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Chapel Farm, Newbridge, Wrexham

Drainage Proposal

Existing Drainage

The existing property consists of a 3-bedroom, 2-bathroom dwelling on the upper 2 floors and a self-contained 1 bedroomed flat on the lower ground level. Foul flows currently discharge to an old septic tank located approximately 50m south of the existing building within the open field, which consists of a masonry chamber with cover slab and an effluent discharge to a soakaway. We understand surface water flows from the roof discharges to buried soakaways.

Proposed Development

The proposed development is for a replacement dwelling consisting of a 4-bedroom, 2-bathroom dwelling, so similar foul flows to the previous situation.

Proposed Surface Water Drainage

Recent infiltration tests have confirmed the ground conditions are suitable for infiltration techniques to dispose surface water flows from the development. Three tests confirmed rates of between 1.13E-05 and 8.29E-06 m/sec. Considering the rural setting this is appropriate for a discharge to ground even though 1 of the 3 tests returned a rate of less than 1.0E-05 m/sec.

An infiltration trench has been designed to accommodate a 100-year storm event + 50% climate change allowance.

Proposed Foul Drainage

Welsh Water have confirmed that capacity exists within the public sewerage network in order to receive the domestic foul only flows from the proposed development site. They have also confirmed that the receiving Cefn WWTW has a phosphate permit.

NRW have suggested that foul water from the proposed dwelling should be disposed of via the mains sewerage system as installation of private sewage treatment facilities within publicly sewered areas is not normally considered environmentally acceptable because of the greater risk of failures leading to pollution of the water environment compared to public sewerage systems. Therefore, we are proposing to drain all foul flows from the proposed development direct to the combined public sewer within Newbridge Road. This will reduce any potential risk of pollution due to foul drainage failures from the site.

Further Consideration

It should be noted that Coopers have previously prepared 2 options to WCBC Planning for foul drainage disposal consideration. As the existing dwelling is currently being served by an old septic tank, we would consider replacing the tank with a new private wastewater treatment plant and construction of a new drainage field for the effluent discharge to ground to be a viable option providing an improvement to the existing situation. Percolation tests have determined the ground conditions are suitable. Private wastewater treatment plants (eg: Klargester Biodisc) have alarms / telemetry installed to alert the user of any potential failure / malfunction. The homeowner would be responsible for the future maintenance and operation of the treatment plant and drainage field.

It should also be noted that where private treatment systems can be properly justified, small discharges to ground (<2m³/day) via a suitable drainage field are considered unlikely to have a pathway for phosphorus to enter the river environment and unlikely to have a significant effect on an SAC, whereas any additional flows to the sewer network may potentially increase phosphate levels within the SAC with increased loads on the Cefn WWTW.

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