

Overview

These guidelines are designed to assist you in preparing a response to Council's Water Sensitive Urban Design (WSUD) policy at Clause 19.03-3L-02 of the Stonnington Planning Scheme. They are suitable for small works, such as a first floor extension to a dwelling.

Policy

Council's WSUD policy applies to planning permit applications for new buildings and extensions to existing building which are 50 square metres in floor area or greater. The three key WSUD measures for dwellings are rainwater tanks, permeable paving, and raingardens.

Information to be provided:

Site layout plan	
<input type="checkbox"/>	A site layout plan showing all building roofs and covered areas, pervious (unsealed) surface areas and impervious (sealed) surface areas with dimensions (These details must be consistent with the plans and other documents lodged with the planning application)
<input type="checkbox"/>	Site boundary, dimensions, and total site area on the site layout plan
<input type="checkbox"/>	The location, type and surface area (m ²) of the proposed WSUD treatment systems on a plan, including how each catchment area to be treated will be connected to a WSUD element, e.g. roof to rainwater tank, driveway to bioretention raingarden

Stormwater treatment performance modelling	
<input type="checkbox"/>	STORM report that achieves a minimum pass rate of 100% - https://storm.melbournewater.com.au/ <u>Note</u> - Council acknowledges that it may not always be possible to achieve a pass rate (100%) in STORM for renovations to existing single dwellings due to existing site constraints and extent of the proposed works. In these cases, a STORM Rating with the best possible score achievable given the existing site constraints must be provided for Council's consideration.

Design Details	
For water tanks:	
<input type="checkbox"/>	Tank capacity and connection <u>Note</u> - Council does not support reuse of collated water for irrigation <u>only</u> as it constitutes a seasonal demand, meaning that tanks will overflow to stormwater in times of low demand, such as Winter and Spring. Tanks must be connected to a viable re-use option such as internal toilet-flushing.
For permeable/porous paving:	
<input type="checkbox"/>	The extent of permeable/porous paving clearly indicated on the plans, including landscape plan(s), if provided. A typical cross-section must also be provided. One is available on Melbourne Waters website: https://www.melbournewater.com.au/building-and-works/stormwater-management/options-treating-stormwater/porous-paving
For raingardens: (additional information can be found at https://www.melbournewater.com.au/water-and-environment/saving-water/raingardens)	
<input type="checkbox"/>	Cross-section of the proposed raingarden. Raingardens are to be lined with a waterproof liner and should be away from building footings. <u>Note</u> - Within STORM, the "Raingarden 100mm" or "Raingarden 300mm" option refers to a 100mm or 300mm ponding depth above the raingarden surface to the top of the overflow which is connected to the Legal Point of Discharge (LPD). Typically, a raingarden is 1m or greater in depth. <u>Note</u> - The minimum acceptable size for a raingarden is 1m ² with a minimum width of 0.35m. Generally, the size of the raingarden should be approximately 2% for the run-off area. Based on this, from 50m ² of run-off area, the size of the raingarden would be 1m ² .
<input type="checkbox"/>	Plant species and planting densities to be used in any vegetated treatment systems, in accordance with best practice requirements (e.g. Melbourne Water recommends 6-10 plants/m ² in a raingarden)

Site Management Plan

<input type="checkbox"/>	A brief statement outlining the environmental protection measures to protect the stormwater system during construction (e.g. sediment, dust, waste, chemicals management). The statement should include the types of measures required to be implemented on site, such as adoption of 'Keeping our stormwater clean' guide by Melbourne Water and typical measures suggested: https://www.clearwatervic.com.au/user-data/resource-files/Keeping_Our_Stormwater_Clean-A_Builders_Guide[1].pdf
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Maintenance Schedule

<input type="checkbox"/>	A clear diagram with labels to identify key elements to be regularly inspected and maintained
<input type="checkbox"/>	A checklist summarising key treatment elements, and inspection and maintenance tasks and frequency
<input type="checkbox"/>	Outline of who is going to own and maintain the WSUD assets and the associated costs (i.e. future tenants or owners, a body corporate, etc.)

Note:

- STORM Treatment Type "Infiltration Sand" is inappropriate due to local soil characteristics within the municipality, which contain clay underneath the topsoil at depths usually ranging from 0.6 to 1.2 metres.
- STORM Treatment Types "Pond", "Wetland" and "Buffer Strip" are inappropriate for small inner urban allotments and are normally used in new large subdivisions.
- Swimming pools and a 1 metre setback from the pool's perimeter can be excluded from the 'impermeable surfaces' calculations. This is because the pool is connected to the sewer and the paved area immediately adjacent to it is assumed to drain directly into the pool.
- Do not use WSUD proprietary devices, also called Stormwater Quality Improvement Devices (SQIDs), as they are generally not accepted at Stonnington.

Further information:

- Refer to the following Sustainable Design Assessment in the Planning Process (SDAPP) factsheets available on Council's website – Section 4.0 Stormwater Management and 4.1 Site permeability - <https://www.stonnington.vic.gov.au/Planning-and-building/Planning/Sustainability-in-your-planning-application#section-4>

Examples

Below are example maintenance checklist for rainwater tanks, raingardens and permeable/porous paving. The examples can be used as part of your WSUD response. Once endorsed to form part of the permit, the property owner is responsible for the continuous implementation of the maintenance of the WSUD measure.

Rainwater Tank Maintenance Checklist:

Maintenance of rainwater tanks is important to ensure the quality of water is high, key tasks include:

- Stop leaf litter and debris entering the tank.
- Prevent bird droppings and dust building up in the gutters.
- Prevent mosquitos and other animals entering the tank.

Rainwater tank element	Inspection item	Maintenance task	Frequency
Roof, gutters & downpipes	Check if there is leaf litter or debris in the gutters.	If there is litter or debris, remove by hand and dispose of responsibly. Regularly clear your gutters. Make sure you cover the tank inlet if you are rinsing down the gutters to avoid debris entering the tank.	Quarterly
First flush diverter	Check if there is anything blocking the first flush diverter.	If there is anything blocking the diverter, remove by hand and dispose of responsibly. To clean out, unscrew the cap at the base of the diverter and remove the filter. Wash the filter and the flow restrictor inside the cap with clean water.	Quarterly
Potable mains back up device	Check that the potable mains back up switch is operating correctly.	If it is not operating correctly, repair or replace the device.	6-Monthly
Mesh cover	Inspect the mesh cover for deterioration and holes.	If the mesh cover has deteriorated or has holes, replace the cover. The mesh cover should be regularly cleaned.	Quarterly
Tank volume	Inspect the tank to see if there is a large amount of sediment or debris at the bottom that reduces the volume available for water storage.	If there is sediment or debris at the bottom, remove the sediment and dispose of responsibly. A range of devices are available to monitor water level. Some simple float systems can be used effectively.	2-3 Years
Pump	Check that the pump is working effectively.	If the pump is not working, check that the potable mains back up is not permanently on. Repair or replace the pump as required. Check operating instructions for your pump. Check that pumps are kept clear of surface water (flooding), vegetation, and have adequate ventilation. Pumps should be serviced every few years to prolong the pump's life.	6-Monthly
Pipes & taps	Check pipes and taps for leaks.	If there are leaks, repair as needed.	Quarterly
Overflow	Inspect the overflow to ensure it is clear and connected to the stormwater network.	If it is unclear, remove blockages and restore the connection as required.	Quarterly
Supporting base	Check the supporting base for any cracks or movements.	If the supporting base is damaged, replace as required.	2-3 Years

The owner should keep a maintenance log of when the tasks above have been undertaken.

Raingarden Maintenance Checklist:

A raingarden is a specially designed garden that uses plants and soil to remove the pollutants from stormwater runoff generated from roofs, driveways and paths following rainfall events. These natural treatment systems help protect the environment by reducing the amount of stormwater runoff and pollutants that enter the stormwater system. Maintenance of raingardens is essential to ensure they effectively treat stormwater, continue to look good, and do not cause local flooding.

Raingarden element	Inspection item	Maintenance task	Frequency
Raingarden inlet	Check if there is scour or erosion where water enters the raingarden. Check if there is any rubbish, leaf litter or sediment blocking the inlet.	If there is erosion around the inlet, re-profile with hand tools and place gravel or stones at the inlet. If there is litter or debris, remove by hand and dispose of responsibly.	Quarterly and following storm events
Raingarden surface level	Check where the surface is sitting below the raingarden edges or border.	If it is sitting less than 5cm below the edge, remove sediment from the surface so that it is sitting approximately 10-20cm below.	Quarterly
Raingarden temporary detention	Check if there is anything that is slowing the filtration of flows, such as moss or clay.	If there is anything stopping the filtration of flows, remove the crust from the top of the raingarden and check that water will filter through exposed media.	Quarterly
Raingarden surface	Check if the raingarden surface is flat.	If there are any areas of the raingarden surface that have eroded or become higher and are not getting wet during a rain event, smooth the surface out with flat hand tools.	Quarterly and following storm events
Plants	The health of the plants should be checked as well as the presence of any weeds.	If there are any unhealthy or dying plants, they should be replaced. If plants continue to die, replace with a more suitable species. Do not use fertilizer to improve plant health as this will pollute the raingarden. If there are any weeds remove by hand and dispose of responsibly.	Quarterly
Planting media	Check how long the raingarden holds water for.	If the raingarden is holding water for more than a couple of hours after rain has stopped, remove and replace the top 100mm of planting material (loamy sand).	Quarterly and following storm events
Overflow pit/pipe	Check if there is anything blocking the top of the overflow pit/pipe that would prevent water from entering.	If there are any blockages, remove and dispose of responsibly.	Quarterly
Under drainage	Check if there is any rain that drains to the bottom of the raingarden in a heavy rain event.	If this is occurring, flush the underdrain or uncover it to check for blockages.	Annually and following storm events
Stormwater network connection	Check if there is any water ponding in the overflow pit or pipe and not entering the stormwater network.	If there is any water ponding, check for blockages and dispose of responsibly.	Quarterly and following storm events

The owner should keep a maintenance log of when the tasks above have been undertaken.

Permeable/Porous Pavement Maintenance Checklist:

Permeable/porous pavements allow water to drain through the pavement surface and seep into the ground below. This benefits vegetation by improving access to air and water. It also helps the environment by reducing the amount of stormwater runoff and pollutants that enter the Bay.

Permeable pavement – pavers, concrete or asphalt that have been designed to allow water to flow through them (i.e. the paving materials are porous)

Porous pavement – can be created with traditional masonry pavers that have a porous jointing material between the pavers, which is loose laid and allows water to drain between the pavers.

Permeable/Porous paving element	Inspection item	Maintenance task	Frequency
Paving surface	Check for accumulated sediment	Sweep, wet vacuum, or pressure hose the surface of the pavers to remove clogging material. Care needs to be taken with high pressure hoses as they can cause damage to loose material in the joints and bedding material.	Quarterly and following storm events
Infill material between pavers	Check the material between the paves has not been eroded away or has vegetation growing in it	Top up between the pavers with suitable drainage material. Remove any unwanted vegetation.	Quarterly and following storm events
Bedding Material (material pavers are laid on)	Check level of the pavement surface	An uneven paving surface can result from the bedding material failing to provide an even base. The paving and bedding material may need to be reset.	Annually
Underdrain (if required)	Check inspection openings for sediment accumulation	In areas where soils have poor drainage (e.g. heavy clays), an underdrain may be needed under the drainage layer. Flush underdrain to remove sediment (if required).	Annually