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## Waste Management Facility, Botany

Integrated Water Management Strategy

PREPARED FOR:

**Coombes Property Group Pty Ltd**

**Waste Management Facility, Botany**

*Integrated Water Management Strategy*

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### EXECUTIVE SUMMARY

This Integrated Water Management (IWM) report has been prepared to accompany a development application (DA) which seeks consent for a construction and demolition (C&D) waste management facility at 2-4 Hale Street, Botany (Lot 1 DP 562374) (the subject site). The proposal is classified as State Significant Development (SSD) under Section 4.36 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and is subject to NSW Planning Secretary's Environmental Assessment Requirements (SEARs, SSD-62855708, 25 Oct 2023).

This report has been prepared to address all water-related items listed under the SEARs, including relevant government authority advice. Please refer to Table 1. This report references, and should be read in conjunction with, all documents submitted as part of this DA. These include, although are not limited to: Flood Impact Assessment, Infrastructure, Ecologically Sustainable Development, and Landscape Masterplan reports (refer Section 2.1).

The C&D facility includes buildings (warehouse and office) and on-grade hardstands for vehicle access, parking, and egress. Waste management operations will be undertaken inside the warehouse. The preliminary water balance for the developed site, which details the project's likely water demands and the various water streams flowing into and out of the site, has informed IWM.

The overarching premise of the developed IWM strategy, which is summarised bullet points below, is that the facility is designed and managed such that it does not become a point source of waterway contamination, a risk to the environment, or a burden on the Authority water supply system.

- Operational (warehouse) floor drainage separated from surface water network, and connected to sewer (trade waste agreements *tba*).
- Stormwater drainage appropriately treated prior to discharge to a proposed new Stormwater Discharge Point on Hale St.
- Stormwater treatment train includes roofwater capture and reuse, and a new raingarden integrated into front landscaping.
- Collected roofwater treated as required and made available for nonpotable end uses (landscape irrigation, toilet flushing, wheel wash, and machinery and warehouse floor hose-down).
- The site is in a designated flood prone area and is subject to significant flooding in events greater than the 1% AEP.
- Given the site's location in the heavily flooded area, flood storage is proposed in lieu of on-site detention (OSD).
- In the event of the fire sprinklers being activated, fire sprinkler water will be detained on site (in-ground tank beneath the warehouse floor) to ensure no discharge to the surface water (stormwater) network without appropriate treatment.

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## 1.1 SEARs REQUIREMENTS AND GOVERNMENT AUTHORITY ADVICE

Table 1. Summary Compilation of the SEARs Requirements and Government Authority Advice Addressed in this IWM Report.

#	SEARs Key Issues – Water Management	Where in this report this is addressed
01.	<p>An Integrated Water Management Strategy, including:</p> <p>A surface and groundwater water discharge assessment in accordance with relevant EPA guidelines, including an assessment of potential impacts on watercourses, riparian areas, key fish habitat and recreational fishing, groundwater, and groundwater-dependent communities nearby</p>	<p>The subject site is in the Georges River catchment, to which up to eleven Water Quality Objectives and twelve coastal River Flow Objectives apply. The NSW Water Quality and River Flow Objectives are interpreted by the catchment management authorities in the development of catchment and land use planning processes. Sydney Water is the primary water quality authority responsible for catchment management.</p> <p>The stormwater and wastewater management systems designed for the proposed project will comply with the requirements and guidelines specified and enforced by Sydney Water and Bayside Council. To ensure no change in water quality or threat to the environmental values of the catchment there will be no unauthorised connections nor discharge of untreated or improperly treated water.</p> <p>Note that there will be no discharge to or extraction of groundwater as part of this proposal and no construction of any major in-ground infrastructure such as basements. Therefore, the proposal will not impact groundwater / groundwater-dependent communities.</p>
02.	<p>Details of the proposed stormwater/wastewater drainage design incorporating water sensitive urban design techniques, including the capacity of on-site detention system(s), on-site sewage management and measures to treat, reuse or dispose of water</p>	<p>Stormwater refers to rainfall runoff from proposed warehouse and office roofs and outdoor trafficable areas (pavements and car parks).</p> <p>Any water that has come into contact with waste management operations, contaminated surfaces or materials, or bunded areas is classified as wastewater and is to be kept separate from the surface water (stormwater) stream.</p> <p>This IWM report describes the proposed stormwater drainage design, including WSUD, detention and water reuse. Please refer to Section 5 in this report for a description of the proposed stormwater drainage design.</p>

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		CJ Arms, 2024a. <i>Waste Management Facility, Botany Infrastructure Assessment – Water, Sewer, and Stormwater</i> report outlines the intention for wastewater management for the project. At this stage, no on-site wastewater treatment or reuse is proposed. Wastewater will be managed in line with any trade waste agreement if applicable ( <i>tba</i> ).
<b>03.</b>	Characterisation of water quality at the point of discharge to surface and/or groundwater against relevant water quality criteria using a MUSIC water quality model and demonstration that all connections comply with Sydney Water requirements	<p>Characterisation of stormwater quality at the point of discharge: MUSIC modelling including water quality results are included in Sections 5.8 and 5.9 of this report. Modelling demonstrates compliance with Sydney Water stormwater quality discharge requirements as specified in Bayside Technical Specification Stormwater Management.</p> <p>Characterisation of groundwater not relevant as there will be no impact to groundwater from proposed development.</p>
<b>04.</b>	Where water and drainage infrastructure works are required that would be handed over to the local council, or other drainage or water authority, provide full hydraulic details and detailed plans and specification of proposed works that have been prepared in consultation with, and comply with the relevant standards, the local council or other drainage or water authority	<p>Refer Section 5.7 in this report.</p> <p>The proposed stormwater drainage system (combined roof drainage and surface drainage) for new development will connect to Council’s stormwater drainage system at the front of the site in Hale St.</p> <p>Design of this connection will comply with authority requirements and relevant standards (Australian Standard AS/NZS3500.3) and guidelines, with full hydraulic details and detailed plans and specification to be completed at Construction Certificate stage.</p>
<b>05.</b>	Details of any surface or groundwater mitigation, management and monitoring activities and methodologies.	<p>Refer to Section 5 for a description of surface water management strategy. The proposed strategy complies with Bayside Technical Specification Stormwater Management as modelled in MUSIC.</p> <ul style="list-style-type: none"> <li>• All surface water from hard surfaces (roof and pavements) are to be directed for treatment through the proposed raingarden that will be integrated into the landscape at the front of the subject site.</li> <li>• Roof water will be captured for on-site reuse in a proposed 60 m<sup>3</sup> rainwater tank with overflow (if tank full) to the raingarden.</li> </ul>

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	Bayside Council Advice	Where in this report this is addressed
06.	<b>10.</b> A detailed Stormwater Management Plan and design certification must be prepared by an accredited professional.	This IWM report details the proposal's stormwater management strategy, which has been prepared and reviewed by Members of the Institute of Engineers Australia with over 20 years' industry experience.
7.	<b>11a.</b> Detailed calculations and parameters used to define the storage volumes and discharge rates of the On-Site Detention (OSD) system.	Given the location of the site at the low point for the catchment in a heavily flood affected area, a flood storage is proposed in lieu of an OSD system. Refer also to Section 5.6 for a summary description of proposed flood storage.
8.	<b>11b.</b> Calculations showing capacity of the internal drainage systems; overflow structures and overland flow paths/floodway (if applicable); location of any Council drainage easements and/or drainage system within and adjacent to the site.	Calculations and details on the capacity of the internal drainage systems to be undertaken at Construction Certificate stage. There is no overland flow path through the subject site. The approximate location of relevant drainage and overflow structures are shown in Appendix B. Proposed Stormwater Drainage Scheme .
9.	<b>11c.</b> Design plans and details: i. Site layout  ii. Existing site contours and final design levels  iii. Catchment area draining to each OSD system  iv. Finished floor levels and footprints of the proposed development/ structures  v. Location and size of the internal and external drainage systems, rainwater re-use system and OSD systems.	i. The site layout as prepared by the project architect is included in Appendix A. Proposed Site Layout. ii. Site survey is appended in Annexure D and final design levels will be completed at Construction Certificate stage. iii. Not applicable as OSD is not required (flood storage provided in lieu of OSD, refer Section 5.6). iv. Shown in Appendix A. Proposed Site Layout. v. The location and size of the drainage and rainwater reuse systems are shown in Appendix B. Proposed Stormwater Drainage Scheme.

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	<ul style="list-style-type: none"> <li>vi. Levels and location of discharge points for each OSD system</li> <li>vii. Maximum water surface levels in each storage.</li> <li>viii. Overflow structures and surcharge/overflow paths</li> <li>ix. Locations and details of each discharge control unit (if any)</li> <li>x. Location and extent of any overland flow path/ floodway through the site (if any).</li> <li>xi. Location and type of pollution control devices.</li> <li>xii. Cross-sections details of the rainwater tanks and OSD systems.</li> </ul>	<ul style="list-style-type: none"> <li>vi. Flood storage (in lieu of OSD) is shown in Appendix B.</li> <li>vii. Designed maximum water levels will be finalised at Construction Certificate stage.</li> <li>viii. The approximate location of relevant drainage and overflow structures shown in Appendix B (to be detailed at Construction Certificate stage).</li> <li>ix. Not applicable as OSD is not required.</li> <li>x. Not applicable as there is no overland flow path through the subject site.</li> <li>xi. Pollution control devices are located on the proposed Stormwater Management plan in Appendix B and described in Section 5.8.</li> <li>xii. Rainwater tanks and flood storage will be detailed at Construction Certificate stage.</li> </ul>
<p><b>10.</b></p>	<p><b>12.</b> The development requires the use of a Water Sensitive Urban Design Approach (WSUD) to the design of the drainage system. Bayside Technical Specification Stormwater Management requires development to confirm the targets for the stormwater pollution reduction and to justify the target by an analysis using MUSIC. Bayside Technical Specification Stormwater Management also outlines the stormwater reduction targets:</p>	<p>The WSUD approach for stormwater management has been developed in compliance with Bayside Technical Specification Stormwater Management and modelled using MUSIC.</p> <p>Refer to Sections 5.8 and 5.9 of this IWM report.</p>
<p><b>11.</b></p>	<p><b>13.</b> WSUD modelling utilising MUSIC must be submitted along with the stormwater plans depicting compliance with the following:</p> <ul style="list-style-type: none"> <li>a. Incorporation of a Stormwater Quality Improvement system to ensure compliance with Bayside Technical Specification Stormwater Management, and</li> </ul>	<p>The WSUD treatment train and MUSIC model have been developed in compliance with Bayside Technical Specification Stormwater Management and the NSW MUSIC Modelling Guidelines. Refer Section 5.8 and 5.9 of this report.</p> <p>The MUSIC model is submitted for review with this IWM report.</p>

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	b. The MUSIC model must be prepared in line with the NSW MUSIC Modelling Guidelines.	
	<b>Aerodrome Developments and Airspace Protection (CASA)</b>	<b>Where / how this is addressed in this report</b>
12.	Given the proximity of the subject site to Sydney airport, SEARs advice has been sought from CASA. Water management has not been specifically referenced by CASA although managing the risk of wildlife and bird strikes is an important consideration.	To manage the risk of wildlife and bird strike, the developed water management strategy ensures adequate drainage aimed at minimising the pooling and ponding of water.
	<b>NSW EPA. Site Specific Requirements</b>	<b>Where / how this is addressed in this report</b>
13.	<p><b>7. Wastewater management</b></p> <p>The EIS must include details of how wastewater at the facility will be managed. This includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• storage, treatment, sampling and disposal.</li> <li>• mitigation measures proposed to be implemented to prevent and mitigate leaks and spills from on-site activities: <ul style="list-style-type: none"> <li>○ appropriate primary and secondary containment systems should be included.</li> <li>○ details of bunding, isolation, overflow prevention and other controls should be prioritised to demonstrate spill and leak related risks have been appropriately considered and addressed.</li> <li>○ detailed information regarding any trade waste agreements in place with Sydney Water.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• CJ Arms 2024a provides the preliminary strategy for wastewater management, including sewage and trade waste</li> <li>• The proposed project intends to re-use as much wastewater from warehouse and stockpiling operations as practical, noting that wastewater production rates are expected to be very low (refer to Section 4).</li> <li>• Bunding around fuel storage areas and contaminated stockpiles to be detailed at future design stages.</li> <li>• Given the current early stage of the project, Sydney Water has not been consulted regarding proposed wastewater management or future trade waste licencing agreements. Wastewater applications will be undertaken during future design stages and conditions of connection will be identified and communicated at those stages.</li> </ul>
14.	<b>8. Water management</b>	

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	<p>It is considered best practice by the EPA for facilities to retain all water on site and not discharge any water in order to limit pollution and contamination. The EPA requires the Applicant first demonstrate that all practical and reasonable alternatives to discharge have been considered and implemented before other options are reviewed. Where discharge of polluted water is unavoidable, the Applicant must:</p> <ul style="list-style-type: none"> <li>• identify all pollutants that pose a risk of non-trivial harm and the potential impact of those pollutants on the environment.</li> <li>• implement all practical measures that can be taken to prevent, control, abate or mitigate the pollution and protect the environment from harm.</li> <li>• consider the environmental values of water affected by the proposed discharge; and implement all practical measures that can be taken to restore or maintain those values.</li> </ul>	<ul style="list-style-type: none"> <li>• CJ Arms 2024a provides the preliminary strategy for wastewater management.</li> <li>• All water generated from waste processing (warehouse floor, stockpiling, wash-down etc.) will be classified as “wastewater” and will be drained to the wastewater management system.</li> <li>• Rainfall runoff from roofs and external pavements will be classified as stormwater and will be drained towards the stormwater treatment and flood storage systems prior to discharge.</li> <li>• Wastewater drainage will be completely isolated from the stormwater drainage system, through necessary bunding, sumps, floor drainage etc.</li> <li>• If required under future trade waste agreements, testing and treatment of the wastewater streams will be undertaken to ensure no discharge of untreated or improperly treated contaminated water to the environment.</li> <li>• Design of wastewater drainage and treatment systems will be undertaken during future design stages.</li> </ul>
<p><b>15.</b></p>	<p>An assessment of impacts to water, during both construction and operation, must be included in the EIS. This must include at a minimum:</p> <ul style="list-style-type: none"> <li>• characterisation of any proposed discharges from the Premises (both volume and quantity).</li> <li>• assessment of the potential impacts from these discharges.</li> <li>• proposed mitigation measures to manage any impacts (discharges includes, but is not limited to, stormwater (contaminated and uncontaminated), and wastewater (such as from dewatering)).</li> </ul>	<ul style="list-style-type: none"> <li>• A Construction and Environmental Management Plan (CEMP) will be prepared and submitted at Construction Certificate stage (Section 6).</li> <li>• Likely water streams (both quality and flow) from stockpile drain-through, warehouse hose-down, and wheel and machinery washing will be detailed at future design stages.</li> <li>• Wastewater drainage will be completely isolated from the stormwater drainage system, through bunding, sumps, floor drainage etc. as required.</li> <li>• On-site treatment and trade waste agreements for site wastewater will be developed at this time.</li> </ul>
<p><b>16.</b></p>	<p>Detailed information regarding the management of stormwater during both construction and operation must be included in the EIS.</p>	<p>A Construction and Environmental Management Plan (CEMP) will be prepared and submitted at Construction Certificate stage (Section 6).</p>

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17	Details must be provided of any trade waste agreements which are (or are proposed to be) in place with Sydney Water.	Trade waste agreements will be put in place with Sydney Water. Formal applications will be made after this DA (SEARs) process, at a relatively early stage in the design of this project.
18.	Sufficient evidence must be provided that the proposed systems will be capable of adequately managing stormwater. This includes a thorough integrity assessment of the proposed stormwater system to demonstrate its adequacy and suitability.	Preliminary stormwater design is presented in this report (Section 5). This will be subject to scrutiny and detailing during upcoming stages in the design process.
19.	<p>The waste management warehouse building must be constructed to exclude all stormwater and internal surfaces be graded inwards to contain any contaminated water (being any water that has come into contact with waste or other materials which have the potential to cause contamination).</p> <p>The EPA notes even where all waste activities are conducted within a fully enclosed building, materials may be tracked on to external surfaces leading to the generation of contaminated water.</p> <p>Any external areas where vehicles travel or wait for loading/unloading must drain to a stormwater quality treatment device sufficient to remove any contaminants, both solid and dissolved, prior to discharge offsite.</p>	<ul style="list-style-type: none"> <li>• All water generated from waste processing (stockpile management, wash-down etc.) will be drained to the wastewater management system, with stormwater drainage isolated from this system (refer CJ Arms 2024a).</li> <li>• External pavements to be drained towards the stormwater treatment and flood storage system prior to discharge.</li> </ul>

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	SYDNEY WATER	Where / how this is addressed in this report
20.	The proponent needs to ensure the removal of all these unauthorised connections from the property and needs to engage appropriate professionals to ensure stormwater discharge from the development site complies with Sydney Water’s connection requirements.	The proponent confirms that unauthorised connections to the Sydney Water stormwater assets adjacent to the subject site will be removed. Given the close proximity of the subject site to the Sydney Water stormwater asset, building plans to be submitted for approval to Water Servicing Coordinator (WSC). Note that this will take place in future design stages.
21.	No buildings or permanent structures are to be proposed over the stormwater channel / pipe or within 1m from the outside wall of the channel / pipe or within Sydney Water’s easement, whichever is larger. Permanent structures include (but are not limited to) basement car parks, hanging balconies, roof eaves, hanging stairs, stormwater pits, stormwater pipes, elevated driveway, basement access or similar structures. This clearance requirement would apply for unlimited depth and height.	The buildings will be set back from site boundaries, with recommended landscaped buffers and to ensure access and egress for emergency services vehicles. Refer architectural master plan in Appendix A. Proposed Site Layout and CJ Arms 2024b. <i>Hale Street, Botany. Landscape Concept Design</i> report. As the building is within 10m of the assets listed, an Out of Scope BPA is required from Sydney Water during the design phase of the project and building plans will be submitted for approval to WSC.
22.	The applicant is required to submit the elevation drawings with the stormwater channel/ pipe shown, to ensure that the proposed buildings and permanent structures are 1m away from the outside face of the stormwater channel and away from the Sydney Water easement.	Please refer to master plan (Appendix A) and architectural elevation drawings submitted as part of this DA. As the building is within 10m of the assets listed, an Out of Scope BPA is required from Sydney Water during the design phase of the project and building plans will be submitted for approval by a WSC.
23.	<b>Integrated Water Cycle Management</b>	A preliminary IWM strategy has been developed, and has been summarised in Section 4 of this report. The overarching premise of the developed IWM strategy is for the new C&D facility to be designed and managed such that it does not become a point source of waterway contamination, a risk to the environment, or a burden on the Authority water supply system. Water conservation strategies include water efficiency and the capture and reuse of roofwater for nonpotable use.

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<p>4. The proponent should outline any sustainability initiatives that will minimise/reduce the demand for drinking water, including any alternative water supply and end uses of drinking and non-drinking water that may be proposed, and demonstrate water sensitive urban design (principles are used), and any water conservation measures that are likely to be proposed. This will allow Sydney Water to determine the impact of the proposed development on our existing services and required system capacity to service the development.</p>	<p>WSUD and stormwater management is described in Section 5. Detailed design of these systems will be undertaken during future and ongoing design stages early in the design process.</p>
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### 1.2 RESPONSE TO SUBMISSIONS COMMENTS

A response to this submission was provided by Bayside Council (their ref: SSD-2024/10) dated 09/09/2024 – and the response to their civil engineering queries is summarised below (note flood and landscape related queries are responded to in other respective reports):

Bayside Council Comments	Proponent Response	Location Addressed
<p>It's not clear how the building is set at or above the flood planning level (1% AEP flood level + 500mm freeboard) given Council's flood model indicates flood levels of RL 2.92m directly to the west of the proposed building.</p>	<p>As discussed in the council pre-application meeting the spurious data along the western boundary is due to the lidar data in the council model which is slightly different than the actual topography in this location, largely resulting from issues with lidar representation in the model.</p> <p>This information is reflected in the attached civil concept plan.</p>	<p>Appendix D and B show the updated survey data and proposed level concept respectively.</p>

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Bayside Council Comments	Proponent Response	Location Addressed
<p>The development should investigate the feasibility of having warehouse levels set above the sea level rise/climate change 1% AEP flood level to future proof the building. The commentary in section 10.1.3 is not supported. It is not feasible for the development to rely on drainage upgrades in the surrounding area to mitigate flood level impacts due to climate change/sea level rise.</p>	<p>Additional modelling as requested shows the proposed floor level (2.50m AHD) of the building is already set above the 2100 climate change scenario.</p> <p>The 500mm freeboard provides sufficient protection for climate change scenarios.</p> <p>ARR_BLK Design scenario                      2050 CC - rainfall (0.5% AEP) and tidal increase of 0.4m – FL 2.14m AHD                      2100 CC - rainfall (0.2% AEP) and tidal increase of 0.9m – FL 2.44m AHD.</p>	<p>Appendix B shows the floor level and approximate extent of inundation in the 1% AEP event up to RL 2.00</p>
<p>The substation is to be flood proofed to the 1% AEP + 500mm level.</p>	<p>Noted. The electrical substation floor level is set at 2.5m which is above 1% AEP + 500mm freeboard.</p>	<p>Appendix B shows the proposed level of the substation.</p>
<p>A set of stormwater plans prepared by a suitably qualified civil engineer were not provided. As a result, the development cannot be assessed to determine if it satisfies clause 6.3 and clause 5.21 of the Bayside LEP and the requirements of the Bayside DCP (section 3.9, 3.10 and 9.5). These plans need to be provided to enable the development to be fully assessed.</p>	<p>We have included a revised and more detailed concept in Appendix B for reference. The provision of a full set of detailed design plans is not typical at this stage of a development application as it will be undertaken at Construction Certificate stage, however the information now included in Appendix B should provide enough detail to facilitate review</p>	<p>Appendix B</p>

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Bayside Council Comments	Proponent Response	Location Addressed
<p>There is a limited number of plans accompanying the development proposal. In the architectural plans submitted there are no details of design surface levels across the site. Full details of design surface levels across the site are necessary to inform the assessment of the development (particularly the flood impact assessment). A civil grading plan and a cut/fill bulk earthworks plan needs to be provided to understand and assess the design surface levels across the site. The gradients on the driveway to the warehouse need to comply with AS2890.2:2018. The levels in the civil grading shall be reflected in the architectural design.</p>	<p>Updated architectural plans with design surface levels across the site have been provided. Refer to Appendix A and Architectural drawing package. Cut and fill plan has been prepared by comparing design versus existing surfaces and is appended in Annexure E. The gradients from the street to the building are indicated on Appendix B and considered practical and compliant with AS2890.2</p>	<p>Appendix A, B and E</p>

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Bayside Council Comments	Proponent Response	Location Addressed
<p>The stormwater plans shall include the following details at minimum:</p> <ul style="list-style-type: none"> <li>• Site layout;</li> <li>• Surface and roof drainage plans;</li> <li>• Existing site contours and final design levels;</li> <li>• WSUD catchment plan;</li> <li>• Finished floor levels and footprints of the proposed development/ structures;</li> <li>• Location and size of the internal and external drainage systems, rainwater re-use system, flood storage tank systems;</li> <li>• Levels and location of discharge points for the stormwater system including design details of the Hale Street drainage extension;</li> <li>• Cross-sections details of the rainwater tanks and flood storage tank;</li> <li>• Maximum water surface levels in each storage;</li> <li>• Details of surcharge/overflow paths for the major storm;</li> <li>• Location and manufacturer spaces of stormwater quality improvement devices; and</li> <li>• Flood storage tank base plan is to be provided, showing all base levels and minimum 1% fall towards the outlet pipe;</li> <li>• A lid plan is to be submitted for the flood storage tank; showing the distance from pit centre to centre. The grates spacing of the access grates to be as per Section 6.6.2 of Bayside Technical Specification Stormwater Management.</li> <li>• Full details of the bioretention system including manufacturers details.</li> <li>• Construction and operational phase sediment and erosion control plan.</li> </ul>	<p>As noted above we have provided a more detailed concept plan that indicates the majority of this information – that we believe is appropriate at this stage of the development process.</p> <p>The degree of detail requested here is achievable in the detail design phase of the project.</p>	<p>Appendix B</p>
<p>Engineering design certification shall be submitted for the stormwater design</p>	<p>As mentioned above, the design certification will be submitted with detail designs</p>	

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Bayside Council Comments	Proponent Response	Location Addressed
<p>Council raises no objection to not having an OSD for the development. However, the approach to designing the flood storage tank in section 5.6 is incorrect. It needs to be designed as a flood mitigation measure (e.g., to offset proposed fill on the site) and be calculated through the flood modelling.</p>	<p>We have updated our report to relate to the flood modelling processes.</p>	<p>Section 5.6</p>
<p>The water quality improvement targets quoted in sections 5.8 &amp; 5.9 of the “Integrated Water Management Report” are incorrect. The correct targets are as per section 7.1.1 table 5 of Bayside Technical Specification Stormwater Management shown below:  The MUSIC modelling undertaken is consequently incorrect. The MUSIC modelling must be revised to demonstrate the abovementioned pollutant reduction targets are met or exceeded.</p>	<p>The targets we met were provided by Council in letter to advise on the SEARS requirements and these are understood to be the controlling targets. However, we have updated the treatment train to achieve council treatment targets.</p>	<p>Section 5.8 &amp; 5.9</p>
<p>Furthermore, figure 5 of this report cannot be assessed as it does not include the areas of each catchment and is not supplemented by stormwater plans verifying the catchment areas and demonstrating the treatment train is feasible.</p>	<p>Refer to Table 4 on Section 5.8 and Catchment area plan in Appendix C</p>	<p>Section 5.8: Table 3; Appendix C</p>
<p>The parameters of the bioretention system in the MUSIC model shall be shown. The bioretention system appears to be overperforming and it’s not clear how the site will effectively capture gross pollutants from impervious areas. Furthermore, it needs to be detailed how this system will work given the substation and trees proposed in this area.</p>	<p>This is included in the soft copy of the MUSIC file provided for council review.</p>	<p>Attached .sqz file</p>
<p>A soft copy of the amended MUSIC modelling shall be provided.</p>	<p>As above</p>	<p>Attached .sqz file</p>

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*Integrated Water Management Strategy*

Bayside Council Comments	Proponent Response	Location Addressed
<p>A WSUD catchment plan highlighting the impervious and pervious areas for water quality treatment including areas which bypass the treatment system should be provided. The WSUD catchment plan shall be aligned with the MUSIC modelling and shall be scaled with the architectural plan in the background. The MUSIC modelling shall be consistent with the WSUD catchment plan.</p>	<p>Refer to Table 4 on Section 5.8 and Catchment area plan in Appendix C</p>	<p>Section 5.8: Table 4; Appendix C; Attached .sqz file</p>
<p>The fuel tank must be bunded, located under a roof structure and drained directly to the Sydney water sewer. No run-off from the fuel dispensing area is to be directed to the stormwater system.</p>	<p>This is shown on the architectural drawings and reflected on our updated civil concept plan.</p>	<p>Appendix B</p>
<p>The plans propose an extension of Council’s Hale Street drainage infrastructure. A surveyor must be engaged to determine all relevant levels (e.g., the invert levels) of this infrastructure.</p>	<p>This will be done and submitted with detail design</p>	

## Waste Management Facility, Botany

Integrated Water Management Strategy

A response to this submission was provided by Department of Planning, Housing and Infrastructure (their ref: SSD-62855708) dated 13/09/2024 – and the response to their civil engineering queries is summarised below (note landscape related queries are responded to in other respective reports):

Dept of Planning, Housing and Infrastructure Comments	Proponent Response	Location Addressed
<p>The level of detail provided regarding the proposed earthworks and stormwater drainage design is insufficient to enable an assessment of these works.</p> <p>Recommendations: A civil engineering report is required that provides design drawings for the proposed stormwater drainage system and bulk earthworks, including the proposed flood storage tank design and finished levels plan(s).</p>	<p>Revised and detailed concept design for the proposed stormwater drainage system has been included at Appendix B and concept bulk earthworks design at Appendix E. The drawings provided in Appendix B and E should provide sufficient design information to enable assessment of the proposed earthworks and stormwater drainage design. Further detailed design, including a civil engineering report, will be undertaken at Construction Certificate stage.</p>	<p>Appendix B and E</p>
<p>The IWMS states a new stormwater discharge point and inlet pit will be installed at the front of the site on Hale Street, with a proposed 22 metre extension to Council’s stormwater drainage system on Hale Street. Insufficient design details have been provided regarding this extension and the environmental impacts of these works have not been assessed.</p> <p>Recommendation: Additional information is provided regarding the design of the proposed stormwater discharge point and extension, including consideration of any associated environmental impacts.</p>	<p>Additional design information regarding the proposed stormwater design, discharge point and extension is provided in Appendix B.</p> <p>Further detailed design, consultation with council engineering, and development of detailed requirements including consideration of any associated environmental impacts, will be undertaken at Construction Certificate stage.</p>	

A response to this submission was also provided by Sydney Water (their ref: 217853, 212452) dated 30/08/2024 . The comments are acknowledged and there are no issues with regards to the comments.

## Waste Management Facility, Botany

*Integrated Water Management Strategy*

### 2. INTRODUCTION

This Integrated Water Management (IWM) report has been prepared as part of a DA seeking consent for a construction and demolition (C&D) waste management facility at 2-4 Hale Street, Botany (Lot 1 DP 562374) (the subject site).

It is planned that the proposed C&D waste management facility will be licenced and designed to accept up to 300,000 tonnes per annum of C&D waste. It would operate as a waste transfer station undertaking receipt and basic sorting with aggregation of material for bulk transport to Luddenham advanced resource recovery facility or another approved facility within the KLF group where more advanced sorting and recycling would be undertaken.

The new C&D waste management facility must be designed and managed such that it does not become a point source of waterway contamination or a risk to the environment. The focus of this report is the appropriate use and sustainable management of water during waste handling and processing, the on-site management of wastewater streams, and the treatment and discharge of stormwater.

#### 2.1 DOCUMENTS REFERENCED IN THIS REPORT

This report refers to, and should be read in conjunction with, all documents submitted as part of this application. These include, and are not limited to: Flood Impact Assessment, Infrastructure, Ecologically Sustainable Development, and Landscape Masterplan reports:

- CJ Arms, 2024a. Waste Management Facility, Botany Infrastructure Assessment – Water, Sewer, and Stormwater report. March 2024
- CJ Arms, 2024b. Hale Street, Botany. Landscape Concept Design report. March 2024
- CJ Arms, 2024c. Waste Management Facility, Botany. Flood Impact Assessment report. March 2024
- JBS&G, 2022. Detailed Site Investigation. 2-4 Hale St Botany. Report 62740/144,250 Rev A.
- SEARs, 25 October 2023. NSW Planning Secretary's Environmental Assessment Requirements Waste Management Facility, Botany, including issued Govt Authority Advice on SEARs.

## Waste Management Facility, Botany

*Integrated Water Management Strategy*

### 2.2 DEVELOPMENT PROPOSAL

Reference is made to the architectural master plan for the proposed development, which is included in Appendix A. Proposed Site Layout. Please also refer to the architecture drawing set and planning documents submitted as part of this DA.

The subject site covers a total area of around 7,439 m<sup>2</sup>. The development proposal for the site includes a single large warehouse and ancillary buildings with a combined GFA of 3882m<sup>2</sup>, comprising:

- Warehouse (3,559 m<sup>2</sup>)
- Office - Ground & First Floor (260 m<sup>2</sup>)
- Gatehouse (15m<sup>2</sup>)
- Pump room (48 m<sup>2</sup>)

In addition to the warehouse and office, the site will be laid out and developed to include:

- Vehicle access via Hale Street, including 2 new crossovers (one for cars and one for trucks)
- Large hardstand area, for vehicle ingress, egress, and turning
- On-grade car parking (15 spaces) for staff and visitors
- Inground weighbridges
- New kiosk substation
- Appropriate setbacks from site boundaries
- Landscape buffer to Hale St
- Water management elements, including rainwater tank and raingarden

To prepare the subject site for development, the existing buildings will be demolished, and the existing substation will be decommissioned and removed and replaced with a new kiosk substation in a different location (refer Appendix A).

# Waste Management Facility, Botany

Integrated Water Management Strategy

## 3. SUBJECT SITE – EXISTING

### 3.1 LOCALITY

Refer Figure 1 below for general site location.

The subject site is located at 2-4 Hale Street, Botany and is identified as Lot 1 in Deposited Plan (DP) 562374 in the Bayside Local Government Area (LGA).

The subject site covers a total area of 7,439 m<sup>2</sup>.



Figure 1: Locality Plan (Source: Nearmap, Jan 2024)

### 3.2 EXISTING TOPOGRAPHY

Refer to Figure 2 for topographical survey map. Topographical data has been obtained from a topographical level and features survey (United Surveyors, May 2022).

The site falls between 1-3% in a general direction towards the south-east corner of the site. Hale Street, which fronts the site, drains from west to east at a gentle grade of 0.4 %.

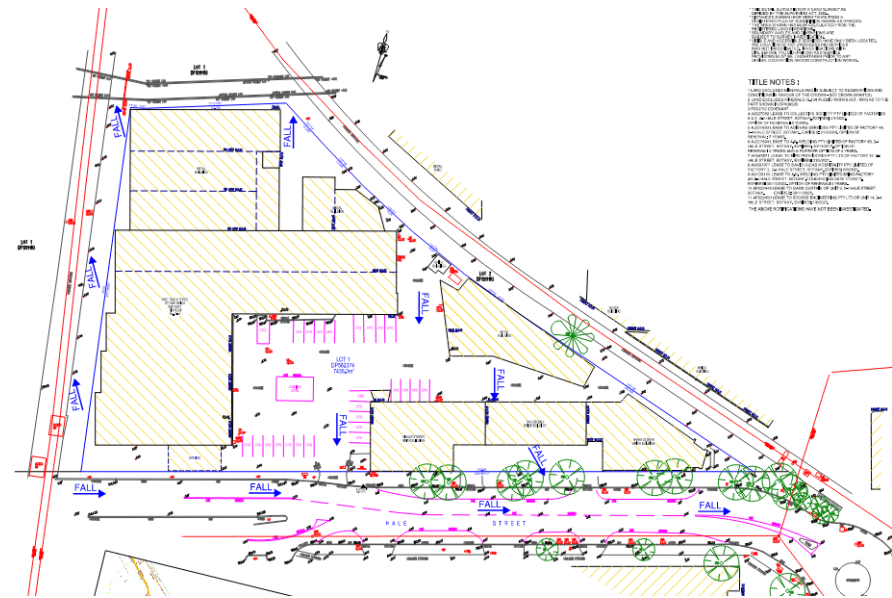


Figure 2: Existing Topography

## Waste Management Facility, Botany

*Integrated Water Management Strategy*

### 3.3 STORMWATER DRAINAGE NETWORK – EXISTING

The subject site currently discharges surface water (stormwater) via several kerb outlets into Hale Street. There is no stormwater drainage network in Hale Street fronting the subject site and drainage is conveyed completely via surface runoff along kerb and channel. The closest kerb inlet pit is on Hale Street approx. 22m downstream from the subject site's southeastern boundary.

There are two downpipe connections from the existing building that discharge directly into the open stormwater drain (Sydney Water channel) to the north of the site. These downpipe connections will be removed as part of redevelopment, and all stormwater from roofs and ground level surfaces will be discharged towards the new Stormwater Discharge Point at the front of the site on Hale St (Figure 3).

Set back areas from the western and northern boundaries of the site are essentially landlocked and currently drain outwards from the site towards the northern drainage channel (Figure 4).



Figure 3. Current site conditions, north of the existing building, showing existing downpipe connections (to be removed).



Figure 4. Current site conditions, west of the existing building – set back between existing building and site boundary.

## Waste Management Facility, Botany

Integrated Water Management Strategy

### 4. INTEGRATED WATER MANAGEMENT (IWM)

The proposed new C&D waste management facility will support the transition to a circular economy, reducing waste and emissions and consumption of resources. At the same time, the facility must be designed and managed such that it does not become a point source of waterway contamination or a risk to the environment. The project must comply with the general requirements of the SEARs, as well as relevant government authority advice, regulations, and guidelines.

The SEARs specifies that an IWM strategy must be developed, which includes the consideration of:

- Water sustainability and conservation measures including initiatives to minimise the consumption of potable water.
- Understanding of potable and nonpotable end uses and consideration of alternative water sources
- Use of Water Sensitive Urban Design principles.

#### 4.1 WATER BALANCE MODELLING

Water balance modelling ascertains projected water flows within and around a project site. Predicted inputs and outputs of water, wastewater, stormwater, and rainwater identified through this process are critical for developing and optimising a functional IWM strategy.

Modelled estimates of indoor and outdoor water use and irrigation, which are compiled in Table 2, indicate that operational water demand will total around 2.5 ML per year, with almost 90% (2.2 ML) for

nonpotable end uses. Nonpotable demands include landscape irrigation, toilet flushing, and warehouse operations where there is minimal direct human contact.

It is considered appropriate to supply nonpotable demands with a fit-for-purpose reclaimed nonpotable water supply, in this case captured roof water.

Potable end uses will be supplied from the authority water supply.

#### 4.2 RAINWATER CAPTURE AND REUSE

Based on the projected nonpotable water demands for the project and the proposed roof area, rainwater capture and reuse modelling has been undertaken. A 60 m<sup>3</sup> rainwater tank draining the entire roof area will meet 98% of this demand.

#### 4.3 WASTEWATER

Wastewater will be produced in two main streams:

- Offices: toilet, shower, and kitchen wastewater
- Warehouse operations: hose-down, wheel washing etc. (refer Table 2)

Efficiency of water use will be maximised across all end uses and the volume of wastewater produced will be relatively low (Table 2).

At this stage, no on-site wastewater treatment and reuse is proposed. The quality of operational wastewater will be subject to further investigation and the pre-treatment of wastewater will be included as required under any future trade waste agreement (*tba*).

## Waste Management Facility, Botany

Integrated Water Management Strategy

Table 2. Summary of Water Balance Results and Assumptions

Water End use	Water Use Annual (kL/y)	Water Use Daily (L/d)	Water Source	Water Use Assumptions	Wastewater Annual (kL/y)	Wastewater Daily (L/d)
Showers	59	163	Potable	Office staff only (~10 ppl)	59	163
Toilets	65	179	Nonpotable (roof) water	Staff and visitors	65	179
Hand washing	23	63	Potable	" "	22	60
Consumption (drinking)	7	20	Potable	Office staff only (~10 ppl)	0	0
Cleaning (office, tea sinks)	183	500	Potable	" "	91	250
Wheel wash	731	2,000	Nonpotable (roof) water	wheel bath, assisted by brushes	219	600
Vehicle and machinery wash	394	1,080	Nonpotable (roof) water	high pressure hose 9 Lpm, 2 h/d	355	972
Stockpile dust suppression	219	600	Nonpotable (roof) water	5 Lpm, 10 min/h, 12 h/d	11	30
Hose-down	394	1,080	Nonpotable (roof) water	high pressure hose 9 Lpm, 2 h/d	20	54
Irrigation	442	1,200*	Nonpotable (roof) water	500 m <sup>2</sup> outdoor landscape	0	0
<b>TOTAL</b>	<b>2,518</b>	<b>6,900 L/d</b>			<b>843 kL/y</b>	<b>2,307 L/d</b>
<b>Nonpotable water</b>	<b>2,246</b>	<b>6,150 L/d</b>				
<b>Potable water</b>	<b>272</b>	<b>745 L/d</b>				

\* averaged over the year (summer / peak irrigation demand = approx. 2,300 L/d)

### 5. STORMWATER DRAINAGE AND TREATMENT – PROPOSED

Please refer to Appendix B. Proposed Stormwater Drainage Scheme.

A new stormwater discharge point will be installed at the front of the site on Hale St, with a proposed (approx. 22 m) extension to Council's stormwater drainage system on Hale Street.

A preliminary drainage system has been designed which will cater for all minor and major flows from the subject site to the stormwater discharge point. The stormwater drainage and treatment system for the developed site will comprise:

- Roof drainage. The intention is that the warehouse and office roofs will be drained into a 60 m<sup>3</sup> RWT. Collected roofwater will be available for nonpotable reuse.
- Minor drainage: ground level rainfall runoff (stormwater) up to and including the 5% AEP storm event.
- Major drainage: ground level runoff up to and including the 1% AEP storm event.
- Raingarden: 30 m<sup>2</sup> treatment (filter) area, located at the Hale St frontage of the site.
- Gross Pollutant Trap (GPT) – OceanGuard200um in the last pit connecting to proposed council stormwater point of discharge.
- Minor and major stormwater drainage and overflow from RWT will be directed through the raingarden.

- Flood storage: Refer Section 5.6

#### 5.1 ROOFWATER DRAINAGE SYSTEM

An aboveground 60 m<sup>3</sup> rainwater tank (RWT) will be installed directly east of the warehouse next to the carpark. Roofwater from the new warehouse and office will be drained to the inlet of the RWT (roof drainage subject to detailed design).

The RWT system will include a 100% capacity overflow pipe that will discharge into the raingarden at the front of the site.

#### 5.2 RAINWATER TANK SYSTEM

The layout and connections into and out of the RWT will be finalised and detailed at an early design stage.

The RWT has been sized to maximise capture and reuse of roofwater with an efficient use of available space. End uses for the collected roofwater include landscape irrigation, toilet flushing, wheel washing, and hose-down.

#### 5.3 MINOR DRAINAGE SYSTEM

The minor drainage system will be designed to cater for storm events up to and including 5% AEP. Minor stormwater drainage will be collected using a combination of pit and pipe network system which will drain towards the existing kerb inlet pit on Hale Street roughly 22m downstream from the subject site's southeastern boundary. Discharge will be via a proposed 300mm reinforced concrete pipe.

#### 5.4 MAJOR DRAINAGE SYSTEM

## Waste Management Facility, Botany

*Integrated Water Management Strategy*

The major drainage system will be designed to cater for all storm events up to the 1% AEP. Major stormwater drainage will be collected using a combination of surface drainage, and a pit and pipe network system.

### 5.5 BIOFILTRATION (RAINGARDEN)

Refer to Appendix B for tank and raingarden location.

The stormwater treatment train comprises the 60kL RWT and a 30 m<sup>2</sup> raingarden. The raingarden is located at the Hale St frontage of the site and will receive rainfall runoff from the site (minor drainage flows, refer Section 5.3) and piped overflow from RWT.

Refer to Table and Appendix C for catchment areas draining to the raingarden and those which bypass treatment.

Treated stormwater from the raingarden will be discharged via a new stormwater discharge point (proposed double grated gully pit and lintel located at the front of the site on Hale Street, refer Section 5.7).

### 5.6 FLOOD STORAGE

Given the location of the site at the low point for the catchment in a heavily flooded area (refer CJ Arms, 2024c. *Waste Management Facility, Botany. Flood Impact Assessment* report), flood storage will be provided in lieu of OSD.

Based on the flood modelling requirements (refer Sections 8.1.4 & 9.2.4) of the *Flood Impact Assessment*) for storage in the 1%AEP condition (including AR&R blockage factors) the existing site holds 200m<sup>3</sup> of floodwater (deeper than 200mm) and in the proposed conditions the site will hold at least 222.4m<sup>3</sup> of floodwater (deeper than

200mm), which is an increase of 22.4m<sup>3</sup> more flood storage than the site previously held.

Table 3 shows the flood storage summary obtained from Flood Impact Assessment.

**Table 3: Flood Storage Summary**

Scenario	Existing Flood Storage m <sup>3</sup>	Proposed Flood Storage m <sup>3</sup>
1% AEP, 000BLK	9.1	44.5
1% AEP, ARRBLK	200.0	222.4

### 5.7 STORMWATER DISCHARGE POINT – PROPOSED

As discussed in Section 3.3, there is currently no stormwater drainage network on Hale Street directly fronting the subject site. As part of this project, a new kerb inlet pit is proposed, to which (treated) stormwater from the new development will be discharged.

The new kerb inlet pit will be connected to an existing kerb inlet pit located 22m to the west on Hale Street. Refer to Appendix B for location of stormwater outlet configuration.

## Waste Management Facility, Botany

Integrated Water Management Strategy

### 5.8 STORMWATER TREATMENT TRAIN – WSUD

A stormwater treatment train has been developed that incorporates water sensitive urban design (WSUD) techniques, including measures to maximise the reuse of water, and landscape integrated treatment (raingarden).

Stormwater discharged from the new development will be treated in compliance with SEARs and local government authority requirements, specifically the Bayside Technical Specifications as follows:

- Reduce baseline annual load of Gross Pollutants (GP) by 90%.
- Reduce baseline annual load of Suspended Solids (TSS) by 85%.
- Reduce baseline annual load of Total Phosphorous (TP) by 60%.
- Reduce baseline annual load of Total Nitrogen (TN) by 45%.

The catchment areas shown in Table 4 are as per catchment areas plan in Appendix C and fig 5.

Table 4. Stormwater Treatment Train

	Area (m <sup>2</sup> )	Treatment Node	% impervious
<b>Factory roof</b>	3,559	RWT + Raingarden + GPT	100%
<b>Office &amp; Pump room roof</b>	260	RWT + Raingarden + GPT	100%
<b>Tanks &amp; Landscape area</b>	316	Raingarden + GPT	38%
<b>Carpark area</b>	496	Raingarden + GPT	100%
<b>Weighbridge Paved area</b>	1,141	Raingarden + GPT	100%
<b>Landscape + substation area</b>	201	Raingarden + GPT	7%
<b>Landscape + car park crossover</b>	620	GPT	27%
<b>Hardstand &amp; Trucks crossover</b>	400	GPT	100%
<b>Landscape-eastern wedge</b>	60	bypass treatment	0%
<b>Landscape – western + northern setbacks</b>	386	bypass treatment	0%
<b>TOTAL</b>	<b>7,439</b>		

## Waste Management Facility, Botany

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The stormwater treatment train, which is summarised in Table , includes:

- 60kL RWT capturing roof water from the new warehouse, office and pump room.
- Rainwater reuse strategy ensuring fit for purpose water supply to non-potable end uses (landscape irrigation, toilet flushing, wheel washing, and hose-down) (refer Section 4.1).
- Annual non-potable (reuse) demand is 2,246 kL/y
- 30m<sup>2</sup> raingarden located in the low side of the development adjacent the main vehicle entrance.
- Overflow from the RWT and the majority of ground level rainfall runoff directed through the raingarden.
- The raingarden will be unlined, to allow the exfiltration of water to the surrounding landscape for passive irrigation.
- Gross Pollutant Trap (GPT) – OceanGuard200um in the last pit connecting to proposed council stormwater point of discharge.
- There are small landscape areas that are unable to be drained through the raingarden or GPT due to constraints such as level (RL) or location (downstream of the raingarden or GPT). These are listed in Table (*bypass treatment*).

## 5.9 MUSIC MODELLING RESULTS

Stormwater treatment efficacy was undertaken using a MUSIC model, which was parameterised using rainfall runoff and pollutant parameters in accordance with the NSW MUSIC Modelling Guidelines.

A screen capture of the MUSIC model including the treatment train schematic, with MUSIC modelling treatment performance results is included in Figure 5.

# Waste Management Facility, Botany

Integrated Water Management Strategy

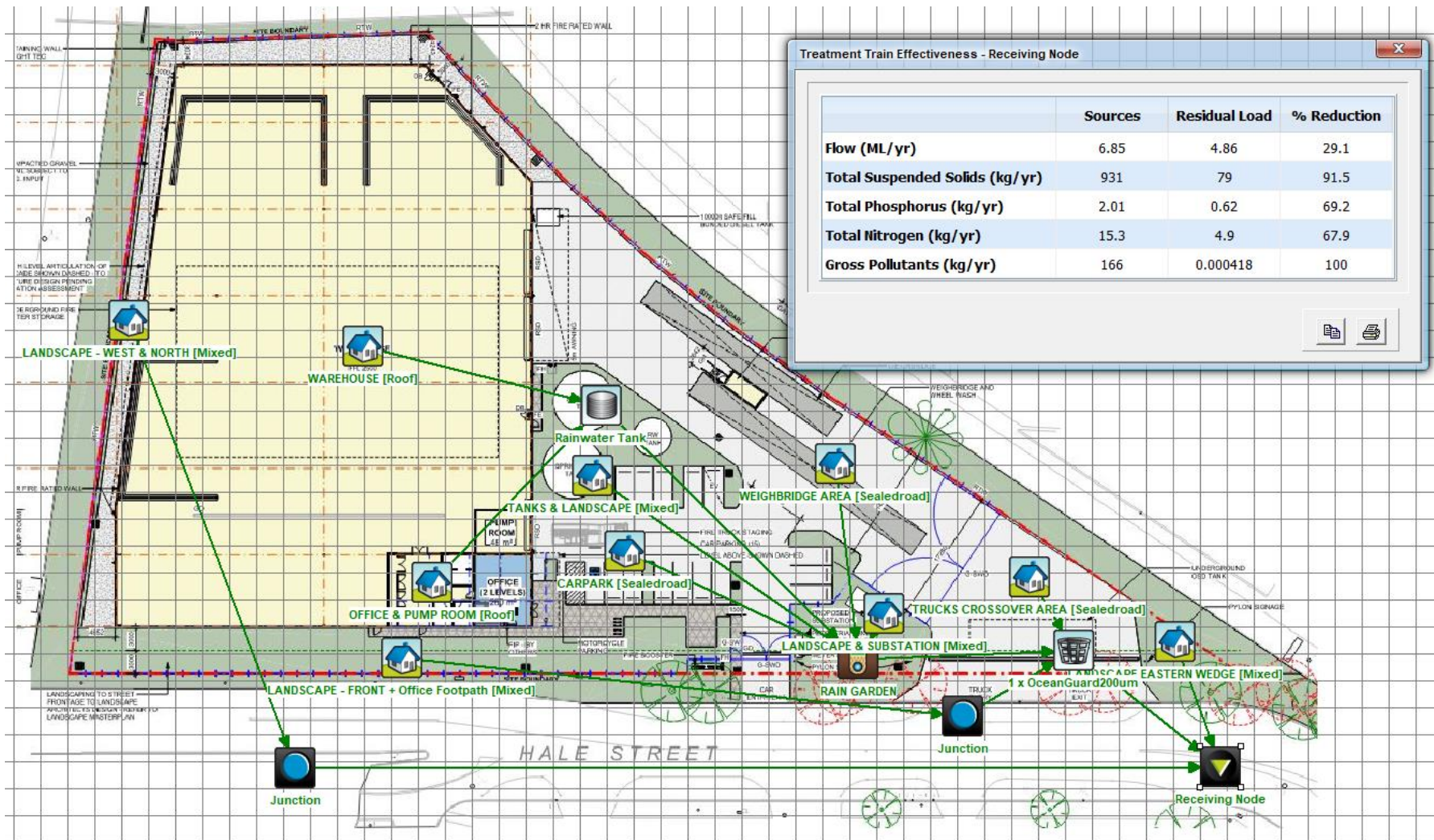


Figure 5. MUSIC Model Treatment Train and Results

## **Waste Management Facility, Botany**

*Integrated Water Management Strategy*

### **6. BULK EARTHWORKS**

The cut and fill plan for the site, which is appended in Appendix E, was prepared by comparing the design versus existing surfaces.

## **Waste Management Facility, Botany**

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### **7. CONSTRUCTION PHASE CONTROLS**

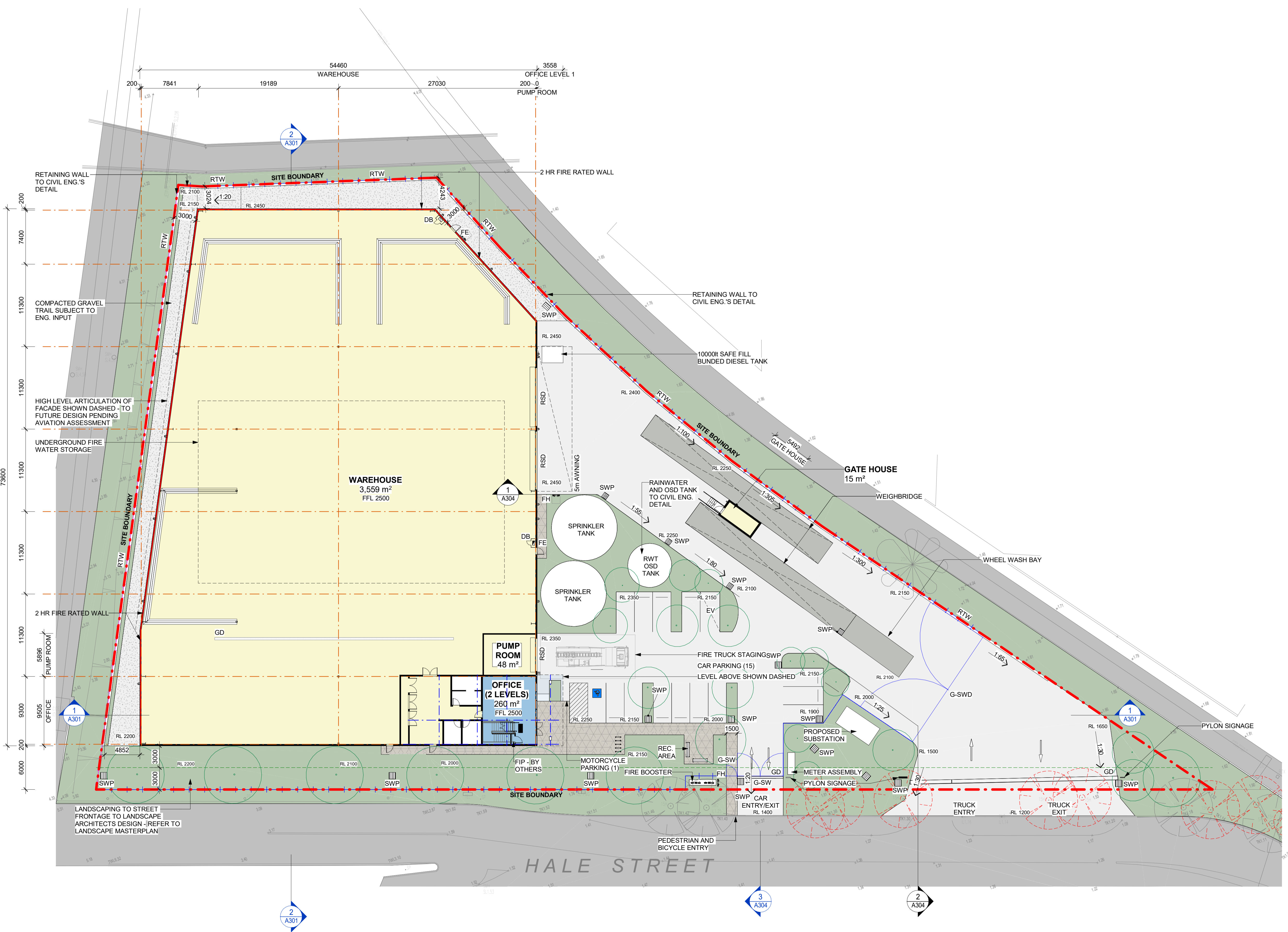
The construction phases of the hardscaping, drainage, and building works must be properly managed to ensure environmental values are continually protected.

To do this, Construction and Environmental Management Plan (CEMP) will be prepared to address construction-related impacts. Plans will be submitted for approval prior to commencement of any works.

## **Waste Management Facility, Botany**

*Integrated Water Management Strategy*

### **8. APPENDIX A. PROPOSED SITE LAYOUT**

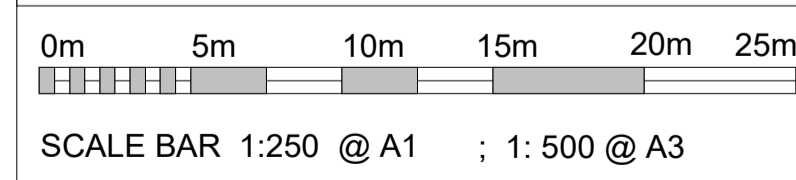


DEVELOPMENT AREA SCHEDULE	
<b>SITE AREA</b>	<b>7,439 m<sup>2</sup></b>
WAREHOUSE	3,559 m <sup>2</sup>
OFFICE - GROUND FLOOR - FIRST FLOOR	260 m <sup>2</sup> (60 m <sup>2</sup> ) (200 m <sup>2</sup> )
GATEHOUSE	15 m <sup>2</sup>
PUMP ROOM	48 m <sup>2</sup>
<b>TOTAL BUILDING AREA</b>	<b>3,882 m<sup>2</sup></b>
TOTAL PARKING PROVIDED	15 SPACES

LEGEND	
	SITE BOUNDARY
	LANDSCAPE SETBACK
	FNC-1: 2.1 M PALISADE FENCE
	FNC-2: 2.1 M CHAINLINK FENCE
	WAREHOUSE
	LOADING ZONE
	OFFICE
	HEAVY DUTY PAVEMENT
	LIGHT DUTY PAVEMENT
	COMPACTED GRAVEL TRAIL
	PEDESTRIAN PAVEMENT
	LANDSCAPING
	PROPOSED TREE TO LANDSCAPE DETAIL
	TREE RETAINED
	TREE REMOVED

ABBREVIATION	
DB	DISTRIBUTION BOARD
EV	ELECTRIC VEHICLE PARKING
FE	FIRE EXIT DOOR
FH	FIRE HYDRANT
G-SW	GATE SINGLE (SWING)
G-SWD	GATE DOUBLE (SWING)
RSD	ROLLER SHUTTER DOOR
GD	GRATED DRAIN

- NOTES**
- ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
  - ALL LANDSCAPING TO LANDSCAPE ARCHITECT'S DETAILS.
  - ALL INFORMATION SUBJECT TO DETAILED DESIGN AND ENGINEERING INPUT.
  - HYD, MECH, ELECTRICAL, AND FIRE ELEMENTS ARE INDICATIVE ONLY.
  - ALL MEASUREMENTS OF EXISTING STRUCTURES ARE APPROXIMATE ONLY, AND TO BE CONFIRMED ON SITE.
  - TENANT FITOUT ITEMS SHOWN BLUE.



Issue	Description	Date	By	QA
D	Development Application	23.02.2024	CL	MF
E	Development Application Updates	01.03.2024	CL	MF
F	Development Application Updates	07.03.2024	CL	MF
G	Development Application Updates	13.03.2024	CL	MF
H	Development Application	15.03.2024	CL	MF
J	Development Application	22.03.2024	CL	MF
K	Development Application - Tree Updates	03.04.2024	CL	MF
L	Issue for Information	11.10.2024	PY	MF
M	Issue for Information	05.11.2024	PY	MF
N	Issue for Information	03.12.2024	PY	MF

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**DEVELOPMENT APPLICATION**

CLIENT  
**COOMBES PROPERTY GROUP**

PROJECT MANAGER  
WASTE MANAGEMENT FACILITY  
2-4 HALE ST, BOTANY

Drawn DT  
Checked LA  
PRINT DATE  
3/12/2024 5:20:26 PM

NORTH POINT  
Drawing Title  
**SITE PLAN**  
SHEET NUMBER  
**1220011\_A005**  
ISSUE  
**N**

## **Waste Management Facility, Botany**

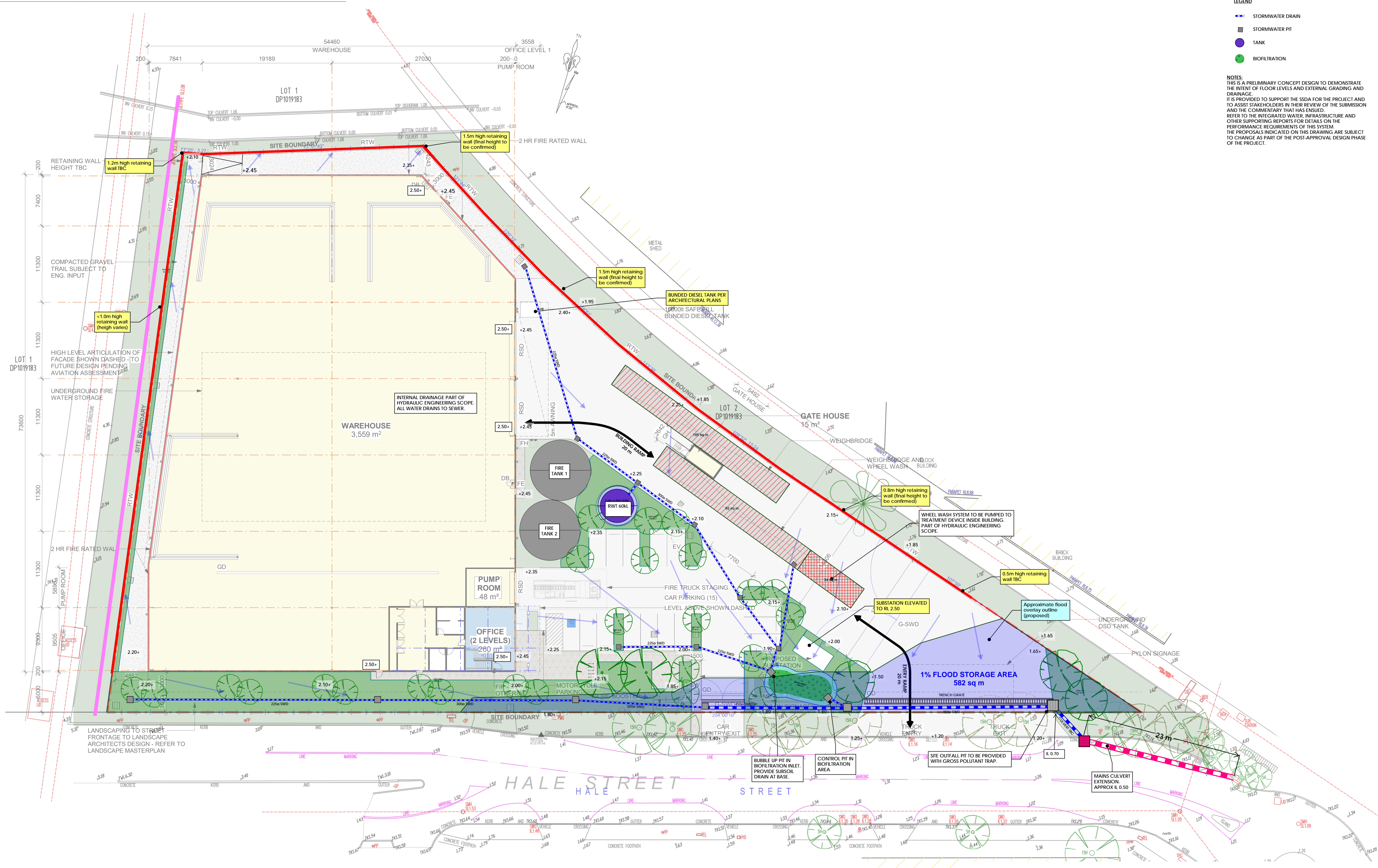
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### **9. APPENDIX B. PROPOSED STORMWATER DRAINAGE SCHEME**

**LEGEND**

- STORMWATER DRAIN
- STORMWATER PIT
- TANK
- BIOFILTRATION

**NOTES:**  
 THIS IS A PRELIMINARY CONCEPT DESIGN TO DEMONSTRATE THE INTENT OF FLOOR LEVELS AND EXTERNAL GRADING AND DRAINAGE. IT IS PROVIDED TO SUPPORT THE SSDA FOR THE PROJECT AND TO ASSIST STAKEHOLDERS IN THEIR REVIEW OF THE SUBMISSION AND THE COMMENTARY THAT HAS ENSUED. REFER TO THE INTEGRATED WATER, INFRASTRUCTURE AND OTHER SUPPORTING REPORTS FOR DETAILS ON THE PERFORMANCE REQUIREMENTS OF THIS SYSTEM. THE PROPOSALS INDICATED ON THIS DRAWING ARE SUBJECT TO CHANGE AS PART OF THE POST-APPROVAL DESIGN PHASE OF THE PROJECT.



PI	28/11/2024	FOR INFORMATION	BW	TS
Revised/	Date	Reason	Drawn	Checked
1.		The drawing is copyright of CJ Arms. It must not be copied or reproduced without written consent from the owner.		
2.		Do not scale from this drawing. Only figured dimensions are to be taken from this drawing.		
3.		All contractors must visit site and be responsible for taking and checking all dimensions related to the works shown on the drawing prior to fabrication or setting out.		

- Note for Contractors**  
The works described on this drawing must be undertaken by competent Contractors with an appropriate level of experience who have prepared appropriate Safe Work Method Statements (SWMS) relating to these works. The contractor is responsible for the management of all risks associated with the construction activities stated on this drawing.
- This drawing should not be issued in part and must be read in conjunction with all appropriate specifications, notes pages, details and authority drawings as appropriate.
- Deal before you dig. BEWARE OF UNDERGROUND SERVICES. The location of underground services are approximate only and their exact positions should be proven on site. No guarantee is given that existing services are shown.

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Project: HALE STREET, BOTANY  
 Client: COOMBS PROPERTY  
 Drawing Title: MASTERPLAN CIVIL CONCEPT

Drawn By: AMM  
 Checked By: AMM  
 Drawn Scale: 1:250 @ A1  
 Date of first issue: 12/12/2023

Project Number	Origin	Zone	Level	File Type	Rev	Number	Revision
15146	CJA	00	00	SK	CV	1000	P1

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## **Waste Management Facility, Botany**

*Integrated Water Management Strategy*

### **10. APPENDIX C. PROPOSED MUSIC MODEL CATCHMENT PLAN**

# MUSIC MODEL: CATCHMENT AREAS

## LEGEND

- WAREHOUSE (3,559m<sup>2</sup>) - to Rain Water Tank - to Rain garden - to GPT
- OFFICE & PUMP ROOM (260m<sup>2</sup>) - to Rain Water Tank- to Rain garden - to GPT
- CARPARK (496m<sup>2</sup>) - to Rain garden - to GPT
- TRUCKS WEIGHBRIDGE AREA (1,141m<sup>2</sup>) - to Rain garden - to GPT
- LANDSCAPE AND TANK AREA (316m<sup>2</sup>) - to Rain garden - to GPT
- LANDSCAPE AND SUBSTATION AREA (201m<sup>2</sup>) - to Rain garden - to GPT
- TRUCKS CROSSOVER AREA (405m<sup>2</sup>) - to GPT
- LANDSCAPE & CARPARK CROSSOVER AREA (620m<sup>2</sup>) - to GPT
- WEST & NORTHERN LANDSCAPE AREA (386m<sup>2</sup>) - BYPASS TREATMENT
- EASTERN LANDSCAPE AREA (60m<sup>2</sup>) - BYPASS TREATMENT

### DEVELOPMENT AREA SCHEDULE

SITE AREA	7,439 m <sup>2</sup>
WAREHOUSE	3,559 m <sup>2</sup>
OFFICE - GROUND FLOOR - FIRST FLOOR	260 m <sup>2</sup> (60 m <sup>2</sup> ) (200 m <sup>2</sup> )
GATEHOUSE	15 m <sup>2</sup>
PUMP ROOM	48 m <sup>2</sup>
<b>TOTAL BUILDING AREA</b>	<b>3,882 m<sup>2</sup></b>
TOTAL PARKING PROVIDED	15 SPACES

### LEGEND

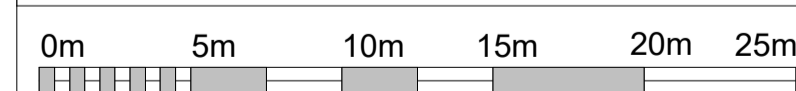
- SITE BOUNDARY
- LANDSCAPE SETBACK
- FNC-1: 2.1 M PALISADE FENCE
- FNC-2: 2.1 M CHAINLINK FENCE
- WAREHOUSE
- OFFICE
- HEAVY DUTY PAVEMENT
- LIGHT DUTY PAVEMENT
- COMPACTED GRAVEL TRAIL
- PEDESTRIAN PAVEMENT
- LANDSCAPING
- PROPOSED TREE TO LANDSCAPE DETAIL
- TREE RETAINED
- TREE REMOVED

### ABBREVIATION

DB	DISTRIBUTION BOARD
EV	ELECTRIC VEHICLE PARKING
FE	FIRE EXIT DOOR
FH	FIRE HYDRANT
G-SW	GATE SINGLE (SWING)
G-SWD	GATE DOUBLE (SWING)
RSD	ROLLER SHUTTER DOOR
GD	GRATED DRAIN

### NOTES

- ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
- ALL LANDSCAPING TO LANDSCAPE ARCHITECT'S DETAILS.
- ALL INFORMATION SUBJECT TO DETAILED DESIGN AND ENGINEERING INPUT.
- HYD, MECH, ELECTRICAL, AND FIRE ELEMENTS ARE INDICATIVE ONLY.
- ALL MEASUREMENTS OF EXISTING STRUCTURES ARE APPROXIMATE ONLY, AND TO BE CONFIRMED ON SITE.
- TENANT FITOUT ITEMS SHOWN BLUE

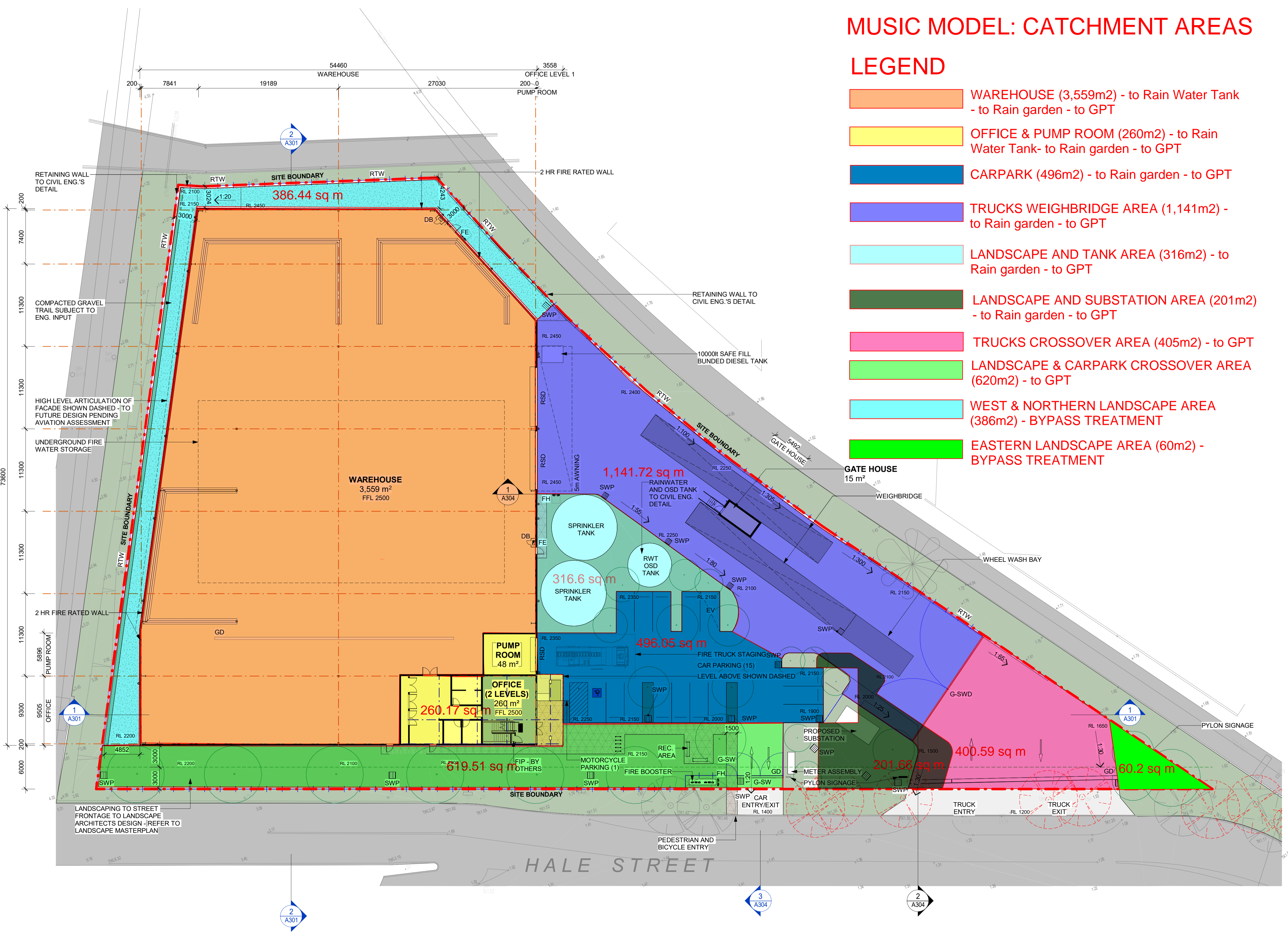


SCALE BAR 1:250 @ A1 ; 1: 500 @ A3

Drawing Title  
**SITE PLAN**

SHEET NUMBER  
**1220011\_A005**

ISSUE  
**N**



Issue	Description	Date	By	QA
D	Development Application	23.02.2024	CL	MF
E	Development Application Updates	01.03.2024	CL	MF
F	Development Application Updates	07.03.2024	CL	MF
G	Development Application Updates	13.03.2024	CL	MF
H	Development Application	15.03.2024	CL	MF
J	Development Application	22.03.2024	CL	MF
K	Development Application - Tree Updates	03.04.2024	CL	MF
L	Issue for Information	11.10.2024	PY	MF
M	Issue for Information	05.11.2024	PY	MF
N	Issue for Information	03.12.2024	PY	MF

**STRATEGY | DESIGN | DELIVERY**  
ACN: 002 033 801 ABN: 29 317 655 675

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Website: www.reidcampbell.com

**DEVELOPMENT APPLICATION**

CLIENT

**COOMBS PROPERTY GROUP**

PROJECT MANAGER

PROJECT  
**WASTE MANAGEMENT FACILITY**  
2-4 HALE ST, BOTANY

Drawn Checked PRINT DATE  
DT LA 3/12/2024 5:20:26 PM

NORTH POINT

Drawing Title  
**SITE PLAN**

SHEET NUMBER  
**1220011\_A005**

ISSUE  
**N**

## **Waste Management Facility, Botany**

*Integrated Water Management Strategy*

### **11. APPENDIX D. EXISTING SITE SURVEY**

REVISION	DATE	DETAILS
B	01/07/2022	ADDITIONAL
C	19/07/2022	ADDITIONAL
D	18/03/2024	ADDITIONAL

© UNITED SURVEYORS 2022  
REPRODUCTION WITHOUT WRITTEN APPROVAL IS STRICTLY PROHIBITED

DATUM: AUSTRALIAN HEIGHT DATUM  
ORIGIN: GLOBAL POSITIONING SYSTEM  
DWG REF: 11654-1  
REDUCTION RATIO: 1:300  
SHEET SIZE: A1  
DATE OF SURVEY: 18 MAY 2022  
SURVEYOR: GS/JF  
SHEET 1 OF 1



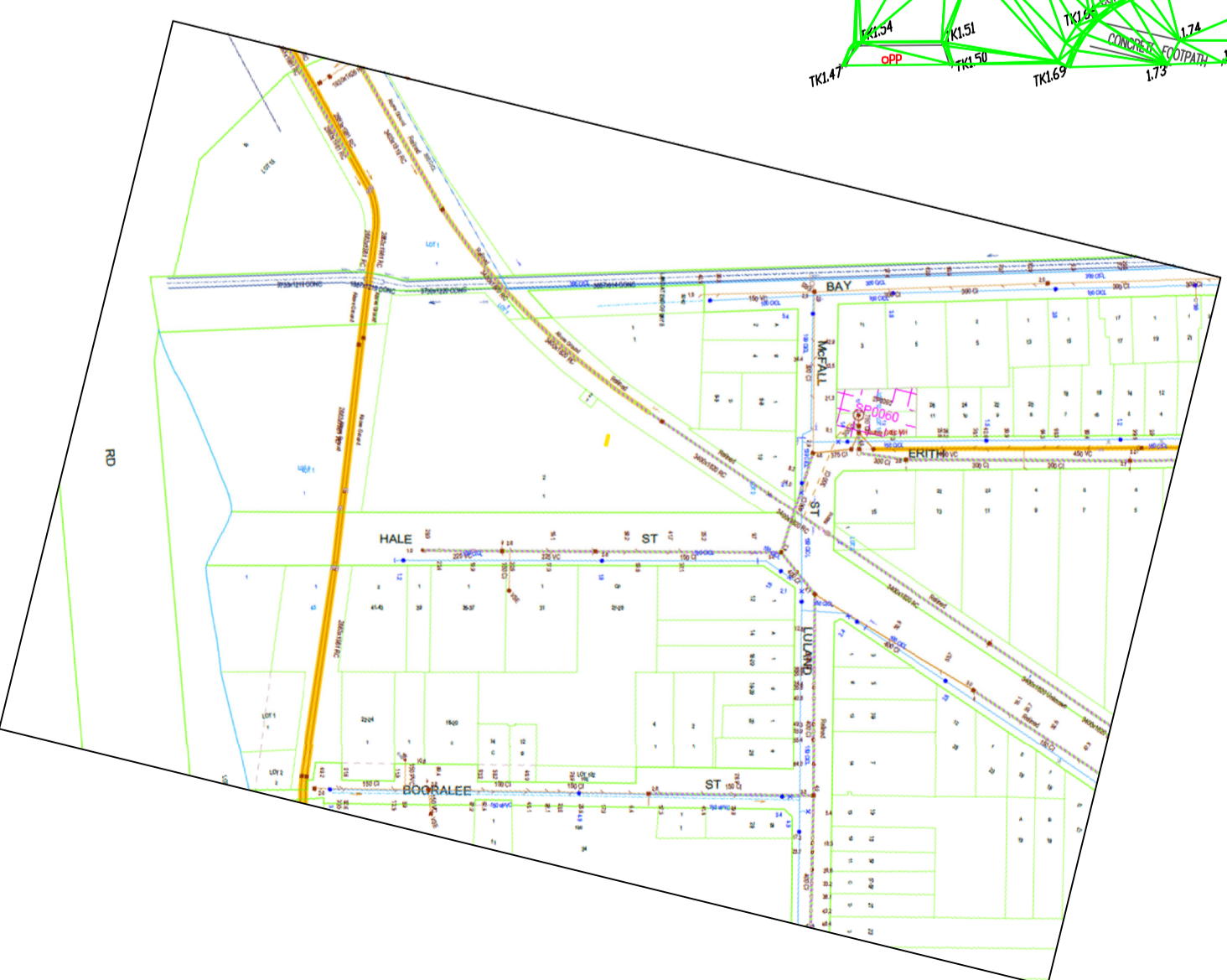
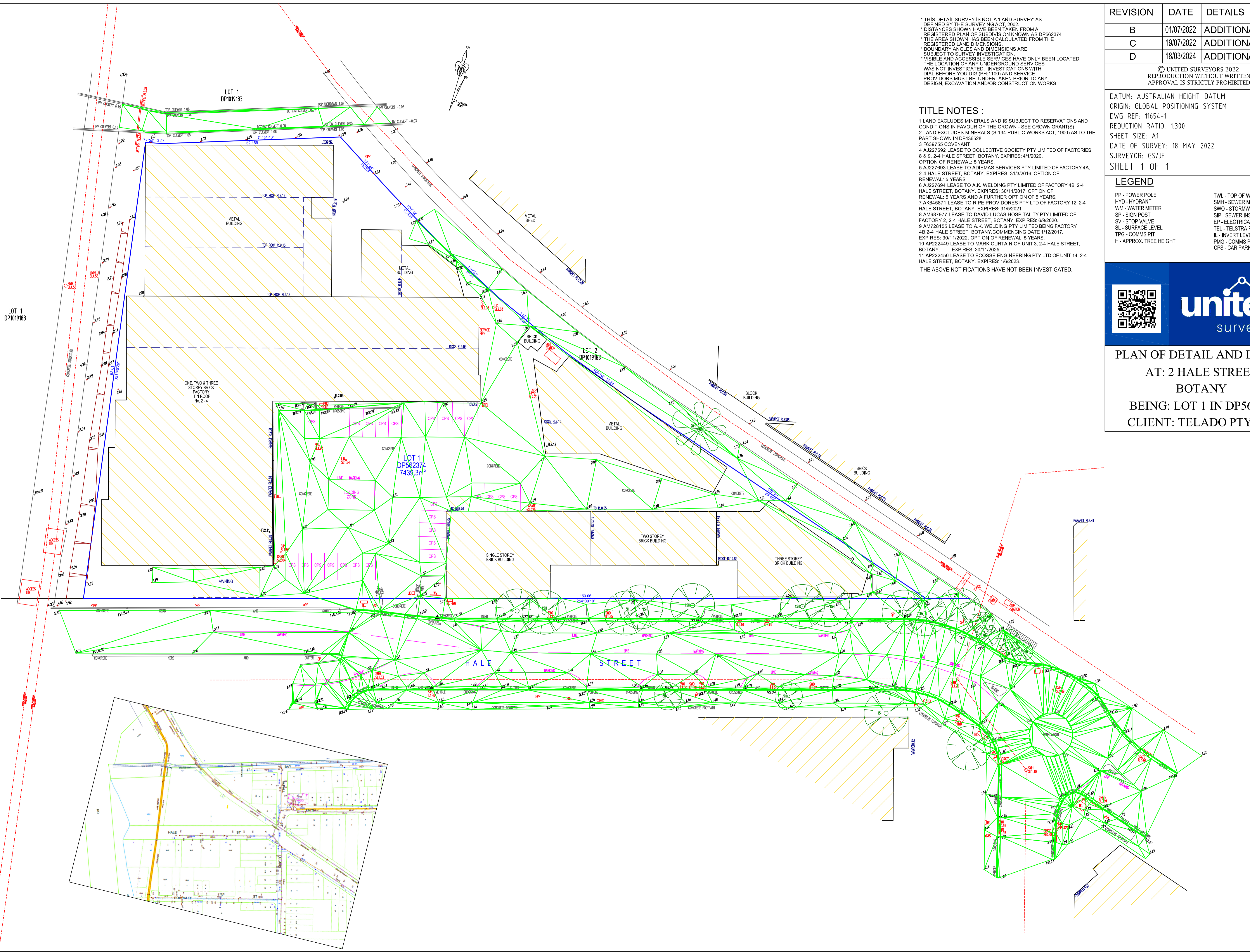
**LEGEND**

PP - POWER POLE	TWL - TOP OF WALL
HYD - HYDRANT	SMH - SEWER MANHOLE
WM - WATER METER	SWO - STORMWATER OUTLET
SP - SIGN POST	SIP - SEWER INSPECTION POINT
SV - STOP VALVE	EP - ELECTRICAL PILLAR
SL - SURFACE LEVEL	TEL - TELSTRA PIT
TPG - COMMS PIT	IL - INVERT LEVEL
H - APPROX. TREE HEIGHT	PMG - COMMS PIT
	CPS - CAR PARKING SPACE

**PLAN OF DETAIL AND LEVELS**  
AT: 2 HALE STREET  
BOTANY  
BEING: LOT 1 IN DP562374  
CLIENT: TELADO PTY LTD

\* THIS DETAIL SURVEY IS NOT A 'LAND SURVEY' AS DEFINED BY THE SURVEYING ACT, 2002.  
\* DISTANCES SHOWN HAVE BEEN TAKEN FROM A REGISTERED PLAN OF SUBDIVISION KNOWN AS DP562374  
\* THE AREA SHOWN HAS BEEN CALCULATED FROM THE REGISTERED LAND DIMENSIONS  
\* BOUNDARY ANGLES AND DIMENSIONS ARE SUBJECT TO SURVEY INVESTIGATION  
\* VISIBLE AND ACCESSIBLE SERVICES HAVE ONLY BEEN LOCATED. THE LOCATION OF ANY UNDERGROUND SERVICES WAS NOT INVESTIGATED. INVESTIGATIONS WITH DIAL BEFORE YOU DIG (PB1100) AND SERVICE PROVIDERS MUST BE UNDERTAKEN PRIOR TO ANY DESIGN, EXCAVATION AND/OR CONSTRUCTION WORKS.

**TITLE NOTES :**  
1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - (SEE CROWN GRANTS)  
2 LAND EXCLUDES MINERALS (S.134 PUBLIC WORKS ACT, 1990) AS TO THE PART SHOWN IN DP436528  
3 F639755 COVENANT  
4 AJ227692 LEASE TO COLLECTIVE SOCIETY PTY LIMITED OF FACTORIES 8 & 9, 2-4 HALE STREET, BOTANY. EXPIRES: 4/1/2020.  
OPTION OF RENEWAL: 5 YEARS.  
5 AJ227693 LEASE TO ADIEMAS SERVICES PTY LIMITED OF FACTORY 4A, 2-4 HALE STREET, BOTANY. EXPIRES: 31/3/2016. OPTION OF RENEWAL: 5 YEARS.  
6 AJ227694 LEASE TO A.K. WELDING PTY LIMITED OF FACTORY 4B, 2-4 HALE STREET, BOTANY. EXPIRES: 30/11/2017. OPTION OF RENEWAL: 5 YEARS AND A FURTHER OPTION OF 5 YEARS.  
7 AK645871 LEASE TO RIPE PROVIDORES PTY LTD OF FACTORY 12, 2-4 HALE STREET, BOTANY. EXPIRES: 31/5/2021.  
8 AM687977 LEASE TO DAVID LUCAS HOSPITALITY PTY LIMITED OF FACTORY 2, 2-4 HALE STREET, BOTANY. EXPIRES: 6/9/2020.  
9 AM728155 LEASE TO A.K. WELDING PTY LIMITED BEING FACTORY 4B, 2-4 HALE STREET, BOTANY. COMMENCING DATE 1/12/2017. EXPIRES: 30/11/2022. OPTION OF RENEWAL: 5 YEARS  
10 AP222449 LEASE TO MARK CURTAIN OF UNIT 3, 2-4 HALE STREET, BOTANY. EXPIRES: 30/11/2025.  
11 AP222450 LEASE TO ECOSSE ENGINEERING PTY LTD OF UNIT 14, 2-4 HALE STREET, BOTANY. EXPIRES: 1/6/2023.  
THE ABOVE NOTIFICATIONS HAVE NOT BEEN INVESTIGATED.



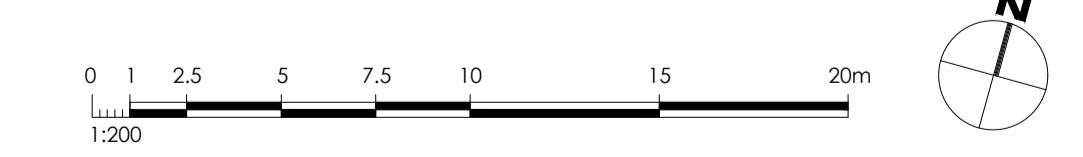
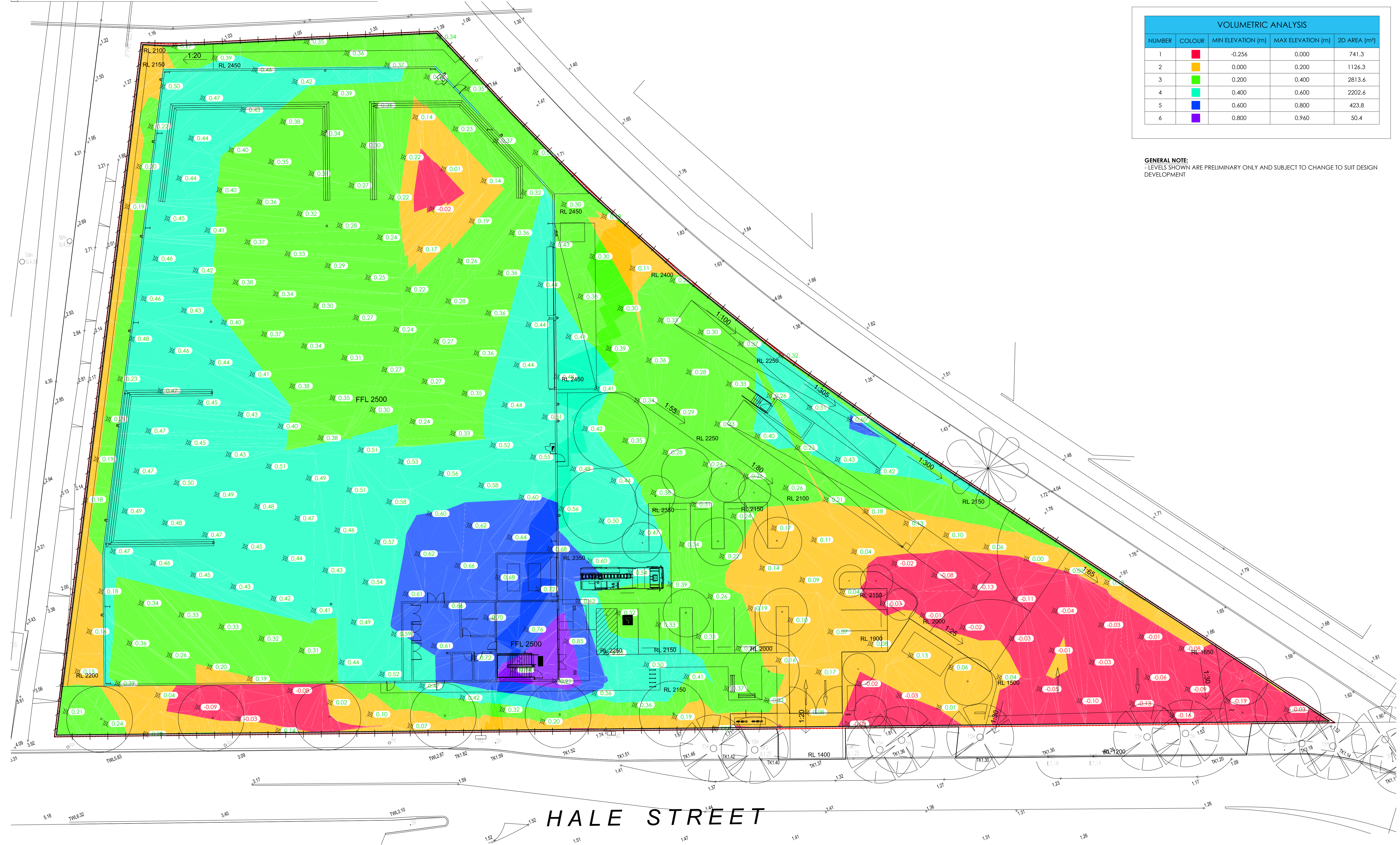
## **Waste Management Facility, Botany**

*Integrated Water Management Strategy*

### **12. APPENDIX E. CUT AND FILL PLAN**

VOLUMETRIC ANALYSIS				
NUMBER	COLOUR	MIN ELEVATION (m)	MAX ELEVATION (m)	2D AREA (m <sup>2</sup> )
1	Red	-0.256	0.000	741.3
2	Orange	0.000	0.200	1126.3
3	Light Green	0.200	0.400	2813.6
4	Light Blue	0.400	0.600	2202.6
5	Dark Blue	0.600	0.800	423.8
6	Purple	0.800	0.960	50.4

**GENERAL NOTE:**  
- LEVELS SHOWN ARE PRELIMINARY ONLY AND SUBJECT TO CHANGE TO SUIT DESIGN DEVELOPMENT



NO	DATE	ISSUED FOR APPROVAL	BY	CHKD
002	09.12.2024	ISSUED FOR APPROVAL	JSS	BW
001	05.02.2024	ISSUED FOR APPROVAL	JSS	BW
	Revised Date	Reason	Drawn	Checked

**Note for Contractors**  
The works described on this drawing must be undertaken by competent Contractors with an appropriate level of experience who have prepared appropriate Safe Work Method Statements (SWMS) relating to these works. The contractor is responsible for the management of all risks associated with the construction activities stated on this drawing.

This drawing should not be issued in part and must be read in conjunction with all appropriate specifications, notes pages, details and authority drawings as appropriate.

**Disclaimer:**  
1. This drawing is copyright of CJ Arms. It must not be copied or reproduced without written consent from the owner.  
2. Do not scale from this drawing. Only figured dimensions are to be taken from this drawing.  
3. All contractors must call and be responsible for locating and checking all dimensions related to the works shown on the drawing prior to fabrication or setting out.

**Dial before you dig, BEWARE OF UNDERGROUND SERVICES.** The location of underground services are approximate only and their exact position should be proven on site. No guarantee is given that existing services are shown.



**CJ ARMS**  
www.cjarms.com

SKETCHES - CIVIL SITINGWORKS

Project: HALE STREET, BOTANY		Drawing Title: CUT AND FILL PLAN - DESIGN VS EXISTING SURFACE	
Client: COOMBS PROPERTY GROUP		Drawn By: JSS	
Checked By: BW		Drawn Scale: 1:200 @ A1	
Date of Issue: 05.02.2024		Date of First Issue: 05.02.2024	
Project Number: 15146	Client: CJA	Zone: XX	Level: XX
File Name: SK	Rev: C	Number: 1101	Revision: P02