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Brooklyn Data Centre Infrastructure Servicing Report

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Stockland
Stockland - Brooklyn

Brooklyn Data Centre (BDC)

Brooklyn Data Centre Infrastructure Servicing Report

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Executive summary

The Project redevelops the site into a data centre campus consisting of 2 major Data Centre buildings (each comprising of 8 x ~ 9MW data halls) designed to provide the required resilience and redundancy to ensure performance requirements are met. To enable the data centre, the full suite of services infrastructure is required as per below:

- Electrical Power: First building deployment will draw approximately 125 MVA power supply. Infrastructure will be scalable to support an ultimate site load of 250 MVA power supply, with modular expansion capability, leveraging a planned 220 kV/33kV supply from AusNet. The substation will provide dual 33 kV feeders for each building. Each ~9MW data hall will be supported by 6 x 3.2MVA 33kV/400V transformers and 6 standby generators (with 1 for redundancy).
- Telecommunications: The plan incorporates dual Meet Me Rooms (MMRs) for each building with four diverse points of entry to ensure carrier diversity and redundancy. Site wide fibre optics will be reticulated across the site to service ancillary equipment and plant.
- Water & Fire Services: Authority connection to provide domestic water supply, fire water supply (feed to hydrant and sprinkler fire water tanks) are proposed. In addition to the town's supply, onsite firewater storage consisting of two tanks with a combined 520,000 L capacity is proposed, supported by a dedicated pump house to meet AS 2118.1 and AS 2419.1 standards.
- Stormwater & Water Sensitive Urban Design (WSUD): Existing LPoD is retained (location/invert to be confirmed with Hobsons Bay City Council & Melbourne Water). A new gravity network collects all roof and hardstand runoff. Post-development impervious area reduces relative to pre-development; no on-site detention is required for attenuation at planning stage. The strategy includes Water Sensitive Urban Design (WSUD) measures (swales, bioretention, raingardens) that meet or exceed all the Best Practice Environmental Management Guidelines (BPEMG) pollutant-reduction targets.
- Sanitary Sewer / Hydraulics: New gravity sanitary drainage to authority sewer (pump station only if grades are unachievable). The 225 mm site gravity sewer (south–north) and additional mains on western/northern boundaries are retained and protected; the Melbourne Water North West Sewer Trunk Main crossing will require coordination and protection during detailed design. Trade-waste pre-treatment will be implemented where required under authority policies.
- Existing Infrastructure & Staging: Redundant private water, sewer, stormwater, electrical, and telecommunications infrastructure within the Stage 1 footprint will be decommissioned. Existing utilities including water, sewer and electrical servcing facilities the wider site, "Stage 2" will be retained or diverted to provide continuity of supply. The assumed LPoD invert is based on the adjacent open channel (approx. 16.21 mRL) pending authority verification.
- Fuel Storage & Spill Management: Four centralised bulk diesel yards with self-bunded vertical tanks in N+1 configuration; site-wide storage sized for 48-hour autonomy (total 3.2 ML N+1 across four locations). Systems include fuel polishing, leak detection, inventory management, physical separation and fire-rating, and oil-water separation/spill containment tied to the stormwater design.

The strategy confirms there are no servicing barriers to development, providing a compliant and scalable foundation for the project.

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1. Introduction

This report has been prepared by Jacobs on behalf of *Stockland Development Pty Ltd* in support of the planning permit application relating to the land at 413 Francis St Brooklyn (**the Site**). This application seeks approval for the Stage 1 portion of the land use and development (shown in image below) for a data centre (**the Project**) as shown in Figure 1-1.

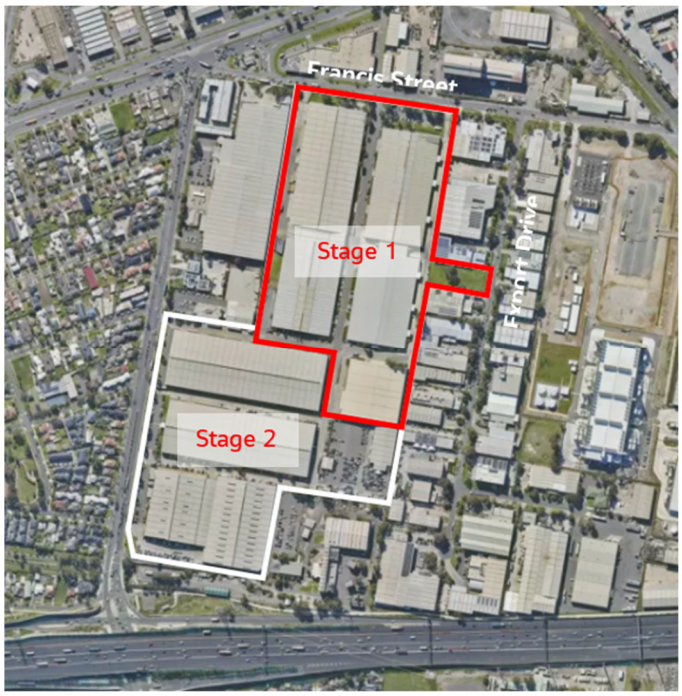

Figure 1-1: Location of the proposed Project development

The Project seeks the staged use and development of a two-storey data centre (250MVA ultimate power capacity) pursuant to the Industrial 1 & 3 Zones. To facilitate these works, the existing warehouse buildings and associated hard stand/car parking area are to be removed. Early works approval will be sought to undertake bulk earthworks across the Site, including the preparation of leveling of the Site to allow AusNet to deliver the substation (utility installation). It is noted that substation area will be subject to separate planning approvals and the use and development associated with the substation will be subject to a separate approval prepared by AusNet.

This application meets the relevant eligibility criteria to be considered under the Development Facilitation Program where the Minister for Planning will be the Responsible Authority pursuant to Clause 53.22 of the Planning Scheme.

In particular, the Project seeks permission for the staged delivery of two, two-storey data centre buildings, generally comprising the following buildings and works:

- Bulk earthworks for site preparation and leveling (early works approval sought);
- Construction of two-storey data centre buildings with a building height of 18.3 metres, with an additional 7.2 metres of building services for plant and chiller equipment (combined maximum height of circa 25.5 metres);

- The buildings comprise a total gross floor area of circa 75,000 square metres across the two storey data halls and ancillary offices, with additional associated major plant open structures (housing generators and chillers);
- Vehicle ingress and egress is proposed centrally along the Site's frontage to Francis St, with circa 110 car parking spaces provided at the frontage of the two data centre buildings;
- Removal of some vegetation to accommodate the functional parameters of the proposed data centre and substation development;
- Additional landscaping provided in the front setback of the building, scattered throughout the Site and to the office entry of each building, providing an improved landscape response; and
- Provision of required utilities, including diesel generator back up power system, associated fuel storage systems, fire pump and associated water tanks.

The proposed data centre seeks to provide much needed AI integration, data, content and cloud services to address the emerging demand for cloud computing services.

The Project's design has been shaped by technical assessments and stakeholder feedback, ensuring a balanced approach to development. The Project seeks to provide a strategic response to the existing and emerging character through provision of an improved built form and landscape response.

The purpose of this report is to outline the existing and proposed infrastructure required to enable the data centre to provide the required resilience and redundancy to achieve performance requirements.

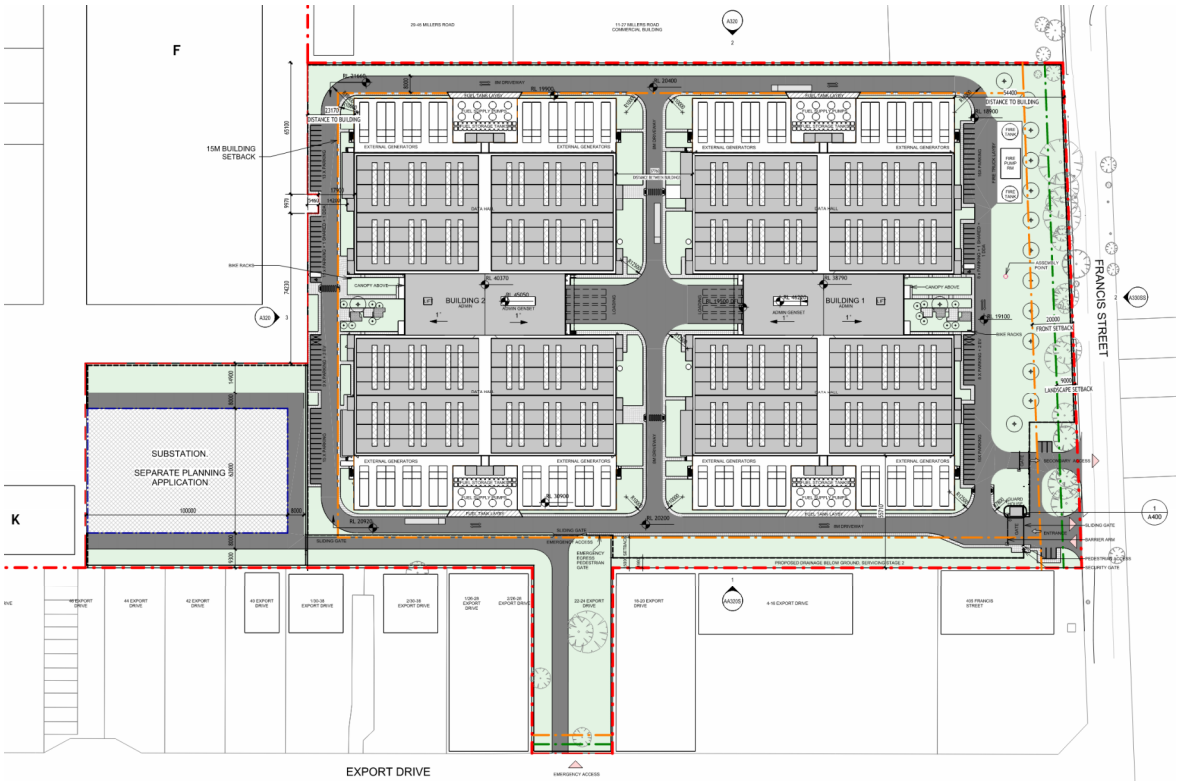

Figure 1-2: Proposed Site Plan

1.1 Design Criteria

The following table illustrates the codes and guidelines adhered to for the proposed utilities requirements for the site and have been tabulated to their respective elements.

Table 1-1: Design Elements and Guidelines

Design Element	Codes and Guidelines
Drainage	1. Cit of Melbourne Stormwater Drainage Design Guidelines 2. Melbourne Water – Water Sensitive Urban Design Guidelines 3. Hobsons Bay City Council – Draft Industrial Design Guidelines 4. Austroads – Guide to Road Design Part 5A: Drainage 5. AS/NZS 3500: Plumbing and Drainage
Electrical	1. AS/NZS 3000 - Electrical installations (Wiring Rules) 2. AS 2067 – Substations and high voltage installations exceeding 1 kV a.c. 3. AS/NZS 62271 (Series) – High-voltage switchgear and controlgear 4. AS/NZS 60076 (Series) – Power transformers 5. AS/NZS 60255 (Series) – Measuring relays and protection equipment 6. AS/NZS 61439 (Series) – Low-voltage switchgear and controlgear assemblies 7. AS/NZS 3008.1.1 – Electrical installations – Selection of cables 8. AS/NZS 60898 / AS/NZS 61008 / AS/NZS 61009 – Circuit breakers and residual current devices (as applicable) 9. AS/NZS 62040 (Series) – Uninterruptible power systems – Performance, testing, and EMC requirements 10. AS/NZS 5139 – Electrical installations – Safety of battery systems for use with power conversion equipment 11. AS/NZS 2293.1 – Emergency lighting and exit signs – System design, installation and operation 12. AS 1670 (Series) – Fire detection, warning, control and intercom systems 13. AS 1768 – Lightning protection 14. AS/NZS 3010 – Electrical installations – Generating sets 15. AS/NZS 4777 (Series) – Grid connection of energy systems via inverters

Design Element	Codes and Guidelines
	16. AS 1940 – Storage and handling of flammable and combustible liquids 17. AS/NZS 4836 – Safe working on or near low-voltage and extra-low voltage electrical installations and equipment
Electrical (International Standards)	1. ISO 8528 (Series) – Reciprocating internal combustion engine driven alternating current generating sets 2. Uptime Institute Tier Standard: Topology *(Referenced for electrical redundancy, fault tolerance, and concurrent maintainability objectives where nominated by the client)*
Telecommunications	1. AS/NZS 11801 series - Information technology - Generic cabling for customer premises 2. AS/NZS 3084 - Telecommunications pathways and spaces for commercial buildings 3. AS/CA S008 - Requirements for customer cabling products 4. AS/CA S009 - Installation requirements for customer cabling (Wiring Rules) 5. AS/NZS 3085.1 - Telecommunications installations - Basic requirements 6. AS/NZS 3000 - Electrical installations (Wiring Rules) 7. AS/NZS ISO/IEC 14763.2 - Implementation and operation of customer premises cabling 8. AS/NZS ISO/IEC 30129 - Telecommunications bonding networks for buildings and other structures
Telecommunications (International Standards)	1. ANSI/TIA-568 series - Telecommunications cabling systems a. Part 0: General requirements b. Part 1: Commercial Buildings c. Part 2-D: Balanced Twisted-Pair Cabling d. Part 3-D: Optical Fiber Cabling 2. ANSI/TIA-569-E - Telecommunications pathways and spaces 3. ANSI/TIA-598-D - Optical fiber colour coding

Design Element	Codes and Guidelines
	4. ANSI/TIA-606-C - Administration of telecommunications infrastructure 5. ANSI/TIA-758-C - Customer-owned outside plant (OSP) cabling 6. ANSI/TIA-942-C - Telecommunications infrastructure standard for data centers 7. ANSI/ICEA S-83-596 - Indoor optical fiber cable 8. ANSI/ICEA S-87-640 - Outside-plant fiber optic cable 9. ANSI/ICEA S-104-696 - Indoor-outdoor optical fiber cable 10. BICSI Publications: a. Telecommunications Distribution Methods Manual (TDMM) b. Information Technology Systems Installation Methods Manual (ITSIMM) c. Outside Plant Design Reference Manual (OSPDRM) 11. EIA-310-E - Racks, cabinets, and equipment mounting 12. IEEE 802.3 - Ethernet 13. IEEE 802.11 - Wireless LAN (Wi-Fi)
Hydraulic Services	1. AS/NZS 3500.1 Plumbing and Drainage Part 1: Water Services 2021 2. AS/NZS 3500.2 Plumbing and Drainage Part 2 Sanitary Plumbing and Drainage 2021 3. AS/NZS 3500.3 Plumbing and Drainage Part 3 Stormwater Drainage 2021 4. AS/NZS 3500.4 Plumbing and Drainage Part 4 Heated Water Services 2021 5. NCC-2022 National Construction Code 6. NCC Volume 3 -2022 Plumbing Code of Australia
Fire Services	1. Fire Detection and Alarm System AS 1670.1-2018. 2. Fire Sprinkler System AS 2118.1-2017.

Design Element	Codes and Guidelines
	3. Fire Hydrant System AS 2419.1-2021. AS 1940-2017. 4. Fire Hose Reel System AS 2441-2005. AS 1940-2017. 5. Portable Fire Extinguishers AS 2444-2001. AS 1940-2017.

2. Existing Utilities

2.1 Water Supply – Domestic and Fire Fighting

The existing Francis Street water authority connection and fire booster cabinet will be relocated to the proposed main entrance. The existing water infrastructure across Stage 1 is to be removed and replaced with new infrastructure to form a domestic and fire ring main across the site.

A connection water supply connection from Export Drive is proposed to provide redundancy to the system. This will replace the Miller Street connection which is to be disconnected from Stage 1. However, will continue to service Stage 2.

2.2 Sewer

The site contains multiple sewer assets crossing through to the entire site between Stages 1 and 2. Local connections servicing the warehouses to be demolished are to be removed. The main lines running through the site are proposed to be retained and protected. Existing easements will be maintained.

The three existing lines to be retained include:

- 225mm gravity sewer along the western boundary (north south direction)
- 225mm gravity sewer through the centre of the site (north south. It is proposed to connect the new building facilities into this line. Further assessment of protection requirements to be addressed in subsequent design stages.
- The existing Melbourne Water North West Sewer Trunk Main runs diagonally entering from the northeastern boundary and existing through the southern boundary. Although deep, the main will need to be factored as part of the design for construction over public assets. Further liaison with Melbourne Water is required in subsequent design stages.

Overall, several areas of the proposed development interface with existing hydraulic infrastructure. Further detailed investigation, including survey, CCTV inspections, and authority verification, will be required to confirm the exact condition, depth, and protection requirements of each asset. Modifications or diversions will only occur where unavoidable; otherwise, existing infrastructure will be retained and integrated into the final design. Pump stations will be proposed if gravity connections are not feasible.

2.3 Stormwater

Existing drainage infrastructure within the development footprint will be decommissioned as part of the redevelopment. The only stormwater assets intended to be retained is the open drainage culvert along the north-eastern boundary. These will continue to convey flows toward the assumed Legal Point of Discharge (LPoD) until the new stormwater network is constructed and commissioned.

The LDoP for the site is understood to be via the existing open stormwater culvert drainage channel, which ultimately discharges to the existing Council stormwater network within Francis Road (refer to Figure 3-1 indicating the assumed area of LPOD from the stormwater design for the existing site). Topographical survey of the existing site has been undertaken and used to identify the invert level for the adjacent open channel, with a preliminary level of approximately 16.21 mRL adopted for planning-stage design.

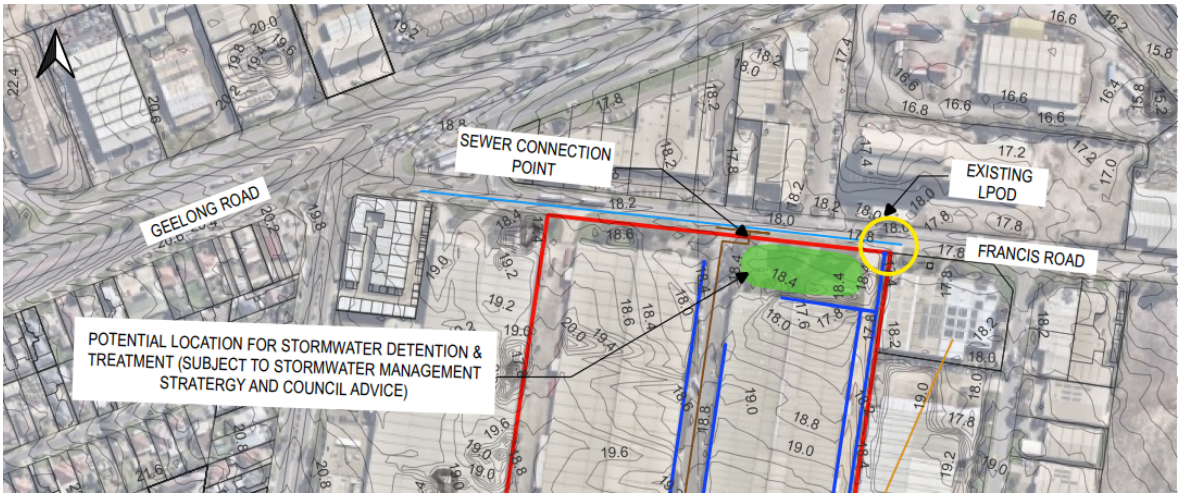

Figure 2-1: Stormwater existing LPOD for existing site (source:DPM Preliminary Drainage Assessment Plan)

As noted in the DPM Stormwater Management Strategy (Feb 2024), an application for the Legal Point of Discharge (LPoD) was submitted to Hobsons Bay City Council; however, Council could not confirm the precise location, size, level, or connection arrangement of the outfall within Francis Road. In the absence of verified authority information, this report adopts an assumed LPoD location at the north-east corner of the site, with potential connection to the Melbourne Water drainage pipeline located on the southern side of Francis Road.

For the purposes of this planning-stage assessment, the LPoD invert has been temporarily assumed based on the lowest point of the adjacent open channel. Final LPoD details, including the confirmed location, connection arrangement, and governing invert level, will be verified with Hobsons Bay City Council and Melbourne Water prior to detailed stormwater design.

The internal stormwater drainage system will ultimately be designed to connect to the confirmed LPoD as specified by the relevant authority, ensuring that runoff from the site is appropriately conveyed without adverse impacts on the surrounding road reserve or public drainage assets. Appropriate stormwater treatment and attenuation measures will be incorporated as part of the final stormwater management design.

2.4 Telecommunications

Telecommunications servicing the existing building and site ancillary structures/equipment will be demolished and removed for the new development. The proposed connections to supply the data centre and telecommunications are covered further in this report. Any existing services that service the existing warehouses south of the Stage 1 site is to remain operational during the development and any connections are to be re-routed prior to the development commencing. These services are to be connected into the completed Stage 1 services once commissioned. Telecommunication dependencies are subject to further investigation prior to any being decommissioned/removed.

2.5 Electrical

The existing private electrical infrastructure across the development site servicing the existing warehouses is proposed to be fully demolished and removed to facilitate the new development. A new Ausnet substation and connections have been developed to provide sufficient electrical supply to ensure the site meets performance requirements.

Two existing substations are impacted by the Project which will require relocation and reconnection. The Millers – VicProducers No1 substation is proposed to be relocated to the south of Building 2 and the Francis 413-Millers substation relocated to the northern side of the site. Final location to be confirmed.

3. Proposed Utilities

3.1 Demolition/Diversion/Modification to Existing Services

As a minimum the scope of works are to include:

- Decommission of existing services made redundant with the demolition of existing buildings;
- Diversion of existing services required to maintain service to existing facilities in the Stage 2 area to allow for the proposed building and Civil Works; and
- Modification of the existing services where required to supply the new works with renewal of underground infrastructure.

3.2 Water/Firewater

A new potable water and firewater network is proposed to service the development, incorporating dual authority connections, upgraded on-site distribution infrastructure, and dedicated fire protection systems sized in accordance with AS 2118.1 and AS 2419.1.

3.2.1 Authority Connections

The town main potable water supply will be used to replenish the onsite fire water storage tanks. At this stage it is assumed that the authority supply cannot provide the simultaneous fire hydrant and fire sprinkler demands required under AS 2118.1 and AS 2419.1. The authority connection will therefore function primarily as a make-up supply to the dedicated fire storage system. Existing hydrants located along the eastern boundary will be retained and incorporated into the upgraded site reticulation. Final authority connection details and available water supply characteristics will be confirmed during detailed design.

3.2.2 Fire Pumps and Distribution

To meet combined fire hydrant and sprinkler demands, Two (2) off circular fire water tanks, each with a minimum effective capacity of 260,000 L shall be provided (520,000 L effective capacity total).

Sprinkler water storage capacity:

- 18 operational sprinklers (OH3) at a minimum of 60 L/min for 60 min = 64,800 L + 20% = 77,760 L total.
- As a single supply, half the total fire water required is provided in each tank.
- 77,760 x 1/2 = 38,880 L required in each tank.

Hydrant water storage capacity:

- 3 hydrants x 10 L/s for 240 min = 432,000 L total.
- As a primary supply, half the total fire water required is provided in each tank.
- 432,000 x 1/2 = 216,000 L in each tank.

Separate fire sprinkler and fire hydrant booster assemblies, each featuring a large-bore suction connection and booster connections will be provided at the site entry to allow Fire and Rescue Victoria (FRV) to draw from the fire water tanks and boost the systems via their appliances.

The fire water tanks will be located adjacent to the fire pump house.

An electric-driven primary fire sprinkler pump and diesel-driven secondary fire sprinkler pump shall be provided to serve the fire sprinkler demands. A pressure maintenance (jockey) pump will be provided to maintain pressure in the fire sprinkler ring main above that of the shutoff head of the main pumps.

An electric-driven primary fire hydrant pump and diesel-driven secondary fire hydrant pump shall be provided to serve the fire hydrant demands. A pressure maintenance (jockey) pump will be provided to maintain pressure in the fire hydrant ring main above that of the shutoff head of the main pumps.

Separate fire sprinkler and fire hydrant ring mains will be provided around the site to serve the sprinkler valve rooms and fire hydrants. Isolation valves in the fire ring mains will allow sections of the ring mains to be isolated if necessary

3.2.3 Domestic Water Reticulation

A new domestic water ring main system will be provided to serve the site facilities, running independently of the firewater ring main. The potable water supply will be used for all non-fire uses across the development.

3.3 Stormwater

The stormwater management strategy for the site is based on retaining the existing Legal Point of Discharge (LPoD). Authority records are inconclusive regarding the precise location and invert level of the Designated Point of Discharge (DoP); therefore, the invert is assumed to match the lowest point of the adjacent open channel near the expected discharge location. Verification will occur during the next design stage.

All existing stormwater infrastructure within the development footprint will be decommissioned, except for the drainage assets along the north-east boundary which will remain operational. A new underground piped network will collect runoff from all roof and paved areas, wrapping around the proposed data centre footprint and including a dedicated branch to the loading bay between the two docks. Stormwater from retained Stage 1 facilities will be redirected to the new system to maintain compliant discharge to the LPoD.

Refer to the Stormwater Management Plan for further commentary on the stormwater management across the site.

3.3.1 Site Catchment and Hydrology

Below summarises the pre and post development conditions. There is an overall decrease in impervious with the new Project.

a) Pre Development Condition:

- Roof catchment: 66,330m^2
- Roading/carpark/loading dock/ container hardstand catchment: 31,590m^2
- Landscape: 12,553m^2

b) Post Development Condition:

- Roof catchment: 49,873m^2. This clean catchment generates significant runoff volume.
- Hardstand catchment (impervious) including roading, carparks, loading dock, generator yard, fuel yard, fire pump house and substation catchment: 29,085m^2; and
- Landscape: 31,515m^2

Based on the above, the proposed post-development site will not result in an increase in pre-development flows due to the reduction in overall roof and hardstand areas proposed, therefore, no onsite detention is

required for attenuation purposes. It is assumed the current Legal Point of Discharge (LPoD) is to be retained with further modelling anticipated during the Planning Application to determine the feasibility of the existing LPoD.

It is proposed the site wide stormwater reticulation is based on a gravity system. The finished floor levels for the respective building have been assigned to accommodate the loading dock to achieve gravity flow from these areas.

3.3.2 Flood

Flood extents have been extracted from VicPlan maps and show the 1% Annual Exceedance Probability (AEP) flood extent on Francis Road encroaches into the northern end of the proposed site, refer to Figure 3-1 for extents. Flood level advice provided from Melbourne Water, as part of the Stormwater Management Strategy (prepared by *DPM Consulting Group, February 2024*), stated that the 1% AEP flood level within the site range from 18.52m AHD to the north western corner and 18.02m AHD in the north east corner. Additionally, the Stormwater Management Strategy assessed the Overland Flow Paths (OLFP) have been assessed to follow the natural contours with the OLFP directed towards Francis Road.

The proposed building Finished Floor Levels (FFL) and surrounding carpark levels are well above the above mentioned flood levels expected. The FFL of 20.10m and 21.90m AHD for Building 1 and Building 2 respectively, both exceed the flood level. The proposed access road levels of 18.60m and 18.40m AHD for the north western and north eastern corners respectively, exceed the flood level.

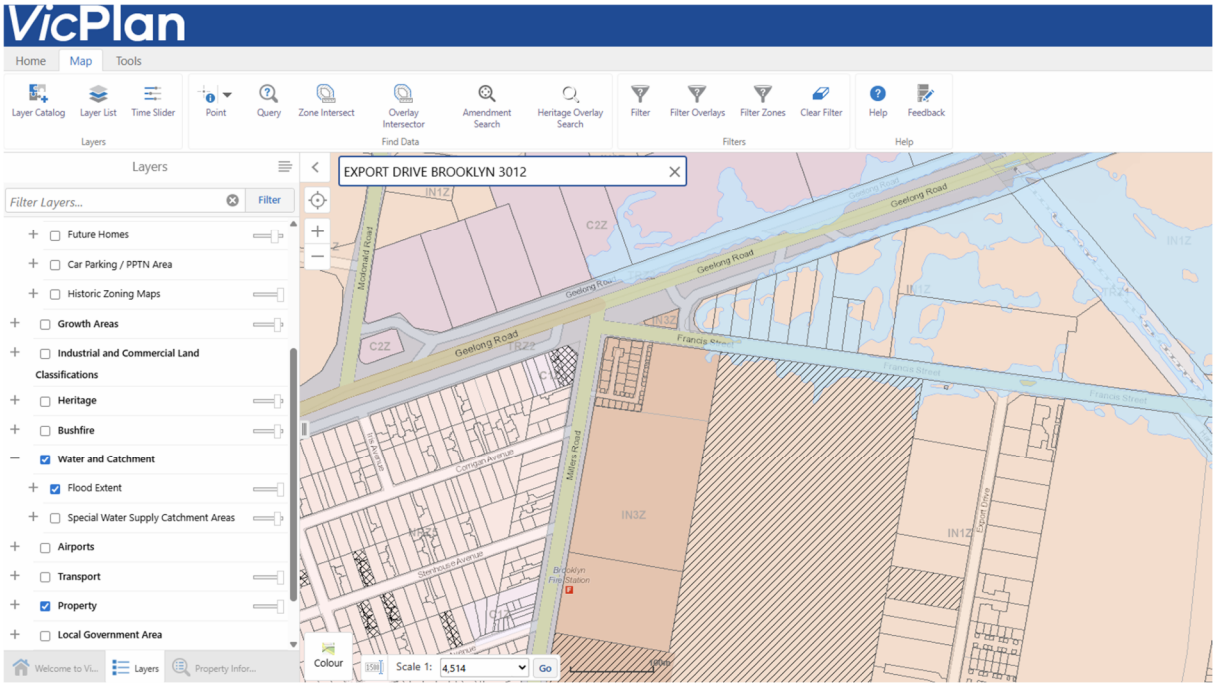

Figure 3-1: 1% AEP flood extent on Francis Road (VicPlan Maps)

3.3.3 Water Quality Strategy – Water Sensitive Urban Design (WSUD)

3.3.3.1 Aim of WSUD Design

The aim of the WSUD measures is to treat stormwater pollutants for compliance with the water quality objectives as prescribed in the Best Practice Management Guidelines (CSIRO, Melbourne Water 1999) as follows in Table 3-1. The BPEMG targets are also followed by respective Council.

Table 3-1: Stormwater Quality Performance Objectives

Pollutant	Receiving water objective	Current best practice performance objective
Post construction phase:		
Total suspended solids (TSS)	Comply with SEPP (eg. not exceed the 90th percentile of 80 mg/L) (1)	80% removal of the typical urban annual load
Total phosphorus (TP)	Comply with SEPP (eg. base flow concentration not to exceed 0.08 mg/L) (2)	45% removal of the typical urban annual load
Total nitrogen (TN)	Comply with SEPP (eg. base flow concentration not to exceed 0.9 mg/L) (2)	45% removal of the typical urban annual load
Litter	Comply with SEPP (eg. no litter in waterways) (1)	70% reduction of typical urban annual load (3)
Flows	Maintain flows at pre-urbanisation levels	Maintain discharges for the 1.5 ARI*event at pre-development levels
Notes: 1 An example using SEPP (Waters of Victoria1988), general surface waters segment. 2 SEPP schedule F7-Yarra Catchment-urban waterways for the Yarra River main stream. 3 Litter is defined as anthropogenic material larger than five millimetres.		

Abbreviation: SEPP- State Environmental Planning Policy

3.3.3.2 MUSIC Modelling

MUSIC (Model for Urban Stormwater Improvement Conceptualisation) is software used to simulate rainfall, runoff, and pollutant generation, enabling assessment of urban stormwater impacts for this site development.

The WSUD measures were modelled using MUSIC X.

3.3.3.3 MUSIC Modelling Results

The results of the model run are summarised in the table below.

Table 3-2: BPEMG Water Quality Target and Achievement

Pollutant	BPEMG Target (%)	Achieved (%)	Remarks
TSS	80	87.74	Compliant
TP	45	50.28	Compliant
TN	45	45.06	Compliant

GP	70	100.00	Compliant

The above results indicate the water quality strategy based on the proposed WSUD measures achieve the BPEMG requirement.

3.3.4 Water Quantity - On-site Detention (OSD)

The proposed data centre will be air-cooled therefore the overall potential to re-use rainwater is considered negligible. Rainwater harvesting and reuse as grey water for sanitary purposes will be implemented, however will not have contributed significantly to water quantity management.

As mentioned in Section 3.3.1, the post-development roof and hardstand areas are less than the pre-development state, therefore, no increase in flows are expected. As a result, no onsite detention tanks are required for attenuation purposes. This was also identified as part of the Stormwater Management Strategy (prepared by *DPM Consulting Group, February 2024)*.

3.3.5 Fuel & Generator Risk Management

As the site contains high-risk spill equipment, appropriate management is required to isolate any spills from the stormwater network. The fuel storage location and configuration will be a bulk diesel fuel storage system, centralised to 4 no. locations across the site, to service the adjacent 4 no. data halls by supplying the associated 28 no. generator sets. The following measures will be implemented:

- Self-bunded tanks – double-skinned tank allows for tank interstitial space leak containment and detection for rapid notification of issues.
- Oil water separators (SPEL Puraceptor or approved equivalent) are required to ensure spill is contained and isolated from entering the stormwater network. These will apply to each of the fuel storage yards and the substation. The sizing of the tanks is based on 110% of an 18,000L fuel delivery vehicle, therefore minimum required volume is 19,800L.

3.4 Hydraulics

The following services are to be designed and constructed as required for the new buildings and form the scope of works as described further in this report.

- Sanitary Plumbing and Drainage including waste and foul water
- Roof Water Plumbing and Drainage
- Domestic Potable & non-potable Cold Water Services
- Domestic Potable & Non-potable Water (Hot/tempered)
- Harvested Rainwater & non-potable rainwater reticulation

3.4.1 Sanitary Plumbing and Drainage

New Sanitary Plumbing and Drainage shall be designed and constructed to the requirements of AS/NZS 3500.2 2021 and NCC requirements.

Sanitary Plumbing and drainage will incorporate a pit and pipe construction to convey liquid waste by gravity to the Authorities sewer main. Liquid waste is collected in all fixtures, plant and equipment discharging to the Authorities sewer. If a gravity system is unachievable provide a new sewer pump station. Where provided,

sewer pump station shall include a duplex submersible pump housed in a chamber with a minimum of 1 day storage capacity. Pumps shall be supplied by an essential power supply.

Liquid waste discharges that are prohibited from entering the Authorities sewer system shall be classified as trade waste. The discharges may be either, contaminated or high in temperature or both as created by processes including cooking, mechanical equipment. Where it is required the trade waste system will incorporate pre-treatment devices for retention and/or treatment which may include – basket arrestors, dilution pits, cooling pits or grease arrestors. The final selection of the pre-treatment device(s) shall be coordinated with the Authorities policies and existing trade waste agreement requirements.

Pipe materials and fittings will use PVC with solvent cement joints above ground, and rubber ring joints below ground. Pipes and fittings conveying prohibited waste discharges including temperatures above 60^0C should use high density polyethylene (HDPE) pipe and fittings with fusion welded joints.

Table 3-3: Proposed works design criteria and requirements

Description	Comments
Minimum pipe size-drainage	Inground -100 mm Above ground – 65 mm
Minimum pipe grade	65 mm – 2.5% 100 mm – 1.65% 150 mm – 1.00%
Inspection openings	In addition to AS/NZS3500.2, accessible inspection openings to be provided adjacent to each WC or bank of WC's.

3.4.2 Roof Water Plumbing and Drainage

New roof and stormwater drainage shall be designed and constructed to the requirements of AS/NZS 3500.3.2021 and local building Codes and Policies.

Roof water plumbing from new building shall be designed to the requirements of AS/NZS 3500.3 reference Table D.1 using the Melbourne City rainfall data.

- 5% AEP (20yr) 132 mm/hr
- 1% AEP (100yr) 187 mm/hr

Roof water downpipes will discharge to the civil stormwater systems/strategy via gravity.

Above ground roof water drainage pipe materials and fittings should be PVC with solvent cement joints where concealed and where exposed fully welded stainless steel with the final selection of rainwater products as nominated in the Architects schedules. Below ground roof water drainage pipe material and fittings should be PVC with rubber ring joints.

Design criteria for the Roof Water Plumbing and Drainage with the minimum.

- Box gutters, downpipes and overflows to an average recurrence interval (ARI of 100 years) - 1% AEP.
- Eave gutters, downpipes to an average recurrence interval (ARI of 20 years) – 5% AEP.
- Duration of intensity 5 minutes

- Box gutters to be installed complete with overflow of equal capacity.
- Maximum of 16 l/s flowrate per outlet.

3.4.3 Domestic Potable & Non-Potable Cold Water Services

New domestic water supply shall be designed and constructed to the requirements of AS/NZS 3500.1.2021 and Building Codes requirements.

The domestic potable cold water supply will extend from the existing Authorities water main extending to all fixtures, plant and equipment that requires potable cold water.

This includes fire water storage tank make-up.

It is assumed that the available water pressure and flow from the Authorities water main will be suitable to meet the demands for the domestic water supply. Where there is insufficient pressure the inclusion of a pump set will be required, where there is insufficient quantity, on-site water storage will be required.

Confirmation of the available pressure and flow will be obtained from the authorities during the design process.

In accordance with the NCC Building Codes and AS/NZS 3500.1 requirements, backflow prevention devices are required. The final strategy of backflow prevention for this building may include the installation of a combination of containment, zone and individual devices. Water services downstream of a zone or individual device is considered non-potable and shall be identified accordingly. Investigation shall be required to confirm the overall backflow prevention strategies for the new buildings and coordinated with the site wide strategies.

The scope of works for domestic potable cold water supply for this facility may include the following.

- Control of water quantities through the selection of water storage tanks
- Control of supply pressures through the on-site pump set.

Dual water filters to be installed to sensitive equipment or where water quality is recorded as being below the recommended standard. Provision of initial water treatment to the building subject to the existing water quality.

Water meters and sub-meters shall be provided in accordance with.

Table 3-4: Proposed works design criteria and requirements

Description	Comments
Maximum pressure at fixture outlets	500 kPa
Minimum pressure at fixture outlets	200 kPa
Minimum cold-water flow velocities	0.6 m/sec at the design flow
Maximum cold-water flow velocities	1.8 m/sec
Isolation Valves	Isolation valves to be provided to allow staged shut down for installation, maintenance or emergency whilst minimizing disruption to other, non-affected, operational areas.

3.4.4 Domestic Potable & Non-potable Water (Hot/tempered)

New domestic hot and tempered water supplies shall be designed and constructed to the requirements of AS/NZS3500.4:2022 and NCC requirements.

The water supply to extend from the new hot water units located in the nominated plant room to all fixtures, plant and equipment that requires potable hot/tempered water.

Non-potable hot water will extend to all fixtures that require hot/tempered water and present a backflow hazard that requires protection by a backflow prevention device.

The new buildings shall be supplied with new hot water plant to ensure system capacities will meet the hot/warm water demands. The proposed hot water units shall include dual electric storage units. The space requirements for the system estimated to be approximately 2.5 m x 3.0 m internal. The final sizing of the hot water units should be confirmed based on the final loading.

Tempered water shall be provided via thermostatic mixing valves (TMV's) and sized to meet the designed demand. TMV's shall be complete with isolation and housed in a recessed in-wall stainless steel cabinet. Submissions for alternative solutions including point of use TMV's shall be reviewed.

Domestic hot/warm dead-legs shall be kept as short as possible, and the design will adhere to the AS/NZS3500.4, minimising the Risk of Legionnaires Disease.

Table 3-5: Proposed works design criteria and requirements

Description	Comments
Maximum pressure at fixture outlets	500 kPA
Minimum pressure at fixture outlets	200 kPA
Maximum "dead leg" volume	2 litres from main branch to fixture or maximum 3 meters in pipe length to the fixture outlet (or less than 10 metres)
Maximum hot water flow velocities/temperatures	1.5 m/sec – 65 ^{0}C
Maximum hot water return velocities/temperatures	0.8 m/sec – 60 ^{0}C (maximum 5.0^0 loss)
Water Delivery Temperatures	Hot Water outlets 6 0^{0}C Ablution outlets 50 ^{0}C Accessible outlets 43.5 ^{0}C Ambulant outlets 43.5 ^{0}C
Isolation Valves	Isolation valves to be provided and shown on drawings to allow staged shut down for maintenance or emergency whilst minimizing disruption to other, non-affected, operational areas.

3.4.5 Harvested Rainwater & non-potable rainwater reticulation

Consideration of a rainwater harvesting system providing a secondary non-potable rainwater supply will be confirmed by consultation with the Ecological Sustainable Development consultant and documented in the detailed design.

If selected, the new harvested rainwater system will be constructed to the requirements of AS/NZS 3500.4:2022 and NCC requirements.

Harvested rainwater will be captured from selected roofs and reticulated to supply the irrigation demands. The system will include,

- Above ground water storage tanks located adjacent the building and coordinated with Architectural layouts
- Electric variable speed drive pump set housed in a weatherproof enclosure
- Water filtration system to meet the requirements of Authorities requirements
- Water quality must meet the – Australian Drinking Water Standards.

Reticulation pipework to consist of selected plastic pipe and fittings in accordance with the requirements of

3.5 Electrical

The development will be supported by a high-availability electrical distribution network designed to meet the requirements of a data centre campus. The electrical infrastructure will be scalable to an ultimate site load of 250 MW, with the initial phase comprising two ~80 MW buildings (approximately 120 MVA total). The infrastructure has been planned to allow staged delivery of additional capacity without interruption to operational loads.

The electrical and mechanical systems have been planned to support a typical IT rack density of 21 kW, with provision for future increases. Individual data halls are planned to operate with approximately 9 MW of IT load, based on nine HAC units per hall (24 racks per HAC).

The distribution strategy incorporates fault-tolerant medium-voltage (MV) architecture and concurrently maintainable low-voltage (LV) and standby power systems to meet the reliability expectations of modern hyperscale data centres.

3.5.1 Harmonic Filtration

The installation has been planned using a multilayer harmonic remediation strategy, to ensure that harmonic emissions at the Point of Common Connection (PCC) remain fully compliant with IEEE 519 and AS/NZS 61000.3.6.

3.5.1.1 Primary Layer – Harmonic Reduction Through Equipment Selection

The first level of mitigation is achieved by selecting equipment that produces intrinsically low harmonic distortion, including:

- Active Front End (AFE) UPS systems, typically <3% THDi
- Low-harmonic VSDs and power conversion systems
- Equipment compliant with modern harmonic limits

This ensures that harmonic distortion is minimised at the source, significantly reducing upstream cumulative effects.

3.5.1.2 Secondary Layer – LV Distributed Active Harmonic Filters

The second layer consists of active harmonic filters (AHFs) deployed throughout the LV distribution system, located close to major nonlinear loads. This provides dynamic and effective cancellation of harmonic currents before they propagate upstream.

3.5.1.3 Third Layer – MV Distribution-Level Harmonic Mitigation

A third level of mitigation is implemented via MV-level harmonic filtering, positioned at the building distribution level. This layer cleans residual aggregated harmonic currents from LV equipment and ensures low Total Demand Distortion (TDD) at the MV network interface. Space has been provisioned at the data centre MV switchboards and within MV Rooms on site for future implementation.

These three layers collectively provide robust harmonic suppression and mitigate the majority of harmonic contributions before they reach the site substation.

3.5.1.4 Fourth Layer – Substation Filters

This layer to be applied only if required based on the above layers.

Given the strength and effectiveness of the upstream mitigation layers, it is anticipated that harmonic filtering at the Ausnet substation may be substantially smaller than originally assumed or may not be required.

3.5.2 Utility Electrical Infrastructure

AusNet has been appointed to undertake the high level planning, design, and delivery of utility electrical infrastructure to meet the site's 250 MW ultimate demand. Supply will be provided via 220 kV connections from Brooklyn Terminal Station, stepped down at a new utility substation located on the southern boundary of the site.

Space has been allocated for the utility substation to the south west of Stage 1 development with an approximate footprint of 62 m × 100 m in accordance with AusNet's preliminary requirements, this site is accessed from a separate ingress/egress point on Export Drive . The substation will provide four independent 33 kV feeders, supplying the two data centre buildings on a fully redundant basis.

The utility network will be designed and delivered in accordance with AusNet specifications, including protection coordination, metering requirements, and staging provisions to enable future load expansion.

3.5.3 MV Site Reticulation

System description: The electrical system shall be based on the following single line diagram.

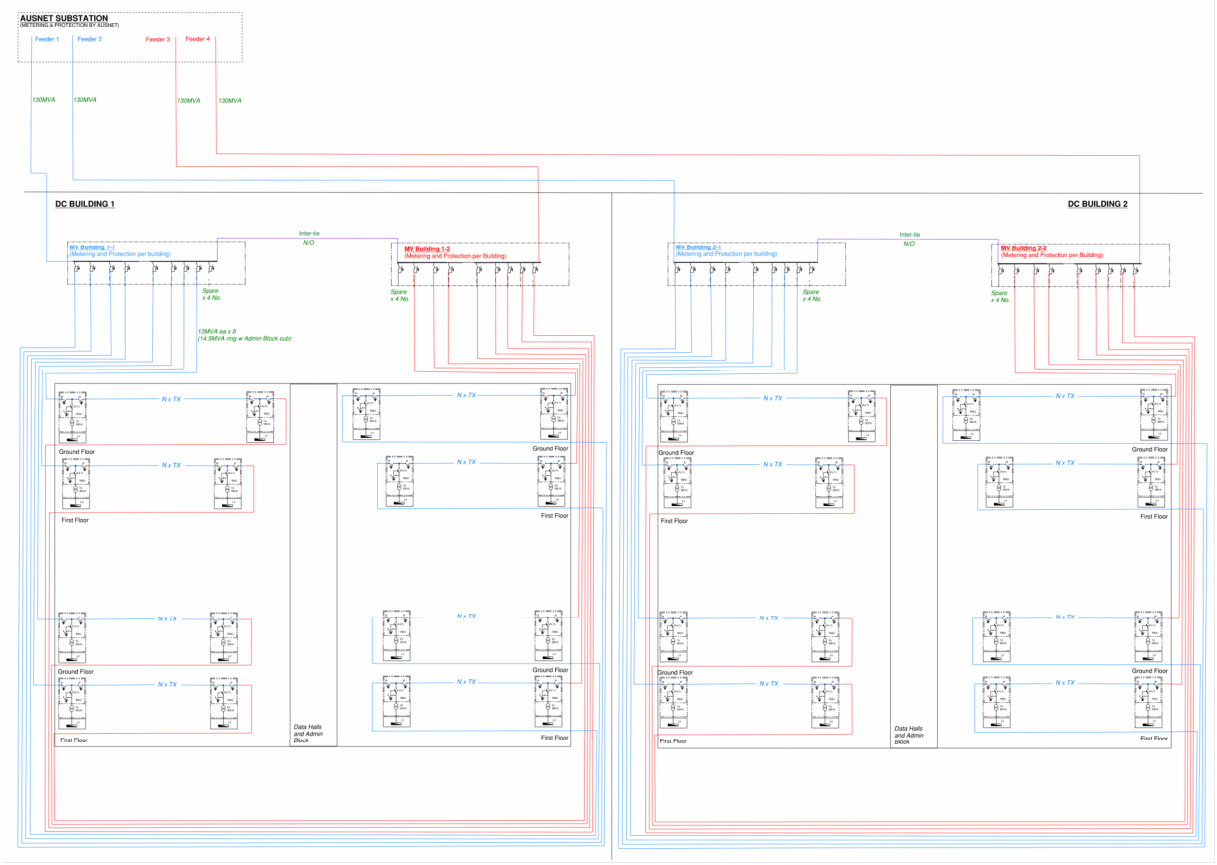

Figure 3-2: MVS Single Line Diagram

Each building will be supplied by dual 33 kV independent feeders, sized at approximately 130 MVA per feeder. Feeders will be routed into each building via separate pathways and terminated on independent MV switchboards.

A normally-open bus-tie arrangement within each building will provide operational flexibility while maintaining electrical segregation between feeders. Under normal conditions, building load will be shared across the two feeders; however, each feeder will be capable of supporting critical loads in the event of a single feeder outage.

Key characteristics of the MV site reticulation include:

- Independent feeders per building — no electrical interconnection is proposed between Building 1 and Building 2.
- Multiple 33 kV distribution rings, providing dual-path supply to building transformers.
- 33 kV/400 V step-down transformers located within each building's MV rooms.
- Unit-level protection schemes for targeted fault isolation.

This configuration ensures high system resilience, fault isolation capability, and compliance with data-centre reliability requirements.

3.5.4 LV Distribution and Standby Power

System description: The electrical system shall be based on the single line drawings. The system is a distributed redundant design utilizing 3.0 MW generators, 1200 KW / 1263 KVA Static UPS with Lithium-Ion batteries,

Low Voltage Switchboards - Low-voltage switchboards shall be in the Electrical Room adjacent to the IT white space and the MV rooms. Low voltage switchboards shall be Form 3B, IP 44.

Each 9MW module of IT load will be serviced by 6 no. LV Main Switchboards (MSBs). Normal supply of each MSB will be via a 3.2MVA 33kV/400V transformer. Refer below for backup generator supply configuration.

The MSB essential bus will supply non-IT loads, non-critical mechanical loads (including chillers, AHUs and CRAHs). The MSB critical bus supplied by UPS will support the IT loads and critical mechanical loads such as CDUs and chilled water pumps. Refer Mechanical section regarding redundancy and backup power arrangement for mechanical services.

Fire Rating Requirements: MV Rooms, Electrical rooms and battery rooms shall be separate 2h fire rated and conditioned.

Generator Configuration:

Each generator will be containerised outdoor type, capped at 3 MW nominal capacity. Units will include attenuators, day tanks, fuel pumps, and 1,000-litre belly tanks.
Automatic load transfer will be managed via ATS and generator control systems.

A seventh 3MW generator will provide additional redundancy to the 6 backup generators, in the event of generator failure or unavailability due to maintenance or faults.

For site-wide fuel storage and distribution, refer to the Fuel Section.

UPS Coverage for IT and critical Mechanical Loads:

All IT loads will be supported by UPS systems configured in 2N topology. UPS capacity will be sized to support full IT load, including increased rack densities.
Battery autonomy will bridge the gap between utility failure and generator startup. Each LV MSB will be backed up by 2 no. 1200 KW / 1263 KVA Static UPS with Lithium-Ion batteries.

3.6 Telecommunications

The telecommunications infrastructure has been planned to support reliable, diverse, and scalable connectivity to the data centre campus. The design incorporates dual Meet Me Rooms (MMRs), diverse pathways, structured cabling compliant with relevant standards, and site-wide ICT distribution to support operational systems, facility management, and tenant connectivity.

3.6.1 Admin Block

3.6.1.1 Meet Me Rooms (MMRs)

Each building shall be provided with two Meet Me Rooms (MMR-A and MMR-B) located within the Admin Block (First Floor), spaced a minimum of 20 m apart to maintain redundancy and spatial separation.

- Each MMR shall be 5 m × 7 m.
- MMRs will accommodate diverse carrier entry pathways and support full segregation of A- and B-side fibre streams.

3.6.1.2 Intermediate Distribution Frames (IDFs)

Two IDFs (IDF-A and IDF-B) will be located vertically aligned above the MMRs, with the same approximate dimensions. These will serve as secondary distribution rooms for structured cabling within the Administration Building.

3.6.1.3 Telecommunications Distributors

A Building Distributor (BD) will be located on Level 1 of the Administration Building, separate from the MMRs.

A Floor Distributor (FD) will be located on Level 2 to service upper-level administrative and support spaces.

A dedicated telecommunications rack will be installed in the Facility Operations Centre to support operational systems.

3.6.2 Data Hall

3.6.2.1 Floor Distributor Racks (FDRs)

Each data hall (approx. 61 m × 37 m) will be serviced by a centrally located Floor Distributor Rack positioned in the Mechanical Gallery to ensure cable length compliance and optimal coverage.

3.6.2.2 Risers

Four vertically stacked (superimposed) data halls, one A-side and one B-side riser will be provided between each pair of halls. These pathways support cross-hall tenancy requirements and reduce congestion in shared circulation areas.

3.6.2.3 Electrical Room ICT Interface

Each Electrical Room will contain a Floor Distributor Rack (FDR) to service electrical and mechanical systems.

- MV and battery rooms will connect to the FDR using copper cabling.
- Generators and external plant will connect using fibre optic cabling..

3.6.3 Utility Infrastructure + Points of Entry (PoE)

Each building will be provided with four telecommunications points of entry, labelled PoE#1 to PoE#4:

- PoEs #1 and #3 route to MMR-A
- PoEs #2 and #4 route to MMR-B

Route selection and pathway planning have been arranged to maintain future construction flexibility for Building 2.

3.6.4 Sitewide Fibre Reticulation

3.6.4.1 Building Pathways – Administration Building

A Building Distributor (Level 1) will connect to a Floor Distributor (Level 2) to service administrative areas, electrical rooms, generator enclosures, and MV switchgear.

3.6.4.2 Data Halls

Each data hall will have **four cable tray entry points**:

- Two A-side
- Two B-side

Superimposed data halls will additionally be connected by **four risers** (two A-side, two B-side), enabling cross-floor cabling for multi-level tenancies.

3.6.4.3 Site-Wide Connectivity

Fibre connectivity will be extended to operational assets including:

- Fuel farm
- Fire water tanks
- Security panel locations
- Site entry gate
- Other operational enclosures requiring network connectivity

3.7 Fuel

A high-density data centre facility requires highly resilient backup power systems in the form of Uninterruptible Power Supplies (UPS) and diesel generator sets. The purpose of the on-site diesel storage system is to provide fuel to these diesel generator sets.

The fuel storage location and configuration will be a bulk diesel fuel storage system, centralised to 4 no. locations across the site, to service the adjacent 4 no. data halls by supplying the associated 28 no. generator sets. This arrangement provides an efficient balance of scale between a fully modularised arrangement (i.e. 1 tank per generator set) and a site centralised storage arrangement.

Key features of the system arrangement include:

- Location – efficient operation with centralised fuel unloading at 4 distinct locations across the site.
- Above ground – providing simple monitoring, maintenance and replacement in comparison to in-ground storage tanks.
- Vertical orientation – spatially efficient footprint (in comparison to horizonal orientation tanks)
- Redundancy – N+1 tank arrangement at each location
- Scale – associated systems are centralised at each location to provide efficient N+1 redundancy at this scale. These systems include Fuel Oil Supply pump stations; electrical, control and monitoring systems; fuel polishing systems; leak detection and spill management; and inventory management.
- Above ground localised fuel distribution – supply pipework to generators is limited to units located immediately adjacent, avoiding large distances of N+1 pipe routes and risks associated with in-ground services reticulation
- Oil water detention and treatment – spill containment is further described in the Civil documentation.
- Self-bunded tanks – double-skinned tank allows for tank interstitial space leak containment and detection for rapid notification of issues.

- Physical protection – separation distances from buildings, property boundaries, and site emergency egress paths
- Fire rating – 4-hour fire rating provides additional resilience, as well as addressing risks of tanks being located within high pressure gas pipelines setbacks.

The bulk fuel storage system will be designed in accordance with the applicable Australian Standard, particularly:

- AS1692 – Steel tanks for flammable and combustible liquids
- AS1940 – The storage and handling of flammable and combustible liquids

The overall volume of diesel storage required is dictated by the overall backed up power load, as well as the duration of backup to be covered in the occurrence of an extended power outage. These parameters are itemised in the table below:

Table 3-6: Fuel Storage Sizing

	Design Criteria
IT Load	36 MW (4 no. x 9MW data halls)
PUE	1.5 (conservative)
Total Load	54 MW
Fuel Burn Rate	250 L/ MWhr (750L/hr for a 3MW genset)
Hours of storage required	48 hrs
Power Usage for Design Duration	2, 592 MWhr
Total N Fuel Storage Required [(1)]	648 kL
Ullage	5%
Total tank volume required	680 kL
No. of tanks provided (N+1)	8
No. of tanks required in tank failure mode (N)	7
Required volume per tank	97, 200 kL
Selected Tank Size	100, 000 kL
Total Site N+1 Storage	3.2 ML (8 tanks x 4 locations)

[(1)] Potential 1,000 L 'day tank' storage within packaged generator set has not been included in site fuel storage calculation, as these provide rather a function to stabilise operation.

4. Conclusion

The servicing assessment confirms that the proposed data centre development at 413 Francis Street can be fully supported by new, purpose-built utility infrastructure designed in accordance with all relevant Australian Standards, Hobsons Bay City Council requirements, and authority guidelines. Staged construction will retain continuity of existing services to adjacent facilities while new systems are commissioned.

Existing assets, including water, sewer and electrical will be retained, relocated and protected if continuity in servicing to Stage 2 area is required. Redundant services will be removed as part of the Project.

New water and firewater infrastructure includes dual authority connections, onsite firewater storage sized to AS 2118.1 and AS 2419.1, and a dedicated pump house and fire ring main to ensure redundancy and maintainability.

The stormwater strategy provides a new gravity network to the retained LPoD, incorporates WSUD measures verified via MUSIC X modelling that meet or exceed BPEMG targets. OSD is not required as there is an overall decrease in site impervious cover. Building FFLs are above the 1% AEP flood levels.

Sewer and hydraulics are designed around gravity discharge wherever feasible; pump stations will only be adopted where necessary. Interfaces with authority assets will be confirmed via survey, CCTV, and formal approvals. The three existing sewer lines crossing the site are proposed to be retained and protected. No constraints have been identified that would prevent development, subject to standard authority engagement during detailed design.

Electrical infrastructure supports future scaling to the ultimate 250 MW demand, incorporating space for a utility substation, dual 33 kV feeders, resilient MV/LV distribution, 3 MW generators in N+1 configuration, and 2N UPS systems.

Telecommunications infrastructure includes dual MMRs, diverse PoEs and site-wide fibre reticulation to provide the required redundancy for the Project.

Overall, the proposed utilities strategy is technically sound, buildable, and scalable, with no servicing issues identified that would impede progression to detailed design or authority approvals. The servicing framework provides a robust foundation for the successful delivery and long-term operation of the Brooklyn Data Centre.

Appendix A. Combined Utilities Plan

F

WATER SUPPLY FROM MILLER STREET TO BE DISCONNECTED UNDER STAGE 1. MILLER STREET CONNECTION WILL CONTINUE TO SERVICE STAGE 2

OIL WATER SEPARATOR

TYPICAL 3MW DIESEL GENERATOR IN EXTERNAL ENCLOSURE

DIESEL FUEL TANKS AND PUMPS TO LOCAL GENERATORS

REFER DRAWING NO. E002 FOR TYPICAL MV, LV MSB AND BATTERY ROOM LAYOUT

11-27 MILLERS ROAD COMMERCIAL BUILDING

BUILDING MV TERMINAL ROOM

TYPICAL 3MW DIESEL GENERATOR IN EXTERNAL ENCLOSURE

DIESEL FUEL TANKS AND PUMPS TO LOCAL GENERATORS

OIL WATER SEPARATOR

POTABLE WATER AND FIRE WATER MAIN TO BE MAINTAINED. INTERCONNECTED WITH AUTHORITY CONNECTIONS AT MILLERS ROAD

EXISITING 225mm SEWER TO BE RETAINED

"MILLERS - VICPRODUCERS No1 SUBSTATION" TO BE RELOCATED AND RECONNECTED WITH "FRANCIS 413-MILLERS SUBSTATION". CONNECTIONS TO BE REINSTATED. FINAL LOCATION TO BE CONFIRMED

RECONNECT TO EXISTING ELECTRICAL TO LOGISTICS FACILITY

EXISTING SEWER LINE TO BE RETAINED TO PROVIDE CONNECTION FOR EXISTING LOGISTICS BUILDINGS TO PUBLIC NETWORK

NORTH WEST SEWER TRUNK

SUBSTATION

SEPARATE PLANNING APPLICATION

AUSNET SUBSTATION

BUILDING MV TERMINAL ROOM

OIL WATER SEPARATOR

8M DRIVEWAY

FUEL TANK LAYBY

FUEL SUPPLY PUMPS 20.50m RL

FUEL STORAGE TANKS

EXTERNAL GENERATORS 21.40m RL

EXTERNAL GENERATORS 20.30m RL

15000L ABOVE GROUND RAINWATER TANK TO SERVICE BUILDING

DATA HALL

LOADING DOCK CHANNEL DRAIN

CANOPY ABOVE

BUILDING 2 FFL 21.90 mRL

LIFT

SW CONNECTION FROM LPOD (IL = 16.21) TO BUILDING 2 LOADING DOCK. LENGTH 370m AT 1:200 GRADIENT. APPROXIMATE INVERT LEVEL AT LOADING DOCK = 18.05

LOADING

11 X PARKING + 3 HARD + 1 DDA

15 X PARKING + 1 DDA

FUEL SUPPLY PUMPS 19.10m RL

EXTERNAL GENERATORS 19.80m RL

EXTERNAL GENERATORS 19.00 mRL

REFER DRAWING NO. E002 FOR TYPICAL MV, LV MSB AND BATTERY ROOM LAYOUT

BUILDING 1 FFL 20.10 mRL

SW CONNECTION FROM LPOD (IL = 16.21) TO BUILDING 1 LOADING DOCK. LENGTH 363m AT 1:200 GRADIENT. APPROXIMATE INVERT LEVEL AT LOADING DOCK = 18.03

ADMIN BUILDING

PROPOSED CONNECTION INTO EXISTING SEWER

EXISITING 225mm SEWER TO BE RETAINED AND PROTECTED.

DIESEL FUEL TANKS AND PUMPS TO LOCAL GENERATORS

ELECTRICAL ROOMS

EXTERNAL GENERATORS 21.20m RL

EXTERNAL GENERATORS 20.20m RL

EXTERNAL GENERATORS 19.80m RL

EXTERNAL GENERATORS 18.80m RL

FUEL SUPPLY PUMPS 20.30m RL

FUEL SUPPLY PUMPS 19.00mRL

SLIDING GATE

EMERGENCY ACCESS

EMERGENCY EGRESS PEDESTRIAN GATE

PROPOSED DRAINAGE BELOW GROUND, SERVICING STAGE 2

FIRE TANK

FIRE PUMP RM

FIRE TRUCK LAYBY

ASSEMBLY POINT

RELOCATE EXISTING ELECTRICAL

BIKE RACKS

GUARD HOUSE

GATE

SECONDARY ACCESS

ENTRANCE

FRANCIS STREET

OIL WATER SEPARATOR

TYPICAL 3MW DIESEL GENERATOR IN EXTERNAL ENCLOSURE

DIESEL FUEL TANKS AND PUMPS TO LOCAL GENERATORS

NEW WATER SUPPLY AUTHORITY CONNECTION TO EXPORT DRIVE

BUILDING MV TERMINAL ROOM

REFER DRAWING NO. E002 FOR TYPICAL MV, LV MSB AND BATTERY ROOM LAYOUT

NEW FIRE AUTHORITY BOOSTER

WATER SUPPLY AND FIRE WATER AUTHORITY CONNECTION TO FRANCIS STREET TO BE RELOCATED TO MAIN ENTRANCE

LPOD INVERT LEVEL: 16.21mRL

44 EXPORT DRIVE

42 EXPORT DRIVE

40 EXPORT DRIVE

2/30-38 EXPORT DRIVE

22-24 EXPORT DRIVE

18-20 EXPORT DRIVE

4-16 EXPORT DRIVE

405 FRANCIS STREET

TO POE#3

TO POE#4

EXPORT DRIVE

EMERGENCY ACCESS

DRAWING TO BE PRINTED IN COLOUR

LEGEND

- STORMWATER
- BIORETENTION SWALE
- TELECOMMUNICATIONS
- ELECTRICAL MV
- ELECTRICAL LV
- WATER SUPPLY
- FIRE WATER SUPPLY
- SANITARY SEWER
- EX SANITARY SEWER
- FUEL SUPPLY
- BIORETENTION DEVICE
- OIL WATER SEPERATOR
- RAINWATER TANK
- STORMWATER PIT

NOTES:

1. LOCATION OF SERVICES ARE INDICATIVE

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REV.	DATE	DESCRIPTION
A	20/05/26	FOR PLANNING SUBMISSION

KEY PLAN

CLIENT: Stockland

Jacobs

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PROJECT: BROOKLYN DATA CENTRE

BUILDING NAME: 413 FRANCIS STREET BROOKLYN

TITLE: COMBINED UTILITIES PLAN

DRAWING STATUS

DRAWN	DRAWING CHECK	REVIEWED	APPROVED
PC	PC		
DESIGNED	DESIGN REVIEW	DATE	DATE
PC	LT		
SCALE	SHEET SIZE	INTERNAL PROJECT No.	
1:500	A0	IA355900	
DRAWING No.			REV
C102			A

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