

**OUTLINE SURFACE WATER DRAINAGE AND
MANAGEMENT PLAN STATEMENT**

FOR

PROPOSED RESERVED MATTER APPLICATION FOR 13 DWELLINGS

AT

BIG GREEN FARM

PENLEY

WREXHAM

BOWER EDLESTON
A R C H I T E C T S

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1. SITE DETAILS:

This statement has been prepared in line with the pro-forma guidance contained in the Department for Communities and Local Government document “National Planning Practice Guidance: Flood Risk and Coastal Change”.

The development is located at Big Green Farm in Penley. The National Ordnance Survey grid reference for the centre of the site is E341673 N339554. The site comprises the existing farm stockyard and buildings set in open countryside.

The site approximate area of 0.42 hectares.

The site is designated as lying within an area of Flood Risk Zone 1, assessed as having a less than a 1 in 1000 (<0.1%) annual probability of river flooding.

Within Wales, development is covered by Technical Advice Note 15: Development and Flood Risk (TAN 15).

The TAN 15 Development Advice Map for the area identifies that the site lies within Zone A being land deemed to be at least risk of flooding.

There is an existing surface water sewer crossing the site in north/south alignment at the western edge of the site.

There are no watercourse systems within the site.

No evidence of any land drainage or groundwater issues has been noted with the site appearing well drained.

The site is understood to be underlain by sand.

2. SURFACE WATER DRAINAGE STRATEGY:

TAN15 recommends that surface water generated by the development site should, as far as is practicable, be managed in a sustainable manner to mimic the surface water flow arising from the site prior to the proposed development.

Proposals should ensure that volumes and peak flow rates of surface water leaving the developed site are no greater than those prior to development, reducing surface water run off where possible and taking climate change into consideration.

The issue of surface water drainage to the proposed development has been considered with reference to the hierarchy of surface water disposal as noted in the Building Regulations H3:

- Sustainable urban drainage systems (SUDS)
- Discharge of surface water off site direct to watercourse
- Discharge to adopted sewer.

SUDS are made up of one or more structures built to manage surface water runoff. They are used in conjunction with good management of the site to prevent flooding and pollution. There are four general methods of control:

- Filter strips and swales
- Filter drains and permeable surfaces
- Infiltration devices
- Basins and ponds.

On the basis of the likely permeable nature of the ground conditions on site, the use of sustainable urban drainage systems (SUDS) in the form of soakaways is considered a practical option for dealing with roof drainage from proposed dwellings. This will naturally be verified by the construction and testing of soil infiltration pits on site.

In addition rainwater harvesting tanks will serve individual dwellings. Rainwater from roofs and hard surfaces can be stored and used. If designed appropriately, the systems can also be used to reduce the rates and volumes of runoff. This also reduces demands on mains water.

Rainwater run off from the proposed road will be collected using road gullies and directed via storm drains to existing storm sewer.

The open form of the development provides an overland flood route for any on site flooding caused by blocked sewers or extreme rainfall events.

3. MANAGING THE SUDS

The preliminary SUDS design has been developed for easy maintenance to comprise:

Occasional tasks - sweep and suction brush permeable paving in autumn after leaf falls. remove silt and check free flow in inspection chambers.

Remedial work - inspect SUDS system regularly to check for damage or failure and repair where necessary.

4. OWNERS/ADOPTERS OF DRAINAGE SYSTEM

The individual residential plots will be under individual private ownership. The inspection and maintenance responsibility for the surface water drainage system within the plots will rest with the individual plot owners.

The access road constructed to adoptable standards will be under the control of the local authority with inspection and maintenance of the surface water drainage system resting with Welsh Water.

5. SUDS FEATURES CHECKLIST

Permeable Surfaces

Permeable block paving, porous asphalt, gravel or free draining soils allow rain to percolate through the surface into underlying drainage layers must be protected from silt, sand, compost, mulch, etc.

Soakaways

Soakaways serving the private plots will comprise pre-fabricated plastic cellular systems or pre-cast concrete segmental systems with access covers to allow for inspection and cleaning. The soakaways will be wrapped in geo-membrane material to prevent ingress of silts.

Inspection Chambers

Inspection chambers and rodding eyes on pipe bends and junctions allow cleaning of the drainage system if necessary.

6. MAINTENANCE SPECIFICATION

General Requirements

Maintenance activities comprise

- Regular maintenance
- Occasional Tasks
- Remedial Work

Avoid use of weed killers and pesticides to prevent chemical pollution.

Avoid de-icing agents wherever possible to allow bio-remediation of pollutants in permeable surface.

Protect all permeable, porous and infiltration surfaces from silt, sand, mulch and other fine particles.

Permeable Surfaces

Activity	Frequency
<u>Regular Maintenance:</u> Brush Regularly and remove sweepings from all hard surfaces	Monthly
<u>Occasional Tasks:</u> Brush and vacuum surface once a year to prevent silt blockage and enhance design life.	Annually
<u>Remedial Work:</u> Monitor effectiveness of permeable pavement and when water does not infiltrate immediately advise Client of possible need for reinstatement of top layers or specialist cleaning.	As required

Jet washing and suction cleaning will substantially reinstate pavement to 90% efficiency.	
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Infiltration Devices - Soakaways

Regular Maintenance:	Frequency
<u>Occasional Tasks:</u> Lift access covers during dry periods and check for silting up of chamber	Annually
<u>Remedial Work:</u> Remove silt	As required

Inlets, Outlets, Inspection Chambers and Rodding Eyes

Regular Maintenance:	Frequency
Remove cover and inspect ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. Undertake inspection after leaf fall in autumn.	Annually
<u>Occasional Tasks:</u> Check topsoil levels are 20mm above edges of chambers to avoid mower damage.	As necessary
<u>Remedial Work:</u> Repair physical damage if necessary.	As required

Spillage - Emergency Action

Most spillages on development sites are of compounds that do not pose a serious risk to the environment if they enter the drainage in a slow and controlled manner with time available for natural breakdown in a treatment system.

Therefore, small spillages of oil, or other known organic substances should be removed where possible using soak mats as recommended by the Environment Agency with residual spillage allowed to bio-remediate in the drainage system.

In the event of a serious spillage, either by volume or of unknown or toxic compounds, then isolate the spillage with soil, turf or fabric and block outlet pipes from chambers downstream of the spillage with bungs.

A bung for blocking pipes may be made by wrapping soil or turf in a plastic sheet or close woven fabric.

Contact the Welsh Water immediately.