Case study

132kV Substation

The project involved the construction of a new adoptable 132/33kV Primary Substation at Llanwern Farm Solar Park, Newport, South Wales as a point of connection for a new 49.9MW Solar Farm with 200 battery storage units. The development will provide enough green energy to power over 15,000 homes and save over 21,000 tons of CO2 per annum.

Due to the underlying poor ground conditions, Alan Wood & Partners (AWP) were required to call on their considerable skill and expertise to design a foundation capable of supporting the proposed plant and equipment, without excessive settlement. This required the design of pile supported, monolithic, reinforced concrete raft foundations, with chemically stabilised access roads, to control expected total and differential settlements to within allowable tolerances for effective operation of the plant. The site is also at risk of flooding requiring critical plant and equipment to be lifted above predicted flood levels and requiring Alan Wood & Partners to design and detail elevated platforms and access steps.

Working directly for the EPC contractor, AWP were engaged to provide full Civil and Structural engineering services for the proposed development, which included geotechnical investigation and design, structural design of all plant foundations, power transformer bunds, switch rooms etc.

Alan Wood & Partners

Location:
Newport, South Wales

Client:
Ethical Power Connections Ltd. On behalf of Western Power Distribution

Architect:
Ethical Power Connections Ltd

Value:
£5m

Civil Engineering | Structural Engineering | Geotechnical and Geoenvironmental

Engineer / Manage / Deliver /