DRAINAGE STATEMENT

Land adjacent to Graig Wen Farm,

Off Brymbo Road,

Bwlchgwyn

Wrexham

LL11 5UB

Trevor Mennell Planning

SEPTEMBER 2024

History

The original planning approval was granted, following an approved planning appeal back in 2020 with conditions. An application to Wrexham LPA to discharge Condition 8 (Drainage) was refused. It was considered there was a lack of details to satisfy recent requirements following the introduction of more recent policies by Natural Resources Wales on nutrient "sensitive river" Special Areas of Conservation (SAC).

An initial decision was made to install a private drainage system which was ultimately agreed in principle by the LPA's Drainage Officer and the Councils Senior Planning Officer. Various schemes were put forward to both the Council's Drainage Officer and NRW where the Drainage Officer recommended approval of a Cesspit which was ultimately refused by NRW who preferred an alternative treatment plant.

By this time a license had been obtained off NRW to bring the site up to level with crushed building rubble. The area of the development was brought up to level to some 600mm in depth.

There was a necessity to obtain percolation tests which were unsuccessful as a clay band was some 1m below the new ground level preventing water to percolate and the tests were abandoned. The necessity to provide a drainage field below ground was proven unachievable and the only way forward was a recognised drainage mound, a final acceptable effluent treatment which could be Screened Out as not likely to have a significant effect on the River Dee SAC as there were no pathways to impact the River Dees SAC problem as confirmed by our professional ecologist, Mr Ed Lomas, Camlad Ecology

Following the refusal to Discharge Condition 8 of the Discharge of Conditions application dated 30th October 2023 the reasons for refusal have now been addressed in accordance with Circular 008/2018 as follows:-

Reason 1

Insufficient information has been submitted to demonstrate that a drainage connection to the public foul sewer network is not feasible. The proposed foul drainage arrangements therefore conflict para 6.6.21 of PPW 11 and the guidance in Circular 008/2018.

a. An asset plan was obtained from Welsh Water showing the foul drainage network within the vicinity of the site which includes the locations of the nearest foul sewer connection (Appendix 1).
b. A 150mm dia is located in Cefn Road, 170m west of the site. To connect to the public sewer the development foul drainage arrangement would involve the installation of a pumping station and a rising main. The land and sewer levels will not permit a gravity connection. The rising main would need to cross a private right of way which links Glascoed Road and Ruthin Road, and agricultural fields to include private gardens to a new manhole within Cefn Road.
c. Also, a 225mm dia sewer is located in Ruthin Road some 280m South of the site. Again, to connect would involve the installation of a Pumping Station and rising main within the private right of way to a new manhole in Ruthin Road. The land and sewer levels will not permit a gravity connection.
d. A letter from Welsh Water's Development Officer dated 23rd November 2021 confirms this (Appendix 2). A verbal enquiry was made to Welsh Water with reference to a sewer requisition where I was informed this is normal for a large development but in this case, it would not be financially viable for the water company or my client for development of this small site to requisition a sewer connection.
e. A formal enquiry was also made to the landowner of the fields opposite reference the possibility of a requisition who wrote to NRW refusing access to my client (Appendix 3).
f. My client's solicitor confirmed with reference to the private right of way which is owned by the adjoining landowners. That my client has a right to pass and repass over the right of way with no designated right by any owners to install services along its length. It is therefore not feasible for a sewer connection to be considered.
g. The above consultations have been carried out in accordance with Para 2.2 of the Circular 008/2018

h. The decision to include a drainage mound was initially recommended as a possible solution by the Councils own Ecologist (Appendix 4).

i. Full consideration has been given to the financial implications relative to the installation of a pumping station and rising main to Welsh Water standards for adoption. Should that have been feasible against the installation of a Matrix Topas-Plus wastewater treatment plant by Clenviro with a final effluent treatment drainage mound all in accordance with the current Building Regulations. Approved Document H2. The Matrix Topas-Plus is a registered system certified by British Water as can be confirmed on the following link:- https://www.britishwater.co.uk/page/Accreditation-Certificationcertified-small-wastewater-treatment-systems-for-up-to-50-pt

Reason 2

Insufficient information has been submitted to demonstrate that the proposed foul drainage arrangements would not result in adverse impacts to the River Dee and Bala Lake Special Area of Conservation. In the absence of this information, the proposal conflicts with policies DM1, NE1 and NE6 of the Wrexham Development Plan.

A thorough assessment of both the Bio Disc market and the private wastewater treatment plant has been carried out by our drainage consultant relative to final effluent discharge and the ability to meet near neutral phosphate discharge. The original Bio-Disc specification has now been changed to a Clenviro Matrix – Topas Plus sewage treatment plant achieving discharge qualities of 1mg/litre designed and recognised by British Water. The LDP identifies the need to provide a high-quality sustainable design to comply with Policy DM1 and NE6 to meet the latest standards of the regulating authorities throughout Britain.

The purchase price of the Matrix Topas-Plus is £17,000.00 + VAT with an additional installation estimate of £24,000.00.

In comparison a pumping station with rising main purchase and installation in accordance with the stringent Welsh Water document 'Sewers for Adoption' would be in excess of £65,000.00 which is outside my clients remit.

The proposed system with a near neutral phosphate discharge of treated effluent from the Matrix Topas-Plus to the drainage mound with its phosphorous reduction technology will have no adverse effect on any water services or breach any statutory regulations collected.

The disposal of sludge will be via a registered waste carrier on contract together with general maintenance contract with Clenviro the manufacturers and suppliers of the unit. The final effluent treatment contained within the drainage mound irrigation system will be constructed in accordance with the Building Regulations 2010 Approved Document (H2 1.26 – 1.44 attached) – (Appendix 5) and its installation supervised by the Councils own Building Control Team. In all, fully in compliance with Welsh Government Circular 008/2018 and the Councils LDP Policy NE6.

Full details of the proposal are available for Wrexham Council to carry out their required HRA.

Ecology and the River Dee SAC

The Ecology Consultant, Edwin Lomas of Camlad Ecology Ltd has prepared a summary of his initial report and findings relative to the use of the private sewage treatment arrangement as required by the Council's LDP Policy NE1 and NE6, in particular those relative to the River Dee (SAC) (Appendix 6).

Proposed Development

The site is a small development of 4 no. family pitches with a maximum discharge to the Matrix system of 600 litres/day where the Clenviro Matrix Topas-Plus system (Appendix 7) will treat the wastewater quality discharge removing phosphates to near neutral content and pumped above ground to a final polishing treatment by the drainage mound an alternative proven drainage field as recognised within the Building Regulations ref H2.

The proposed drainage arrangement will attenuate phosphates from the effluent by decreasing the volume of wastewater produced from the site occupants without increasing the concentration of phosphates. The discharge will be less than 2 cu.m / day. It is recognised that this Clenviro system works for holiday parks and traveller sites with little maintenance and will operate when the sites have been periodically vacant.

The Mound

The mound is a drainfield that is raised above the natural soil surface in a specific sand fill material.

Within the sand fill is a gravel-filled bed with a network of small diameter pipes. The treated effluent is pumped through the pipes in controlled doses to insure uniform distribution throughout the mound. The effluent leaves the pipes under low pressure through small diameter holes, and trickles downward through the gravel and into the sand. Treatment of the effluent occurs as it moves through the sand and into the natural soil.

The Pump Chamber

The pump chamber is a concrete, fiberglass or polyethylene container that collects the septic tank effluent. The chamber contains a pump with control floats and a high-water alarm float. The pump action can be controlled either by the use of control floats or by timer controls. Control floats are set to turn the pump “on” and “off” at levels for pumping a specific volume of effluent per does. Timer controls are set to produce both the length of the dose and the interval or rest period between doses.

The high-water alarm float starts an alarm to warm you of any pump malfunction. If pump timer controls are used, the alarm also will warn you of excessive water use in the home or leaks into the system. The float is set to start when the effluent in the pump chamber rises above the “on/off” float. The alarm will consist of a buzzer and an easily visible light. It will have a union and valve for easy removal of the pump. A piece of nylon rope or other non-corrosive material will be attached to the pump for taking the pump in and out of the chamber.

Arrangement of Private Sewerage

As previously referenced full consideration has been given to the financial implications relative to the installation of a pumping station and rising main to Welsh Water standards for adoption (should that have been feasible) against the installation of a Clenviro Matrix System with a final effluent treatment drainage mound all in accordance with the current Building Regulations, Approved Document H2 and Circular 008/2018.

A thorough assessment of the private sewage treatment plant market was carried out by our drainage consultant relative to the final effluent discharge and the ability to meet near neutral phosphate discharge. The original specification of the unit has now been changed to a Clenviro 'Matrix – Topas Plus sewage treatment plant achieving discharge qualities of 1mg/litre designed to meet the latest standards of the regulating authorities throughout Britain. The purchase price of the unit is £17,000.00 + VAT with an installation estimate of £24,000.00 to total £41,000.00 + VAT.

In comparison a pumping station with rising main purchase and installation in accordance with the stringent water authority bible "Sewers for Adoption" would be in excess of £65,000.00 + VAT.

Surface Water – Sustainable Drainage System (SUDs)

The sustainable drainage system is designed to manage the storm water on site primarily from the Dayrooms and static caravans to mimic roof natural drainage by draining to the gravel surface away from the Foul Drainage Treatment Plant and Mound.

Conclusion

The proposed system with a near neutral phosphate discharge of effluent with its phosphorous reduction technology to the drainage mound will have no adverse effect on any water services or breach any statutory regulations and conforms to BS6297:2007+AI2008 and Circular 008/2018.

The disposal of sludge will be collected via a registered waste carrier on contract together with general maintenance contract with Clenviro the manufacturers and suppliers of the unit.

The final effluent treatment contained within the drainage mound irrigation system will be constructed in accordance with the Building Regulations 2010 Approved Document H2 1.26 – 1.44 (Appendix 5) and its installation supervised by the Councils own Building Control Team.

In all fully in compliance with Welsh Government Circular 008/2018.

Full details of the proposal are available for Wrexham Council to carry out the required HRA. Plan

It is considered the proposed development and Matrix Topas-Plus sewage treatment plant with secondary treatment will not effect NRW's compliance assessment to reach its target against Phosphorous Targets and Condition 8 should be approved and screened out.

Appendices

Appendix 1 – Welsh Water Sewer Network Plan

Appendix 2 – Letter from Welsh Water – 23rd November 2021

Appendix 3 – Letter from Landowner

Appendix 4 – Advisory Email from Wrexham Council Ecologist

Appendix 5 – Building Regulations 2010 – H2 1.26 – 1.44

Appendix 6 – Ed Lomas – Ecology Report – Water Movement

Appendix 7 – Clenviro Matrix Topas-Plus Detailed Information