

# **Sydney Swans Headquarters and Community Centre Development**

Infrastructure Management Plan

**Sydney Swans**

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# Document control record

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# 1 Introduction

## 1.1 Purpose

This report addresses the following items of the Secretary's Environmental Assessment Requirements (SEARs) for the development.

### 16. Utilities

*The EIS shall:*

- *Address the existing capacity and future requirements of the development for the provision of utilities, including staging of infrastructure in consultation with relevant agencies*
- *Detail impacts to any existing infrastructure assets of utility stakeholders from demolition/construction and any proposed mitigation/protection measures.*

## 1.2 Scope

This report aims to provide the following items to inform the strategy for servicing the proposed Sydney Swans Headquarters and Community Centre development:

- A summary of existing infrastructure services in the vicinity of the site
- A preliminary assessment of proposed demand for each utility service
- An assessment of the indicative capacity of utility infrastructure currently servicing the site and any required augmentation
- A summary of the staging and timing of the utilities and services works.

This report focuses on the following utility services infrastructure:

- Potable water infrastructure (Water)
- Wastewater infrastructure (Sewer)
- Electrical infrastructure (Elec)
- Natural gas infrastructure (Gas) and
- Data and telecommunications infrastructure (Telco)

Stormwater drainage and flood management infrastructure is described in a separate Stormwater Management Plan (SMP) prepared by TTW and is not considered in this report.

Please note that the utility infrastructure information provided in this report is detailed on record drawings provided by utility authorities through DBYD enquiries made by Aurecon and existing visual non-intrusive services surveys.

Assumptions included within this report, including existing site conditions, existing and proposed infrastructure capacity, and existing and proposed demand will need to be confirmed prior to detailed design and further consultation with the utility authorities.

## 1.3 Overview of Proposed Development

The Sydney Swans Headquarters and Community Centre (SSHQ&CC) development is a refurbishment of the existing Royal Hall of Industries (RHI), along with the construction of a new 2 storey building along the southern side of the site. The new development will be the new Sydney Swans Headquarters and will also accommodate the NSW Swifts Netball organisation.

The proposed development will consist of the following components:

- Construction of a mezzanine level in the RHI building which will surround a double height space in the middle of the building which will become an indoor training centre for the Sydney Swans.
- The building will accommodate new office areas, players locker rooms and amenities, staff and training facilities, rehab areas, indoor pool and gym facilities.
- Retail tenancies including new Mechanical Centre, Blood bank and Café will be provided.
- In the building extension, a new indoor netball court will be provided along with office areas will be provided for the NSW Swifts.

The site is located at 1 Driver Avenue, Moore Park within the Moore Park Precinct. It is bound by Driver Avenue, Lang Road and Errol Flynn Boulevard. The site is located within the City of Sydney local government area.

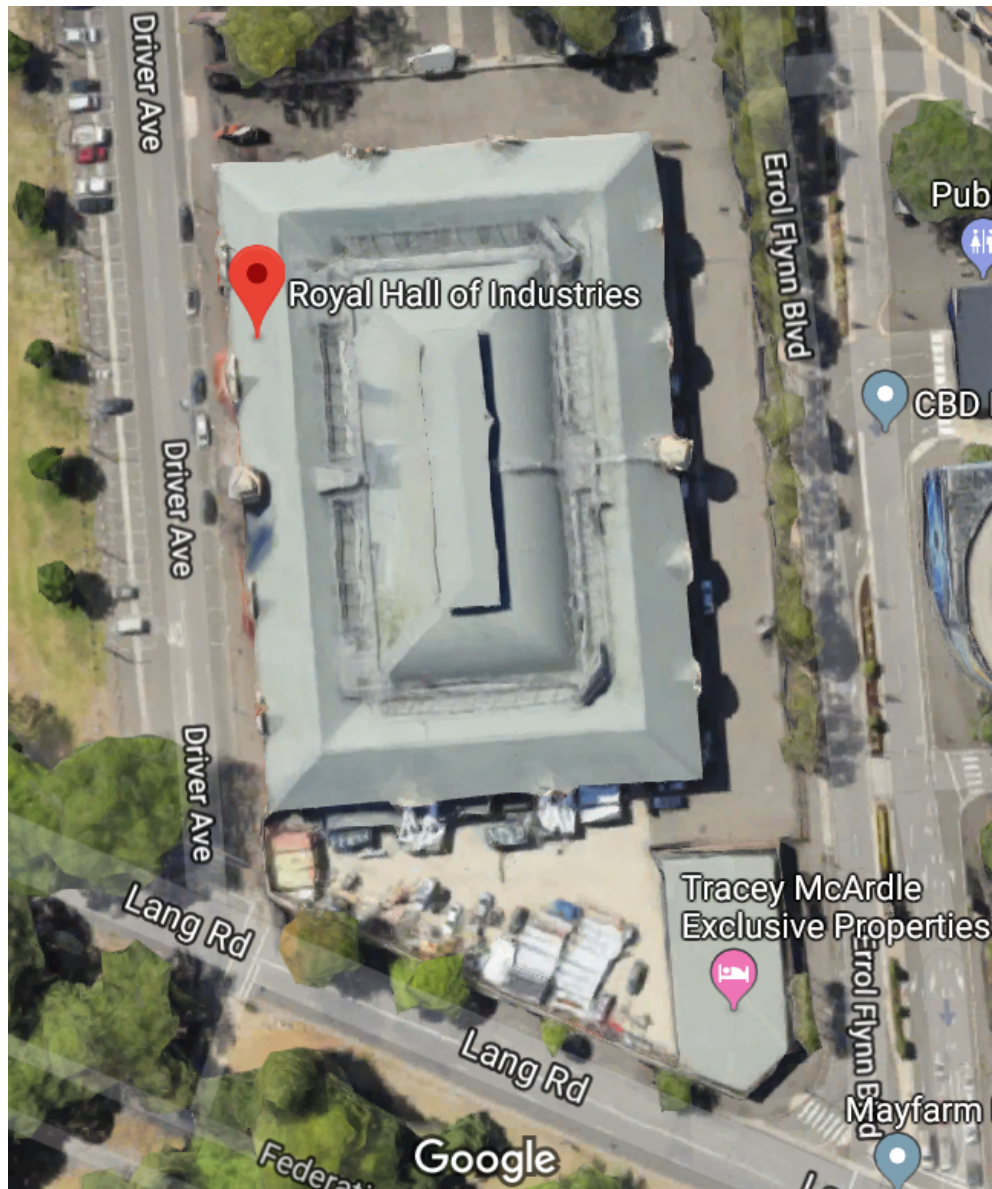


Figure 1: Project Site

## 2 Potable Water – Domestic

### 2.1 Existing Infrastructure

The existing authority's infrastructure in vicinity of the site has been identified based on Dial Before You Dig (DBYD) records, desktop review of available site services information, discussion with the current facilities manager and visual site inspection. The Potable Water service provider in this area is Sydney Water.

The DBYD records detail the existing water infrastructure surrounding the site which includes the following:

- An existing DN 150 uPVC Water Main located in Driver Avenue (western side)
- It is understood that there is a 200mm main that connects the site to a water main located in Anzac Parade. It appears that this main provides water to the potable and fire water services.

It is proposed that the existing connection be reused as it has capacity to cater for the water demand.

Further investigations will be undertaken during detail design phase to confirm the exact layout and depths of the infrastructure described above.

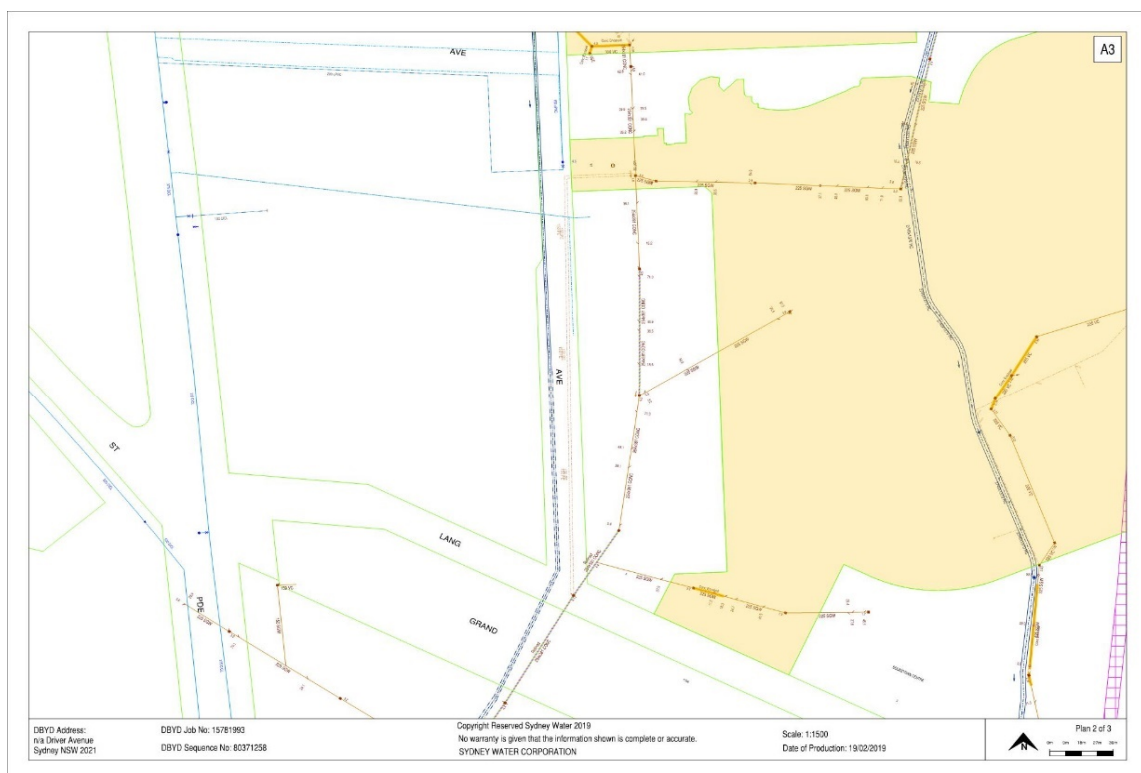


Figure 2: Sydney Water Sewer and Water Diagram

### 2.2 Demand Assessment

The demand assessment for the Swans fitout has been based on the figures below:

- 200 pax
- 8 hour working day (average)

The estimated Water Max demand is 25-40l/s Potable Simultaneous Demand (PSD).

The average day water usage is estimated to be 5-8kl/average day. This number includes offset by the rain water collection available for rain water harvesting of approximately 25kL (when the rain water tank has available rain water use).

## 2.3 Water Demand Reduction

Initiatives that should be considered include but not limited to;

- Maintain reduction of water use through fixture selections and the use of alternate water supplies.
- The use of rain water harvesting for all toilet flushing and irrigation thereby, achieving a reduction in potable water use.
- Use 4-star WELS rated or better sanitary ware and tapware throughout the fitout to reduce the potable water consumption.
- Urinals shall utilise rainwater harvesting for flushing and shall be fitted with automatically operated flush devices.
- Shower facilities shall incorporate low flow shower heads to reduce the energy required to the hot water plant and overall water consumption.
- Pulse capable water meters shall be located throughout the fitout

## 2.4 Utility Interaction and Proposed Diversions, Temporary Works and Staging

The nominated Accredited Services Provider (MPG Building and Infrastructure Services) have undertaken initial discussions with Sydney water for the proposed works and are undertaking the Section 73 design for all the required services extensions / augmentation. Refer to *Appendix A – Preliminary Sydney Water Building Plan Approval Assessment/ Assets options Report for Sydney Swans Development Rev1* for details.

## 2.5 Water Management Plan

A water reuse management strategy plan is to be created and the purpose of this plan is to;

- Detail water reuse target as a percentage of potable water demand reduction which is sourced from a non-potable water source (such as rain water harvesting)
- Detail the use of water on the project through the construction phase

The strategy shall address the water use requirements and reuse options for the construction phase for all works on the site. Water reuse will be limited to stormwater collected within the project boundaries.

This Strategy will address and detail the following:

- Water use requirements for Construction works;
- Water use for the site sheds and auxiliary buildings;
- ESD initiatives;
- Monitoring potable and non-potable water use to identify targets are met.

## 3 Potable Water – Fire Services

### 3.1 Existing Authorities Infrastructure

Based on the WAE information provided, the development is connected to the generally as follows (

Figure 3) :

- An existing Ø200mm water main (blue brute) across the Moore Park connecting to the existing Sydney Water Ø375mm Sydney Water water main in Anzac Parade and finishing within the site at the eastern end of the Hordern Pavilion. The existing 200mm incoming water supply to the site appears to have a dedicated fire services provision for the RHI. The size and condition of this water main remains subject to confirmation.

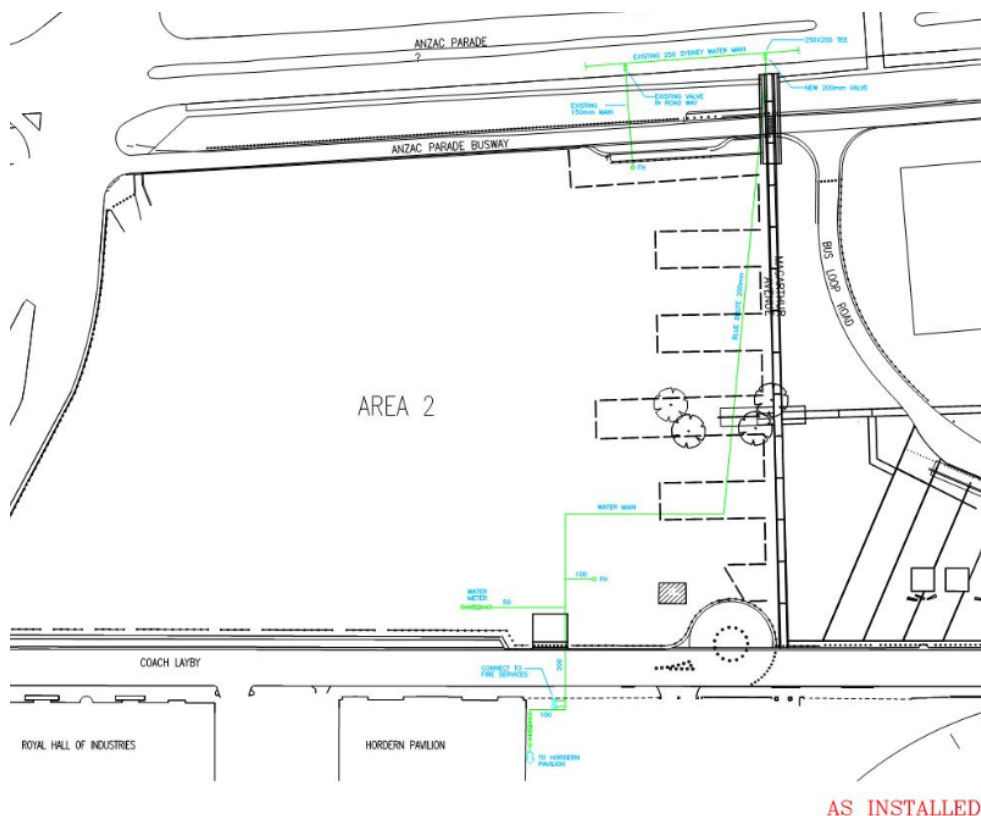


Figure 3: Location of Sydney Water and Private Mains Servicing the Site.

We have been provided with a copy of the Statement of Available Pressure and Flow (copy below)

The fire flow statement provided confirms that the existing SWC water main currently servicing the development has sufficient flows with a MPF equal to 120L/sec.

The fire flow statement provided also indicates that we will not sufficient positive pressure at the booster assembly to comply with the requirements of AS2419.1

It will be necessary to consider / include an on-site tank to overcome this F&RNSW operation issue.

## Statement of Available Pressure and Flow



Nick Watts  
233 Castlereagh Street  
Sydney, NSW 2000

Attention: Nick Watts

Date: 27/03/2019

Pressure & Flow Application Number: 612151  
Your Pressure Inquiry Dated: 2019-02-28  
Property Address: 133-135 Anzac Pde, Moore Park NSW 2021

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: Anzac Parade	Side of Street: West
Distance & Direction from Nearest Cross Street	65 metres South from Moore Park Parade
Approximate Ground Level (AHD):	48 metres
Nominal Size of Water Main (DN):	375 mm

### EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	37 metre head
Minimum Pressure	19 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	19
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5	21
	10	21
	15	21
	20	21
	26	21
	30	21
	40	21
	50	21
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	5	19
	10	19
	15	19
	20	19
	26	19
	30	19
	40	19
	50	19
Maximum Permissible Flow	120	19

(Please refer to reverse side for Notes)

Figure 4: Sydney Water of Available Pressure and Flow.

## 3.2 Sydney Water Feasibility Letter

A copy of the Sydney Water feasibility letter has been provided and we have indicated to RHI design team that the Sydney Water indicated for connection as part of the feasibility letter is incorrect and there is a need to go back to the Water Servicing Coordinator to have the letter amended to suit existing site conditions.

## 3.3 Existing Infrastructure

### 3.2.1 Existing Fire Hydrant System

The Existing Fire Hydrant System servicing the RHI is currently connected to the Hordern Pavilion hydrant system. The RHI has been provided with a number of internal hydrants.

Based on the information received to date, the existing hydrant system including hydrant booster pumps and the like are located on the northern side of the Hordern pavilion. The existing hydrant system is not compliant with the latest Australian Standards.

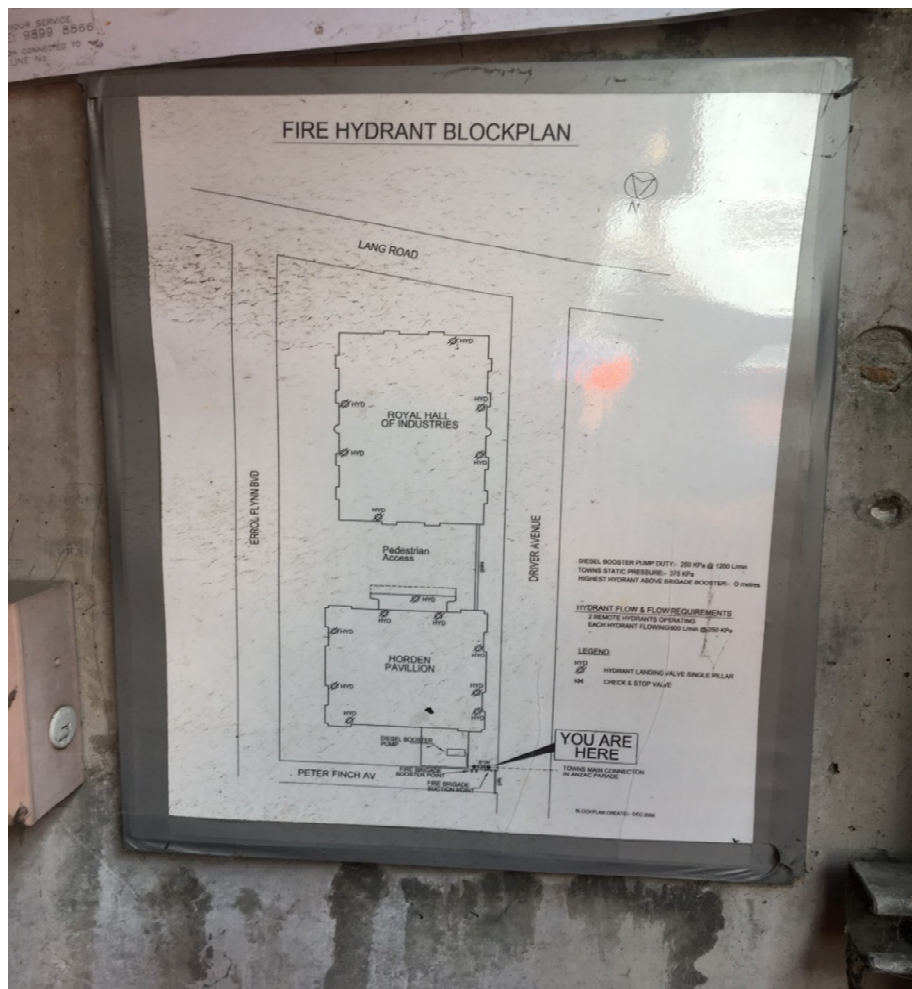


Figure 5: Fire Hydrant Block Plan

### 3.2.1 Existing Fire Sprinkler System

The existing corporate lounge, kitchen and amenities of the RHI building have been provided with sprinkler protection. The existing fire sprinkler system currently servicing these areas are connected to the Hordern pavilion sprinkler infrastructure.

As previously indicated we understand that the existing RHI fire sprinkler will be disconnected from the Hordern pavilion system and removed and replace with a new compliant fire sprinkler system to comply with the fire strategy for the RHI

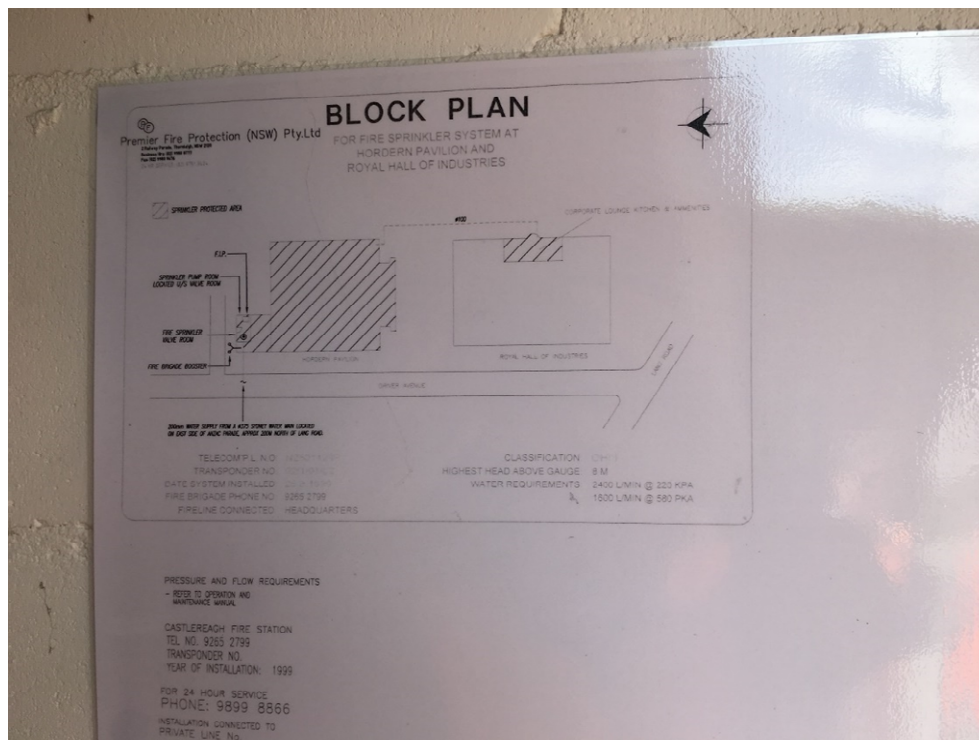


Figure 6: Fire Sprinkler Block Plan

#### 4.4.3 Fire Detection and Alarm System

The Existing Fire detection and alarm system within the RHI is currently connected to the Hordern Pavilion Fire Indicator Panel and EVAC panels. The RHI has been provided with a number of internal smoke detectors and speakers. The existing smoke detection and alarms system is not compliant with the latest Australian Standards.

#### 4.4.4 Fire Hose Reels

The existing fire hose reel system within the RHI building will be disconnected and removed. Based on information provided by the Fire Engineers, the provision of fire hose reels will be omitted from the building under an Alternative Solution.

#### 4.4.5 Portable Fire Extinguishers

Generally, the RHI building appears to be supported throughout with Fire Extinguishers. Fire Extinguisher Where sighted in a number of location. However, it is anticipated that the fire extinguishers location, type and capacity will need to be reassess for compliance.

## 4 Wastewater – Sewer

### 4.1 Existing Infrastructure

The existing local wastewater infrastructure near the site has been identified based on Dial Before You Dig (DBYD) records and documents. The waste water (Sewer) service provider in this area is Sydney Water.

These records indicate the presence of various wastewater infrastructure in the vicinity of the RHI site including:

- a single 225mm VC sewer traversing the entire site.
- Private wastewater infrastructure throughout the site;
- Private grease waste system;

It is proposed to reuse the existing connections and a proposed new connection proposed at the corner of Lang Road and Driver Avenue will be required for the new building.

Refer to Figure 2 in Section 2 for the existing sewer arrangement.

### 4.2 Demand Assessment

A wastewater demand has been estimated, based the proposed current architectural layouts and as a percentage of the potable water demand.

Based on fixture unit loadings (AS3500) the sewer discharge estimate is expected to be ~350 fixture sewer loading units.

Based on a percentage of water demand, the sewer discharge estimate is expected to be between 4-6.4kl per day.

### 4.3 Utility Interaction and Proposed Diversions, Temporary Works and Staging

The nominated Accredited Services Provider (MPG Building and Infrastructure Services) have undertaken initial discussions with Sydney water for the proposed works and are undertaking the Section 73 design for all the required services extensions / augmentation. Refer to *Appendix A – Preliminary Sydney Water Building Plan Approval Assessment/ Assets options Report for Sydney Swans Development Rev1* for details.

## 5 Stormwater

Authority Stormwater drainage and flood management infrastructure is not considered in this report, a separate Stormwater management plan has been prepared by TTW. (Refer to Appendix A)

## 6 Natural Gas

### 6.1 Existing Infrastructure

The existing infrastructure has been identified based on Dial Before You Dig (DBYD) records and documents. These records indicate the presence of Jemena assets in the vicinity of the the RHI Building

The development has the following Jemena Mains:

- An existing 75mm Nylon 210kPa natural gas main located within Driver Avenue (western side).
- An existing 75mm Nylon 210kPa natural gas main located in Lang Road (southern side).
- The gas system is connected to the gas main in Driver Avenue (north-west corner of the site)

It is proposed that the existing connection be reused as it has capacity to cater for the gas demand for the site.

The existing natural gas infrastructure layout is shown in **Error! Reference source not found..**

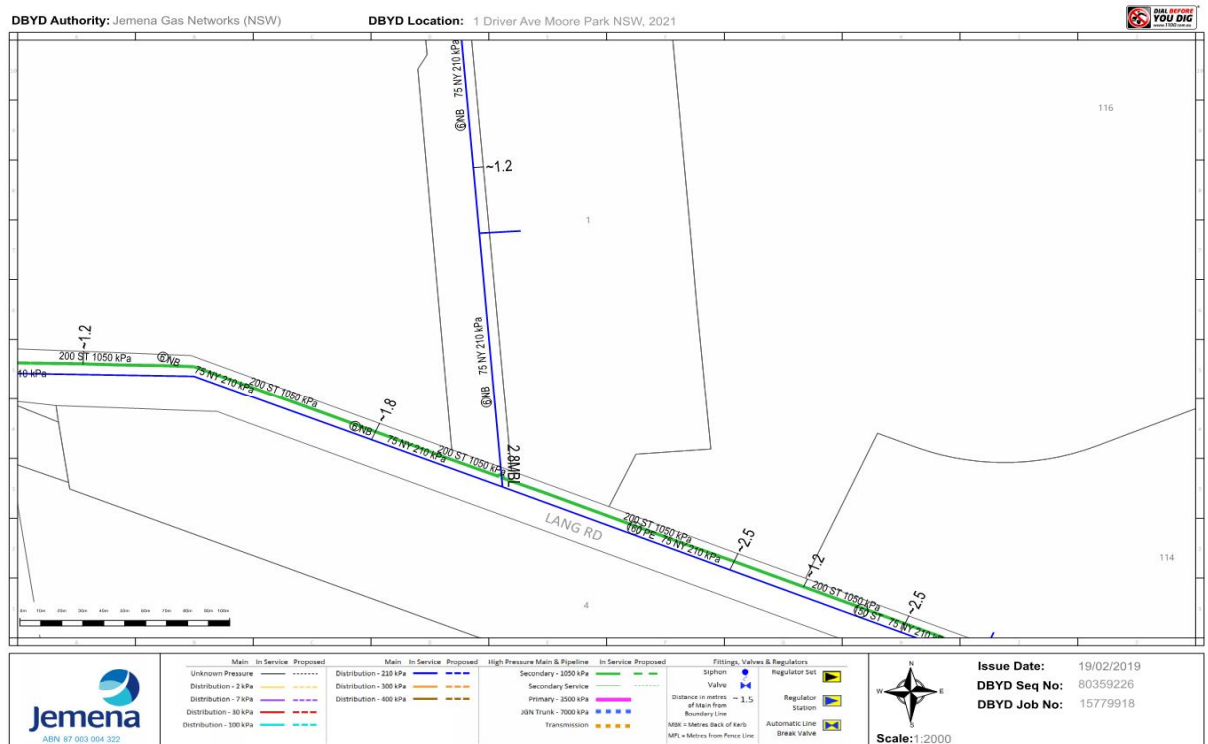


Figure 7: Jemena Gas diagram

### 6.2 Demand Assessment

A preliminary demand figure for the development has been calculated estimated to be between 4,000 and 5000 MJ/hr based on (un-diversified):

- Kitchen Appliances - ~2000mj/h
- Domestic Hot Water - ~1800mj/h
- Mechanical Heating Plant - ~800mj/h

## 6.3 Initial Design Assessment

It is anticipated that the project will be supplied with gas via the existing metered connection. No further discussions with Jemena is required.



## 7.4 Utility Interaction

An application for connection was lodged with Ausgrid on 21st February 2019, for the decommissioning of the existing kiosk substation and the installation of a new 1500kVA K Type Kiosk substation along Errol Flynn Street. Ausgrid have confirmed the requirement for the new Kiosk and have provided the schedule of non -contestable fees associated with the substation kiosk works. Documentation related to this was issued on 26th February 2019 and the offer has been accepted for the development. Currently, Ausgrid are developing the Design Information Pack for the proposed works.

## 7.5 Diversions, Temporary works and Staging

The existing kiosk will be decommissioned as part of the construction works, and temporary / construction supply will be provided to the site for the duration of the building works.

Installation of the permanent works including kiosk installation will be installed mid 2020.

Augmentation works required for the HV feeders will be confirmed once Ausgrid release the design information pack for the site.

## 7.6 Next Steps

The following is a summary of the next steps in progressing the design and delivery of the site electrical infrastructure:

- Receive the Design Information Pack from Ausgrid
- Complete Level 3 detailed design for Ausgrid signoff

## 8 Telecommunications

All major carriers are available to the site. An NBNCo search indicates that the site will be serviced by Hybrid Fibre Co-Axial (HFC) technology, however the service area is currently undergoing remediation works and may take some time before it is available.

### 8.1 Existing Infrastructure

The existing infrastructure on site consists of the following.

- Trunk pathways are located along Errol Flynn Street and Driver Avenue for the main carriers (Telstra/pipenetworks, Optus, nextGen )
- Privately owned onsite pit and pipe network into the RHI building to a communications room located within the basement.

### 8.2 Demand Assessment

No demand calculations have been made for the telecommunications services requirements.

### 8.3 Utility Interaction

The following utility interactions will be required for project.

#### Swans LAN

Coordination will be required with the SWANs service provider for the installation of the services Lead In Cabling to the proposed server room on level 1.

#### Building Distributor

A new Building distributor will be provided in the basement. Coordination will be required to extend NBN to the new building distributor room.

#### DAS Infrastructure

Discussions have been held with Optus who will be installing a DAS system within the RHI building for the swans fitout. A new DAS room will be provided in the basement to house the DAS equipment.

# Appendix A – Consultant Reports

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# **Site Management and Service Delivery Plan- CIVIL**

## **Sydney Swans HQ and Community Centre**

**Prepared for APP / 14 March 2019**

181978

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## 1.0 Executive Summary

This report identifies main areas of civil and stormwater related risks for the Sydney Swans HQ and Community Centre development at the Royal Hall of Industries (RHI) and strategies for mitigating these issues. These include risks involved with:

- Flooding and Flood inundation risk.
- Local Stormwater drainage and disposal, including location of existing stormwater drainage pipes in relation to the proposed construction, and location of stormwater infrastructure such as on site detention (OSD) tanks.

## 2.0 Site and Surrounding Features and Considerations

The job site is situated within the Moore Park Precinct at the corner of Lang Road and Driver Avenue and consists of the existing Royal Hall of Industries (RHI), surrounding yard area to the south. The site is bounded by Errol Flynn Boulevard to the east, and the Hordern Pavilion to the north.

## 3.0 Existing Infrastructure

The Royal Hall of Industries and Sydney Showgrounds has been in operation for over 130 years, with the Royal Hall of Industries being constructed in 1913. The drainage infrastructure in this area has been constructed and appended to with each successive building and site upgrade works, with no detailed design plans have been made available that summarise the entire stormwater system.

A local stormwater network within the former showgrounds drains upstream areas, including the former showground arena, via a piped stormwater system within Erol Flynn Drive, through the Royal Hall of Industries site to a connection point in Driver Ave.

Trunk Stormwater drainage owned by Sydney Water exists in Driver Avenue to the west of the site (2m wide x 1m deep culvert), with City of Sydney Council owned stormwater lines within both Driver avenue and Lang Road that connect to the trunk Sydney Water culvert. All stormwater discharges through Moore Park.

Within the Royal Hall of Industries Site, a stormwater pipe network drains water through the site as described above, and a minor stormwater network conveys roof water and runoff from the carpark on the east of the building to the trunk drainage network. The current survey of the site has not accurately located the path of all underground stormwater pipes, with several stormwater pits being obscured by plant/machinery/temporary buildings, and others that could not be opened. The final discharge point from site has not yet been identified in the survey.

## 4.0 Flood Assessment

The current City of Sydney Interim Floodplain Management Policy (approved May 2014) provides the requirements for flood planning levels as set out in Table 1.

**Table 1 City of Sydney Flood Planning Levels**

Area	Flood Planning Level
Business	Merits approach presented by the applicant with a minimum of the 1% AEP flood level.
Below-ground car parks and all other ingress points e.g. Lifts/stairs/exits	1% AEP flood level + 0.5 m or the PMF (whichever is the higher)

A Flood Study and Risk Management Study has been prepared for the immediate area for the City of Sydney Council, titled "Centennial Park Floodplain Risk Management Study", WMA Water, April 2016. From this flood study it shows that the surrounding areas are subject to inundation in large rainfall events

The 100-year ARI flood event map from the Flood Study is attached to the end of this report, and indicates that the immediate area of the development is currently above the 100 year flood level. This flood level is nominally RL36.5 AHD in the 100 year event, and partially inundated to approximately RL37.5 AHD in the PMF (Probable Maximum Flood).

Based on these levels, and the proposed floor levels, the facility will be above the 100 year rainfall event. Final clarification of entries to the basements of the Royal Hall of Industries must be made to ensure that electrical intrastate within the basement is protected.

## 5.0 Risk Issue and Risk Mitigation

Stormwater, flooding and civil risks issues and associated mitigation measures associated with the redevelopment include:

- Stormwater pipes are located within the footprint of the proposed development, including the location of proposed pools. Risks include the requirement to relocate stormwater pipes and or relocate aspects of the redevelopment layout. This is to be minimised by obtaining further detailed survey of the existing stormwater pipes on site as described. It is noted that meetings have been held with a services locating provider who are currently undertaking this additional investigation works.
- Trunk stormwater pipes draining upstream catchments through the site are required to be diverted around the site. There is a risk that the diversion of stormwater pipes around the site will adversely impact on the on overland flows/flooding, and will require a new flood model to be run to confirm a non-worsening of the current flood levels. This risk is to be minimised as per item 5 a. above, with identification of the trunk drainage paths through the site via survey, and coordination with the architect and project manager with the layout of the proposed works.
- Stormwater services locations and discharge locations differ from survey to date, and this will impact on the proposed location of water treatment devices, being the requirement to install a OSD tank. Mitigation measures are to include location of existing stormwater networks in the site as per item 5 a. above.

- d. Clarification of detailed flood levels on PMF and 100 year flood events from flood model and coordinate with architect to ensure the entries to buildings remain above these levels. This includes reviewing design of entries to basements to provide flood protection to the PMF.

#### Summary of Risk Mitigation Measures

- a. Complete site surveys to determine exact location of existing stormwater infrastructure within the immediate area of the site. This may require plant and machinery to be moved, specialist lifting gear brought to site to remove large stormwater manhole covers, and/or the use of CCTV and electronic locating probes.
- b. Survey to plot exact location and depth of stormwater pipes through the site to ensure that existing stormwater does not clash with proposed infrastructure/buildings.
- c. Based on location of stormwater pipes, determine if relocation of those assets are possible.
- d. Continual design coordination with architect and project manager to ensure that site layout and services are fully coordinated, and that floor levels remain above the flood levels.

## 6.0 Other Site Issues

Related civil issues that will need to be taken into account by the overall project team include the coordination of site levels and grading, to ensure that stormwater is diverted away from site entries and does not pond water, and that adequate pavement thickness of new landscape areas and concrete walkways/slabs to provide protection to underground services .

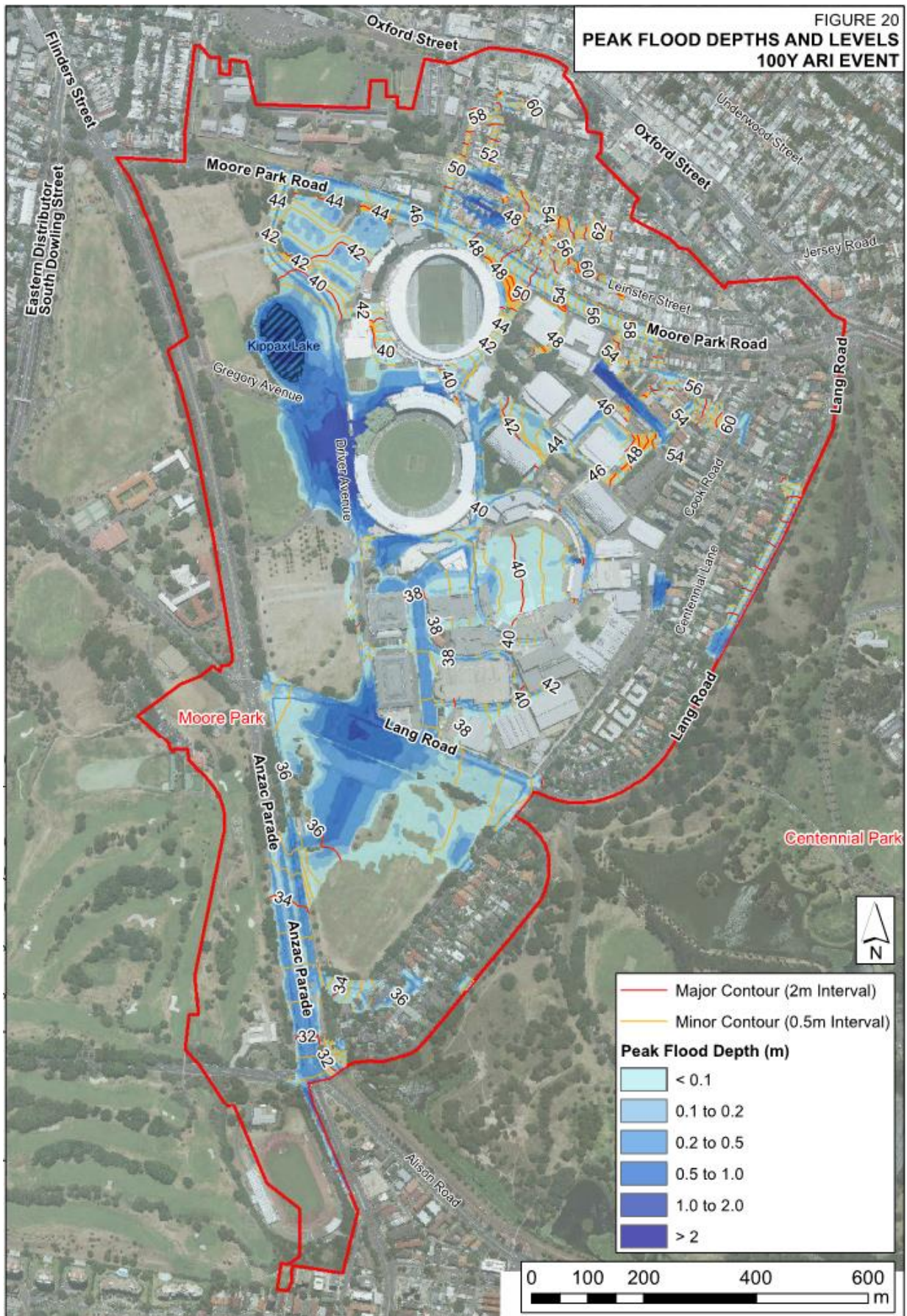
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**PRELIMINARY SYDNEY WATER BUILDING PLAN  
APPROVAL ASSESSMENT/ASSETS OPTIONS  
REPORT** for

**SYDNEY SWANS DEVELOPMENT  
SYDNEY**

**Project No: 2019-0050**

**First Issue**

**18 February 2019**

**Prepared For**

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## Revision Control

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## **1.0 INTRODUCTION**

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### **1.1 SITE INFORMATION**

Address: Royal Hall of Industries, Moore Park, Sydney, NSW 2124

Development: Conversion of the existing Royal Hall of Industries (RHI) building into the Sydney Swans Headquarters and Community Centre along with new buildings to incorporate a training swimming pool and also a training facility for the NSW Swifts Netball team.

### **1.2 EXECUTIVE SUMMARY**

APP have requested this report to be prepared to assess the options for the Sydney Water assets that are impacted by this development.

We will review the assets in their existing condition and provide options for both the potable water, sewer and stormwater assets, providing recommendations with regard to the Sydney Water Building Plan Approval process and also any deviation/adjustment requirements that we would consider that Sydney Water would request.

Sydney Water Building Plan Approval is required prior to the Construction Certificate stage for any development where building works or demolition are taking place.

### **1.3 EXTENT OF SYDNEY WATER ASSETS**

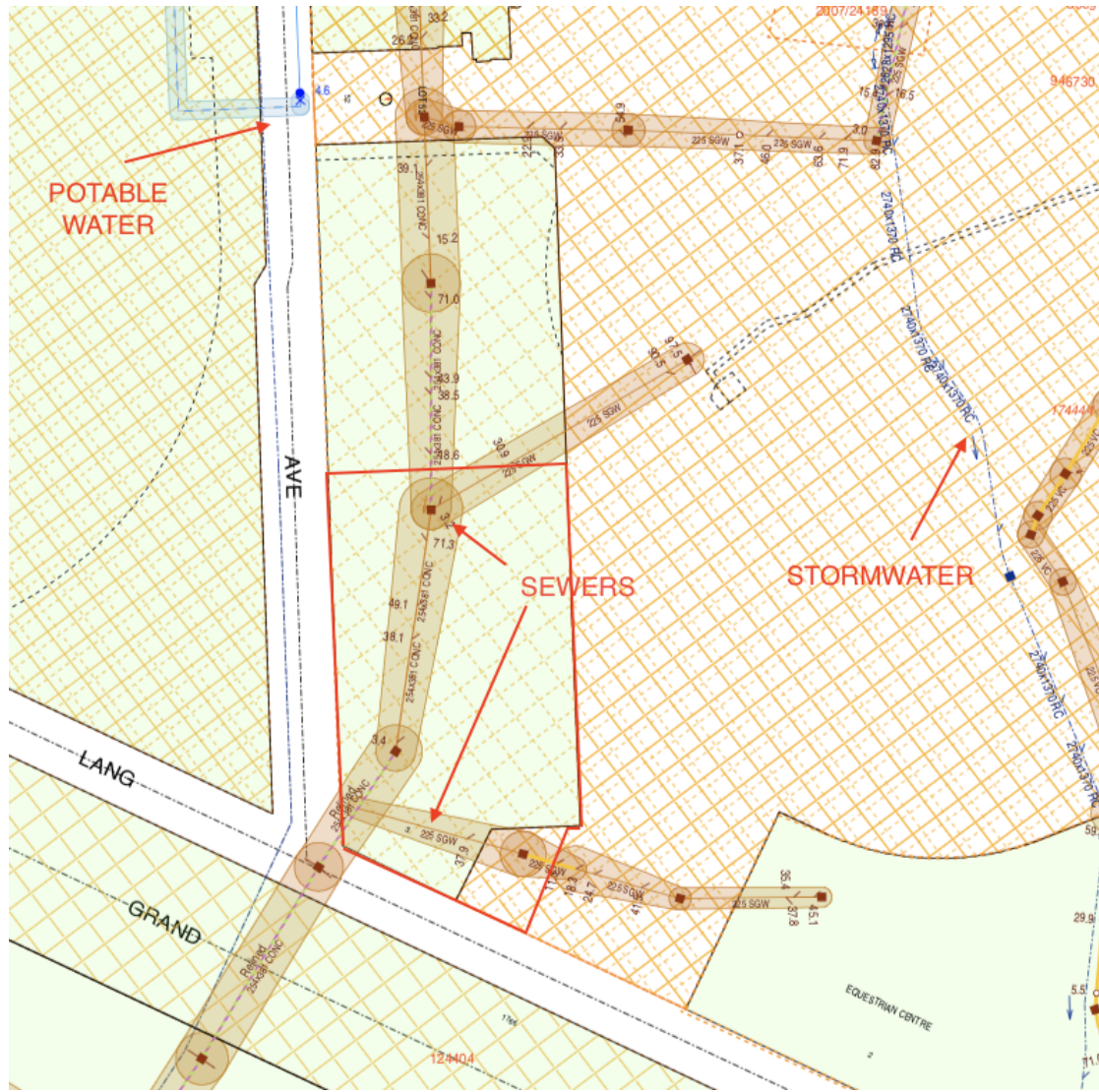
The Development covers Lot 3 of DP 861843 and extends over into the Entertainment Quarter.

There are significant Sydney Water sewers that traverse the proposed development site.

The area is within the Sydney Water Centennial Park/Park Road stormwater catchment area.



Hydra view of Sydney Water assets servicing the site.



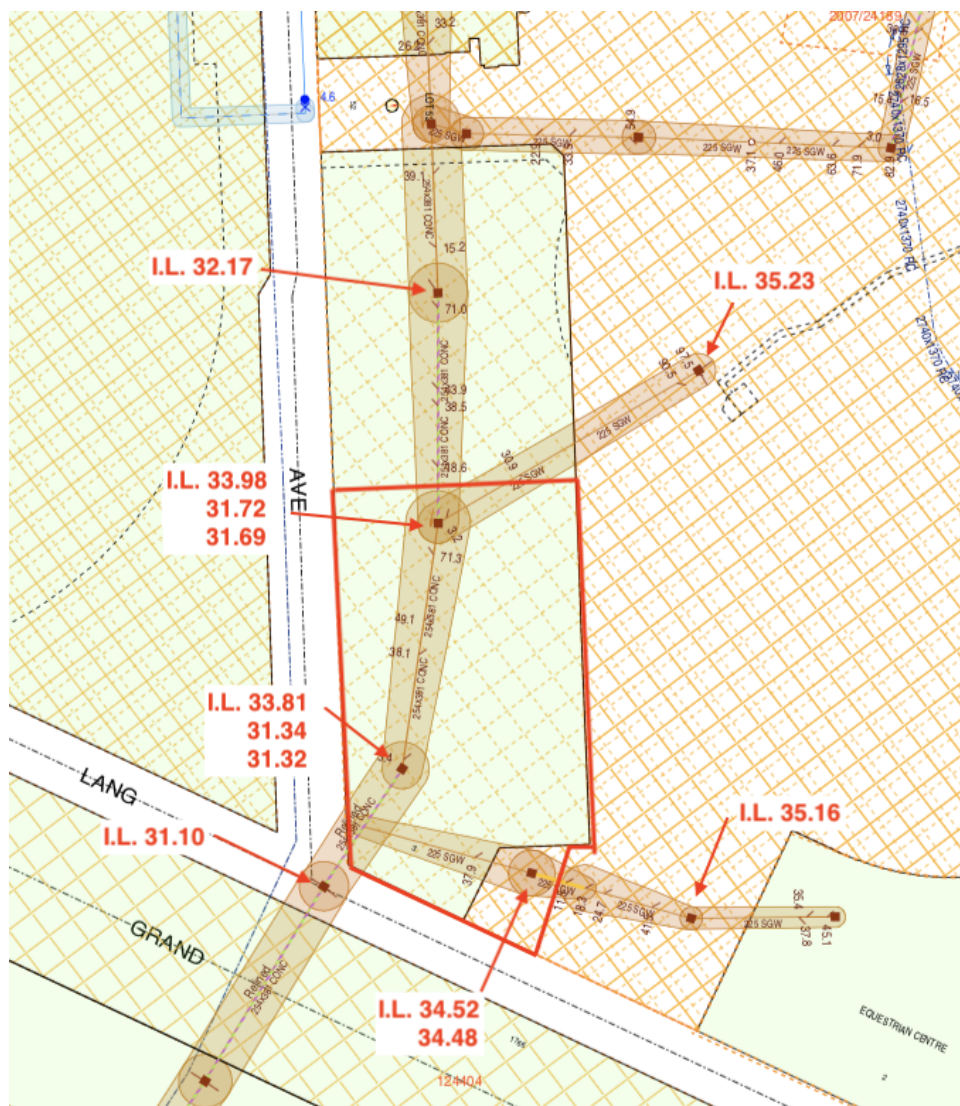


## 2.0 SYDNEY WATER SEWER MAIN ASSETS

### 2.1 EXISTING SEWER ASSETS

There is an existing 245x381 oviform concrete sewer that runs from north to south under the existing building on the site. The invert levels of this sewer are identified in the plan below.

There is also a DN225 salt-glazed-ware sewer that runs through the lot east to west from the Entertainment Quarter into the existing loading yard at the south of the RHI building. The invert level of this sewer is 34.52 at the manhole within the development area to 31.32 at the downstream end.





## **2.2 EX 245 X 381 OVIFORM SEWER**

The existing RHI building is currently built over this sewer, therefore, the existing situation does not comply with Sydney Water's existing Building Plan Approval Guidelines as the sewer would be required to be made maintenance free and any manholes or maintenance shafts would not be allowed within the building footprint and Sydney Water would be provided with 24/7 access.

Given the Heritage status of the RHI building, we would recommend submitting to Sydney Water an Out-of-Scope Building Plan Assessment.

The Assessment requires amongst other documentation a Specialist Engineering Assessment prepared by a Chartered Professional Engineer to be submitted to Sydney Water which will be required to include the following as a minimum:

- CCTV survey and report detailing the existing sewer condition
- an appraisal of the existing condition of the pipe assets
- details of the proposed works
- location, depth and as-constructed details of all Sydney Water assets in the vicinity of the works,
- an appraisal of the impact of the proposed permanent and temporary works on the sewer asset using site investigation, engineering modelling or analysis methods as necessary
- details of any temporary or permanent protection works required to safeguard the sewer from damage, i.e. re-lining of the sewer if required, clearances from the sewer to the new structural members
- construction methodology and sequence
- details of heavy construction equipment to be used in the construction
- geotechnical engineering assessment of existing situation and proposed works

The Out-of-Scope assessment process once submitted to Sydney Water takes a minimum of 6-12 weeks.

The new building would need to comply with the Sydney Water's Guidelines the minimum clearances from the edge of the sewer asset to the edge of the structural element are as detailed below:

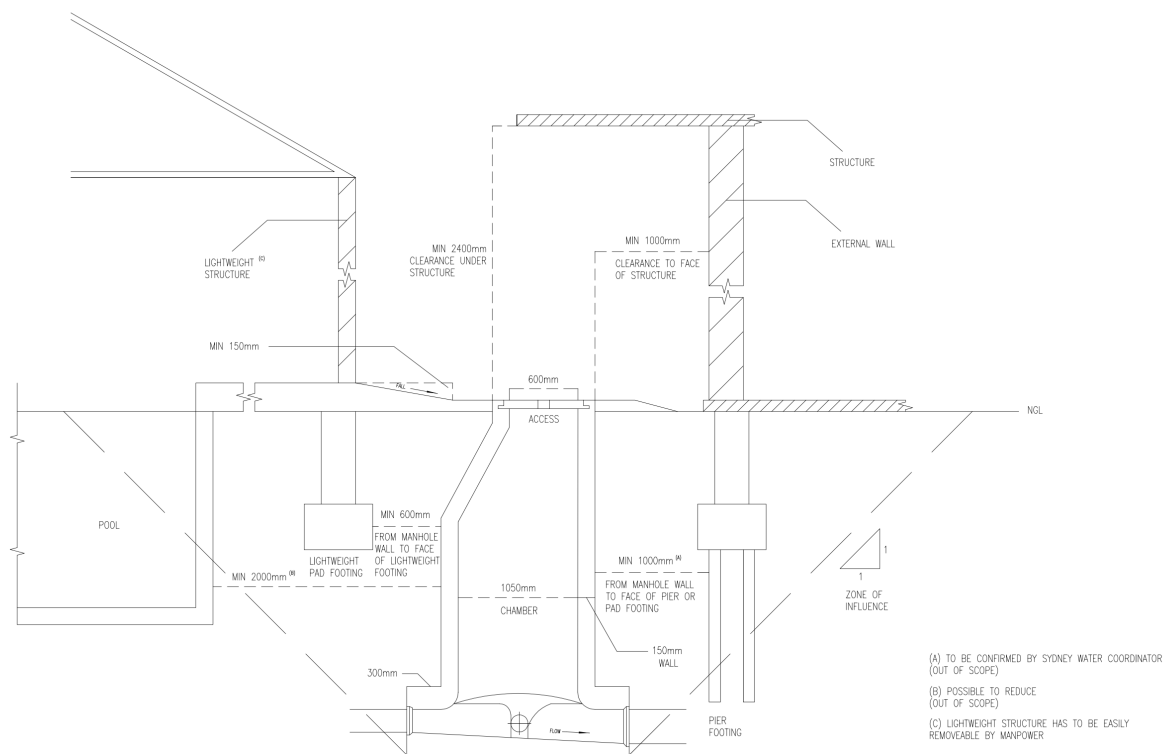
- minimum 600mm from the face of the asset to the face of pad footing,
- minimum 900mm from face of the asset to the face of piles



We would be required to detail the access that Sydney Water would have around the manhole structures that exist on this 254x381 sewer asset to the north and south of the building. To be compliant with Sydney Water requirements the clearance around the manholes would be a minimum of 1m clearance form the edge of the cover to the closest building line. Please see sketch below to detail these compliant measurements:

## MANHOLE DETAIL

1050mm INTERNAL CHAMBER  
2006 OR EARLIER



Currently the RHI building has a manhole that is within the building, we would be required to approach Sydney Water to request their advice on what arrangements they would accept considering the building is existing therefore the maintenance access issues are already non-compliant.

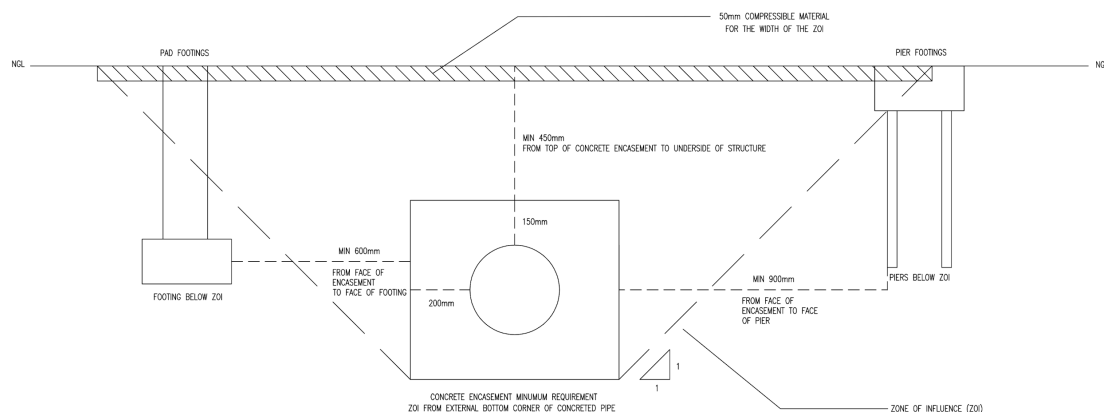


## 2.3 EX DN225 SEWER

The existing DN225 sewer that traverses the development site from south east to south west is only 1.77m deep at the point of interception with the 245x381 sewer in the existing loading dock.

To build over the sewer with a new structure the asset would be required to be concrete encased. There is required to be a minimum of 450mm from the top of the encasement to the underside of the proposed structure. There are also the prescribed minimum horizontal clearances, as previously mentioned that would need to be adhered to; 600mm from face of sewer to face of pad footing or 900mm from face of sewer to pile face. Please see the sketch below:

### CONCRETE ENCASEMENT DETAIL



We would anticipate that as a swimming pool is proposed in the area above this sewer that this sewer will require deviation as the prescribed minimum requirements could not be met.

The proposed deviation sketch design has been included in the Appendices, but would involve an approximate deviation length of 150m of the DN225 sewer main at approximately 2.5% connecting further downstream in Lang Road. This deviation would remove the complexity of dealing with the existing manhole that may fall within the Swifts proposed development building.

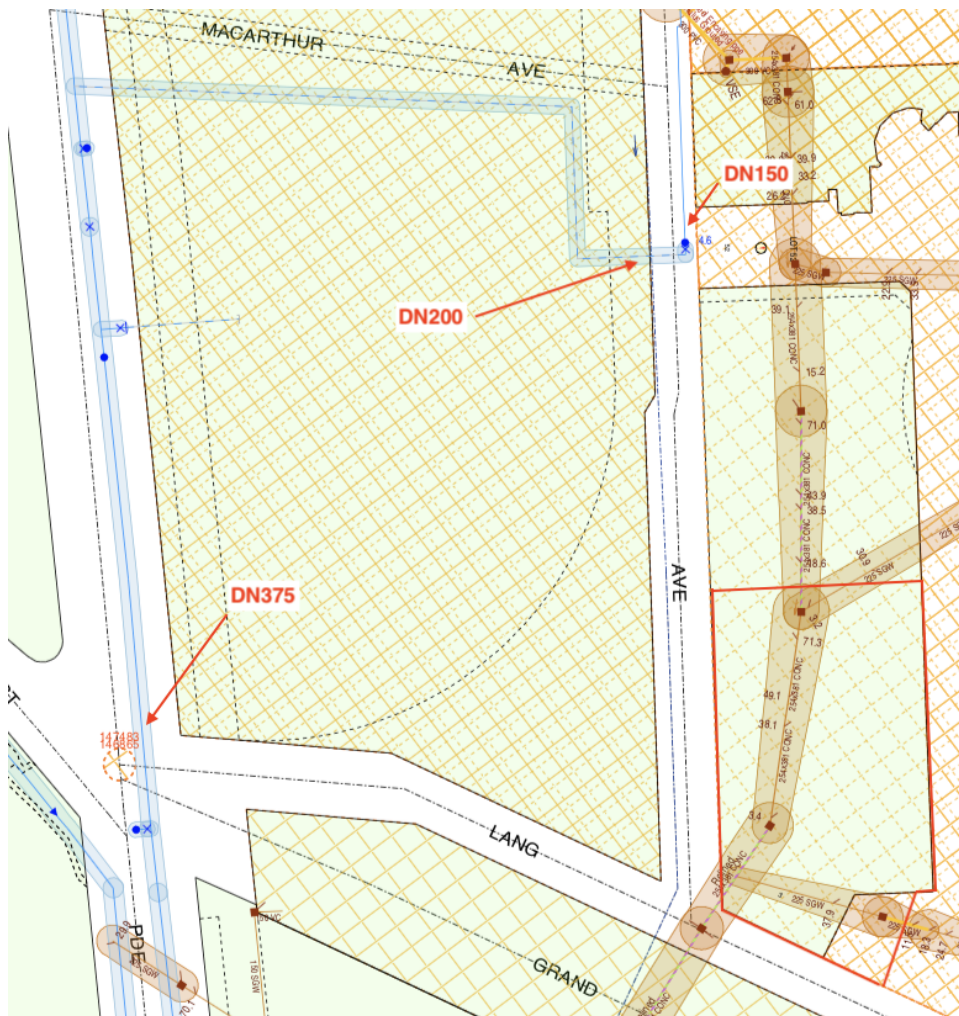


### 3.0 SYDNEY WATER POTABLE WATER ASSETS

#### 3.1 EXISTING POTABLE WATER ASSETS

There is an existing DN200 that traverses the parklands from Anzac Parade and tapers into a DN150 main that runs along Driver Avenue.

The existing connection for the building comes through the site of the Hordern Pavilion from the main in Driver Avenue.





### **3.2 POTABLE WATER CONNECTION REQUIREMENTS**

The Feasibility Section 73 that has been applied for under Case Number 176730, may advise that the development does not have a frontage to a Sydney Water main so a water main extension may be a requirement. Sydney Water may take this opportunity if the lot is to be sub-divided to request that a ring main is constructed along Lang Road and Driver Avenue creating a loop to Anzac Parade.

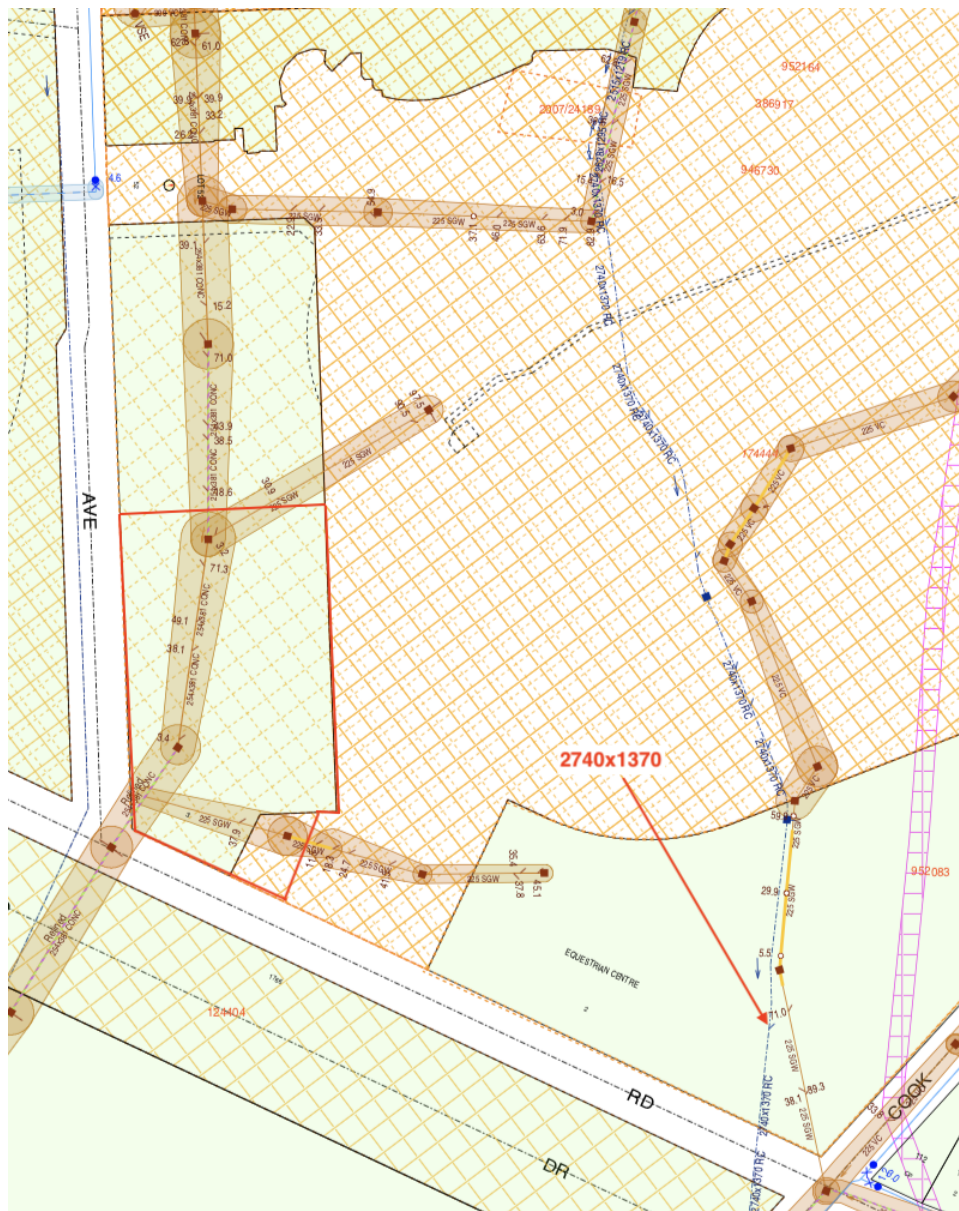


## 4.0 SYDNEY WATER STORMWATER ASSETS

### 4.1 EXISTING STORMWATER ASSETS

The development is within the Sydney Water Centennial Park/Park Road stormwater catchment area.

There is a 2740 x 1370 stormwater asset that traverses the Entertainment Quarter.





## **4.2 STORMWATER CONNECTION REQUIREMENTS**

The Feasibility Section 73 that has been applied for under Case Number 176730, should advise the outline stormwater requirements for the development. As advised by the hydraulic engineer, Sydney Water have noted that the on-site detention (OSD) requirement is for a 30kL tank. The location of the tank would need to be advised and take into account the existing and proposed Sydney Water assets with regards to the Sydney water Building Plan Approval Guidelines.

The OSD tank along with the details of any required connection of this OSD tank and stormwater to the Sydney Water stormwater asset would be noted in the Section 73 Notice of Requirements. The stormwater requirements would need to be designed by a structural engineer. These designs and associated certification would be submitted to Sydney Water for their approval prior to any construction.



## **5.0 CONCLUSION**

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### **5.1 SEWER MAINS**

The existing DN245x381 concrete sewer that is under the existing RHI building would be dealt with under an Out-of-Scope Building Plan Approval Assessment. This process would take a minimum 6-12 weeks for Sydney Water to review upon receipt of the application.

The existing DN225 sewer that traverses the development site from south east to south west, we would anticipate would be required to be deviated along Lang Road for a length of approximately 75m.

### **5.2 POTABLE WATER MAINS**

Sydney Water may request a water main extension along Lang Road and Driver Avenue to create a ring main to Anzac Parade.

### **5.3 STORMWATER MAINS**

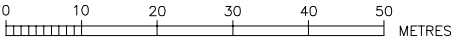
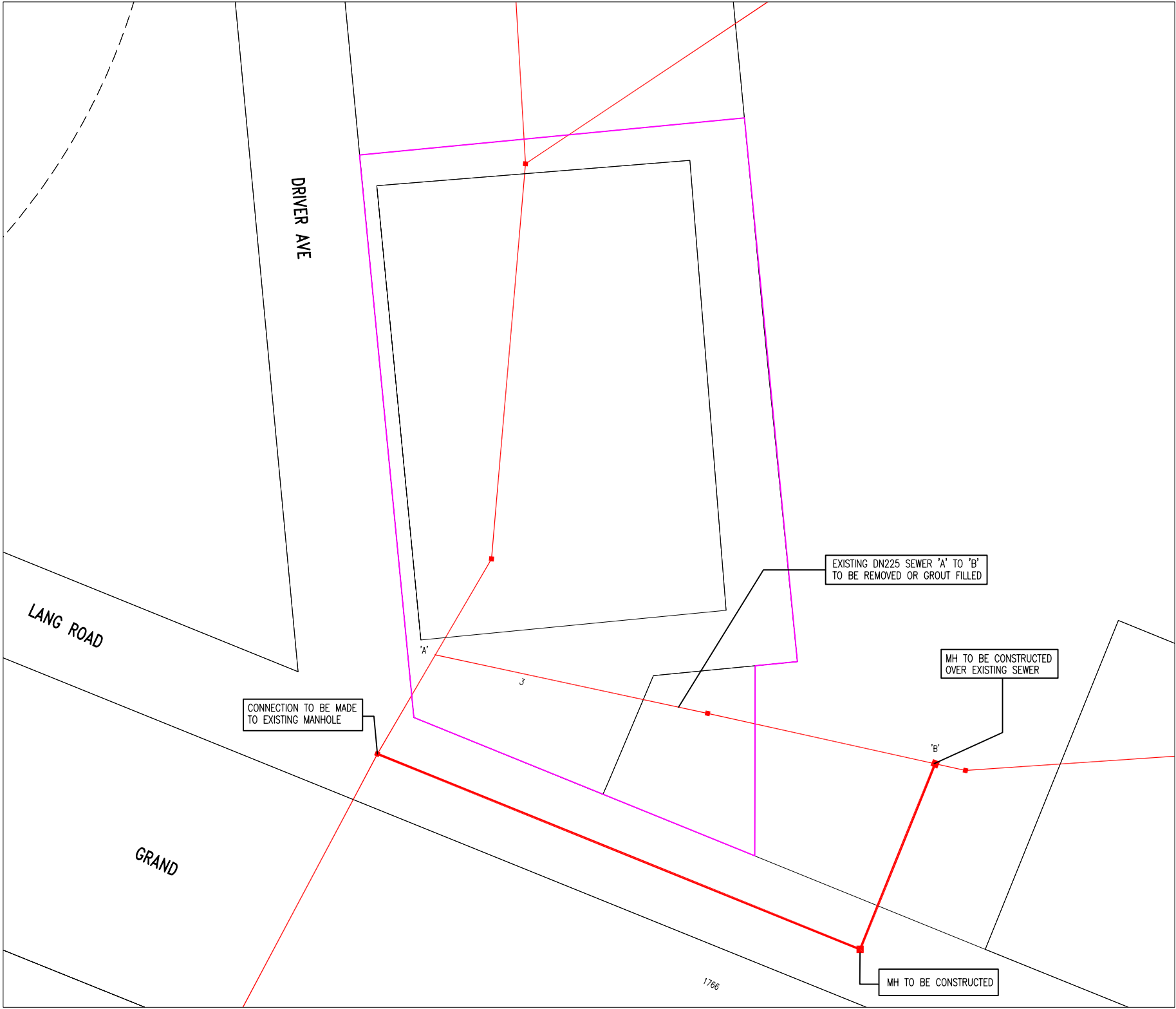
Sydney Water preliminary requirements for on-site detention will be noted in the Letter of Advice of the feasibility Section 73, this has been noted as being a tank of 30kL retention.

Further details of this OSD requirements along with any connection requirements will be noted in the Section 73 Notice or Requirements.



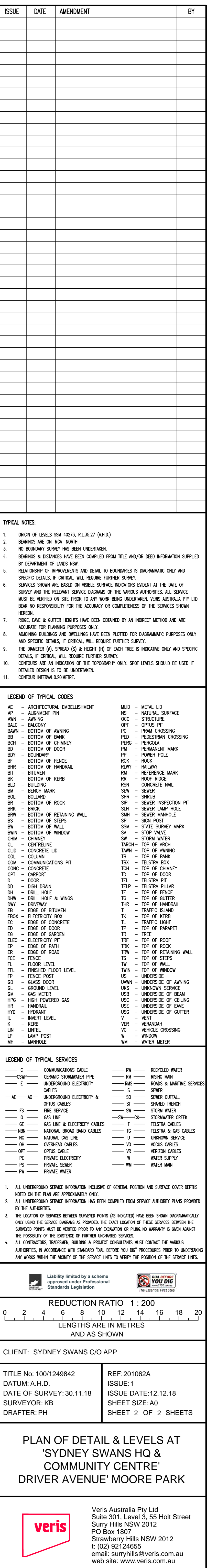
## 6.0 APPENDICES

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PLAN TO BE READ IN CONJUNCTION WITH CURRENT SYDNEY WATER STANDARDS SYDNEY WATER CORPORATION  PRIOR TO COMMENCEMENT OF EXCAVATION FOR PROPOSED AND EXISTING SERVICES CONTACT:- DIAL BEFORE YOU DIG ..... Ph. 1100 ELECTRICITY ..... Ph. .... GAS ..... Ph. .... TELECOMMUNICATIONS ..... Ph. .... GIVING AT LEAST 48 HOURS NOTICE.	UTILITIES						WORK AS CONSTRUCTED CERTIFICATION						PIPE SCHEDULE						AUSTRALIAN HEIGHT DATUM		NO AMENDMENTS ARE TO BE MADE TO THIS PLAN WITHOUT REFERENCE TO SYDNEY WATER. THIS PLAN IS NOT NECESSARILY UP TO DATE OR CORRECT AND SYDNEY WATER ACCEPTS NO RESPONSIBILITY.	<div>Sydney WATER</div> <div>SYDNEY WATER CORPORATION</div>			
	TYPE	DATE	REF.	TYPE	DATE	REF.	DEVELOPER	WATER SERVICE CO-ORDINATOR	CONSTRUCTOR	COMPLETED	W.A.C. PREPARED	DESIGNER	I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS.	SIZE DN	TYPE	CLASS	LENGTH	PIPE JOINING METHOD / NOTES					SCALES		
														225	U.P.V.C.	SN8	150m	RRJ	PLAN : 1:500    SECTION { HOR. : 1:500 VERT. : 1:125						
																				CROSS SECTIONS : . . . . . NATURAL					
																				LENGTHS, DEPTHS & LEVELS ARE IN METRES.					
														DESIGN HEAD, . . . m	NO BOUNDARY TRAPS REQUIRED.						U.B. DIRECTORY . . . . . 16.E9 41st Edition . . . . .	SHEET . 1 . OF . 1 .	File No. N/A	Case No. 176730	SEWERAGE PROPOSED DEVIATION





**FIGURE 30  
DRIVER AVENUE HOTSPOT  
1% AEP EVENT**

