Job No. 6955

Sustainable Drainage Strategy

PROPOSED CONVERISON OF
GREEN BARN, PART OF OUTBUILDING 01 AND OUTBUILDING 02
AT EAVES HOUSE FARM,
WEST BRADFORD,
CLITHEROE,
BB7 3JF

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Sustainable Drainage Strategy

Scope of Drainage Strategy Report In April 2015, the Government made changes to the National Planning Policy Framework which made Sustainable Urban Drainage Systems (SUDS) a material consideration in the determination of planning applications for new developments. This report has therefore been produced to support the Planning Application in accordance with the Town and Country Planning Order 2015.

The Strategy reviews the following information:
• Environment Agency flood maps for rivers and sea flooding.
• Design and Construction Guidance Version 1 - Oct 2019
• Part H of the Building Regulations: Drainage and waste disposal
• BE EN12056 Part 2 Gravity Drainage Systems Inside Buildings
• Technical Guidance to the National Planning Polity Framework

The Hierarchy of Drainage – National Planning Practice Guidance

The National Planning Practice Guidance sets out The Hierarchy of Drainage to promote the use of Sustainable Drainage Systems, by aligning modern drainage systems with natural water processes. The aim of Hierarchy of Drainage is to drain surface water run-off as sustainable, as reasonably practicable.

The increase in infrastructure and the use of traditional drainage networks (pipes and culverts) are resulting in downstream flooding and a deterioration in water quality of controlled waters, due to foul sewer overflow. Therefore, sustainable drainage systems aim to alleviate these problems by storing or re-using surface water at the source. This decreases the flow rates to watercourses and improves water quality.

SUDS designs control surface water run-off (rainfall) by closely resembling that of natural drainage. SUDS features include the use of soakaways, filter strips and swales, filter drains, permeable surfaces, ponds, etc.

The Hierarchy of Drainage

As stated in the National Planning Guidance the aim should be to discharge surface water run-off as high up the drainage hierarchy, as reasonably practicable:

1. **Reuse on site (i.e., rainwater harvesting)**
2. **into the ground (infiltration);**
3. **to a surface water body,**
4. **to a surface water sewer, highway drain, or another drainage system**
5. **to a combined sewer**

Surface Water

An investigation of the hierarchy of drainage options has been considered.
The total surface water run off as a result of the barn conversion, garages and home office is to remain as existing and there is no greater run off of surface water as a result of the conversion work. The building footprint of the barn and home office building are to remain the same. The building footprint of the garages is reduced from the existing building footprint, although the ground floor concrete hard standing will be retained therefore not making any reduction to the surface water run off.

The access road and path will be in permeable gravel and therefore will not create any increase in the volume of surface water run off.

All options have been considered and it has been decided that the most suitable option is to utilize the existing below ground surface water system which discharges to Coplow Brook.

Foul Drainage

The foul drainage will be connected to a previously approved sewage treatment plant (application Ref: 3/2023/0918) which has been designed and sized for Eaves House Farm as well as taking into account future development, eg the conversion of Green Barn. There is plenty of capacity of the sewage treatment plant as it is designed for up to 30 persons.

The Marsh Ensign package sewage treatment plant - 30 person tank, width - 1912mm x 4550mm length x 2284mm height. to be min 10m away from buildings. Refer to previously approved drawing 6955 – S02A.

Treatment plant complete with low-energy compressor with alarm, near silent compressor ensures minimal running, maintenance and servicing costs. Integral alarm detects low pressure in air line. Compressor housing - internal or external options available the compressor can be housed internally or externally with no difference in cost. external compressor is recommended to increase compressor life – this is supplied as standard on 4pe, shallow and pumped outlet models. pvc pressure pipe/diffuser(s) provides a protective conduit for the air diffuser line. Can be easily removed for maintenance and cleaning. Bio-media - high specification bio-media (310m3 per m2) and membrane diffusers ensure even circulation to eliminate 'dead spots'.
Nylon mesh - retains media in aeration chamber during transportation and handling, and in the event of flooding. 32mm sludge return - larger diameter sludge return prevents the possibility of blockages and improves system circulation. provides higher effluent quality whilst balancing flow over a 24-hour period or periods of intermittent use. Impermeable lid - regular lid/frame improves strength and durability whilst blending into the surrounding environment. Integral lifting eyes - for safe and secure on-site handling. Stabilising feet - stabilising feet prevents the tank from rolling and allows safe and steady transportation and installation. Unique ‘keying-in’ lip assists anchoring into granular or concrete surrounds. All to be designed and installed by specialist.