

TREVALYN FARM : CONSTRUCTION OF NEW LAKE , WETLAND AREA , WILDFLOWER MEADOWS AND WOODLAND Planning ref: ROS P / 2011 / 0771

See dwg TFRLP11.22

Surface Water Management Programme.

In response to the planning conditions and the comments provided by the consenting team at the Environment Agency, the following specifications will be used to manage surface waters during construction and operational phases of the habitat creation scheme at Trevalyn Farm.

Construction Phase.

Given the need to top soil strip and excavate in a number of areas of the site, exposed soils and spoil stockpiles will have temporary catch drains constructed along their down slope sides where necessary. These will be managed to ensure any sediment laden runoff is controlled.

Operational Phase

Surface water management for the completed scheme has a number of components, these include:

- In order to construct the lake and reduce any surface ground water pressure against the clay liner of the lake, a cut-off ditch/drain will be constructed. This potentially could be required around the whole periphery of the lake. However, given that the surface ground water flow direction at Trevalyn Farm is south-west to north-east, the initial cut-off ditch/drain will be constructed only around the south-west section of the lake. Beyond this, the surface ground water flow should maintain flow down slope and away from the clay side-walls of the lake. However, should groundwater conditions create a risk to the integrity of the clay side-wall liner then a complete cut-off ditch/drain will be constructed to discharge via the outlet ditch (see Drawing TFRLP11.22).
- The main lake water level will be retained by a fixed-crest spillway and cascade. This will allow water levels to be maintained in the main lake and surplus water will be discharged to the lower lake (see Drawing TFRLP11.22).
- The outlet of water from the lower lake, and the whole lake wetland system will be via an outlet drop board penstock to a culvert which discharges to the main drainage ditch that already exists on site. The drop board penstock will be used to draw down and raise water levels in the lower lake for management proposes.
- The existing ditch which leaves the site to the north-east links to a series of ditch systems which drain into Pulford Brook. The existing ditch on site is primarily a storm flow carrier with little water flowing through the ditch for most of the year. The surface water management scheme involves the construction of earth dams across this ditch at three locations (see Drawing TFRLP11.22). These dams will perform two functions. The first is to help retain water within the ditch for longer each year; and thereby enhance the wildlife and habitat functions of the ditch. The second is to encourage water to spill into the newly created woodland to the north-west of the ditch. This will be further assisted through the creation of shallow scrapes

which will direct storm flow from the ditch and into the woodland. Habitat benefits from this are likely to be significant and the Environment Agency has recognised its potential contribution to slowing down storm flows into the Pulford Brook and eventually the River Dee floodplain system. By diverting storm flows into the marsh scallops (see Drawing TFRLP11.22) and woodland, water quality in the receiving waters of Pulford Brook will be protected through the retention of sediments and associated nutrients.

Overall, the surface water management programme ensures that surface water flows are not interrupted and that surface water quality is protected. In addition, the scheme provides habitat, species and landscape benefits by retaining and managing water within the site.