

Alders End Farm, Tarrington, Herefordshire HR1 4ET

Foul & Surface Drainage Layout (8th November 2023)

COACH HOUSE

FARMHOUSE

GRANARIES & CART BARN

Habitable building

Storage / other building

The attenuation pond will be excavated and unlined. The attenuation pond will be 1.2m deep with sloping sides (approximately 1:3)

The base area of the new attenuation pond will be at least 12m x 12m, giving a minimum capacity of 200m³. The outfall drain will be set to give 120m³ of attenuation freeboard.

The pond will not be square but will be excavated and shaped during construction.

Attenuated discharge will be managed to no more than 2-litres/second by means of a 75mm diameter orifice control chamber.

The discharge points to local watercourse will be protected with dry stone headwalls and will include a vermin-proof flap valve.

All underground pipework will be 110mm uPVC and should comply with BSEN1401.

All foul drains should be laid at a gradient no steeper than 1:40

Surface water & Treated effluent drains should be laid at 1:200

b) Flexible pipes

Key

- 1 Selected fill free from stones larger than 40mm, lumps of clay over 100mm, timber, frozen material, vegetable matter.
- 2 Granular material - For rigid pipes the granular material should conform to BS EN 12620 Annex B Table B.15 and should be single size material or graded material from 5mm up to a maximum size of 10mm for 150mm pipes, 16mm for 150mm pipes, 20mm for pipes from 150mm up to 300mm diameter and 40mm for pipes more than 300mm diameter. Compaction fraction maximum 0.3 for class IV or B and 0.15 for class F.
- 3 Selected fill or granular fill free from stones larger than 40mm.

All domestic inspection chambers within the development will be pre-formed uPVC and should comply with BSEN7158.

Surface Water drainage to be laid is 110mm diameter uPVC pipework in line with Building Regulations Part H (Blue)

Foul drainage to be laid is 110mm diameter uPVC pipework in line with Building Regulations Part H (Red)

Connection for new underdrain

Treated foul effluent drain to be laid at 1:200 alongside surface water drain

Connection for new underdrain

Haba Easy-Flow 5-15 packaged sewage treatment plant. To be installed to Manufacturer's guidelines and assuming wet site conditions.

Plan size: 2.9m x 1.8m

Ground level

Local ground conditions

Concrete base/surround to suit:

- 1 28 day compressive strength of 20-30N/mm²
- 2 Slump of 25-50mm

Ensign sewage treatment plant: 150mm concrete base and 150mm surround

300mm

250mm hardcore if required

Excavation = tank diameter + 450mm

Base = tank diameter + 450mm

Sample chamber immediately downstream of packaged sewage treatment plant.

Figure 9 Typical sample chamber design

Key

- 1 Cover with lifting eyes (minimum cover diameter 500 mm)
- 2 Pre-treated effluent
- 3 Chamber
- 4 To drainage field
- 5 Minimum distance of 50 mm
- 6 Minimum distance of 200 mm

All new hardstanding areas will be constructed as permeable hardstandings with an under drain and infiltration reservoir.