



DRAINAGE STATEMENT

RESIDENTIAL DEVELOPMENT

5 BRYN GOLWG, CLYNE

Prepared for: Mr Andrew Owen

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1.0 INTRODUCTION

Mr Andrew Owen commissioned Sycamore Environmental through Evans Banks Planning to produce a Drainage Statement to support outline planning application **P2025/0304**. The application is for a detached dwelling with associated infrastructure.

This drainage statement provides details on how surface water will be managed from the proposed development. The document sets out the principles of Sustainable Drainage Systems (SuDS) in accordance with current Welsh Government guidance, including Technical Advice Note (TAN) 15 document and the statutory standards for SuDS.

2.0 SITE LOCATION AND DESCRIPTION

The site is located on Land at 5 Bryn Golwg, Clyne, Neath, SA11 4EH and comprises of a large side garden of the property known as 5 Bryn Golwg.

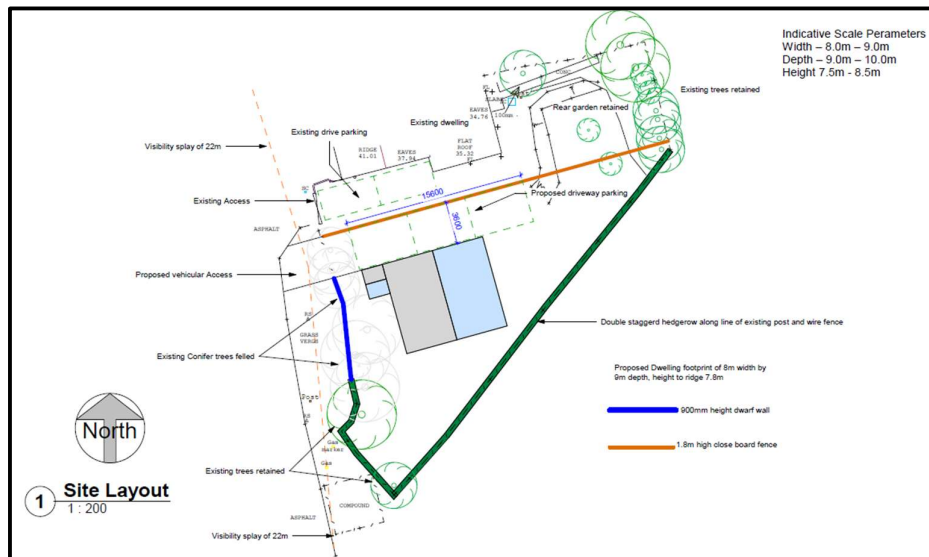
The six-figure reference for the site is **SN802007**. The site location is visible in Figure 1.0 below.

Figure 1.0 – Site Location



The proposed development for the site is a detached dwelling with associated infrastructure. The proposed layout plan is visible in Figure 2.0 below.

Figure 2.0 – Proposed Layout



2.1 Proposed Impermeable Areas

The whole site area is 500m². The proposed impermeable areas are visible in the Table 1.0 below.

Table 1.0 – Surface Areas

Proposed Surface	Area (m ²)
Dwelling	77
Driveway and Car Park Spaces	72.5
Proposed Impermeable Area	149.5
Remaining Permeable Area	350.5

2.2 Soil Conditions

The underlying bedrock geology of the site is Rhondda Member, which is comprised of sandstone, according to the British Geological Survey (BGS) Geology Viewer. Sedimentary bedrock former between 315.2 and 308 million years ago during the Carboniferous period.

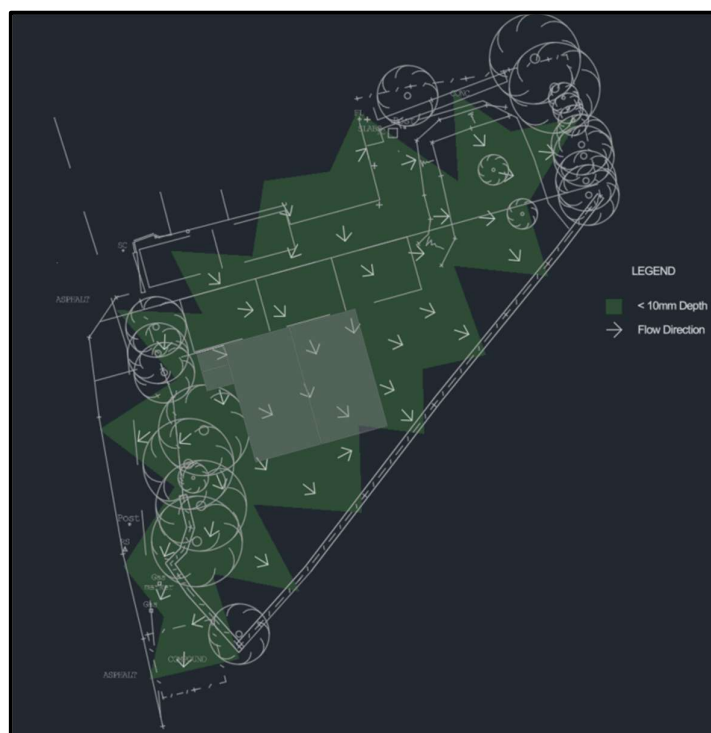
The superficial deposits of the site is Glaciofluvial Deposits, Devensian, which is comprised of sand and gravel. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.

The UK Soil Observatory viewer describes the soil as ‘freely draining’.

The topographical survey indicates that the site slopes downward from north to south, with elevations of 32m AOD and 30.5m AOD, respectively.

A deluge map, visible in Figure 3.0, was produced to show the flow and depth of the water on site.

Figure 3.0 – Deluge Map



3.0 DRAINAGE REQUIREMENTS

The QBAR, Q1, and Q100L/s were calculated using the ICP SUDS (Interim Code of Practice for Sustainable Drainage Systems) method in InfoDrainage. The following parameters and results are as follows:

AREA (Ha) – 0.05

SAAR (mm) – 1400.0

SOIL – 0.370

REGION 9

URBAN – 0.000

The **QBAR Rural** = 0.3L/s, the **QBAR Urban** = 0.3L/s, the **Q1** = 0.3L/s, and the **Q100** = 0.7L/s.

Based on the geology data currently available for the site, it is thought that the surface water is either infiltrating or overflowing onto adjacent land to the south due to the site's topography. A non-active railway line, namely VON Vale of Neath Railway, is situated to the immediate south.

3.1 Standard 1 – Surface Water Runoff Destination

This standard will ensure that the surface water is managed in accordance with the drainage hierarchy, reducing flood risk and encouraging the use of sustainable drainage.

3.1.1 Collection and Reuse

This can be accomplished by using water butts to collect rainwater from the dwelling's roof and reuse the water for garden irrigation.

3.1.2 Infiltration

The preliminary assessment of the geology of the site suggests that there is potential for infiltration. This indicates that a soakaway and a permeable paving system, which rely on full infiltration, could be implemented on the site, subject to infiltration testing.

3.1.3 Discharge to Surface Water Body

The nearest surface water body to the site is approximately 50m southeast of the site, this inland river is unnamed but does connect to the Twrch Brook, before entering the River Neath. Given the need to cross the railway line and third-party land, connection into a watercourse is deemed impractical.

3.1.4 Discharge to Surface Water Main/Sewer

From initial review, there does not appear to be a surface water main on or near the site.

3.1.5 Discharge to Combined Sewer

The combined sewer should only be utilised as a last resort and if only the above has been proven to be unfeasible. Furthermore, there is a sewer serving the other residential properties for foul water, further investigation in to whether this is a combined sewer will be required at the full application stage.

3.2 Standard 2 – Surface Water Runoff Hydraulic Control

Interception methods will assist in keeping the initial 5mm of rainwater on the property. The solution will also be designed to accommodate the 1 in 100-year event plus climate change.

3.3 Standard 3 – Water Quality

Given the nature of the development, the risk level for surface water pollution, following Welsh Government Standards, can be regarded as very low to low, and a simple index approach for design will be sufficient.

Table 2.0 – Simple Index Approach

Pollution Indices				Mitigation Indices			
Land Use	TSS	Metals	Hydrocarbons	SuDS Components	TSS	Metals	Hydrocarbons
Residential Roof	0.2	0.2	0.05	Permeable Pavement	0.7	0.6	0.7
Individual Driveway	0.5	0.4	0.4	Permeable Pavement	0.7	0.6	0.7

The installation of a permeable paving solution for the driveway would provide interception and will reduce the risk of pollution. Moreover, overflow of the water butts will be directed and captured on the permeable paving, meeting the requirements of S3.

3.4 Standard 4 – Amenity

By retaining garden areas and certain trees and incorporating a double staggered hedgerow along the east to south boundary, the development will deliver a greener and more pleasant environment for future residents. It enhances the site's visual quality and fulfils the SuDS amenity standard.

3.5 Standard 5 – Biodiversity

The retention of garden areas and certain trees, and the double staggered hedgerow provide habitat, shelter, and food sources for birds, insects, and other invertebrates, thereby contributing to the local ecosystem and meeting the SuDS biodiversity standard.

3.6 Standard 6 – Design of Drainage for Construction and Maintenance and Structural Integrity

Permeable paving can be a cost-effective solution with little maintenance requirements, with brushing or vacuuming required once a year.

The drainage system should be designed with the appropriate safety factor; the minimum and best practice requirement is 2 for infiltration calculations to account for variability in soil permeability and rainfall.

In compliance with the guidelines provided in the Guidance for Pollution Prevention (GPP 6 Working on construction and demolition sites), the necessary steps will be taken to reduce the risk of contaminating potential watercourses and groundwater during the construction period.

The property owner will remain responsible for the long-term maintenance and operation of the drainage system.

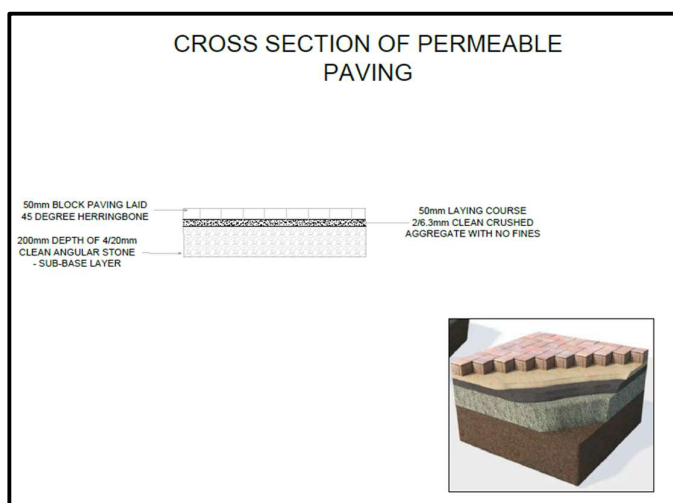
4.0 CONCLUSION

This drainage statement demonstrates that the proposed development at Land at 5 Bryn Golwg, Clyne can manage surface water in accordance with Welsh Government guidance, specifically TAN 15 and the statutory SuDS standards.

The final drainage solution needs to ensure that the rainfall runoff rates do not exceed the greenfield 1 in 1 year storm, with appropriate allowances for climate change. Roof runoff can be collected via water butts, satisfying level 1 of the drainage hierarchy, with the overflow and runoff from the driveway directed to a permeable paving system. Furthermore, a soakaway can be incorporated should infiltration testing be successful.

The permeable paving solution shown in Figure 4.0 can be adopted if infiltration is proven feasible on the site. If infiltration is not viable, an impermeable liner should be included to provide attenuation and controlled discharge.

Figure 4.0 – Permeable Paving Solution



Preliminary assessment indicates potential for infiltration on the site; however, site-specific infiltration testing will be required at the SAB application stage to confirm whether permeable paving and a soakaway is a practical solution for the final discharge of surface water. Should infiltration be unsuitable, connection to a surface water or combined sewer system will need to be explored, subject to approval from the relevant asset owner.

The retention of existing green areas for garden spaces, retention of trees and inclusion of a double staggered hedgerow all align with standards 4 and 5, enhancing amenity and biodiversity on the site.

Appropriate sizing of SuDS features, such as potential soakaways, permeable paving, and water butts should be determined once detailed infiltration data is available.

The responsibility for the operation and maintenance of the drainage system will be that of the property owner.

Overall, the proposed strategy offers a low-risk, sustainable solution for surface water management that aligns with the SuDS statutory standards.