

Drainage strategy

Tranklyn, Wrangling Lane, Luddesdown, Gravesend, Kent, DA13 0XF

Erection of replacement dwelling and associated works.

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The purpose of this document is to outline the proposed drainage strategy for the site to ensure that the principles of sustainable drainage are incorporated into this proposal: to ensure that the development does not contribute to, or is not put at risk from, or adversely affected by, unacceptable levels of water pollution caused by mobilised contaminants and to ensure ongoing efficacy of the drainage provisions, in accordance with policies CS18 and CS19 of the Gravesend Local Plan Core Strategy (September 2014).

Proposed Surface water drainage system

The drainage system has been designed to comply with the current building regulations and SUDS guidance.

All new paths and patios around the new dwelling are to be of a permeable construction to allow the surface water to drain through to the underlying ground and minimise the amount of surface water going into the soakaway.

The existing driveway is to be upgraded/alterd and is to have a permeable construction, the current driveway is to be refurbished and altered and is to consist of 100mm of recycled crushed concrete and 100mm of type one stone and 10 mm of shingle)

A new upper patio is to be formed on the concrete base of the existing dwelling to be demolished, any surface water run-off from this, the driveway, paths and the lower patio is to be directed into gullies and ACO style slot drains, which will discharge into the flower borders via perforated pipes surrounded with suitable drainage media and covered with a minimum of 100mm of top soil.

The soil conditions for the site are believed to be shallow lime rich soils over chalk or limestone and free draining (source: Defra Magic Map). Which should therefore be suitable for soakaways.

A percolation test is to be carried out on site to determine the size and depth of the new soakaway. Soakaway to be situated at least 5000mm from house. Soakaway to be an empty chamber constructed with honeycomb brickwork, proprietary crate system or perforated concrete rings. Position of soakaway to be determined on site. To be designed in accordance with BS EN 752-4 or BRE 365 Soakaway design.

Proposed Foul Drainage system

The proposed foul drainage system has been designed to comply with current building regulations.

All foul drainage runs are to be 100mm PVC-U pipes to BS 5481 laid at a fall of 1 in 40 or 1 in 80 (where the flow rate is >1) and bedded on 100mm depth of pea beach.

The foul water drainage for the new dwelling is to be directed into a new package treatment plant. The discharge from the package treatment plant is to be directed into a drainage field.

The package treatment plant will be designed and sized according to the advice given in the current edition of Flows and Loads, published by British Water. The estimated flow for the dwelling is based on 4 bedrooms, with 6 person occupancy 6x150l=900l per day.

The site is within ground water source protection zone 3 (source: Defra Magic Map), which is suitable for the installation of a package treatment plant.

The drainage field will be designed and sized based on the results of a percolation test and will be constructed/sited to comply with the following:

- The drainage field must be at least 10m from any watercourse or permeable drain and 15m from any building (see plan).
- Drainage fields must ensure aerobic contact between liquid effluent and the subsoil. The minimum depth of the pipes should be 500mm below the surface.
- Drainage fields should be constructed using perforated pipe laid in trenches of uniform gradient that is not steeper than 1:200.
- The perforated pipes must be laid on a 300mm layer of clean shingle or broken stone graded between 20mm and 50mm.
- Trenches should be filled to a level 50mm above the pipe and covered with a layer of geotextile to prevent the entry of silt.
- Drainage trenches should be from 300mm to 900mm wide, with areas of undisturbed ground 2m wide being maintained between parallel trenches.

Pollution prevention methods

Surface water from hardstanding/driveway areas is to be directed into the surface water drain via trapped gullies or interceptors, to prevent the contamination of the ground water from HydroCarbons.

Clean uncontaminated surface water from roofs to be directed directly into the system via trapped gullies.