Natural Power Design and Advisory Services - Freasdail Wind Farm

Project:	**Freasdail Wind Farm**
Client:	I&H Brown Ltd.
Project Description:	The Freasdail wind farm project comprised the construction of eleven 2.05MW wind turbines with foundations, new access tracks including watercourse crossings and associated drainage systems, permanent crane hardstands, temporary blade lay-down areas, temporary turning heads, a permanent substation compound and control building and two temporary construction compounds. The project is located on the Kintyre peninsula.
Services Provided:	Natural Power worked as the designer during the tender and construction stages of I&H Brown's Balance of Plant contract. During the tender stage, Natural Power reviewed geotechnical information, advised on anticipated formation depths for turbine foundations and structural fill and confirmed the quality of the material within areas of cut for use as a road construction basecourse. As part of the detailed design, Natural Power worked collaboratively to a tight timescale, to design the formations for the turbine foundations, tracks, hard-stands and drainage in AutoCAD Civil 3D, as well as review hardstand construction make-ups and access track pavement design and construction details. Natural Power provided technical support including site inspections of the WTG foundation formations and review of test results and material certification for the turbine foundation excavations during the construction phase. In addition, we carried out geotechnical design analysis and calculations for each infrastructure element including testing and inspection input. Natural Power reviewed as-built drawings upon completion of the project.

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Dates and duration of contract for project	January 2016 to December 2016
Performance delivered, including strategic value to the client	➜ To reduce the uncertainty in the foundation performance on the glacial till soils and weathered rock materials beneath two turbine locations, we proposed additional drilling in order to assign geotechnical parameters for foundation design assessments and reduce the risk on the materials required ➜ Collaborative, iterative design process working closely with the contractor to optimise the design ➜ The track layout was optimised to reduce the fill requirements and culvert lengths at watercourse crossings ➜ The track gradients were designed to maximise the site won material and reduce the requirements for imported material ➜ Checked the method statement of the contractors rock bund solution for crane-pads in areas with peat greater than 6m ➜ Provided technical specifications for earthworks in accordance with the relevant codes including Eurocode 7, British Standards, Specification for Highway Works and the Employer's Technical Specification.

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we are ISO 14001:2004 certified (NPC - UK & Ireland) (NPS - UK)

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