the boulder removal and nearby plant species of conservation importance, protection zones/ works exclusion zones will be established at least 1 m radius from the identified plant species of conservation importance to preserve them on site.

The protection zones/ works exclusion zones will be established prior to site clearance and throughout the construction period to separate the identified protected plant individuals from the works.

The temporary working platform and temporary access will be designed to avoid anchorage on the plant species of conservation importance.

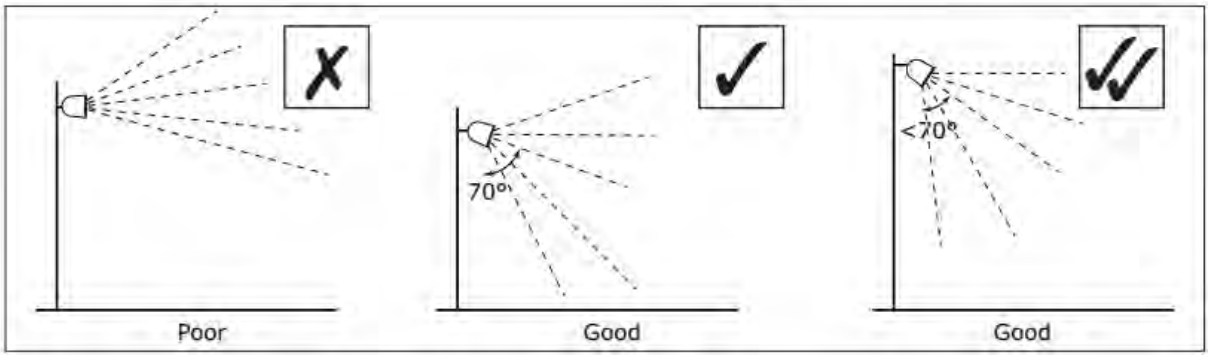
Detailed design of the slope mitigation measures at Clear Water Bay Country Park could be referred to Appendix H and *Detailed Design Plan for Slope Mitigation Works*.
(*https://www.tkodesal.hk/images/bv_tko_data/data/file/Detailed%20Design%20Plan_1.pdf*)

3.5. LIGHTING ARRANGEMENT (MM8)

3.5.1. GENERAL

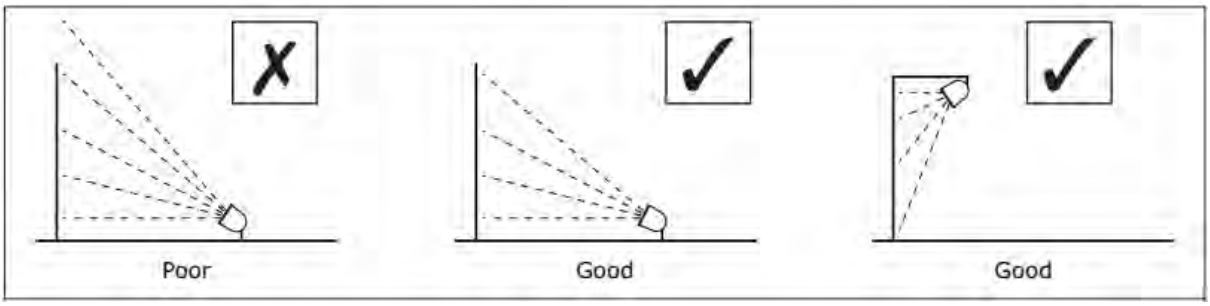
All lights provided in the construction site or the proposed desalination plant should have the following features to minimize light spill outside the contract area:

- The number of lighting should be kept minimum;
- The lux level should be designed just sufficient for safety purpose;
- Point light towards the Site to minimize light spill outside the contract boundary;
- Shielded with hood to prevent sky glow;
- High mounting light will have less spill light and glare;
- Aim light no greater than 70º;



Reference: Guidance Note 01/20 Guidance Notes for the Reduction of Obtrusive Light

- Where light has to be pointed upward, adjust the light direction to ensure no spillage outside the target.



Reference: Guidance Note 01/20 Guidance Notes for the Reduction of Obtrusive Light

3.5.2. GARDEN LIGHTS IN OPERATION PHASE

The outdoor landscape lighting system is crafted with LED bollard lighting along the pathway and spotlight implants to the landscape area will light up the entire garden at night-time that creates a fascinating foreground focal area. Bollard light with low lux level just enough for illuminating the garden will be adopted. The light will be diffused without pointing in one direction. The proposed lighting plan can be found in **Appendix G**.

4. TREE FELLING AND PRESERVATION PROPOSAL (MM4)

As mentioned in the background in Section 1, the site was formed and handed over to WSD for desalination plant development. A tree Survey was carried out by the Contractor after possession of site. 11 nos. of existing trees were recorded within the Site boundary in the Tree Survey conducted on 10 & 19 February 2020. Nine trees are proposed to be removed and two trees will be retained on site. A tree survey result is provided in **Table 4.1** and **Appendix B**, tree treatment summary is provided in **Table 4.2**

11 nos. of existing trees were recorded within the Site boundary in the Tree Survey conducted on 10 & 19 February 2020. A summary of findings is provided below:

Table 4.1 Summary of Tree Survey Results

Scientific Name	Chinese Name	No. of tree(s)
Acacia confusa	台灣相思	2
Ficus microcarpa	細葉榕	1
Ficus subpisocarpa	筆管榕	2
Macaranga tanarius var. tomentosa	血桐	4
Mallotus paniculatus	白楸	1
Sterculia lanceolata	假蘋婆	1
	Total nos. of trees	**11**

Table 4.2 Summary of Proposed Treatment to Existing Trees

Report record	No. of tree(s) to be retained	No. of tree(s) to be transplanted	No. of tree(s) to be removed	Total nos. of tree(s)
Tree Survey	2	0	9	11

9 nos. of compensatory trees are proposed to make up 1:1 compensatory ratio in terms of quantity. The Tree Survey Plan, Tree Assessment Schedule and Compensatory Tree Planting Plan has been included in **Appendix B** for reference. The compensatory tree planting schedule is illustrated below:

Table 4.3 Compensatory Tree Planting Schedule

Scientific Name	Chinese Name	Size	DBH (mm)	Live Crown Ratio	Planting Spacing	Quantity (No.)
Pongamia pinnata	水黃皮	Heavy Standard (6m(HT) x 2m (Spread))	95mm	60%	5m	6
Grevillea banksii	紅花銀樺	Heavy Standard (6m(HT) x 2m (Spread))	95mm	60%	5m	3

5. CONSTRUCTION MITIGATION MEASURES

Located in the public filling area, the site is not visually attractive and looks similar to a construction site. Nevertheless, landscape and visual mitigation measures in construction phase are recommended as below:

5.1. BLENDING IN WITH THE EXISTING LANDSCAPE AND VISUAL

- Construction area and works shall be minimized to prevent affecting nearby landscape environment;
- Area of temporary structures, such as the contractor's office, shall be minimized to a practical minimum and located at less visual prominent locations.
- Decorative hoarding with appropriate colours compatible with the surrounding area shall be erected around all works areas to minimize the visual impacts;
- Avoid potential impact on existing coastline and seashore

5.2. PROVIDING SOFT LANDSCAPING

- Exposed area and soil stockpiles shall be hydroseeded or covered with visually unobtrusive materials/ tarpaulins;
- Green roofs shall be considered on site office where possible;
- Commence landscape planting at locations where construction work has been completed.

5.3. CONSERVING/RECOVERING EXISTING GREENERY

- Existing trees near the Contract Boundary and slope mitigation work areas, and retained trees within site boundary shall be carefully protected. Detailed Tree Protection Specification shall be followed;
- The Contractor shall include a detailed working method statement for the protection of trees prior to conducting any works next to all retained trees;
- Trees unavoidably affected by the works shall be transplanted where practicable. Where possible, trees should be transplanted direct to permanent locations rather than temporary holding nurseries.

5.4. IMPLEMENTING GOOD SITE PRACTICES/ OTHER RECOMMENDED MITIGATION MEASURES

- Sufficient drainage system shall be provided to control run-off from entering the sea;

- All night-time lighting will be reduced to a practical minimum both in terms of number of units and lux level and will be hooded and directional (See Sec.**3.4**).

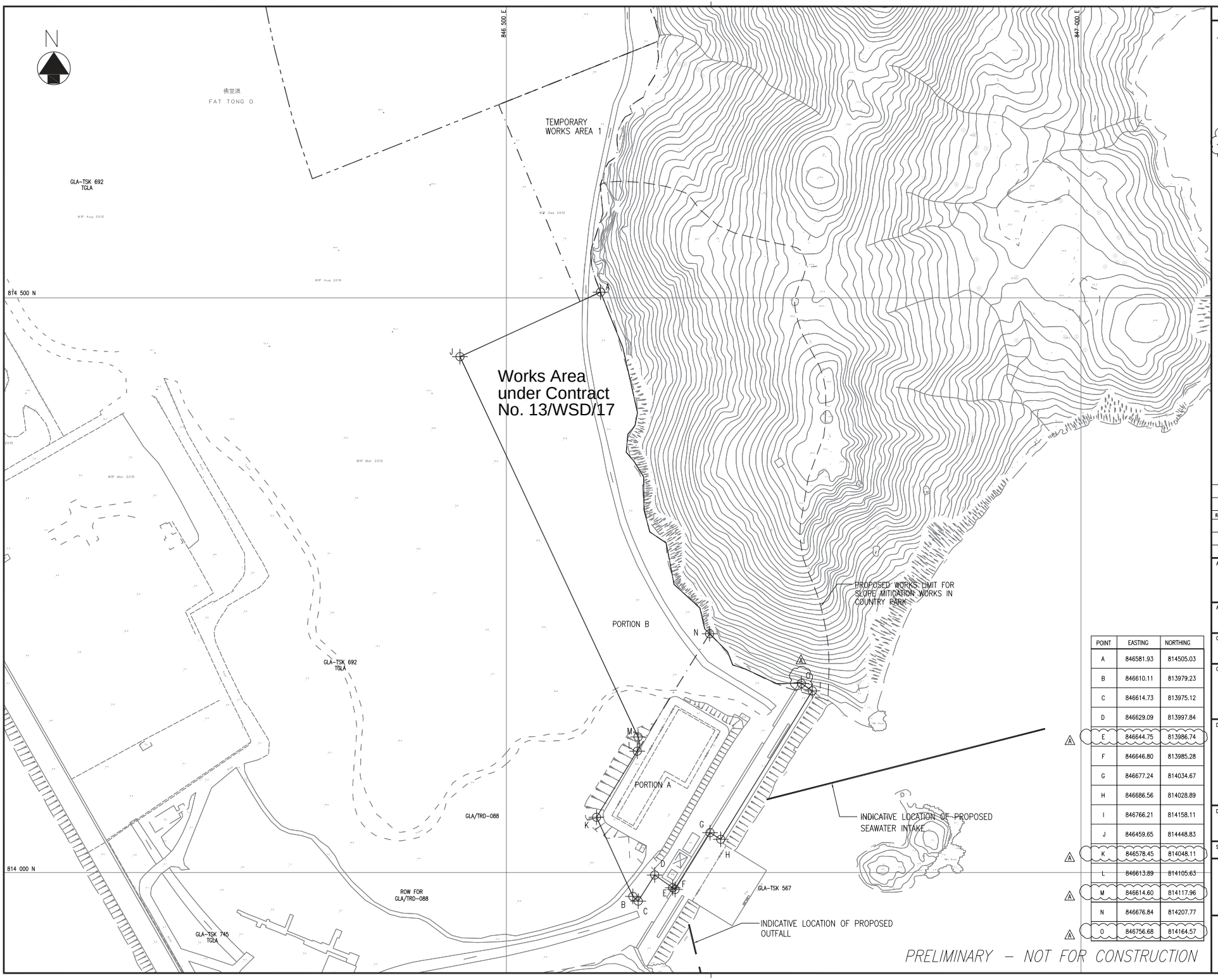
5.5. CONDUCTING REGULAR SITE AUDIT

- Site inspection shall be undertaken regularly to ensure mitigation measures are being effectively implemented;
- Coordinate implementation programme with concurrent contract, if any, to minimize potential cumulative impacts and where possible reduce the period of disturbance to visual context.

6. CONCLUSION

The landscape and visual mitigation measures to be implemented under Contract No. 13/WSD/17 have complied with the requirements and recommendations contained in the EIA Report (Register No. AEIAR-192/2015), the EP, the FEP and ERR. All measures recommended in this LVMP will be fully and properly implemented and maintained for the Contract.

Appendix A – Layout Plan of Works Area under Contract No. 13/WSD/17



LEGEND:

- BOUNDARY OF SENT LANDFILL EXTENSION
- BOUNDARY OF WORKS AREA FOR TKO DESALINATION PLANT
- SITE PHASING
- ALLOCATED LAND BOUNDARIES

GLA-TSK 692 TGLA

NOTE: TEMPORARY WORKS AREA 1 WILL BE HANDED OVER AT +6 MPD WITH A TOLERANCE OF ±500mm.

POINT	EASTING	NORTHING
A	846581.93	814505.03
B	846610.11	813979.23
C	846614.73	813975.12
D	846629.09	813997.84
E	846644.75	813986.74
F	846646.80	813985.28
G	846677.24	814034.67
H	846686.56	814028.89
I	846766.21	814158.11
J	846459.65	814448.83
K	846578.45	814048.11
L	846613.89	814105.63
M	846614.60	814117.96
N	846676.84	814207.77
O	846756.68	814164.57

Revision	Date	Description	Initial
B	10/03	UPDATE NOTES	YLC
A	07/18	UPDATE COORDINATES	YLC

	Designed	Checked	Drawn	Checked
Initial	YLC	CKH	SZ	WLS
Date	02/18	02/18	02/18	02/18

Approved

Agreement No.
CE 8/2015 (WS)

Contract No.
13/WSD/17

Contract Title
DESIGN, BUILD AND OPERATE FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

Drawing Title
SITE HANDOVER WORKS AREAS

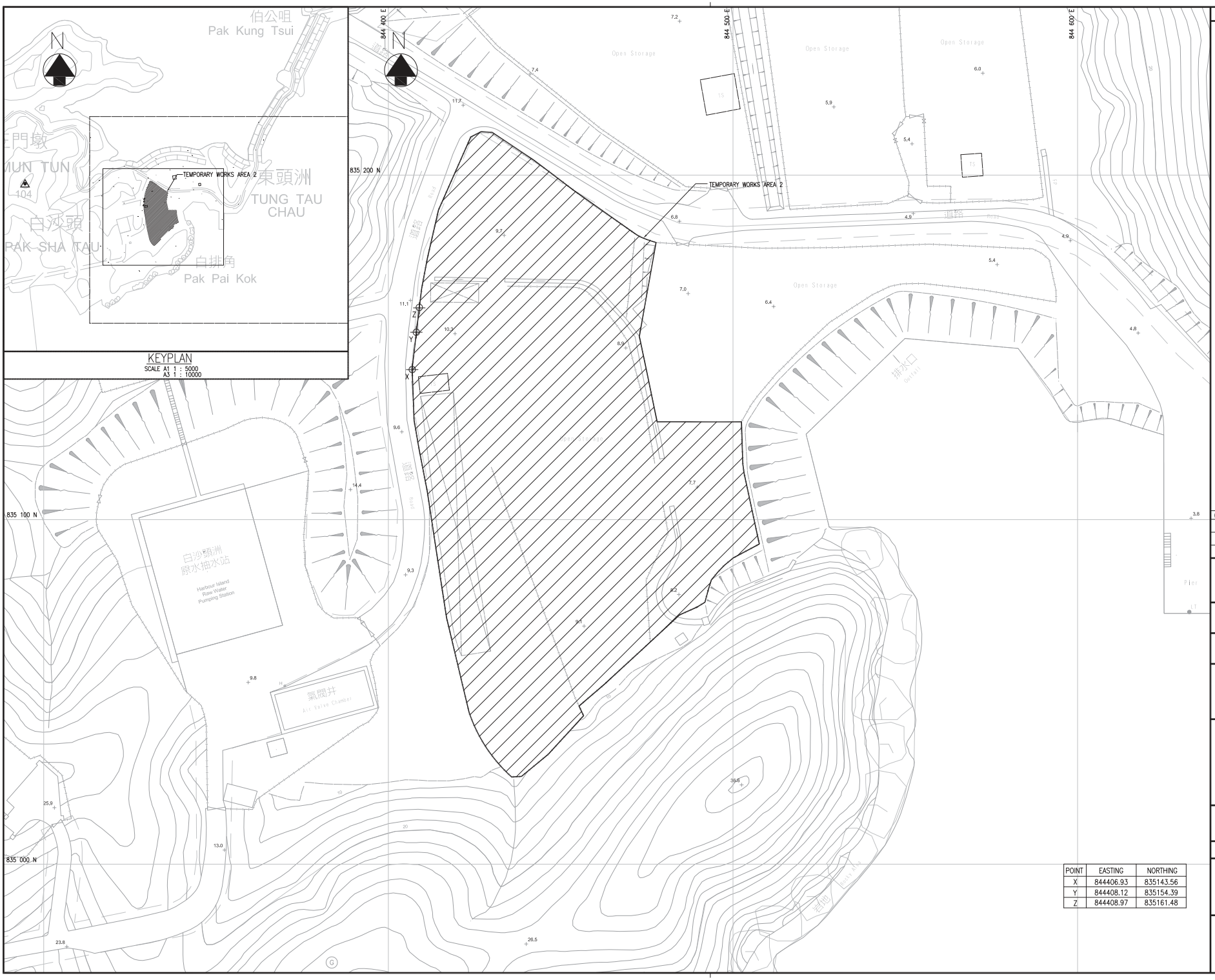
Drawing No.
190495/K/TEND/10/0003

Revision
B

Scale
A1 1 : 1500
A3 1 : 3000

水務署
Water Supplies Department

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司



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LEGEND:

TEMPORARY WORKS AREA 2

POINT	EASTING	NORTHING
X	844406.93	835143.56
Y	844408.12	835154.39
Z	844408.97	835161.48

Revision	Date	Description			Initial
	Designed	Checked	Drawn	Checked	
Initial	TT	CKH	SZ	WLS	
Date	02/18	02/18	02/18	02/18	

Approved

Agreement No.
CE 8/2015 (WS)

Contract No.
13/WSD/17

Contract Title
DESIGN, BUILD AND OPERATE FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

Drawing Title
TEMPORARY WORKS AREA 2

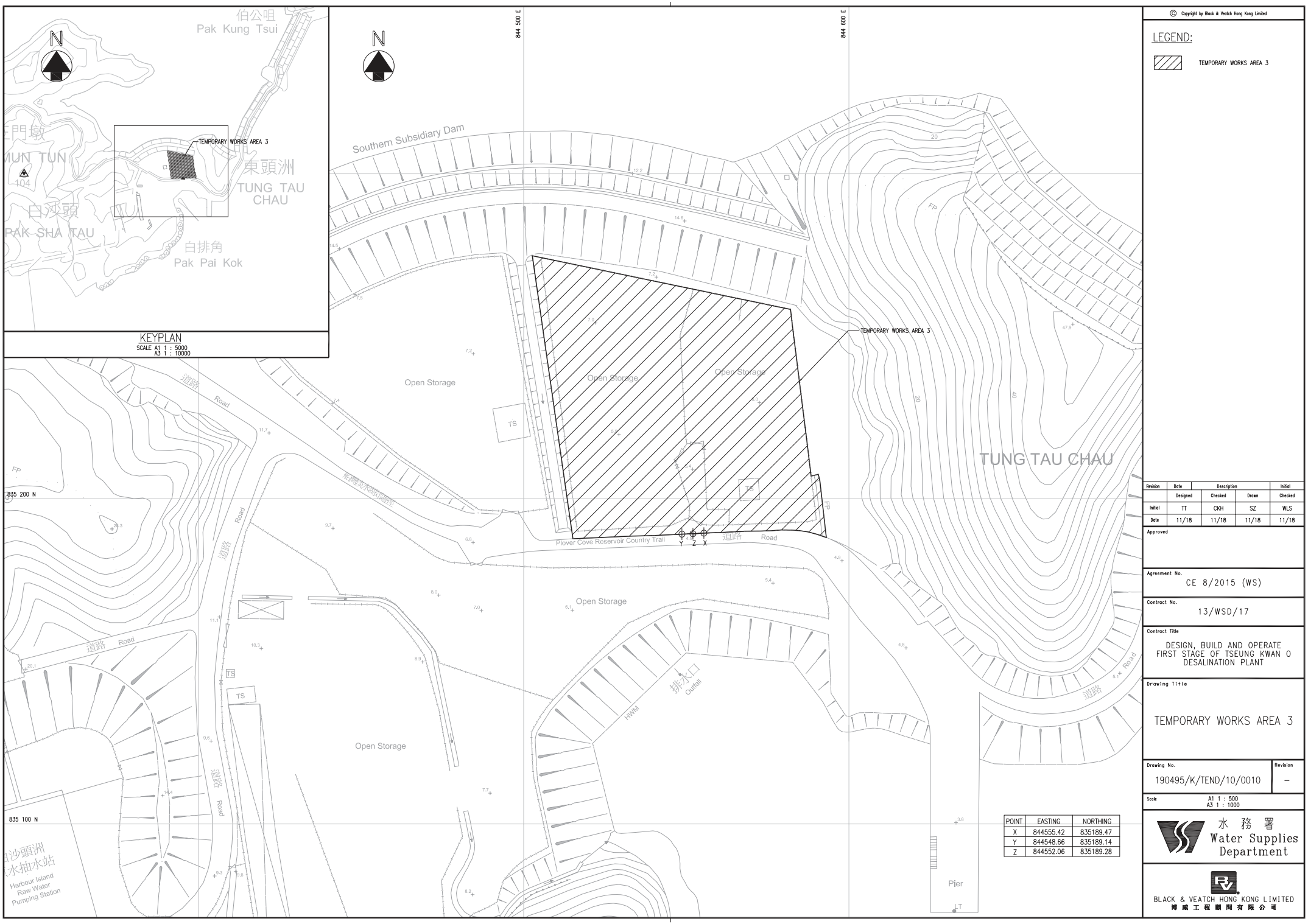
Drawing No.
190495/K/TEND/10/0007

Revision
–

Scale
A1 1 : 500
A3 1 : 1000

水 務 署
Water Supplies Department

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司



POINT	EASTING	NORTHING
X	844555.42	835189.47
Y	844548.66	835189.14
Z	844552.06	835189.28

LEGEND:

TEMPORARY WORKS AREA 3

Revision	Date	Description			Initial
	Designed	Checked	Drawn		Checked
Initial	TT	CKH	SZ		WLS
Date	11/18	11/18	11/18		11/18

Approved

Agreement No.
CE 8/2015 (WS)

Contract No.
13/WSD/17

Contract Title
DESIGN, BUILD AND OPERATE FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

Drawing Title
TEMPORARY WORKS AREA 3

Drawing No.
190495/K/TEND/10/0010

Revision
–

Scale
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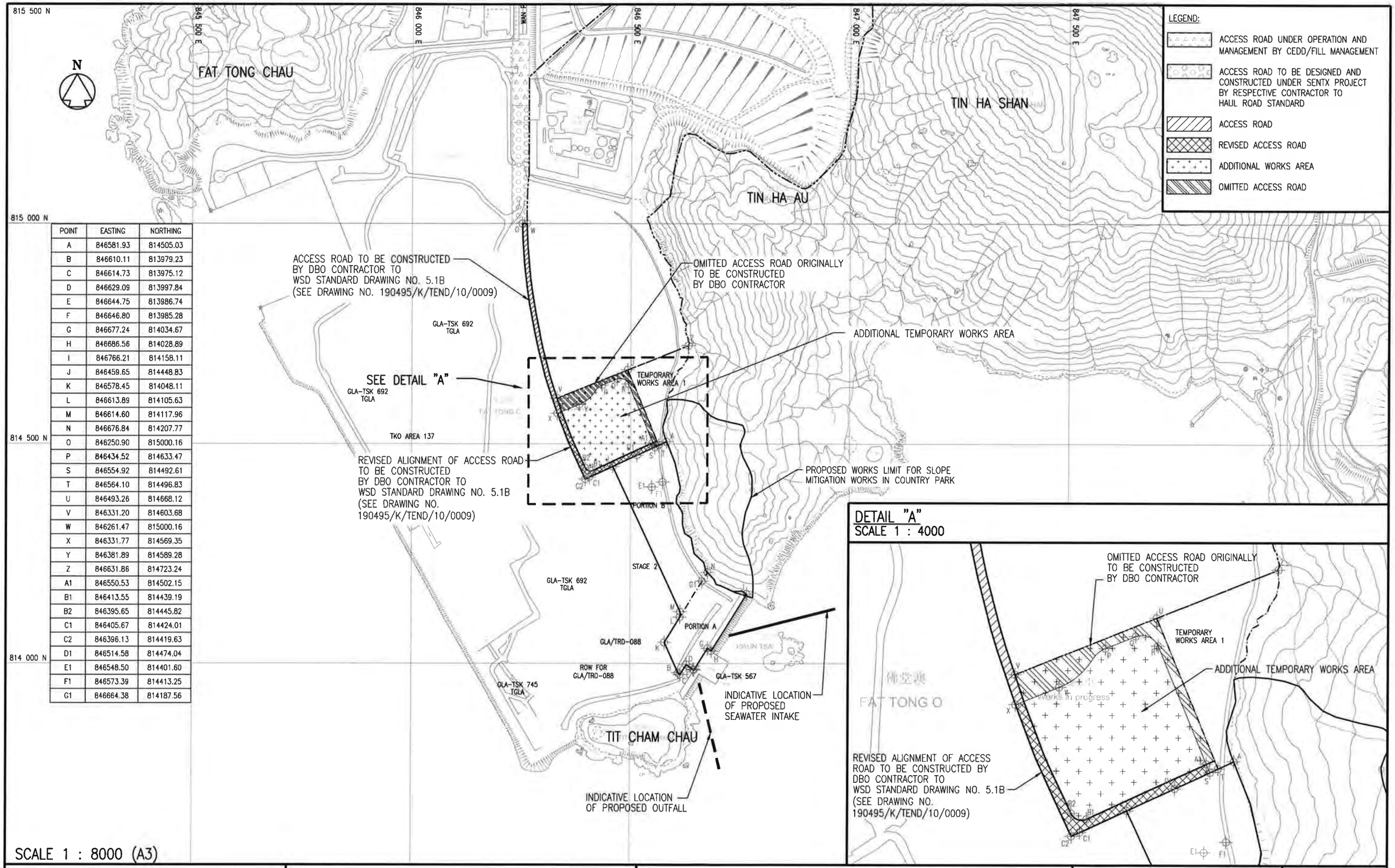
A3 1 : 1000

水務署
Water Supplies Department

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

POINT	EASTING	NORTHING
A	846581.93	814505.03
B	846610.11	813979.23
C	846614.73	813975.12
D	846629.09	813997.84
E	846644.75	813986.74
F	846646.80	813985.28
G	846677.24	814034.67
H	846686.56	814028.89
I	846766.21	814158.11
J	846459.65	814448.83
K	846578.45	814048.11
L	846613.89	814105.63
M	846614.60	814117.96
N	846676.84	814207.77
O	846250.90	815000.16
P	846434.52	814633.47
S	846554.92	814492.61
T	846564.10	814496.83
U	846493.26	814668.12
V	846331.20	814603.68
W	846261.47	815000.16
X	846331.77	814569.35
Y	846381.89	814589.28
Z	846631.86	814723.24
A1	846550.53	814502.15
B1	846413.55	814439.19
B2	846395.65	814445.82
C1	846405.67	814424.01
C2	846396.13	814419.63
D1	846514.58	814474.04
E1	846548.50	814401.60
F1	846573.39	814413.25
G1	846664.38	814187.56



SCALE 1 : 8000 (A3)

DETAIL "A"
SCALE 1 : 4000

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

CONTRACT NO. 13/WSD/17
DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Title:

REVISED ACCESS ROAD AND
ADDITIONAL WORKS AREA

Date: 05/12/2019	Drafted by SCT
Outgoing letter Ref. No.: ---	Checked by SW
Reference Drawing: ---	Approved by RW
Sketch No.: SK/190495B/C13/48-05001	Rev.: 0

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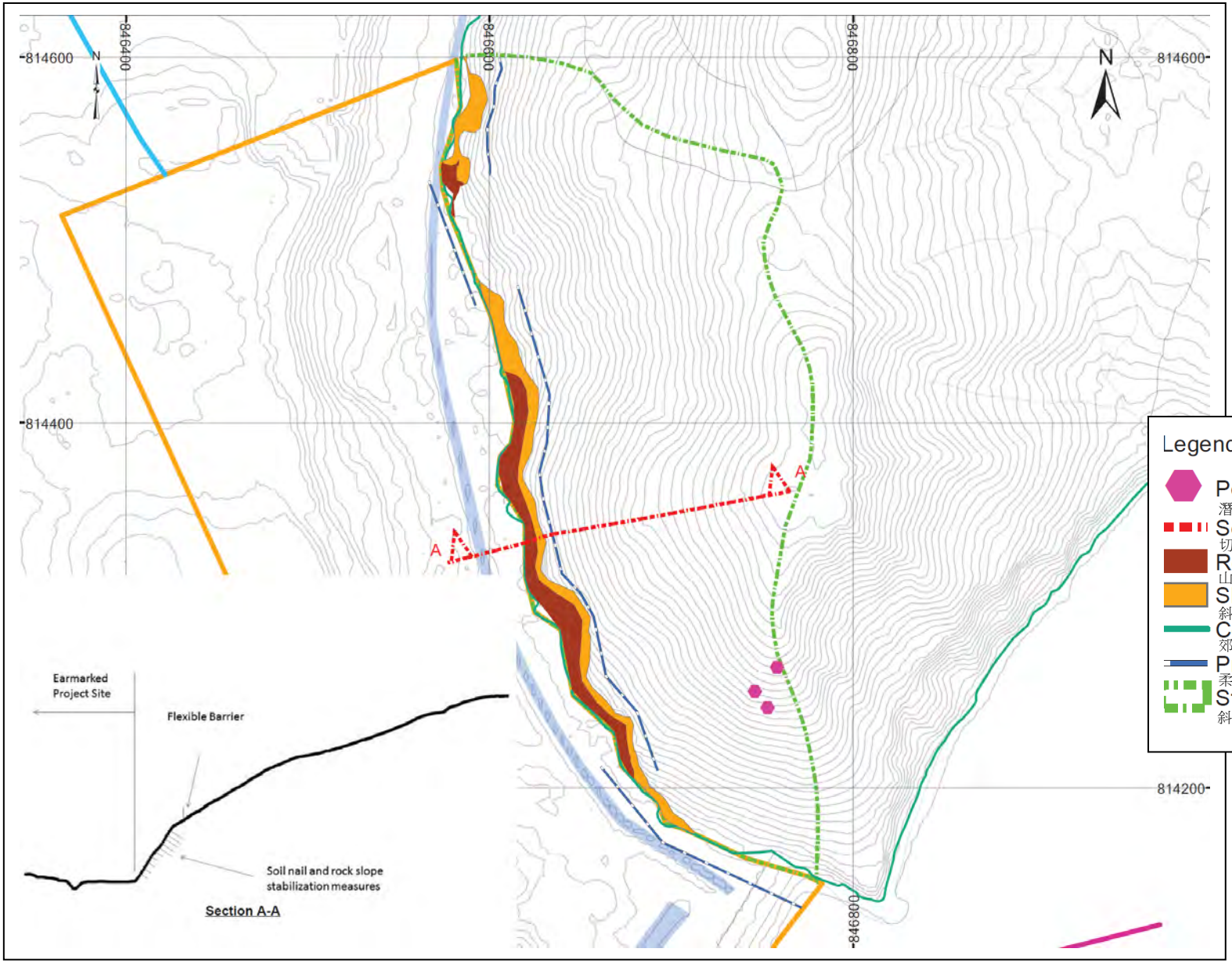


Legend **圖例:**

- Potential Unstable Boulder 潛在不穩定巨石
- Section A - A 切面圖 A-A
- Rock Slope Stabilization Measures 山坡礫石穩固措施
- Slope Stabilization Measures 斜坡穩定措施
- Country Park Boundary 郊野公園界線
- Proposed Flexible Barrier (Note 1) 柔性泥石防禦網 (註一)
- Study Area for Slope Mitigation Work 斜坡緩解工程的研究範圍

Note (註):

1) Indicative alignment opening will be provided for wildlife passage
指示對準開口將提供野生動物通道

Project Title: Desalination Plant at Tseung Kwan O
工程項目名稱: 將 軍 澳 海 水 化 淡 廠
Slope Mitigation Works within the Clear Water Bay Country Park
位於清水灣郊野公園範圍內的斜坡緩解工程

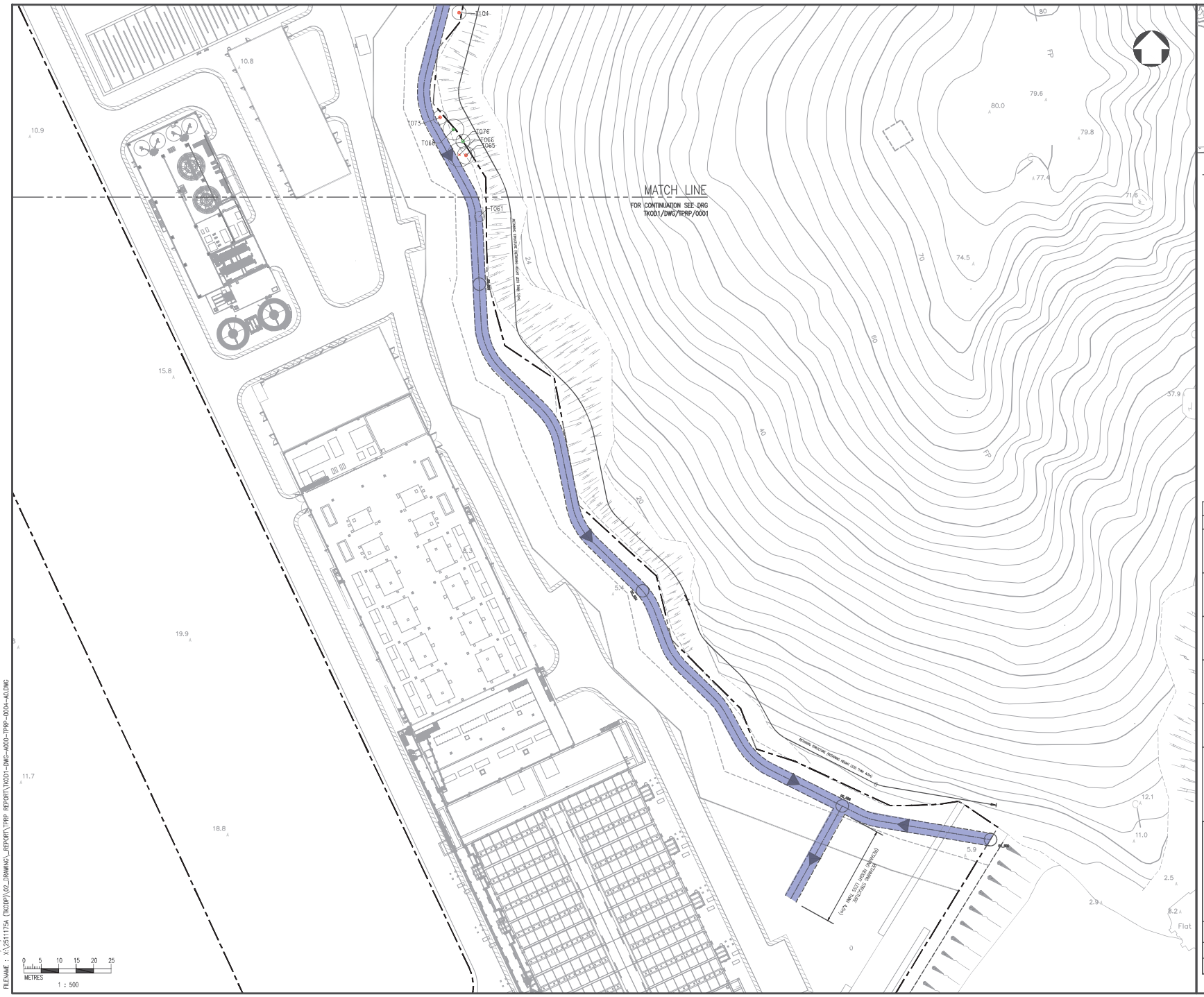
Plan originated from the Figure 2.3d of approved EIA Report: AEIAR-192/2015
圖則源自已批准環評報告–AEIAR-192/2015 內的圖 2.3d

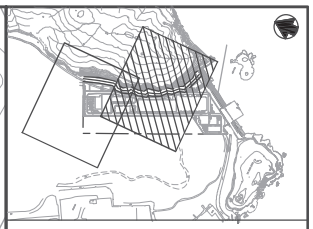
Environmental Protection Department
環境保護署

Environmental Permit No. FEP-01/503/2015/A
環境許可證編號: FEP-01/503/2015/A

Figure 2
圖二

Appendix B – Tree Survey Result





LEGEND

- SITE BOUNDARY
- PROPOSED OPEN CAHNNEL
- T175 EXISTING TREE TO BE RETAINED
- T173 EXISTING TREE TO BE FELL

Rev	Description	By	Date
A0	APPROVAL IN PRINCIPLE	CAD	11 AUG 2020

Employer: 水務署 Water Supplies Department

Supervising Officer designate: BLACK & VEATCH

Design Checker: ARCADIS Design & Consultancy for natural and built assets

Contractor: acciona AJC Joint Venture

Designer: wsp In Association with APU

Project title

Contract No. 13/WSD/17
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title

TREE SURVEY PLAN
OVERLAID PROPOSED WORKS

(SHEET 2 OF 2)

Drawing no.	Rev.
TKOD1/DWG/A000/TPRP/0004	A0

Drawn	Date	Checked	Approved
CAD	15JUL2020	VT	–

Scale: 1:500 (A3) Status: –

DATE: 8/20/20
FILENAME : X:\251117SA (TKODP)\02_DRAWING_REPORT\TPRP REPORT\TKOD1-DWG-A000-TPRP-0004-A0.DWG

Tree Assessment Schedule

Project Title: Contract No. 13/WSD/17 Design, Build and Operation First Stage of Tseung Kwan O Desalination Plant

Appendix B

Date of inspection: 10 & 19 Feb 2020

Prepared by Tree Specialist: Mr. Curtis Lai (#ISA Certified Arborist: HK-1584A) & Mr. Drek Yeung (#ISA Certified Arborist: HK-1093A)

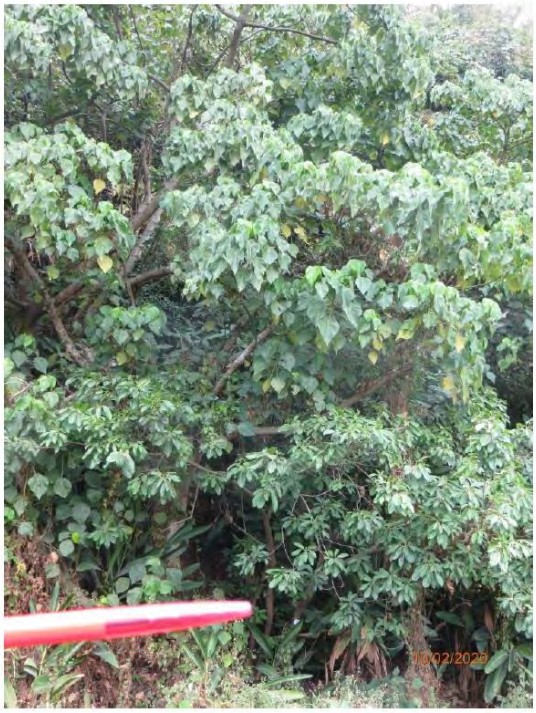
Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/ No)	OVT or Potential OVT (Yes/ No)	Maintenance department to provide comments on TPRP		Recommendation	Justification of tree felling	Additional Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/Medium/Low)	(Good/Average/Poor)			(High/Medium/Low)	Remarks			Before	After	(Retain/ Transplant/Remove)		
T061	*Mallotus paniculatus*	白楸	5	130	3	M	A	A	A	L	-	N	N	CEDD	WSD	R	1, 4, 5	Leaning
T065	*Ficus subpisocarpa*	菩提榕	5	188	5	M	A	A	A	L	-	N	N	CEDD	WSD	R	1, 4	Multiple trunks
T066	*Ficus subpisocarpa*	菩提榕	9	200	7	M	A	A	A	L	-	N	N	CEDD	WSD	R	1, 4	-
T068	*Macaranga tanarius* var. *tomentosa*	血桐	7	165	6	L	P	A	A	L	On slope	N	N	CEDD	WSD	Re	-	Crooked trunk
T073	*Macaranga tanarius* var. *tomentosa*	血桐	7	160	4	L	P	A	A	L	-	N	N	CEDD	WSD	R	1, 4, 5	Trunk wound, crooked trunk
T076	*Ficus microcarpa*	細葉榕	5	120	4	M	A	A	A	L	On slope	N	N	CEDD	WSD	Re	-	-
T104	*Sterculia lanceolata*	假蘋婆	6	105	4	M	A	A	A	L	-	N	N	CEDD	WSD	R	1, 2, 4	-
T109	*Macaranga tanarius* var. *tomentosa*	血桐	6	160	4	M	A	A	A	L	-	N	N	CEDD	WSD	R	1, 4, 5	-
T129	*Acacia confusa*	台灣相思	9	300	7	L	P	A	A	L	-	N	N	CEDD	WSD	R	1, 4, 5	Asymmetric crown
T137	*Acacia confusa*	台灣相思	13	472	12	M	A	A	A	L	-	N	N	CEDD	WSD	R	1, 3, 4, 5	Branch conflict with T138
T138	*Macaranga tanarius* var. *tomentosa*	血桐	10	180	7	L	P	A	A	L	-	N	N	CEDD	WSD	R	1, 3, 4, 5	Branch conflict with T137

Remarks:

***Justification of tree felling**

1. Tree is in direct conflict with the proposed works
2. Preparation of intact and sufficient-sized root ball is not practical due to the topography (e.g. steep slope, shallow substratum, structures)
3. Tree with poor health and/or form and/or structural condition for transplantation.
4. Lack of access for transplantation machinery or vehicle.
5. Species of low post-transplantation survival rate.

T061



T065

T066

T068

T073

T076

T104

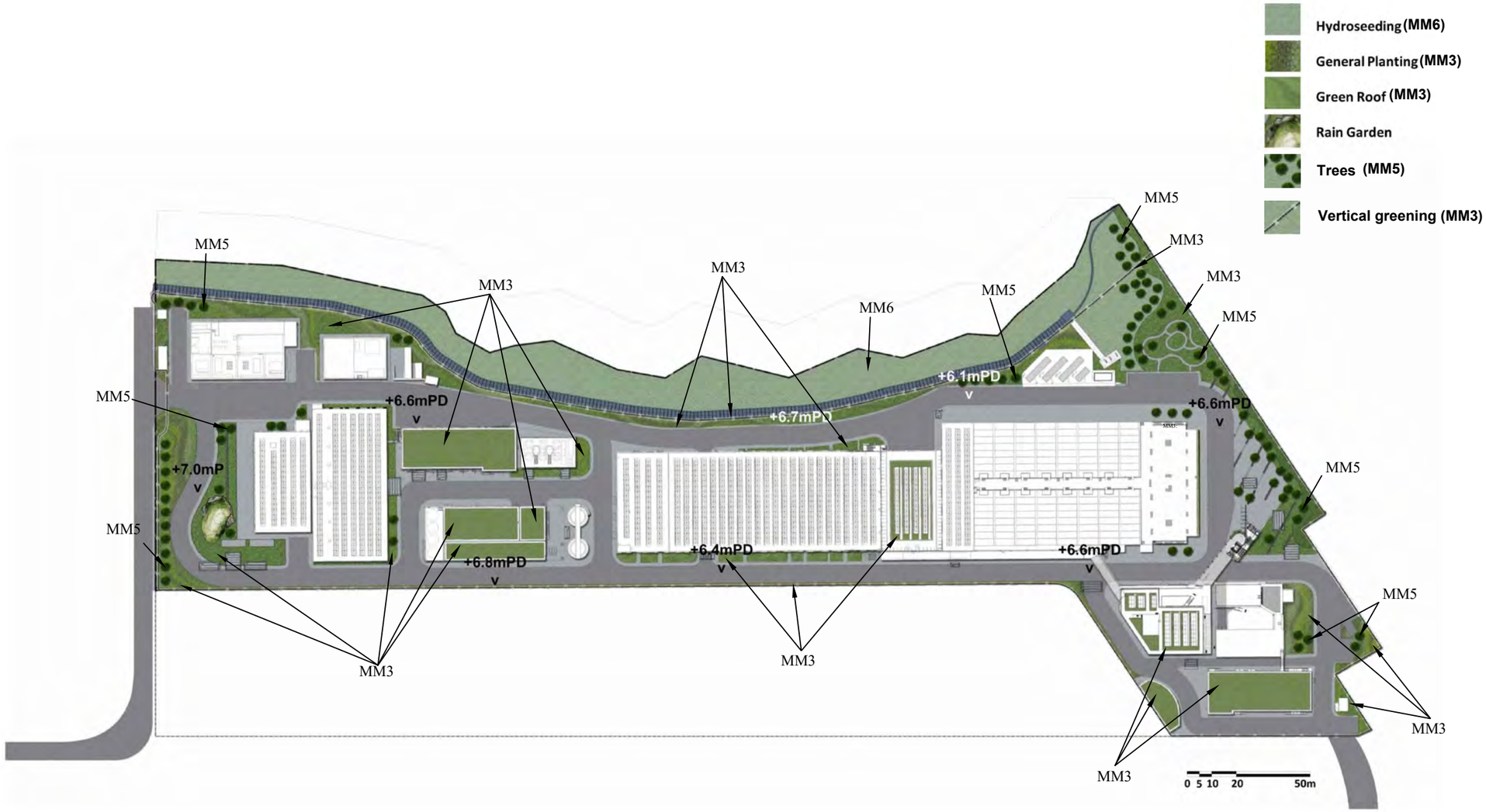
T109

T129

T137

T138

Appendix C – Implementation of L&V Mitigation Measure (Operational Stage)



Mitigation Measure:

MM3:
Design principles will be adopted to take into account the surrounding area, particularly Clear Water Bay Country Park behind and the nearby waterfront, with due consideration given to:

- green roofs where practical (ie without equipment on the roof);
- roadside planting;
- aesthetic treatment of all structures;
- vertical greening;
- screen planting along application site; and
- landscape enhancement with amenity planting where practical, including planting along the edge (site boundary) fence with native shrubs where feasible, to reduce their visual impact and blend them into the surrounding landscape.

MM 5:
No Tree within the Country Park will be felled. Trees within the Site unavoidably affected by the works will be transplanted where practical. For trees that need to be felled, compensatory planting will be provided to the satisfaction of relevant Government departments.

A compensatory tree planting proposal including locations of tree compensation will be submitted to seek relevant government department's approval, in accordance with DEVB TC(W) No. 4/2020.

MM6:
Any slope mitigation works necessary to address natural terrain hazards, will be minimized to minimize any potential environmental impact to the Country Park e.g. soil nailing and rock stabilization will aim to avoid existing trees e.g. should any restoration of vegetation be necessary, the best planting matrix with native species will be established, with the aim of resembling the existing vegetation.

Remark:

1. The mitigation measure only include operation stage mitigation measure
2. Detail of MM8 could be refer to Appendix G.

Project:
Contract No. 13/WSD/17
Design, Build and Operation of Tseung Kwan O Desalination Plant

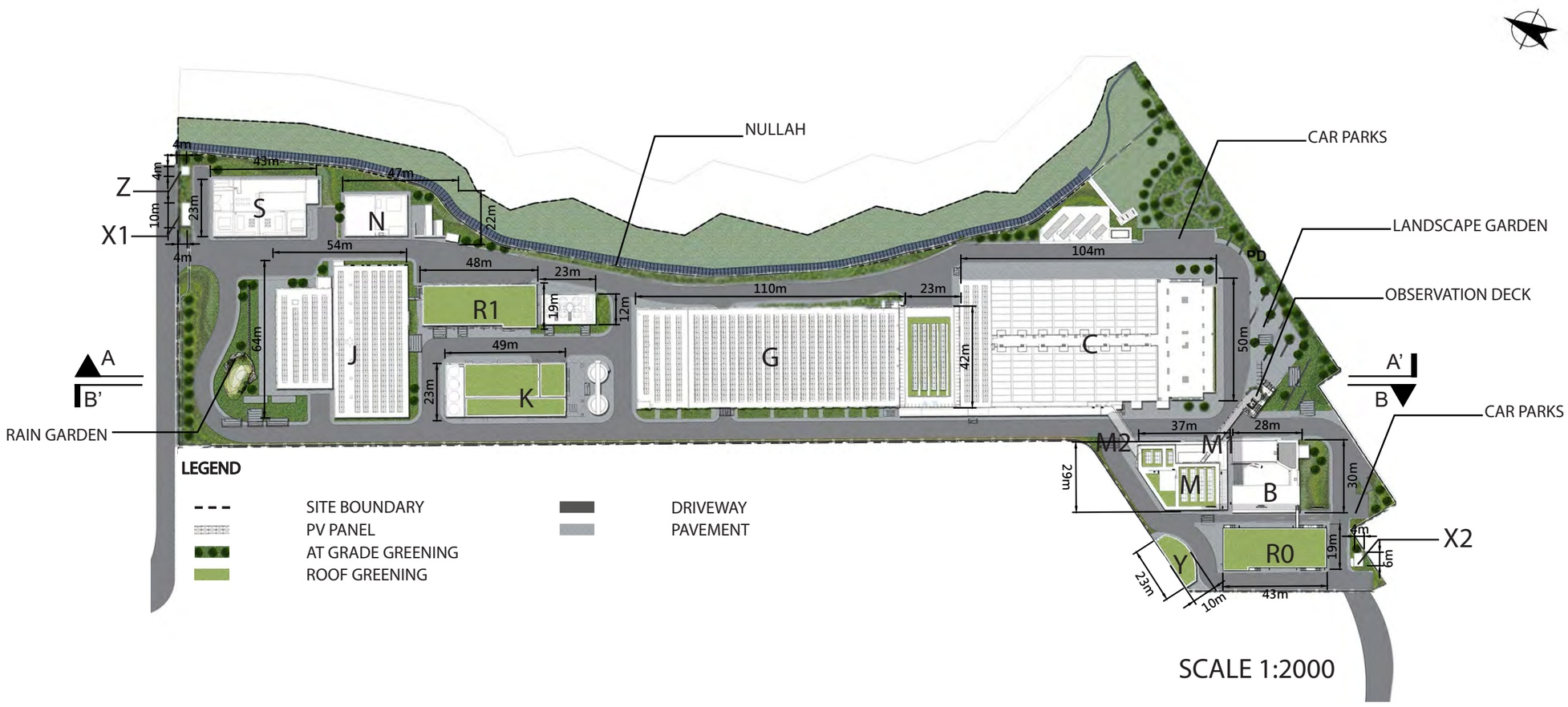
Implementation of L&V Mitigation Measure (Operational Stage)

Scale
A4 1:500

ACUITY SUSTAINABILITY CONSULTING LIMITED

Appendix D – DPTKO Building Layout Plan

Appendix D - Layout Plan of TKO Desalination Plant



LEGEND

M - ADMINISTRATION BUILDING
M1- ELEVATED WALKWAY
V- INSPECTION CORRIDOR
B - COMBINED INTAKE & OUTFALL SHAFT
R0 - CHEMICAL BUILDING
C - ACTIDAFF
G - REVERSE OSMOSIS & ELECTRICAL BUILDING
K - POST-TREATMENT BUILDING
J - PRODUCT WATER STORAGE TANK AND ELECTRICAL BUILDING
R1 - ON-SITE CHLORINE GENERATION SYSTEM BUILDING AND CO^2 TANK AREA

N - MAIN ELECTRICAL & CHILLER PLANT BUILDING
S - TKO DESALINATION PLANT SUBSTATION
Z - MASTER METER ROOM
X1 - GUARD HOUSE A
X2 - GUARD HOUSE B
Y - WORKSHOP

LEGEND

M - ADMINISTRATION BUILDING
M1- ELEVATED WALKWAY
V- INSPECTION CORRIDOR
B - COMBINED INTAKE & OUTFALL SHAFT
R0 - CHEMICAL BUILDING
C - ACTIDAFF
G - REVERSE OSMOSIS & ELECTRICAL BUILDING
K - POST-TREATMENT BUILDING
J - PRODUCT WATER STORAGE TANK AND ELECTRICAL BUILDING
R1 - ON-SITE CHLORINE GENERATION SYSTEM BUILDING AND CO^2 TANK AREA
N - MAIN ELECTRICAL & CHILLER PLANT BUILDING
S - TKO DESALINATION PLANT SUBSTATION
Z - MASTER METER ROOM
X1 - GUARD HOUSE A
X2 - GUARD HOUSE B

LEGEND

- SITE BOUNDARY
- PV PANEL
- AT GRADE GREENING
- ROOF GREENING
- DRIVEWAY
- PAVEMENT

SCALE 1:1000

LEGEND

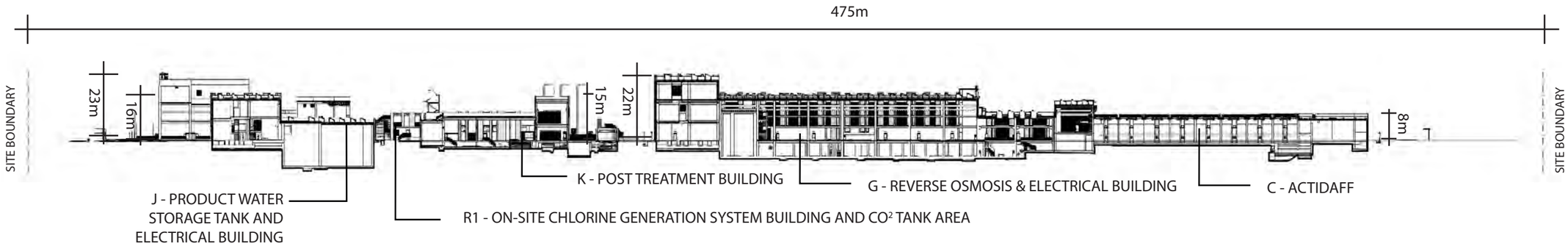
M - ADMINISTRATION BUILDING
M1- ELEVATED WALKWAY
V- INSPECTION CORRIDOR
B - COMBINED INTAKE & OUTFALL SHAFT
R0 - CHEMICAL BUILDING
C - ACTIDAFF
G - REVERSE OSMOSIS & ELECTRICAL BUILDING
K - POST-TREATMENT BUILDING
J - PRODUCT WATER STORAGE TANK AND ELECTRICAL BUILDING
R1 - ON-SITE CHLORINE GENERATION SYSTEM BUILDING AND CO^2 TANK AREA
N - MAIN ELECTRICAL & CHILLER PLANT BUILDING
S - TKO DESALINATION PLANT SUBSTATION
Z - MASTER METER ROOM
X1 - GUARD HOUSE A
X2 - GUARD HOUSE B

LEGEND

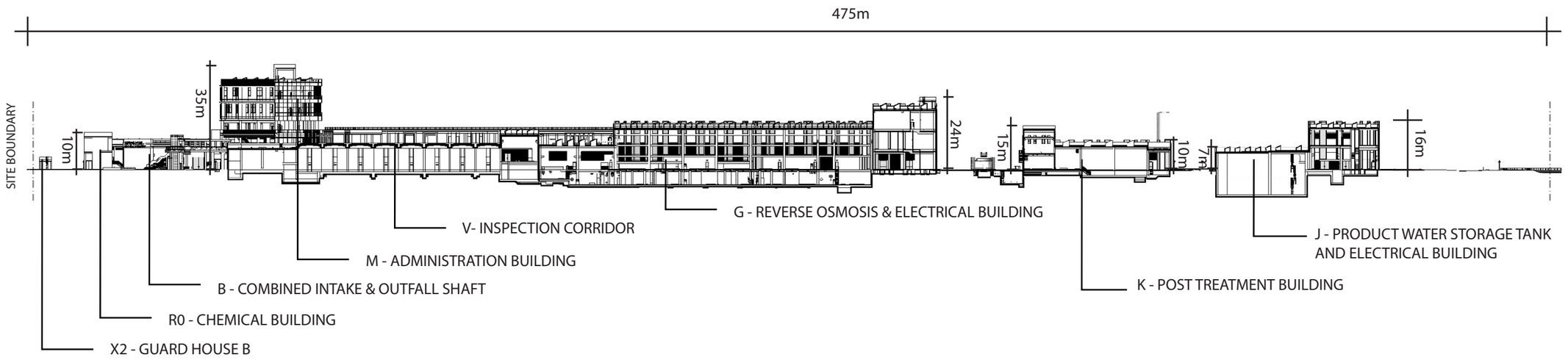
SITE BOUNDARY
PV PANEL
AT GRADE GREENING
ROOF GREENING
DRIVEWAY
PAVEMENT

SCALE 1:1000

SITE SECTION AA'



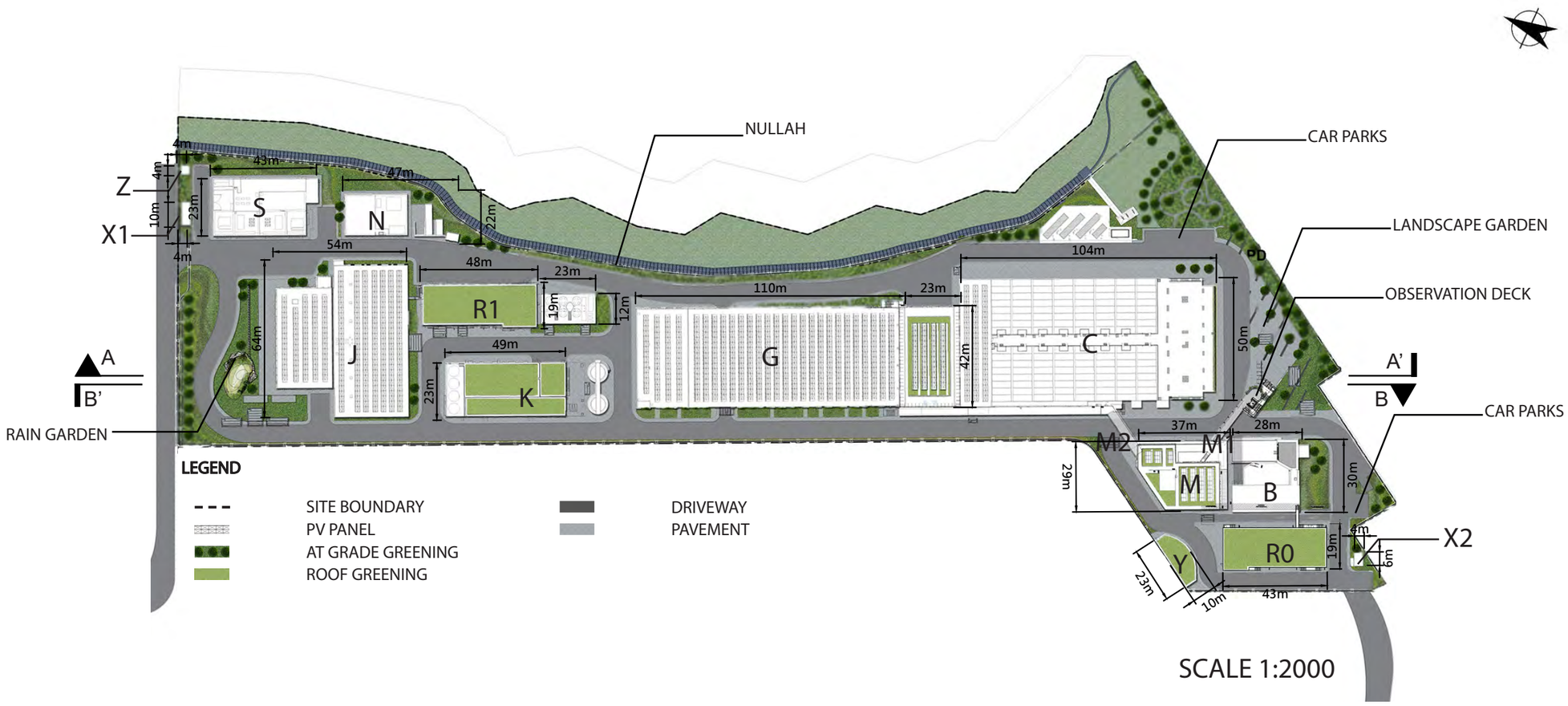
SITE SECTION A-A (SCALE 1:500)



SITE SECTION B-B (SCALE 1:500)

Appendix E – Soft Landscape Design

App E - Soft landscape design (Overview)

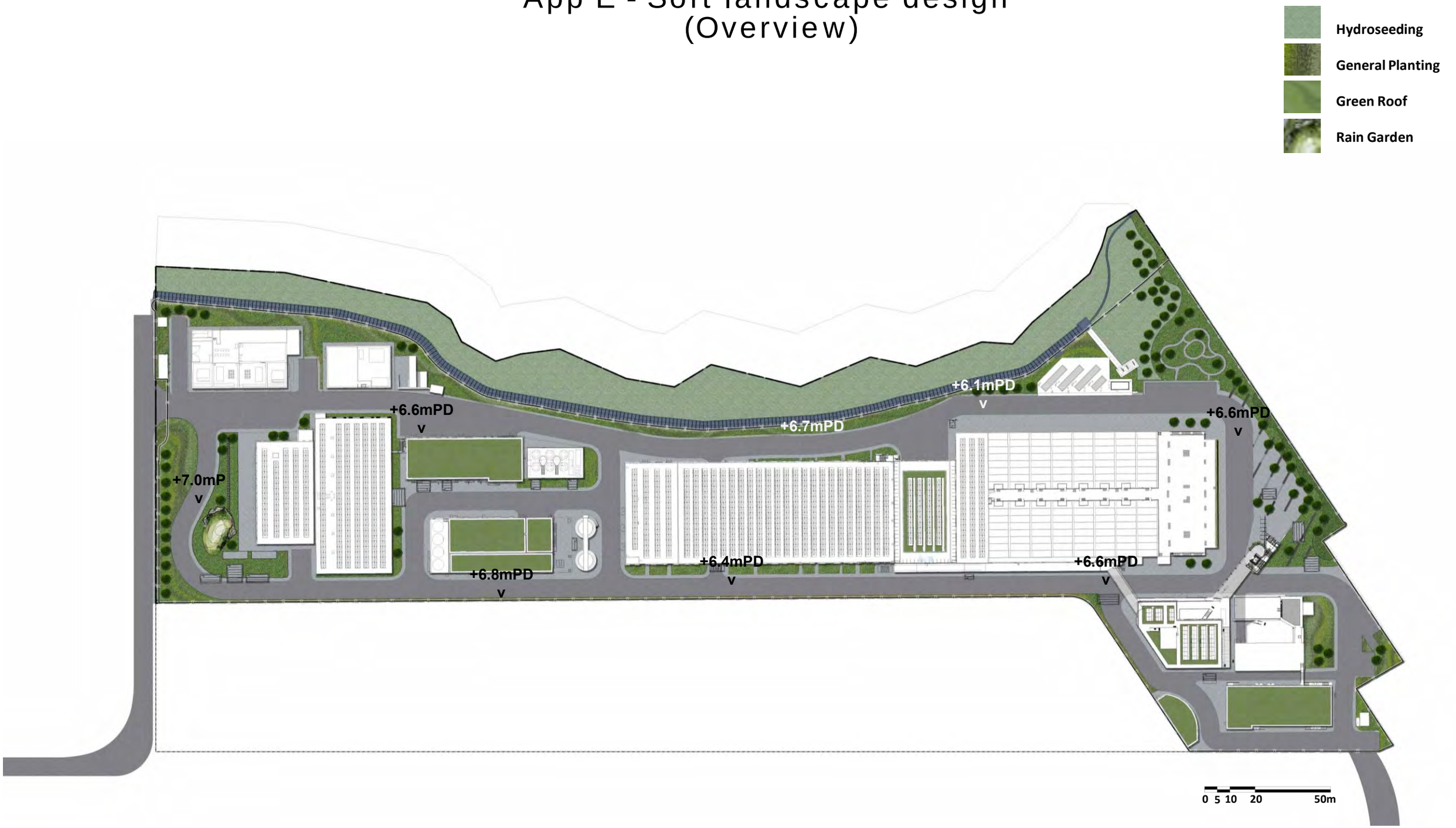


LEGEND

M - ADMINISTRATION BUILDING
M1- ELEVATED WALKWAY
V- INSPECTION CORRIDOR
B - COMBINED INTAKE & OUTFALL SHAFT
R0 - CHEMICAL BUILDING
C - ACTIDAFF
G - REVERSE OSMOSIS & ELECTRICAL BUILDING
K - POST-TREATMENT BUILDING
J - PRODUCT WATER STORAGE TANK AND ELECTRICAL BUILDING
R1 - ON-SITE CHLORINE GENERATION SYSTEM BUILDING AND CO^2 TANK AREA

N - MAIN ELECTRICAL & CHILLER PLANT BUILDING
S - TKO DESALINATION PLANT SUBSTATION
Z - MASTER METER ROOM
X1 - GUARD HOUSE A
X2 - GUARD HOUSE B
Y - WORKSHOP

App E - Soft landscape design (Overview)



PLANTING LIST

App E - Soft landscape design (Planting List)

序號 Item	植物名稱 Botanical Name / Common Name	中文名稱 Chinese Name	高度 Height (mm)	冠寬 Spread (mm)	胸徑 DBH (mm)	間距 Spacing (mm)	G/F 數量 G/F Qty. (nos.)	Admin Building 1/F Qty. (nos.)	總數量 Total Qty. (nos.)	備註 Remark
Trees										
BJ	*Bischofia javanica*	秋楓	5000	3000	100	7000	19	-	19	Native
IR	*Ilex rotumda var.microcarpa*	小果鐵冬青	3000	2000	60	5000	6	2	8	Native
LF	*Liquidambar formosana*	楓香	5000	3000	90	5000	6	-	6	Native
PP	*Pongamia pinnata*	水黃皮	4000	3000	80	5000	12	-	12	Native
SL	*Sterculia lanceolata*	假蘋婆	5000	3000	90	6000	17	-	17	Native
TM	*Terminalia mantaly*	小葉欖仁	5000	2500	90	5000	18	-	18	Exotic
TS	*Triadica sebifera*	烏桕	4000	2000	80	5000	8	-	8	Native
								Total	88	

序號 Item	植物名稱 Botanical Name / Common Name	中文名稱 Chinese Name	高度 Height (mm)	冠寬 Spread (mm)	間距 Spacing (mm)	G/F 數量 G/F Qty. (nos.)	R/F 數量 R/F Qty. (nos.)	Admin Building 1/F Qty. (nos.)	2/F Qty. (nos.)	3/F Qty. (nos.)	4/F Qty. (nos.)	總數量 Total Qty. (nos.)	本地品種/外來品種 Native / Exotic	備註 Remark
Groundcovers														
Adu	*Arachis duranensis*	蔓花生	100	100	200	630	10913	-	-	-	-	11543	Exotic	-
Ccm	*Chlorophytum comosum cv. Marginatum*	金邊吊蘭	200	200	200	-	9303	-	-	-	-	9303	Exotic	-
Lmo	*Lantana montevidensis*	紫花馬纓丹	200	200	200	2797	16692	-	-	-	-	19489	Exotic	-
Nau	*Nephrolepis auriculata*	腎蕨	250	200	200	8918	9903	210	93	-	-	19124	Native	-
Oja	*Ophiopogon japonicus*	麥冬	250	200	200	-	6024	-	-	-	-	6024	Native	-
Ojs	*Ophiopogon jaburan (Siebold) Lodd.*	花葉沿階草	250	200	200	446	13208	-	-	-	-	13654	Exotic	-
Pmy	*Phyllanthus myrtifolius*	錫蘭葉下珠	250	200	150	8147	17537	-	148	-	-	25832	Exotic	-
Shrubs														
Aca	*Allamanda cathartica*	軟枝黃蟬	400	300	200	10834	-	-	-	-	-	10834	Exotic	-
Acu	*Asclepias curassavica*	馬利筋	300	200	200	14651	-	-	-	-	-	14651	Exotic	-
Aod	*Aglaia odorata*	米仔蘭	400	300	200	5575	-	70	122	-	-	5767	Exotic	-
Cal	*Cassia alata*	翹荚決明	1200	800	600	576	-	-	-	-	-	576	Exotic	-
Drg	*Duranta repens 'golden'*	金連翹	300	250	150	28249	-	-	102	-	-	28351	Exotic	-
Drv	*Duranta repens 'Variegata'*	花葉連翹	300	250	200	3482	-	-	-	-	-	3482	Exotic	-
Fja	*Fatsia japonica*	八角金盤	500	350	300	6043	-	30	-	-	-	6073	Exotic	-
Gja	*Gardenia jasminoides*	梔子花	500	350	250	1692	-	30	147	-	-	1869	Native	-
Ich	*Ixora chinensis*	龍船花	500	300	200	13092	-	130	-	-	-	13222	Native	-
Lcr	*Loropetalum chinensis var. rubrum*	紅繼木	300	200	150	10387	-	-	-	-	-	10387	Exotic	-
Lsi	*Ligustrum sinense*	山指甲	500	350	250	9191	-	-	-	-	-	9191	Exotic	-
Msa	*Melastoma sanguineum*	毛茎	500	300	200	13910	-	-	41	-	-	13951	Native	-
Rsi	*Rhododendron simsii*	紅杜鵑	400	300	200	19040	-	-	67	-	-	19107	Native	-
Rto	*Rhodomyrtus tomentosa*	桃金娘	500	300	200	19705	-	-	-	-	-	19705	Native	-
She	*Schefflera heptaphylla*	鵝掌柴	400	300	250	17750	-	40	17	-	-	17807	Native	-
Zpo	*Zanthoxylum piperitum cv 'odorum'*	胡椒木	300	200	150	3964	-	-	116	-	-	4080	Exotic	-
Rain Garden														
Cin	*Canna indica*	美人蕉	400	300	200	1167	-	-	-	-	-	1167	Exotic	-
Hfu	*Hemerocallis fulva*	萱草	400	300	200	603	-	-	-	-	-	603	Exotic	-
Ite	*Iris tectorum*	鳶尾	500	300	200	510	-	-	-	-	-	510	Exotic	-
Lsa	*Lythrum salicaria*	千屈菜	400	400	200	826	-	-	-	-	-	826	Exotic	-
Msi	*Miscanthus sinensis*	細葉芒	400	300	200	595	-	-	-	-	-	595	Exotic	-
Climber														
BcoC	*Bauhinia corymbosa*	首冠藤	800	300	500	550	-	-	-	-	-	550	Exotic	-
LjaC	*Lonicera japonica*	金銀花	800	300	500	550	-	-	-	-	-	550	Native	-
QinC	*Quisqualis indica*	使君子	1000	300	500	700	-	-	-	10	10	720	Exotic	-
Hydroseed														
Cga	*Chloris gayana*	非洲虎尾草	-	-	-	1130m^2	-	-	-	-	-	1130m^2	Exotic	按平方米計算(m^2)
Cda	*Cynodon dactylon*	狗牙根	-	-	-	1130m^2	-	-	-	-	-	1130m^2	Native	按平方米計算(m^2)
Lpe	*Lolium perenne*	黑麥草	-	-	-	1130m^2	-	-	-	-	-	1130m^2	Exotic	按平方米計算(m^2)
Msa	*Melastoma sanguineum*	毛茎	-	-	-	1130m^2	-	-	-	-	-	1130m^2	Native	按平方米計算(m^2)
Rhi	*Rhus chinensis*	鹽膚木	-	-	-	1130m^2	-	-	-	-	-	1130m^2	Native	按平方米計算(m^2)
Rto	*Rhodomyrtus tomentosa*	桃金娘	-	-	-	1130m^2	-	-	-	-	-	1130m^2	Native	按平方米計算(m^2)
Lawn														
Zja	*Zoysia japonica*	台灣草	-	-	-	410m^2	-	-	-	-	-	410m^2	Exotic	按平方米計算(m^2)

Rev	Description	By	Date
A	GENERAL REVISION	AC	2021/11/11

Employer
水務署 Water Supplies Department

Supervising Officer designate
binnies

Design Checker
ARCADIS Design & Consultancy for natural and built assets

Contractor
acciona JEC CSCEC
AJC JOINT VENTURE

Designer
wsp
In Association with APU

Project title
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title
PLANTING LIST
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Drawing no.	Rev.
TKOD1-DWG-A000-WLA3101	A

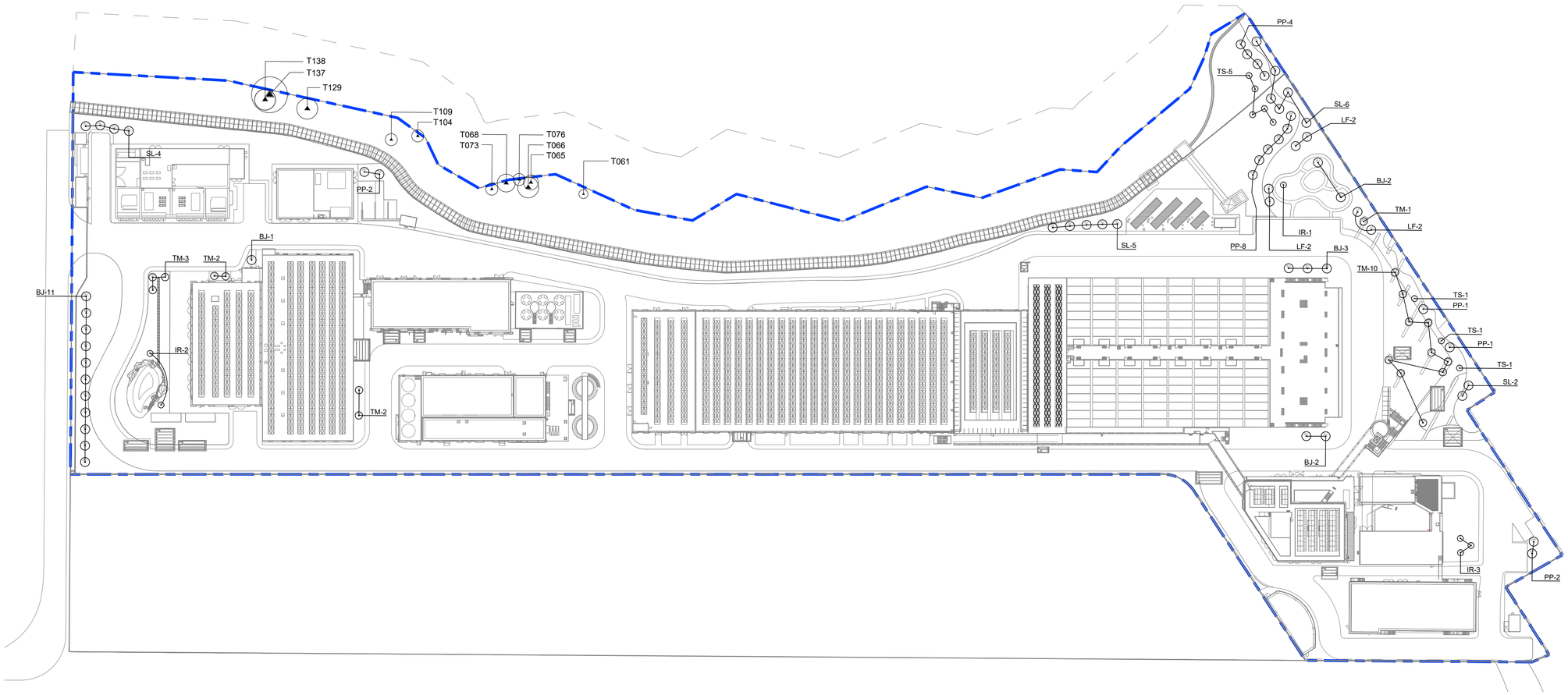
Drawn	Date	Checked	Approved
AC	10 MAY 2021	XL	-

Scale: N.T.S.
Status: DETAILED DESIGN APPROVAL

App E - Soft landscape design
(Tree Planting Plan)

PLANTING LIST

序號 Item	植物名稱 Botanical Name / Common Name	中文名稱 Chinese Name	高度 Height (mm)	冠寬 Spread (mm)	胸徑 DBH (mm)	間距 Spacing (mm)	G/F 數量 G/F Qty. (nos.)
Trees							
BJ	*Bischofia javanica*	秋楓	5000	3000	100	7000	19
IR	*Ilex rotumda var.microcarpa*	小果鐵冬青	3000	2000	60	5000	6
LF	*Liquidambar formosana*	楓香	5000	3000	90	5000	6
PP	*Pongamia pinnata*	水黃皮	4000	3000	80	5000	12
SL	*Sterculia lanceolata*	假蘋婆	5000	3000	90	6000	17
TM	*Terminalia mantaly*	小葉欖仁	5000	2500	90	5000	18
TS	*Triadica sebifera*	烏桕	4000	2000	80	5000	8



LEGEND:

- SITE BOUNDARY
- PROPOSED NEW TREE
- RETAINED TREE

REMARKS:
NOT LESS THAN 1200mm CLEAR SOIL WIDTH AND DEPTH SHOULD BE PROVIDED FOR ALL TREE PLANTING AREAS.

Rev	Description	By	Date
A	GENERAL REVISION	AC	2021/11/11

Employer: 水務署 Water Supplies Department

Supervising Officer designate: binnies

Design Checker: ARCADIS Design & Consultancy for natural and built assets

Contractor: acciona JEC CRCC AJC JOINT VENTURE

Designer: wsp In Association with APU

Project title
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title
TREE PLAN – GROUND FLOOR
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–

Drawing no.	Rev.
TKOD1–DWG–A000–WLA3111	A

Drawn	Date	Checked	Approved
AC	10 MAY 2021	XL	–

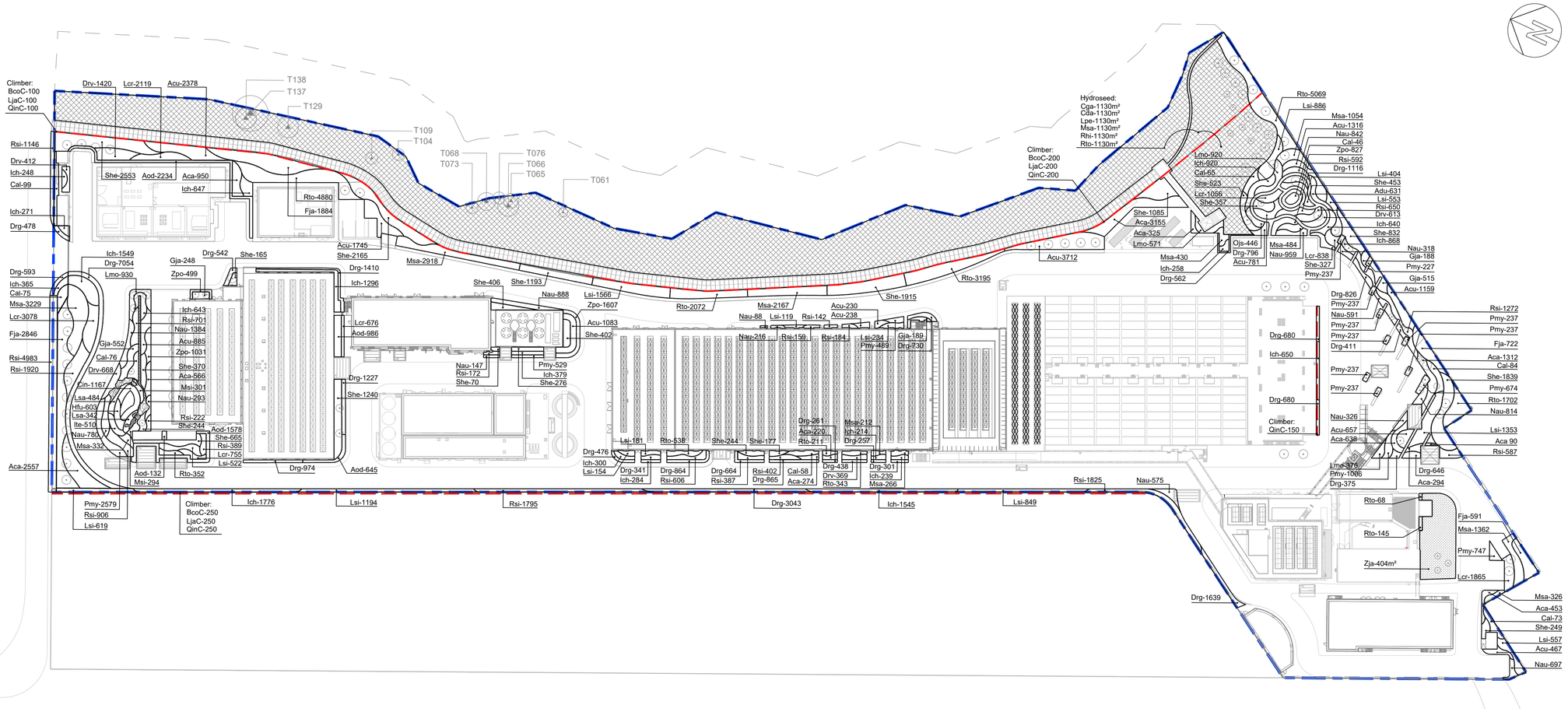
Scale: 1:800@A1
Status: DETAILED DESIGN APPROVAL

App E - Soft landscape design (Shrubs Planting Plan)

PLANTING LIST

序號 Item	植物名稱 Botanical Name / Common Name	中文名稱 Chinese Name	高度 Height (mm)	冠寬 Spread (mm)	間距 Spacing (mm)	G/F 數量 G/F Qty. (nos.)
Groundcovers						
Adu	*Arachis duranensis*	蔓花生	100	100	200	630
Lmo	*Lantana montevidensis*	紫花馬纓丹	200	200	200	2797
Nau	*Nephrolepis auriculata*	腎蕨	250	200	200	8918
Ojs	*Ophiopogon jaburan (Siebold) Lodd.*	花葉沿階草	250	200	200	446
Pmy	*Phyllanthus myrtifolius*	錫蘭葉下珠	250	200	150	8147
Shrubs						
Aca	*Allamanda cathartica*	軟枝黃蟬	400	300	200	10834
Acu	*Asclepias curassavica*	馬利筋	300	200	200	14651
Aod	*Aglaia odorata*	米仔蘭	400	300	200	5575
Cal	*Cassia alata*	翅莢決明	1200	800	600	576
Drg	*Duranta repens 'golden'*	金連翹	300	250	150	28249
Drv	*Duranta repens 'Variegata'*	花葉連翹	300	250	200	3482
Fja	*Fatsia japonica*	八角金盤	500	350	300	6043
Gja	*Gardenia jasminoides*	梔子花	500	350	250	1692
Ich	*Ixora chinensis*	龍船花	500	300	200	13092
Lcr	*Loropetalum chinensis var. rubrum*	紅繼木	300	200	150	10387
Lsi	*Ligustrum sinense*	山指甲	500	350	250	9191
Msa	*Melastoma sanguineum*	毛萋	500	300	200	13910
Rsi	*Rhododendron simsii*	紅杜鵑	400	300	200	19040
Rto	*Rhodomyrtus tomentosa*	桃金娘	500	300	200	19705
She	*Schefflera heptaphylla*	鵝掌柴	400	300	250	17750
Zpo	*Zanthoxylum piperitum cv 'odorum'*	胡椒木	300	200	150	3964

序號 Item	植物名稱 Botanical Name / Common Name	中文名稱 Chinese Name	高度 Height (mm)	冠寬 Spread (mm)	間距 Spacing (mm)	G/F 數量 G/F Qty. (nos.)	備註 Remark
Rain Garden							
Cin	*Canna indica*	美人蕉	400	300	200	1167	-
Hfu	*Hemerocallis fulva*	萱草	400	300	200	603	-
Ite	*Iris tectorum*	鳶尾	500	300	200	510	-
Lsa	*Lythrum salicaria*	千屈菜	400	400	200	826	-
Msi	*Miscanthus sinensis*	細葉芒	400	300	200	595	-
Climber							
BcoC	*Bauhinia corymbosa*	首冠藤	800	300	500	550	-
LjaC	*Lonicera japonica*	金銀花	800	300	500	550	-
QinC	*Quisqualis indica*	使君子	1000	300	500	700	-
Hydroseed							
Cga	*Chloris gayana*	非洲虎尾草	-	-	-	1130m^2	按平方米計算(m^2)
Cda	*Cynodon dactylon*	狗牙根	-	-	-	1130m^2	按平方米計算(m^2)
Lpe	*Lolium perenne*	黑麥草	-	-	-	1130m^2	按平方米計算(m^2)
Msa	*Melastoma sanguineum*	毛萋	-	-	-	1130m^2	按平方米計算(m^2)
Rhi	*Rhus chinensis*	鹽膚木	-	-	-	1130m^2	按平方米計算(m^2)
Rto	*Rhodomyrtus tomentosa*	桃金娘	-	-	-	1130m^2	按平方米計算(m^2)
Lawn							
Zja	*Zoysia japonica*	台灣草	-	-	-	410m^2	按平方米計算(m^2)



LEGEND:

- SITE BOUNDARY
- SHRUBS & GROUNDCOVERS
- LAWN
- PLANTING AREA FOR HYDROSEED
- CLIMBER
- PROPOSED NEW TREE
- RETAINED TREE

REMARKS:
NOT LESS THAN 600mm SOIL DEPTH SHOULD BE PROVIDED FOR THOSE AREAS PLANTED WITH SHRUBS AND 300mm SOIL DEPTH FOR GROUNDCOVERS.

Rev	Description	By	Date
A	GENERAL REVISION	AC	2021/11/11

Employer: 水務署 Water Supplies Department

Supervising Officer designate: binnies

Design Checker: ARCADIS Design & Consultancy for natural and built assets

Contractor: acciona JEC CRCC AJC JOINT VENTURE

Designer: wsp In Association with APU

Project title:
CONTRACT NO. 13/WSD/17
DESIGN, BUILD AND OPERATE FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

Drawing title:
SHRUBS PLAN – GROUND FLOOR
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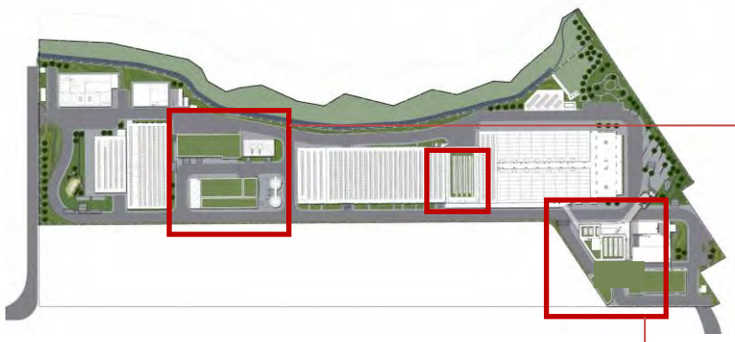
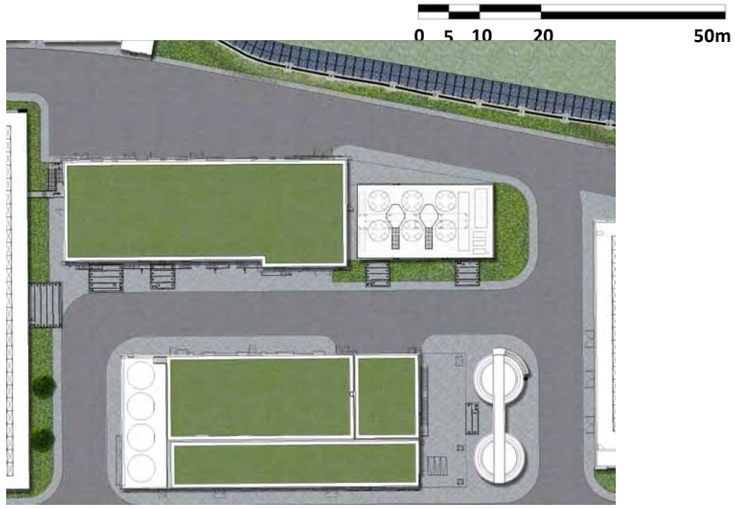
Drawing no.	Rev.
TKOD1-DWG-A000-WLA3112	A

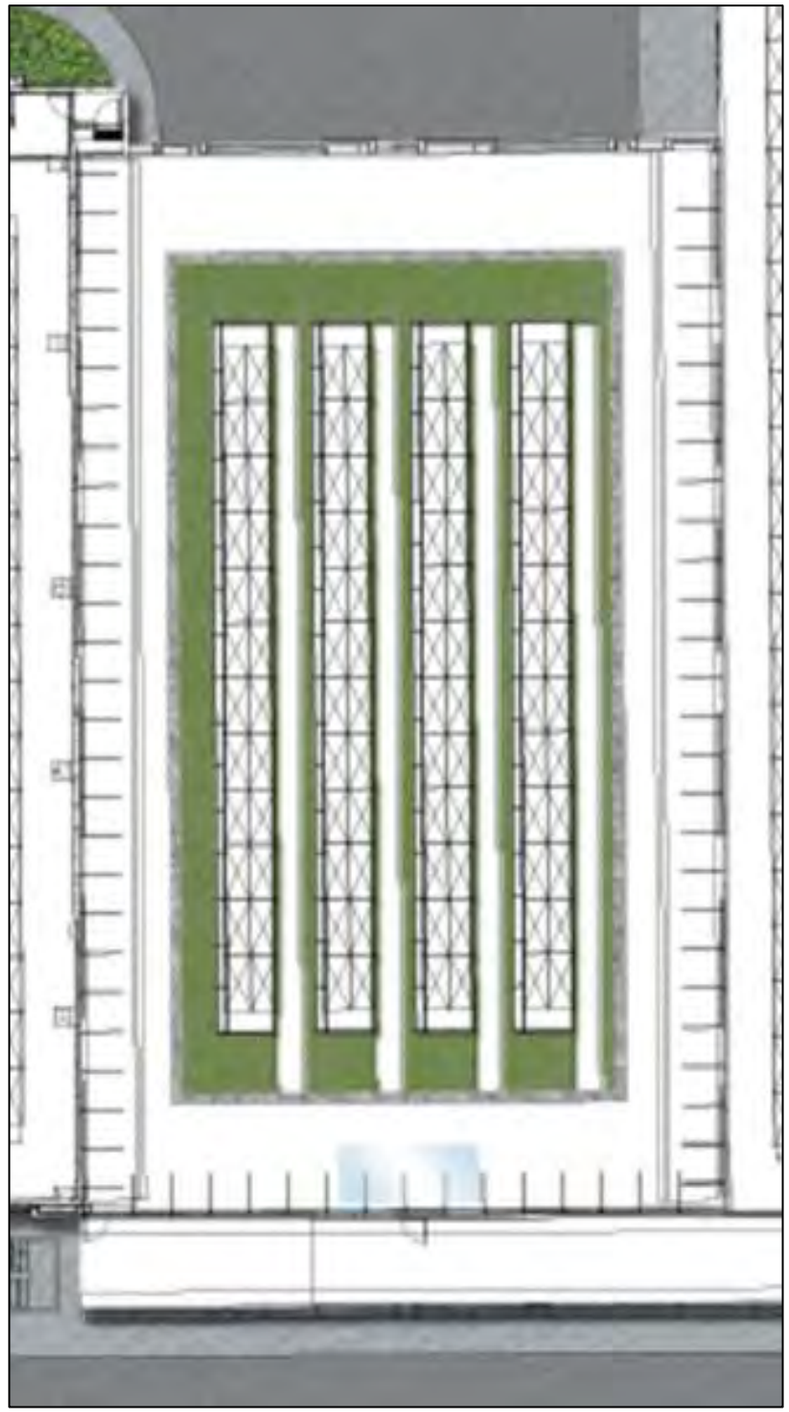
Drawn	Date	Checked	Approved
AC	10 MAY 2021	XL	-

Scale: 1:800@A1
Status: DETAILED DESIGN APPROVAL

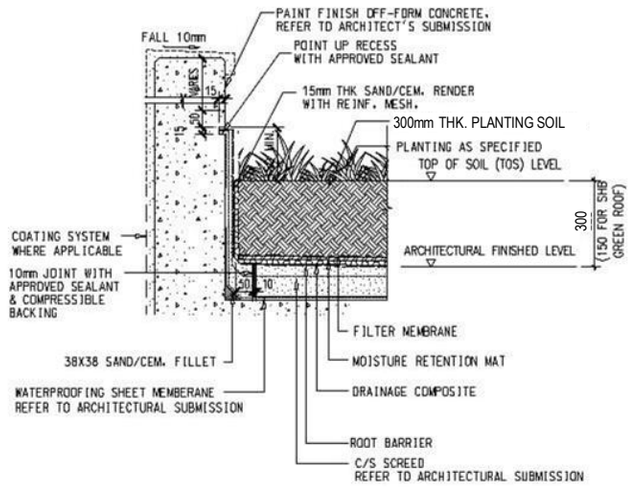
Appendix E - Soft Landscape Design (Green Roof)



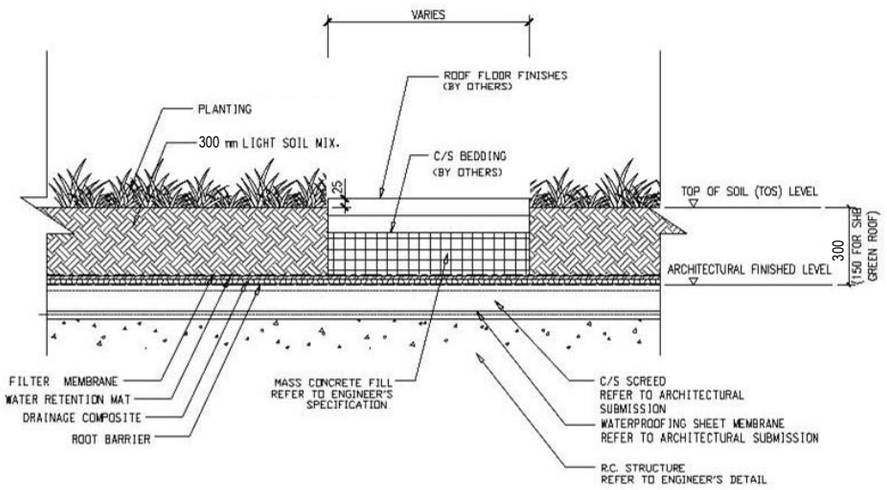




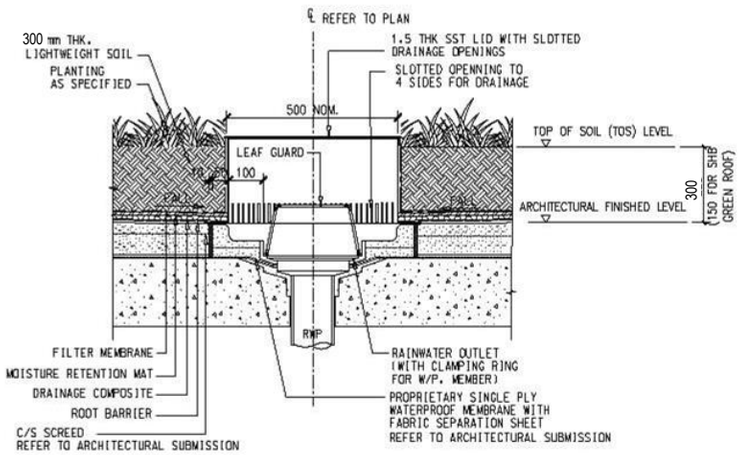
Typical Edge Detail

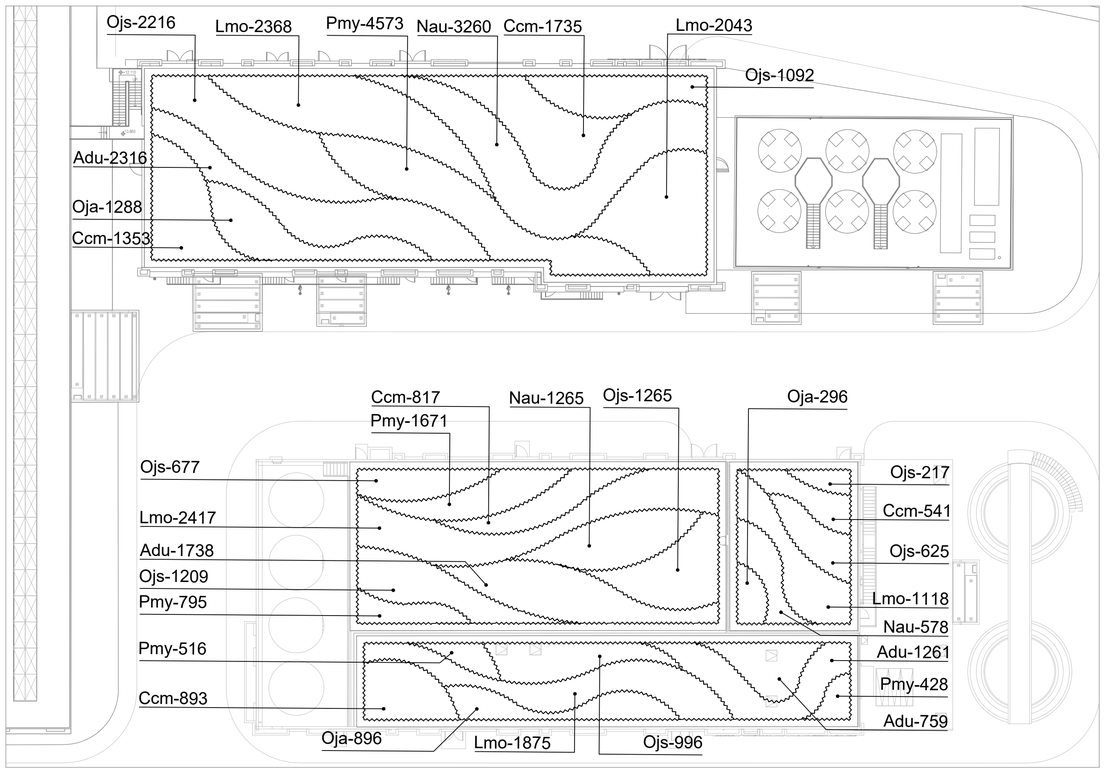


Typical Green Roof Detail

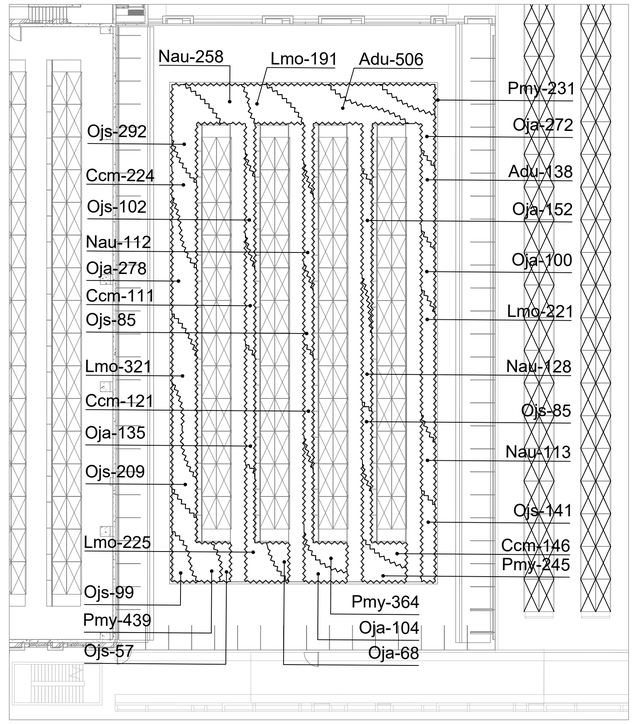


Typical Drainage Detail (Location to Engineer's Requirement)

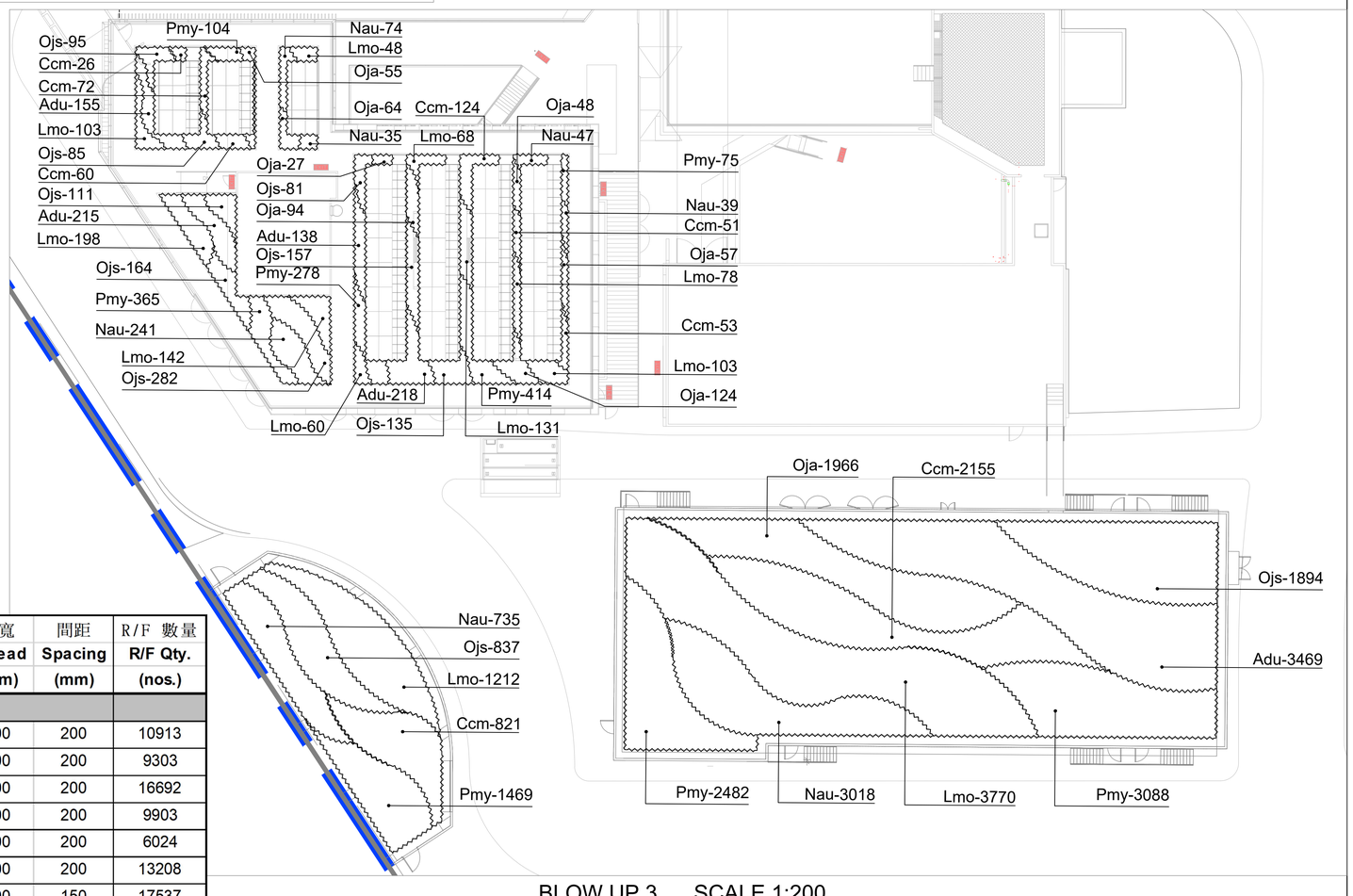




BLOW UP 1 SCALE 1:250



BLOW UP 2 SCALE 1:200

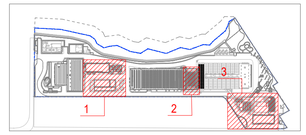


BLOW UP 3 SCALE 1:200

PLANTING LIST

序號 Item	植物名稱 Botanical Name / Common Name	中文名稱 Chinese Name	高度 Height (mm)	冠寬 Spread (mm)	間距 Spacing (mm)	R/F 數量 R/F Qty. (nos.)
Groundcovers						
Adu	*Arachis duranensis*	蔓花生	100	100	200	10913
Ccm	*Chlorophytum comosum cv. Marginatum*	金邊吊蘭	200	200	200	9303
Lmo	*Lantana montevidensis*	紫花馬纓丹	200	200	200	16692
Nau	*Nephrolepis auriculata*	腎蕨	250	200	200	9903
Oja	*Ophiopogon japonicus*	麥冬	250	200	200	6024
Ojs	*Ophiopogon jaburan (Siebold) Lodd.*	花葉沿階草	250	200	200	13208
Pmy	*Phyllanthus myrtifolius*	錫蘭葉下珠	250	200	150	17537

KEY PLAN scale 1:6000



LEGEND:

SHRUBS & GROUNDCOVERS

REMARKS:
NOT LESS THAN 300mm SOIL DEPTH SHOULD BE PROVIDED FOR THOSE AREAS PLANTED WITH FOR GROUNDCOVERS.

Rev	Description	By	Date
A	GENERAL REVISION	AC	2021/11/11

Employer: 水務署 Water Supplies Department

Supervising Officer designate: binnies

Design Checker: ARCADIS Design & Consultancy for natural and built assets

Contractor: acciona JEC CRCG AJC JOINT VENTURE

Designer: wsp In Association with APU

Project title:
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title:
SHRUBS PLAN – ROOF FLOOR
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Drawing no.	Rev.
TKOD1-DWG-A000-WLA3113	A

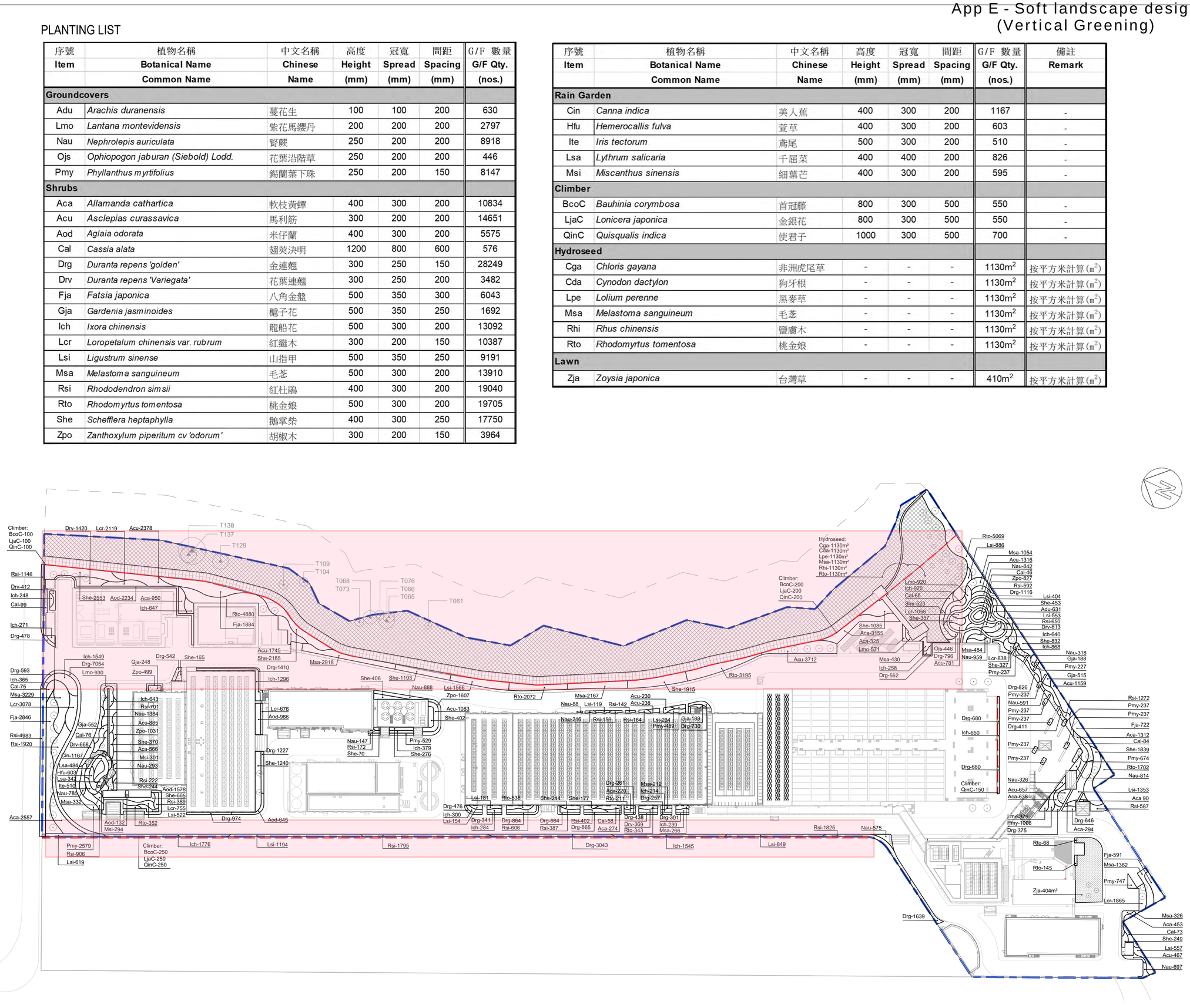
Drawn	Date	Checked	Approved
AC	10 MAY 2021	XL	–

Scale: AS SHOWN@A1
Status: DETAILED DESIGN APPROVAL

PLANTING LIST

序號 Item	植物名稱 Botanical Name / Common Name	中文名稱 Chinese Name	高度 Height (mm)	冠寬 Spread (mm)	間距 Spacing (mm)	G/F 數量 G/F Qty. (nos.)
Groundcovers						
Adu	*Arachis duranensis*	蔓花生	100	100	200	630
Lmo	*Lantana montevidensis*	紫花馬纓丹	200	200	200	2797
Nau	*Nephrolepis auriculata*	腎蕨	250	200	200	8918
Ojs	*Ophiopogon jaburan (Siebold) Lodd.*	花葉沿階草	250	200	200	446
Pmy	*Phyllanthus myrtifolius*	錫蘭葉下珠	250	200	150	8147
Shrubs						
Aca	*Allamanda cathartica*	軟枝黃蟬	400	300	200	10834
Acu	*Asclepias curassavica*	馬利筋	300	200	200	14651
Aod	*Aglaia odorata*	米仔蘭	400	300	200	5575
Cal	*Cassia alata*	翅莢決明	1200	800	600	576
Drg	*Duranta repens 'golden'*	金連翹	300	250	150	28249
Drv	*Duranta repens 'Variegata'*	花葉連翹	300	250	200	3482
Fja	*Fatsia japonica*	八角金盤	500	350	300	6043
Gja	*Gardenia jasminoides*	梔子花	500	350	250	1692
Ich	*Ixora chinensis*	龍船花	500	300	200	13092
Lcr	*Loropetalum chinensis var. rubrum*	紅繼木	300	200	150	10387
Lsi	*Ligustrum sinense*	山指甲	500	350	250	9191
Msa	*Melastoma sanguineum*	毛萋	500	300	200	13910
Rsi	*Rhododendron simsii*	紅杜鵑	400	300	200	19040
Rto	*Rhodomyrtus tomentosa*	桃金娘	500	300	200	19705
She	*Schefflera heptaphylla*	鵝掌柴	400	300	250	17750
Zpo	*Zanthoxylum piperitum cv 'odorum'*	胡椒木	300	200	150	3964

序號 Item	植物名稱 Botanical Name / Common Name	中文名稱 Chinese Name	高度 Height (mm)	冠寬 Spread (mm)	間距 Spacing (mm)	G/F 數量 G/F Qty. (nos.)	備註 Remark
Rain Garden							
Cin	*Canna indica*	美人蕉	400	300	200	1167	-
Hfu	*Hemerocallis fulva*	萱草	400	300	200	603	-
Ite	*Iris tectorum*	鳶尾	500	300	200	510	-
Lsa	*Lythrum salicaria*	千屈菜	400	400	200	826	-
Msi	*Miscanthus sinensis*	細葉芒	400	300	200	595	-
Climber							
BcoC	*Bauhinia corymbosa*	首冠藤	800	300	500	550	-
LjaC	*Lonicera japonica*	金銀花	800	300	500	550	-
QinC	*Quisqualis indica*	使君子	1000	300	500	700	-
Hydroseed							
Cga	*Chloris gayana*	非洲虎尾草	-	-	-	1130m²	按平方米計算(m²)
Cda	*Cynodon dactylon*	狗牙根	-	-	-	1130m²	按平方米計算(m²)
Lpe	*Lolium perenne*	黑麥草	-	-	-	1130m²	按平方米計算(m²)
Msa	*Melastoma sanguineum*	毛萋	-	-	-	1130m²	按平方米計算(m²)
Rhi	*Rhus chinensis*	鹽膚木	-	-	-	1130m²	按平方米計算(m²)
Rto	*Rhodomyrtus tomentosa*	桃金娘	-	-	-	1130m²	按平方米計算(m²)
Lawn							
Zja	*Zoysia japonica*	台灣草	-	-	-	410m²	按平方米計算(m²)



LEGEND:

- SITE BOUNDARY
- SHRUBS & GROUNDCOVERS
- LAWN
- PLANTING AREA FOR HYDROSEED
- CLIMBER
- PROPOSED NEW TREE
- RETAINED TREE

REMARKS:
NOT LESS THAN 600mm SOIL DEPTH SHOULD BE PROVIDED FOR THOSE AREAS PLANTED WITH SHRUBS AND 300mm SOIL DEPTH FOR GROUNDCOVERS.

Rev	Description	By	Date
A	GENERAL REVISION	AC	2021/11/11

Employer: 水務署 Water Supplies Department

Supervising Officer designate: binnies

Design Checker: ARCADIS Design & Consultancy for natural and built assets

Contractor: acciona JEC CSCEC AJC JOINT VENTURE

Designer: wsp In Association with APU

Project title:
CONTRACT NO. 13/WSD/17
DESIGN, BUILD AND OPERATE FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

Drawing title:
SHRUBS PLAN – GROUND FLOOR
–
–
–
–

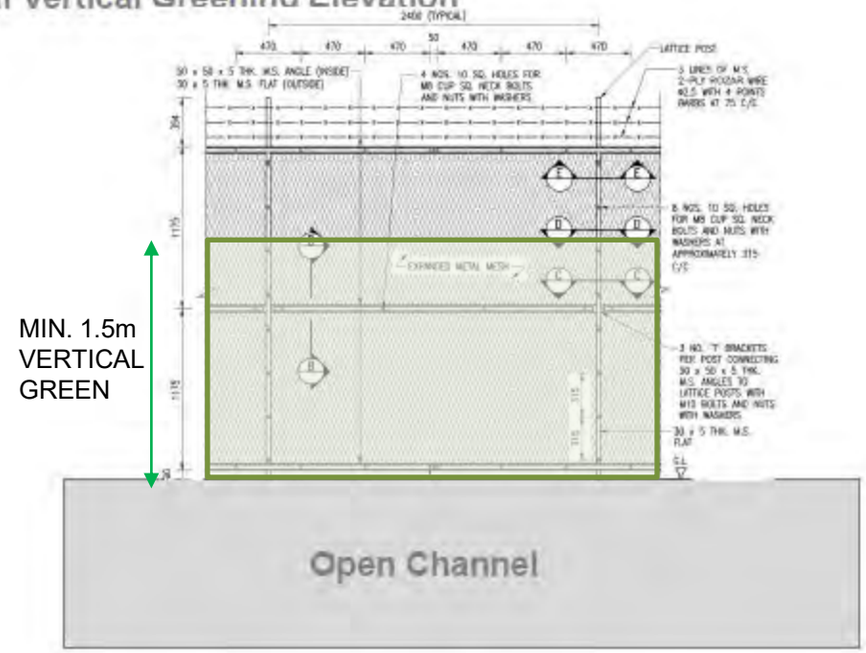
Drawing no.	Rev.
TKOD1-DWG-A000-WLA3112	A

Drawn	Date	Checked	Approved
AC	10 MAY 2021	XL	–

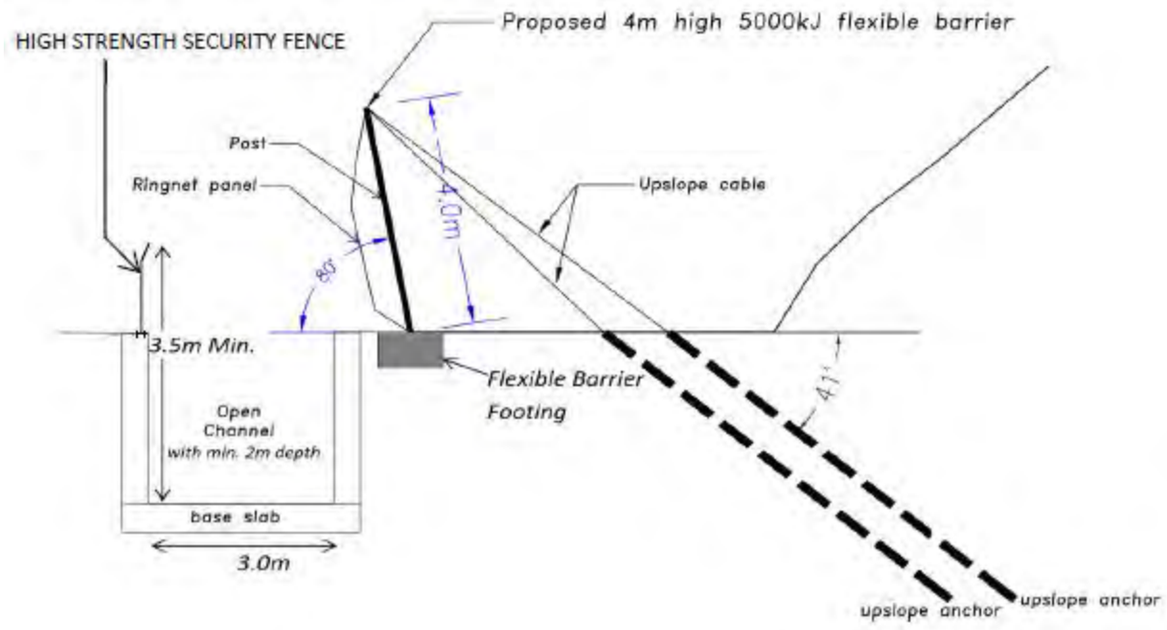
Scale: 1:800@A1
Status: DETAILED DESIGN APPROVAL

Appendix E - Soft Landscape Design (Vertical Greening)

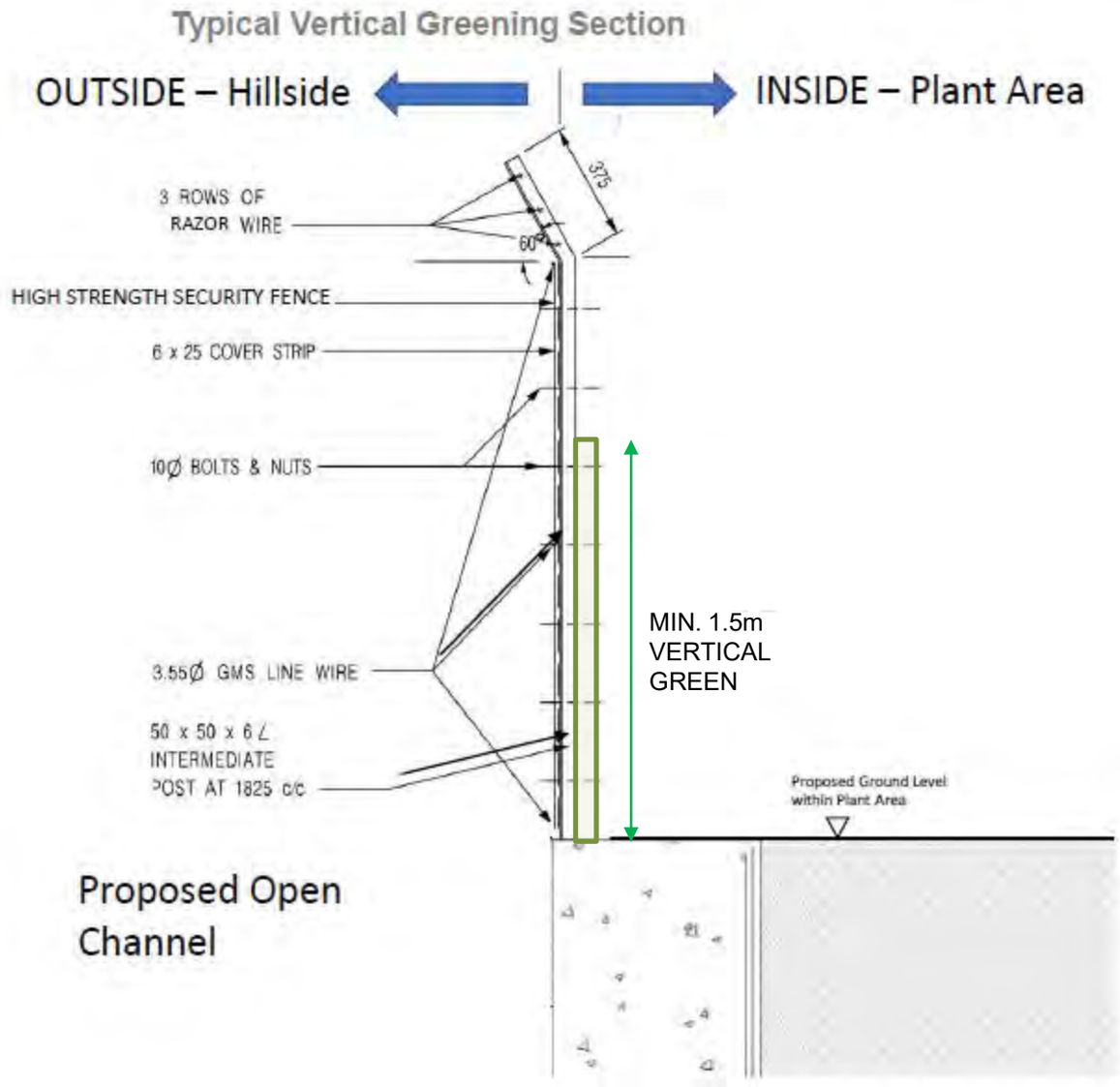
Typical Vertical Greening Elevation



Vertical Greening adjacent to Open Channel



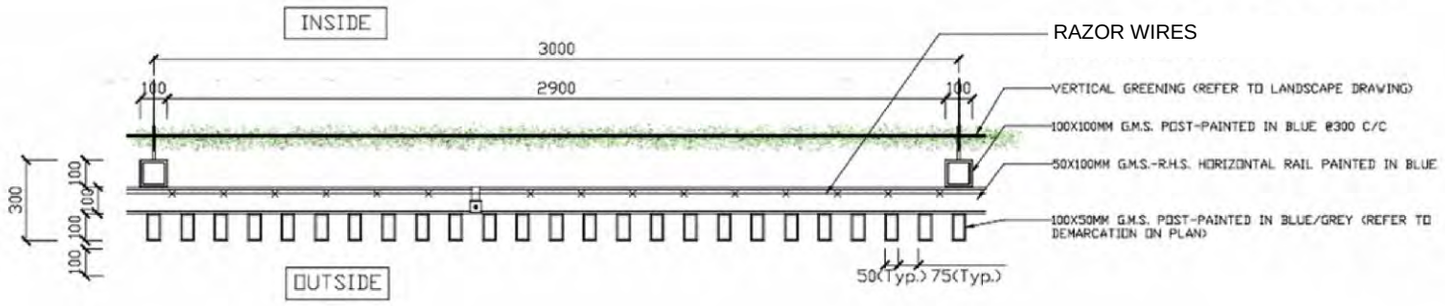
Typical Vertical Greening Section



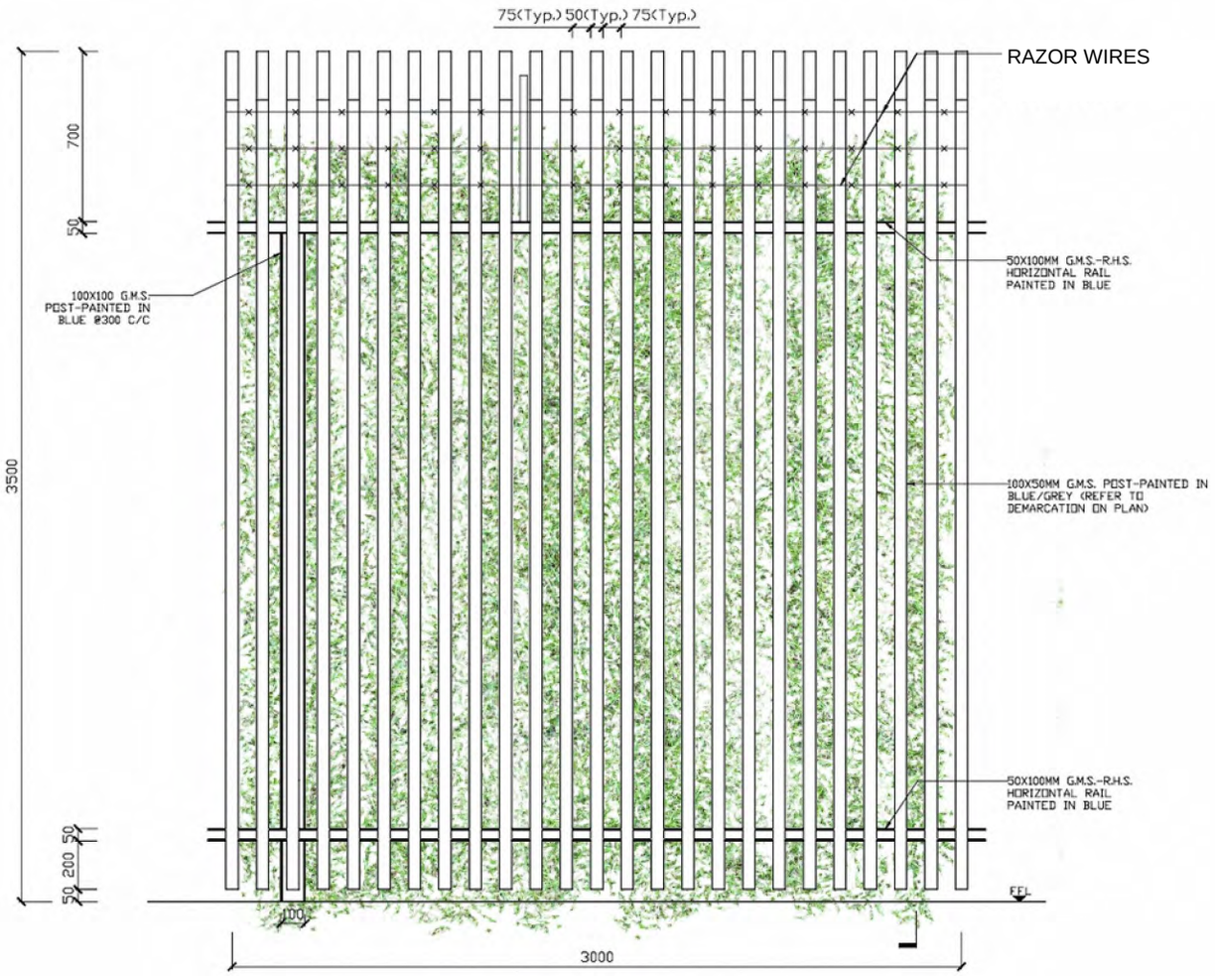
Proposed Open Channel

Appendix E - Soft Landscape Design (Vertical Greening)

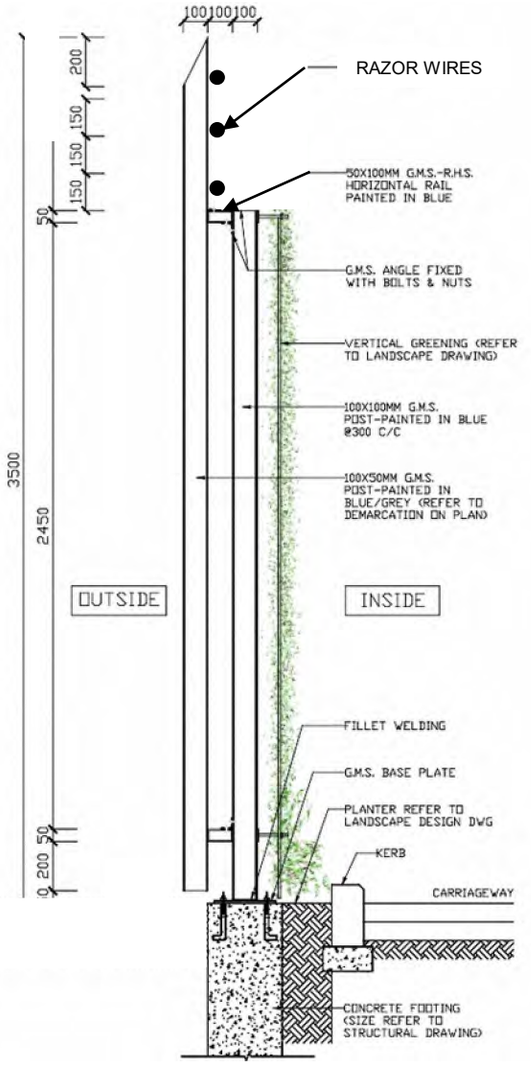
Typical Vertical Greening Zoomin Plan



Typical Vertical Greening Elevation

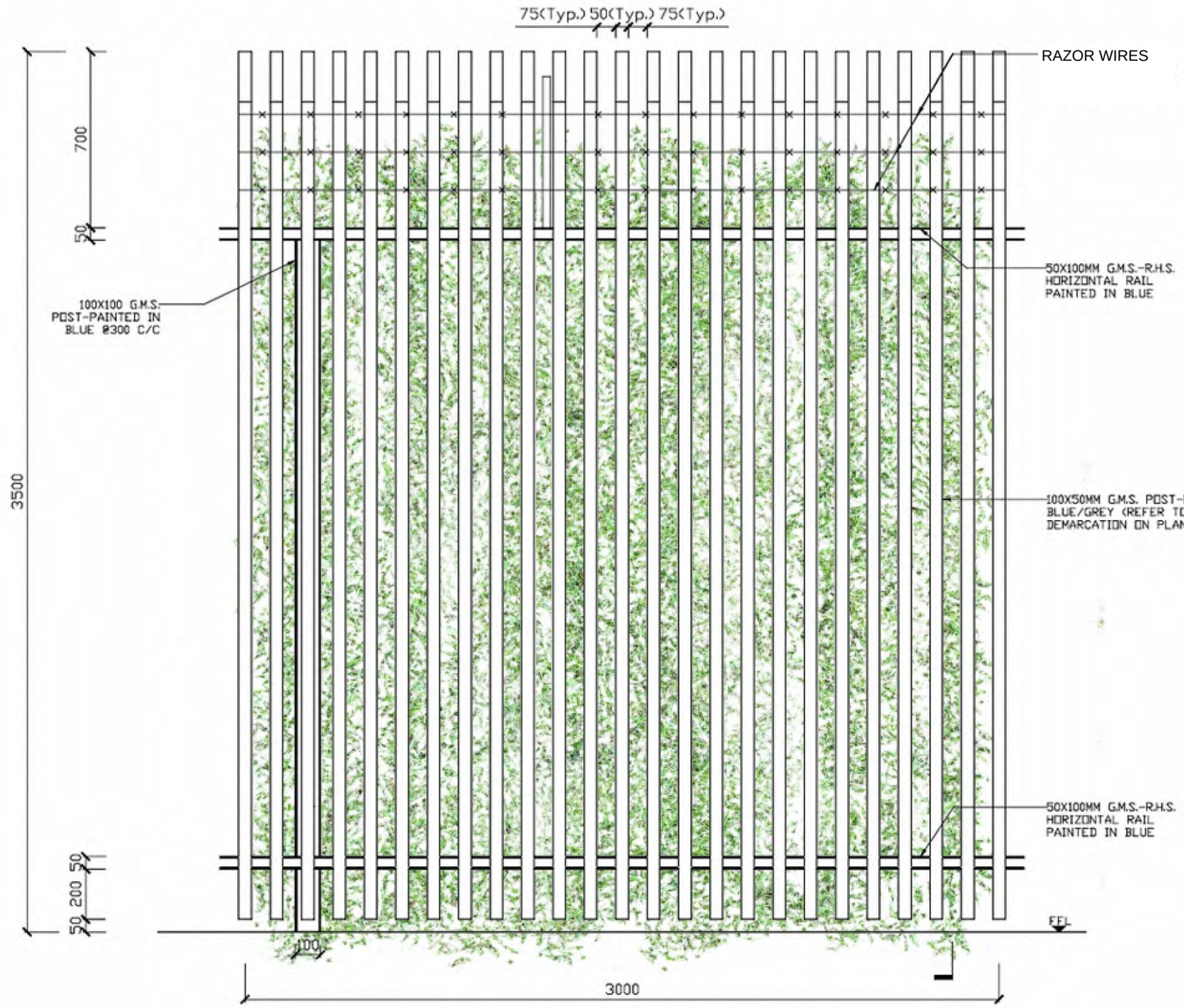


Typical Vertical Greening Section

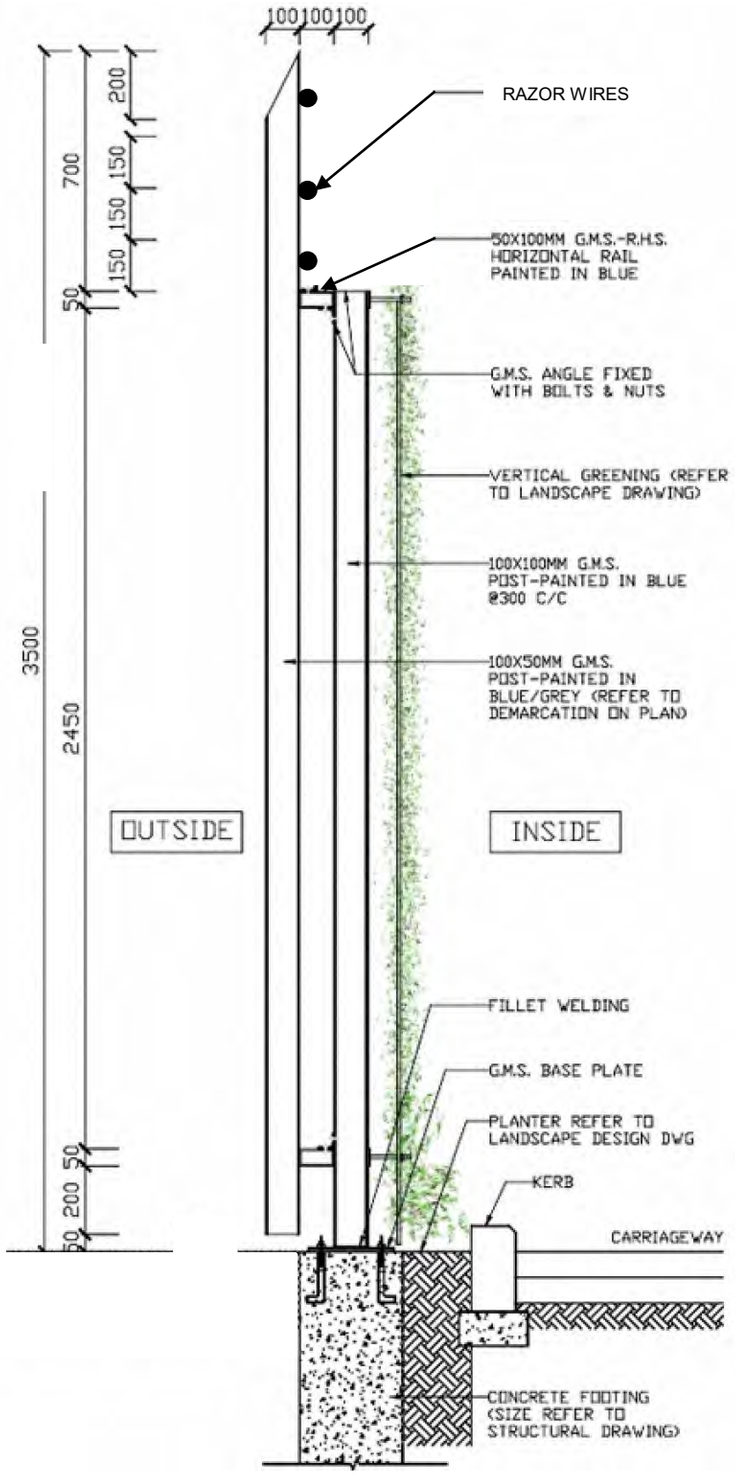


Appendix E - Soft Landscape Design (Vertical Greening)

Typical Vertical Greening Elevation

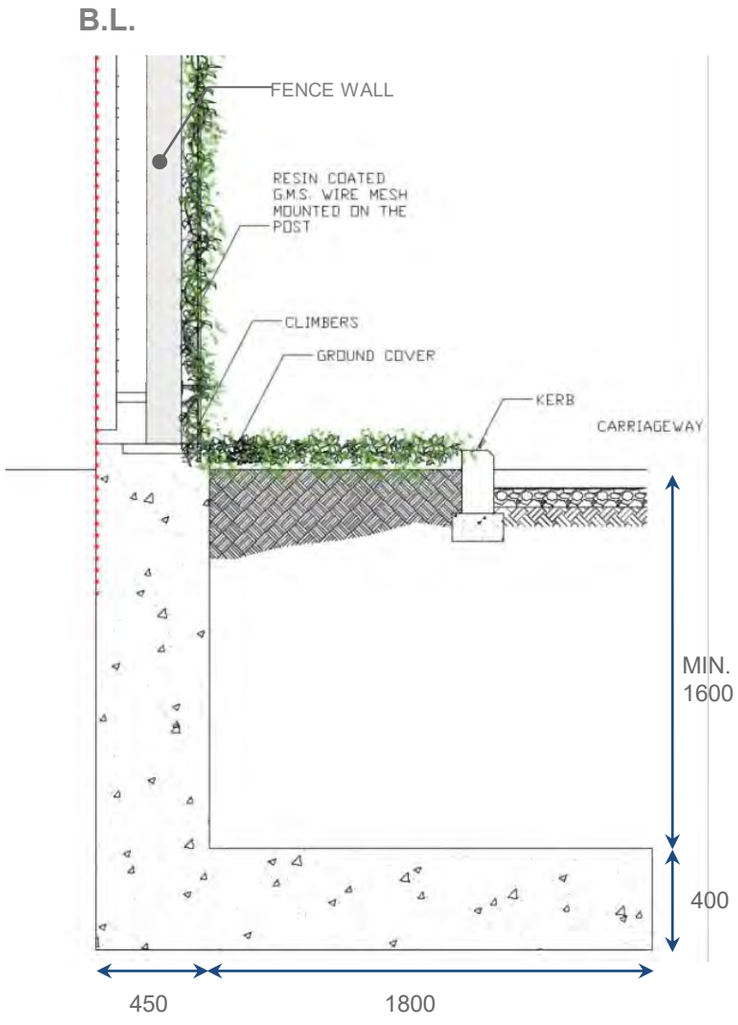


Typical Vertical Greening Section

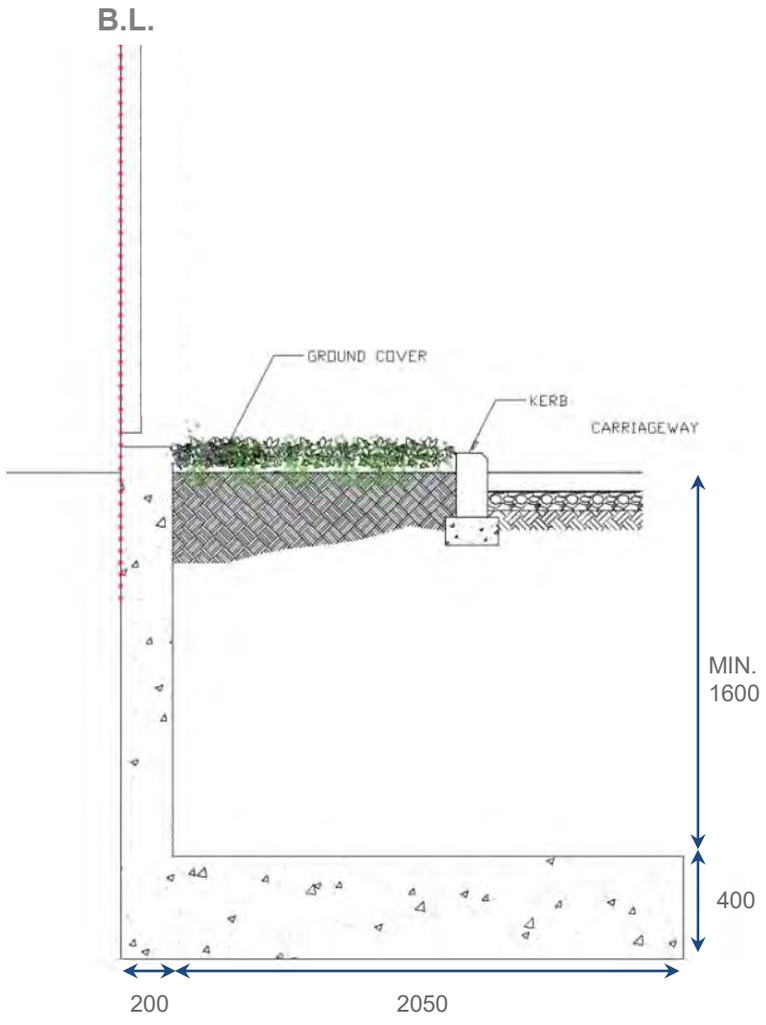


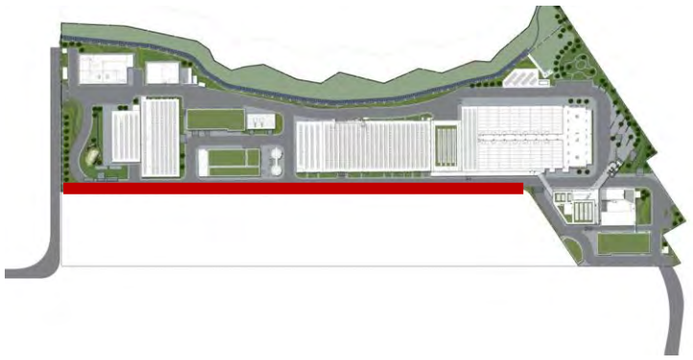
Appendix E - Soft Landscape Design (Vertical Greening)

Typical Vertical Greening
Blow-up Section A-A (FENCE WALL)

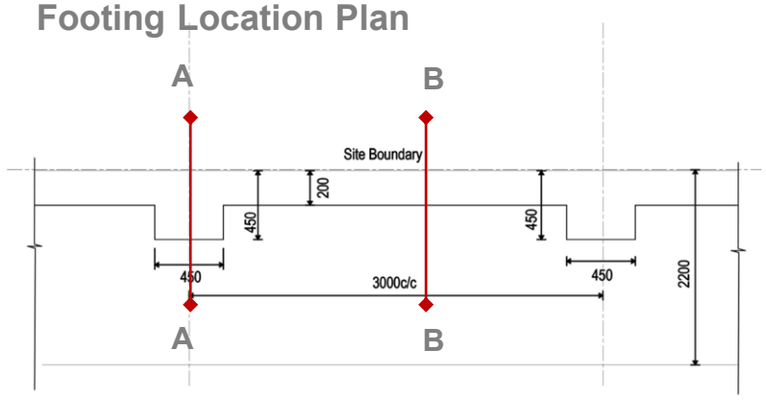


Blow-up Section B-B (FEATURES ONLY)



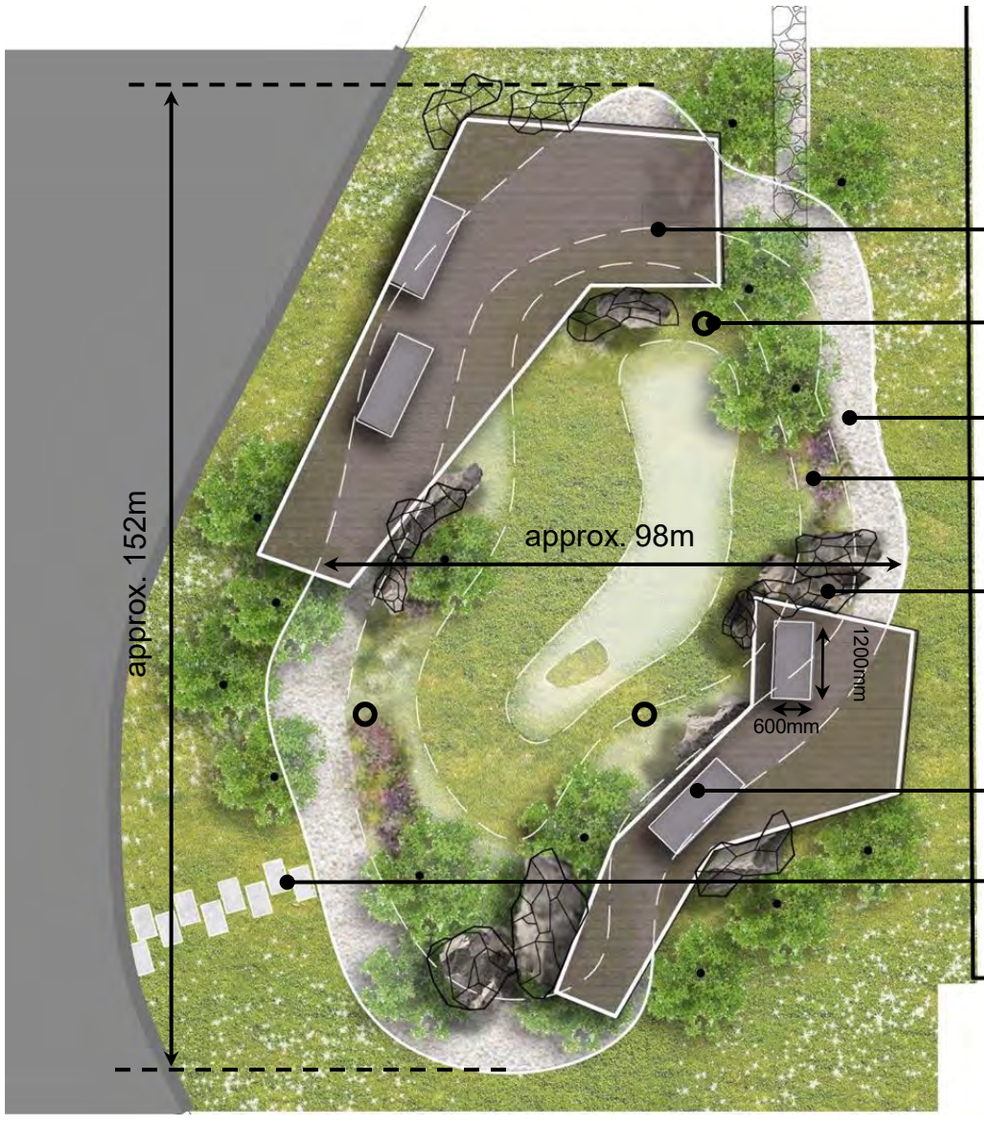


Footing Location Plan



Appendix E - Soft Landscape Design

Landscape Design | Rain Garden



CONCRETE PAVER BLOCK

OVERFLOW DRAIN

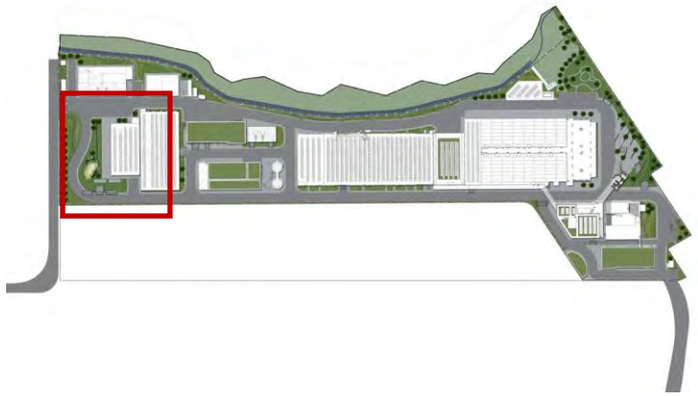
PEBBLES W/ 15 - 20mm DIA

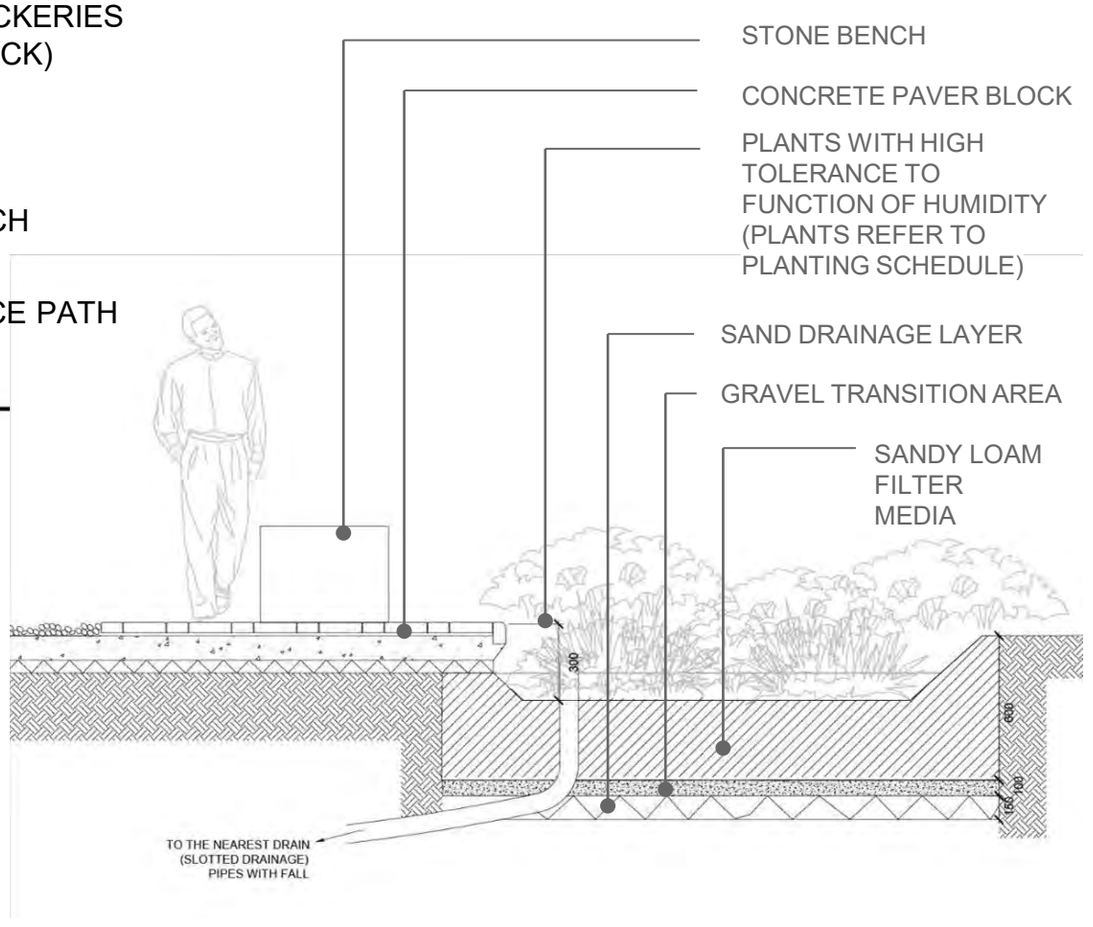
RAIN GARDEN PLANTING

FEATURE ROCKERIES (NATURAL ROCK)

STONE BENCH

MAINTENANCE PATH

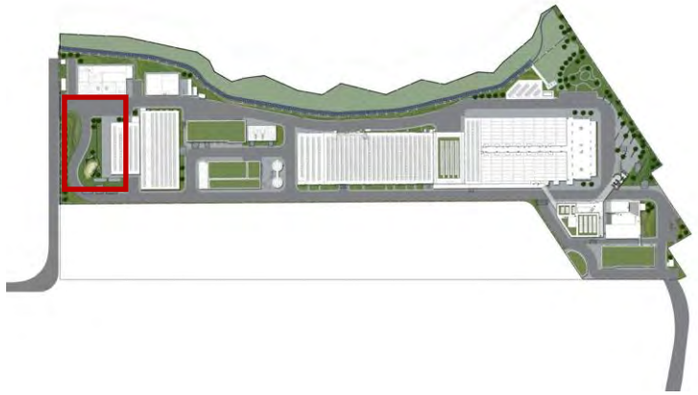




0 5 10m

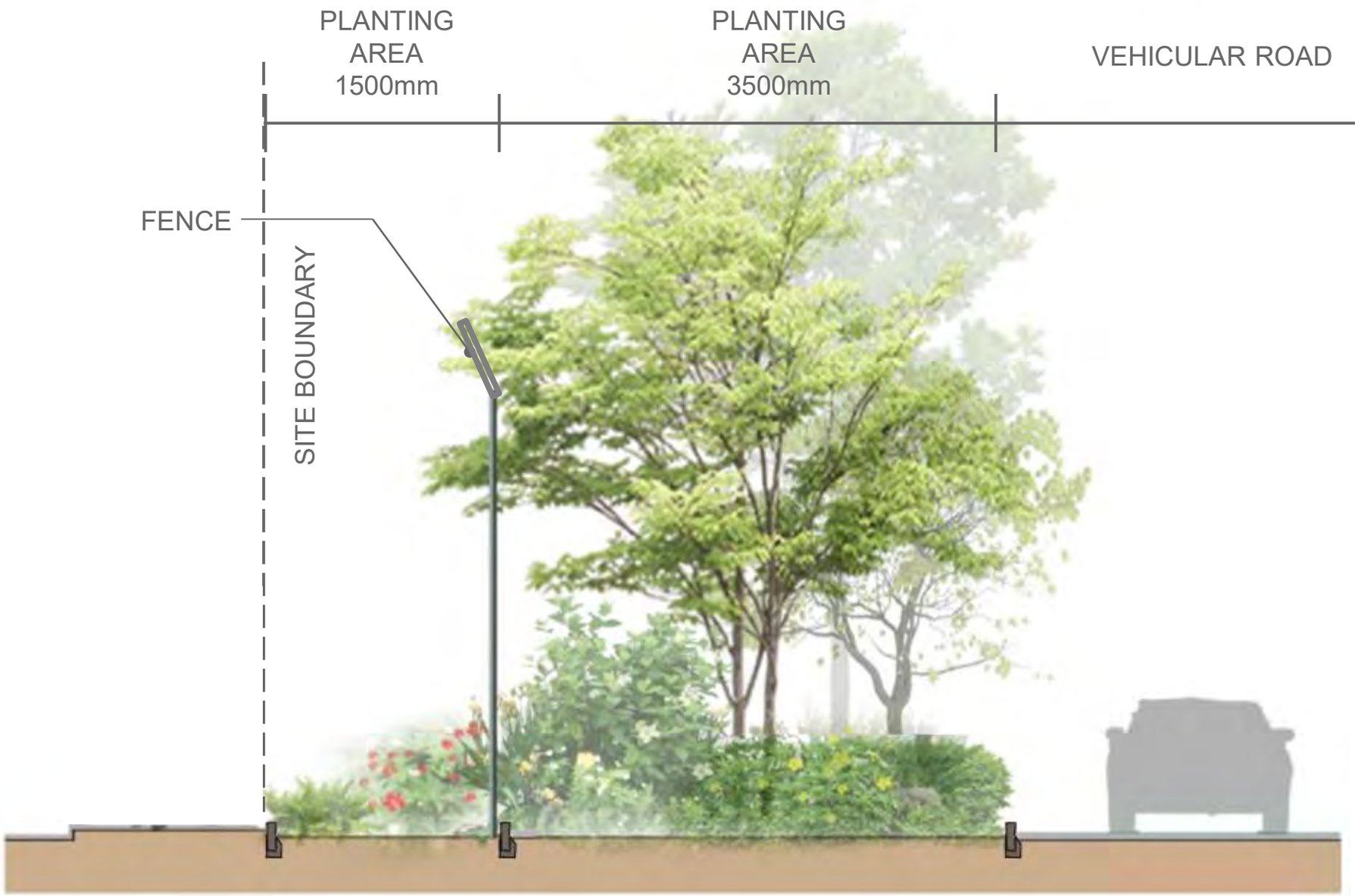
Appendix E - Soft Landscape Design

Landscape Design | Main Entrance



Appendix E - Soft Landscape Design

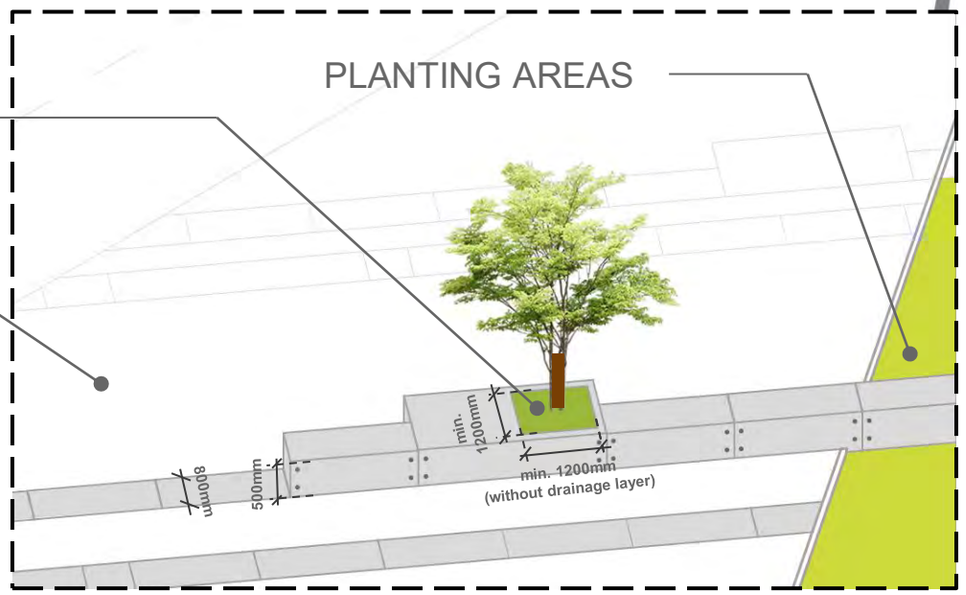
Landscape Design | Main Entrance



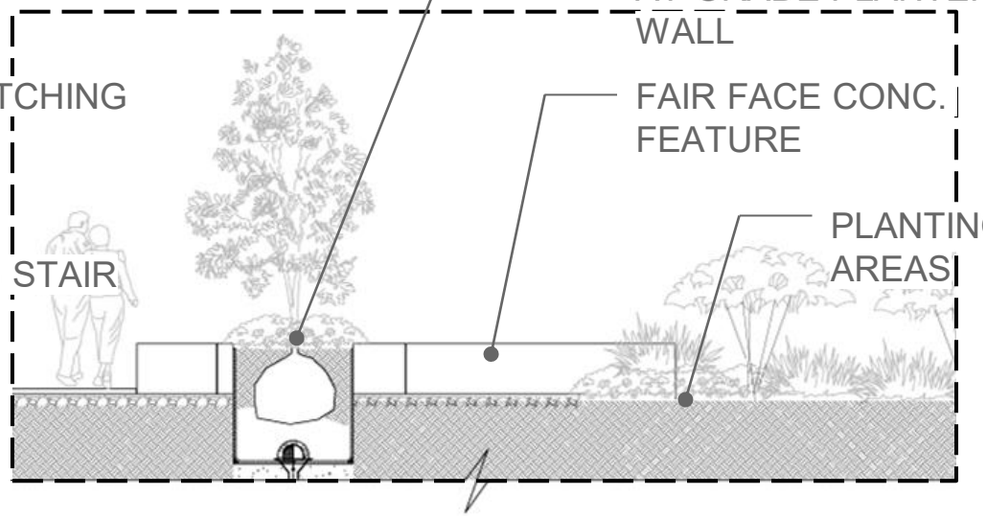
Appendix E - Soft Landscape Design

Landscape Design | Drop off Plaza

BLOW UP AXON

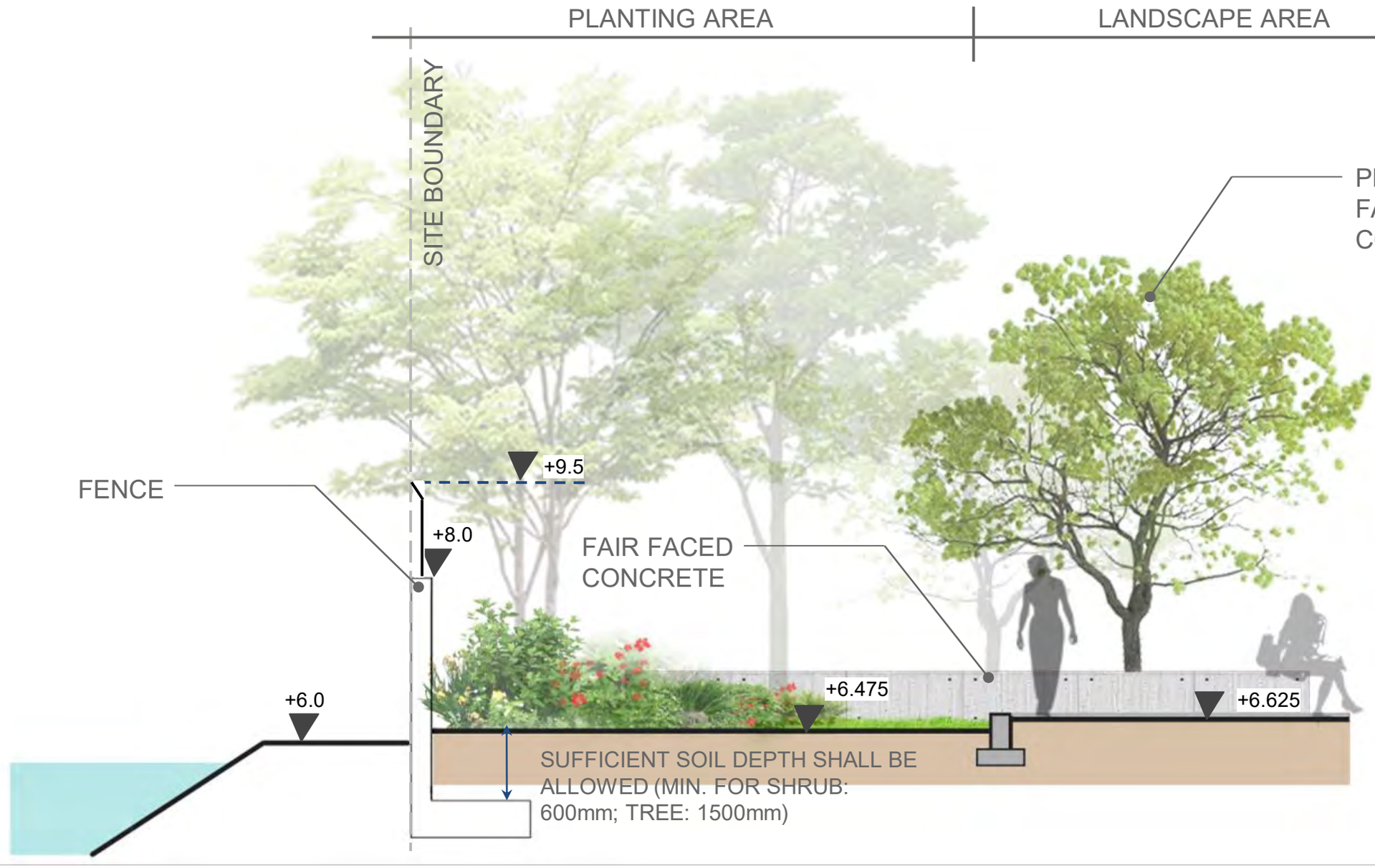


SECTION



Appendix E - Soft Landscape Design

Landscape Design | Main Plaza



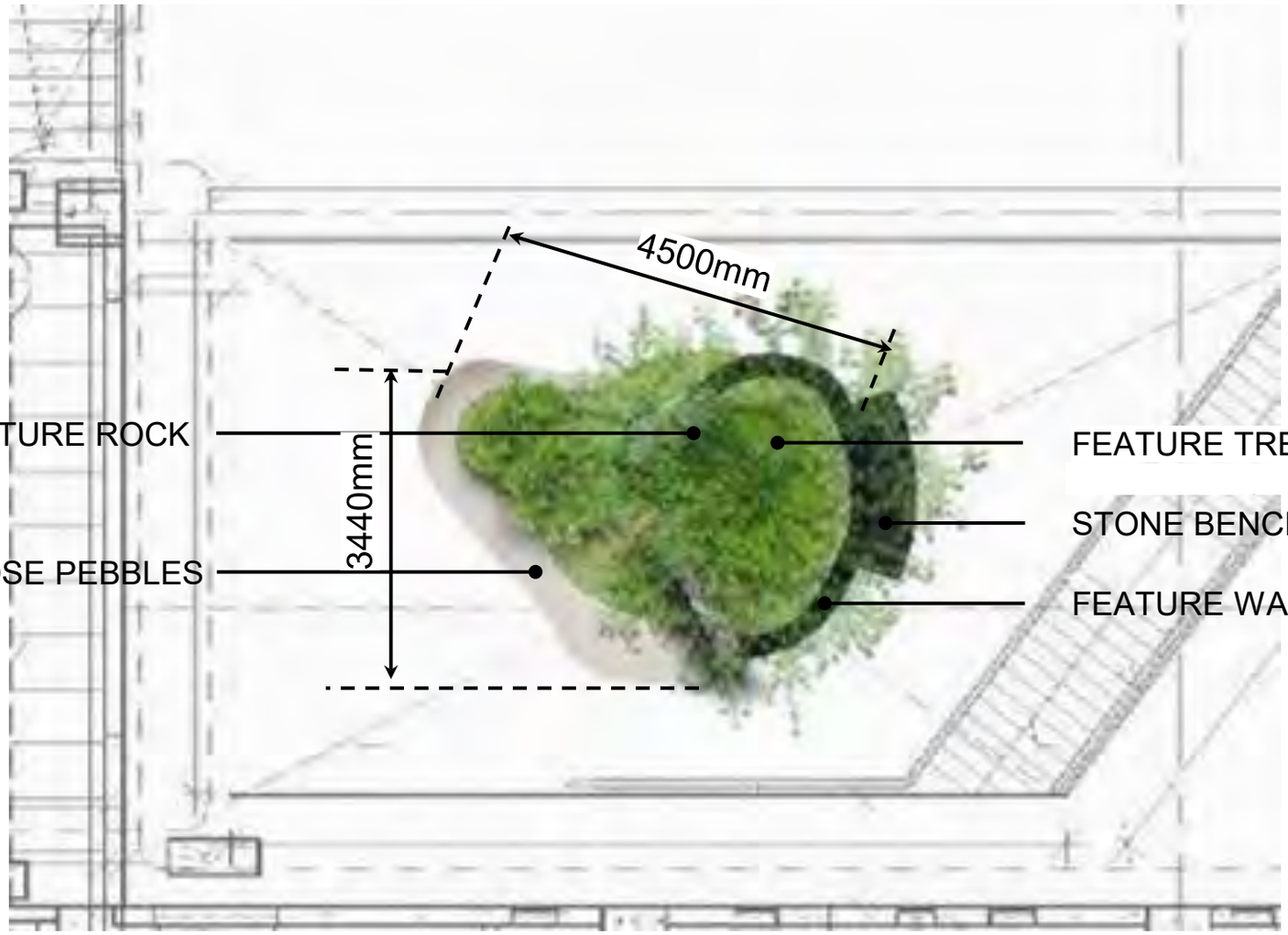
Appendix E - Soft Landscape Design

Landscape Design | Admin Building

Admin Building - 2nd Floor

Appendix E - Soft Landscape Design

Landscape Design | Admin Building

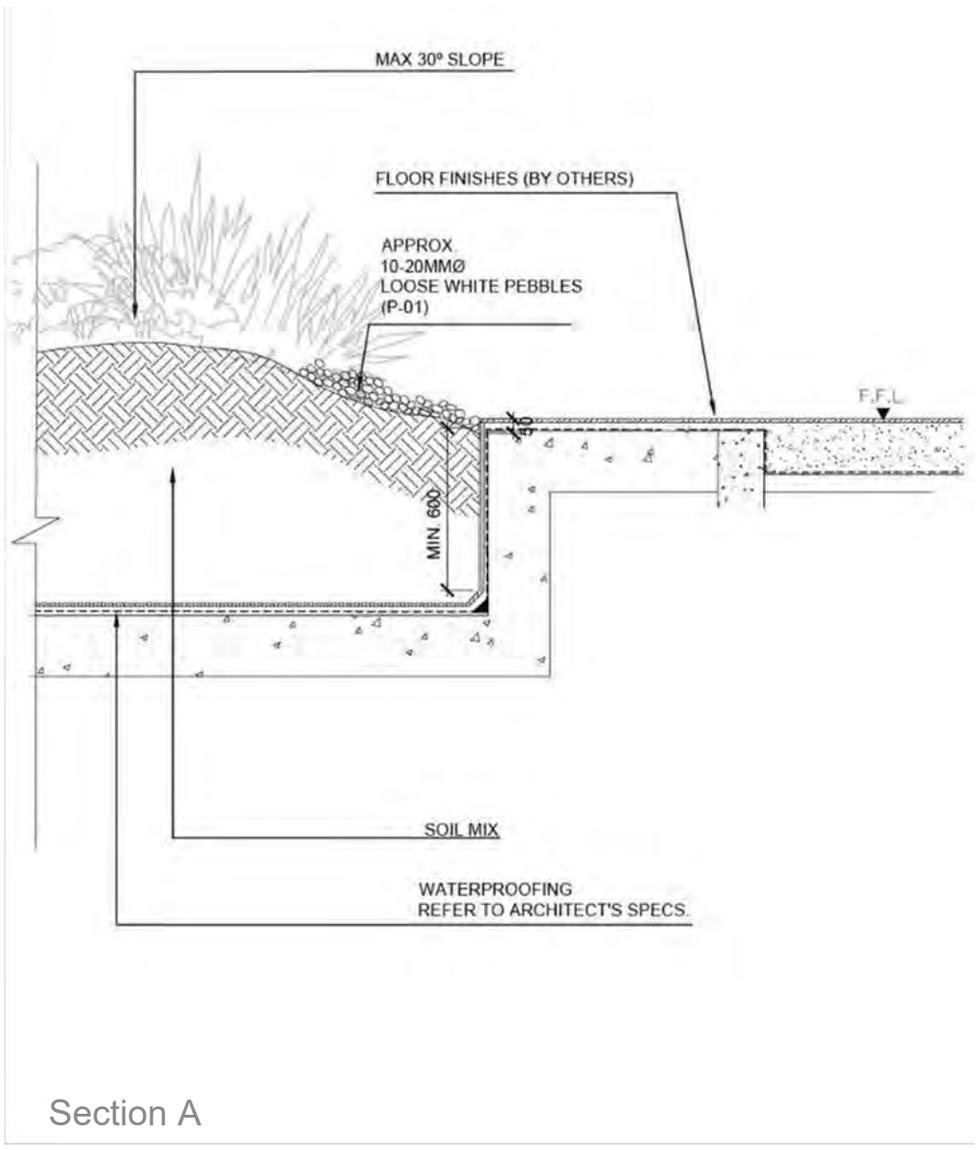


Admin Building - 1st Floor

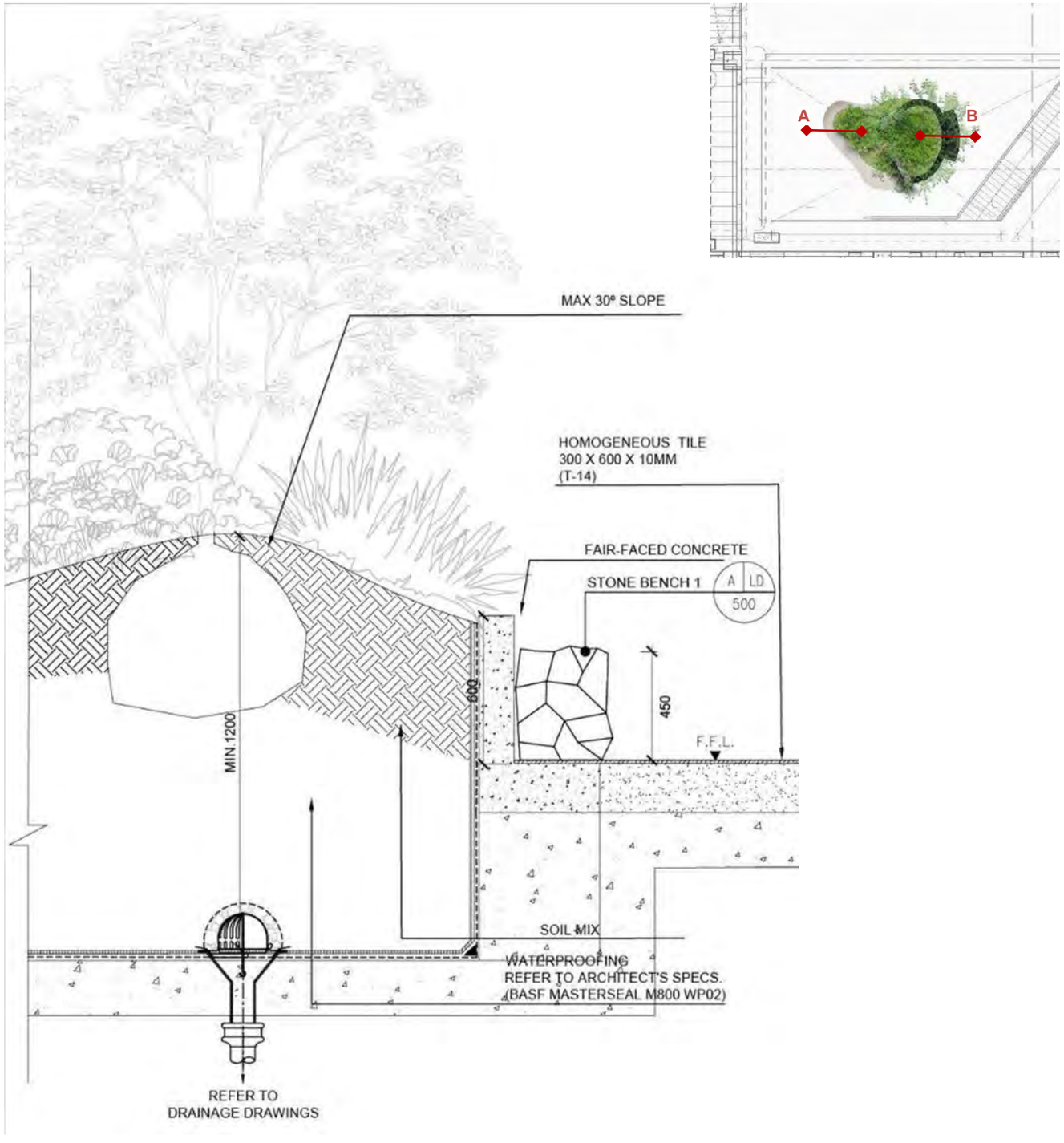
0 5 10m

Appendix E - Soft Landscape Design

Landscape Design | Admin Building

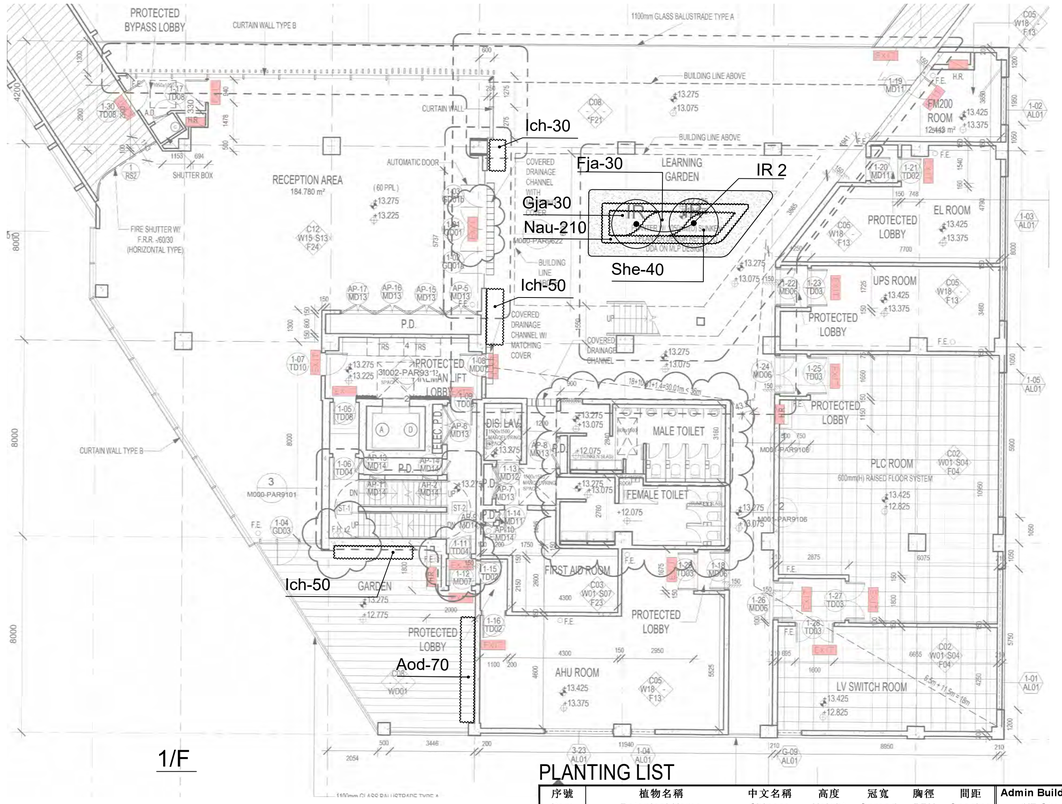


Section A

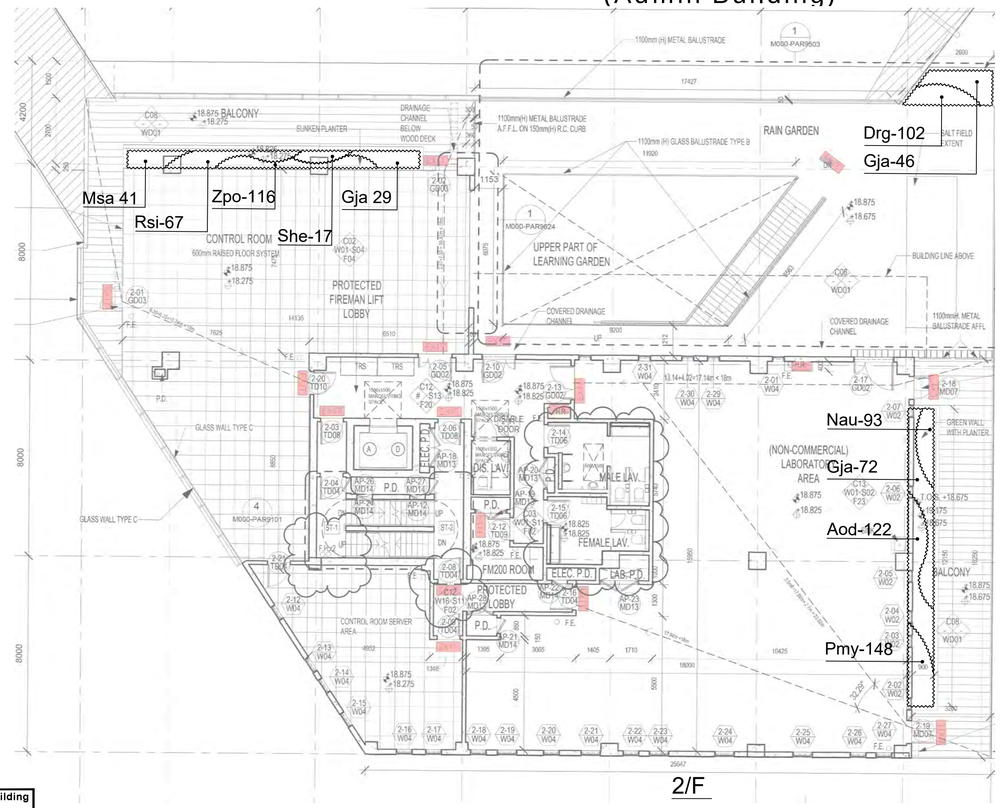


Section B

Appendix E - Soft Landscape Design (Admin Building)



1/F

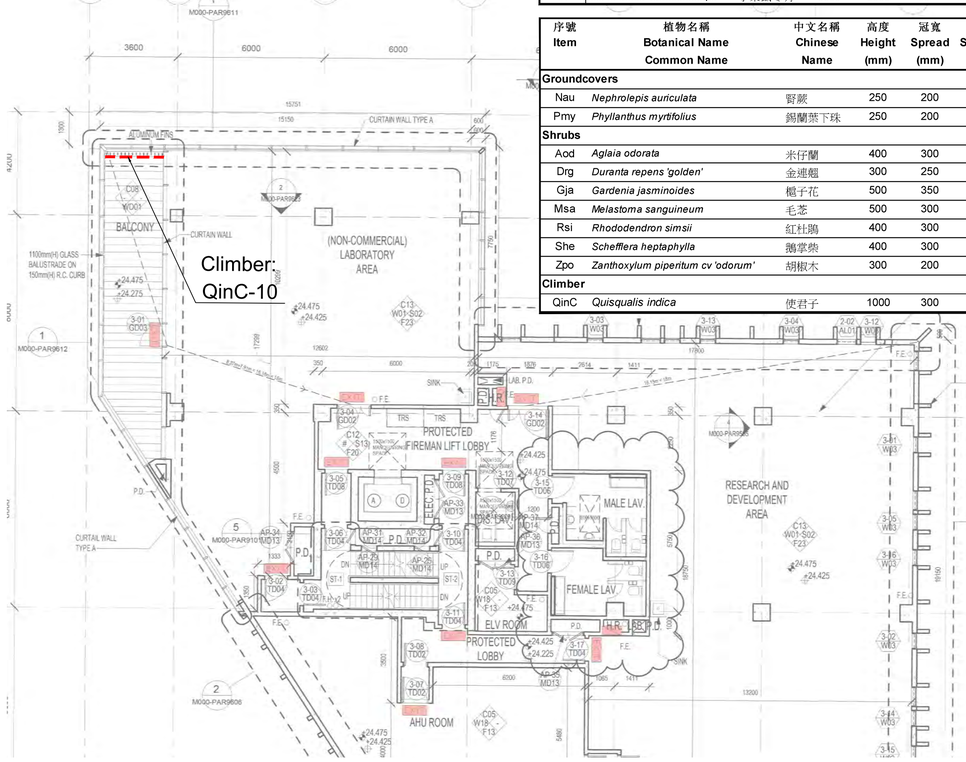


2/F

PLANTING LIST

序號 Item	植物名稱 Botanical Name / Common Name	中文名稱 Chinese Name	高度 Height (mm)	冠寬 Spread (mm)	胸徑 DBH (mm)	間距 Spacing (mm)	Admin Building 1/F Qty. (nos.)
Trees							
IR	*Ilex rotumda var.microcarpa*	小果鐵冬青	3000	2000	60	5000	2

序號 Item	植物名稱 Botanical Name / Common Name	中文名稱 Chinese Name	高度 Height (mm)	冠寬 Spread (mm)	間距 Spacing (mm)	Admin Building 1/F Qty. (nos.)	2/F Qty. (nos.)	3/F Qty. (nos.)	4/F Qty. (nos.)
Groundcovers									
Nau	*Nephrolepis auriculata*	腎蕨	250	200	200	210	93	-	-
Pmy	*Phyllanthus myrtifolius*	錫蘭葉下珠	250	200	150	-	148	-	-
Shrubs									
Aod	*Aglaia odorata*	米仔蘭	400	300	200	70	122	-	-
Drg	*Duranta repens 'golden'*	金運艷	300	250	150	-	102	-	-
Gja	*Gardenia jasminoides*	檀子花	500	350	250	30	147	-	-
Msa	*Melastoma sanguineum*	毛苳	500	300	200	-	41	-	-
Rsi	*Rhododendron simsii*	紅杜鵑	400	300	200	-	67	-	-
She	*Schefflera heptaphylla*	鵝掌柴	400	300	250	40	17	-	-
Zpo	*Zanthoxylum piperitum cv 'odorum'*	胡椒木	300	200	150	-	116	-	-
Climber									
QinC	*Quisqualis indica*	使君子	1000	300	500	-	-	10	10



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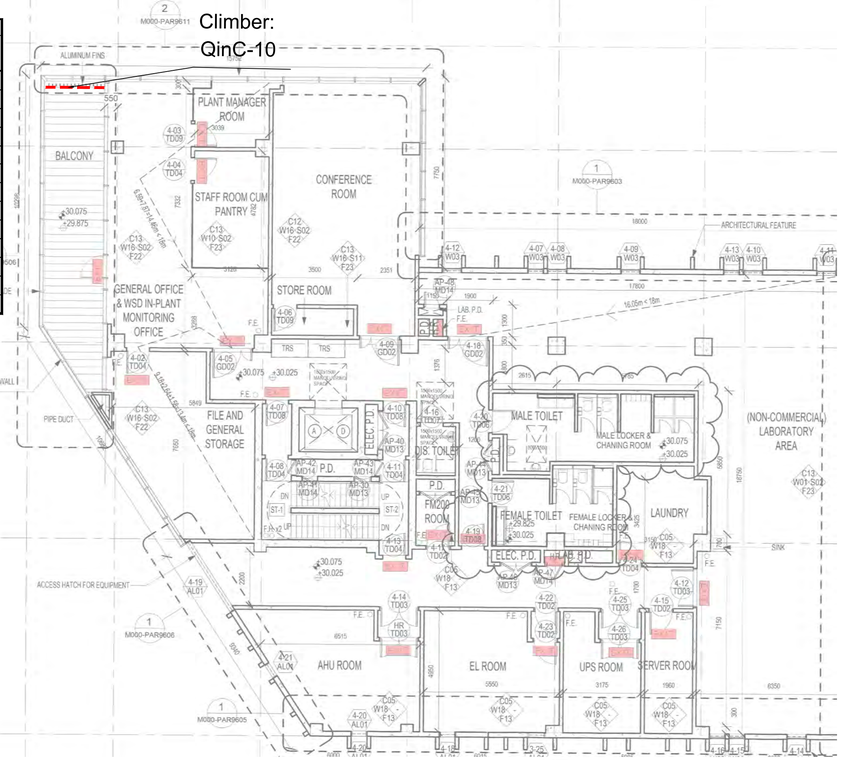
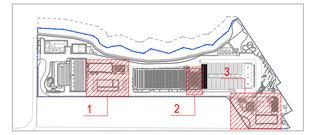


4/F

KEY PLAN scale 1:6000



LEGEND:

TREE

SHRUBS & GROUNDCOVERS

CLIMBER

REMARKS:
NOT LESS THAN 1200mm CLEAR SOIL WIDTH AND DEPTH SHOULD BE PROVIDED FOR ALL TREE PLANTING AREAS AND 600mm SOIL DEPTH FOR SHRUBS AND 300mm SOIL DEPTH FOR GROUNDCOVERS.

Rev	Description	By	Date

Employer
水務署 Water Supplies Department

Supervising Officer designate
binnies

Design Checker
ARCADIS Design & Consultancy for natural and built assets

Contractor
acciona JEC CRCC
AJC JOINT VENTURE

Designer
wsp
In Association with APU

Project title
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

Drawing title
PLANTING PLAN – ADMIN BUILDING
–
–
–
–

Drawing no.	Rev.
TKOD1-DWG-A000-WLA3114	–

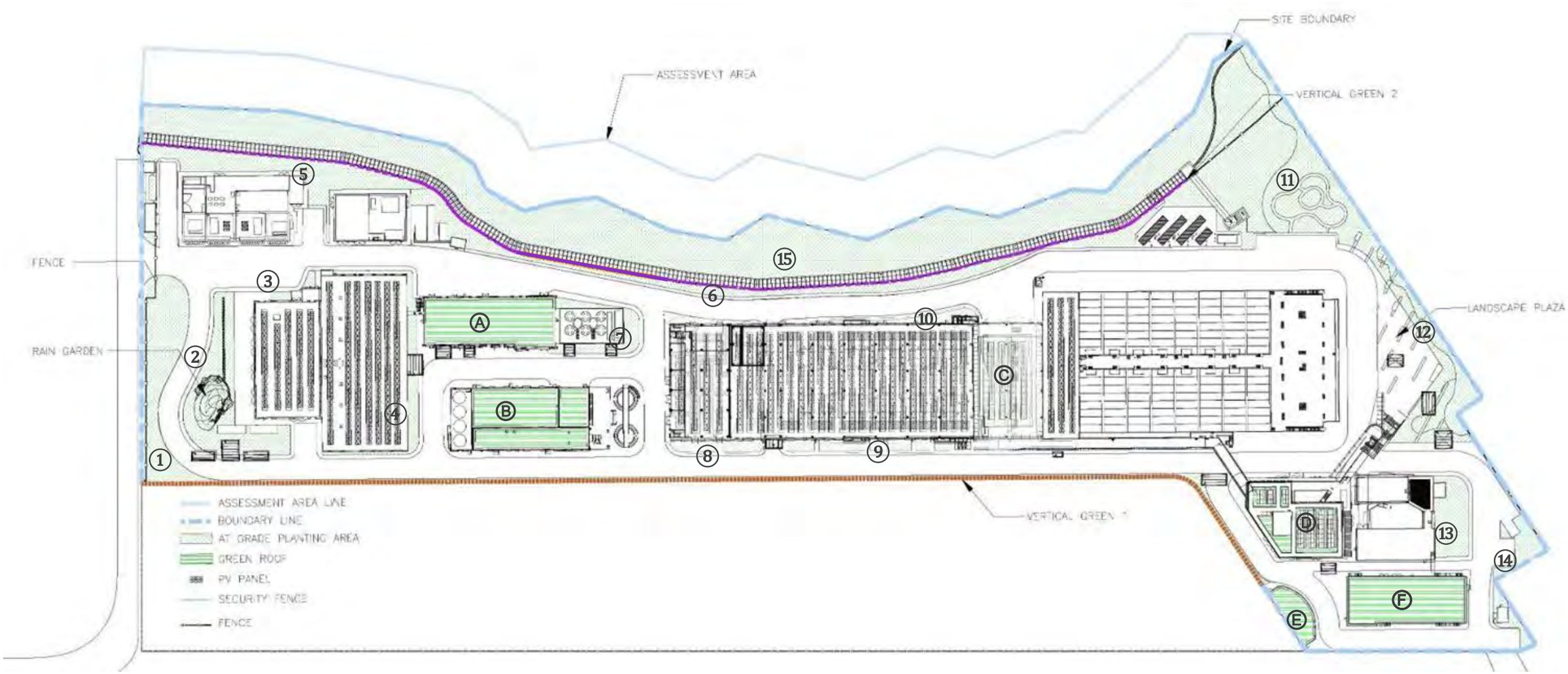
Drawn	Date	Checked	Approved
AC	10 MAY 2021	XL	–

Scale 1:125@A1

Status DETAILED DESIGN APPROVAL

Appendix E - Soft Landscape Design

Landscape Design | Green Area Calculation



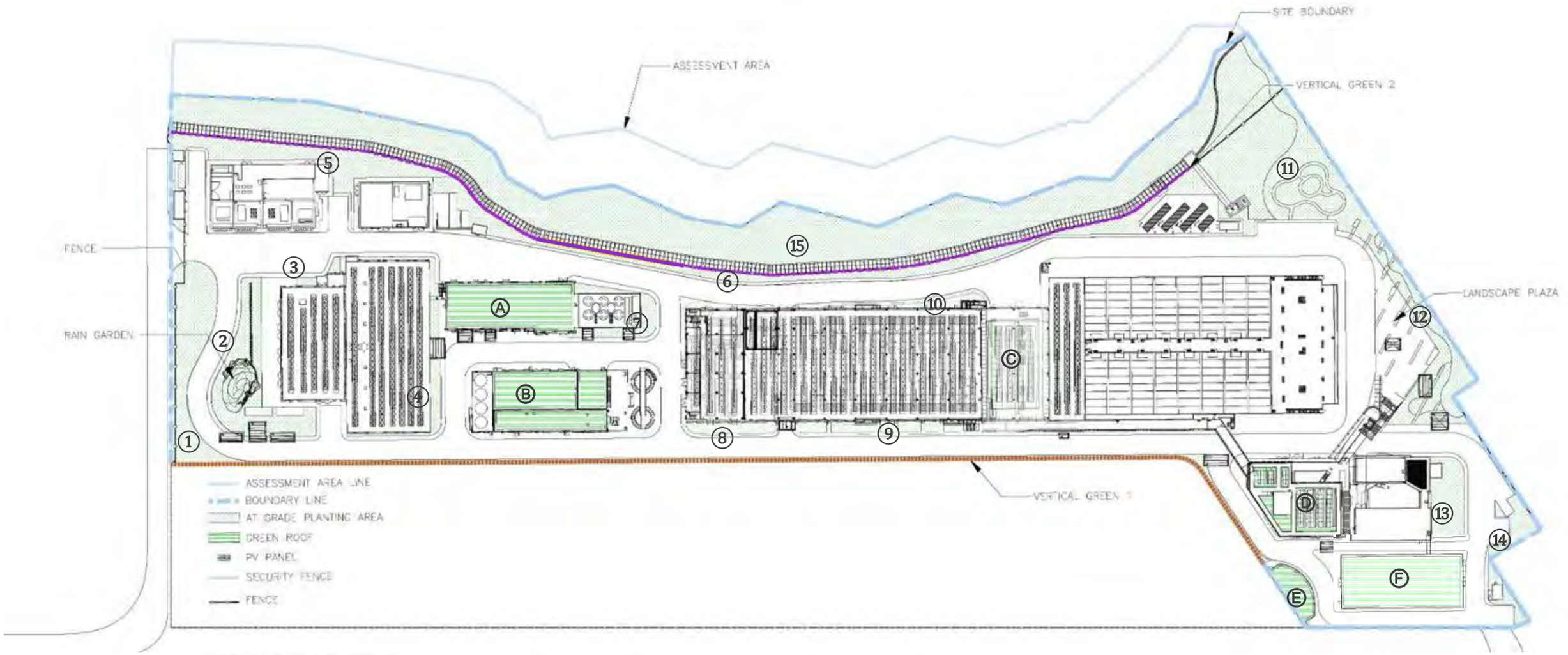
ITEM	AREA (m^2)
①	1252.578
②	736.357
③	42.288
④	250.301
⑤	805.819
⑥	1101.13
⑦	196.241
⑧	109.888

ITEM	AREA (m^2)
⑨	200.463
⑩	91.075
⑪	2245.921
⑫	663.355
⑬	318.392
⑭	259.803
⑮	5426.849
TOTAL	13700.46

ITEM	AREA (m^2)
Ⓐ	696.932
Ⓑ	736.342
Ⓒ	197.214
Ⓓ	162.64
Ⓔ	152.508
Ⓕ	622.136
TOTAL	2,567.772

Appendix E - Soft Landscape Design

Landscape Design | Green Area Calculation



SITE BOUNDARY: 56,120.8 SQM
30% GREENERY REQUIREMENT: 16,836.2 SQM
15% AT GRADE REQUIREMENT: 8,418.12 SQM
MAX. 30% CAP OF ALL GREENERY (VERTICAL GREEN, GRASS PAVER, COVERED PLANTING AREA): 5,050.86 SQM

AT GRADE TOTAL PLANTING AREA (EXCLUDING VERTICAL GREENING) : 13,700.46 SQM (Hence, the at grade greenery calculation requirement is achieved)
[1+2+3+4+5+6+7+8+9+10+11+12+13+14+15]

GREEN ROOF (EXCLUDING VERTICAL GREENING) : 2,567.772 SQM
[A+B+C+D+E+F]

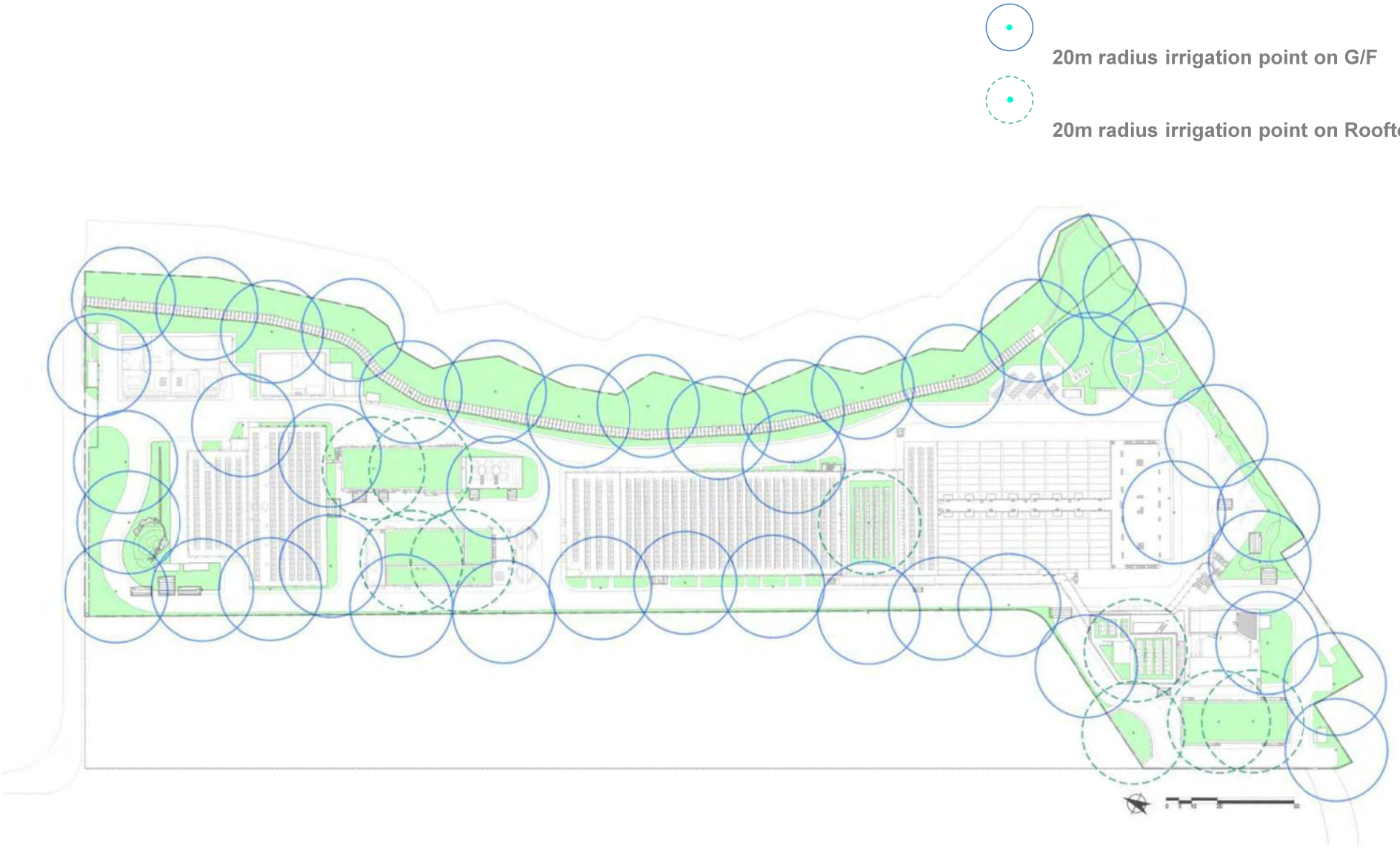
VERTICAL GREEN 1: 585.137(L) X 3(H) = 1,755.411 SQM (Detail refer to A15 and A16)

VERTICAL GREEN 2: 222.689(L) X 1.5(H) = 334.034 SQM (Detail refer to A14)

TOTAL GREENERY AREA: 13,700.46 + 2,567.772 + 1,755.411 + 334.034 = 18,357.677 SQM (32.71%)

Proposed GAC 32.7% (18358 SQ.M.) > Required GAC 30% (16836 SQ.M.)

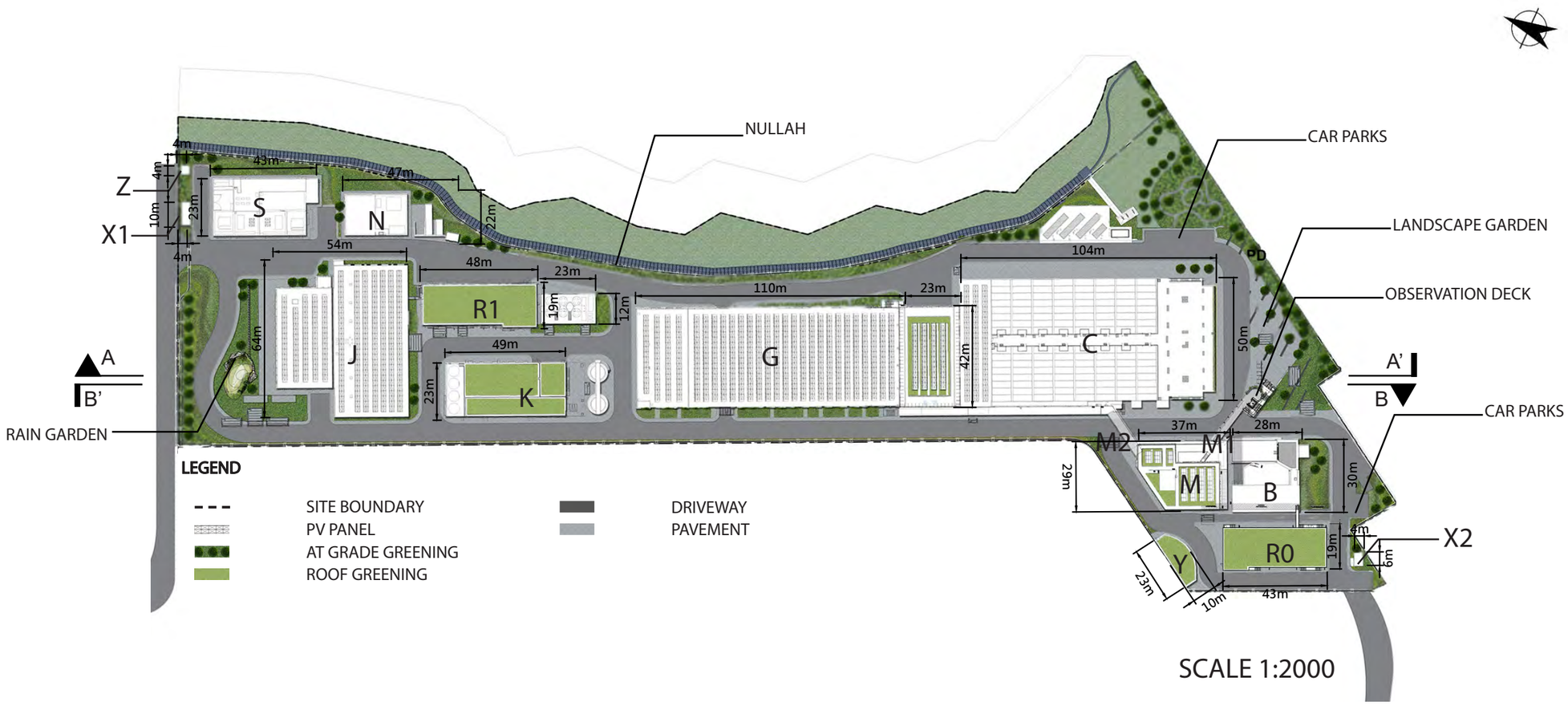
Landscape Design | Irrigation Points



Appendix A - Figure A23

Appendix F – Hard Landscape Design

App F - Hard landscape design (Overview)



LEGEND

M - ADMINISTRATION BUILDING
M1- ELEVATED WALKWAY
V- INSPECTION CORRIDOR
B - COMBINED INTAKE & OUTFALL SHAFT
R0 - CHEMICAL BUILDING
C - ACTIDAFF
G - REVERSE OSMOSIS & ELECTRICAL BUILDING
K - POST-TREATMENT BUILDING
J - PRODUCT WATER STORAGE TANK AND ELECTRICAL BUILDING
R1 - ON-SITE CHLORINE GENERATION SYSTEM BUILDING AND CO^2 TANK AREA

N - MAIN ELECTRICAL & CHILLER PLANT BUILDING
S - TKO DESALINATION PLANT SUBSTATION
Z - MASTER METER ROOM
X1 - GUARD HOUSE A
X2 - GUARD HOUSE B
Y - WORKSHOP

App F - Hard landscape design (Overview)

LEGEND

M - ADMINISTRATION BUILDING
M1- ELEVATED WALKWAY
V- INSPECTION CORRIDOR
B - COMBINED INTAKE & OUTFALL SHAFT
R0 - CHEMICAL BUILDING
C - ACTIDAFF
G - REVERSE OSMOSIS & ELECTRICAL BUILDING
K - POST-TREATMENT BUILDING
J - PRODUCT WATER STORAGE TANK AND ELECTRICAL BUILDING
R1 - ON-SITE CHLORINE GENERATION SYSTEM BUILDING AND CO^2 TANK AREA
N - MAIN ELECTRICAL & CHILLER PLANT BUILDING
S - TKO DESALINATION PLANT SUBSTATION
Z - MASTER METER ROOM
X1 - GUARD HOUSE A
X2 - GUARD HOUSE B

LEGEND

SITE BOUNDARY
PV PANEL
AT GRADE GREENING
ROOF GREENING
DRIVEWAY
PAVEMENT

SCALE 1:1000

App F - Hard landscape design (Overview)

LEGEND

M - ADMINISTRATION BUILDING
M1- ELEVATED WALKWAY
V- INSPECTION CORRIDOR
B - COMBINED INTAKE & OUTFALL SHAFT
R0 - CHEMICAL BUILDING
C - ACTIDAFF
G - REVERSE OSMOSIS & ELECTRICAL BUILDING
K - POST-TREATMENT BUILDING
J - PRODUCT WATER STORAGE TANK AND ELECTRICAL BUILDING
R1 - ON-SITE CHLORINE GENERATION SYSTEM BUILDING AND CO^2 TANK AREA
N - MAIN ELECTRICAL & CHILLER PLANT BUILDING
S - TKO DESALINATION PLANT SUBSTATION
Z - MASTER METER ROOM
X1 - GUARD HOUSE A
X2 - GUARD HOUSE B

LEGEND

SITE BOUNDARY
PV PANEL
AT GRADE GREENING
ROOF GREENING
DRIVEWAY
PAVEMENT

SCALE 1:1000

Appendix F - Hard Landscape Design

M - ADMINISTRATION BUILDING

ELEVATION 1 (SCALE 1:300)

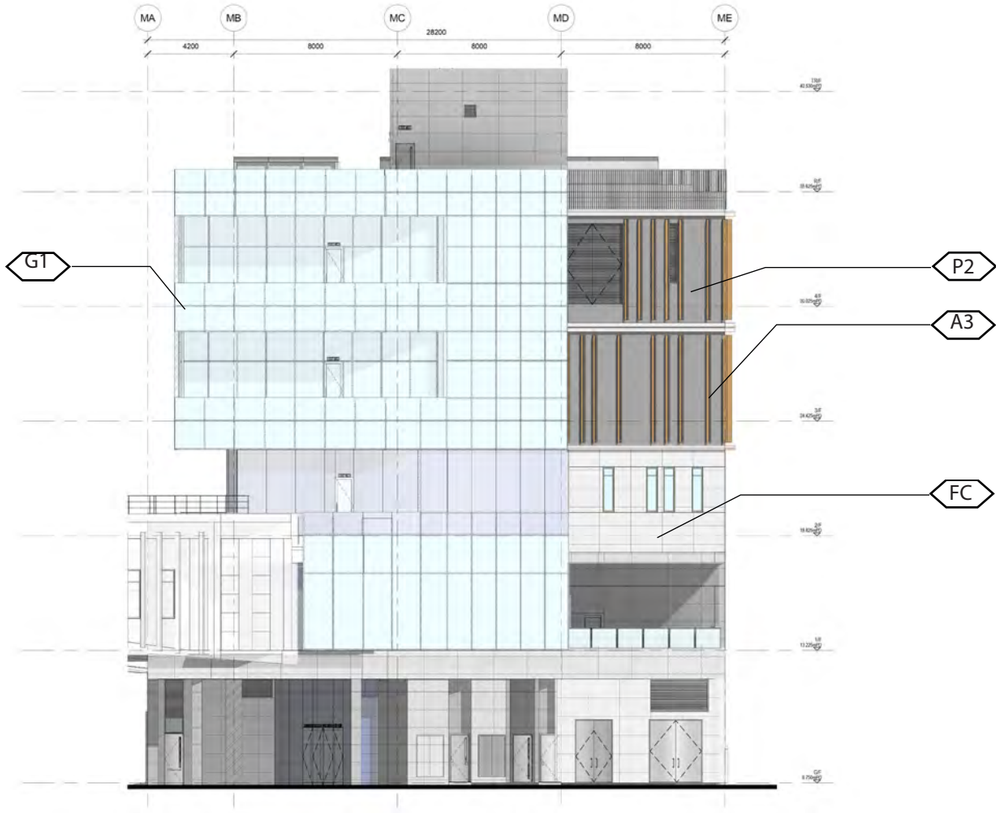
ELEVATION 2 (SCALE 1:300)

LEGEND

FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

M - ADMINISTRATION BUILDING



ELEVATION 3 (SCALE 1:300)

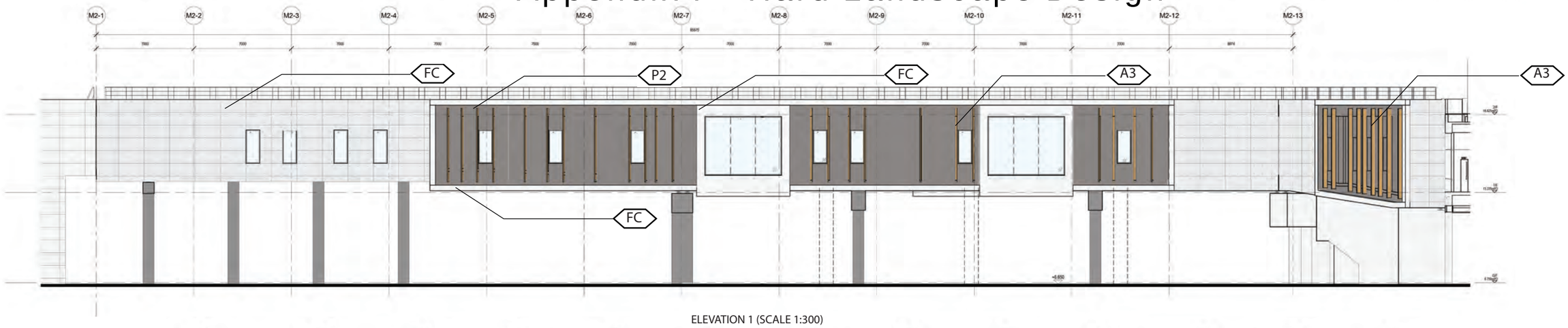
ELEVATION 4 (SCALE 1:300)

LEGEND

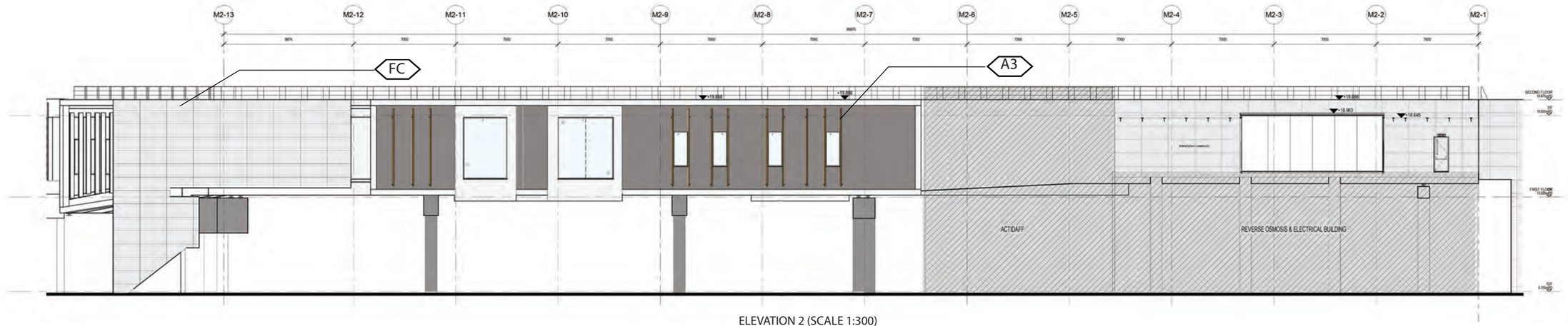
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

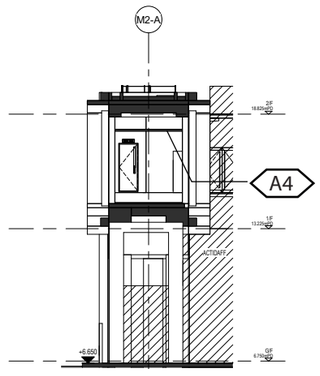
M2- INSPECTION CORRIDOR



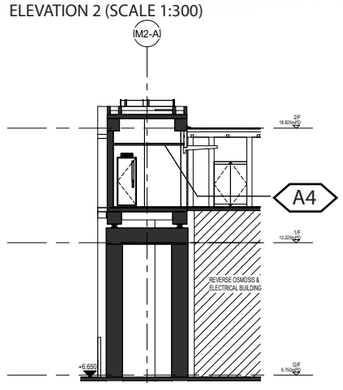
ELEVATION 1 (SCALE 1:300)



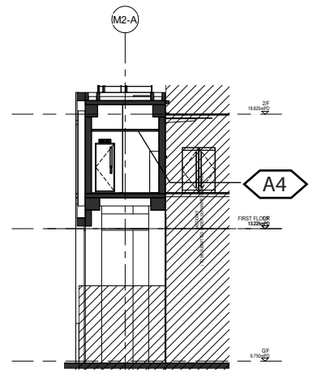
ELEVATION 2 (SCALE 1:300)



SECTION A-A (SCALE 1:300)



SECTION B-B (SCALE 1:300)



SECTION C-C (SCALE 1:300)

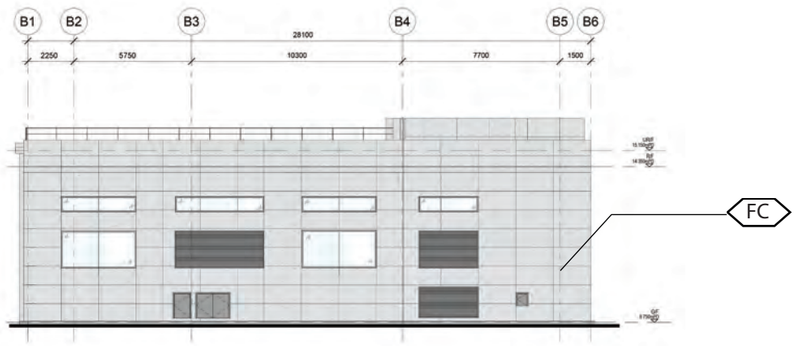
LEGEND

FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

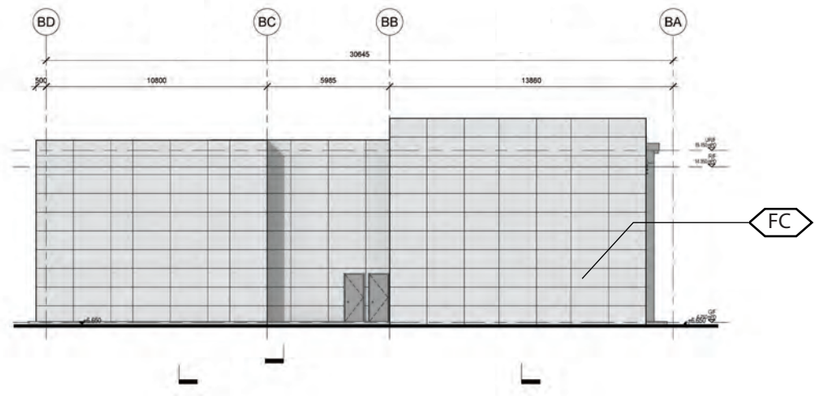
M2-03 - ELEVATION AND SECTION

Appendix F - Hard Landscape Design

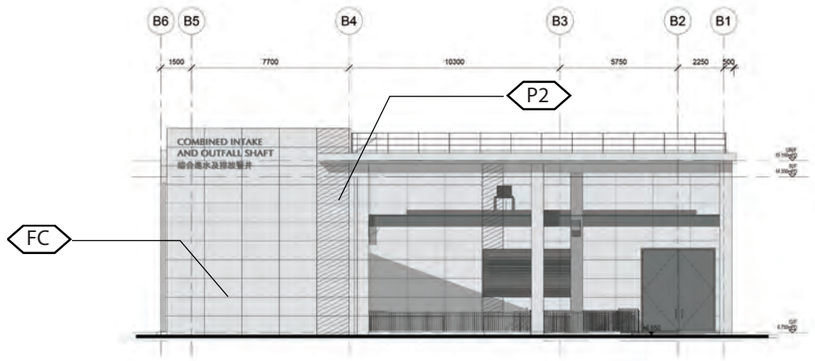
B - COMBINED INTAKE & OUTFALL SHAFT



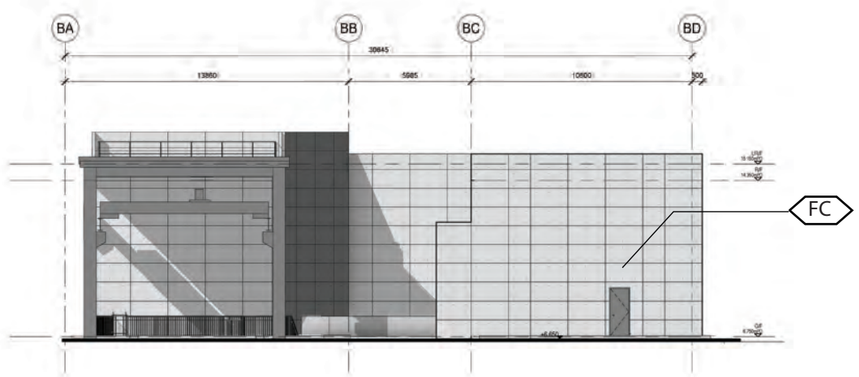
ELEVATION 1 (SCALE 1:300)



ELEVATION 2 (SCALE 1:300)



ELEVATION 3 (SCALE 1:300)



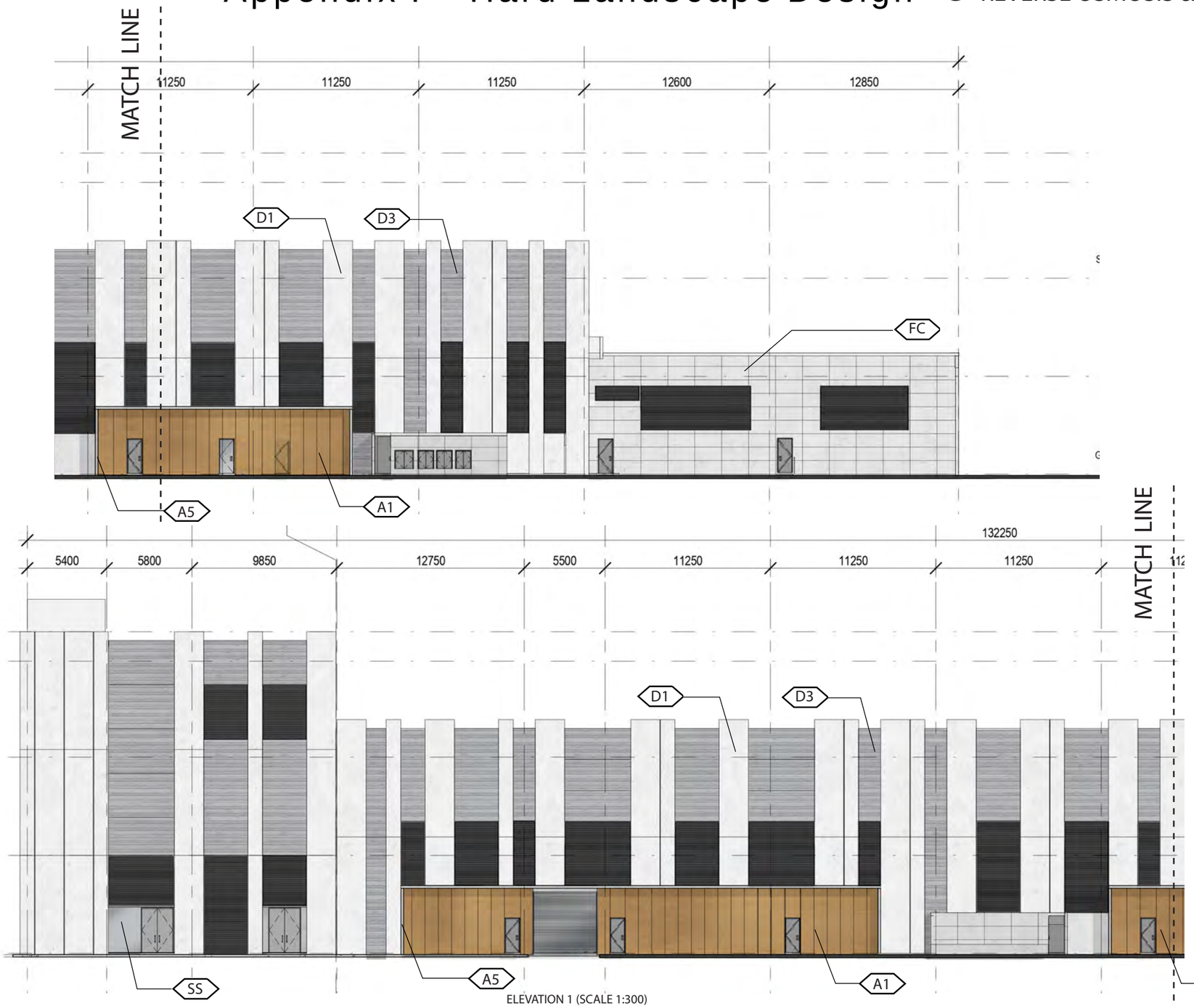
ELEVATION 4 (SCALE 1:300)

LEGEND

FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

G - REVERSE OSMOSIS & ELECTRICAL BUILDING



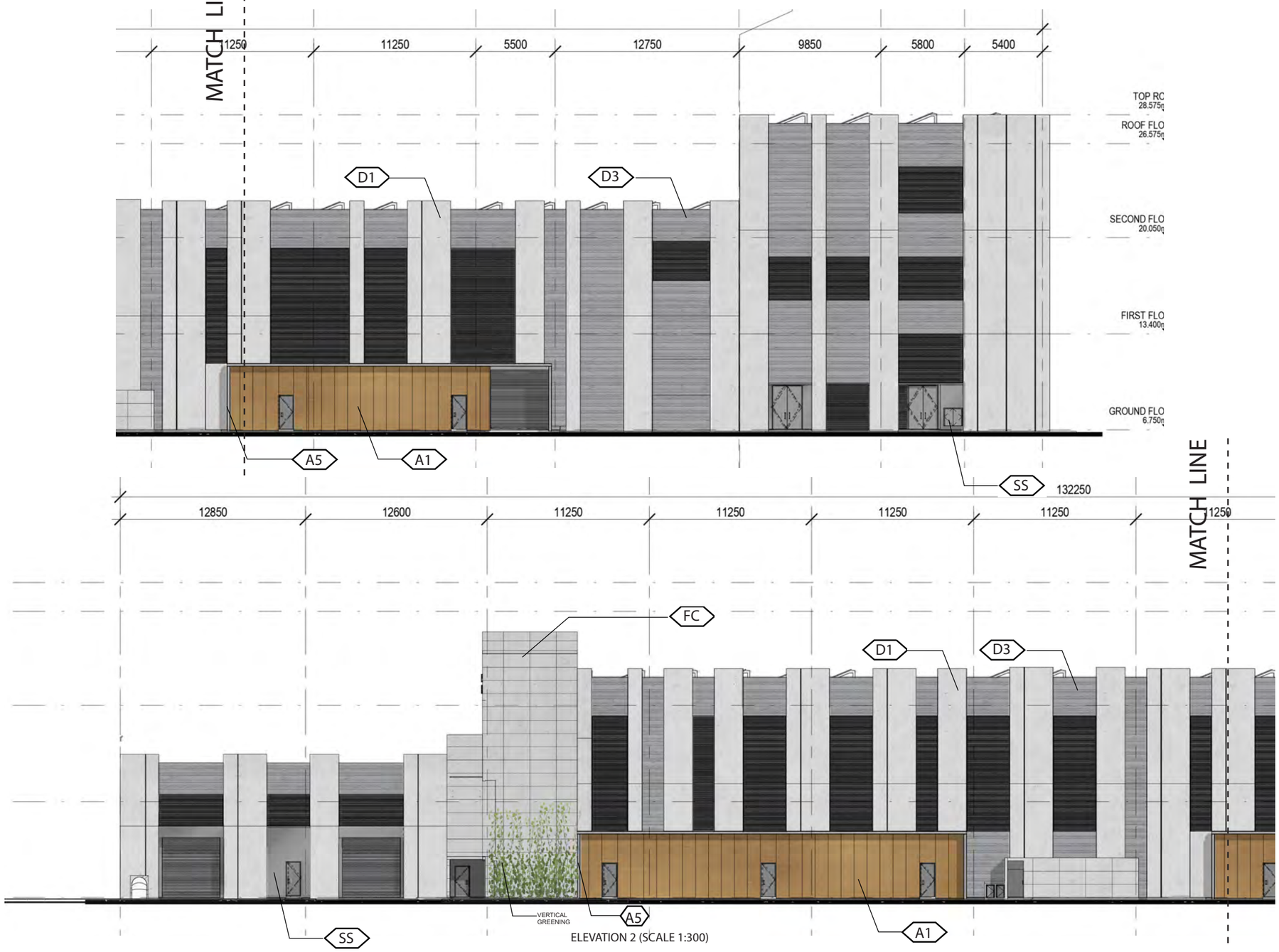
ELEVATION 1 (SCALE 1:300)

LEGEND

FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

G - REVERSE OSMOSIS & ELECTRICAL BUILDING

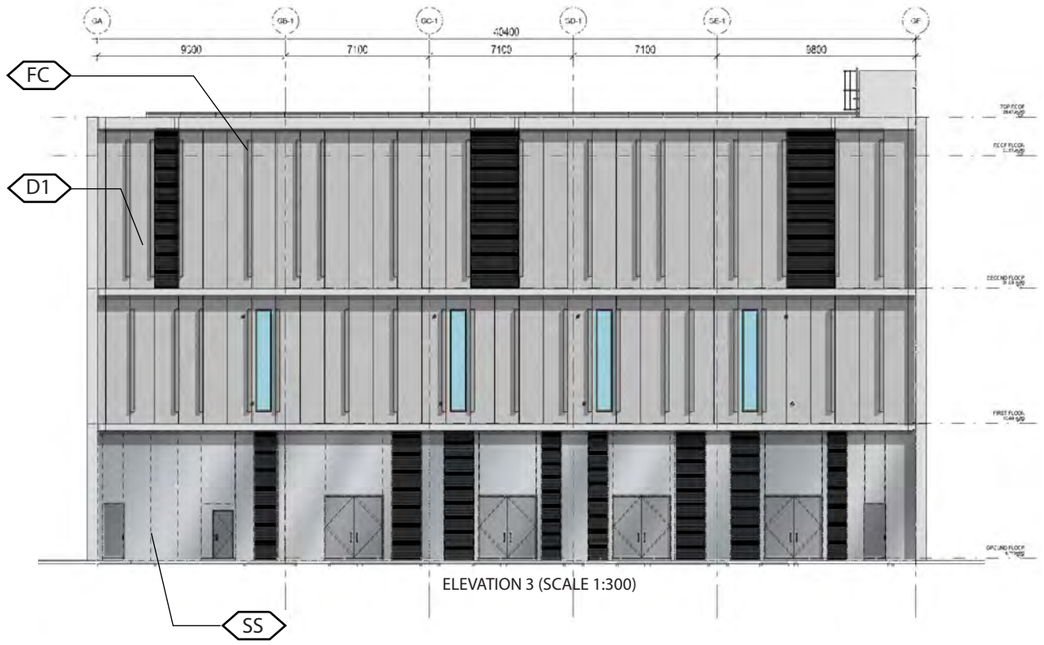


ELEVATION 2 (SCALE 1:300)

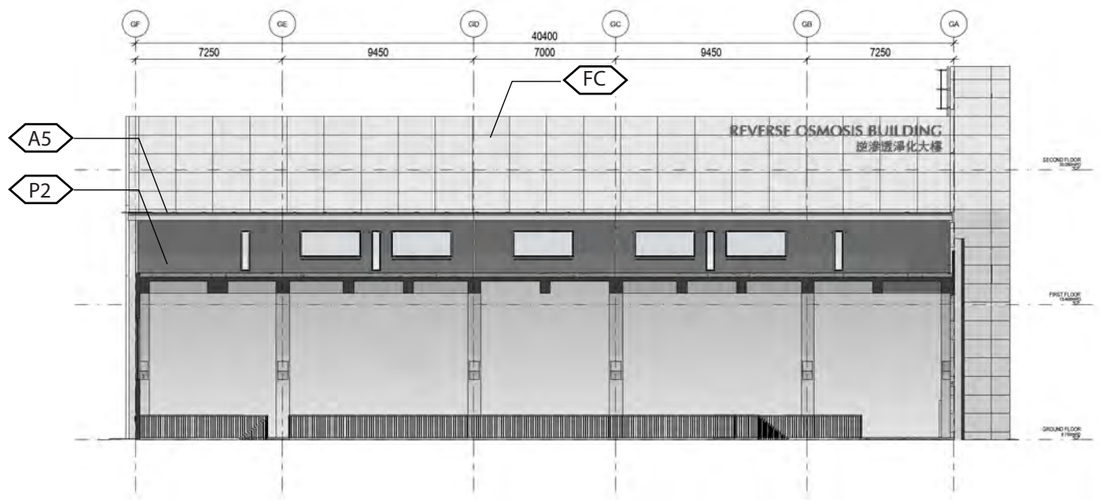
LEGEND

FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design G - REVERSE OSMOSIS & ELECTRICAL BUILDING



ELEVATION 3 (SCALE 1:300)



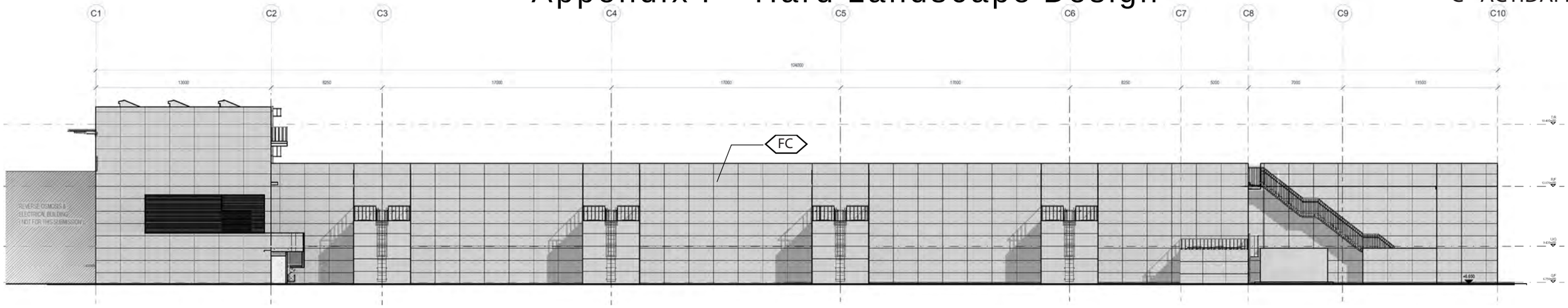
ELEVATION 4 (SCALE 1:300)

LEGEND

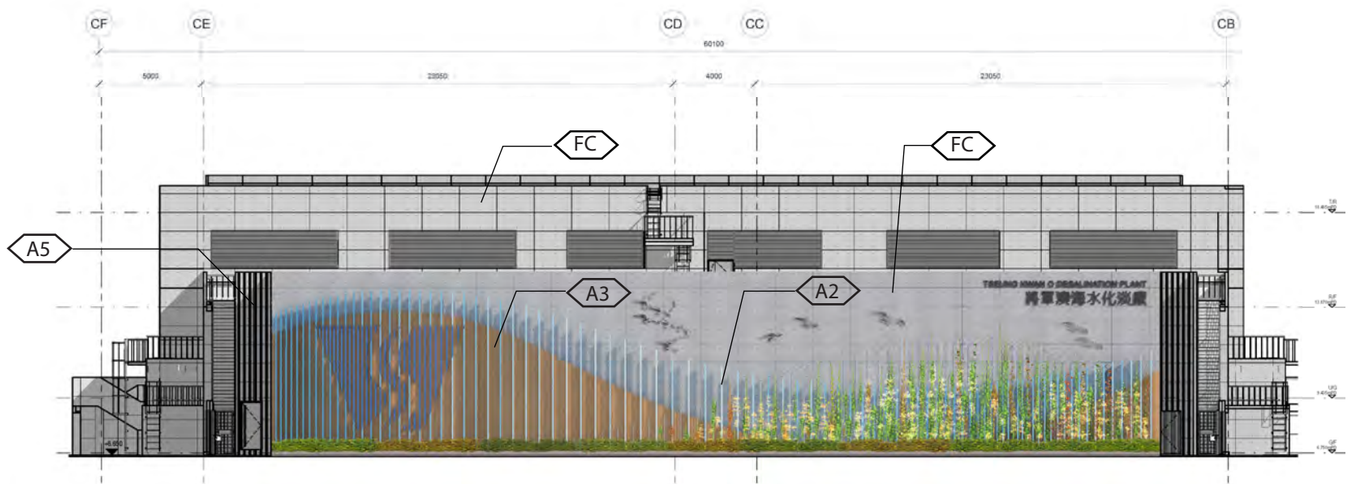
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

C - ACTIDAFF



ELEVATION 1 (SCALE 1:300)



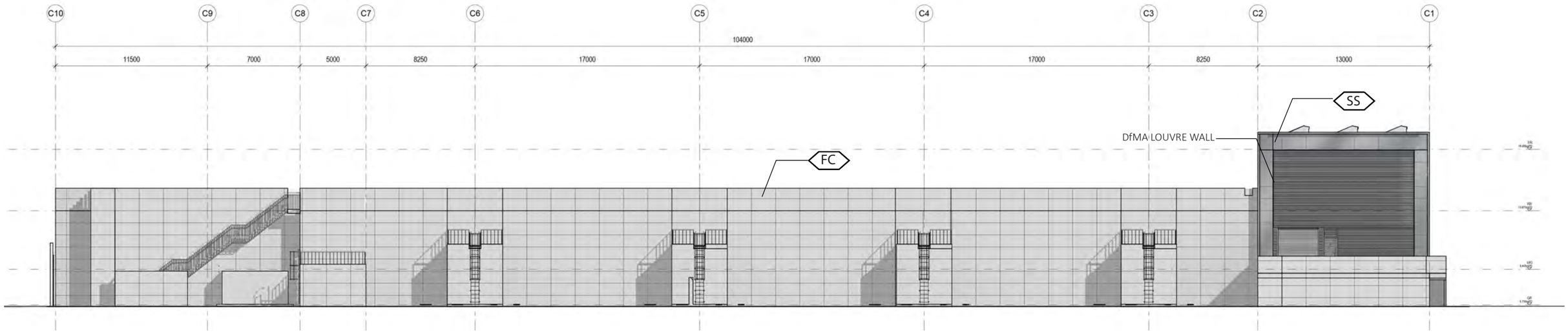
ELEVATION 2 (SCALE 1:300)

LEGEND

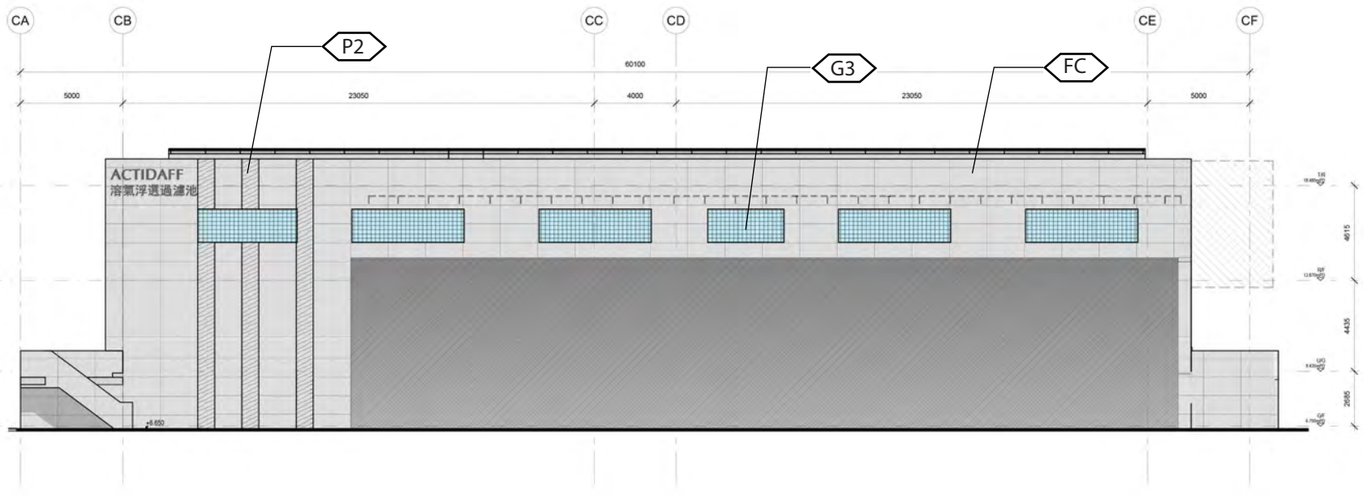
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

C - ACTIDAFF



ELEVATION 3 (SCALE 1:300)



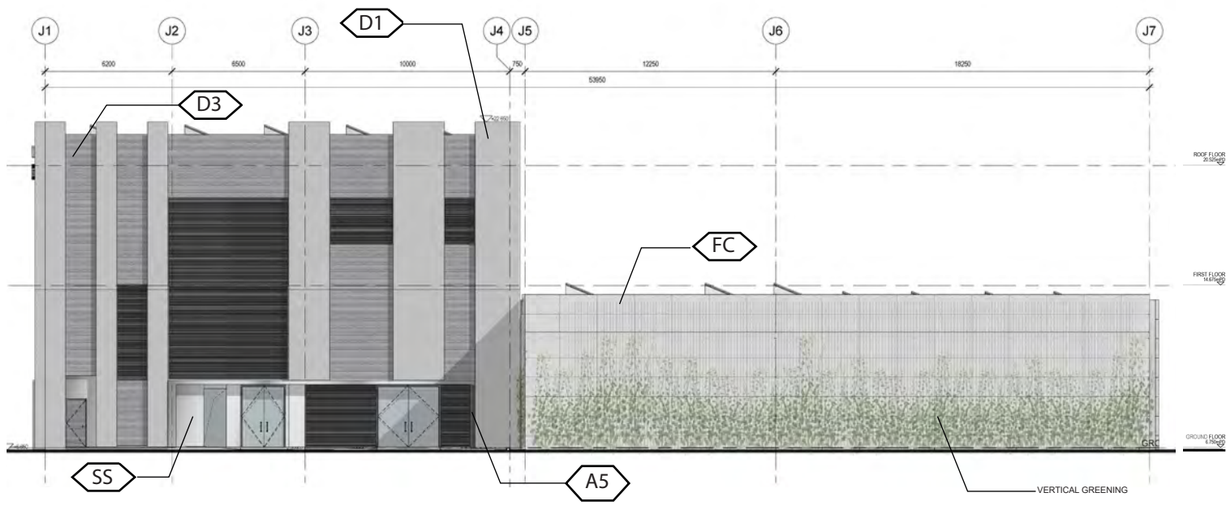
ELEVATION 4 (SCALE 1:300)

LEGEND

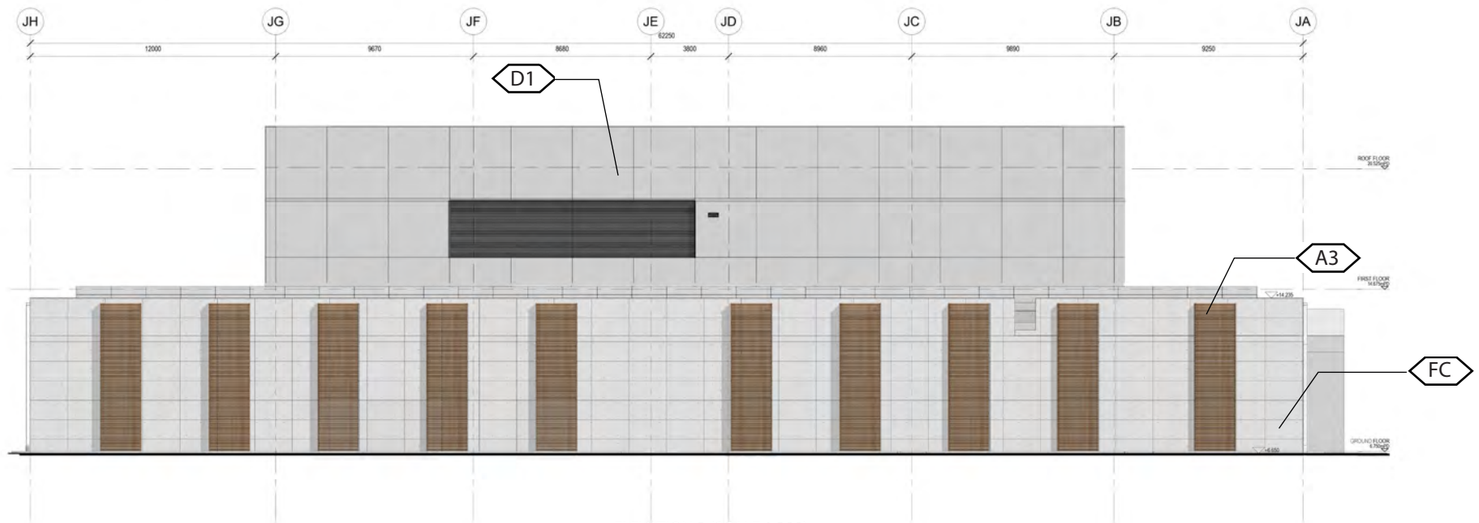
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

J - PRODUCT WATER STORAGE TANK AND ELECTRICAL BUILDING



ELEVATION 1 (SCALE 1:300)



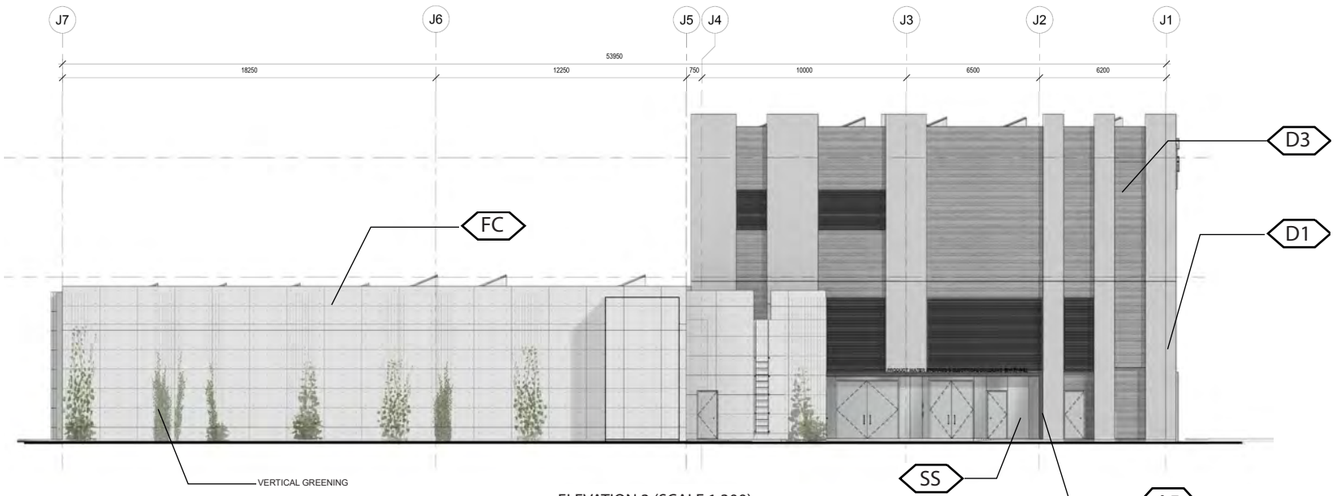
ELEVATION 2 (SCALE 1:300)

LEGEND

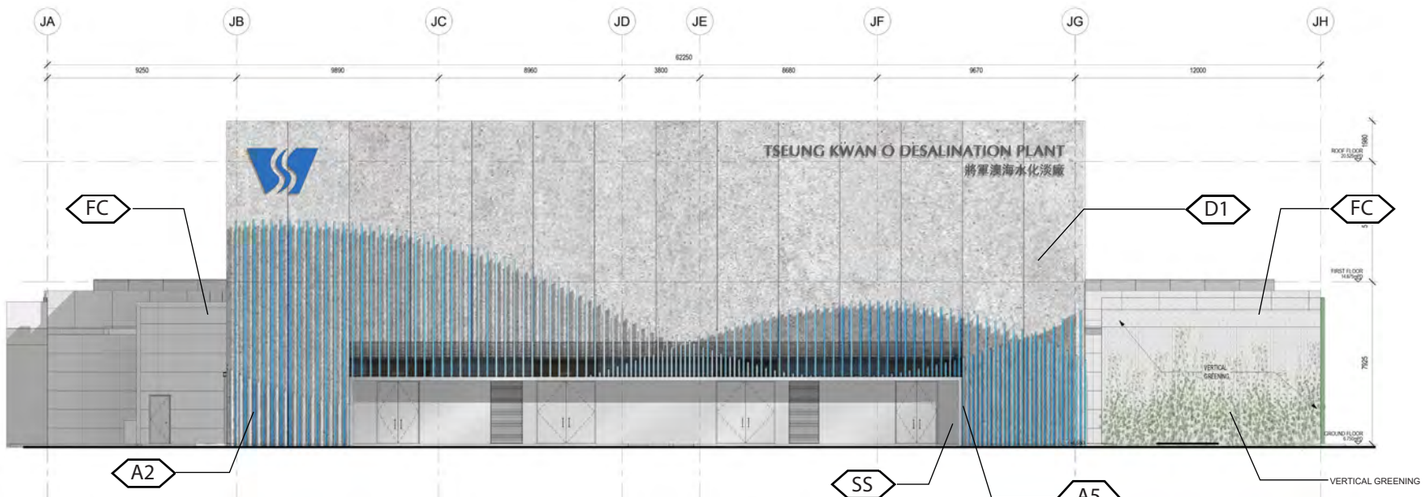
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

J - PRODUCT WATER STORAGE TANK AND ELECTRICAL BUILDING



ELEVATION 3 (SCALE 1:300)



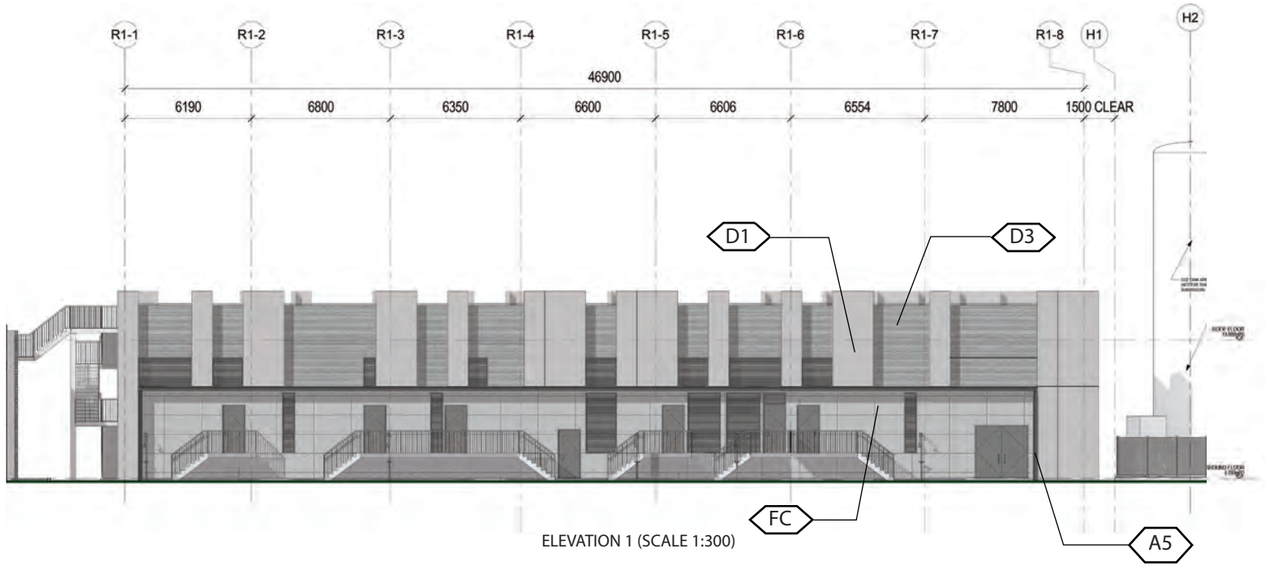
ELEVATION 4 (SCALE 1:300)

LEGEND

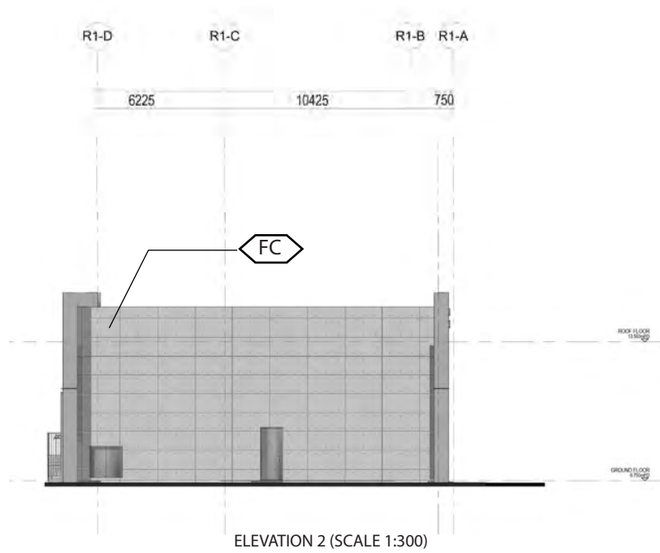
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

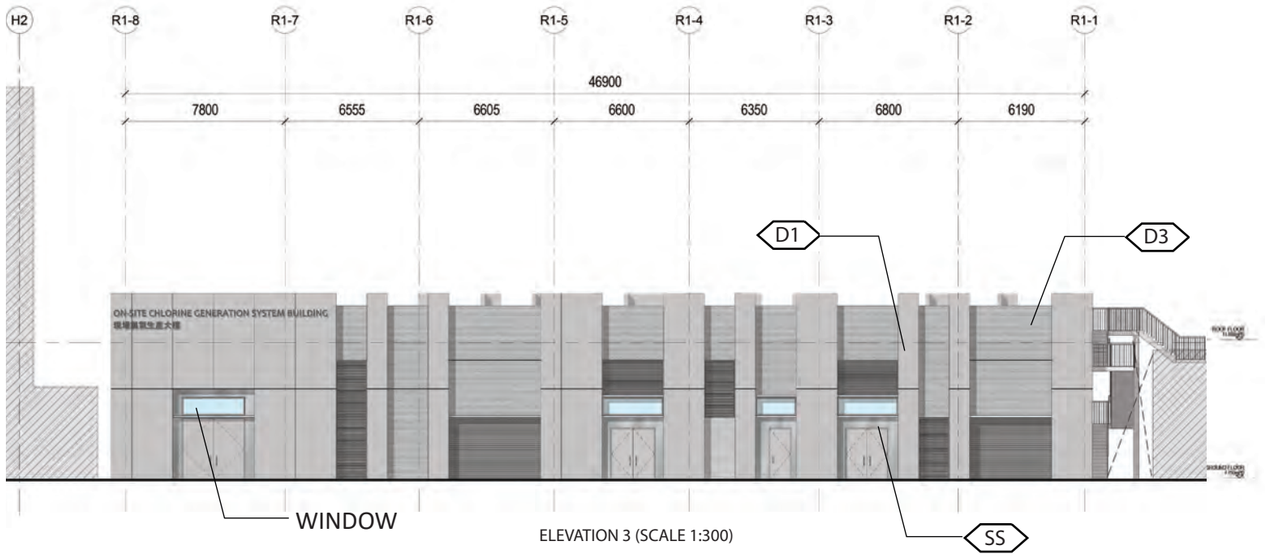
R1 - ON-SITE CHLORINE GENERATION SYSTEM BUILDING



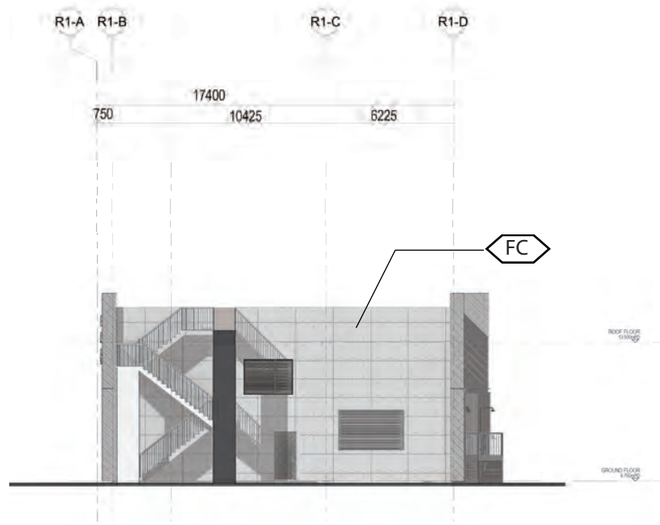
ELEVATION 1 (SCALE 1:300)



ELEVATION 2 (SCALE 1:300)



ELEVATION 3 (SCALE 1:300)



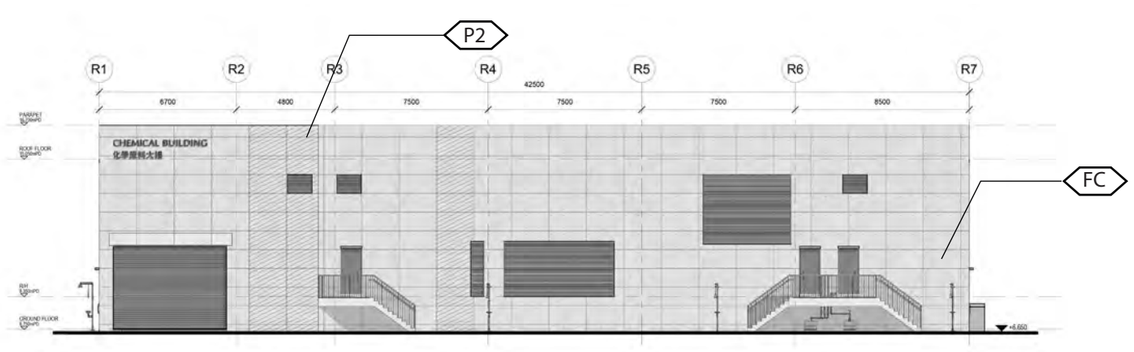
ELEVATION 4 (SCALE 1:300)

LEGEND

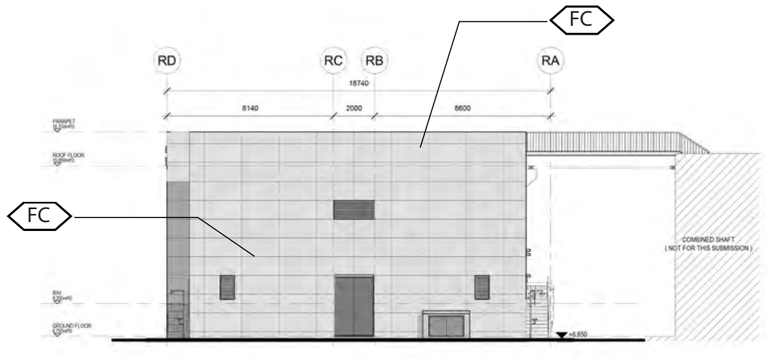
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

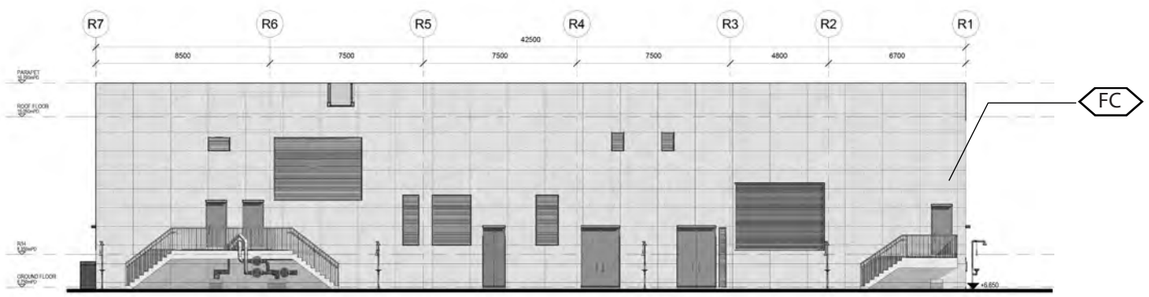
R0 - CHEMICAL BUILDING



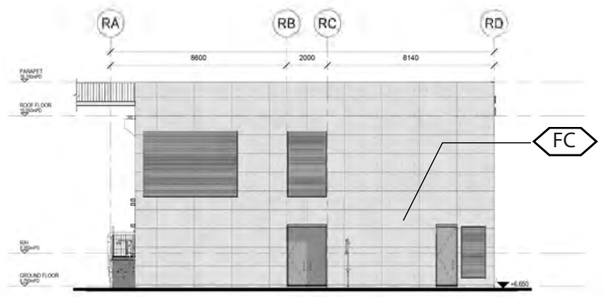
ELEVATION 1 (SCALE1:300)



ELEVATION 2 (SCALE1:300)



ELEVATION 3 (SCALE1:300)



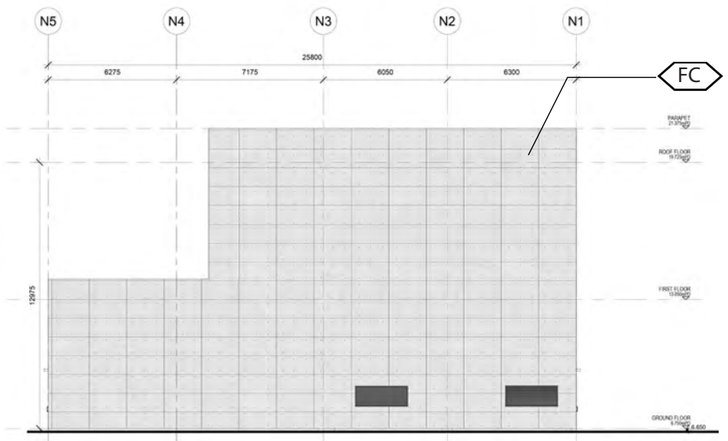
ELEVATION 4 (SCALE1:300)

LEGEND

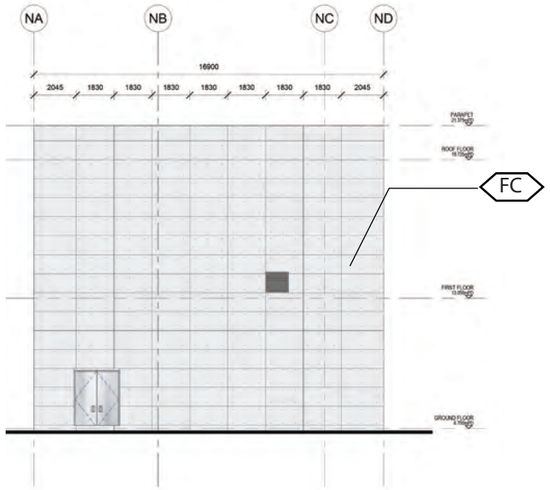
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

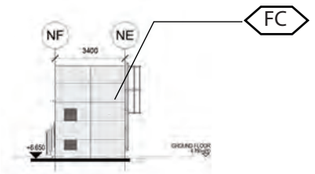
N - MAIN ELECTRICAL & CHILLER PLANT BUILDING



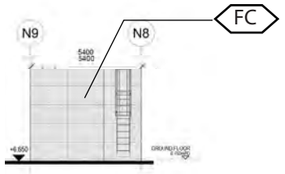
ELEVATION 1 (SCALE 1:300)



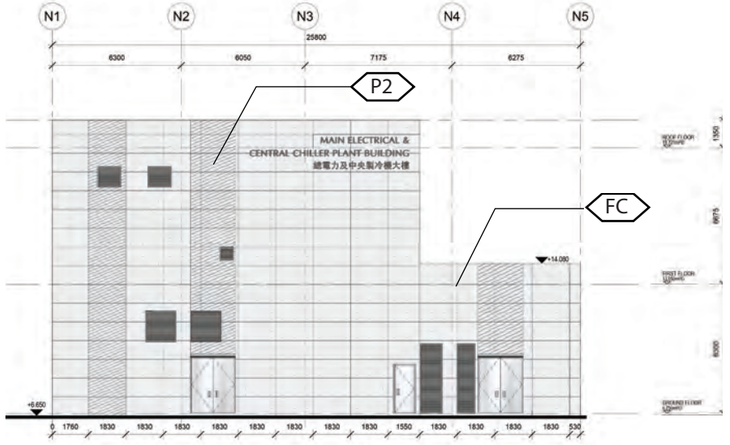
ELEVATION 2 (SCALE 1:300)



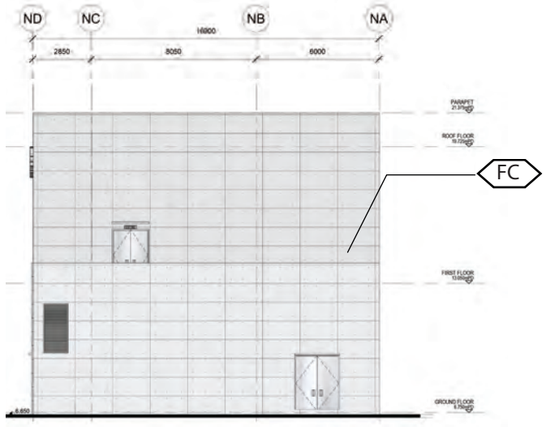
ELEVATION 5 (SCALE 1:300)



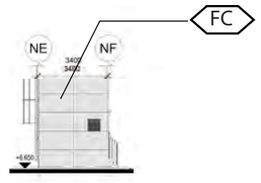
ELEVATION 6 (SCALE 1:300)



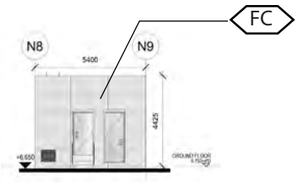
ELEVATION 3 (SCALE 1:300)



ELEVATION 4 (SCALE 1:300)



ELEVATION 7 (SCALE 1:300)



ELEVATION 8 (SCALE 1:300)

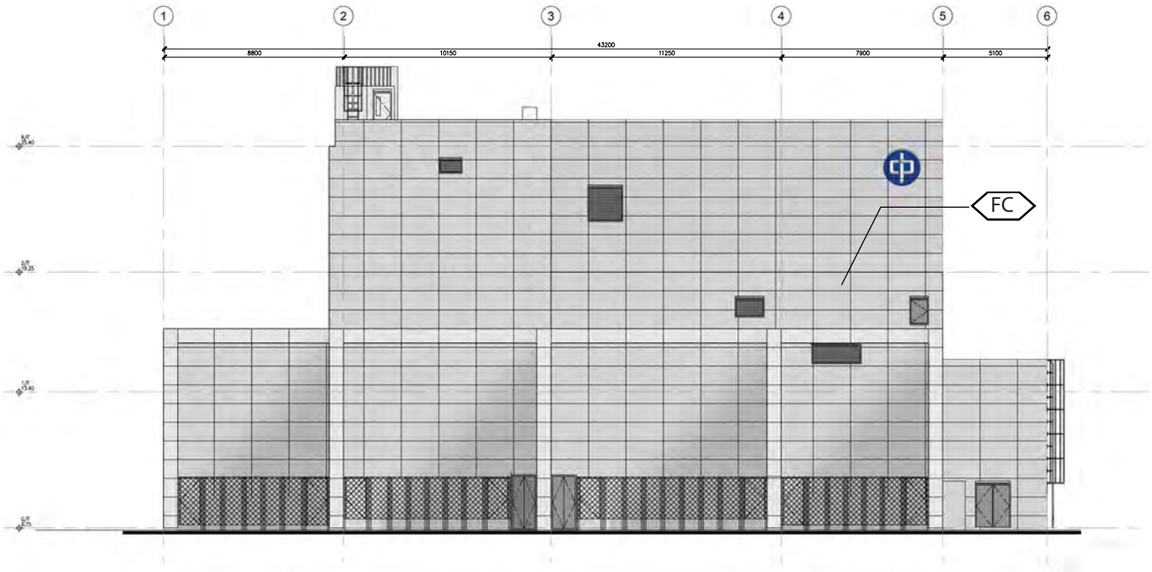
LEGEND

FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

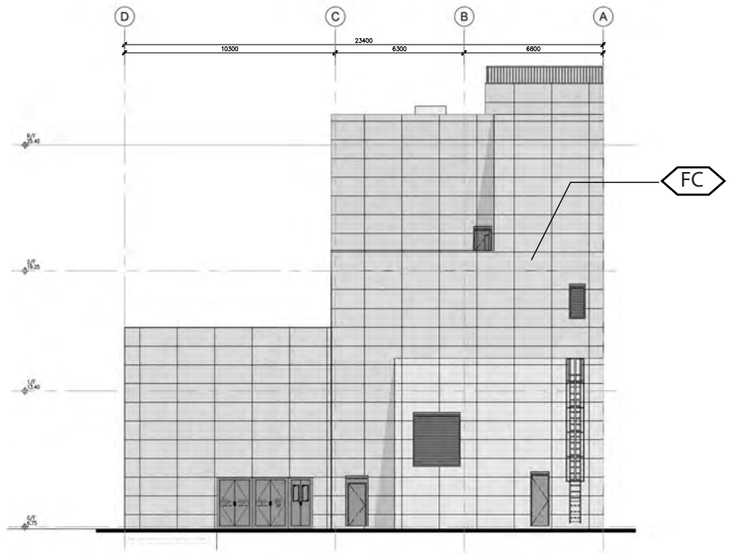
N - 03 - ELEVATION

Appendix F - Hard Landscape Design

S - TKO DESALINATION PLANT SUBSTATION

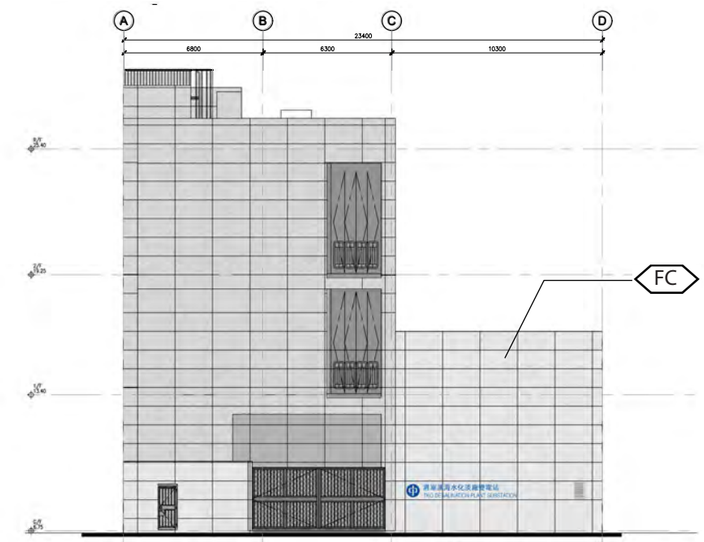


ELEVATION 1 (SCALE 1:300)



ELEVATION 2 (SCALE 1:300)

ELEVATION 3 (SCALE 1:300)



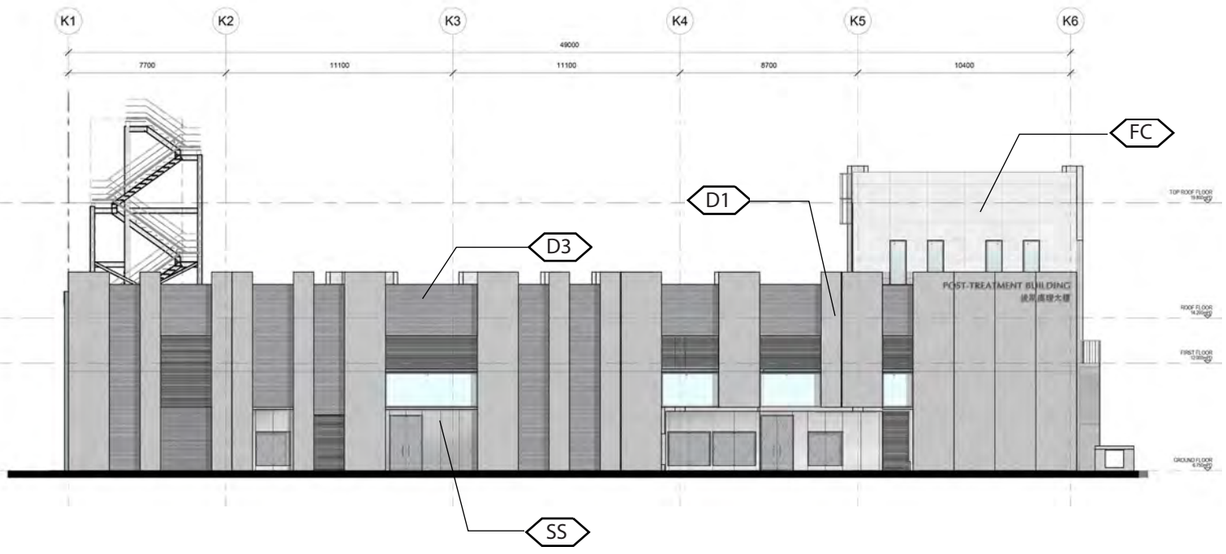
ELEVATION 4 (SCALE 1:300)

LEGEND

FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

K - POST TREATMENT BUILDING



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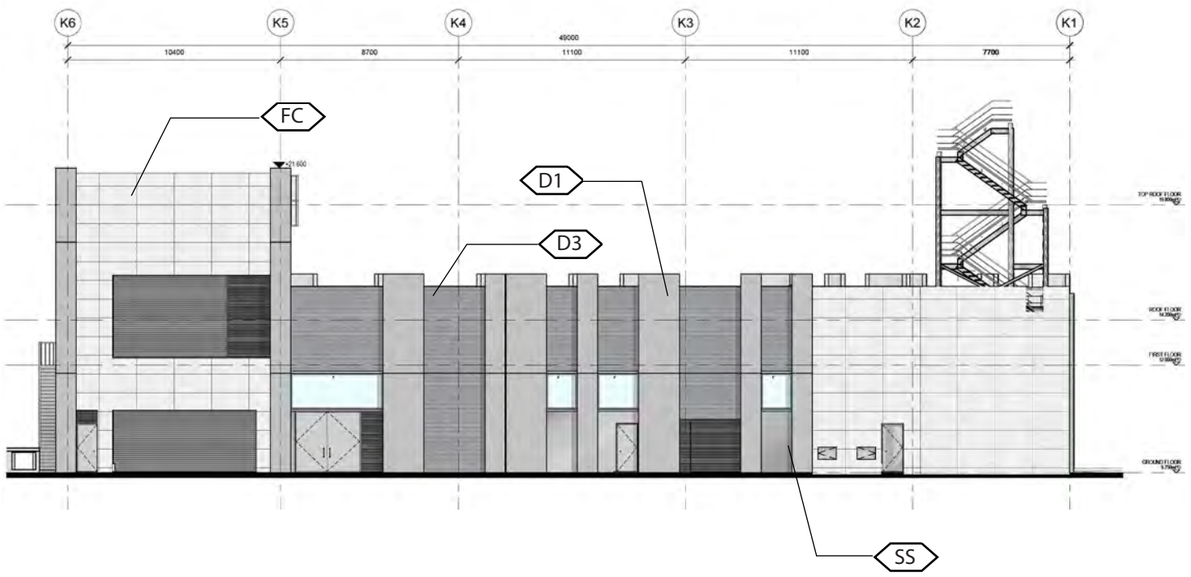
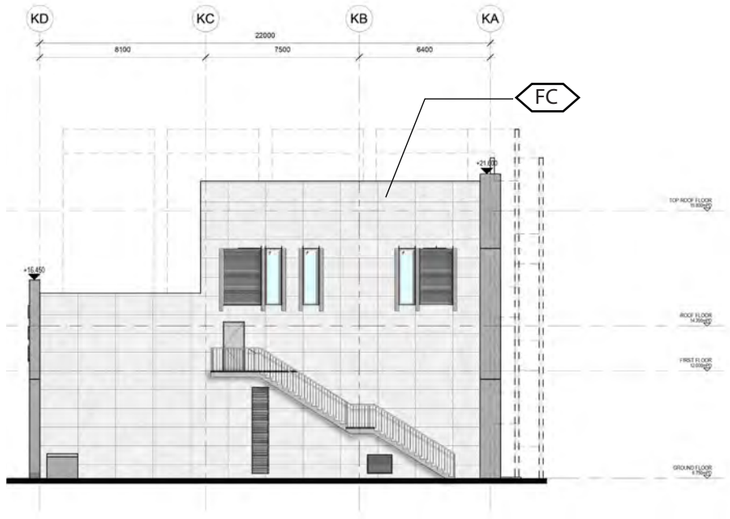


ELEVATION 2 (SCALE 1:300)



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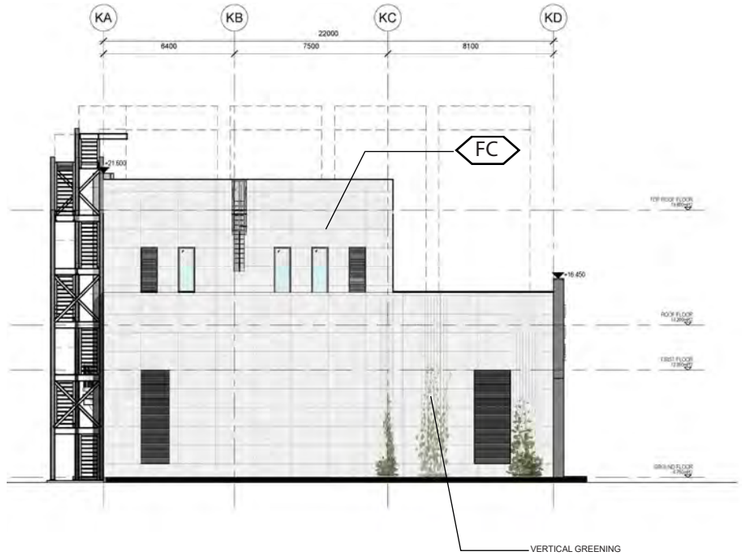


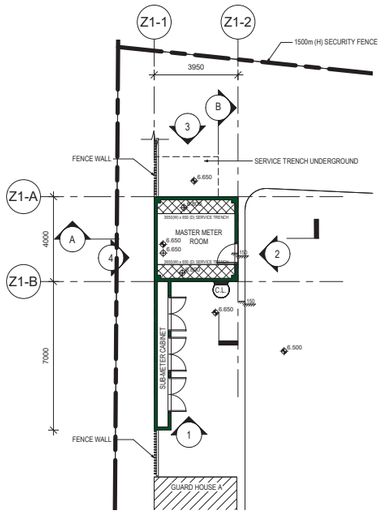
ELEVATION 4 (SCALE 1:300)

LEGEND

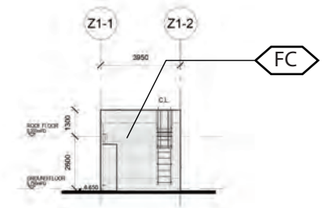
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

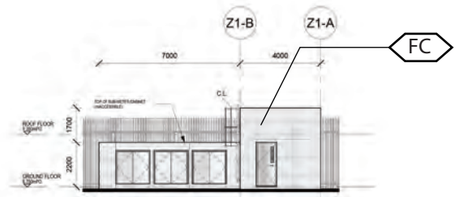
Z - MASTER METER ROOM



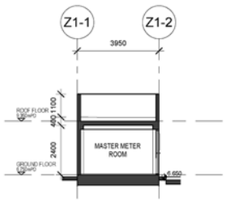
GROUND FLOOR PLAN (SCALE 1:300)



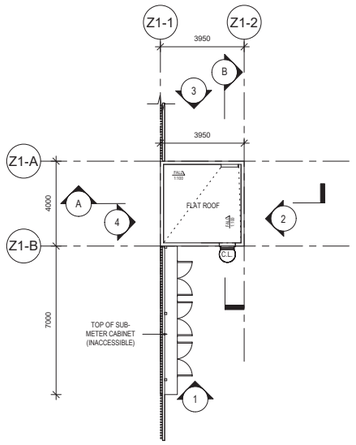
ELEVATION 1 (SCALE 1:300)



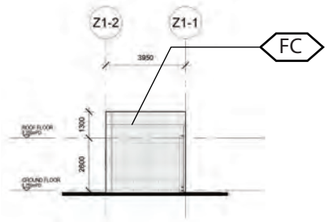
ELEVATION 2 (SCALE 1:300)



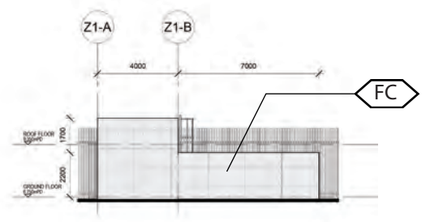
SECTION A-A (SCALE 1:300)



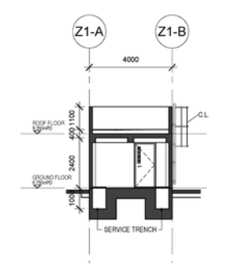
ROOF FLOOR PLAN (SCALE 1:300)



ELEVATION 3 (SCALE 1:300)



ELEVATION 4 (SCALE 1:300)



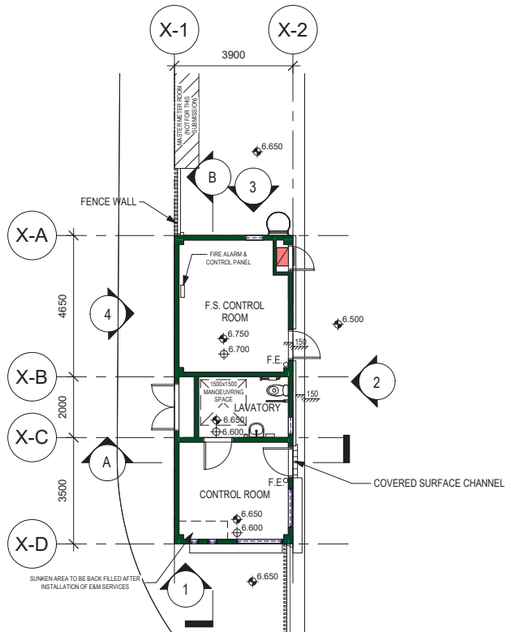
SECTION B-B (SCALE 1:300)

LEGEND

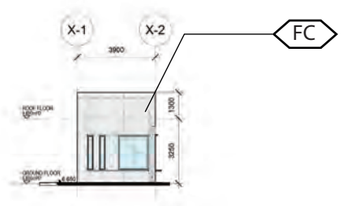
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

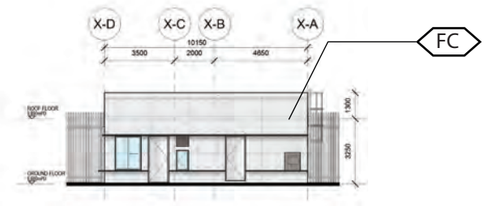
X0 - GUARD HOUSE A



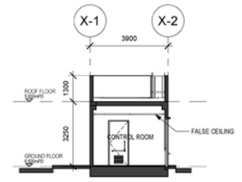
GUARD HOUSE A GROUND FLOOR PLAN (SCALE 1:300)



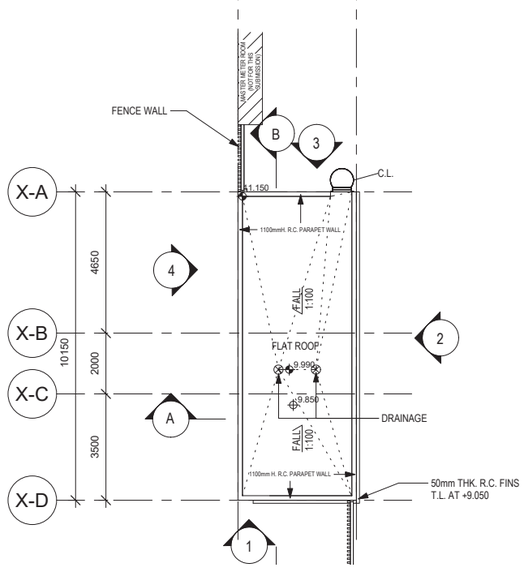
GUARD HOUSE A ELEVATION 1 (SCALE 1:300)



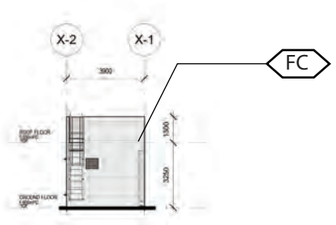
GUARD HOUSE A ELEVATION 2 (SCALE 1:300)



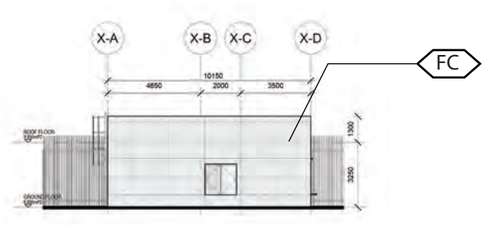
GUARD HOUSE A SECTION A-A (SCALE 1:300)



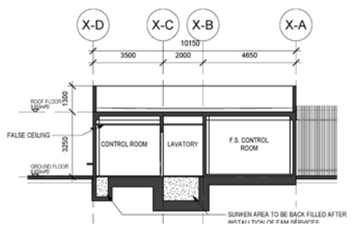
GUARD HOUSE A ROOF FLOOR PLAN (SCALE 1:300)



GUARD HOUSE A ELEVATION 3 (SCALE 1:300)



GUARD HOUSE A ELEVATION 4 (SCALE 1:300)



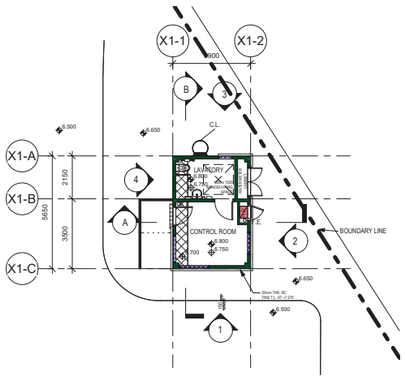
GUARD HOUSE A SECTION B-B (SCALE 1:300)

LEGEND

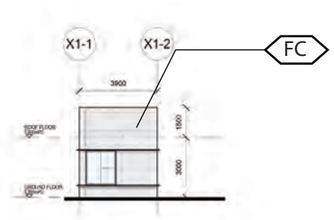
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

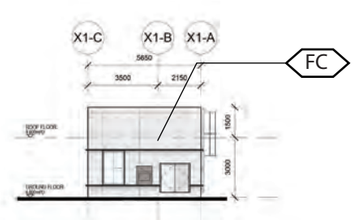
X1- GUARD HOUSE B



GUARD HOUSE B GROUND FLOOR PLAN (SCALE 1:300)



GUARD HOUSE B ELEVATION 1 (SCALE 1:300)



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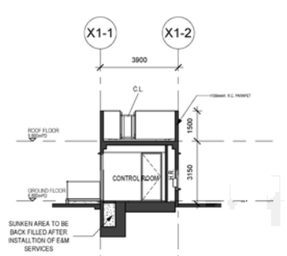
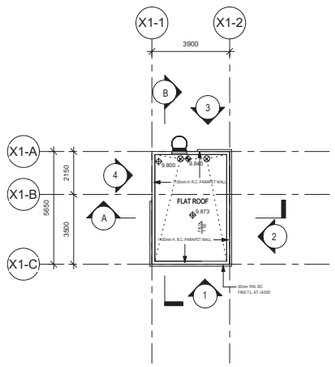
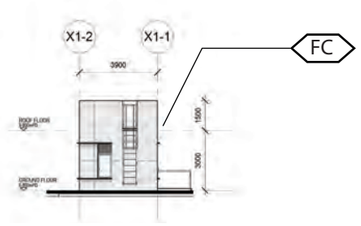


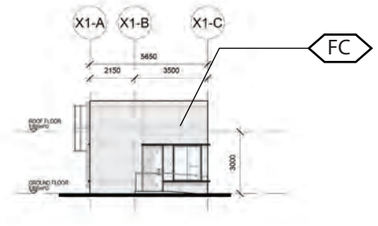
GUARD HOUSE B SECTION A-A (SCALE 1:300)



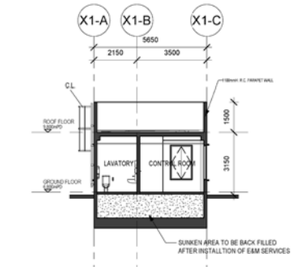
GUARD HOUSE B ROOF FLOOR PLAN (SCALE 1:300)



GUARD HOUSE B ELEVATION 3 (SCALE 1:300)



GUARD HOUSE B ELEVATION 4 (SCALE 1:300)



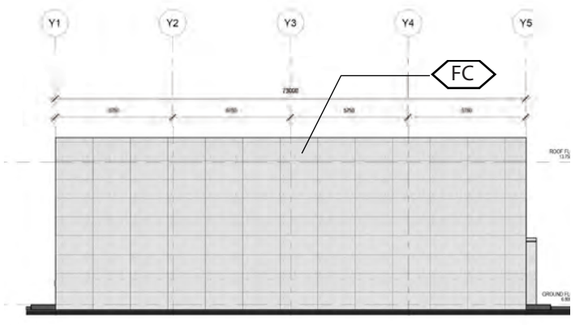
GUARD HOUSE B SECTION B-B (SCALE 1:300)

LEGEND

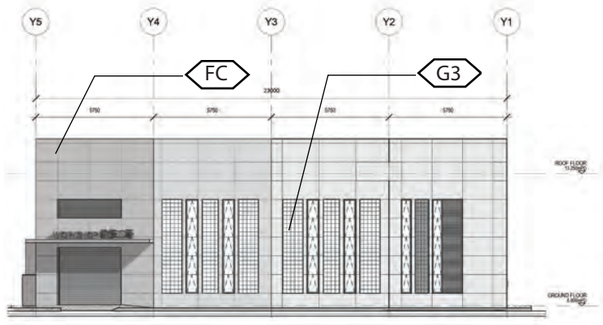
FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design

Y - WORKSHOP



ELEVATION 1 (SCALE 1:300)



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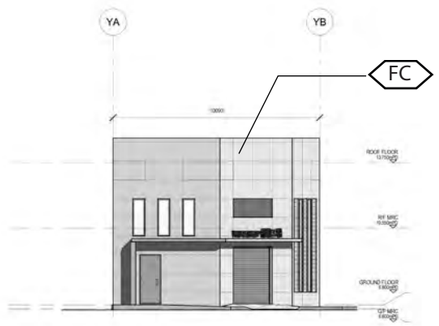
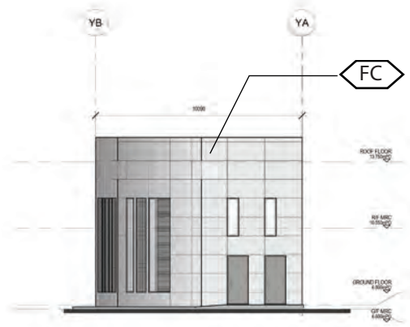
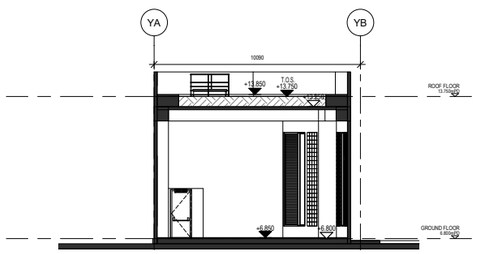


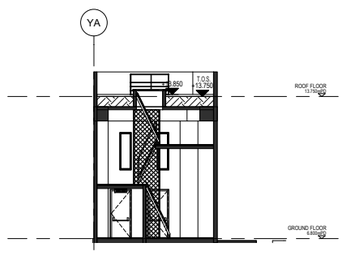
ELEVATION 3 (SCALE 1:300)



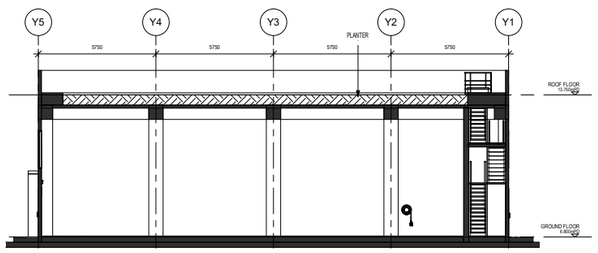
ELEVATION 4 (SCALE 1:300)



SECTION A-A (SCALE 1:300)



SECTION B-B (SCALE 1:300)



SECTION C-C (SCALE 1:300)

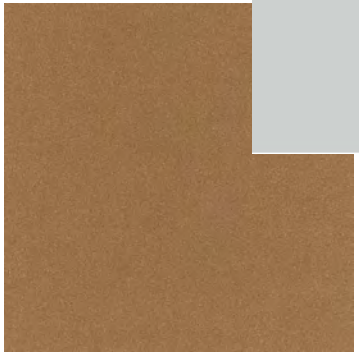
LEGEND

FC FAIRFACED CONCRETE	A1 ALUMINIUM (BRIGHT COPPER)	A2 ALUMINIUM (BLUE)	A3 ALUMINIUM (W/. WOOD GRAIN PATTERN)	A4 ALUMINIUM (WHITE)	A5 ALUMINIUM (GREY)
SS S.S. (BEAD BLASTED)	G1 CURTAIN WALL	G2 GLASS WALL	G3 GLASS BLOCK	G4 GLASS WALL W/. REFLECTIVE COATING	
P1 PAINT IN GRAY	P2 TEXTURED PAINT IN GRAY	D1 DFMA CONCRETE PANEL (LIGHT GRAY, PLAIN)	D2 DFMA CONCRETE PANEL (LIGHT GRAY, BRUSHED)	D3 DFMA CONCRETE PANEL (DARK GRAY, RIBBED)	

Appendix F - Hard Landscape Design Material Board (Exterior)

DfMA CONCRETE PANEL
(TYPE B, RIBBED)
D3

DfMA CONCRETE PANEL
(TYPE A1, PLAIN)
D1



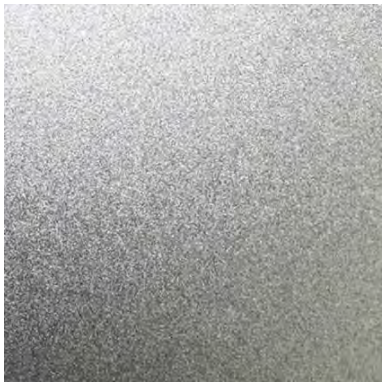
ALUMINIUM CLADDING
(BRIGHT COPPER)
A1

ALUMINIUM CLADDING
(GRAY TIMBER WOLF)
A5

M04 3mm ALUMINIUM WOOD GRAIN PATTERN FINISH
FOR ALUMINIUM FINS/ PANEL WITH TIMBER FINISH & FOR EXTERNAL CEILING AT ADMINISTRATION BUILDING
A3

ST02 BLACK GRANITE
WITH BUSH HAMMERED FINISH
EDGE OF STEPS AT SAIRCASE AND PLANTER

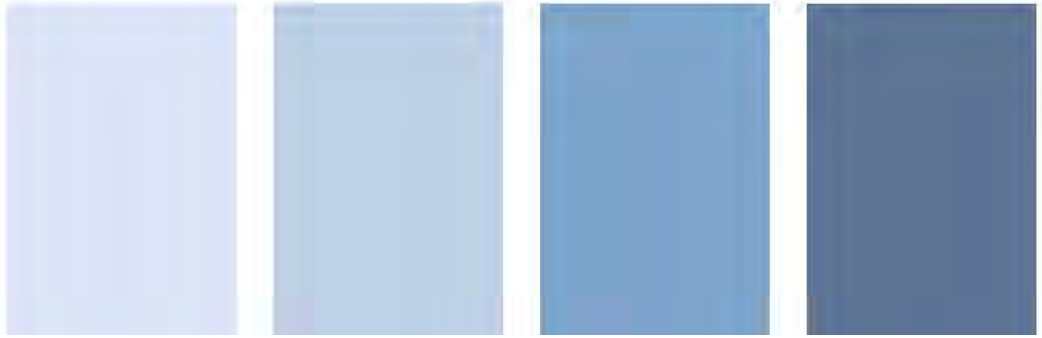
D2 DfMA CONCRETE PANEL
(TYPE A2, BRUSHED)



SS STAINLESS STEEL (SATIN)

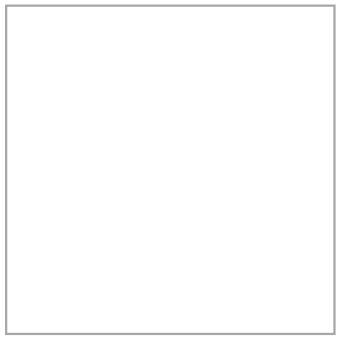
F38 300x600x10mm OUTDOOR FULL-BODY
PORCELAIN TILE ON (IVORY FLOW L2)
STEPS AT GRAND STAIRCASE

Appendix F - Hard Landscape Design Material Board (Exterior)



PANTONE 649CP 552CP 292CP 2386CP

A2 ALUMINIUM (BLUE)

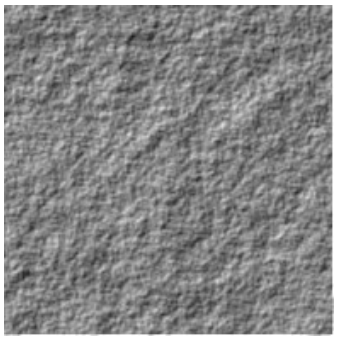


PANTONE WHITE 000C

A4 ALUMINIUM (WHITE)

PANTONE COOL GRAY 9C

P1 GRAY PAINT

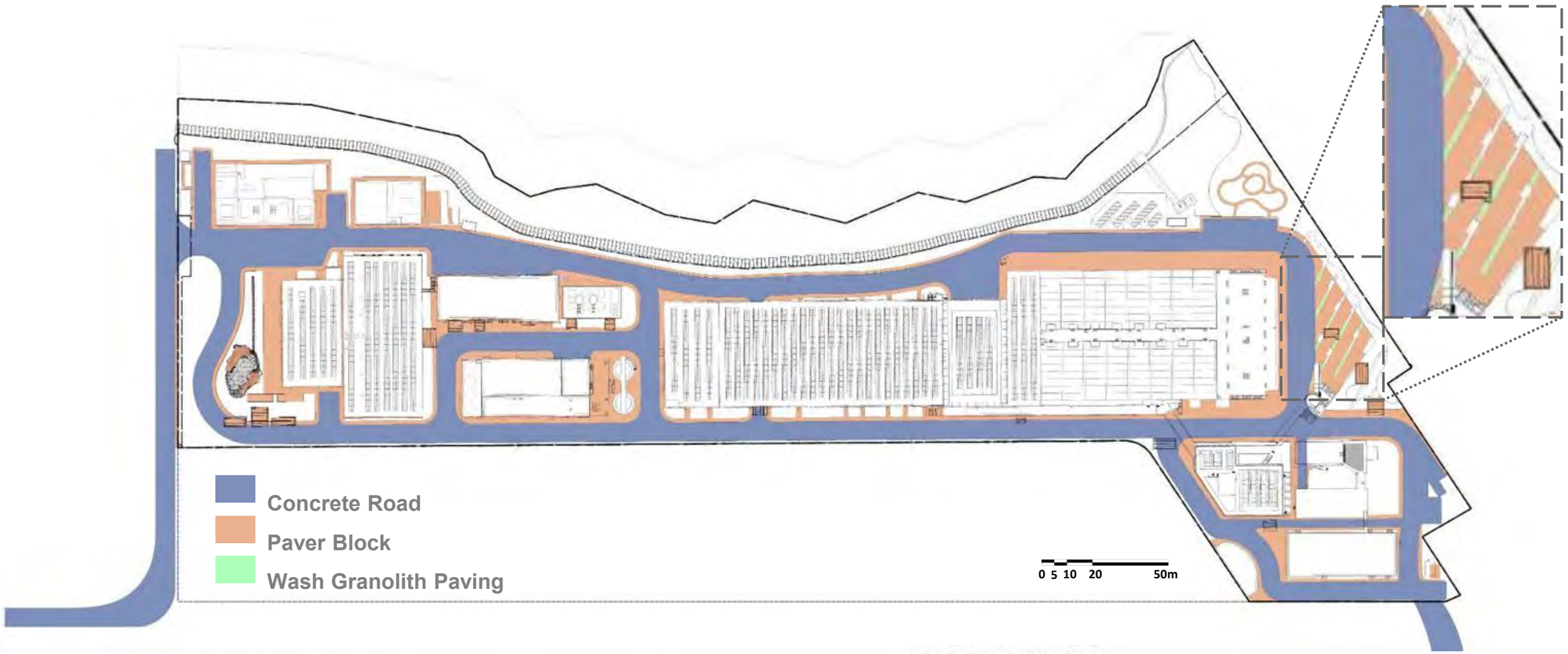


STONE TEXTURED PAINT

P2 TEXTURED PAINT

Appendix F - Hard Landscape Design

Landscape Design | Pavement



MATERIAL SCHEDULE

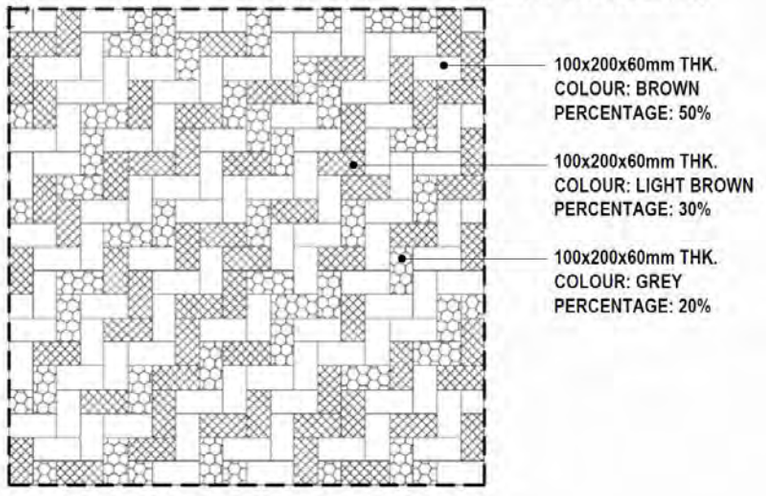
PAVER BLOCK

CONCRETE ROAD
(FOR VEHICULAR)

WASH GRANOLITH PAVING

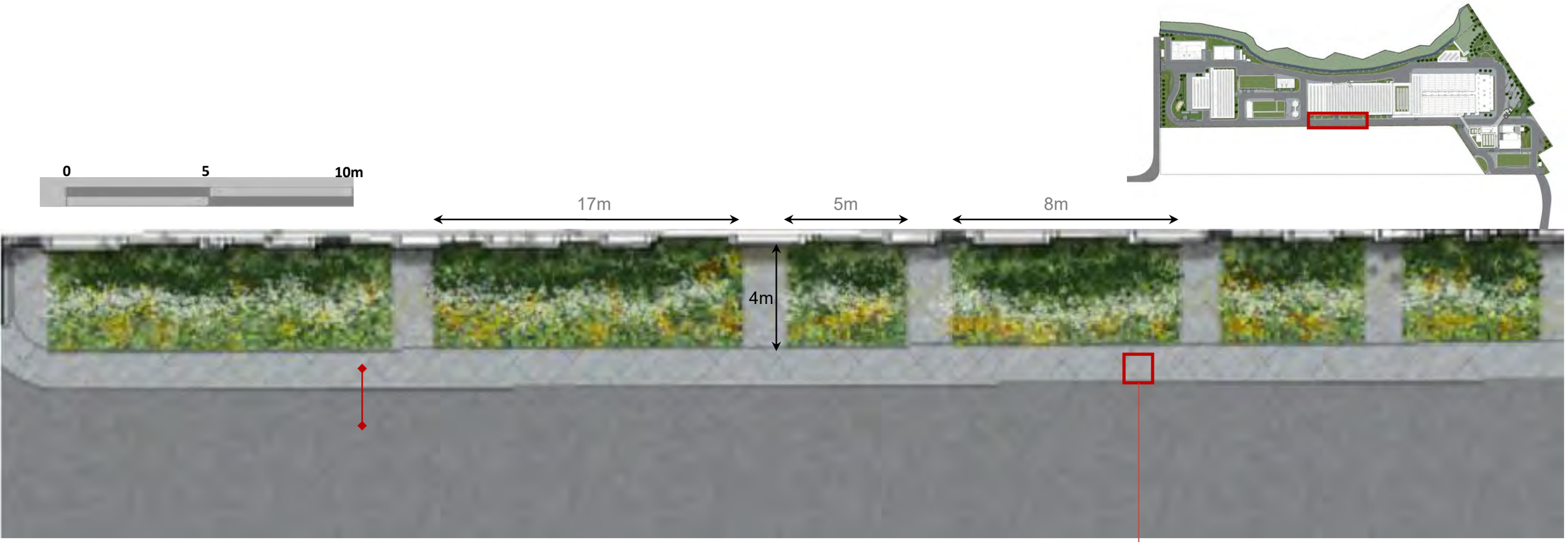
PAVING MODULE PLAN

(ILLUSTRATION OF DIFFERENT COLOURS OF THE RANDOM MIX OF PAVING BLOCKS)



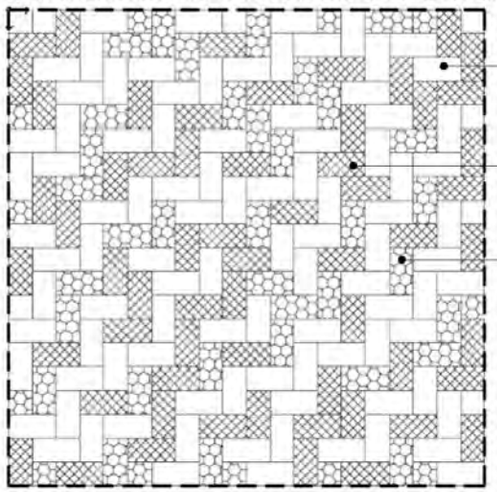
Appendix F - Hard Landscape Design (Paving Pattern)

Landscape Design | Typical Details



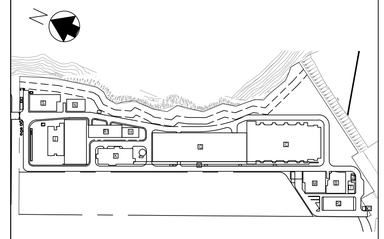
Paving Pattern

(ILLUSTRATION OF DIFFERENT COLOURS OF THE RANDOM MIX OF PAVING BLOCKS)



Appendix G – Lighting Plan

B1



SHEET 1 REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3101

SHEET 2 REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3102

SHEET 3 REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3103

SHEET 4 REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3104

SHEET 5 REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3105

LIGHTING LAYOUT LOCATION PLAN
SCALE 1:1000

Rev	Description	By	Date
B1	DDA SUBMISSION	CYW	23 DEC 2020
B0	DDA SUBMISSION	CYW	09 OCT 2020

Employer
水務署
Water Supplies Department

Supervising Officer designate
BLACK & VEATCH

Design Checker
ARCADIS Design & Consultancy for natural and built assets

Contractor
acciona JEC CRCC
AJC JOINT VENTURE

Designer
wsp
In Association with APU

Project title
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

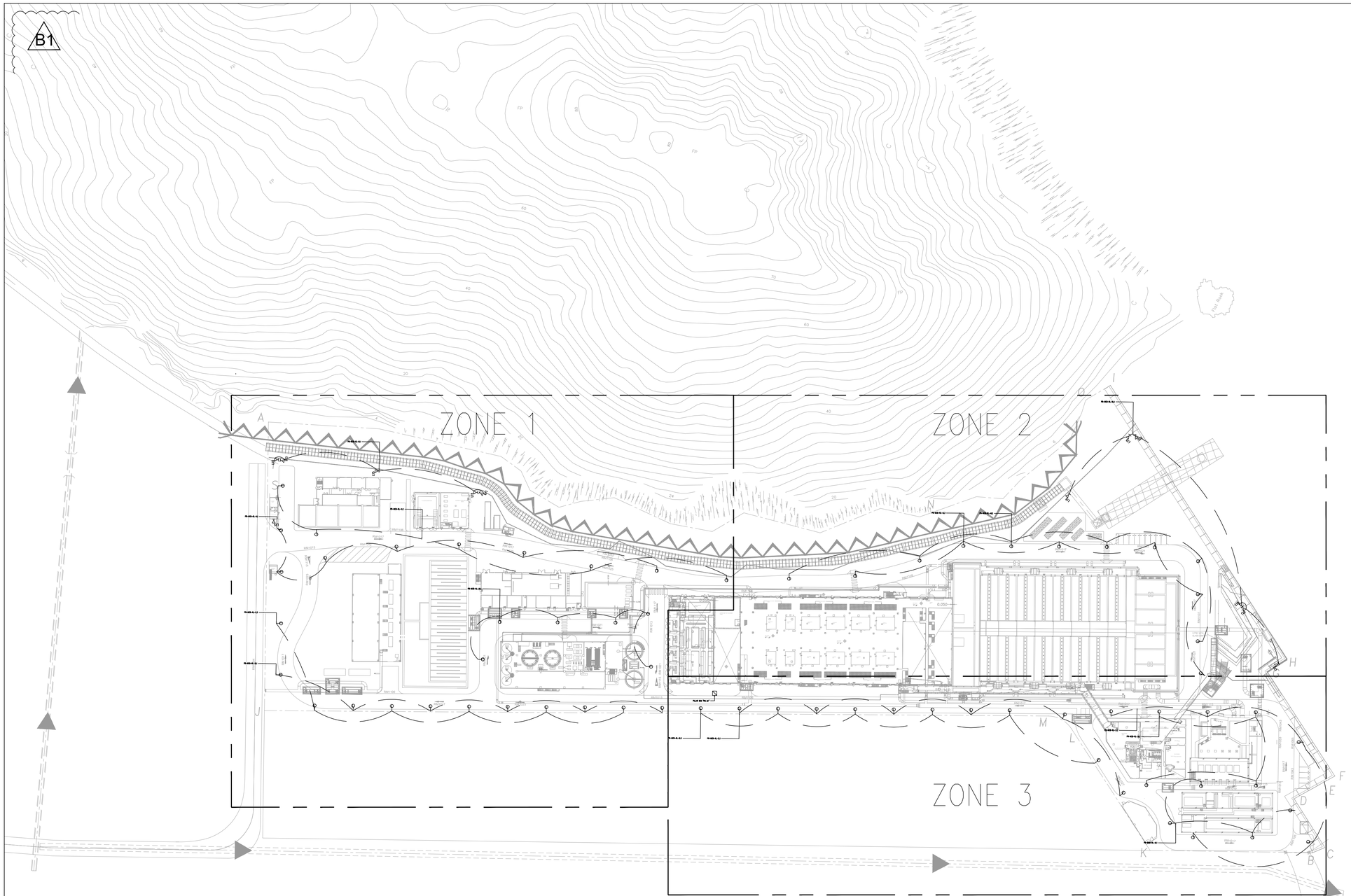
Drawing title
ELECTRICAL –
LIGHTING LAYOUT –
LOCATION PLAN

Drawing no.	Rev.
TKOD1-DWG-A000-WEL3000	B1

Drawn	Date	Checked	Approved
CYW	09 OCT 2020	EF	SY

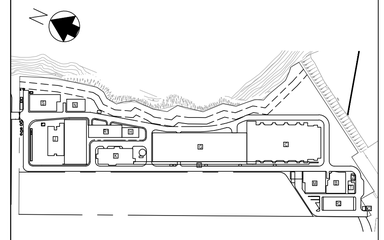
Scale	Status
A1 1:1000	DETAILED DESIGN APPROVAL

B1



LIGHTING LAYOUT ZONING PLAN

SCALE 1:1000



Rev	Description	By	Date
B1	DDA SUBMISSION	CYW	23 DEC 2020
B0	DDA SUBMISSION	CYW	09 OCT 2020

Employer

水務署 Water Supplies Department

Supervising Officer designate

BLACK & VEATCH

Design Checker

ARCADIS Design & Consultancy for natural and built assets

Contractor

acciona JEC CSCEC AJC JOINT VENTURE

Designer

wsp In Association with APU

Project title

CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title

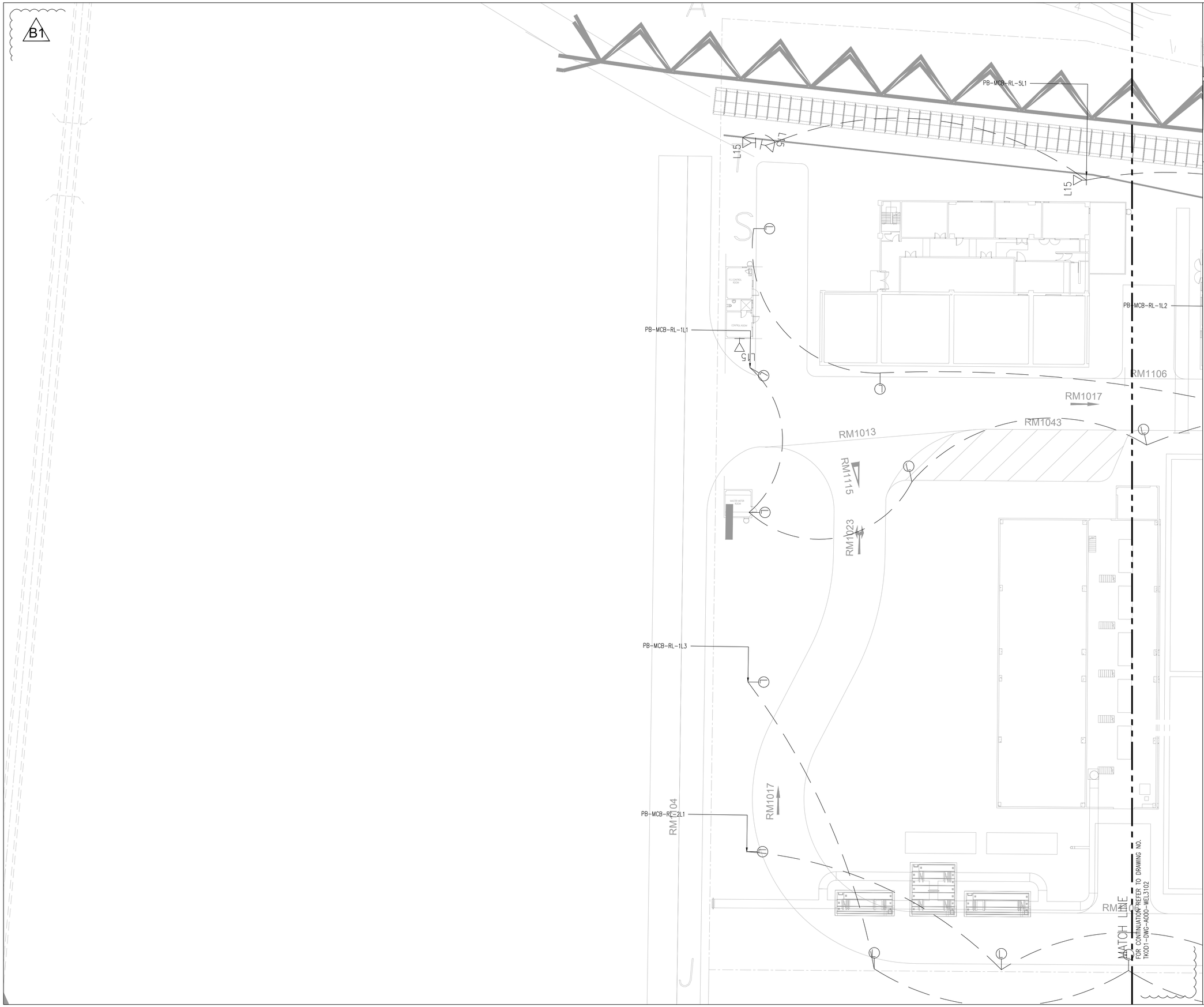
ELECTRICAL –
LIGHTING LAYOUT –
ZONING PLAN

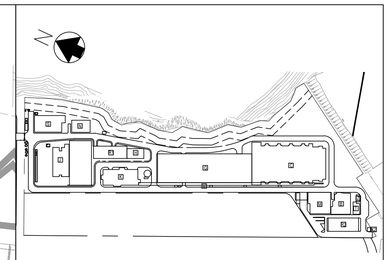
Drawing no.	Rev.
TKOD1-DWG-A000-WEL3001	B1

Drawn	Date	Checked	Approved
CYW	09 OCT 2020	EF	SY

Scale	Status
A1 1:1000	DETAILED DESIGN APPROVAL

B1





Rev	Description	By	Date
B1	DDA SUBMISSION	CYW	23 DEC 2020
B0	DDA SUBMISSION	CYW	09 OCT 2020

Employer

水務署 Water Supplies Department

Supervising Officer designate

BLACK & VEATCH

Design Checker

ARCADIS Design & Consultancy for natural and built assets

Contractor

acciona JEC CRCG

AJC JOINT VENTURE

Designer

wsp

In Association with APU

Project title

CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title

ELECTRICAL –
LIGHTING LAYOUT –
GROUND FLOOR
(SHEET 1 OF 5)

Drawing no.	Rev.
TKOD1-DWG-A000-WEL3101	B1

Drawn	Date	Checked	Approved
CYW	09 OCT 2020	EF	SY

Scale	Status
A1 1:250	DETAILED DESIGN APPROVAL

B1

L15

PB-MCB-RL-1L2

11 kV SWITCHGEAR ROOM

ELECTRICAL CHILLER AND PUMP ROOM

RM1106

RM1017

RM1109

RM1052

RM1025

PB-MCB-RL-2L2

RM1021

RM1115

RM1117

RM1013

SWITCHGEAR ROOM

UPPER PART OF FLUSHING TANK

Tx ROOM (1)

Tx ROOM (2)

Tx ROOM (3)

Tx ROOM (4)

HV MCC ROOM

PILLAR BOX "PB-01"

MATCH LINE
FOR CONTINUATION PLEASE REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3101

MATCH LINE
FOR CONTINUATION PLEASE REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3103

Rev	Description	By	Date
B1	DDA SUBMISSION	CYW	23 DEC 2020
B0	DDA SUBMISSION	CYW	09 OCT 2020

Employer
水務署
Water Supplies Department

Supervising Officer designate
BLACK & VEATCH

Design Checker
ARCADIS Design & Consultancy for natural and built assets

Contractor
acciona JEC CSCEC
AJC JOINT VENTURE

Designer
wsp
In Association with APU

Project title
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title
ELECTRICAL –
LIGHTING LAYOUT –
GROUND FLOOR
(SHEET 2 OF 5)

Drawing no. TKOD1-DWG-A000-WEL3102 Rev. B1

Drawn	Date	Checked	Approved
CYW	09 OCT 2020	EF	SY

Scale A1 1:250

Status DETAILED DESIGN APPROVAL

B1

MATCH LINE
FOR CONTINUATION REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3104

PB-MCB-RL-4L3

PB-MCB-RL-4L2

RM1109

RM1106

RM1106

RM1017

0.050

0.050

SWITCHGEAR ROOM

UPPER PART OF FLUSHING TANK

H.R.

REMOVABLE GRATING COVER

2nd PASS RO RACK

1st PASS RO RACK

RO RACK HALL

ROLLER SHUTTER

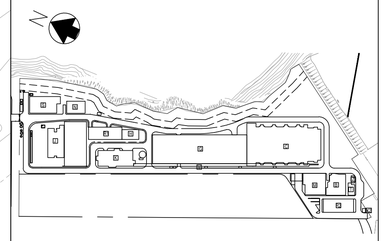
LOADING AREA

INSPECTION GALLERY

MATCH LINE
FOR CONTINUATION REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3102

MATCH LINE
FOR CONTINUATION REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3105

PILLAR BOX "PB-01"



Rev	Description	By	Date
B1	DDA SUBMISSION	CYW	23 DEC 2020
B0	DDA SUBMISSION	CYW	09 OCT 2020

Employer
水務署
Water Supplies Department

Supervising Officer designate
BLACK & VEATCH

Design Checker
ARCADIS Design & Consultancy for natural and built assets

Contractor
acciona JEC CSCEC
AJC JOINT VENTURE

Designer
wsp
In Association with APU

Project title
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title
ELECTRICAL –
LIGHTING LAYOUT –
GROUND FLOOR
(SHEET 3 OF 5)

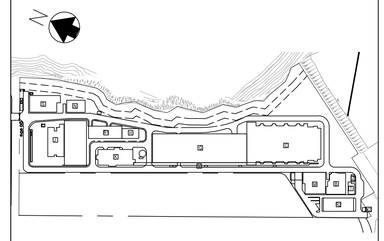
Drawing no. TKOD1-DWG-A000-WEL3103 Rev. B1

Drawn	Date	Checked	Approved
CYW	09 OCT 2020	EF	SY

Scale A1 1:250

Status DETAILED DESIGN APPROVAL

B1



PB-MCB-RL-5L2

MATCH LINE
FOR CONTINUATION REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3103

RM1017

RM1053

RM1021

RM1107

MATCH LINE
FOR CONTINUATION REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3105

B1	DDA SUBMISSION	CYW	23 DEC 2020
B0	DDA SUBMISSION	CYW	09 OCT 2020
Rev	Description	By	Date

Employer
水務署
Water Supplies Department

Supervising Officer designate
BLACK & VEATCH

Design Checker
ARCADIS Design & Consultancy for natural and built assets

Contractor
acciona JEC CSCEC
AJC JOINT VENTURE

Designer
wsp
In Association with APU

Project title
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title
ELECTRICAL –
LIGHTING LAYOUT –
GROUND FLOOR
(SHEET 4 OF 5)

Drawing no.	Rev.
TKOD1-DWG-A000-WEL3104	B1

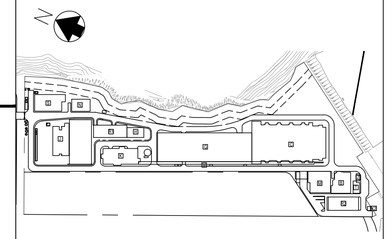
Drawn	Date	Checked	Approved
CYW	09 OCT 2020	EF	SY

Scale	Status
A1 1:250	DETAILED DESIGN APPROVAL

B1

MATCH LINE
FOR CONTINUATION REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3103

MATCH LINE
FOR CONTINUATION REFER TO DRAWING NO.
TKOD1-DWG-A000-WEL3104



RM1017
RM1107
RM1021
RM1027
RM1013
RM1115
RM1106
RM1043
RM1053
RM1065
RM1019

LAYBY WITH
GLASS CANOPY

PB-MCB-RL-3L2
PB-MCB-RL-3L3
PB-MCB-RL-4L1

INSPECTION GALLERY
PROTECTED BYPASS DWY
RECEPTION AREA
LEARNING GARDEN
FM200 ROOM
TEL ROOM
UPS ROOM
PLC ROOM
PROTECTED LOBBY
PROTECTED FIREMAN LIFT
MALE LAV
FEMALE LAV
FIRST AID ROOM
GARDEN
AHU ROOM
SWITCH ROOM

B1	DDA SUBMISSION	CYW	23 DEC 2020
B0	DDA SUBMISSION	CYW	09 OCT 2020
Rev	Description	By	Date

Employer
水務署
Water Supplies Department

Supervising Officer designate
BLACK & VEATCH

Design Checker
ARCADIS Design & Consultancy for natural and built assets

Contractor
acciona JEC CRCEC
AJC JOINT VENTURE

Designer
wsp
In Association with APU

Project title
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title
ELECTRICAL –
LIGHTING LAYOUT –
GROUND FLOOR
(SHEET 5 OF 5)

Drawing no.	Rev.
TKOD1-DWG-A000-WEL3105	B1

Drawn	Date	Checked	Approved
CYW	09 OCT 2020	EF	SY

Scale: A1 1:250
Status: DETAILED DESIGN APPROVAL

Appendix H – Detailed Design for Slope Mitigation Works

BOULDER ID	EASTING	NORTHING
B105	846658	814272
B106	846662	814284
B107	846660	814292
B160	846741	814415
B169	846734	814289
B182	846632	814448
B196	846640	814416
B198	846639	814406
B199	846639	814399
B203	846634	814343
B206	846628	814433
B207	846626	814430
B216	846606	814461
B53	846746	814327
B124	846730	814418

BARRIER_ SECTION	BARRIER_TYPE	CONTROL_POINT	EASTING	NORTHING
1	3000KJ	A	846764	814147
	3000KJ	B	846738	814155
	3000KJ	C	846688	814174
	3000KJ	D	846683	814191
	3000KJ	E	846664	814209
	3000KJ	F	846660	814225
	3000KJ	G	846640	814244
	3000KJ	H	846635	814255
2	5000KJ	H	846635	814255
	5000KJ	I	846630	814266
	5000KJ	J	846625	814282
	5000KJ	K	846617	814286
	5000KJ	L	846610	814310
	5000KJ	M	846611	814316
	5000KJ	N	846611	814340
	5000KJ	O	846604	814343
	5000KJ	P	846596	814364
	5000KJ	Q	846596	814382
	5000KJ	R	846604	814393
	5000KJ	S	846605	814402
3	3000KJ	S	846605	814402
	3000KJ	T	846593	814451
	3000KJ	U	846567	814525
	3000KJ	V	846569	814560
	3000KJ	W	846577	814578
	3000KJ	X	846575	814596

NOTES:

1. EXTENTS OF WORKS AS SHOWN ARE TENTATIVE ONLY.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. 190495/B/DD/00-20001 TO 20011, 30001 TO 30004.
3. SETTING OUT COORDINATES ARE BASED ON HK GRID REFERENCE.
4. SETTING-OUT POINTS OF FLEXIBLE BARRIER ARE TENTATIVE. DIMENSIONS OF LENGTH, SEPARATION AND OVERLAP OF THE FLEXIBLE BARRIER SECTIONS SHALL BE SUBJECT TO THE MANUFACTURER'S RECOMMENDATION.

LEGEND:

- PROPOSED BOULDER TO BE IN-SITU BROKEN OFF INTO PIECES WITH ALL DIMENSIONS LESS THAN 1m AND DEPOSITED IN STABLE CONDITION
- PROPOSED BOULDER TO BE REMOVED
- PROPOSED ROCK SLOPE IMPROVEMENT/ STABILISATION WORKS (REFER TO DRG. NO. 190495/B/DD/00-20001 TO 20011)
- PROPOSED 4m HIGH FLEXIBLE BARRIER

Revision	Date	Description		Initial
	Designed	Checked	Drawn	Checked
Initial	KK	CKH	SZ	WLS
Date	03/17	03/17	03/17	03/17

Approved

Agreement No.
CE 8/2015 (WS)

Contract Title
FIRST STAGE OF DESALINATION PLANT AT TSEUNG KWAN O – INVESTIGATION, DESIGN AND CONSTRUCTION

Drawing Title
PROPOSED SLOPE MITIGATION WORKS

Drawing No.
190495/B/DD/00-10001

Revision
–

Scale
A1 1 : 1000
A3 1 : 2000

水 務 署
Water Supplies Department

BLACK & VEATCH HONG KONG LIMITED
博 威 工 程 顧 問 有 限 公 司

Y:\Daily Work\20170613g\190495-B-DD-00-10001.dwg, 6/16/2017 2:48:10 PM, Bluebeam PDF

Legend

500m Study Boundary

Slope Mitigation Works

- Rock Slope Stabilisation
- Work platform
- Slope Mitigation Works Area
- Flexible Barrier
- Temporary Access
- Boulder Stabilisation Works

Habitat

- Rocky Shore
- Sandy Shore
- Seawall
- Shrubland and Hillside Grassland Mosaic
- Urbanised/Disturbed Area
- Wasteland
- Watercourse
- Mixed Woodland

Plant

- ***Marsdenia lachnostoma***

N

Meters

0 50 100

Appendix G

Species of Conservation Importance in the Revised Scheme of Slope Mitigation Works and Recommended Temporary Access and Working Platform

File: T:\GIS\CONTRACT\0332378\Mxd\0332378_new slope scheme+species_JY.mxd
Date: 14/7/2017

Environmental Resources Management

ERM