

Proposed Solar Farm, Gelli Bwch, Llandarcy

Technical Note – Drainage

Introduction

This Drainage Technical Note is prepared in support of a proposed construction of a new Solar Farm on land to the north of Gelli Bwch Farm, Llandarcy, SA10 6JU. The development comprises the proposed installation of 2594 PV panels on a 4.915 hectare site.

The application site is 300m to the north of a Special Area of Conservation (SAC) and a Site of Special Scientific Interest (SSSI).

Existing Development Site

The existing development is classified as greenfield, with the land currently being used for agricultural purposes. The land has been assessed as being of poor agricultural quality. HR Wallingford's greenfield run off tool suggests that the existing ground should be suitable for infiltration with a soil index classification of 3, as defined in Flood Studies Report (NERC, 1975). There is also an existing field drainage network that further compliments the natural free draining ground which is located along the western boundary of the site and discharges to a heavily wooded area located along the northern boundary of the site.

Proposed Application Site - Surface Water Disposal

The proposed development will involve the construction of a ground mounted solar farm. The solar farm will comprise of 2594 PV panels, which will each be fixed and mounted onto a metal frame. The panels will be laid out in a series of straight arrays running generally east to west across the site.

The metal framework will be supported by mounted posts approximately 5m apart, depending on the orientation / configuration of the panels. The mounted system will be fixed to a non-intrusive ballast system. The panels will be arranged to avoid existing field drainage ditches.

The development also requires the construction of 3No. GRP enclosures to house the mains LV panel, transformer and ring main unit. The GRP enclosures are constructed off raised concrete plinths.

A topographic survey of the site has been undertaken which confirms that the site falls from west to east and from south to north.

The drainage strategy for the site is to maintain the existing drainage regime with any rainfall that lands on the solar panels running onto the surrounding grassed areas and infiltrate into the underlying top soil and being distributed through the top soil and subsoil into the existing ground water system. The proposals do not alter the existing surface water drainage regime nor change the volume of water entering the ground water system. Any exceedance flows or excess run off will drain to the existing field drainage system with no change to the volume of runoff generated post development compared to the current arrangement.

