# 166-174 Blaxland Road, Ryde

## Integrated Water Management Plan

Prepared For: Sasco Property

Date: May 2026

Prepared By: Ian Harris

Project Ref: 0610

**enscape studio Pty Ltd**
Tel: 0411 267 151
E: info@enscapestudio.com.au

# Table of Contents

# 1 Introduction

This Integrated Water Management Plan (IWMP) is submitted to the Department of Planning, Housing and Infrastructure (the Department) on behalf of Sasco Property (the Applicant) in support of a State Significant Development Application (SSDA) for a multistorey residential development at 166-174 Blaxlan Road, Ryde (the site).

This IWMP outlines the conceptual DA level stormwater design for the proposed development on the site.

This IWMP illustrates that the proposed development complies with the Ryde City Council's DCP, Australian Rainfall and Runoff, Australian Standards and best engineering practise.

The purpose of this SMR is to evaluate the quantity and quality of stormwater associated with the proposed development plan so as to demonstrate to Council that an appropriate stormwater management strategy has been adopted.

The IWMP specifically addresses the following items for both the construction and operational phases of the development:

- Stormwater runoff volumes and detention (Stormwater Quantity);
- Stormwater quality treatment measures (Stormwater Quality),
- Erosion and Sedimentation Control.

The following will be achieved with the correct application of this SMR:

- Appropriate standards to be maintained on all aspects of stormwater within the site,
- Pollution control to be maintained,
- Establishment of a unified, clear and concise stormwater management strategy.

# 2 Existing Site Characteristics

## 2.1 Property Detail

Address: 166-174 Blaxland Road, Ryde

Total Site Area: 3,832m$^2$ (0.3832Ha)

The proposed development can be seen on the concept design drawings in Appendix A of this report.

The proposed development is situated within the Ryde City Council LGA and will consist of a multi-storey residential development over a basement car park.

The site is bounded by:

- Blaxland Road to the east
- Residential development on all other sides of the property

Refer to locality plan in figure 1.


*Figure 1: Site Location Plan (Source: Nearmaps 2026)*

## 2.2 Topography

The site falls to the rear away from Blaxland Road. Falls are generally to the south west of the site. Survey shows the site falls from RL 57.50m AHD to RL47.30m AHD.

## 2.3 Existing Stormwater Infrastructure Discharge

Currently the sites all drain to the rear of the properties. There is no formal connection to any inground drainage network or direct connections to the kerb and gutter on Blaxland Road. All stormwater runoff discharges overland onto the downstream properties.

# 3 The Proposed Development

SSD-95802958 is accompanied by a concurrent rezoning request and seeks consent for the demolition of existing structures and construction of a residential flat building development containing 114 residential apartments and basement car parking.

The development consists of a part 4, part 10 storey building above 4 levels of basement car parking containing a total of 171 car parking spaces including 12 accessible spaces, 11 motorcycle spaces and 21 bicycle spaces. A loading dock is provided on the ground floor level adjacent to a waste storage area.

Vehicle access to the basement is provided off Blaxland Road via a two way access driveway with an additional service access driveway provided for the loading dock.

The proposal provides two (2) separate residential lobby's with two (2) lift cores each servicing a maximum of 7 apartments.

Communal open space for all residential apartments is located at the ground floor and at the rooftop.

The proposed development is illustrated in the Architectural Plans prepared by Curzon + Partners.

# 4 Local Authority Requirements

The stormwater requirements of the subject site is governed by the Ryde City Council Stormwater and Floodplain Management Technical Manual. A summary of the key requirements for the development of the Stormwater management system for this development are summarised below.

## 4.1 Stormwater Conveyance Requirements

Council's manual states that the following design storm Average Recurrence Intervals ARI's should be allowed for when designing the Stormwater runoff conveyance systems for the development.

*Table 1: Stormwater Drainage Serviceability*

| Design Parameter | Design Storm ARI (Years) | Conveyance Method |
|---|---|---|
| Minor Drainage System | 20 | In Ground (Piped) |
| Major Drainage System | 100 | Overland |

## 4.2 On Site Detention Requirements

Council's manual states that as the site is larger than 3,000m². On site detention must be calculated using the Detailed calculation method.

The manual states "The OSD must be designed to ensure the level of stormwater runoff discharged from the area of development must not to exceed the peak stormwater discharge arising from the post-developed works, during a 5 year ARI storm event."

## 4.3 Stormwater Quality Treatment

Council's Development Control Plan identifies the requirements for WSUD required for Council Approval. It states that:

Water quality measures are installed that meet the following environmental targets for stormwater runoff leaving the site:

- 90% removal of gross pollutants (> 5mm);
- 85% removal of total suspended solids;
- 65% removal of total phosphorous; and
- 45% removal of total nitrogen.

# 5 Water Utility Provision

## 5.1 Water Mains

The development will be serviced via the existing 100mm water main located along the Blaxland Road frontage. A new 100mm stub connection is proposed to service the domestic water demand and supply to the fire storage tanks. The extract in Figure 2 shows the approximate location of these works.

Sewer Mains

The development will be serviced by the existing 225mm sewer main located along the rear of the site. Confirmation on whether the existing sewer through the site will need to be realigned or reinforced will be subject to the Section 73 application for the development. The extract in Figure 2 shows the approximate location of these works.

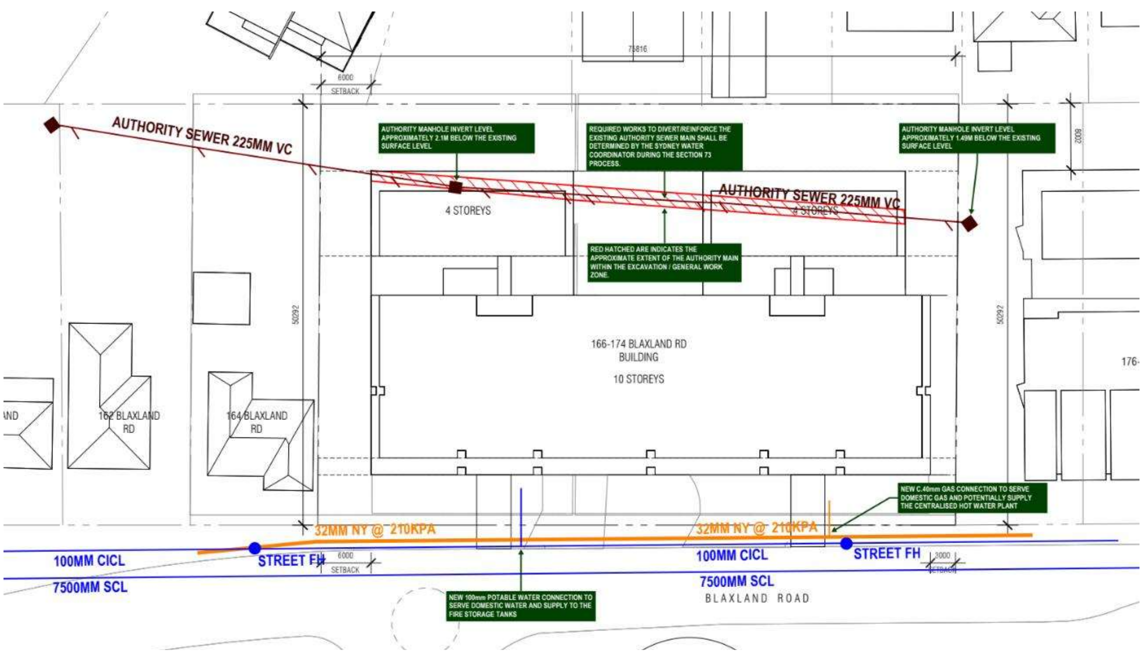



Figure 2: Sewer and Potable Water Provision (Source: Keegan 2026)

# 6 Stormwater Conveyance

This section of the report discusses the systems proposed to allow for stormwater to be conveyed across the site to the legal point of discharge.

As discussed in Section 3.1 of this report Council have set minimum design parameters for the flows they require to be conveyed through the in ground drainage system and what they will allow to be conveyed in a controlled manner overland across the site.

## 6.1 Surface Drainage

The surface areas will be drained through a variety of methods, discussed below, in accordance with AS3500.3:2015 and Council’s stormwater drainage guidelines.

### 6.1.1 In-Ground Drainage

The in-ground drainage has been designed to meet the following criteria:

- In the minor design storm event (20 year) there will be no surcharging of the in ground drainage system and;
- In the major design storm event (100 year) there will be no uncontrolled discharge from the site onto the residential properties to the West of the site.

Surface runoff from the development sites will be directed to stormwater inlet structures using the design topography of these elements. The inlet structures have been designed to adequately convey the surface runoff into the in ground drainage network.

The runoff will then be conveyed underground across the site through a pit and pipe system and then to the legal point of discharge using gravity and the geometric falls of the pipe system.

## 6.2 Legal Point of Discharge

It is proposed that the developed site will drain to the rear of the site and into a new stormwater drainage line located within council’s existing stormwater drainage easement on 57 Samuel Street. The new drainage line will then connect into the existing council drainage infrastructure running through 57 Samuel Street. As the proposed development will control the discharge from the site and discharge through formal drainage infrastructure this will alleviate the current issue of uncontrolled discharge from the development site onto the adjacent downstream property owners.

Details of the drainage connection and stormwater discharge location are shown on the civil engineering drawings in Appendix A of this report.

# 7 Stormwater Attenuation

As noted in Section 4.2 of this report the stormwater discharge from the site is required to be attenuated to ensure the peak discharge rate for all storm events up to and including the 100 year design storm will be limited to the 5 year post-development discharge rate.

Enscape studio have utilised DRAINS hydraulic modelling software to assess the required storage for the development site.

Modelling indicates that a storage volume of $45m^3$ will be required to attenuate the site discharge flows back to the Permissible Site Discharge rate for the site. The table below summarises the outcome of the DRAINS assessment.

| Design ARI (Years) | Unattenuated Discharge Rate (L/s) | Attenuated Discharge Rate (L/s) |
|---|---|---|
| 5 | 109 | 67 |
| 100 | 187 | 109 |

*Table 2: DRAINS modelling output*

The attenuation volume required for the site will be provided using a below ground On Site Detention tank located on the south west corner of the site. The flows rates from the tank will be constrained using an orifice and overflow weir arrangement within the tank.

Details of the tank and discharge control are shown on the civil engineering drawings in Appendix A of this report.

# 8 Stormwater Quality

This section of the report demonstrates the Stormwater Quality Improvement Devices (SQID's) to be implemented to reduce the flow of pollutants from the site.

## 8.1 Potential Pollutants

There are a wide range of potential stormwater pollutant sources which occur from urbanised catchments, many which can be managed through appropriate stormwater quality treatment. Typical urban pollutants may include:

- Atmospheric deposition
- Erosion (including that from subdivision and building activities)
- Litter and debris
- Traffic emissions and vehicle wear
- Animal droppings
- Pesticides and fertilisers
- Application, storage and wash-off of car oil, detergents and other household and commercial solvents and chemicals
- Solids accumulation and growth in stormwater systems
- Weathering of buildings

These pollutants in urban stormwater can be placed into various categories as follows. The pollutants underlined below are able to be readily modelled:

- Suspended Solids
- Litter
- Nutrients such as Nitrogen and Phosphorous
- Biological oxygen demand (BOD) and chemical oxygen demand (COD) materials
- Micro-organisms
- Toxic organics
- Trace metals
- Oils and surfactants

While only the key pollutants underlined above will be examined within the modelling, the stormwater Quality Improvement Devices implemented are expected to assist in reducing a wide range of pollutants. For example, heavy metals are commonly associated with, and bound to fine sediments. Thus reducing the discharge of fine sediment during the construction and operational phases will reduce the discharge of heavy metals to existing stormwater systems.

## 8.2 Pollutant Reduction System

In order to reduce the pollutants a series of treatment devices are proposed, which together, form a treatment train. The diagram below shows the proposed treatment train for this development.

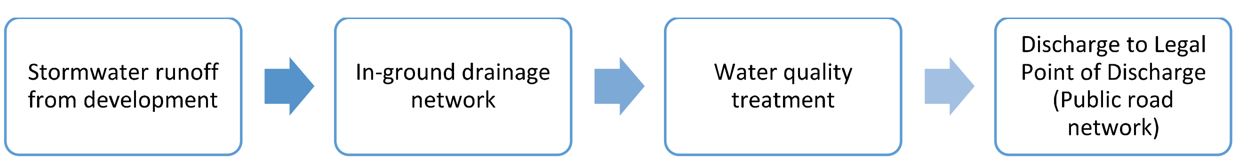



*Figure 3: Proposed Water Quality Treatment Train*

### 8.2.1 Stormwater360 Stormfilter Cartridges

The StormFilter stormwater treatment system uses rechargeable, self-cleaning, media-filled cartridges to absorb and retain the most challenging pollutants from stormwater runoff including total suspended solids, hydrocarbons, nutrients, soluble heavy metals, and other common pollutants.

Maintenance requirements and frequency are dependent on the pollutant load characteristics of each site. Maintenance activities may be required in the event of a chemical spill or due to excessive sediment loading from site erosion or extreme storms. Similarly, the system should be inspected after major storm events.

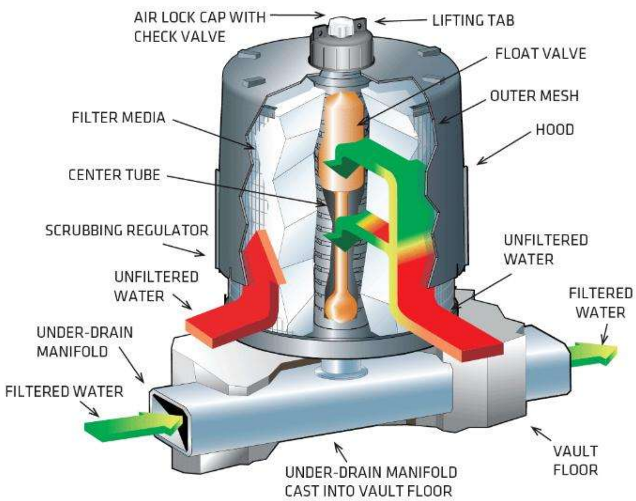



*Figure 8: Stormwater360 Stormfilter (Source: Stormwater360)*

| Parameters | TSS | TP | TN | GP |
|---|---|---|---|---|
| Input (mg/L) | 1000 | 10 | 100 | 1000 |
| Output (mg/L) | 675 | 6.2 | 63 | 100 |
| Reduction (%) | 33 | 48 | 37 | 90 |

## 8.3 Pollutant Reduction Modelling

In order to demonstrate that the proposed treatment train meets the required reduction targets, pollutant reduction modelling is proposed using the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) Software program Version 6.2 by eWater CRC. Pollutant export rates are currently only available for Total Suspended Solids (TSS), Total Nitrogen (TN), Total Phosphorous (TP) and Gross Pollutants (GP). Therefore only quantitative modelling for TSS, TN, TP & GP has been undertaken using MUSIC.

Modelling has only been undertaken on the post-development proposal with SQID's installed so as to demonstrate the percentage reduction for each pollutant type.

### 8.3.1 MUSIC Program Setup

This section explains the setup of the MUSIC model with the detailed pollutant reduction calculations being included in the MUSIC results in Appendix B.

For Music Modelling (using MUSIC 6.3.0) the following parameters have been used in accordance with Ryde City Council WSUD Reference Guideline:

*Table 3: MUSIC modelling parameters*

| Model Parameters | |
|---|---|
| Meteorological Data: | 066037 Sydney Airport 1990-1999 |
| Evaporation Data: | Sydney 1959 |
| Time Step: | 6 minute |

*Table 4: Catchment modelling parameters*

| Node Description | Area (Ha) | Percentage Impervious (%) / Area Impervious (Ha) | | Land Use Rainfall and Pollutant Parameters |
|---|---|---|---|---|
| Urban Roof | 0.044 | 100 | 0.044 | Roof |
| Urban Podium | 0.072 | 70 | 0.051 | Mixed |
| | Total: 0.116Ha | | | |

### 8.3.2 MUSIC Parameters

The following properties from Using MUSIC in Sydney's Drinking Water Catchment by NSW Sydney catchment authority have been used in the MUSIC Modelling based on the Land Use Rainfall and Pollutant Parameters.

*Table 5: Recommended MUSIC Runoff Generation Parameters*

| Parameter | Urban Residential |
|---|---|
| Rainfall Threshold (mm) | 1.0 |
| Soil Capacity (mm) | 120 |
| Initial Storage (%) | 25 |
| Field Capacity | 80 |
| Infiltration Capacity Coefficient a | 200 |
| Infiltration Capacity Coefficient b | 1.0 |
| Initial Depth (mm) | 10 |
| Daily Recharge Rate (%) | 25 |
| Daily Drainage Rate (%) | 5 |
| Daily Deep Seepage Rate (%) | 0 |

### 8.3.3 Pollutant Reduction Results

A number of management measures have been considered with a focus on reducing polluted runoff volumes from the site. The WSUD principals proposed for stormwater treatment includes:

- 17 x Stormfilter Cartridges.
- 1 x oceanguard sack

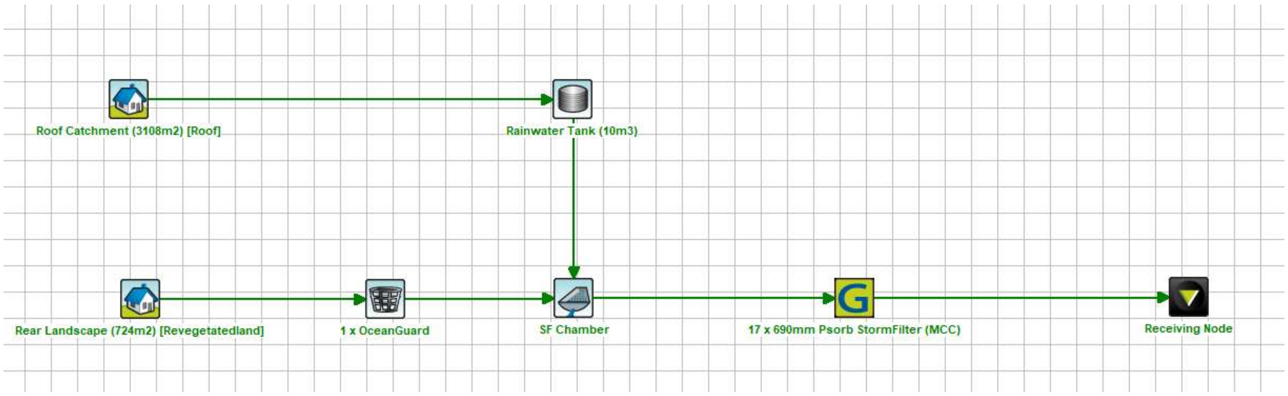



*Figure 4 MUSIC Model*

**MUSIC Output**

| | Sources | Residual Load | % Reduction |
|---|---|---|---|
| Flow (ML/yr) | 4.52 | 4.25 | 6.1 |
| Total Suspended Solids (kg/yr) | 128 | 17.9 | 86.1 |
| Total Phosphorus (kg/yr) | 0.669 | 0.149 | 77.7 |
| Total Nitrogen (kg/yr) | 9.73 | 4.56 | 53.1 |
| Gross Pollutants (kg/yr) | 101 | 0 | 100 |

*Figure 5 MUSIC Results*

The effectiveness of the treatment device proposed in the above section has been modelled using MUSIC with the overall treatment train efficiency results shown in Table 7 below.

*Table 6: Treatment Train Efficiencies*

| Indicator | Total Site Reduction | Site Targets | Target Achieved |
|---|---|---|---|
| Gross Pollutants | 100 | 90% | Yes |
| Total Suspended Solids (TSS) | 86.1 | 85% | Yes |
| Total Phosphorus (TP) | 77.7 | 65% | Yes |
| Total Nitrogen (TN) | 53.1 | 45% | Yes |

From the results presented above it can be seen that the proposed SQID's mean that the stormwater quality treatment meets with the reduction targets set for the development.

# 9 Erosion & Sedimentation Control

Landcom have published a design guide entitled "Managing Urban Stormwater - Soils and Construction" which is regarded as the standard to which erosion and sedimentation control should be designed to within NSW. Ryde City Council specifies compliance with the Landcom design guide in there Stormwater and Floodplain Management Technical Manual.

The control of erosion and sedimentation describes the measures incorporated during and following construction of a new development to prevent the pollution and degradation of the downstream watercourse.

### Stormwater Drainage Infrastructure Inlets

Risk:

- Sediment from the construction site washing into the existing stormwater drainage inlet infrastructure.

Consequence:

- The sediment will then be conveyed into the downstream waterbody by stormwater runoff, contaminating the waterbody.
- The sediment will build up blocking the stormwater infrastructure and preventing stormwater conveyance to the downstream waterbody and impacting drainage upstream.

Mitigation:

- Sandbag protection will be installed surrounding all existing stormwater drainage infrastructure inlets to prevent sediment entering the system.

Maintenance:

- Frequent inspection of the sandbags to ensure they are arranged in a manner that prevents sediment from accessing the drainage system. If sediment is building up on the sandbags they should be cleared of sediment and re-established.

### Construction Exit Protection

Risk:

- Spoil such as soil being conveyed from the site on the wheels of vehicles.

Consequence:

- Spoil being tracked onto the public road corridors where it is then washed into the existing stormwater drainage infrastructure and is then washed downstream polluting the downstream waterbody.
- Spoil being tracked onto the public road creating dangerous driving conditions for other road users.

Mitigation:

- A shaker grid and wash down facility will be installed at all exits from the construction site. All vehicles leaving the site will have their wheels washed down and pass over the shaker grid to remove any spoil collected on their wheels and retaining the spoil on site.

Maintenance:

- Frequent inspection of the shaker grid to ensure it is clean and still functioning.

### Downstream Site Boundaries

Risk:

- Rainfall runoff falling on the site collecting sediment from the construction site and conveying it overland onto downstream properties and waterbodies.

Consequence:

- Sediment discharge polluting downstream properties and waterbodies.

Mitigation:

- Installation of sediment fences on all downstream boundaries of the site to collect sediment and prevent it discharging onto downstream properties or waterbodies.

Maintenance:

- Regular inspection of the sediment fences to ensure they are functioning correctly and are intact.
- If sediment build up is present it should be removed to ensure correct functionality of the fences.

A Soil and Water Management Plan has prepared as part of the development application documentation and is included in Appendix A of this report.

The maintenance of these control measures throughout their intended lifespan will ensure that the risk of erosion and sedimentation pollution of the downstream watercourse will be minimized.

# Appendix A – Civil Engineering Drawings

# CIVIL ENGINEERING WORKS

## DEVELOPMENT APPLICATION

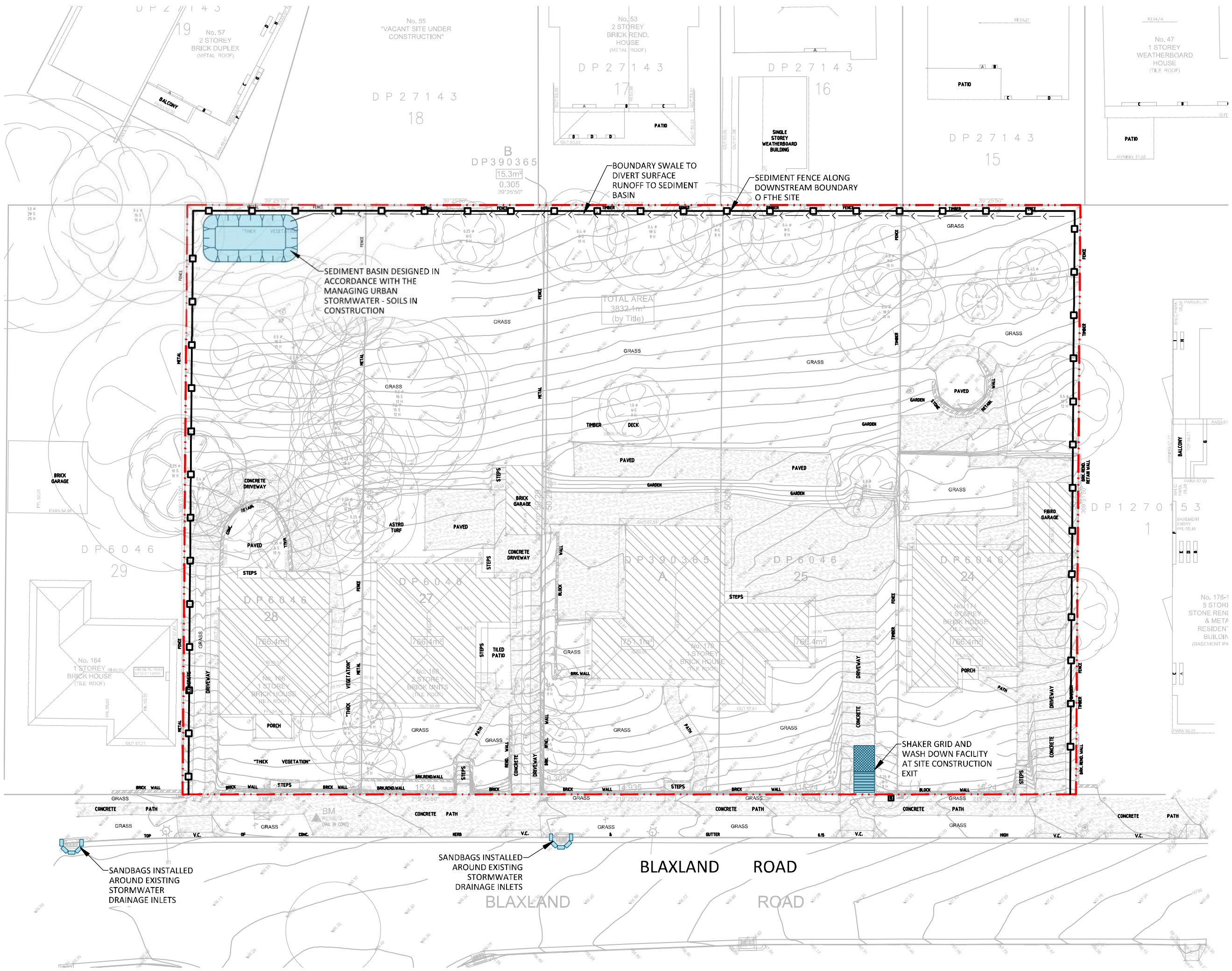

SITE LOCATION PLAN
SCALE 1:500

**PROJECT SUMMARY**

| | |
|---|---|
| SITE ADDRESS: | 166-174 BLAXLAND ROAD, RYDE |
| LOCAL GOVERNMENT AREA: | CITY OF RYDE COUNCIL |
| SITE AREA: | 3,832 |
| DEVELOPMENT DESCRIPTION: | MULTI-STOREY RESIDENTIAL DEVELOPMENT WITH TWO LEVELS OF BASEMENT. |

| SASCO PROPERTY | 166-174 BLAXLAND ROAD, RYDE | enscape studio | 0610 | C-01 | A |
|---|---|---|---|---|---|
| CLIENT | PROJECT | tel 0411 267 151<br>info@enscapestudio.com.au<br>ABN 91 649 181 171 | PROJECT No | DRAWING No | REV |

0610-C-01.dwg 13/03/2026 3:48:36 PM




## LEGEND

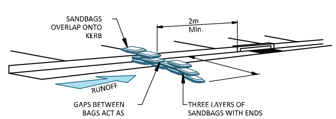
- SITE BOUNDARY
- PROPOSED SITE HOARDING
- VEHICLE SHAKEDOWN DEVICE
- PROPOSED SILT FENCE
- PROPOSED DIVERSION SWALE
- PROPOSED SEDIMENT BASIN
- PROPOSED SANDBAG PROTECTION

## EROSION AND SEDIMENT CONTROL NOTES

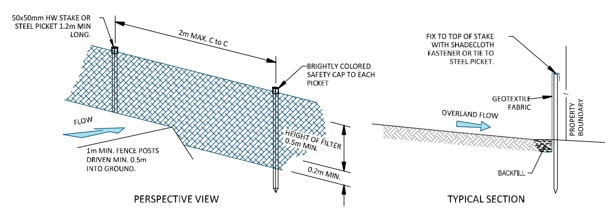
1. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH:
   - LOCAL AUTHORITY REQUIREMENTS,
   - EPA - POLLUTION CONTROL MANUAL FOR URBAN STORMWATER,
   - DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT MANUAL- "URBAN EROSION & SEDIMENT CONTROL".
2. EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES ARE PROVIDED FOR THE WHOLE OF THE WORKS. SHOULD THE CONTRACTOR STAGE THESE WORKS THEN THE DESIGN MAY REQUIRE TO BE MODIFIED. VARIATION TO THESE DETAILS MAY REQUIRE TO BE APPROVED BY THE RELEVANT AUTHORITIES. THE EROSION AND SEDIMENT CONTROL PLAN SHALL BE IMPLEMENTED AND ADOPTED TO MEET THE VARYING SITUATIONS AS WORK ON SITE PROGRESSES.
3. MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
4. WHEN STORMWATER PITS ARE CONSTRUCTED PREVENT SITE RUNOFF ENTERING THE PITS UNLESS SILT FENCES ARE ERECTED AROUND PITS.
5. MINIMISE THE AREA OF SITE BEING DISTURBED AT ANY ONE TIME.
6. PROTECT ALL STOCKPILES OF MATERIALS FROM SCOUR AND EROSION. DO NOT STOCKPILE LOOSE MATERIAL IN ROADWAYS, NEAR DRAINAGE PITS OR IN WATERCOURSES.
7. ALL SOIL AND WATER CONTROL MEASURES ARE TO BE PUT BACK IN PLACE AT THE END OF EACH WORKING DAY, AND MODIFIED TO BEST SUIT SITE CONDITIONS.
8. CONTROL WATER FROM UPSTREAM OF THE SITE SUCH THAT IT DOES NOT ENTER THE DISTURBED SITE.
9. ALL CONSTRUCTION VEHICLES SHALL ENTER AND EXIT THE SITE VIA THE APPROVED CONSTRUCTION ENTRY/EXIT ROUTE.
10. ALL VEHICLES LEAVING THE SITE SHALL BE CLEANED AND INSPECTED BEFORE LEAVING.
11. MAINTAIN ALL STORMWATER PIPES AND PITS CLEAR OF DEBRIS AND SEDIMENT. INSPECT STORMWATER SYSTEM AND CLEAN OUT AFTER EACH STORM EVENT.
12. CLEAN OUT ALL EROSION AND SEDIMENT CONTROL DEVICES AFTER EACH STORM EVENT.
13. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS HAVE BEEN COMPLETED.

## SEQUENCE OF WORKS

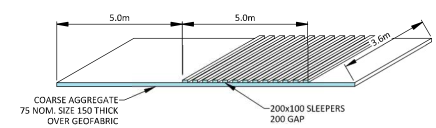
1. PRIOR TO COMMENCEMENT OF EXCAVATION THE FOLLOWING SOIL MANAGEMENT DEVICES MUST BE INSTALLED:
   - CONSTRUCT SILT CONTROL DEVICES BELOW THE SITE AND ACROSS ALL POTENTIAL RUNOFF SITES.
   - CO-ORDINATE CONSTRUCTION ENTRY/EXIT ROUTES WITH PROJECT MANAGER. ARRANGE SUITABLE LOCATION FOR THE INSPECTION OF TRUCKS PRIOR TO LEAVING SITE AND DIVERT RUNOFF TO SUITABLE CONTROL SYSTEM.
   - CONSTRUCT MEASURES TO DIVERT UPSTREAM FLOWS INTO EXISTING STORMWATER SYSTEM.
   - PROVIDE SANDBAG SEDIMENT TRAPS UPSTREAM OF EXISTING PITS.
   - LOCATE A 1.8 METRE CHAIN WIRE FENCE AROUND THE BOUNDARIES AND ATTACH HESSIAN CLOTH TO IT ON THE WINDWARD SIDE (TIES AT THE TOP CENTER AND BOTTOM AND AT 1 METRE INTERVALS.
2. DISTURBED AREAS ARE TO BE REGULARLY WATERED TO REDUCE DUST POLLUTION.
3. CONSTRUCT GEOTEXTILE FILTER PIT SURROUND AROUND ALL PROPOSED PITS AS THEY ARE CONSTRUCTED.
4. ON COMPLETION OF PAVEMENT PROVIDE SAND BAG KERB INLET SEDIMENT TRAPS AROUND PITS.
5. PROVIDE AND MAINTAIN A STRIP OF TURF ON BOTH SIDES OF ALL ROADS AFTER THE CONSTRUCTION OF KERBS.




SANDBAG KERB INLET SEDIMENT TRAP




SEDIMENT FENCE DETAIL




SHAKER GRID

1:200 2 0 2 4 6 8 10 A1
1:400 A3

| REV | DESCRIPTION | DRAWN | APP'D | DATE |
|---|---|---|---|---|
| A | ISSUED FOR APPROVAL | IH | IH | 13.03.26 |

CLIENT: SASCO PROPERTY

ARCHITECT: CURZON + PARTNERS

PROJECT: 166-174 BLAXLAND ROAD RYDE

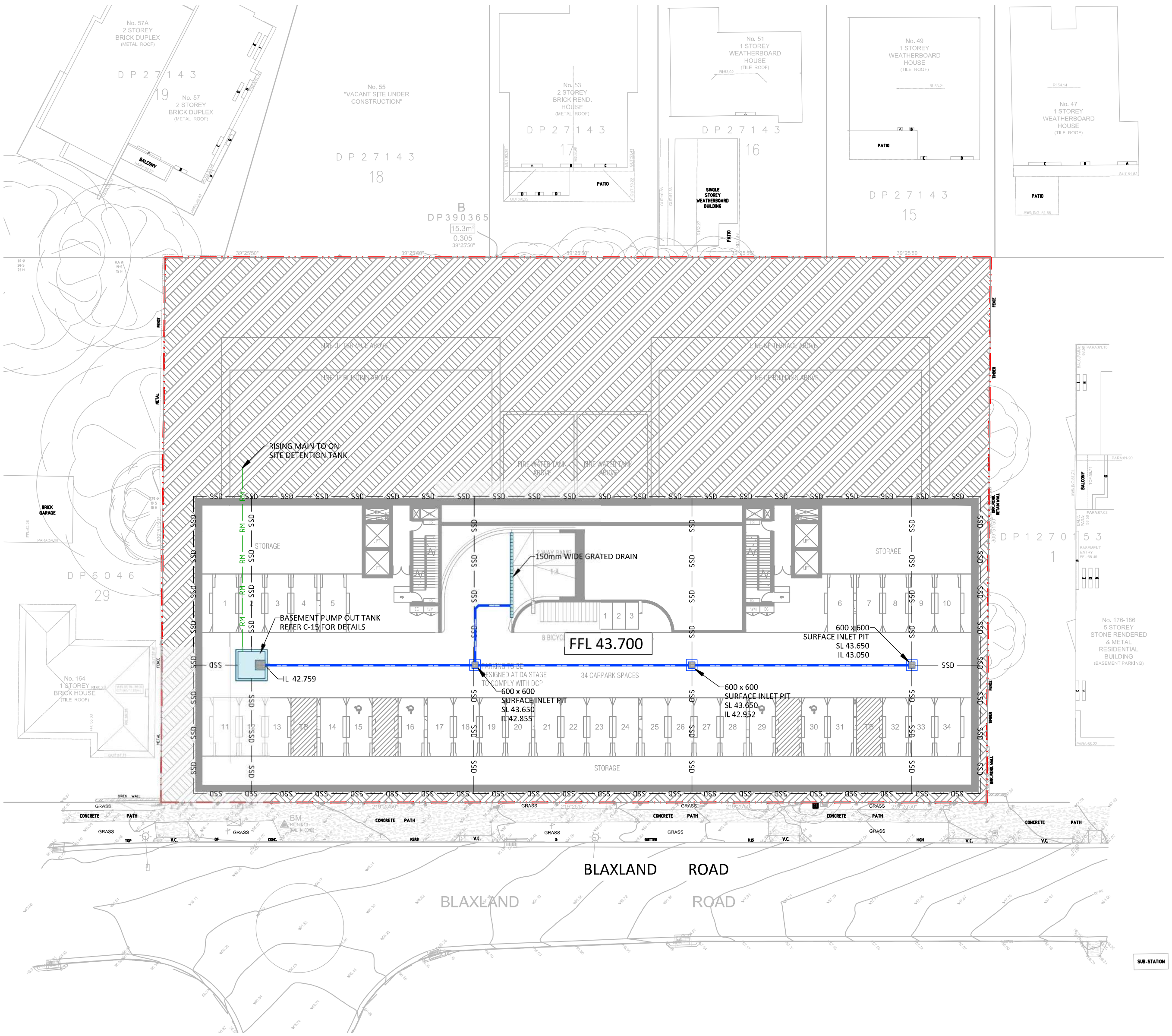
TITLE: SEDIMENT & EROSION CONTROL PLAN

enscape studio
tel 0411 267 151
info@enscapestudio.com.au
ABN 91 649 181 171

# FOR APPROVAL
NOT FOR CONSTRUCTION

| SCALE @ A1 | PROJECT No | DRAWING No | REV |
|---|---|---|---|
| AS NOTED | 0610 | C-05 | A |

0610-C-05.dwg
13/03/2026 1:24:51 PM




## LEGEND

| | |
|---|---|
| | PROPOSED SITE BOUNDARY |
| | PROPOSED STORMWATER PIPE |
| SSD — SSD | PROPOSED SUBSURFACE DRAINAGE |
| | PROPOSED GRATED PIT |
| | PROPOSED GRATED DRAIN |
| | ON SITE DETENTION TANK/BASEMENT PUMP OUT PIT |
| | RAINWATER TANK |
| 150Ø UPVC | PROPOSED PIPE SIZE AND FLOW DIRECTION |
| ◦DP | PROPOSED DOWNPIPE |
| | OVERLAND FLOW |

## STORMWATER MANAGEMENT NOTES

### SITE INFORMATION

ADDRESS: 166-174 BLAXLAND ROAD, RYDE
LOCAL GOVERNMENT AREA: RYDE CITY COUNCIL
SITE AREA: 3,832m²

### DEVELOPMENT CONTROL REQUIREMENTS

GOVERNING DOCUMENT: CITY OF RYDE COUNCIL - STORMWATER AND FLOODPLAIN MANAGEMENT TECHNICAL MANUAL

DESIGN STORMS: MINOR = 20 YEAR; MAJOR = 100 YEAR

DISCHARGE ATTENUATION REQUIREMENT:

1. THE OSD MUST BE DESIGNED TO ENSURE THE LEVEL OF STORMWATER RUNOFF DISCHARGED FROM THE AREA OF DEVELOPMENT MUST NOT TO EXCEED THE PEAK STORMWATER DISCHARGE ARISING FROM THE POST-DEVELOPED WORKS, DURING A 5 YEAR ARI STORM EVENT.

WATER QUALITY TREATMENT REQUIREMENTS:

- 90% REMOVAL OF GROSS POLLUTANTS (> 5MM);
- 85% REMOVAL OF TOTAL SUSPENDED SOLIDS;
- 65% REMOVAL OF TOTAL PHOSPHOROUS; AND
- 45% REMOVAL OF TOTAL NITROGEN.

### SITE ATTENUATION DESIGN

| | | |
|---|---|---|
| ALLOWABLE PEAK DISCHARGE RATES: | 5 YEAR ARI | = 109L/s |
| BYPASS DISCHARGE RATES: | 5 YEAR ARI | = 1L/s |
| | 100 YEAR ARI | = 2L/s |
| UNATTENUATED POST DEVELOPMENT DISCHARGE RATES: | 5 YEAR ARI | = 109L/s |
| | 100 YEAR ARI | = 187L/s |
| POST DEVELOPMENT DISCHARGE RATES: | 5 YEAR ARI | = 67L/s |
| | 100 YEAR ARI | = 107L/s |
| TOTAL DEVELOPMENT DISCHARGE RATES: | 5 YEAR ARI | = 68L/s |
| | 100 YEAR ARI | = 109L/s |

REFER TO DRAINS CALCULATIONS BY ENSCAPE STUDIO FOR MORE INFORMATION.

### OSD DESIGN SUMMARY

OSD VOLUME REQUIRED: 45.0m³
OSD VOLUME PROVIDED: 45.02m³

OSD DIMENSIONS: WIDTH 3.343m; LENGTH 8.162m; DEPTH 1.65m

INVERT OF OUTLET: 46.05m AHD
ORIFICE PLATE DIAMETER: 214mm

1:200 2 0 2 4 6 8 10 A1
1:400 A3

| REV | DESCRIPTION | DRAWN | APP'D | DATE |
|---|---|---|---|---|
| A | ISSUED FOR APPROVAL | IH | IH | 13.03.26 |

CLIENT: SASCO PROPERTY
ARCHITECT: CURZON + PARTNERS
PROJECT: 166-174 BLAXLAND ROAD RYDE
TITLE: STORMWATER MANAGEMENT PLAN BASEMENT 2

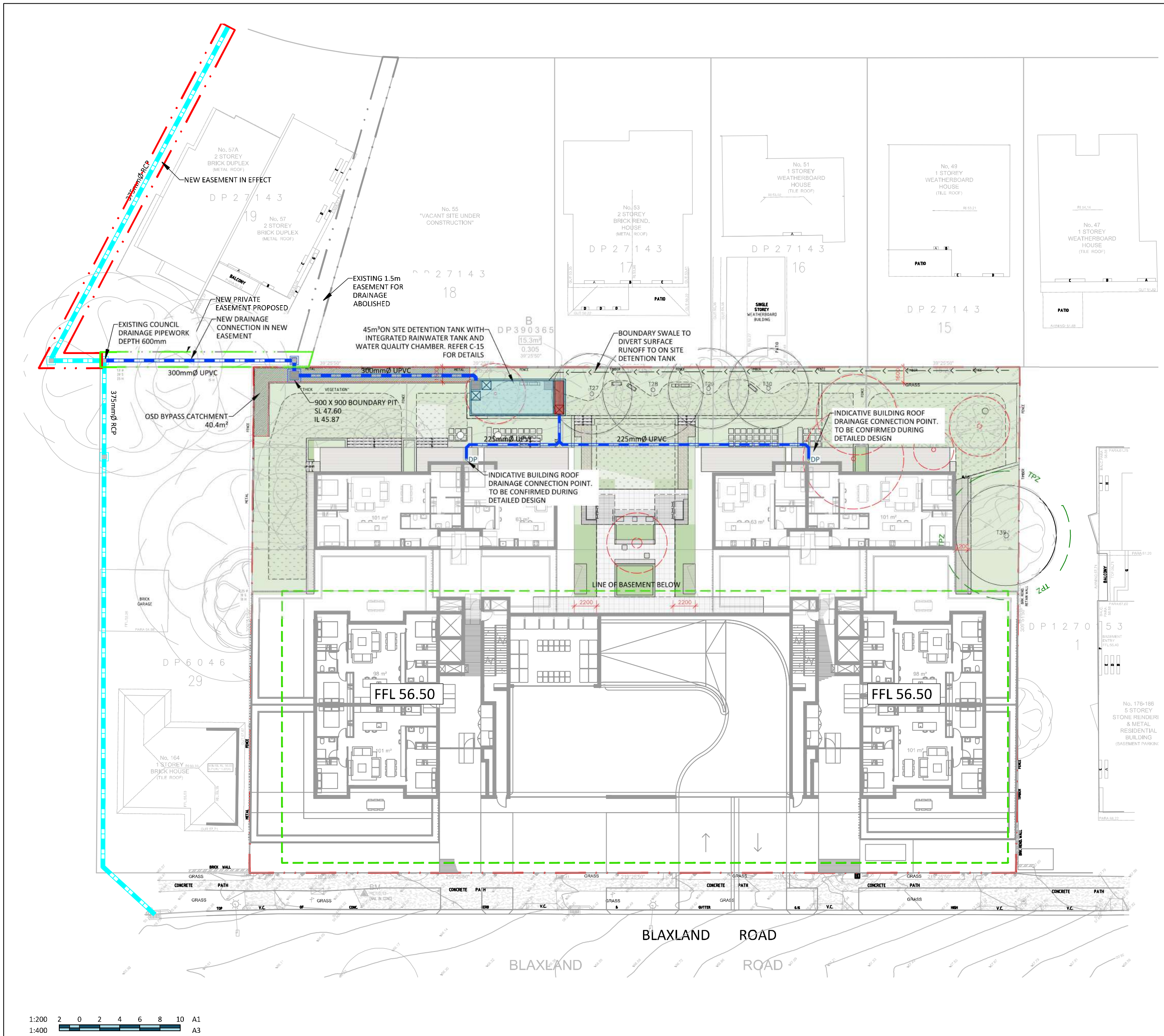
0610-C-10.dwg

enscape studio
tel 0411 267 151
info@enscapestudio.com.au
ABN 91 649 181 171

20/05/2026 2:08:56 PM

# FOR APPROVAL
NOT FOR CONSTRUCTION

| SCALE @ A1 | PROJECT No | DRAWING No | REV |
|---|---|---|---|
| AS NOTED | 0610 | C-10 | A |




## LEGEND

| | |
|---|---|
| | PROPOSED SITE BOUNDARY |
| | PROPOSED STORMWATER PIPE |
| | EXISTING STORMWATER PIPE |
| | EXISTING GRATED PIT |
| | PROPOSED GRATED DRAIN |
| | ON SITE DETENTION TANK/BASEMENT PUMP OUT PIT |
| | RAINWATER TANK |
| 150Ø UPVC | PROPOSED PIPE SIZE AND FLOW DIRECTION |
| ◦DP | PROPOSED DOWNPIPE |
| | OVERLAND FLOW |

## STORMWATER MANAGEMENT NOTES

SITE INFORMATION

ADDRESS: 166-174 BLAXLAND ROAD, RYDE
LOCAL GOVERNMENT AREA: RYDE CITY COUNCIL
SITE AREA: 3,832m²

DEVELOPMENT CONTROL REQUIREMENTS

GOVERNING DOCUMENT: CITY OF RYDE COUNCIL - STORMWATER AND FLOODPLAIN MANAGEMENT TECHNICAL MANUAL

DESIGN STORMS: MINOR = 20 YEAR; MAJOR = 100 YEAR

DISCHARGE ATTENUATION REQUIREMENT:

1. THE OSD MUST BE DESIGNED TO ENSURE THE LEVEL OF STORMWATER RUNOFF DISCHARGED FROM THE AREA OF DEVELOPMENT MUST NOT TO EXCEED THE PEAK STORMWATER DISCHARGE ARISING FROM THE POST-DEVELOPED WORKS, DURING A 5 YEAR ARI STORM EVENT.

WATER QUALITY TREATMENT REQUIREMENTS:

- 90% REMOVAL OF GROSS POLLUTANTS (> 5MM);
- 85% REMOVAL OF TOTAL SUSPENDED SOLIDS;
- 65% REMOVAL OF TOTAL PHOSPHOROUS; AND
- 45% REMOVAL OF TOTAL NITROGEN.

SITE ATTENUATION DESIGN

| | | |
|---|---|---|
| ALLOWABLE PEAK DISCHARGE RATES: | 5 YEAR ARI | = 109L/s |
| BYPASS DISCHARGE RATES: | 5 YEAR ARI | = 1L/s |
| | 100 YEAR ARI | = 2L/s |
| UNATTENUATED POST DEVELOPMENT DISCHARGE RATES: | 5 YEAR ARI | = 109L/s |
| | 100 YEAR ARI | = 187L/s |
| POST DEVELOPMENT DISCHARGE RATES: | 5 YEAR ARI | = 67L/s |
| | 100 YEAR ARI | = 107L/s |
| TOTAL DEVELOPMENT DISCHARGE RATES: | 5 YEAR ARI | = 68L/s |
| | 100 YEAR ARI | = 109L/s |

REFER TO DRAINS CALCULATIONS BY ENSCAPE STUDIO FOR MORE INFORMATION.

OSD DESIGN SUMMARY

OSD VOLUME REQUIRED: 45.0m³
OSD VOLUME PROVIDED: 45.02m³

OSD DIMENSIONS: WIDTH 3.343m; LENGTH 8.162m; DEPTH 1.65m

INVERT OF OUTLET: 46.05m AHD
ORIFICE PLATE DIAMETER: 214mm

| REV | DESCRIPTION | DRAWN | APP'D | DATE |
|---|---|---|---|---|
| A | ISSUED FOR APPROVAL | IH | IH | 13.03.26 |

CLIENT: SASCO PROPERTY
ARCHITECT: CURZON + PARTNERS
PROJECT: 166-174 BLAXLAND ROAD RYDE
TITLE: STORMWATER MANAGEMENT PLAN GROUND FLOOR

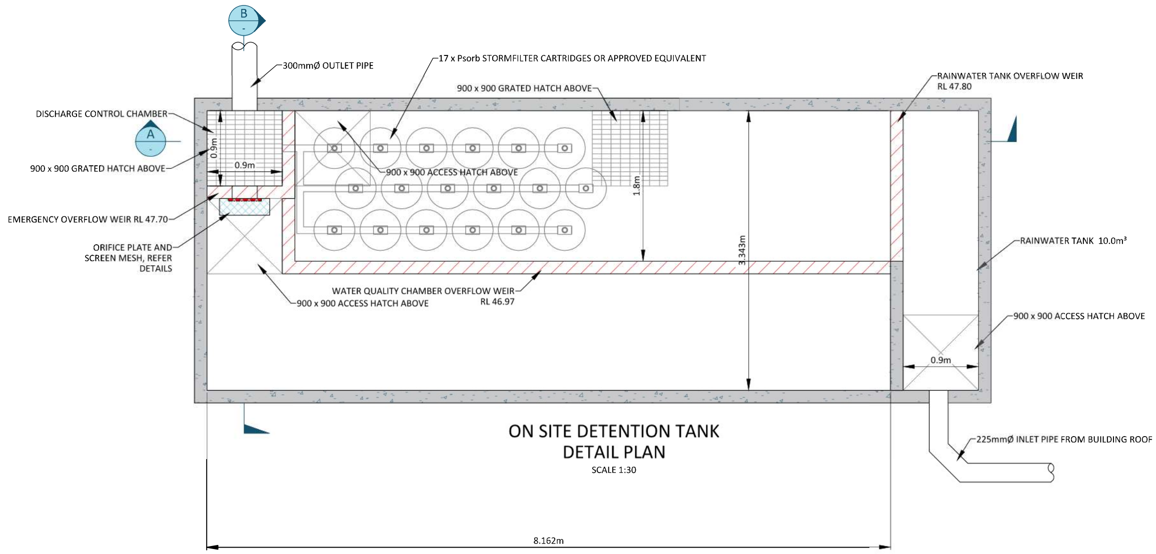
0610-C-11.dwg

enscape studio
tel 0411 267 151
info@enscapestudio.com.au
ABN 91 649 181 171

20/05/2026 3:14:45 PM

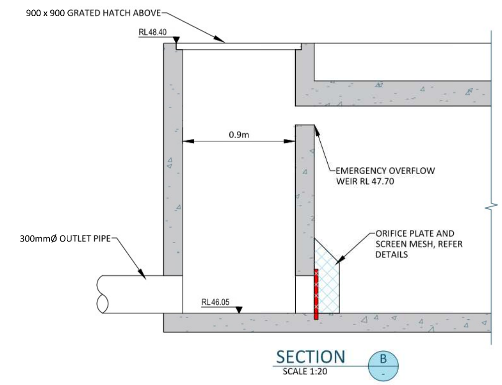
FOR APPROVAL
NOT FOR CONSTRUCTION

| SCALE @ A1 | PROJECT No | DRAWING No | REV |
|---|---|---|---|
| AS NOTED | 0610 | C-11 | A |



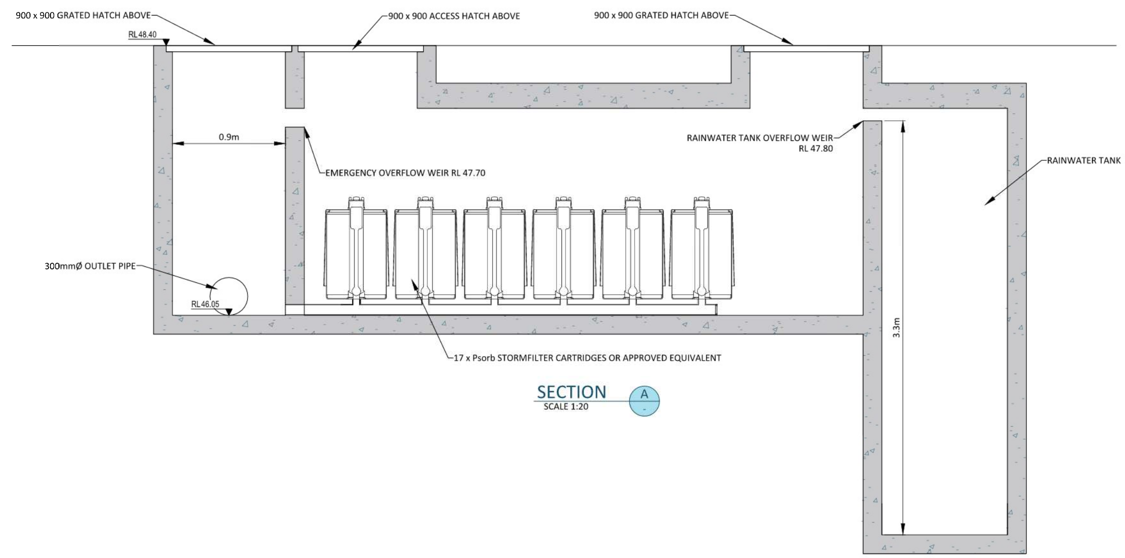

ON SITE DETENTION TANK DETAIL PLAN

SCALE 1:30



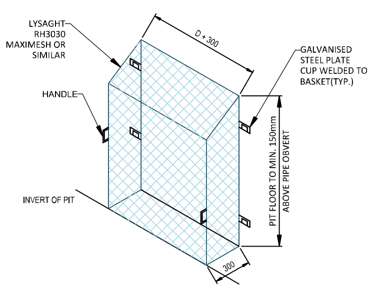

SECTION B

SCALE 1:20



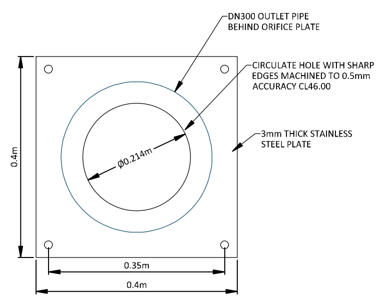

SECTION A

SCALE 1:20




SCREEN MESH DETAIL

SCALE 1:20




ORIFICE PLATE DETAIL

SCALE 1:5

1:100 / 1:200 — 2 1 0 2 4 — A1 / A3 — HORIZONTAL

1:40 / 1:80 — 0.4 0 0.4 0.8 1.2 1.6 2 — A1 / A3 — VERTICAL

| REV | DESCRIPTION | DRAWN | APP'D | DATE |
|---|---|---|---|---|
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| A | ISSUED FOR APPROVAL | IH | IH | 13.03.26 |

CLIENT: SASCO PROPERTY

ARCHITECT: CURZON + PARTNERS

PROJECT: 166-174 BLAXLAND ROAD RYDE

TITLE: STORMWATER MANAGEMENT DETAILS SHEET 1

0610-C-15.dwg

enscape studio

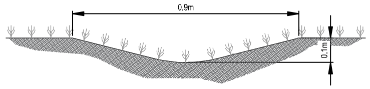
tel 0411 267 151
info@enscapestudio.com.au
ABN 91 649 181 171

20/05/2026 2:37:29 PM

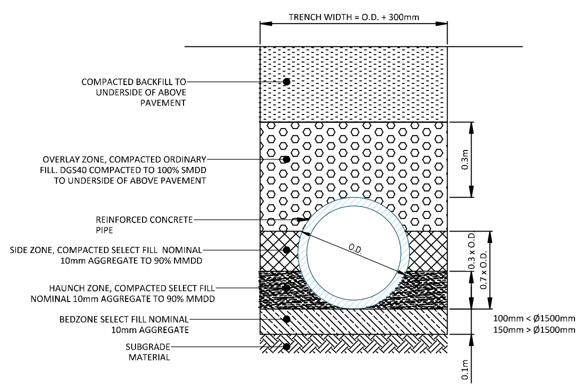
FOR APPROVAL

NOT FOR CONSTRUCTION

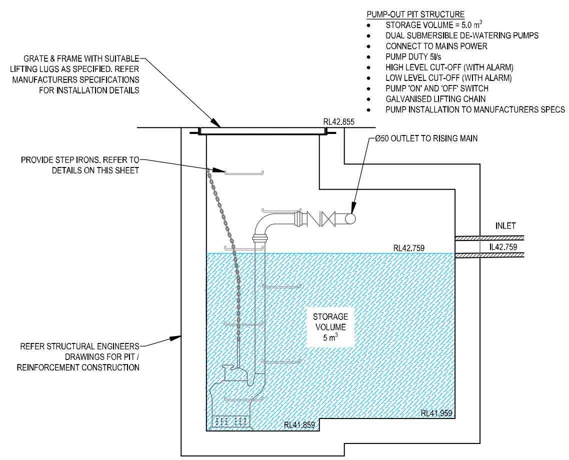
| SCALE @ A1 | PROJECT No | DRAWING No | REV |
|---|---|---|---|
| AS NOTED | 0610 | C-15 | A |



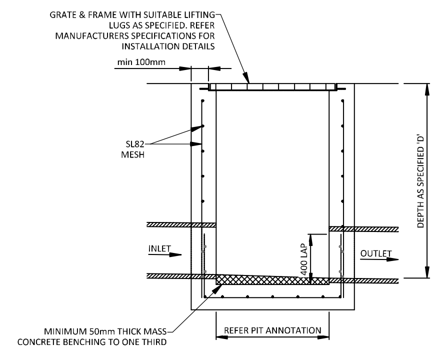

BOUNDARY DIVERSION SWALE DETAIL
(SCALE 1:10)




TYPICAL PIPE TRENCH DETAIL
SCALE 1:10

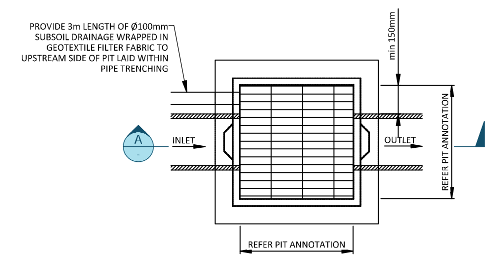



PUMP-OUT PIT DETAIL - BASEMENT DRAINAGE
SCALE 1:20




SECTION
SCALE 1:20

A
-




GRATED PIT DETAIL
SCALE 1:20

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1:10 | 0.1 | 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | A1 | |
| 1:20 | | | | | | | | A3 | |
| 1:20 | 0.2 | 0 | 0.2 | 0.4 | 0.6 | 0.8 | 1 | A1 | |
| 1:40 | | | | | | | | A3 | |

| REV | DESCRIPTION | DRAWN | APP'D | DATE |
|---|---|---|---|---|
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| A | ISSUED FOR APPROVAL | IH | IH | 13.03.26 |

CLIENT: SASCO PROPERTY

ARCHITECT: CURZON + PARTNERS

PROJECT: 166-174 BLAXLAND ROAD RYDE

TITLE: STORMWATER MANAGEMENT DETAILS SHEET 2

0610-C-16.dwg

enscape studio
tel 0411 267 151
info@enscapestudio.com.au
ABN 91 649 181 171

13/03/2026 2:50:44 PM

# FOR APPROVAL
NOT FOR CONSTRUCTION

| SCALE @ A1 | PROJECT No | DRAWING No | REV |
|---|---|---|---|
| AS NOTED | 0610 | C-16 | A |

# Appendix B – MUSIC Model Output

Source nodes
Location,Roof Catchment (3108m2),Rear Landscape (724m2)
ID,1,2
Node Type,UrbanSourceNode,UrbanSourceNode
Zoning Surface Type,Roof,Revegetatedland
Total Area (ha),0.311,0.072
Area Impervious (ha),0.311,0
Area Pervious (ha),0,0.072
Field Capacity (mm),80,80
Pervious Area Infiltration Capacity coefficient - a,200,200
Pervious Area Infiltration Capacity exponent - b,1,1
Impervious Area Rainfall Threshold (mm/day),1,1
Pervious Area Soil Storage Capacity (mm),120,120
Pervious Area Soil Initial Storage (% of Capacity),25,25
Groundwater Initial Depth (mm),10,10
Groundwater Daily Recharge Rate (%),25,25
Groundwater Daily Baseflow Rate (%),5,5
Groundwater Daily Deep Seepage Rate (%),0,0
Stormflow Total Suspended Solids Mean (log mg/L),1.3,1.95
Stormflow Total Suspended Solids Standard Deviation (log mg/L),0.32,0.32
Stormflow Total Suspended Solids Estimation Method,Stochastic,Stochastic
Stormflow Total Suspended Solids Serial Correlation,0,0
Stormflow Total Phosphorus Mean (log mg/L),-0.89,-0.66
Stormflow Total Phosphorus Standard Deviation (log mg/L),0.25,0.25
Stormflow Total Phosphorus Estimation Method,Stochastic,Stochastic
Stormflow Total Phosphorus Serial Correlation,0,0
Stormflow Total Nitrogen Mean (log mg/L),0.3,0.3
Stormflow Total Nitrogen Standard Deviation (log mg/L),0.19,0.19
Stormflow Total Nitrogen Estimation Method,Stochastic,Stochastic
Stormflow Total Nitrogen Serial Correlation,0,0
Baseflow Total Suspended Solids Mean (log mg/L),1.1,1.15
Baseflow Total Suspended Solids Standard Deviation (log mg/L),0.17,0.17
Baseflow Total Suspended Solids Estimation Method,Stochastic,Stochastic
Baseflow Total Suspended Solids Serial Correlation,0,0
Baseflow Total Phosphorus Mean (log mg/L),-0.82,-1.22
Baseflow Total Phosphorus Standard Deviation (log mg/L),0.19,0.19
Baseflow Total Phosphorus Estimation Method,Stochastic,Stochastic
Baseflow Total Phosphorus Serial Correlation,0,0
Baseflow Total Nitrogen Mean (log mg/L),0.32,-0.05
Baseflow Total Nitrogen Standard Deviation (log mg/L),0.12,0.12
Baseflow Total Nitrogen Estimation Method,Stochastic,Stochastic
Baseflow Total Nitrogen Serial Correlation,0,0
Flow based constituent generation - enabled,Off,Off
Flow based constituent generation - flow file, ,
Flow based constituent generation - base flow column, ,
Flow based constituent generation - pervious flow column, ,
Flow based constituent generation - impervious flow column, ,
Flow based constituent generation - unit, ,
OUT - Mean Annual Flow (ML/yr),4.19,0.331
OUT - TSS Mean Annual Load (kg/yr),107,21.4
OUT - TP Mean Annual Load (kg/yr),0.615,53.8E-3
OUT - TN Mean Annual Load (kg/yr),9.21,0.515
OUT - Gross Pollutant Mean Annual Load (kg/yr),101,0.00
Rain In (ML/yr),4.63264,1.07251
ET Loss (ML/yr),0.4392,0.741085
Deep Seepage Loss (ML/yr),0,0
Baseflow Out (ML/yr),0,0.175303
Imp. Stormflow Out (ML/yr),4.19344,0

Perv. Stormflow Out (ML/yr),0,0.156122
Total Stormflow Out (ML/yr),4.19344,0.156122
Total Outflow (ML/yr),4.19344,0.331425
Change in Soil Storage (ML/yr),0,-2E-6
TSS Baseflow Out (kg/yr),0,2.68157
TSS Total Stormflow Out (kg/yr),107.044,18.7325
TSS Total Outflow (kg/yr),107.044,21.4141
TP Baseflow Out (kg/yr),0,0.011626
TP Total Stormflow Out (kg/yr),0.615182,0.042127
TP Total Outflow (kg/yr),0.615182,0.053753
TN Baseflow Out (kg/yr),0,0.162496
TN Total Stormflow Out (kg/yr),9.21138,0.352678
TN Total Outflow (kg/yr),9.21138,0.515174
GP Total Outflow (kg/yr),101.472,0

No Imported Data Source nodes

USTM treatment nodes
Location,Rainwater Tank (10m3),SF Chamber
ID,3,4
Node Type,RainWaterTankNode,SedimentationBasinNode
Lo-flow bypass rate (cum/sec),0,0
Hi-flow bypass rate (cum/sec),100,100
Inlet pond volume,0,0
Area (sqm),5,6.3
Initial Volume (m^3),0,0
Extended detention depth (m),0.2,0.77
Number of Rainwater tanks,1,
Permanent Pool Volume (cubic metres),10,0
Proportion vegetated,0,0
Equivalent Pipe Diameter (mm),50,97
Overflow weir width (m),10,2
Notional Detention Time (hrs),0.107,70.0E-3
Orifice Discharge Coefficient,0.6,0.6
Weir Coefficient,1.7,1.7
Number of CSTR Cells,2,1
Total Suspended Solids - k (m/yr),400,1
Total Suspended Solids - C* (mg/L),12,20
Total Suspended Solids - C** (mg/L),0,20
Total Phosphorus - k (m/yr),300,1
Total Phosphorus - C* (mg/L),0.13,0.13
Total Phosphorus - C** (mg/L),0,0.13
Total Nitrogen - k (m/yr),40,1
Total Nitrogen - C* (mg/L),1.4,1.4
Total Nitrogen - C** (mg/L),0,1.4
Threshold Hydraulic Loading for C** (m/yr),0,3500
Horizontal Flow Coefficient, ,
Reuse Enabled,On,Off
Max drawdown height (m),2,
Annual Demand Enabled,On,Off
Annual Demand Value (ML/year),0.3,
Annual Demand Distribution,PET,
Annual Demand Monthly Distribution: Jan, ,
Annual Demand Monthly Distribution: Feb, ,
Annual Demand Monthly Distribution: Mar, ,
Annual Demand Monthly Distribution: Apr, ,
Annual Demand Monthly Distribution: May, ,
Annual Demand Monthly Distribution: Jun, ,

Annual Demand Monthly Distribution: Jul, ,
Annual Demand Monthly Distribution: Aug, ,
Annual Demand Monthly Distribution: Sep, ,
Annual Demand Monthly Distribution: Oct, ,
Annual Demand Monthly Distribution: Nov, ,
Annual Demand Monthly Distribution: Dec, ,
Daily Demand Enabled,Off,Off
Daily Demand Value (ML/day), ,
Custom Demand Enabled,Off,Off
Custom Demand Time Series File, ,
Custom Demand Time Series Units, ,
Filter area (sqm), ,
Filter perimeter (m), ,
Filter depth (m), ,
Filter Median Particle Diameter (mm), ,
Saturated Hydraulic Conductivity (mm/hr), ,
Infiltration Media Porosity, ,
Length (m), ,
Bed slope, ,
Base Width (m), ,
Top width (m), ,
Vegetation height (m), ,
Vegetation Type, ,
Total Nitrogen Content in Filter (mg/kg), ,
Orthophosphate Content in Filter (mg/kg), ,
Is Base Lined?, ,
Is Underdrain Present?, ,
Is Submerged Zone Present?, ,
Submerged Zone Depth (m), ,
B for Media Soil Texture,-9999,-9999
Proportion of upstream impervious area treated, ,
Exfiltration Rate (mm/hr),0,0
Evaporative Loss as % of PET,0,0
Depth in metres below the drain pipe, ,
TSS A Coefficient, ,
TSS B Coefficient, ,
TP A Coefficient, ,
TP B Coefficient, ,
TN A Coefficient, ,
TN B Coefficient, ,
Sfc, ,
S*, ,
Sw, ,
Sh, ,
Emax (m/day), ,
Ew (m/day), ,
IN - Mean Annual Flow (ML/yr),4.19,4.25
IN - TSS Mean Annual Load (kg/yr),107,98.8
IN - TP Mean Annual Load (kg/yr),0.615,0.608
IN - TN Mean Annual Load (kg/yr),9.21,8.95
IN - Gross Pollutant Mean Annual Load (kg/yr),101,0.00
OUT - Mean Annual Flow (ML/yr),3.92,4.25
OUT - TSS Mean Annual Load (kg/yr),93.3,98.3
OUT - TP Mean Annual Load (kg/yr),0.570,0.607
OUT - TN Mean Annual Load (kg/yr),8.54,8.95
OUT - Gross Pollutant Mean Annual Load (kg/yr),0.00,0.00
Flow In (ML/yr),4.19344,4.24732
ET Loss (ML/yr),0,0

Infiltration Loss (ML/yr),0,0
Low Flow Bypass Out (ML/yr),0,0
High Flow Bypass Out (ML/yr),0,0
Orifice / Filter Out (ML/yr),1.78907,3.78878
Weir Out (ML/yr),2.12662,0.458685
Transfer Function Out (ML/yr),0,0
Reuse Supplied (ML/yr),0.277278,0
Reuse Requested (ML/yr),0.299966,0
% Reuse Demand Met,92.4365,0
% Load Reduction,6.62344,-0.00341392
TSS Flow In (kg/yr),107.044,98.8054
TSS ET Loss (kg/yr),0,0
TSS Infiltration Loss (kg/yr),0,0
TSS Low Flow Bypass Out (kg/yr),0,0
TSS High Flow Bypass Out (kg/yr),0,0
TSS Orifice / Filter Out (kg/yr),42.4691,87.6321
TSS Weir Out (kg/yr),50.858,10.6625
TSS Transfer Function Out (kg/yr),0,0
TSS Reuse Supplied (kg/yr),4.47963,0
TSS Reuse Requested (kg/yr),0,0
TSS % Reuse Demand Met,0,0
TSS % Load Reduction,12.8143,0.516976
TP Flow In (kg/yr),0.615182,0.60778
TP ET Loss (kg/yr),0,0
TP Infiltration Loss (kg/yr),0,0
TP Low Flow Bypass Out (kg/yr),0,0
TP High Flow Bypass Out (kg/yr),0,0
TP Orifice / Filter Out (kg/yr),0.26137,0.541528
TP Weir Out (kg/yr),0.308783,0.0659027
TP Transfer Function Out (kg/yr),0,0
TP Reuse Supplied (kg/yr),0.0375704,0
TP Reuse Requested (kg/yr),0,0
TP % Reuse Demand Met,0,0
TP % Load Reduction,7.31962,0.0574715
TN Flow In (kg/yr),9.21138,8.95124
TN ET Loss (kg/yr),0,0
TN Infiltration Loss (kg/yr),0,0
TN Low Flow Bypass Out (kg/yr),0,0
TN High Flow Bypass Out (kg/yr),0,0
TN Orifice / Filter Out (kg/yr),3.91893,7.98386
TN Weir Out (kg/yr),4.62532,0.964174
TN Transfer Function Out (kg/yr),0,0
TN Reuse Supplied (kg/yr),0.550419,0
TN Reuse Requested (kg/yr),0,0
TN % Reuse Demand Met,0,0
TN % Load Reduction,7.24245,0.0358163
GP Flow In (kg/yr),101.472,0
GP ET Loss (kg/yr),0,0
GP Infiltration Loss (kg/yr),0,0
GP Low Flow Bypass Out (kg/yr),0,0
GP High Flow Bypass Out (kg/yr),0,0
GP Orifice / Filter Out (kg/yr),0,0
GP Weir Out (kg/yr),0,0
GP Transfer Function Out (kg/yr),0,0
GP Reuse Supplied (kg/yr),0,0
GP Reuse Requested (kg/yr),0,0
GP % Reuse Demand Met,0,0
GP % Load Reduction,100,100

PET Scaling Factor, ,

Generic treatment nodes
Location,17 x 690mm Psorb StormFilter (MCC),1 x OceanGuard
ID,5,7
Node Type,GenericNode,GPTNode
Lo-flow bypass rate (cum/sec),0,0
Hi-flow bypass rate (cum/sec),0.0153,0.02
Flow Transfer Function
Input (cum/sec),0,0
Output (cum/sec),0,0
Input (cum/sec),10,10
Output (cum/sec),10,10
Input (cum/sec), ,
Output (cum/sec), ,
Input (cum/sec), ,
Output (cum/sec), ,
Input (cum/sec), ,
Output (cum/sec), ,
Input (cum/sec), ,
Output (cum/sec), ,
Input (cum/sec), ,
Output (cum/sec), ,
Input (cum/sec), ,
Output (cum/sec), ,
Input (cum/sec), ,
Output (cum/sec), ,
Input (cum/sec), ,
Output (cum/sec), ,
Gross Pollutant Transfer Function
Enabled,True,True
Input (kg/ML),0,0
Output (kg/ML),0,0
Input (kg/ML),14.9393,14.7808
Output (kg/ML),0,0
Input (kg/ML), ,
Output (kg/ML), ,
Input (kg/ML), ,
Output (kg/ML), ,
Input (kg/ML), ,
Output (kg/ML), ,
Input (kg/ML), ,
Output (kg/ML), ,
Input (kg/ML), ,
Output (kg/ML), ,
Input (kg/ML), ,
Output (kg/ML), ,
Input (kg/ML), ,
Output (kg/ML), ,
Input (kg/ML), ,
Output (kg/ML), ,
Total Nitrogen Transfer Function
Enabled,True,True
Input (mg/L),0,0
Output (mg/L),0,0
Input (mg/L),100,50
Output (mg/L),44.1,39.5
Input (mg/L), ,

```
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Total Phosphorus Transfer Function
Enabled,True,True
Input (mg/L),0,0
Output (mg/L),0,0
Input (mg/L),10,10
Output (mg/L),1.39,7
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Total Suspended Solids Transfer Function
Enabled,True,True
Input (mg/L),0,0
Output (mg/L),0,0
Input (mg/L),1000,20.8
Output (mg/L),66,8
Input (mg/L), ,40.3
Output (mg/L), ,14.1
Input (mg/L), ,60.6
Output (mg/L), ,19.3
Input (mg/L), ,79.3
Output (mg/L), ,23.4
Input (mg/L), ,99.9
Output (mg/L), ,26.9
Input (mg/L), ,121
Output (mg/L), ,30
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
Output (mg/L), ,
Input (mg/L), ,
```

Output (mg/L), ,
TSS Flow based Efficiency Enabled,Off,Off
TSS Flow based Efficiency, ,
TP Flow based Efficiency Enabled,Off,Off
TP Flow based Efficiency, ,
TN Flow based Efficiency Enabled,Off,Off
TN Flow based Efficiency, ,
GP Flow based Efficiency Enabled,Off,Off
GP Flow based Efficiency, ,
IN - Mean Annual Flow (ML/yr),4.25,0.331
IN - TSS Mean Annual Load (kg/yr),98.3,21.4
IN - TP Mean Annual Load (kg/yr),0.607,53.8E-3
IN - TN Mean Annual Load (kg/yr),8.95,0.515
IN - Gross Pollutant Mean Annual Load (kg/yr),0.00,0.00
OUT - Mean Annual Flow (ML/yr),4.25,0.331
OUT - TSS Mean Annual Load (kg/yr),17.9,5.48
OUT - TP Mean Annual Load (kg/yr),0.149,37.6E-3
OUT - TN Mean Annual Load (kg/yr),4.56,0.407
OUT - Gross Pollutant Mean Annual Load (kg/yr),0.00,0.00
Flow In (ML/yr),4.24733,0.331427
ET Loss (ML/yr),0,0
Infiltration Loss (ML/yr),0,0
Low Flow Bypass Out (ML/yr),0,0
High Flow Bypass Out (ML/yr),0.524057,0
Orifice / Filter Out (ML/yr),0,0
Weir Out (ML/yr),0,0
Transfer Function Out (ML/yr),3.7234,0.331427
Reuse Supplied (ML/yr),0,0
Reuse Requested (ML/yr),0,0
% Reuse Demand Met,0,0
% Load Reduction,-0.00317847,0
TSS Flow In (kg/yr),98.2929,21.4142
TSS ET Loss (kg/yr),0,0
TSS Infiltration Loss (kg/yr),0,0
TSS Low Flow Bypass Out (kg/yr),0,0
TSS High Flow Bypass Out (kg/yr),12.1924,0
TSS Orifice / Filter Out (kg/yr),0,0
TSS Weir Out (kg/yr),0,0
TSS Transfer Function Out (kg/yr),5.68251,5.4783
TSS Reuse Supplied (kg/yr),0,0
TSS Reuse Requested (kg/yr),0,0
TSS % Reuse Demand Met,0,0
TSS % Load Reduction,81.8146,74.4174
TP Flow In (kg/yr),0.607447,0.053752
TP ET Loss (kg/yr),0,0
TP Infiltration Loss (kg/yr),0,0
TP Low Flow Bypass Out (kg/yr),0,0
TP High Flow Bypass Out (kg/yr),0.075502,0
TP Orifice / Filter Out (kg/yr),0,0
TP Weir Out (kg/yr),0,0
TP Transfer Function Out (kg/yr),0.07394,0.037626
TP Reuse Supplied (kg/yr),0,0
TP Reuse Requested (kg/yr),0,0
TP % Reuse Demand Met,0,0
TP % Load Reduction,75.3983,30.0007
TN Flow In (kg/yr),8.94817,0.515171
TN ET Loss (kg/yr),0,0
TN Infiltration Loss (kg/yr),0,0

TN Low Flow Bypass Out (kg/yr),0,0
TN High Flow Bypass Out (kg/yr),1.10274,0
TN Orifice / Filter Out (kg/yr),0,0
TN Weir Out (kg/yr),0,0
TN Transfer Function Out (kg/yr),3.45966,0.406987
TN Reuse Supplied (kg/yr),0,0
TN Reuse Requested (kg/yr),0,0
TN % Reuse Demand Met,0,0
TN % Load Reduction,49.0131,20.9996
GP Flow In (kg/yr),0,0
GP ET Loss (kg/yr),0,0
GP Infiltration Loss (kg/yr),0,0
GP Low Flow Bypass Out (kg/yr),0,0
GP High Flow Bypass Out (kg/yr),0,0
GP Orifice / Filter Out (kg/yr),0,0
GP Weir Out (kg/yr),0,0
GP Transfer Function Out (kg/yr),0,0
GP Reuse Supplied (kg/yr),0,0
GP Reuse Requested (kg/yr),0,0
GP % Reuse Demand Met,0,0
GP % Load Reduction,100,100

Other nodes
Location,Receiving Node
ID,6
Node Type,ReceivingNode
IN - Mean Annual Flow (ML/yr),4.25
IN - TSS Mean Annual Load (kg/yr),17.9
IN - TP Mean Annual Load (kg/yr),0.149
IN - TN Mean Annual Load (kg/yr),4.56
IN - Gross Pollutant Mean Annual Load (kg/yr),0.00
OUT - Mean Annual Flow (ML/yr),4.25
OUT - TSS Mean Annual Load (kg/yr),17.9
OUT - TP Mean Annual Load (kg/yr),0.149
OUT - TN Mean Annual Load (kg/yr),4.56
OUT - Gross Pollutant Mean Annual Load (kg/yr),0.00
% Load Reduction,6.14
TSS % Load Reduction,86.1
TN % Load Reduction,53.1
TP % Load Reduction,77.7
GP % Load Reduction,100

Links
Location,Drainage Link,Drainage Link,Drainage Link,Drainage Link,Drainage Link,Drainage Link
Source node ID,1,3,4,5,7,2
Target node ID,3,4,5,6,4,7
Muskingum-Cunge Routing,Not Routed,Not Routed,Not Routed,Not Routed,Not Routed,Not Routed
Muskingum K, , , , , ,
Muskingum theta, , , , , ,
IN - Mean Annual Flow (ML/yr),4.19,3.92,4.25,4.25,0.331,0.331
IN - TSS Mean Annual Load (kg/yr),107,93.3,98.3,17.9,5.48,21.4
IN - TP Mean Annual Load (kg/yr),0.615,0.570,0.607,0.149,37.6E-3,53.8E-3
IN - TN Mean Annual Load (kg/yr),9.21,8.54,8.95,4.56,0.407,0.515
IN - Gross Pollutant Mean Annual Load (kg/yr),101,0.00,0.00,0.00,0.00,0.00
OUT - Mean Annual Flow (ML/yr),4.19,3.92,4.25,4.25,0.331,0.331

OUT - TSS Mean Annual Load (kg/yr),107,93.3,98.3,17.9,5.48,21.4
OUT - TP Mean Annual Load (kg/yr),0.615,0.570,0.607,0.149,37.6E-3,53.8E-3
OUT - TN Mean Annual Load (kg/yr),9.21,8.54,8.95,4.56,0.407,0.515
OUT - Gross Pollutant Mean Annual Load (kg/yr),101,0.00,0.00,0.00,0.00,0.00

Catchment Details
Catchment Name,0610-Blaxland Rd - MUSIC Model
Timestep,6 Minutes
Start Date,1/01/1959
End Date,31/12/1959 11:54:00 PM
Rainfall Station, 66062 SYDNEY
ET Station,Monthly User Defined
Mean Annual Rainfall (mm), 1490
Mean Annual ET (mm), 1260

enscape
studio

Tel: 0411 267  151
E: info@enscapestudio.com.au