

Drainage Statement

New Dwelling

LAND AT 37 DERWEN RD, ALLTWEN, PONTARDAWE, SWANSEA SA8 3AU

March 2026 Revision A

INTRODUCTION

This Drainage Statement is to accompany the Reserved Matters planning application for the development of a new dwelling at 37 Derwen Rd. Alltwen.

Technical Advice Note 15 – Development, flooding and coastal erosion requires all new developments to provide a Drainage Statement. This drainage statement will explain how the proposal will integrate SuDS into the scheme.

This document should be read in conjunction with the following drawing:

P 15A Drainage Plan Proposed

1.0 SITE LOCATION

The site is a corner plot and is currently being used as the rear garden of 37 Derwen Rd.

The foul and surface water of the host dwelling currently drains to the combined sewer

The site does not have any pluvial, fluvial or ground water flooding issues.

The majority of the site is part of an old quarry which now consists of made ground.

Available borehole data down to 3.5m in the vicinity has shown compact coarse sand and medium rounded gravel with some coarse gravel and cobbles at 1.5 to 3m, and silty sandy clay and gravel down to 1.5m.

The underlying geology is mainly Glaciofluvial deposits of Devensian-Sand and gravel on a base of Hughes Member-Sandstone bedrock.

The infiltration potential of the site is moderate to high.

2.0 DRAINAGE STRATEGY

The Sustainable Drainage Systems Standards for Wales sets out the principles for surface water management.

2.1 Standard S1 – Surface water runoff destination – where the rainwater will be discharged to once it has been managed by SuDS on the site, states the hierarchy which development must follow:

2.1.1 Priority Level 1: Surface water runoff is collected for use.

Water butts or bespoke water storage units will be installed on rainwater downpipes to promote rainwater reuse and reduce flows to the drainage system.

2.1.2 Priority Level 2: Surface water runoff is infiltrated to ground.

The majority of the surface water from the roof will either be directly piped to stepped wildflower rain gardens to the north east of the property, or via water butt / storage overflows.

Some surface water from the new house will be disposed of via perforated pipe laid flat in the clean stone subbase blanket beneath the access and parking areas, as shown. Porous hardstanding beneath terrace/ access and parking areas designed to wholly infiltrate.

2.1.3 Priority Level 3: Surface water runoff is discharged to a surface water body. – N/A

2.1.4 Priority Level 4: Surface water runoff is discharged to a surface water sewer, highway drain, or another drainage system. – N/A

2.1.5 Priority Level 5: Surface water runoff is discharged to a combined sewer.- N/A

2.2 Standard S2 – Surface water runoff hydraulic control. Reducing the rate and volume of water discharged, requires storage of rainwater which can be provided by SuDS features.

Surface water will be managed as detailed in standard S1 above.

2.3 Standard S3 – Water Quality.

Removing pollution from the water after it has fallen on a surface.

All surface water will be filtered through a suitable sub base aggregate both in permeable hardstanding and landscaped areas so as to infiltrate to ground. There are no identified pollution risks or pathways to sensitive receptors.

2.4 Standard S4 – Amenity.

Using SuDS to improve spaces for people.

The proposed SuDS design will mainly consist of wildflower rain gardens.

2.5 Standard S5 – Biodiversity.

Creating, protecting and enhancing wildlife habitats.

All enhancement features are clearly detailed a in the accompanying Green Infrastructure Statement.

2.6 Standard S6 – Design of drainage for construction, operation and maintenance.

Ensuring the design can be built and maintained safely, cost effectively, and sustainably for the lifetime of the development.

A full Construction programme, management and maintenance plan will be submitted as part of SAB application.

3.0 PROPOSED SUDS FEATURES

3.1 WATER BUTTS

Rainwater harvesting butts will be established for the proposed development.

The run-off from the proposed development roof should be led into rainwater harvesting butts via rainwater downpipes and guttering to catch run-off from the dwellings roof.

Overflow from the butts will be discharged into the rain gardens.

3.2 RAIN GARDENS

Roof water from the property will drain to wildflower rain gardens to the north east of the property.

These rain gardens are stepped down the eastern slope of the site. To accommodate overflow, they will incorporate an underdrain to discharge from one into the next

Rain gardens (also referred to as bioretention schemes) are shallow landscaped depressions and are used to reduce rainfall runoff whilst also mitigating the impact of pollution.

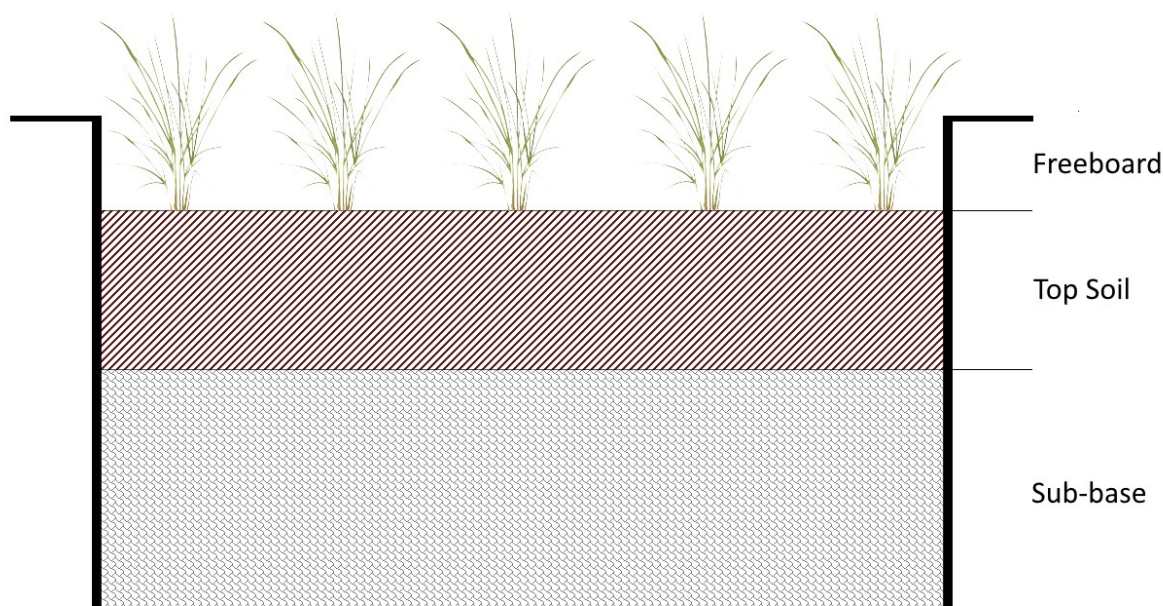
Rain gardens are flexible, 'green' surface water drainage features which can be incorporated into most development schemes and are an example of how SuDS components can be easily integrated into a development proposal without compromising the primary function of neighbouring land.

Rain gardens provide a wide range of benefits including:

- Reducing rainfall runoff from a development,
- Improving water quality by removing sediment and other pollutants through the filtration process,
- Creating biodiverse habitats, and
- Enhancing amenity value for local residents and site users.

Given the above, it is considered that rain gardens can be used on developments to meet the four pillars of SuDS Design: Water Quality, Water Quantity, Amenity and Biodiversity.

Rain gardens are made up of three elements :Freeboard, Topsoil and Sub-base.



The freeboard is the space above the topsoil within a rain garden which can be used to store water. The freeboard depth is measured from the pathway/road level or top lip of the rain garden planter to the top of the topsoil.

To encourage water to flow into the rain garden and accommodate any resultant sediment accumulation a rain garden should be designed to have a freeboard depth of between 200 and 300mm.

The topsoil layer provides the first phase of infiltration. This layer is usually made up of a mixture of sand, soil and compost creating a substrate for vegetation to be planted.

The depth of the topsoil layer varies based on the type of vegetation proposed to be planted within the rain garden. For shrubs and herbaceous plants a minimum topsoil layer of 300mm is recommended. However, if it is proposed to turf or plant wildflowers in the rain garden a reduced depth of 200mm can be considered.

The sub-base is the final layer within a rain garden and generally comprises of 100-500mm of gravel dependent on the water storage requirements.

Where the sub-soil is free draining it may be considered appropriate to not include the sub-base. However, in the majority of situations the sub-base will be required.

In instances where the sub-soil has a lower soakage rate, an under-drain can be installed within the sub-base to enable discharge into either another, downstream SuDS feature or to an outfall location. The use of an under-drain ensures that any stored water drains effectively and that the rain garden does not become waterlogged.

3.3 PERMEABLE PAVING

A 100 m² area of permeable hardstanding is proposed for the parking and access areas. Suitable aggregate materials such as a Type 3 aggregate to a depth of 0.25 m (angular gravels with suitable grading as per CIRIA, 2015) will improve water quality due to their filtration capacity and usually work to a 30% porosity. A geotextile layer will be required underlain by aggregate material to intercept silt/particles.

The surface layer is constructed out of permeable material allowing infiltration of water through gaps along its surface. A geomembrane isolates stored water from the surrounding soil, and the geotextile layer prevents clogging and damage to the geo-cellular modules.

A plastic geo-cellular system – such as CORE Drive 40-30 gravel grid with a built in geotextile membrane will be used, designed to hold loose stone in place and fully SuDS compliant.

4.0 CONCLUSION

In conclusion, all surface water management and drainage systems have been considered and the proposed management of surface water through collection and infiltration systems demonstrates that the requirements of the Welsh Government national standards for sustainable drainage systems will be met for the new dwelling.

The surface water drainage system will be designed to meet the required standards and full calculations provided with the SAB application.