

Requirements for Onsite Stormwater Drainage

v3.0 October 2021



TOWN of
EAST FREMANTLE

INFORMATION SHEET

This information sheet has been created for residential property owners to provide information relating to effectively containing water run off on their properties.

What is Water Runoff?

- Rainwater that is collected from roof and paved areas including driveways on and around the dwelling on the property,
- Swimming pool water discharged from overflowing or emptied swimming pools.

Property owners have a statutory obligation under common law precedents and the Local Government Act 1995 to confine water runoff within their property boundaries.

The most effective way to achieve this objective is to provide catchment areas such as soakwells, spoon drains or similar methods to disperse the rainwater collected from gutters and downpipes from roof and paved areas.

It is necessary to design and install a system so that when overflowing occurs any water is directed away in a manner which ensures it does not pond against or enter the building or adjacent properties.

1. Site Plan

Include with the plans submitted to the Town's Planning & Development services a site plan showing the following drainage details:

- 1.1. Existing ground levels or contours. (AHD)
- 1.2. Proposed levels of paved or concrete areas. (AHD)
- 1.3. Details of roof and pavement drainage disposal.
- 1.4. Size (depth and diameter) and locations of all soakwells, drainage grates or spoon drains.
- 1.5. Minimum size soakwell allowable for roof water disposal is: 900mm diameter x 600mm diameter deep
- 1.6. Cover of pipes in trafficable areas, and identification of trafficable grates.

NOTE: The following formula shall be used to determine the soakwell capacities Impervious Area (m²) x 0.0125m = Capacity Required m³
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2. Conditions

The following conditions shall also apply:

- 2.1. All soakwells installed in paved or concreted areas are to be provided with trafficable lids and made accessible for maintenance purposes.
- 2.2. Soakwells to be no closer than 1m or it's depth (whichever is greater) from the outside edge of the soakwell to a footing or boundary line.
- 2.3. All soakwells used shall be of an approved manufacture and standard. PVC soakwells are not acceptable in areas subject to vehicular traffic
- 2.4. All soakwells installed within flexible pavement areas (bitumen or brick paving) shall be provided with an approved base to prevent any subsidence of the well liners.

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3. Soakwells

The following criteria shall apply in the use of soakwells:

- 3.1. Soakwells shall be used only where soil and groundwater conditions favour.
- 3.2. Soakwells are not acceptable in road reserves as part of subdivision unless specifically approved by Council.
- 3.3. Soil profile and groundwater data shall be submitted to Council.
- 3.4. Soakwells shall be linked only where the site slopes towards the frontage boundary and a future drainage connection is required. The last soakwell shall be located 3m from the boundary and shall allow for the installation of a future sand-trap.
- 3.5. No linkage is permitted onsite sloping towards the rear.
- 3.6. Overflow outlets are required for the 20 years ARI storm and contingency provisions for the 100 year ARI storm.

4. Drainage Sumps

Council policy discourages the construction of drainage sumps. In exceptional cases where sumps are permitted, the following shall apply:

- 4.1. For subdivisions, a sump may be incorporated as part of the Public Open Space (POS) under strict guidelines in respect of slope, vegetation, landscaping and nutrient stripping. These vary with each sump.
- 4.2. For development, similar rules as (a) apply except that the sump is constructed within the block. A beautified fence/wall may also be required.
- 4.3. Sump capacity (measured between base level & Top of Wall Level (TWL)) shall be the equivalent of 70% of total incoming flows resulting from a 72-hour design storm of 10- ARI.
- 4.4. The TWL shall determine the Hydraulic Grade Line (HGL).
- 4.5. Total sump volume (freeboard included) shall contain the entire flow of a 72 hours design storm of 10 year ARI.
- 4.6. Sump and adjoining areas (excluding residential blocks) shall contain the flow of a 72- hour design storm of 100-year ARI without causing severe flooding or damage.

Please find below a table indicating some common concrete soakwells sizes for water dispersion. These calculations are based on normal rainfall conditions. Excessive stormwater conditions can cause overflow depending on the soil type.

SOAKWELL SIZES AND CAPACITIES

Diameter	Depth	Capacity (m ³)	Equivalent Impervious area (m ²)
900	600	0.38	30.40
900	900	0.57	45.60
900	1200	0.76	60.80
1200	600	0.68	54.40
1200	900	1.02	81.60
1200	1200	1.36	108.80
1200	1500	1.70	136.00
1500	600	1.06	84.80
1500	1200	2.10	168.00
1500	1500	2.65	212.00
1800	600	1.53	122.40
1800	900	2.29	183.20
1800	1200	3.05	244.00
1800	1500	3.82	305.60
1800	1800	4.58	366.40