TTW Structural Civil Traffic Façade

Water Sensitive Urban Design (WSUD) Report

King David School Sports Hall

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204021

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Your Partner in Engineering

REFERENCES

Standards

NCC 2019 Volume 1 & 2

AS/NZS 1170.0:2002 General Principles Part 0: General Principles

AS/NZS 3500.3:2003, Plumbing and drainage, Part 3: Stormwater drainage

Austroads Guide to Pavement Technology Part 2: Pavement Structural Design.

Urban Stormwater Best Practice Environmental Management Guidelines, CSIRO 2006

Australian Rainfall and Runoff - A Guide to Flood Estimation 2019 (ARR 2019)

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DOCUMENT REVISION STATUS

Issue	Revision	Issue Date	Issued By
Water Sensitive Urban Design report	1	21 March 2022	Vusa Dube
Water Sensitive Urban Design report	2	24 March 2022	Vusa Dube

Contents

1.0 Introduction

This Water Sensitive Urban Design (WSUD) report is provided in response to comment No. 18 of the letter received from DELWP dated 04/02/2022. which is to provide a WSUD response in accordance with planning application requirements of Clause 53.18 Stormwater Management in Urban Development and Clause 22.18 of the Stonnington Planning Scheme that include the following:

a) An assessment of how the proposal responds to the objectives of Clauses 53.18-5 and 53.18-6.

b) An assessment of how the proposal responds to the standards of Clauses 53.18-5 and 53.18-6.

c) Details of the proposed stormwater management system, including drainage works and retention, detention and discharges of stormwater to the drainage system.

d) Design details, such as cross sections, to assess the technical effectiveness of the proposed stormwater treatment measures.

e) A site management plan which details how the site will be managed through construction

f) A maintenance program which sets out future operational and maintenance arrangements

The objectives of the policy in more detail are as follows:

53.18-5 Stormwater management objectives for buildings and works

To encourage stormwater management that maximises the retention and reuse of stormwater.

To encourage development that reduces the impact of stormwater on the drainage system and filters sediment and waste from stormwater prior to discharge from the site.

To encourage stormwater management that contributes to cooling, local habitat improvements and provision of attractive and enjoyable spaces.

To ensure that industrial and commercial chemical pollutants and other toxicants do not enter the stormwater system.

Standard W2

The stormwater management system should be designed to:

- Meet the current best practice performance objectives for stormwater quality as contained in the *Urban Stormwater - Best Practice Environmental Management Guidelines* (Victorian Stormwater Committee, 1999).
- Minimise the impact of chemical pollutants and other toxicants including by, but not limited to, bunding and covering or roofing of storage, loading and work areas.
- Contribute to cooling, improving local habitat and providing attractive and enjoyable spaces.

53.18-6 Site management objectives

To protect drainage infrastructure and receiving waters from sedimentation and contamination.

To protect the site and surrounding area from environmental degradation prior to and during construction of subdivision works.

Standard W3

An application should describe how the site will be managed prior to and during the construction period and may set out requirements for managing:

- Erosion and sediment
- Stormwater.

- Litter, concrete and other construction wastes.
- Chemical contamination.

Clause 22.18 of the Stonnington Planning Scheme has the following objectives:

22.18-2 Objectives

- To achieve the best practice water quality performance objectives set out in the Urban Stormwater Best Practice Environmental Management Guidelines, CSIRO 1999 (or as amended). Currently, these water quality performance objectives are:
    - Suspended Solids - 80% retention of typical urban annual load
    - Total Nitrogen - 45% retention of typical urban annual load
    - Total Phosphorus - 45% retention of typical urban annual load
    - Litter - 70% reduction of typical urban annual load.
- To promote the use of water sensitive urban design, including stormwater re-use.
- To mitigate the detrimental effect of development on downstream waterways, by the application of best practice stormwater management through water sensitive urban design for new development.
- To minimise peak stormwater flows and stormwater pollutants to improve the health of water bodies, including creeks, rivers and bays.
- To reintegrate urban water into the landscape to facilitate a range of benefits including microclimate cooling, local habitat, and provision of attractive spaces for community use and wellbeing.

This report will outline the WSUD measures the site management measures that are to be employed during construction to meet the objectives outlined above. In addition, briefly list some future maintenance procedures that will be performed to ensure the WSUD measures remain fully functional.

2.0 Site Overview

The subject land has an area of approximately total 0.30ha. The local council is City of Stonnington. The Site is located at 519 Orrong Rd, Armadale, Victoria.

Based on Victoria Planning maps the site does not have flooding/inundation overlay. Melbourne Water advice that we received dated 30 November 2021 stated that the site is not subject to flooding in 1% AEP events. A copy of the Melbourne Water flood certificate is provided in Appendix D.

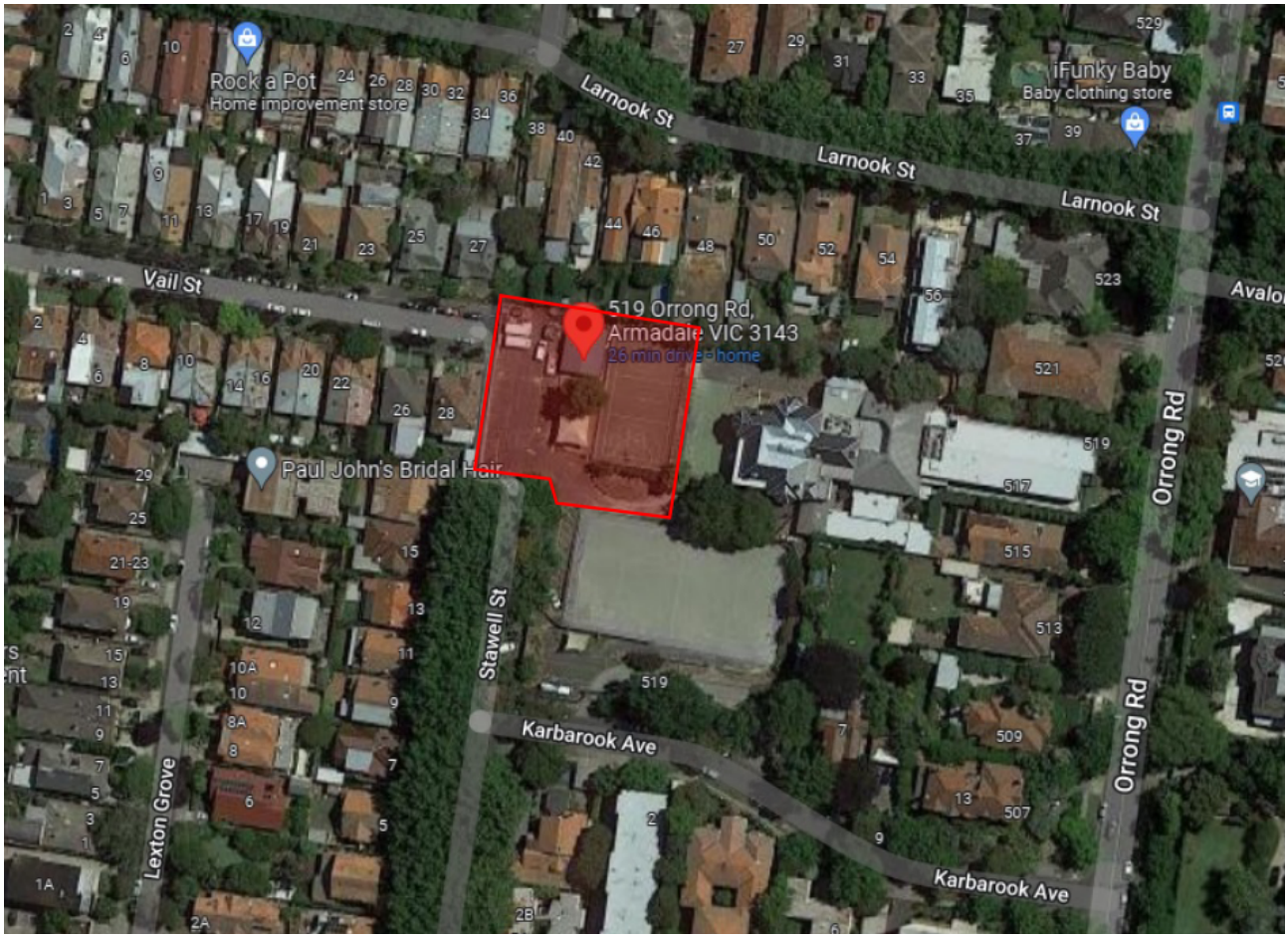

Figure 1:Site Location

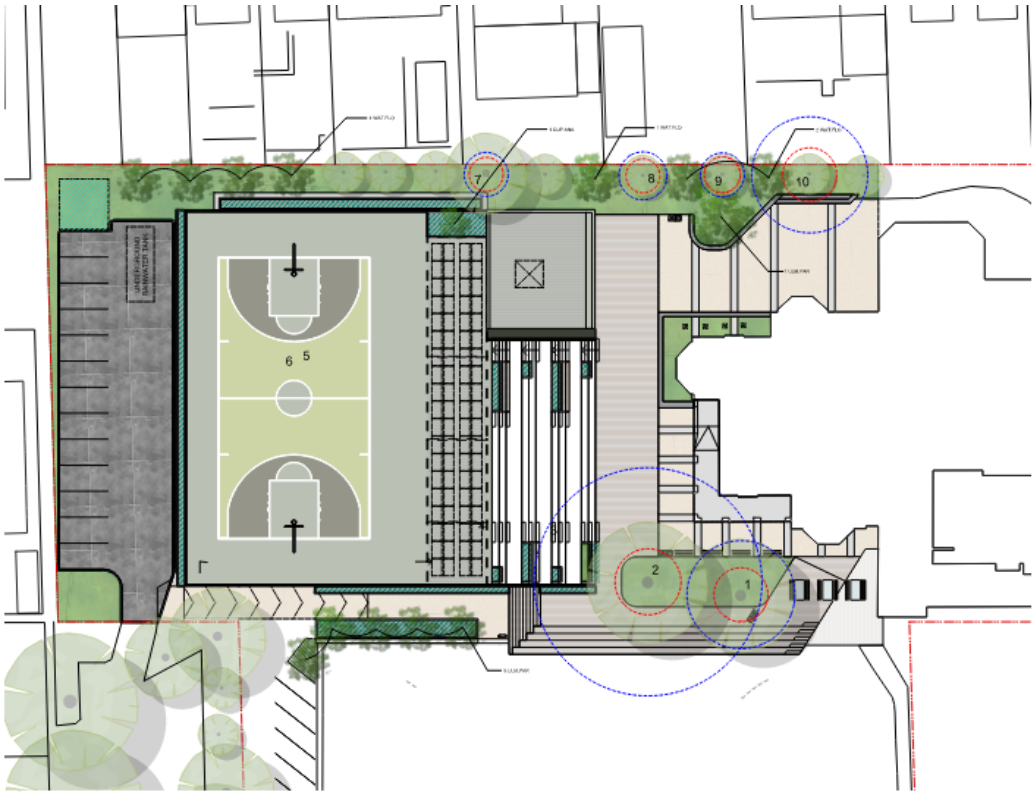

Figure 2 Proposed development

2.1 Existing Catchment

A review of the available information shows the catchment consisting of landscaping, asphalt carpark and other paving, and roofs. Upon reviewing the proposed development, there is not much change in the proposed catchment from the existing conditions. Overall impervious areas, i.e. the roofs and pavements, will slightly increase post development.

TTW will endeavour to attenuate flows from the proposed development to not exceed pre development conditions.

2.2 Legal Point of Discharge

The proposed stormwater strategy will largely follow the existing conditions. LPoD advice dated 29 Dec 2021 was received (see Appendix A). Council advised that connection will be to the external council grated site-entry pits on Stawell Street and Karbarook Avenue. Based on the extent of the proposed works in relation to the LPoD location, we propose to modify the existing drainage network only where required in the northern area of the site and connect to the existing network towards the south of the site as opposed to connecting directly to the LPoD.

Council did not advise a Permissible Site Discharge (PSD) or specific On Site Detention (OSD) requirements. The slight increase in impervious area from pre- to post- development conditions is expected to result in a minor increase of stormwater flows from the site. We propose to attenuate the flows back to pre-development conditions for storm events varying from 20% AEP, through 10%, 5% up to 1% AEP.

Asset plans from City of Stonnington indicate there is no council drainage infrastructure internal to the site. It is anticipated that modification of the internal stormwater drainage network should be achievable given the natural fall of the site towards the point of discharge.

Figure 3: City of Stonnington DBYD asset plan

2.3 Flood Risk

Melbourne water flood certificate dated 23rd November 2021 (see Appendix B) states that the project site is not subject to flooding. In addition the LPoD letter from Council dated 29 December 2021 states the same.

Figure 4: Vic Plan Overlay

Online Vic plan maps also indicate no flooding within the area as shown in the Appendix.

3.0 Water Sensitive Urban Design

The proposed development consists of a new sports and wellness centre which will feature indoor and outdoor basketball court, gym, amenities, studios and an administrative office. External areas have paved car parking and other pavements, as well as vegetated landscape areas. Some planters are also proposed above ground on the building structure. The proposed drainage and WSUD schematic is provided in Appendix A.

The proposed stormwater treatment measures were modelled using the MUSIC software package to assess the impacts of the proposed development against the performance targets. MUSIC simulates rainfall, stormwater runoff and pollution as well as pollution removal and flow reduction through various stormwater management systems.

With the aid of MUSIC software, the following WSUD measures, also presented in the schematic sketch in Appendix A, are proposed to be implemented for the development to achieve the targeted objectives:

- A total of approximately 1275m^2 roof area will discharge to a 30kL stormwater reuse tank and the harvested stormwater used for onsite irrigation of vegetated landscape areas. 150m^2 of the roof is non-trafficable and the remainder of 1125m^2 that is a rooftop playing court is trafficable. The stormwater reuse tank is proposed to be located below ground in the carpark to the west of the proposed building. The stormwater harvesting and OSD storages will be combined in a single tank. The OSD volume will be provided over and above the 30kL reuse storage. Using MUSIC software, a reuse demand rate of at least 1.6kL/day was iteratively found to achieve best practice pollutant reduction targets with the 30kL storage volume.
- A SPEL basin bioretention unit is proposed downstream of the harvesting/OSD tank, mainly for removal of the nutrients nitrogen and phosphorus so that best practice targets can be met. In the final design, raingarden(s) of equivalent performance might be used in place of the SPEL basin if found to be more cost effective and adequate space can be found at suitable locations in the architectural and landscape layout designs.
- A SPEL Ecoceptor is to be installed immediately upstream of the point where the proposed drainage will connect to the existing network. The Spel Ecoceptor is a vertically configured pollutant trap, sediment and light liquids separator. In our MUSIC modelling the SPEL Ecoceptor was configured to not contribute to removal of Total Phosphorus (TP) and Total Nitrogen (TN). Only the rainwater harvesting and reuse and bioretention were considered for TP and TN removal in accordance with current guidelines from Melbourne Water and many Council authorities.
- There is a paved carpark area (approx. 625sq.m) at the west of the site that will have drainage taken to the SPEL Basin, then to the Ecoceptor.
- Runoff from the proposed roofs will be directed to provide passive irrigation of above ground planters that are part of the proposed building. Overflow from the planters will then be taken to the harvesting tank.

Figure 3.1 overleaf shows a screenshot of the MUSIC model outlining the stormwater sources, proposed treatment method and the overall treatment train effectiveness statistics. The pollutant reduction meets best practice requirements.

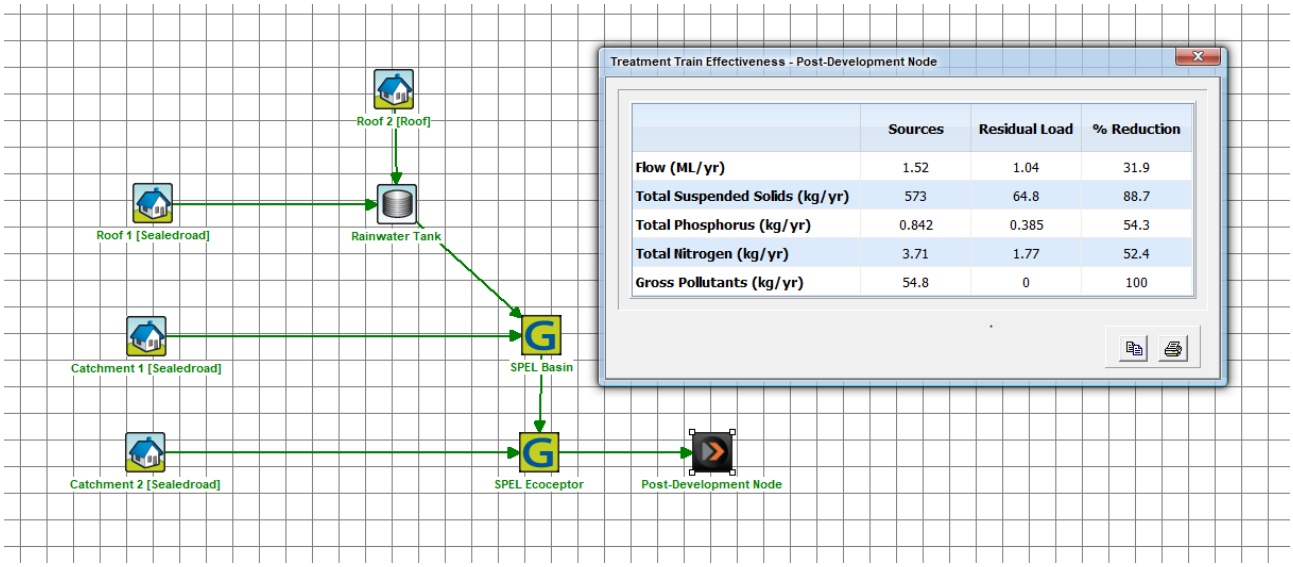

Figure 3.1: Music Model and results

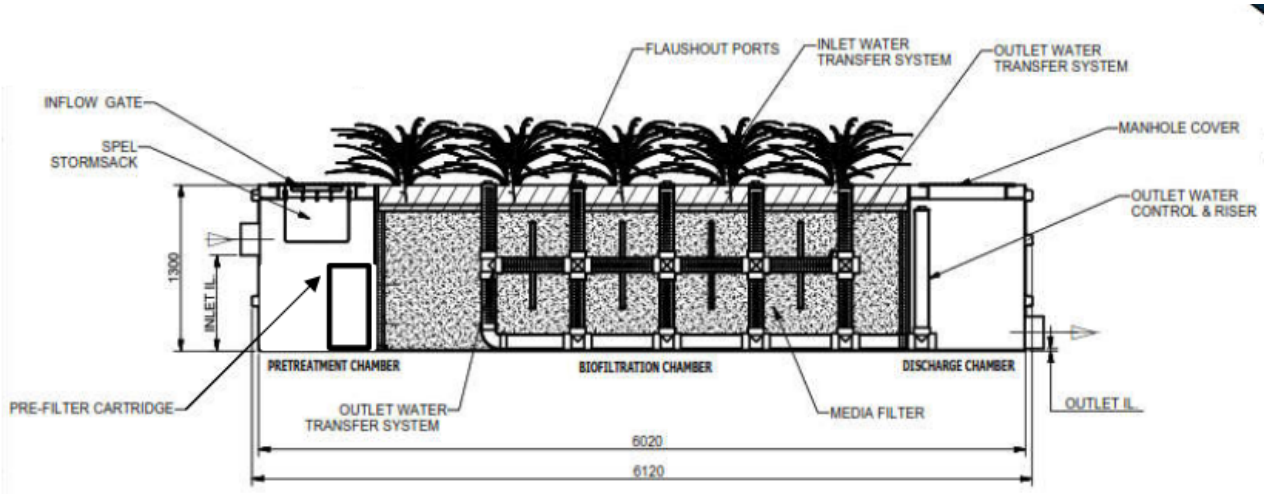

Figure 3.2: Typical SPEL Basin bioretention unit

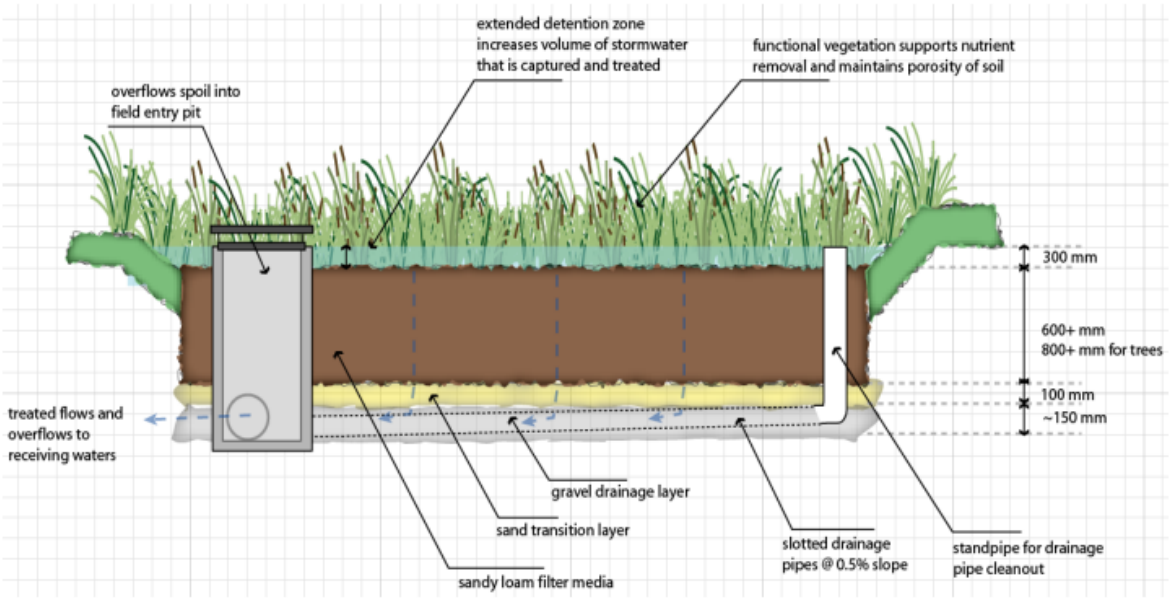

Figure 3.3: Typical Bio Retention Rain Garden Detail

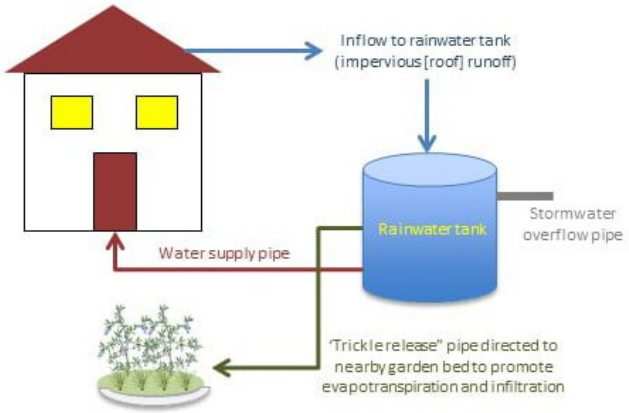

Figure 3.3: Typical Rainwater harvesting and re-use. (Re-use is only irrigation for this development)

Figure 3.4: SPEL Ecoceptor

4.0 Stormwater Drainage Design

4.1 Catchment Definition

The existing site condition has been modelled to reflect the two different surface runoff conditions (impervious and pervious), broadly speaking the site is mostly pavement with the remainder of the area being vegetated landscape.

The proposed development will result in a minor increase of impervious area.

A summary of the catchments in shwon in the table below.

	Pre-Development	Post-Development
Impervious	2650m^2	2800m^2
Pervious	350m^2	200m^2
Total	3000m^2	3000m^2

Table 4.1: Catchment Parameters

4.2 On Site Detention

Council did not advise a Permissible Site Discharge or specific On Site Detention requirements. The slight increase in impervious area from pre- to post- development conditions is expected to result in a minor increase of the stormwater flows from the site. We propose to attenuate the flows back to pre-development conditions for storm events varying from 20% AEP, through 10%, 5% up to 1% AEP.

Catchment Analysis

The pre-development post-development catchment areas for the site are shown in Table 4.2 below. The post-development arrangement includes a portion that will be connected to OSD (controlled) and another that will not (uncontrolled). A breakdown of the catchment areas is as follows:

	Pre-Development	Post Development
Impervious – Controlled	-	1275 m^2
Impervious – Uncontrolled	2650 m^2	1525 m^2
Pervious – Controlled	-	-
Pervious – Uncontrolled	350 m^2	200 m^2
Total	3000 m^2	3000 m^2

Table 4.2: DRAINS Catchment Parameters

Drains Model

Hydrological and hydraulic modelling of the internal stormwater drainage system was undertaken using the computer software DRAINS.

The drainage arrangements were modelled in DRAINS software for comparison of pre and post development discharges and sizing the detention storages. The DRAINS models are shown in Fig. 4.1.

DRAINS is a multi-purpose program for designing and analysing urban stormwater drainage systems and catchments. The software uses ARR 2019, hydrology models such as ILSAX as well as storage routing model hydrology. Working through a number of time steps during the course of a storm event, it converts rainfall patterns to stormwater runoff hydrographs and routes these through networks of pipes, detention systems including outlet controls, channels and streams.

Rainfall data that was input in the model was downloaded from the ARR data hub for the location of this development.

Ensembles of storms of various durations and patterns were analysed and the detention storages sized based on the critical storms from the analysis results.

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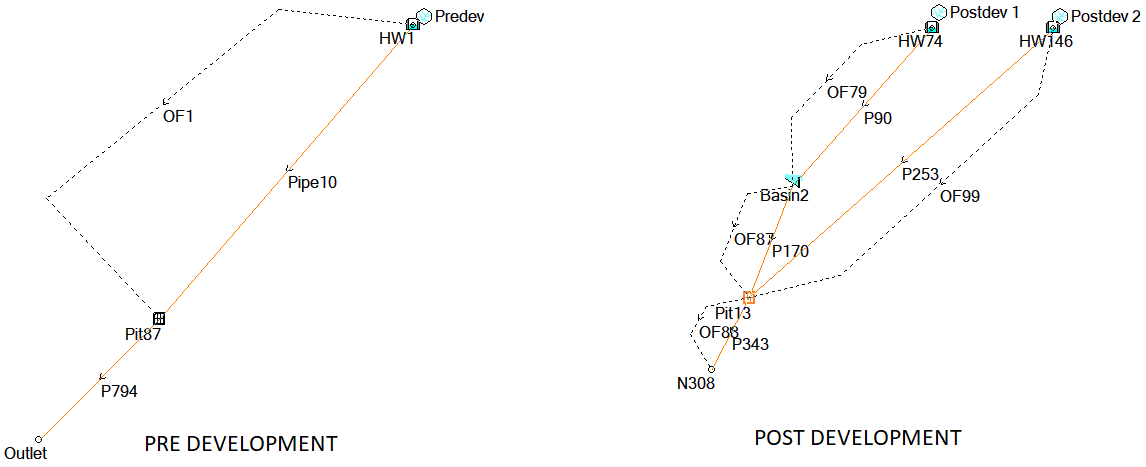

Figure 4.1: DRAINS computer models

Table 4.3 below outlines the post development detention system that was incorporated in the DRAINS model.

Detention Parameters	
	Detention Tank
Detention Volume	10m^3
Orifice Diameter	160mm

Table 4.3: Detention Tank Parameters

The above OSD limited post development discharges to not exceed pre development values as shown in Table 4.4 below.

Development Site Discharge (m^3/s)				
AEP	**20%**	**10%**	**5%**	**1%**
Pre-Development	0.057	0.068	0.084	0.128
Post-Development	0.052	0.062	0.074	0.106
Peak Flow Reduction	-0.005	-0.006	-0.01	-0.022

Table 4.4: Development Runoff Calculations with Detention

Storage hydrographs for 1%, 5%, 10% and 20% AEP median storms are shown in Figs 4.2 to 4.5 demonstrating the adequacy of the 10m^3 detention tank volume.

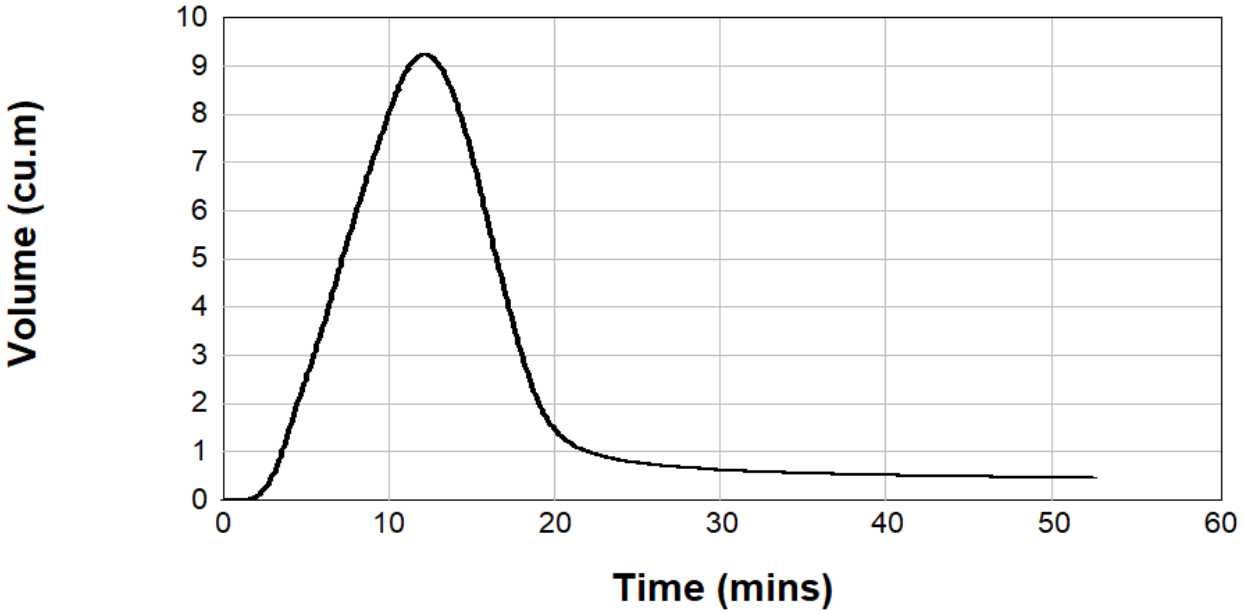

Figure 4.2: Detention Tank Storage Graph for 1% AEP

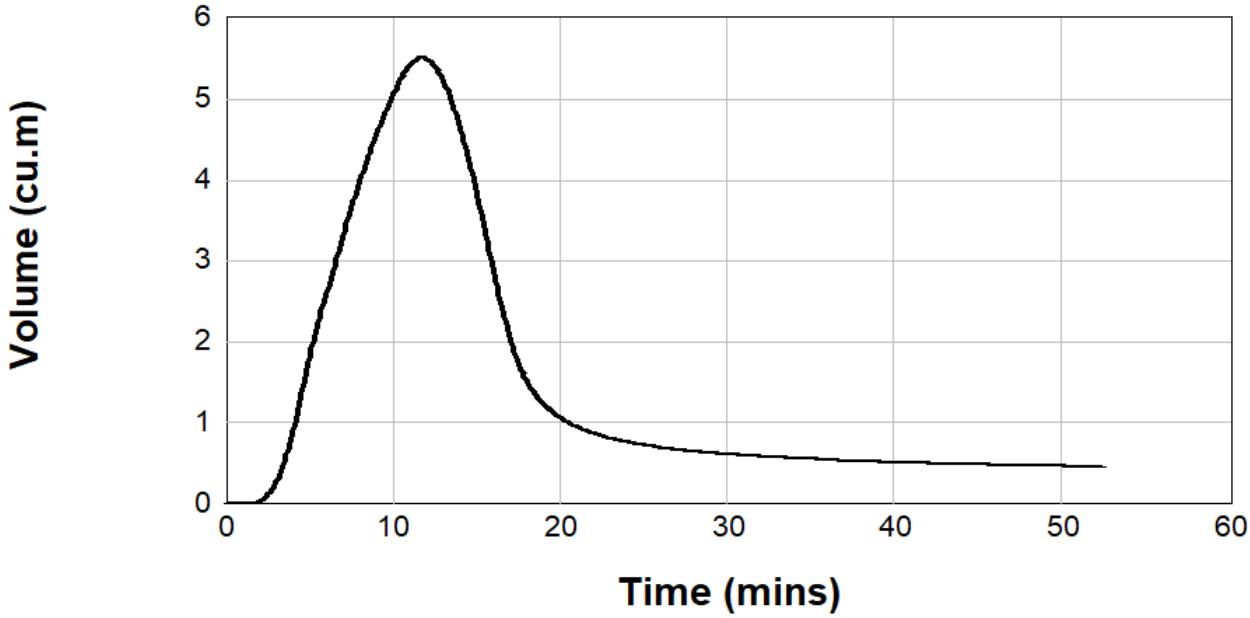

Figure 4.3: Detention Tank Storage Graph for 5% AEP

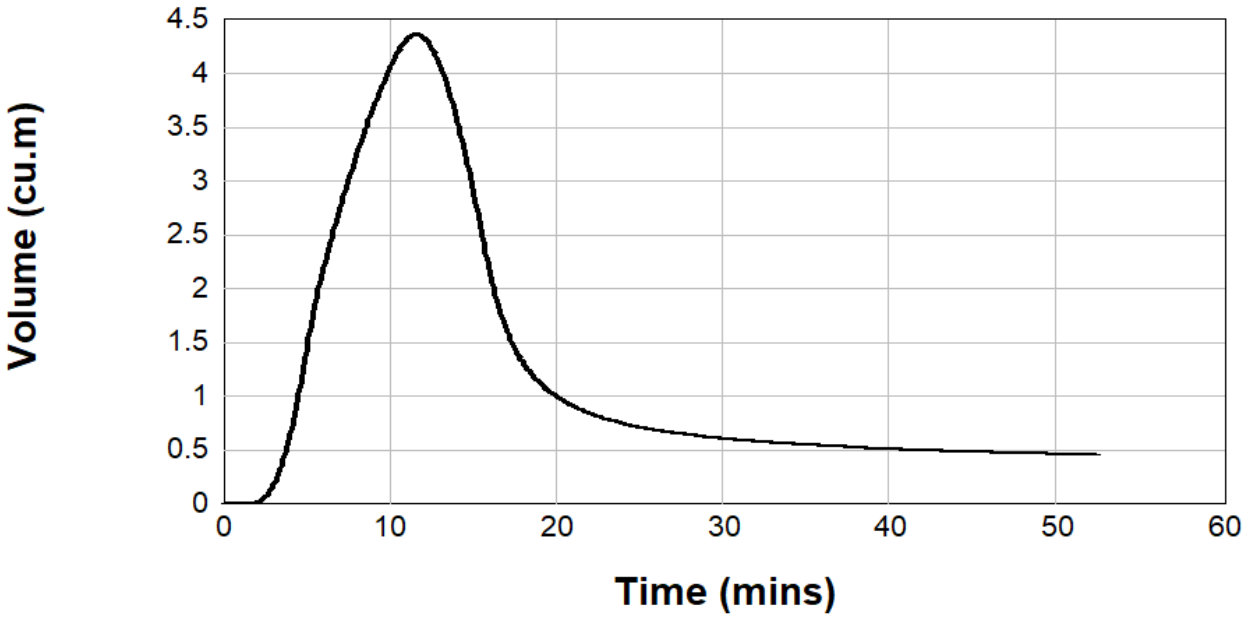

Figure 4.4: Detention Tank Storage Graph for 10% AEP

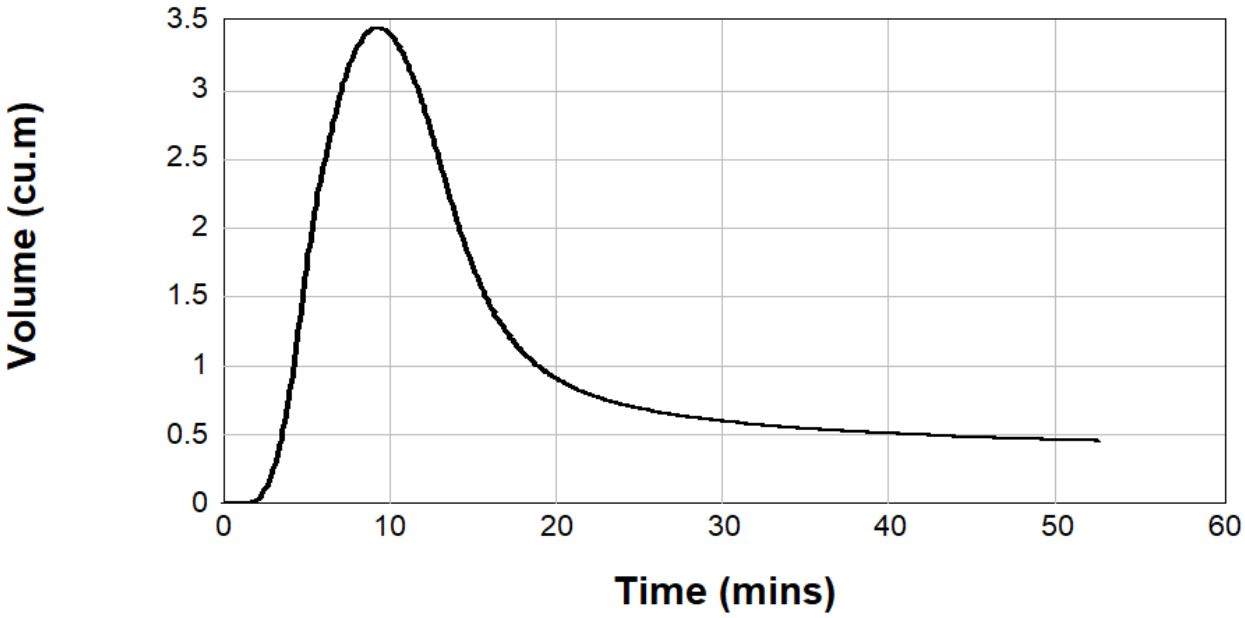

Figure 4.5: Detention Tank Storage Graph for 20% AEP

5.0 Site Management Measures (Construction Phase)

To prevent the infiltration of litter, sediments and other pollutants from entering the stormwater system, Melbourne Water suggest the use of various sediment management measures which can be utilised on site to provide drainage structure protect. As drainage is constructed on site, any inlets into the system should be protected. The following measures are compatible with a development of this nature and may be implemented on site during construction works to prevent polluting the stormwater system:

- Silt Fences – are temporary, permeable barriers of geo-textile installed in a trench and supported by star pickets or wooden posts. This provides treatment from sediment as the velocity of the runoff is sufficiently slowed down whereby it no longer has the energy to hold particles in suspension. Filtration is also provided as runoff passes through the silt fence.

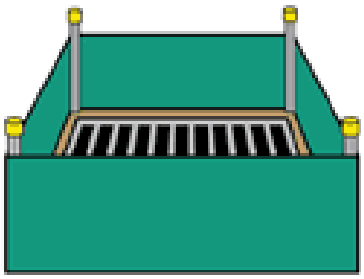

Figure 5.1: Silt Fence (Reference: Melbourne Water)

- Gravel Sausages and RockLogs – are permeable sacks (geo-textile, synthetic netting or wire) pre-filled or filled by the user with materials such as coarse sand or aggregate up to 50mm used most commonly to protect kerb inlets. Treatment from sediment is similar to that of silt fences.

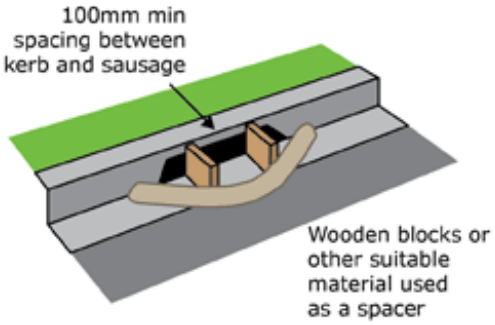

Figure 5.2: RockLogs (Reference: Melbourne Water)

- Drain Wardens – traps sediment on silt fence material, which is laid under and held in place by the grate, as run-off flows through it into the stormwater system.

Figure 5.3: Drain Warden (Reference: Melbourne Water)

- Rumble Grids – remove sediment stuck to the tyres and chassis of vehicles through vibration. Many prefabricated rumble grids are able to open the tread on tyres to increase the amount of sediment removed from them. Rumble grids should be located at all vehicular access points to the site.

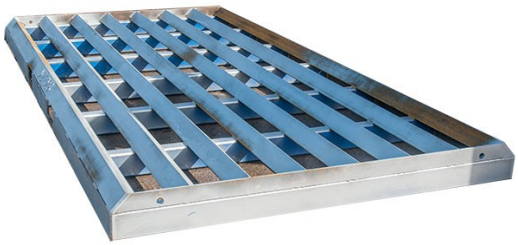

Figure 5: Rumble Grid (Reference: Orange Hire)

Prior to the commencement of works the engaged contractor is to submit a construction management plan to the satisfaction of the responsible authority whereby more detail regarding how the above and/or other sediment management measures will be incorporated into the construction site. We have provided a sketch of what we envisage, refer Appendix D, to which the contractor will add to or adjust the measures.

6.0 Maintenance

Melbourne Water recommends that WSUD assets should generally be inspected every three months with higher levels of maintenance required within the first two years after construction. WSUD assets should be inspected while stormwater is flowing through the system to identify and fix any problems observed.

The rainwater reuse system shall be inspected and maintained as per Table 6.1 below, in accordance with the Department of Health's 'Guidance on use of rainwater tanks' document.

Component	Key Activities	Frequency
Gutters	Will need cleaning as well as inspection. If inspection finds large amounts of leaf material or other debris, then the inspection and cleaning frequency may need to be increased.	6 months
Roof	Check for the presence of accumulated debris including leaf and other plant material. Accumulated material should be cleaned. If tree growth has lead to overhanging branches these should be pruned.	6 months
Tank Inlets, Insect-Proofing and Leaf Filters	If necessary, these should be cleaned and repaired.	6 months
Tank and Tank Roof	Check structural integrity of the tank including the roof and access cover. Any holes or gaps should be repaired.	6 months
Internal Inspection	Check for evidence of access by animals, birds or insects including the presence of mosquito larvae. If present, identify and close access points. If there is any evidence of algal growth (green growth or scum on or in the water), find and close points of light entry.	6 months
	In addition to 6 monthly inspections, tanks should be inspected every 2-3 years for the presence of accumulated sediments. If the bottom of the tank is covered with sediment the tanks should be cleaned.	2-3 Years
Pipework	Check for structural integrity. Sections of pipework that are not self-draining should be drained. Buried pipework, such as with 'wet systems', can be difficult to drain or flush. Where possible drainage points should be fitted.	6 months

Table 6.1: Inspection and Maintenance Activities for Rainwater Tanks (Reference: Department of Health)

The raingardens proposed on site shall be inspected and maintained as per

Component	Key Activities	Typical Frequency
Filter Media	- Remove leaf litter and gross pollutants - Check for biofilms (algal biofilms may develop on the surface of the filter media leading to clogging issues) - Monitor ponding of water following rainfall events - Check for permanently boggy/pooled areas	3 months & following storm events
	- Remove sediment (or scarify filter media surface if required)	Annually
Erosion	- Check for erosion/scouring - Check for evidence of preferential flow paths - Replace filter media in eroded areas - Add rock protection around inlets (if required)	3 months
Mulch	- Check depth and even distribution of mulch - Check mulch is not touching plant stems - Check for sediment/silt accumulation in mulch layer - Replace mulch (if required) - Retain mulch using jute mats or nets (if required)	3 months
Vegetation	- Inspect plant health and cover - Replace dead plants (maintain a consistent vegetation density of 6-10 plants per square metre across the raingarden filter media) - Remove weeds (avoid use of herbicides) - Prune plants (where applicable)	3 months

	- Water plants (if required during establishment phase)	
Civil Components	- Check infrastructure for damage and repair as required - Ensure inlet and outlet points are clear of sediment, litter and debris	3 months & following storm events
	- Inspection opening for underdrain (slotted drainage pipe): - Check water level - Check for sediment accumulation - Flush the underdrain system (if required)	Annually

Table 6.2 in accordance with Melbourne Water's 'WSUD maintenance guidelines – Inspection and maintenance activities' document.

Component	Key Activities	Typical Frequency
Filter Media	- Remove leaf litter and gross pollutants - Check for biofilms (algal biofilms may develop on the surface of the filter media leading to clogging issues) - Monitor ponding of water following rainfall events - Check for permanently boggy/pooled areas	3 months & following storm events
	- Remove sediment (or scarify filter media surface if required)	Annually
Erosion	- Check for erosion/scouring - Check for evidence of preferential flow paths - Replace filter media in eroded areas - Add rock protection around inlets (if required)	3 months
Mulch	- Check depth and even distribution of mulch - Check mulch is not touching plant stems - Check for sediment/silt accumulation in mulch layer - Replace mulch (if required) - Retain mulch using jute mats or nets (if required)	3 months
Vegetation	- Inspect plant health and cover - Replace dead plants (maintain a consistent vegetation density of 6-10 plants per square metre across the raingarden filter media) - Remove weeds (avoid use of herbicides) - Prune plants (where applicable) - Water plants (if required during establishment phase)	3 months
Civil Components	- Check infrastructure for damage and repair as required - Ensure inlet and outlet points are clear of sediment, litter and debris	3 months & following storm events
	- Inspection opening for underdrain (slotted drainage pipe): - Check water level - Check for sediment accumulation - Flush the underdrain system (if required)	Annually

Table 6.2: Inspection and Maintenance Activities for Raingardens (Reference: Melbourne Water)

7.0 Conclusion

The proposed stormwater treatment model complies with Council's Policy of promoting the management of stormwater to mitigate the impacts of urban developments. The WSUD measures and detention system as discussed in this report are to be incorporated in the stormwater design of this development to ensure that the WSUD objectives outlined in the application requirements of Clause 53.18 Stormwater Management in Urban Development and Clause 22.18 of the Stonnington Planning Scheme are met.

	Measure to be Implemented
1	30kL rainwater reuse tank to capture roof runoff and re-use for irrigation.
2	Passive irrigation by collecting runoff from rooftop play court towards 18m2 raingarden.
3	Raingarden for pollutants removal including nutrients.
4	Spel Ecoceptor for removal of gross pollutants and suspended solids.

Table 6.1: Summary of how proposed WSUD measures

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Appendix A – Stormwater Management and WSUD Schematic

Overflow from high level planters taken to harvesting tank

Passive irrigation of high level planter with roof runoff

Combined proposed Stormwater Harvesting and OSD Tank. Harvesting volume 30kL, OSD volume 10kL

Baffle Pit

car park drainage to proposed drainage network

Existing car park to be rebuilt as needed to suit new design layout and levels

Proposed new drainage network

High flow bypass

SPEL Ecoceptor separator

Proposed SPEL Basin bioretention unit

Connect to existing drainage network. Exact location to be confirmed

Fall

Proposed spoon drain

GENERAL EXTENTS
PROPERTY BOUNDARY

PAVEMENTS & SURFACES
INSITU CONCRETE PAVEMENT WITH EXPOSED AGGREGATE FINISH
INSITU CONCRETE PAVEMENT WITH GRIT BLAST FINISH
ASPHALT PAVEMENT
DECK
TACTILE INDICATORS HAZARD | TYPE 04
TACTILE INDICATORS DIRECTIONAL | TYPE 04

WALL, EDGES & KERBS
INSITU CONCRETE WALL | 150mm WIDE

FURNITURE & FIXTURES
BIKE HOOP RACK
BIN LITTER
BIN RECYCLE
BENCH SEAT
TABLE SETTING
DRINKING FOUNTAIN

SOFTSCAPE & PLANTING
PROPOSED TREE
EXISTING TREE
TREE PROTECTION ZONE TO EXISTING TREE. REFER TO ARBORICULTURAL ASSESSMENT & REPORT
STRUCTURAL ROOT ZONE TO EXISTING TREE. REFER TO ARBORICULTURAL ASSESSMENT & REPORT
3 TREE ASSET ID NUMBERING. REFER TO ARBORICULTURAL ASSESSMENT & REPORT
SHRUBS REFER TO PLANTING PLANS & SCHEDULE
IRRIGATED VERTICAL GREENING PLANTER
IRRIGATED RAINGEN BED
NOTE: ALL IRRIGATION TO BE SUPPLIED FROM SITE CAPTURED RAINWATER FROM UNDERGROUND WATER TANK IN CAR PARK

Appendix B - Catchment Plan

Approximately 150m2 of existing landscape catchment to be drained onto proposed network.

Combined proposed Stormwater Harvesting and OSD Tank. Harvesting volume 30kL, OSD volume 10kL

Baffle Pit

Catchment 1: Approximately 625m2 car park catchment to be drained onto proposed network

Roof 1: Approximately 1125m2 to proposed rain garden

Roof 2: Approximately 150m2 roof catchment to stormwater harvesting tank via tree planters.

Approximately 50m2 of existing landscape catchment to be drained onto proposed network.

Catchment 2: Approximately 900m2 of concrete pavement catchment to be drained onto proposed network.

Fall

DP

UNDERGROUND RAINWATER TANK

GENERAL EXTENTS
PROPERTY BOUNDARY

PAVEMENTS & SURFACES
INSITU CONCRETE PAVEMENT WITH EXPOSED AGGREGATE FINISH
INSITU CONCRETE PAVEMENT WITH GRIT BLAST FINISH
ASPHALT PAVEMENT
DECK
TACTILE INDICATORS HAZARD | TYPE D4
TACTILE INDICATORS DIRECTIONAL | TYPE D4

WALL, EDGES & KERBS
PRIMA CONCRETE WALL | 150mm WIDE

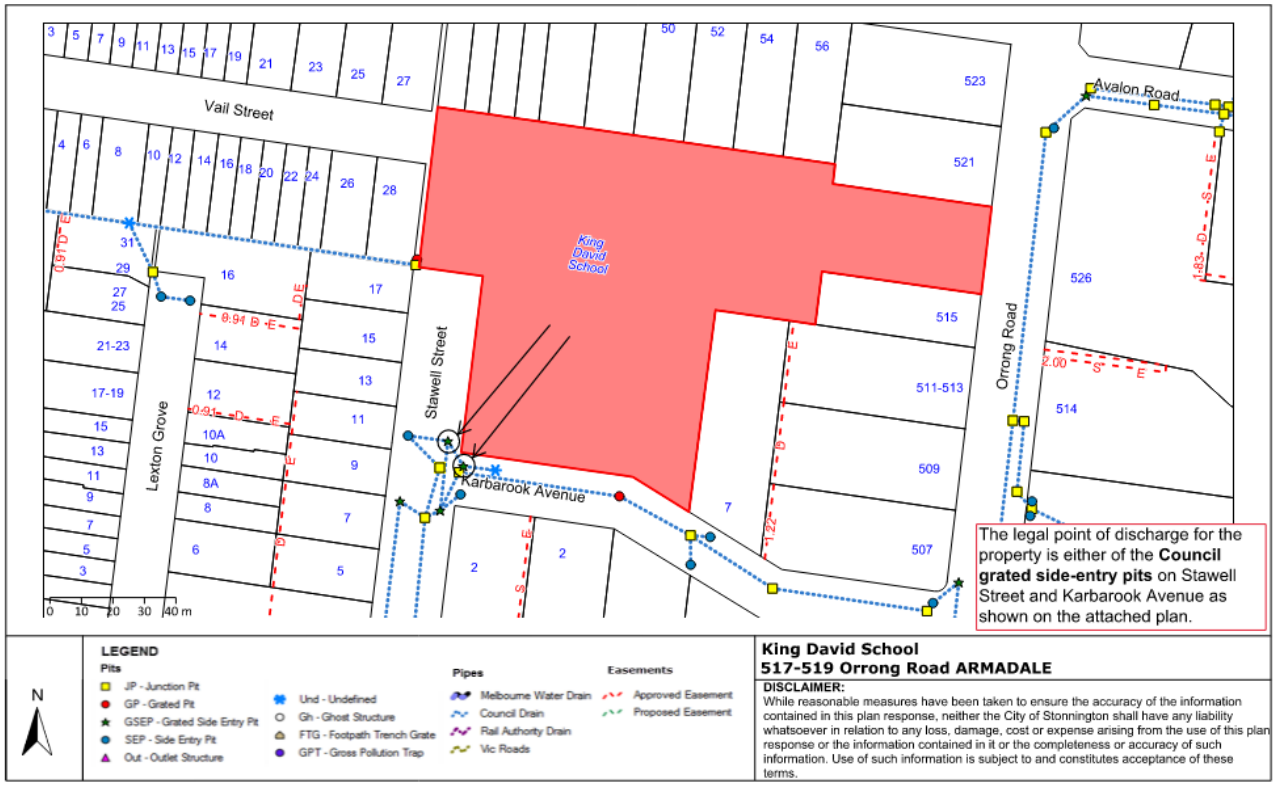
FURNITURE & FIXTURES
BIKE HOOP RACK
BIN LITTER
BIN RECYCLE
BENCH SEAT
TABLE SETTING
DRINKING FOUNTAIN

SOFTSCAPE & PLANTING
PROPOSED TREE
EXISTING TREE
TREE PROTECTION ZONE TO EXISTING TREE. REFER TO ARBORICULTURAL ASSESSMENT & REPORT
STRUCTURAL ROOT ZONE TO EXISTING TREE. REFER TO ARBORICULTURAL ASSESSMENT & REPORT
3 TREE ASSET ID NUMBERING. REFER TO ARBORICULTURAL ASSESSMENT & REPORT
SHRUBS REFER TO PLANTING PLANS & SCHEDULE
IRRIGATED VERTICAL GREENING PLANTER
IRRIGATED GARDEN BED
NOTE: ALL IRRIGATION TO BE SUPPLIED FROM RAIN CAPTURED RAINWATER FROM UNDERGROUND WATER TANK IN CAR PARK

Appendix C – Legal Point of Discharge

City of STONNINGTON

Council Stormwater Network



Appendix D - Melbourne Water Flood Certificate

Melbourne Water

30 November 2021

Sadik Fahim
TTW Pty Ltd (VIC)
13 / 379
Collins Street VIC 3000

Dear Sadik,

Proposal: Pre-development advice
Site location: Lot No 1, 519 ORRONG ROAD ARMADALE 3143

Melbourne Water reference: MWA-1233076
Date referred: 23/11/2021

ADVERTISED PLAN

Thank you for your application regarding the proposed development at the above property. Melbourne Water has reviewed the proposal and provides the following advice for your consideration.

Land and flood level information available at Melbourne Water indicates that the above property is not subject to flooding from a Melbourne Water drain or waterway, based on a storm event with a 1% chance of occurrence in any one year. The property is not affected by any Melbourne Water assets.

Melbourne Water has no development requirements for the subject property.

Advice

This advice is valid for a period of three months from the date of this letter.

The above information is only preliminary and forms no contractual agreement between your company and Melbourne Water. Melbourne Water reserves the right to alter any or all of this information at any time.

For enquiries in relation to this application please contact our Customer Service Centre on 131 722.

Yours sincerely,

Customer Service Centre
Melbourne Water

VICTORIA State Government

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Melbourne Water ABN 81 945 386 953
990 La Trobe Street Docklands VIC 3008
PO Box 4342 Melbourne VIC 3001 Australia
T 131 722 F +61 3 9679 7099
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Appendix E – Site Management Schematic (Construction Phase)