



INFORMATION SHEET

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Stormwater Detention on Your Property

What is stormwater detention?

Stormwater detention is the collection of rain that falls on your property (known as stormwater), storing it temporarily, and then releasing it slowly so that it doesn't cause downstream flooding.

Why is stormwater detention necessary?

The aim of stormwater detention is to hold stormwater within the property for a sufficient period to simulate when the land was grassland (pre-development conditions). This reduces the flood risk for properties downstream, and adverse effects to the natural waterways.

What is the Shire of Denmark's requirements?

Stormwater from all impervious areas (roof, driveway, paving etc.) is to be detained onsite with an overflow connected to existing stormwater infrastructure (or discharged to the road – see figure 4).

How can I achieve the detention requirements?

There are several options available to achieve detention, as listed below:

- Storage pits (see Figure 1) or modular storage
- Rain gardens (see Figure 2)
- Rainwater tanks (with rainwater retention volume – see Figure 3). *NOTE: Rainwater tanks are to be used when other options are unachievable.*

Due to Denmark's soil conditions; soakwells are not suitable in most areas within the Shire.

How much storage is required?

As a guide, 0.5m³ (500 litres) is required per 100m² of impervious area.

Alternatively, the storage can be calculated and designed by a Civil Engineer to the satisfaction of the Shire of Denmark.

Where the impervious area is unknown, the following table can be used:

| | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|------|
| Total land area (m ²) | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| Required storage volume (m ³) | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 |

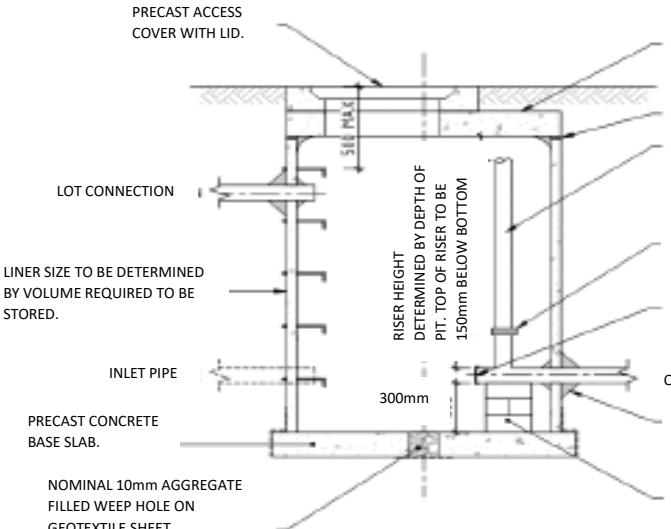
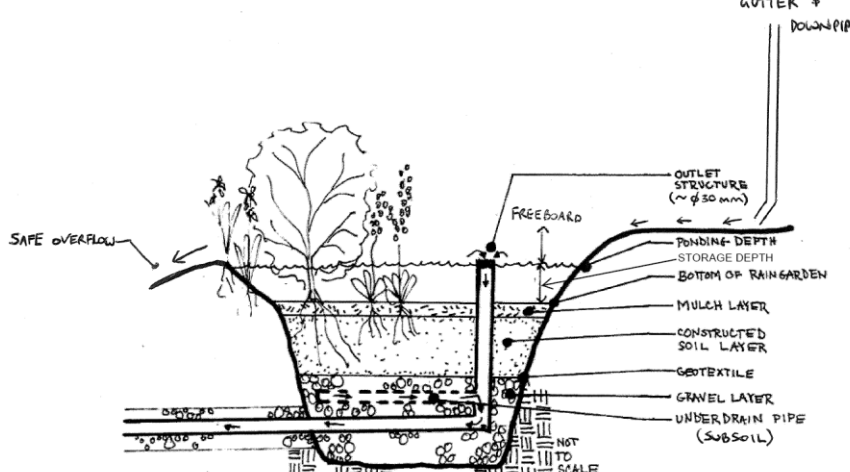
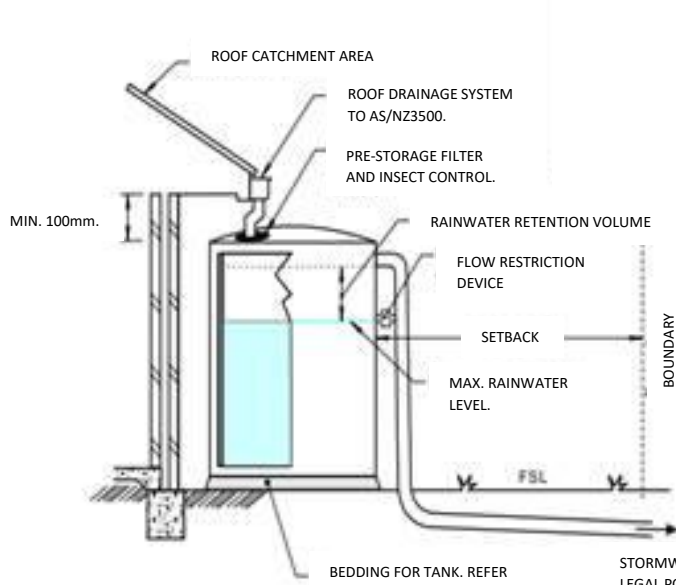
How do I connect to the Shire's Road drainage system?

Connection to the Road drainage system requires approval by the engineering department, and **must be inspected, by a Shire of Denmark Project Officer or Civil Engineer. Call the Engineering Department on 9848 0322 to arrange.**

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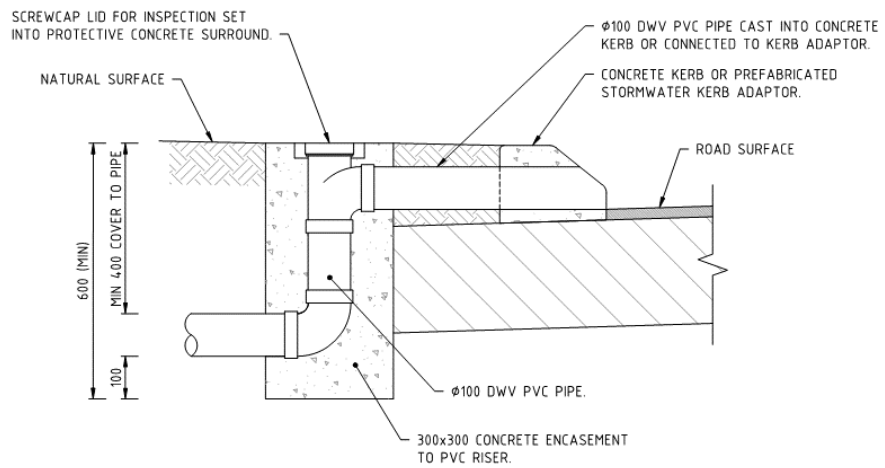
| | |
|---|--|
| <p>Figure 1 - Storage Pits</p> |  <p>PRECAST ACCESS COVER WITH LID.</p> <p>150mm PRECAST LID WITH ACCESS HOLE.</p> <p>MORTAR BEDDING AND FILLET.</p> <p>PVC RISE TO BE PLACED OFFSET FROM MANHOLE LID. PIPE DIAMETER TO BE 100mm.</p> <p>DISMOUNTABLE JOINER (MAINTENANCE ACCESS) WHERE LESS THAN 300mm BETWEEN TOP OF RISER AND BASE OF LID.</p> <p>3 x 12mm OUTLET HOLED TO BE DRILLED IN TO SCREW CAP.</p> <p>ALL PIPES TO BE FINISHED WITH MORTAR FILLET. 50mm INSIDE, 100mm OUTSIDE.</p> <p>MORTARED BRICK SUPPORT TO BE PLACED UNDERNEATH CONNECTION.</p> <p>LOT CONNECTION</p> <p>LINER SIZE TO BE DETERMINED BY VOLUME REQUIRED TO BE STORED.</p> <p>INLET PIPE</p> <p>PRECAST CONCRETE BASE SLAB.</p> <p>NOMINAL 10mm AGGREGATE FILLED WEEP HOLE ON GEOTEXTILE SHEET.</p> <p>300mm</p> <p>150mm</p> <p>RISER HEIGHT DETERMINED BY DEPTH OF PIT. TOP OF RISER TO BE 150mm BELOW BOTTOM</p> <p>OUTLET PIPE</p> |
| <p>Figure 2 – Rain Garden</p> |  <p>GUTTER & DOWNPIPE</p> <p>OUTLET STRUCTURE (~450mm)</p> <p>FREEBOARD</p> <p>PONDING DEPTH</p> <p>STORAGE DEPTH</p> <p>BOTTOM OF RAINGARDEN</p> <p>MULCH LAYER</p> <p>CONSTRUCTED SOIL LAYER</p> <p>GEOTEXTILE</p> <p>GRAVEL LAYER</p> <p>UNDERDRAIN PIPE (SUBSOIL)</p> <p>SAFE OVERFLOW</p> <p>NOT TO SCALE</p> |
| <p>Figure 3 – Rainwater Storage Tank</p> |  <p>ROOF CATCHMENT AREA</p> <p>ROOF DRAINAGE SYSTEM TO AS/NZ3500.</p> <p>PRE-STORAGE FILTER AND INSECT CONTROL.</p> <p>MIN. 100mm.</p> <p>RAINWATER RETENTION VOLUME</p> <p>FLOW RESTRICTION DEVICE</p> <p>SETBACK</p> <p>MAX. RAINWATER LEVEL.</p> <p>BOUNDARY</p> <p>FSL</p> <p>BEDDING FOR TANK. REFER TO MANUFACTURER SPECS.</p> <p>STORMWATER OVERFLOW TO LEGAL POINT OF DISCHARGE.</p> |

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**Figure 4 – Kerb
Outlet Detail**



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