An architectural rendering of a modern, multi-story data centre building. The building features a white facade with a grid of windows and a dark grey roof. A parking lot with several cars is visible in the foreground. The scene is set against a clear sky with some trees in the background.

Building Services Infrastructure Report –

**211180 – SYD08
57 STATION RD, SEVEN
HILLS DATA CENTRE
DEVELOPMENT**

Client:
LCI

Revision:
P1

Date:
28/03/2022

REPORT INFORMATION

Project	211180 - SYD08
Title	Building Services Infrastructure Report In support of a State Significant Development Application (SSDA)
Client	LCI
Revision	P1
Revision Date	28/02/2022
Prepared By	LCI Consultants Sydney Office Level 5 73 Miller Street North Sydney 2060
ABN/ACN	92 124 107 973 / 124 107 973
Author	LCI Consultants

REVISION SCHEDULE

Revision	Date	Issue Name	Author	Authorised
P1	28/03/2022	SSDA submission	DAM, JA, MM, KM, JM	BA

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1 Introduction

1.1 Purpose

This Infrastructure report has been prepared on behalf of Lehr Consultants International (Australia) Pty Ltd (LCI) in support of a State Significant Development Application (SSDA) submitted to the Department of Planning and Environment (DPE) under Part 4 of the *Environmental Planning and Assessment Act 1979 (EP&A Act 1979)*.

LCI is seeking to secure approval for the construction of a new data storage centre development on the site known as 57 Station Road, Seven Hills, located within the Blacktown City Council local government area (LGA). The proposed development will comprise the erection of a new two-storey data centre at the rear of the site, associated plant and equipment, car parking areas, landscaping, and civil works.

This report provides an Infrastructure capacity assessment and responds to the Industry Specific Secretary’s Environmental Assessment Requirements (SEARs) issued by DPE on 23 December 2021. An outline of the SEARs relevant to this Infrastructure assessment, and how they have been responded to, is summarised in the table below.

Issue and Assessment Requirements	Documentation	Response
Assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site.	Infrastructure Delivery, Management and Staging Plan	Section 2.1 Section 3.1.1 Section 4.1
Identify any infrastructure upgrades required on-site and off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained		Section 2.3 & 2.4 Section 3.1.2 Section 4.1
Provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development		Section 2.3 & 2.4 Section 3.1.2 Section 4.1

Figure 1: Specific Secretary’s Environmental Assessment Requirements (SEARs)

1.2 Site Location

The site is within the Blacktown local government area (LGA), however is on the boundary of the Parramatta LGA also. The site is in the Seven Hills Industrial Area, approximately 3.8km east of the Blacktown CBD and 6.8km west of the Parramatta CBD, and approximately halfway between Toongabbie and Seven Hills railway stations.

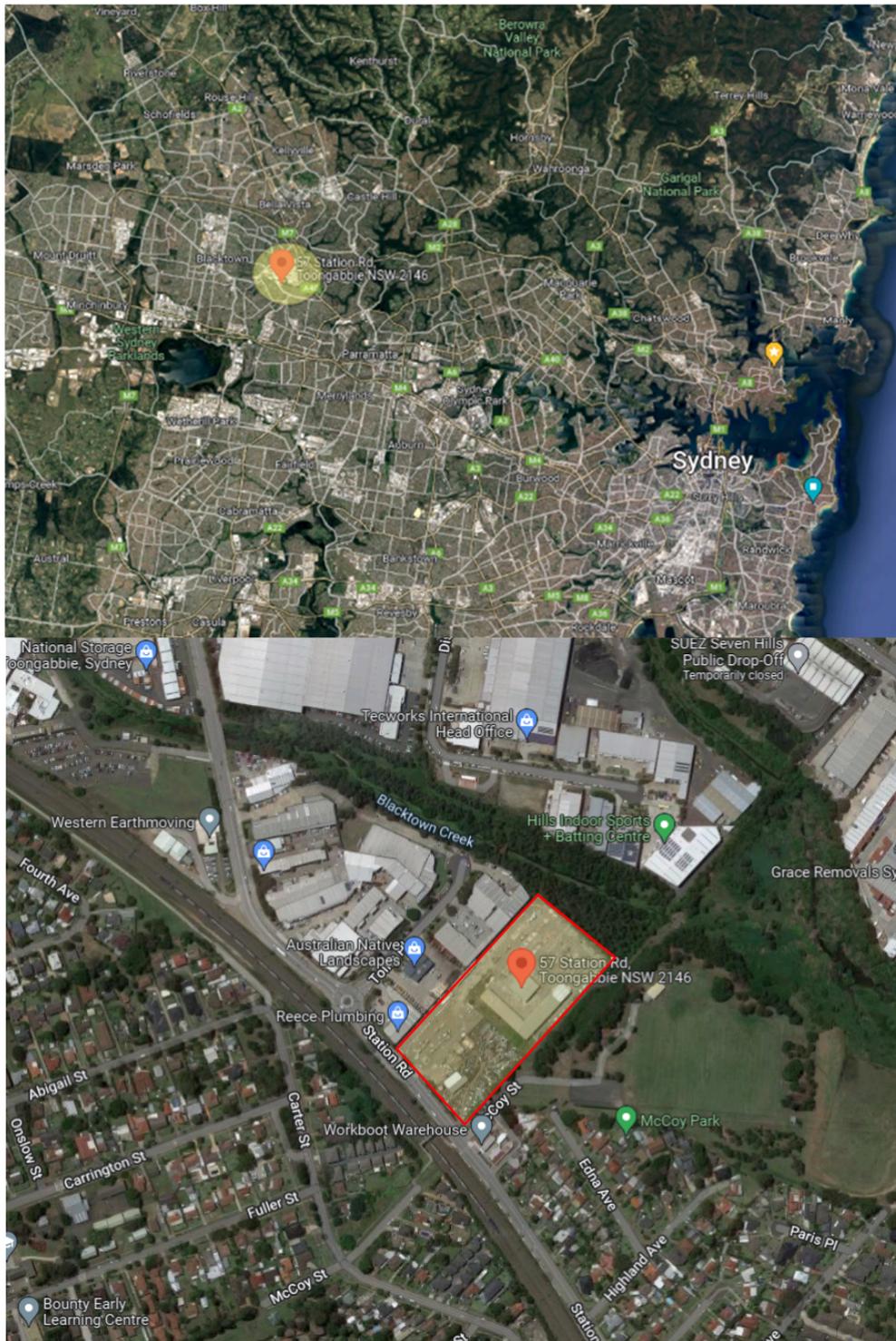


Figure 2: Proposed Site Location (yellow hatch)

Source: Google Maps

1.3 Site Description

The site is located on land known as 57 Station Road, Seven Hills, described legally as Lot B / DP 404669. The site is rectangular in shape with an area of 2.57ha and a northeast-southwest orientation. It is a corner lot with a frontage of around 111m to Station Road to the southwest, and 242m to McCoy Street road reserve to the southeast. The majority of the McCoy Street road reserve is unformed, with a formed 80m long driveway providing access to the adjoining McCoy Park.

The site is currently occupied by a range of buildings and structures associated with the previous industrial uses. An HV transmission tower is also located on the Site in the south, at the corner of Station Road and McCoy Street. Vehicular access is provided via three separate crossings along Station Road.

1.3.1 Overview of Approved Development

The Site is subject to an existing development approval, issued by Blacktown City Council under DA-21-01058 on 10 January 2022. The development consent permits:

Removal of trees, bulk earthworks, stormwater drainage works and construction of a single storey data centre to operate 24 hours a day 7 days a week with ancillary offices, on-site parking and associated landscaping.

The existing approval permits tree removal, bulk earthworks, and drainage works across the entirety of the site, with the construction of a data centre on approximately the front third as depicted in the figure below. The balance of the site is the location of the proposed SSDA, excluding bulk earthworks.

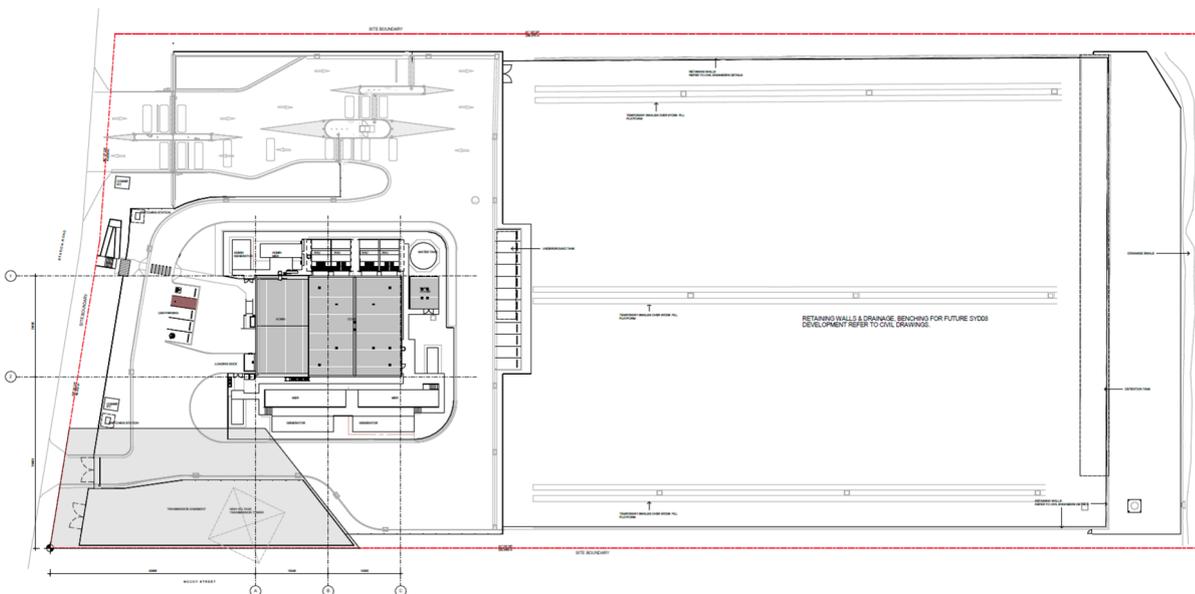


Figure 3: Site Plan for approved data centre (SYD09) on Site, under DA-21-01058.

Source: DEM Architects

1.4 Overview of the Proposed Development

The SSDA seeks approval for the construction and use of a new data storage premises at the rear of the site.

The particulars of the Proposal are as follows:

- Construction of a new two-storey 19.2MW data centre at the rear of the Site including ancillary office space
- A total floor area of 8,076sqm (to be confirmed before finalisation of report)
- Provision of external plant in plant yards to the west, north and south of the proposed data hall, as well as rooftop plant, which will be screened
- Provision of 9 new generators, for a site total of 12 generators
- Capacity for up to 289,000L of diesel fuel storage
- Operation to take place 24 hours a day, 7 days a week
- New vehicular circulation to provide access to Station Road, connecting into new driveways already approved under DA-21-01058
- Parking for 31 vehicles.
- Landscaping works.

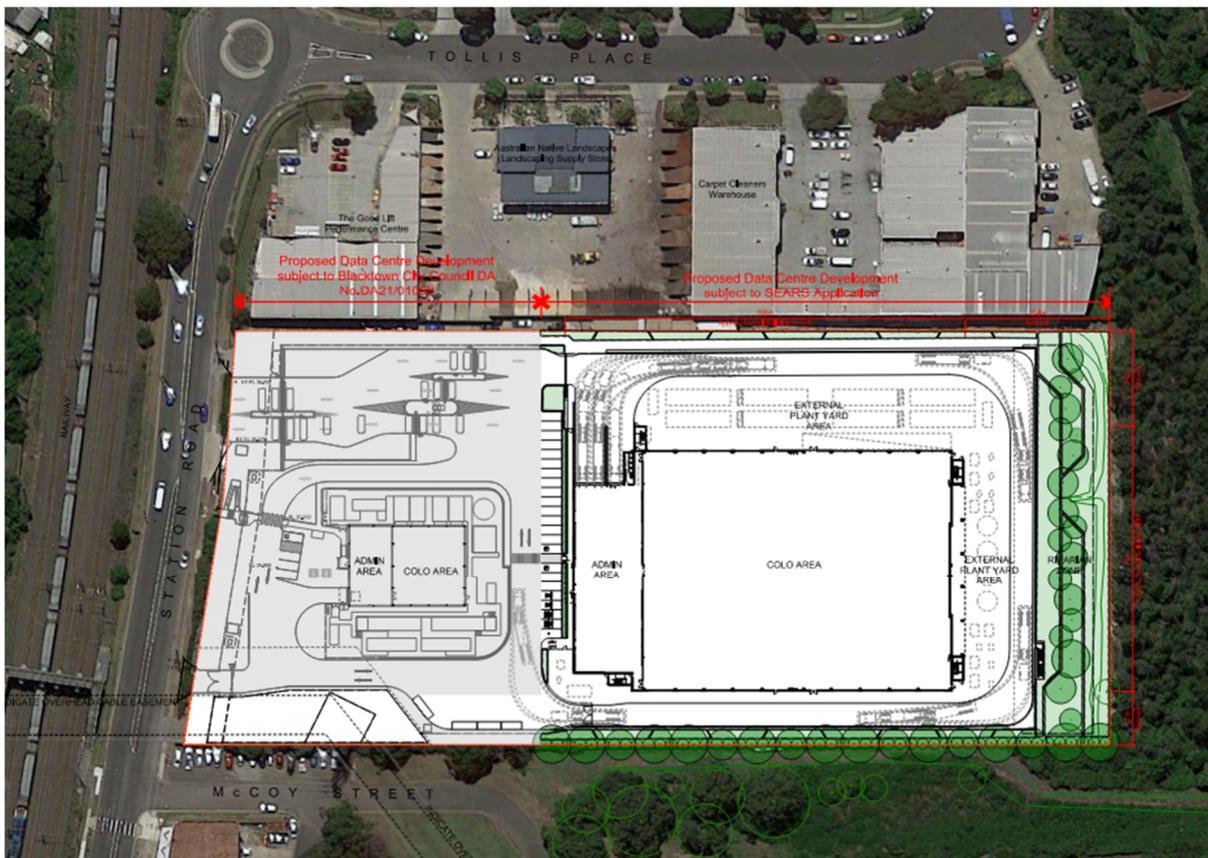


Figure 4: Site Plan showing approved data centre (SYD09 on the left hand side, hatched in light grey), under DA-21-01058 and the proposed SYD08 (subject to SEARs) development on the right hand side.

Source: DEM Architects

1.5 Overview of the Proposed Infrastructure Connection Strategy for SYD08

The front and rear data centre developments share connections to the public infrastructure.

The design process of the front data centre development, focused on providing a technical feasible solution for the whole site, including the rear data centre development. This included service requirements and load calculations which required to be presented to the governing authorities.

All required service connections for the rear data centre development will run through the front portion/development of the site and are connected to the authority owned networks located in front of the site.

Some services are shared between the two buildings as listed below:

- Two 33kV HV feeders ring which will be connected from the Endeavour Energy Network
- Telecommunication carrier connections
- One Sewer connection will be provided to the existing Sydney water Sewer network. The existing sewer connection is located on the rear portion of the site and is built as part of the front data centre development.
- One potable water connection will be provided to the existing Sydney Water main reticulating in front of the building through Station Road.
- One fire water connection will be provided from the existing Sydney Water main reticulating in front of the site through Station Road.
- Stormwater system from both buildings will terminate in combined OSD tank located inground in the northern side of the rear development.

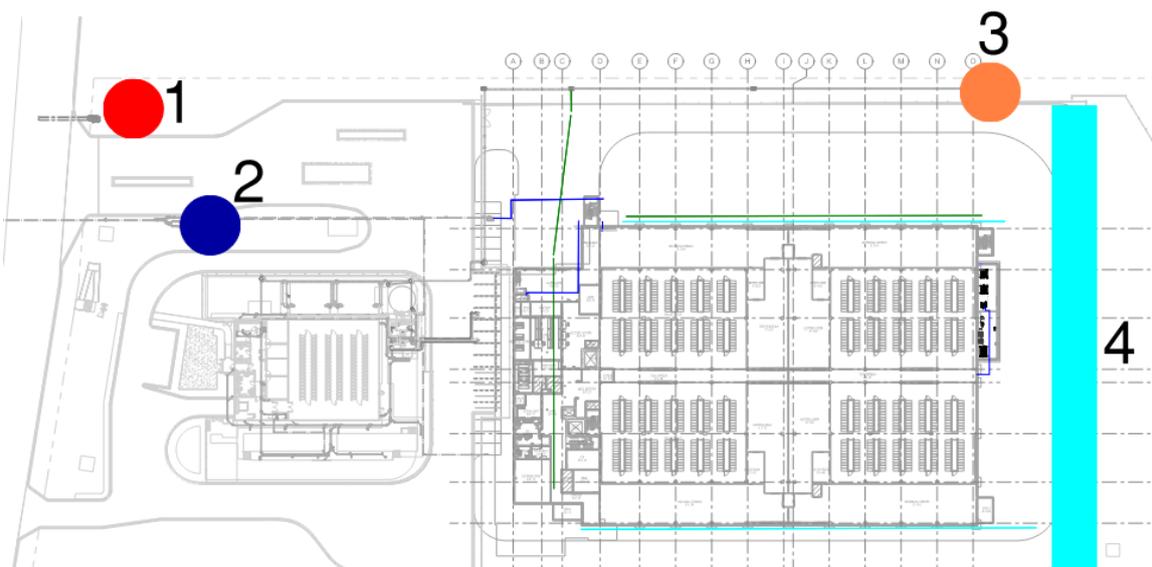


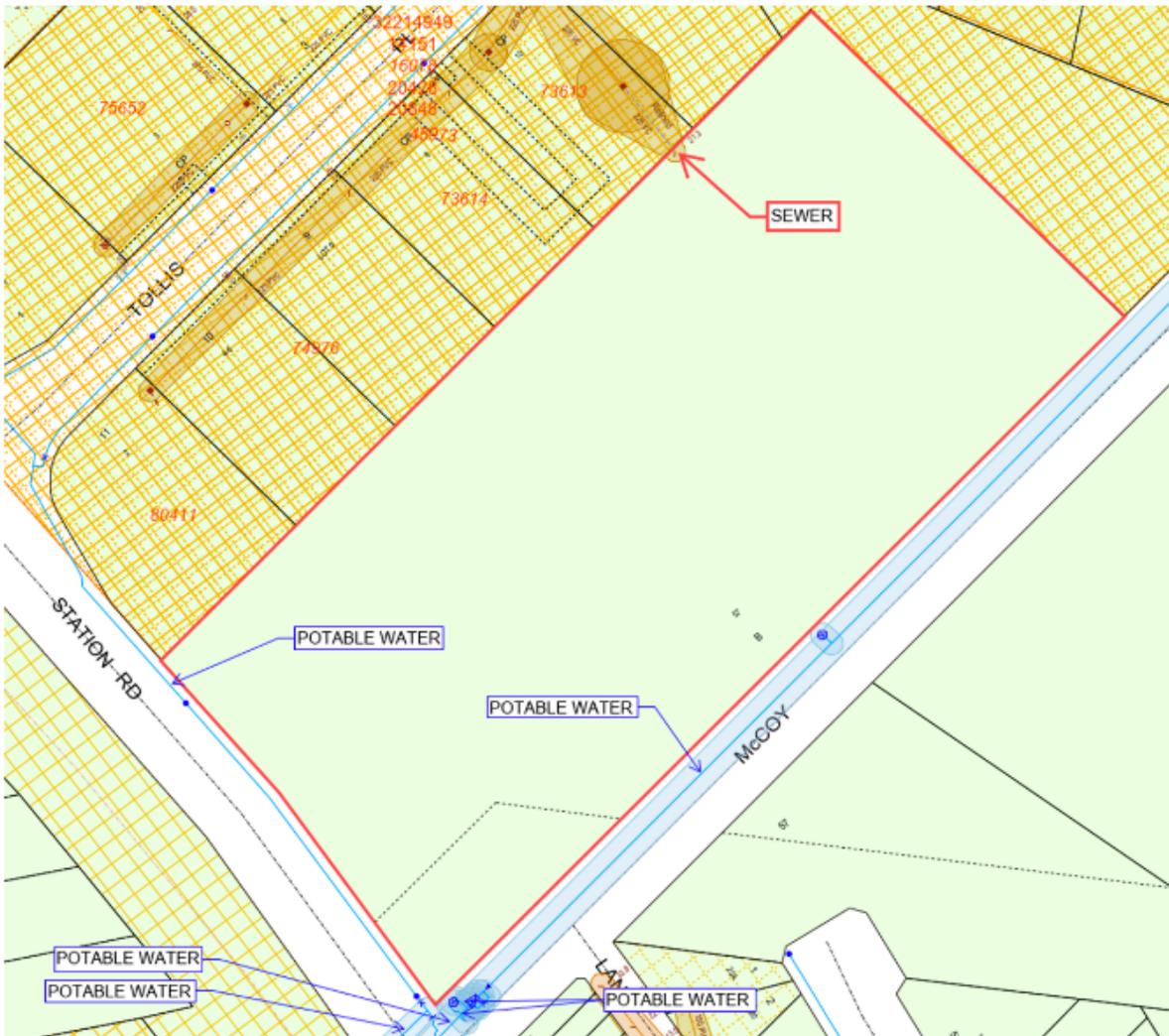
Figure 5: The example of the shared services connection strategy

1 – Shared Fire water connection, 2 – Shared Potable water connection, 3 – Shared sewer connection, 4 – Shared On Site Detention Tank.

2 Hydraulic and Fire Infrastructure Connections

2.1 Governing Authorities Requirements – Hydraulic and Fire Services

All requirements for the rear data centre development for Potable Water, Fire water and Sewer are captured during the front data centre development application, review and approval process with Sydney Water.



2.2 Sydney Water Application Process Requirements

The application process for Water and Sewer assets managed and owned by Sydney Water is run through licenced professionals identified as Sydney Water Coordinators.

Sydney Water process allows the Client to request for the review of the proposed solutions before, during and after the DA submission which was done during the front data centre development design process (DA-21-01058).

During the pre DA design stage for the front data centre development a Feasibility application was submitted notifying Sydney Water about proposed developments where water and sewer loads requirements for both developments were presented.

Sydney Water reviewed our application and issued a Feasibility Letter (April 27, 2021) under Case Number: 187673. Reference number 2020-0294.

The letter outlined:

"4. Water and Sewer Works

4.1 Water

Your development must have a frontage to a water main that is the right size and can be used for connection.

Sydney Water has assessed your application and found that:

- *Sydney Water has no objection in principle to the proposed dual connections to the 250mm main in Station Road.*

4.2 Sewer

Your development must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within your development's boundaries.

Sydney Water has assessed your application and found that:

- *The existing 225 mm sewer main in the rear of the property will serve your development."*

After DA-21-01058 was approved, one of the conditions of the consent, was to submit a Section 73 application (an application to connect to the Sydney Water network) which was done under case number 196827 on 15th of February 2022.

Sydney water is currently reviewing our application and will be issuing a document called Notice of requirements where detailed requirements for our connections will be explained.

2.3 Water

2.3.1 Potable Water and Fire Supply Capacity Analysis

Sydney Water's Feasibility Letter stated Potable water and Fire water connections will be connected to the existing 250mm main in Station Road.

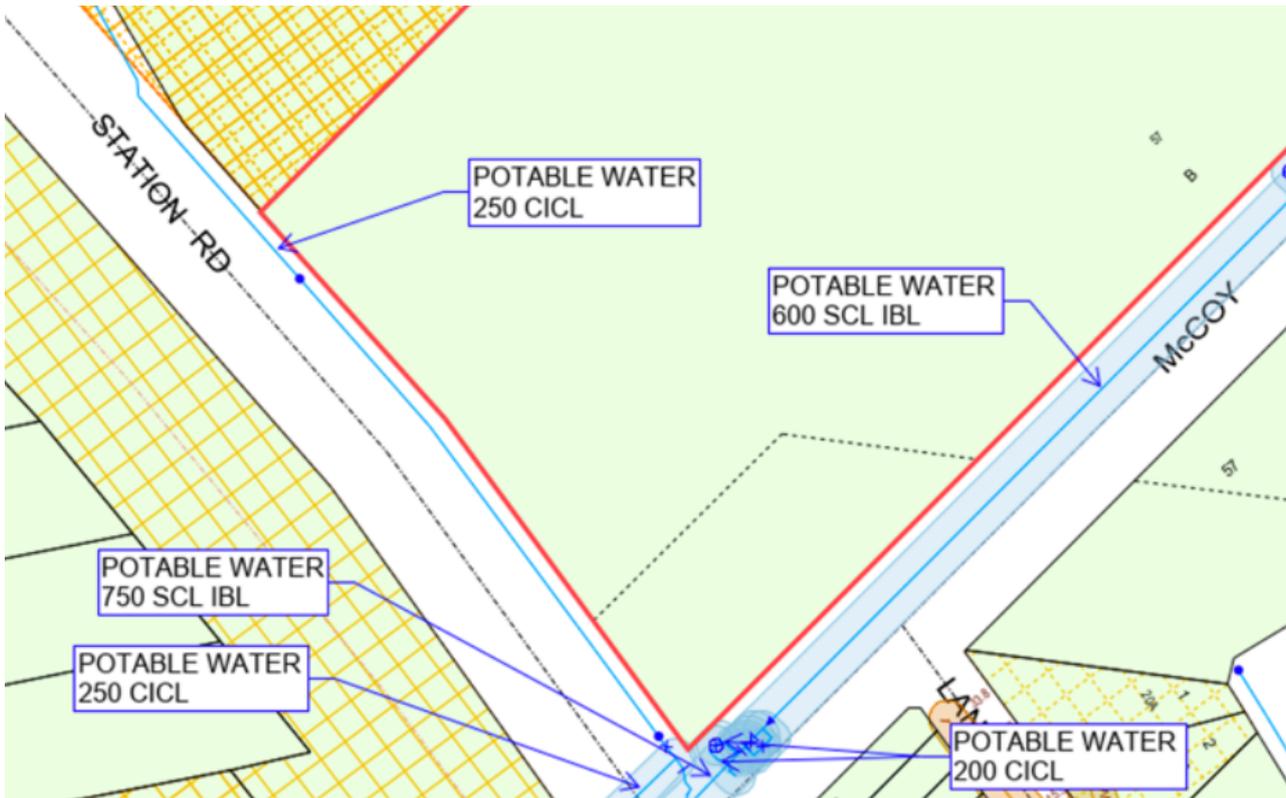


Figure 7: Authority Water Mains

The requirement for the potable water connection is based on peak flow requirements for mechanical systems for both buildings:

Front Data Centre Development = 0.73 l/s

Rear Data Centre Development = 12.6 l/s

Annual Average Water Demand:

SYD08 (building at the back of the site) = 4,689,033L = 0.15l/s

SYD09 = 263,142L = 0.01l/s

During the design process, in order to review the performance of the water main, a Pressure and Flow statements was requested from Sydney Water.

Sydney Water performed a model to project how Station Road water main would perform if the supply from one of sides was interrupted.

The results showed that this is high performance main capable of providing the same performance if supply is isolated from either of the sides.

Statement of Available Pressure and Flow



LCI Consultants
 73 Walker North Sydney
 Sydney, 2060

Attention: LCI Consultants

Date: 24/12/2020

Pressure & Flow Application Number: 1017279
Your Pressure Inquiry Dated: 2020-12-03
Property Address: 57 Station Road, Toongabbie 2146

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Station Road	Side of Street: East
Distance & Direction from Nearest Cross Street	70 metres South from Tollis Place
Approximate Ground Level (AHD):	36 metres
Nominal Size of Water Main (DN):	250 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	80 metre head
Minimum Pressure	70 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	70
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5	71
	10	71
	15	71
	25	71
	26	71
	30	71
	40	70
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	50	70
	5	70
	10	70
	15	70
	25	70
	26	70
Maximum Permissible Flow	30	69
	40	69
	50	69
	88	67

(Please refer to reverse side for Notes)

Statement of Available Pressure and Flow

LCI Consultants
 73 Walker North Sydney
 Sydney, 2060

Attention: LCI Consultants

Date: 24/12/2020

Pressure & Flow Application Number: 1017274
Your Pressure Inquiry Dated: 2020-12-03
Property Address: 57 Station Road, Toongabbie 2146

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Station Road	Side of Street: East
Distance & Direction from Nearest Cross Street	70 metres South from Tollis Place
Approximate Ground Level (AHD):	36 metres
Nominal Size of Water Main (DN):	250 mm (South of Proposed Closed Valve)

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	80 metre head
Minimum Pressure	70 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	70
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5	71
	10	71
	15	71
	25	71
	26	71
	30	70
	40	70
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	50	69
	5	70
	10	70
	15	70
	25	69
Maximum Permissible Flow	26	69
	30	69
	40	69
	50	68
	70	67

(Please refer to reverse side for Notes)

Statement of Available Pressure and Flow

LCI Consultants
 73 Walker Street, North Sydney
 Sydney, 2060

Attention: LCI Consultants

Date: 24/12/2020

Pressure & Flow Application Number: 1017268
Your Pressure Inquiry Dated: 2020-12-03
Property Address: 57 Station Road, Toongabbie 2146

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Station Road	Side of Street: East
Distance & Direction from Nearest Cross Street	70 metres South from Tollis Place
Approximate Ground Level (AHD):	36 metres
Nominal Size of Water Main (DN):	250 mm (North of Proposed Closed Valve)

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	80 metre head
Minimum Pressure	70 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	70
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5	70
	10	70
	15	70
	25	69
	26	69
	30	68
	40	67
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	50	66
	5	69
	10	69
	15	69
	25	68
	26	68
Maximum Permissible Flow	30	67
	40	66
	50	64
	51	64

(Please refer to reverse side for Notes)

2.3.2 Potable Water and Fire Water Connections and Authority Metering

Both Potable and Fire water connections will be done on the main in Station road. Those connections will serve both buildings and are constructed during front data centre development construction works.

Capped off provisions for rear connection will be allowed during the front development construction.

One authority meter will be provided for the site. Private submetering will be provided for each building.

2.4 Sustainability measures implemented in the Hydraulic design

Proposed measures are:

- Highly-efficient Water Fixtures and Appliances:

The project will adopt high-efficient water fixtures with high WELS ratings and appliances for use, including the following:

- Showerheads: ≥ 3 Stars
- Toilets: ≥ 4 Stars
- Taps: ≥ 5 Stars
- Dishwashers: < 13.2 L/cycle (if 8 cycles or more)
-

- Rainwater Capture and Reuse:

Rainwater harvesting and reuse will be used to reduce potable water consumption. Rainwater from Data Hall roofs will be harvested for reuse in irrigation and flushing. This is consistent with Blacktown City Council requirements for rainwater reuse, and will contribute towards a LEED credit. Rainwater reuse for toilet flushing will also meet requirements for the associated LEED credit.

- Low-Irrigation Demand Plant Selection :

Plants with low irrigation demand will be considered to reduce water consumption for irrigation. The potential for plants that do not require irrigation beyond a 2-year establishment period will also be considered, which will contribute strongly towards a LEED credit.

Please note that sections below, up to 2.5 Sewer are adopted from Civil engineers report by ACOR (NSW202013_SYD08 Stormwater management Report_03_2203211)

2.4.1 Water Conservation

DA-21-01058 Approved Site Water Balance

Blacktown City Council - Part J Water Sensitive Urban Design and Integrated Water Cycle Management requires that industrial and business developments meet a minimum of 80% non-potable water demand through rainwater reuse.

A water balance model has been developed using MUSIC software to determine the required rainwater tank and secondary stormwater tank size to satisfy a minimum of 80% non-potable demand for the data centre development.

The DA-21-01058 Development Consent required the following rainwater and surface water harvesting parameters:

- 100kL total capacity stormwater harvesting tank collecting surface flows from the roadway for re-use for subsurface irrigation of landscaping areas
- 11kL total capacity roof water harvesting tank collecting roof runoff from the single storey data centre for re-use for toilet flushing.

A summary of the single storey data centre water demands approved under DA-21-01058 is shown in Table 5 below.

Table below shoes Water Demand Allowances

Description	Unit Demand	Total Number of Fixtures or Area	Total Water Demand
Toilets and Urinals	0.1kL/day per toilet	2 toilets	0.20 kL/day
Irrigation (excluding turf area)	0.4kL/year/m ²	1960 m ²	784 kL/year
General Washdown (1 tap per 50 m building perimeter)	0.005 kL/day per tap	2 taps	0.01 kL/day

Proposed Two-Storey Data Centre Site Water Balance

The two-storey data centre development proposed within this SSDA submission considers the additional non-potable water demand due to additional toilets, general washdown areas and landscape irrigation.

A MUSIC water balance model has been created to satisfy 80% of non-potable water demand serviced through rainwater reuse, in accordance with Blacktown City Council - Part J Water Sensitive Urban Design and Integrated Water Cycle Management.

Site Water Usage and Demand

The following water demand profile has been incorporated into the water balance model, in accordance with the allowances listed in Blacktown City Council WSUD developer handbook.

Table below shows Water Demand Allowances – Two Storey Data Centre Development

Description	Unit Demand	Total Number of Fixtures or Area	Total Water Demand
Toilets and Urinals	0.1kL/day per toilet	14 toilets	1.40 kL/day
Irrigation (excluding turf area)	0.4kL/year/m ²	1,305 m ²	522 kL/year
General Washdown (1 tap per 50 m building perimeter)	0.005 kL/day per tap	7 taps	0.035 kL/day

Water Balance Catchment Area

The proposed rainwater storage tank will harvest roof water runoff from the proposed two-storey data centre building.

A nominal roof area of 5,100m² will drain into two proposed rainwater tanks located within the plant yard to the north of the data centre building.

A water balance catchment plan showing the roof areas draining to rainwater tanks and landscape areas requiring irrigation is shown in Figure 6 below.

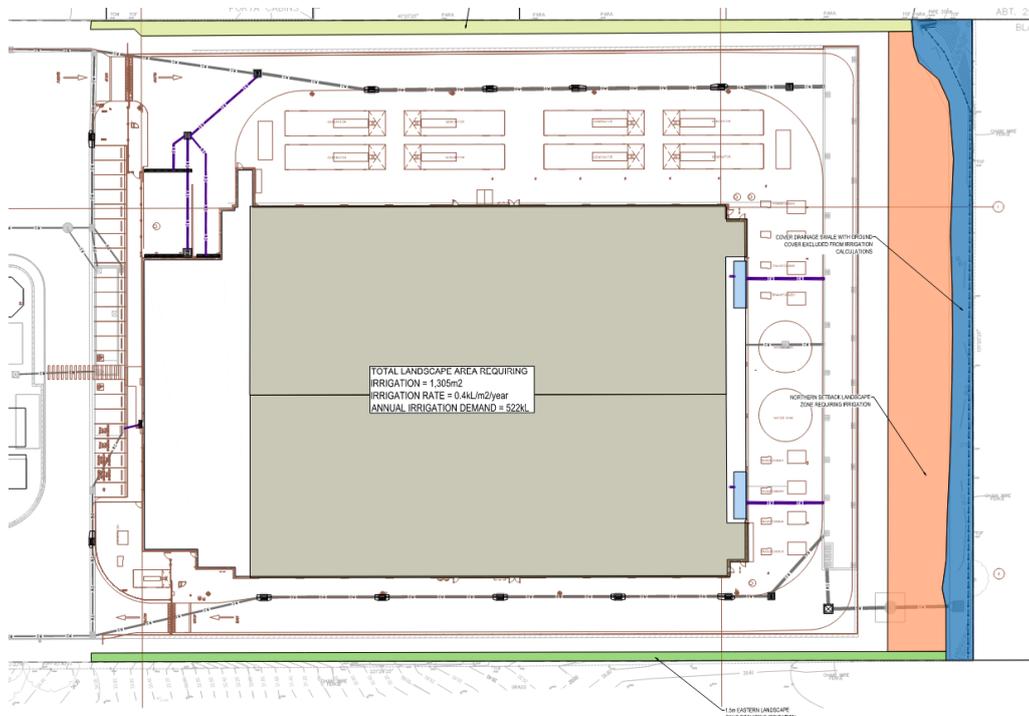


Figure 8: Water Balance Catchment Plan

We note that the existing drainage swale along the northern boundary shown in blue in Figure 6 has not been included as landscaping which requires irrigation.

Water Balancing Model and Rainwater Tank Sizing

A MUSIC water balance model has been created to determine the required rainwater tank size and roof area to be collected to achieve 80% of non-potable demand serviced through rainwater reuse. Based on this MUSIC model, the following key elements will be required:

- Two 40kL total capacity (35kL effective capacity) rainwater storage tanks (80kL total capacity accounting for 10% additional volume for an anaerobic zone). The rainwater tanks will be located within the plant yard to the north of the data centre building, which is in close proximity to the water treatment plant for the site.
- A nominal roof area of 5,100m² draining into the rainwater storage tanks, with approximately 2,550m² roof area draining into each rainwater tank.

The MUSIC water balance model summary is shown in Figure 7 below and demonstrates that a minimum of 80% of non-potable water demand is met from rainwater re-use.

2.5 Sewer

The existing site sewer will be demolished, with the existing connection being reused.

New internal sewer lines for the rear data centre development will be connected to the existing Sydney Water 225mm connection point located at the back of the site (Northern side) next to rear data centre developments retaining wall.

The requirements for the sewer discharge are based on peak mechanical systems condensate discharge for both buildings:

- Front Data Centre Development = 0.35 L/S
- Rear Data Centre Development = 4.8 L/S

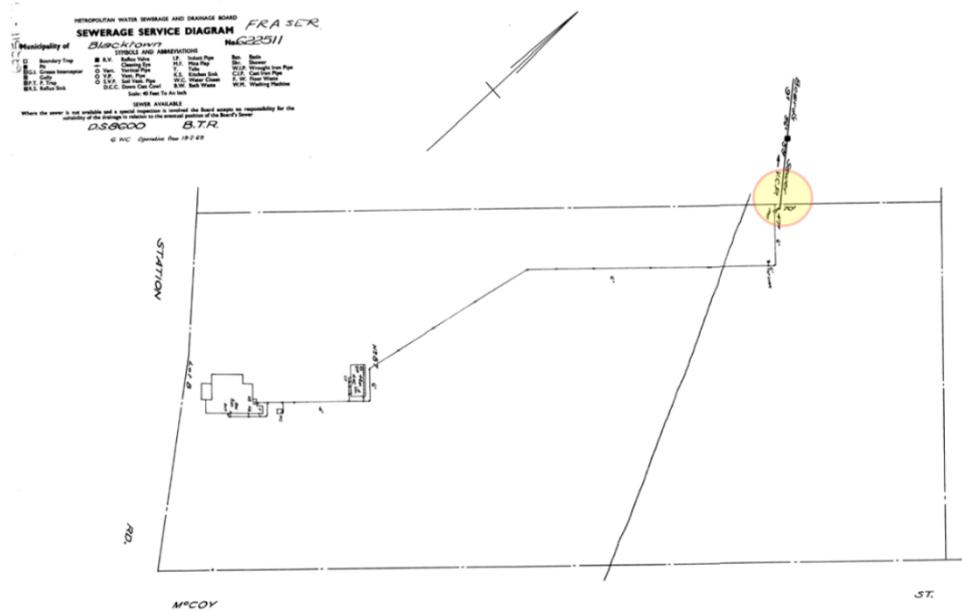


Figure 9: The existing site sewer that will be demolished. The connection point to the Authority main will be kept (yellow circle).

2.5.1 Potential Structural Impact of New Building to the Existing Sewer Infrastructure (BPA – Building Plan Approval)

A Building Plan Approval application has been completed and approved as part of the front data centre development.

3 Electrical

3.1 Governing Authorities Requirements – Electrical Services

3.1.1 Existing

The proposed development site sits within the authority of Endeavour Energy network.

Preliminary negotiations with the authority have already commenced, with a connection application having been submitted to connect the proposed electrical demand for the site, that has an ultimate load forecast to be in the order of **28MW**.

The authority have undertaken an initial review of the application, and provided an initial response that has proposed the local 33kV network (via the Seven Hills Zone Substation) will be proposed to provide the necessary capacity to serve the development. A copy of the response is attached, per Figure 13.

The local 33kV is found approximately 1km to the north from the site in Powers Rd, and presently supplies the sub-transmission network in the local region. Figure 12 below refers.

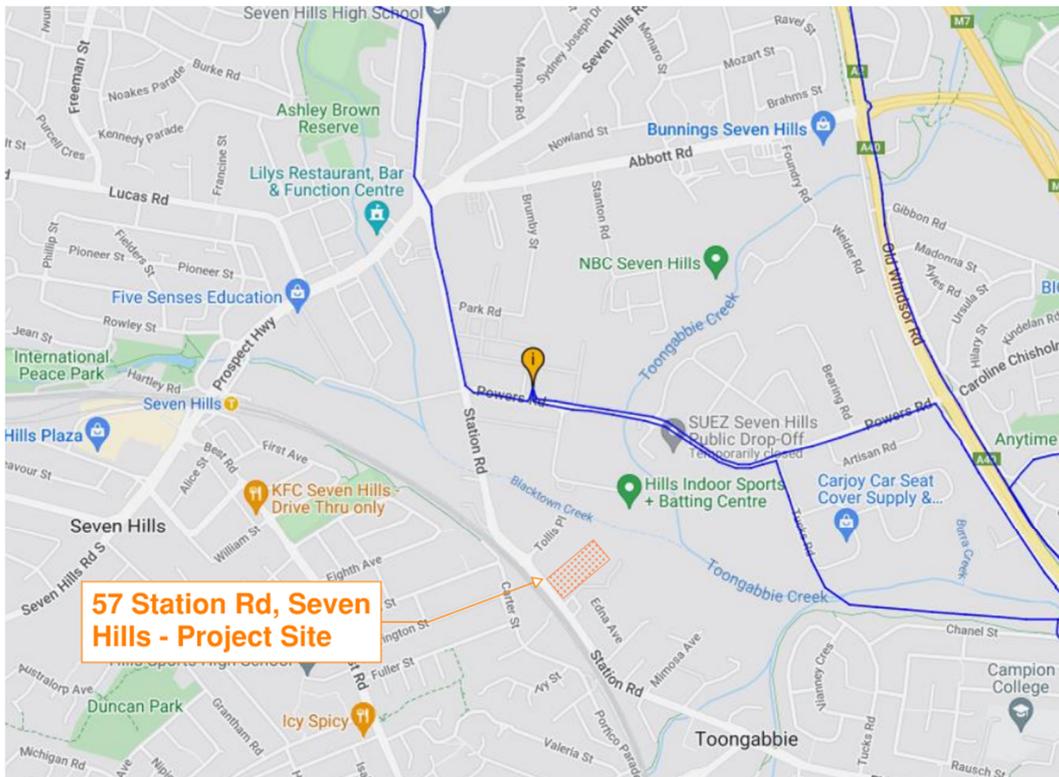


Figure 10: Existing Endeavour Energy 33kV network

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-
-
-
-

1 November 2021

Endeavour Energy Ref: UIL6223
Customer Ref:



LCI Consultants Australia
Level 4, 73 Walker Street
North Sydney NSW 2060

Attention: David Mitchell

INITIAL RESPONSE

UIL6223 – LOT B, DP 404669, Connection of Load Application: 57 Station Road, SEVEN HILLS

Thank you for your application providing information of the proposed development at the above location. Your application has been registered under the above reference number. Please quote this reference number on all future correspondence.

It is understood that the applicant has proposed to establish a datacentre at the above address for an ultimate load of 28MVA supplied at 33kV. For the initial load of 6MVA, to be supplied at 11kV, Endeavour is currently processing project UIL6077 which is expected to be replaced by the final 33kV supplies once their connection points are established. Previously there has been a technical review (ENL3893) carried out by Endeavour for the requested load of 28MVA and the advice was such that supply may be available from Seven Hills Zone Substation. Our planning group will now need to revisit the network to determine if the previous concept still stands or is further assessment required

Attached to this letter is a payment advice for the network investigation to determine the network's capacity to cater for the requested load. Please pay the fees and we will advise our technical evaluations accordingly. Please note that there will additional fees issued at a later stage for preparation of the detailed Design Brief and Design Certification.

Yours faithfully,



Ayman Shahalam
Contestable Works Project Manager
Ph: 0298537803
Email: Ayman.Shahalam@endeavourenergy.com.au

Figure 11: Endeavour Energy initial response to the connection application

3.1.2 Proposed Network & Electrical

As indicated by Endeavour Energy response dated 1st November 2021, it is envisaged that the development will be supplied power from the local 33kV infrastructure, via connections at the Seven Hills Zone substation. Specific details of the off-site augmentation from Endeavour Energy are to follow their initial response.

It is confirmed that a supply authority 'contestable' project will be undertaken to extend two 33kV network feeder cable supplies. Given the location of the proposed electrical connections, the intended excavation route will proceed along Powers Road, extending down Station Road, directly into the frontage of the site into on site switching stations. These will serve as a delineation point between the site installation and network and the authority network.

Electrical protection of the facility will be coordinated with the network requirements. Once the feeders route into the site, they will be reticulated throughout the private installation to 8 x 3.36MVA 33kV/415V dry type transformers and 1 x 0.75MVA 33kV/415V dry type transformer.

Furthermore, back-up power supply is provided on the proposed site in the form of 8 x 3MW and 1 x 0.5MW standby low voltage generators to supply the proposed critical loads. Each Generator will be housed in a prefabricated generator enclosure with noise attenuation and belly tank, designed to comply with AS1940, providing 48 hours fuel storage.

LCI notes that there is an existing HV transmission tower in the front portion of the development. The associated authority requirements to the easement have been maintained clear from all services as part of this development. Therefore, the new development has no impact on the existing HV transmission tower and its associated easement.

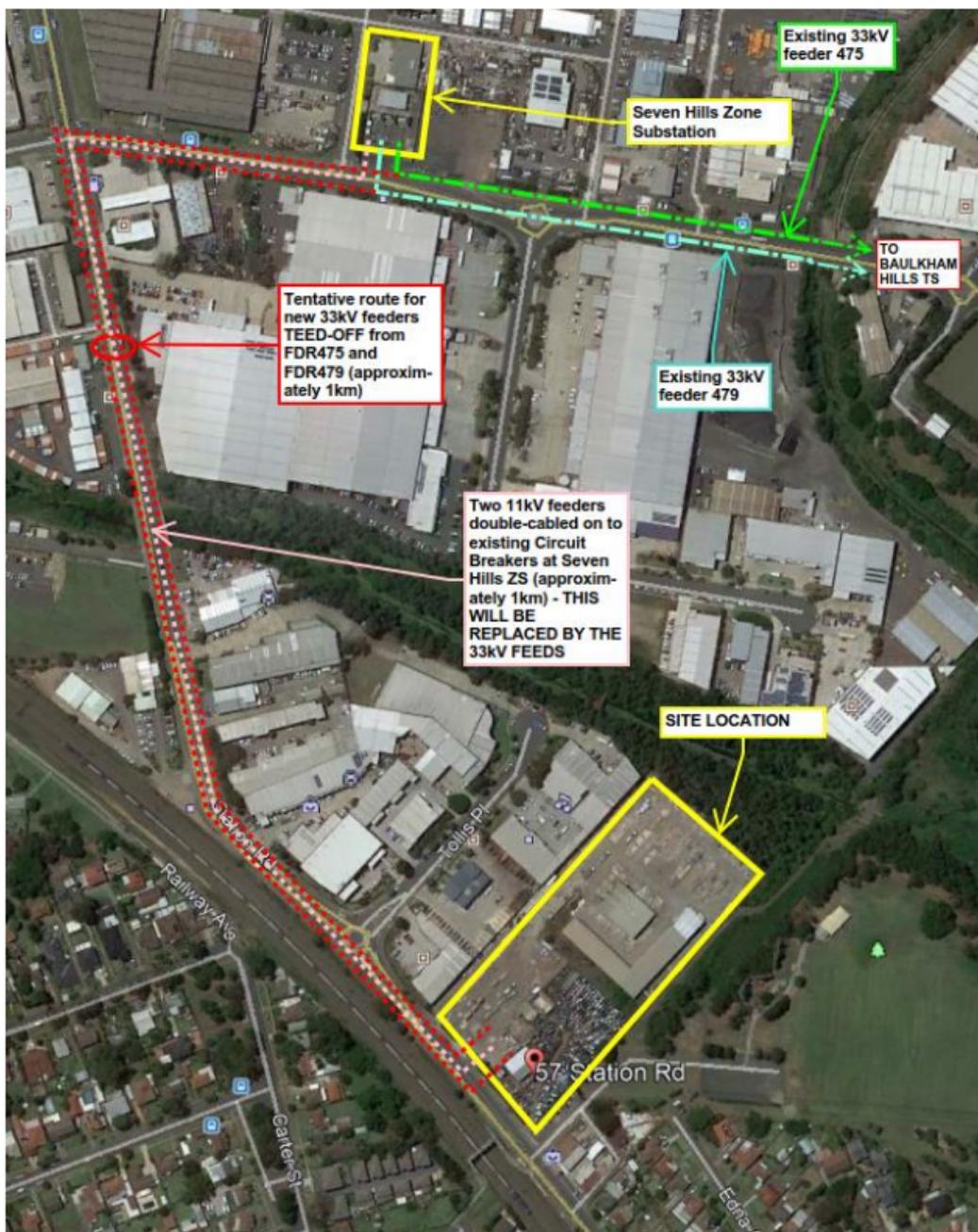


Figure 12: Existing Endeavour Energy 33kV network & indicative 33kV pathway to site

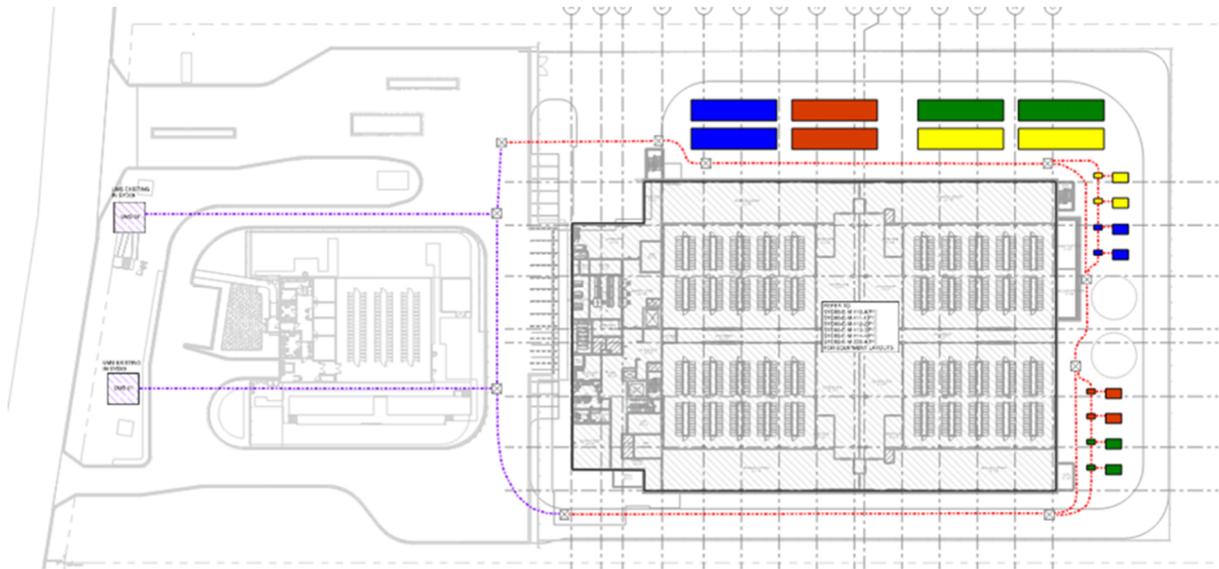


Figure 13: internal 33kv reticulation within the development site (Conceptual)

4 Information and Communication Technology

4.1 Telecommunications Lead-Ins

The rear development and adjoining front development site will have multiple telecommunications carrier connections. Carrier connectivity is routed into rear development via the private interlinks between the front and rear site. Multiple carrier point-of-entries into the campus are provided at the front development. Multiple point of entries is required for capacity and resiliency. Alternate carriers may also be used for capacity and resiliency.

These point-of-entries act as a telecommunications pathway demarcation point between the private property and the telecommunications carriers. Telecommunications carriers will meet and connect into these point-of-entries for regional connectivity between the campus and other major telecommunications facilities including exchanges, gateways, other data centres etc. There are a total of 5no. point-of-entries at the front development with 3no. along Station Road and 2no. at the sides of the front development. 1no. of these entries will require under-boring through the adjacent site as agreed with telecommunications carriers. The pathways are provided via underground telecommunications pit and pipe. This lead-in pit and pipe is owned by the carrier up until the point-of-entry at the property boundary. A sub-duct may then be provided with a carrier cable contained within it. This is routed via the private pathways to the appropriate termination point within the campus.



Figure 14: Point-of-Entries for Telecommunications

Initial pit and pipe carrier connectivity will be provisioned by the front development to enable the facility (both front and rear developments). Where increased capacity and resiliency is required to meet the operational demand during operation of the facility, subsequent further connections to the point-of-entries may be made to the front development.

Carrier connectivity usually ties into already available infrastructure routed along the road reserve near-by. To meet resiliency or capacity requirements, runs of new conduit pathways may be made between the existing carrier pit and pipe within the road reserve, and to the point of demarcation/point-of-entries. External reticulation to the point-of-entries will require careful carrier planning. This is typically handled by the telecommunications carriers on application for connection.

All the internal reticulation between the point-of-entries to the front and rear developments is via private infrastructure consisting of telecommunication vaults and communications conduits spanning between these vaults. These pathways will be sized to minimise subsequent on-site excavation activities during the life of the facility.

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