



- KEY**
- Existing 750mm Ø Storm Culvert
 - Adoptable Storm Drain (SAB)
 - Private Storm Drain
 - Swale / Rain Garden with underdrain
 - Permeable Paving
 - Rain Garden
 - Rain Garden Box Planter
 - Flow Control Device
 - Adoptable Foul Sewer (S104)
 - Foul Rising Main (S104)

DRAINAGE HIERARCHY

Integral Geotechnique's Geotechnical report (12722/LW/20/SI REV B) dated December 2020 confirms 'None or negligible infiltration was observed at each trial pit location and therefore no infiltration rate could be calculated for any of the tested locations.'

Subsequently it is proposed to discharge SW runoff from the site to the existing watercourse

SW runoff flows into the culverted watercourse are to be restricted to Greenfield runoff rates in accordance of Standard S2 o the Wales SuDS Standards.

In accordance of Standard S3 o the Wales SuDS Standards, SW runoff is to be intercepted through using permeable paving, swales and bio-retention areas to improve the water quality discharging to the existing watercourse.

Proposed SuDS Strategy is subject to consultation and approval from NPT SAB

SITE CATCHMENT

Greenfield

Total Area = 2.05ha
Greenfield Catchment Area* = 0.711ha

*based on proposed impermeable area

Greenfield Runoff Rates (0.711ha)

1 in 1yr	= 9.2 l/s
QBar	= 10.4 l/s
1 in 30yr	= 18.5 l/s
1 in 100yr	= 22.7 l/s

Pre-Development volume discharge (100yr 360mins)

1 in 100yr (360mins) = 289m³

Post-Development
Approx Impermeable Area = 0.711ha

Post-Development peak flow rate

1 in 1yr	= 8.5 l/s (-0.7 l/s)
1 in 30yr	= 8.6 l/s (-9.9 l/s)
1 in 100yr	= 8.8 l/s (-13.9 l/s)

Discharge Volume (100yr 360mins)

Post-Dev - 1 in 100yr + 30% (360mins) = 277m³

Total Volume +/- = - 12m³

SuDS Measures

The above post-development flow rates are based on a traditional storm network model simulation. However, all runoff is to be conveyed to pass through a SuDS feature which will further reduce the above discharge rates and volume.

The SuDS components will effectively increase concentration time, reduce flow velocities and rates, and providing significant volume losses through evaporation and evapotranspiration.

Losses are difficult to quantify and will vary depending on plant species, level of saturation and varied ground conditions across the site.