



Brookbarn – Development Proposal

LU/385/14/PL



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Rev A

Introduction



On the 23rd April 2015 Anesco was granted planning permission to build a solar farm on Land at Brookbarn Farm. This came with conditions associated with the previous use as a Landfill. This document is to show the how the design changed through the course of planning and provide information and details so that conditions 14, 15, 16, 17 and 18 should be discharged.

Typical Anesco Solar Farm Design

For a typical field, Anesco follow the typical design for solar farms in the UK. This typically involves three types of ground work:

1. Mounting system - Installing steel piles in the ground to a depth of between 1.5 and 2.5m to support the frame.
2. Cabling - Digging trenches to install cables connecting the inverters to transformers and the substation
3. Foundations - Concrete foundations for the associated buildings

Brookbarn Geotechnical Investigation

During the initial desk based investigation part of the site was revealed to be a closed landfill. This prompted further investigation to ascertain the ground conditions and the possibility of supporting a solar farm.

It was confirmed during the full planning process that the ground had the potential to support a solar farm of our normal design.

Further consultation with local residents, LPA and our Health and Safety consultant, it was concluded it would be best to seek an alternative option to penetrating the areas the Landfill.

Alternative Designs

Anesco have experience with a wide variety of land types, including Green Field, ex-airfields, ex-colliery sites and installing one of the first solar farms on a landfill in the country.

These experiences, specifically already having installed on a landfill where we were not allowed to penetrate the ground, gave us a tried and tested design to work with.

Addressing each of the three types of ground work separately:

1. Mounting system – Although using a piled system is by far the most efficient and cheapest we have previous experience using a ballasted system where the need has arisen. Examples include landfills, weak ground and crossing underground utilities.

A Ballast system involves connecting the shortened pile to a heavy foot, either a metal tray with bricks or a cast concrete block. These can then be placed on the surface and no ground penetration occurs.

During the full planning process we got the option of ballasting the system added by the supplementary drawing 001065_05 Rev A Typical Section and Elevation of Ballasted Array.



We are proposing to use this Ballasted Mounting system across the whole site.

2. Cabling – Cabling in the ground is the standard method of construction however it is perfectly acceptable to install SWA cables in open mesh trays on the surface. We have used these on the landfill solar farm we currently operate.
We are proposing to use these trays across the entire site.
3. Foundations - The foundations for the electrical cabinets and transformers will be over the landfill. Typically this involves casting a concrete block as a floor with a vertical dimension of 1m. To avoid penetrating the design we are working with a supplier to develop a steel skid based arrangement that will be dragged or placed in position.

We are proposing to use this solution in both the locations of transformer and feeder pillars

We have placed the Substation specifically not over the landfill so we can use the traditional foundation design.

Conclusion

We have carried out investigations and had reports written to understand the ground conditions of the site. This confirmed the site is partially over a landfill and as such the design needed to be looked at in detail. After listening to concerns of neighbours, LPA, EA and our own Health and Safety consultant Anesco made the decision to change the design so that we do not penetrate the ground.

For the avoidance of any doubt – no ground penetration will occur over areas of the former landfill.

By not penetrating the ground we have mitigated possible risks associated with the Landfill. Therefore we would like to submit this document and appendices to discharge conditions 14, 15, 16, 17 and 18 of application LU/385/14/PL.