

**FRENCH HOUSE, ALDINGTON ROAD, LYMPNE, CT214PA
PLANNING CONDITIONS DISCHARGE – Y19/1152/FH**

Foul and Surface Water Drainage Strategy

Planning Condition 5: Foul Drainage

Prior to commencement of development, full details of the means of foul water disposal from the development shall be submitted to the Local Planning Authority for approval in writing, together with a timetable for their implementation, with such details as approved, implemented and/or maintained in a functional condition thereafter in accordance with the approved timetable.

Reason:

To ensure proper drainage and avoid pollution and flooding of the area given the hydrological sensitivity of the Lympne Escarpment SSSI.

Foul Drainage Strategy Submitted for Planning:

The previously submitted design indicated foul water flows from the new accommodation were proposed to be pumped to a higher elevation and into a new sewage treatment plant located adjacent the proposed car park.

Treated effluent from the STP would then be discharged to ground via a drainage field (infiltration). This strategy was based on infiltration rates obtained by soakaway testing to BRE 365.

It was noted during the Planning Consultation that while the actual tests appear not to have been undertaken in compliance with BRE 365, this methodology is not appropriate for the design of a drainage field. Testing in accordance with BS 6297 should be undertaken to establish an appropriate Vp (percolation value) to enable the design (and feasibility) of the drainage field.

Revised Strategy:

There is a known risk of landslip in the area primarily as a result of solifluction (slow creep of soils down slope due to increased water content). The introduction of infiltration methods potentially increases the rate and volume of water flow and thus could increase risk of slippage. The submitted strategy is based on infiltration and therefore would increase this risk particularly as the discharge location is upgradient.

Subsequent consultation with a Geotechnical Specialist and separate Geotechnical Contractor confirmed that infiltration methods are not acceptable on this site. Consequently, the Foul Drainage Strategy has been revised to avoid discharge of treated effluent via infiltration. Subsequently, percolation tests to BS 6297 have not been undertaken; such tests were considered not feasible given the risk of solifluction as well as anticipated low percolation values.

Existing sewage from the wider park is disposed and treated elsewhere, having been collected by tanker from outlying tanks/cesspits. A cesspit is located adjacent the Restaurant from which sewage is pumped out by tanker. This is the closest available collection point to French House. However, the capacity of the cesspit required would be extremely large and impractical as large tankers could not

access it. Regular collection of foul effluent from a cesspit within the grounds of French House is both not feasible or desirable due to potentially high frequency of emptying and the associated nuisance.

It has therefore been concluded that a new sewage treatment plant is installed to collect and treat foul and waste flows from French House, the sleeping pods and restaurant from which treated effluent will be discharged to an open watercourse that flows downhill toward the Royal Military Canal. The location of the STP will be close to the existing road for ease of maintenance yet sufficiently distant from the Restaurant to avoid nuisance.

Although the effluent quality of a packaged STP is high, consideration of risk to downstream receptors will be required as part of an Environmental Permit Application.

The daily volume of sewage generated by the hotel, sleeping pods and restaurant has been calculated as 8,150 litres (PE = 160). As this exceeds the General Binding Rules for Small Sewage Discharges threshold of 5m³/day and is located in the SSSI, a Bespoke Environmental Permit will be necessary which will require an assessment of impact upon the SSSI amongst other things. Adequate testing and assessment of all risks will be undertaken accordingly.

The proposed revised Drainage Scheme is shown on the following drawings:

20027-SFK-GH-ZZ-DR-C-0070 T2: Site Wide Drainage Sheet 1

20027-SFK-GH-ZZ-DR-C-0071 T2: Site Wide Drainage Schedules

20027-SFK-GH-ZZ-DR-C-0075 T2: Site Wide Drainage Details – Sheet 1

20027-SFK-GH-ZZ-DR-C-0076 T2: Site Wide Drainage Details – Sheet 2

20027-SFK-GH-ZZ-DR-C-2002 T3: Building Drainage Layout – Giraffe Hall

20027-SFK-GH-ZZ-DR-C-2010 T2: Drainage Details

20027-SFK-GH-ZZ-DR-C-2011 T1: Giraffe Hall – Drainage Schedules

Planning Condition 6: Surface Water Drainage

No development shall begin in any phase until a detailed sustainable surface water drainage scheme for the site has been submitted to (and approved in writing by) the local planning authority. The detailed drainage scheme shall demonstrate that the surface water generated by this development (for all rainfall durations and intensities up to and including the climate change adjusted critical 100 year storm) can be accommodated and disposed of without increase to flood risk on or off-site. The drainage scheme shall also demonstrate (with reference to published guidance):

- i. that silt and pollutants resulting from the site use can be adequately managed to ensure there is no pollution risk to receiving waters.*
- ii. appropriate operational, maintenance and access requirements for each drainage feature or SuDS component are adequately considered, including any proposed arrangements for future adoption by any public body or statutory undertaker.*

The drainage scheme shall be implemented in accordance with the approved details.

Reason:

To ensure the development is served by satisfactory arrangements for the disposal of surface water and to ensure that the development does not exacerbate the risk of on/off site flooding and to safeguard adjacent ecological constraints, given the hydrological sensitivity of the Lymgne Escarpment SSSI. These details and accompanying calculations are required prior to the commencement of the development as they form an intrinsic part of the proposal, the approval of which cannot be disaggregated from the carrying out of the rest of the development.

Surface Water Drainage Strategy Submitted for Planning:

The previously submitted surface water drainage strategy was based on the implementation of infiltration methods with some runoff combined with foul and pumped to a sewage treatment plant located at an elevated location adjacent the new car park. The use of soakaways or similar methods of infiltration was proposed around the main house and sleeping pods, sufficiently distanced from structures.

Whilst soakaway test results have been used to justify the proposed strategy of infiltration, rates obtained are relatively low, cognisant of the clay content within the strata. No design however was undertaken therefore any proposed strategy at that time was conceptual. However, as noted during Planning Consultations, whilst the soakaway tests were reported to be in accordance with BRE 365, the test results suggest the recommended procedure was not implemented. Only one filling of each trench was undertaken as opposed to a recommended three fillings (also required by the SuDS Manual C753). Furthermore, the procedure for establishing the suitability of infiltration methods as set out in the SuDS Manual needs to be implemented; no evidence this has occurred as part of defining the strategy is available.

No consideration of the geotechnical risks due to increased water infiltration has been considered as part of the overall assessment.

Revised Strategy:

There is a known risk of landslip in the area primarily as a result of solifluction (slow creep of soils down slope due to increased water content). The introduction of infiltration methods potentially increases the rate and volume of water flow and thus could increase risk of slippage. The submitted strategy is based on infiltration and therefore would increase this risk particularly as the discharge location is upgradient.

Subsequent consultation with a Geotechnical Specialist and separate Geotechnical Contractor confirmed that infiltration methods are not acceptable on this site. Consequently, the Surface Water Drainage Strategy has been revised to avoid discharge of surface water via infiltration. Subsequently, soakaway tests to BRE365 have not been undertaken; such tests were considered not feasible and advised against given the risk of solifluction.

It has also been advised to avoid construction of large tanks below ground within existing sloped ground due to the risk of landslip during excavation. This together with avoiding infiltration methods limits the opportunities for Sustainable Drainage Systems however where feasible without causing risk, they have been implemented. Generally, the strategy for disposing surface water is to discharge to existing natural channels that run down gradient toward the Royal Military Canal. This is in line with the comments received during Planning Consultation which indicated the possible discharge of water into “tertiary rivers” located within the grounds of the wider park.

Permeable paving is proposed for the new car park located at the top of the slope however the attenuating sub base is lined with an impermeable membrane. The storage provided contains runoff generated by a 1 in 100 year plus an allowance of 40% for climate change. Discharge is slowly released into a piped system that eventually discharges into an existing channel down gradient.

Similarly, the courtyard fronting the main house is a lined permeable construction which discharges into a piped system that collects runoff from the roof of the main house and eventually discharges into an existing channel to the west of the development. Runoff from the sleeping pods will cascade from the roof onto remodelled adjacent ground and flow down gradient toward the open channel.

Silt traps will be provided in the form of catchpits together with the application of geotextile membranes within permeable pavements in accordance with C753.

No element of the surface water drainage strategy will be adopted or handed over upon completion. The maintenance of the system will be the responsibility of the Landowner as part of the overall operations of the Park.

The proposed revised Drainage Scheme is shown on the following drawings:

20027-SFK-GH-ZZ-DR-C-0060 T2: External Works Details

20027-SFK-GH-ZZ-DR-C-0070 T2: Site Wide Drainage Sheet 1

20027-SFK-GH-ZZ-DR-C-0071 T2: Site Wide Drainage Schedules

20027-SFK-GH-ZZ-DR-C-0075 T2: Site Wide Drainage Details – Sheet 1

20027-SFK-GH-ZZ-DR-C-0076 T2: Site Wide Drainage Details – Sheet 2

20027-SFK-GH-ZZ-DR-C-2002 T3: Building Drainage Layout – Giraffe Hall

20027-SFK-GH-ZZ-DR-C-2010 T2: Drainage Details

20027-SFK-GH-ZZ-DR-C-2011 T1: Giraffe Hall – Drainage Schedules