

Tallentire Wind Farm, Cumbria.

Civil and Ancillary Works

Project Profile

Client: Renewable Energy Systems (RES)

Designer: JNP Group

SUDS Design: DR Murray

Value: £5.7m



Design and Construct contract for Civil and Ancillary Works for a 6 turbine wind farm site constructed in farmland near Cockermouth in Cumbria. The wind turbines procured for the site by RES were Vestas 2.0 MW units. Turbine erection was completed in February/March 2013 and the site was generating electricity by the end of March 2013.

The main construction work included;

- Establishment of temporary and permanent works compounds.
- Topsoil strip to working areas with specific stockpiling and storage within each landowner boundary.
- 7.5km of minimum 5.5m wide imported 6F5 & Type 1 stone site roads and turbine spurs, widened at bends and junctions to suit swept path of turbine delivery vehicles. A layer of geo-grid was provided at formation level to ensure long term stability of the road construction on the clay formation.
- Section 278 works to the site entrance off the A595 and for the track crossing of an unclassified public road.
- 6 nr 40m x 20m crane hard standings constructed using imported type 1 stone.
- 6nr 19.4m dia octagonal reinforced concrete gravity foundations for the 2.0MW Vestas wind turbines.
- Each turbine base required 400m³ of concrete which was completed in one pour and included casting-in of the 15 tonne turbine insert 'can'.
- Sustainable drainage system to the whole site including swales, check dams, mini-settlement & stilling ponds and controlled outfalls to existing water courses with gabion basket headwalls.
- Culverted crossings of existing streams and watercourses
- Protection slabs to 2 gas main and 2 water main crossing
- 20m x 6m control building
- 10km of cable trenches for electrical and telecoms cables.
- Crossings of many field boundaries with re-construction of walls and fences and provision of new field gates and cattle grids to allow farm access.
- Permanent stockproof fencing to working areas across fields and provision of silt fencing to all downslope working area fences.
- Re-soiling, reinstatement and seeding of road & cranepad margins and swales



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A Spoil Management Plan was developed to retain topsoil and excavated soils in specifically identified areas agreed with each landowner/farmer.

We were also able to achieve beneficial re-use for the surplus sub-soils from the scheme through a separate design & construct contract for construction of a slurry lagoon for one of the landowner farmers in a disused quarry.

The 20m x 6m Control Building is built over a 1.5m deep reinforced concrete substructure which provides space for the power and SCADA cables. The building is traditionally built with rendered blockwork and slated pitched roof and provides space for the Utility switch room, wind farm switch room, control room and Scada room as well as office and welfare facilities. A grey water harvesting system was also installed for the control building.

The site was in an ecologically and archaeologically important location and during the topsoil strip for roads and crane hard standings archaeologists kept a watching brief although no items of importance were found. Ecology surveys were also carried out prior to site commencement and restrictions were placed in 2 site areas because of the presence of nesting birds and a badger sett.

The site crossed a number of landowner boundaries and continuous liaison was required with each landowner to ensure preparation, construction and reinstatement work was carried out to their satisfaction and that our activities did not impinge on field access, harvesting, livestock movement or other operations.

Working closely as a team with RES project management and engineering staff and our designers ensured that any problem areas encountered were quickly resolved and did not impact on the tight delivery programme.

