

Capability statement: Wind Farm Drainage Design



McCloy Consulting is a team of specialist engineers and hydrologists capable of providing clients with expert technical advice on drainage for a wide range of developments.

Established in 2003, the company has quickly established a reputation for providing a professional service tailored to our clients' needs, delivering bespoke solutions to a range of environmentally sensitive problems whilst retaining an ethos of value for money to the client.

Introduction

Due to windspeed requirements, wind development sites are generally located in elevated upland areas, which by their nature coincide with areas of scientific interest and sensitive biological and marine habitats. These habitats, including peat bogs and sensitive watercourses and lakes, are therefore at high risk of pollution due to construction and operation activities at the wind development site.

The upland nature also means that any pollution incident at a wind farm site is likely to be carried downstream by natural watercourses, with associated wide ranging ecological implications in the lower reaches of the watershed.

The main method of pollutant transport is via surface water runoff, whereby silts, oils, and other construction related debris is washed into sensitive upland watercourses and transported downstream. The disruption of natural upland drainage paths and diversions and culverting of watercourses to allow construction of access roads, substation platforms, and turbine bases can fundamentally alter the natural hydrology and hydrogeology of the site and lead to peat instability.

Approach

The main focus of our drainage designs is to deliver a robust and workable silt management solution utilising SuDS techniques, both for the management of construction rainfall runoff and for the long term drainage of the site.

The drainage and silt management solutions developed by McCloy Consulting embrace the concept of source control. The designs focus on mimicking the natural hydrology of the site, therefore limiting the impact on the surrounding area. Ongoing communication with the Project Delivery Team and regular site visits are provided during construction as part of the service to ensure the successful delivery of the drainage solution through to implementation stage of the project.

Expertise

McCloy Consulting Ltd. has developed a specialist niche expertise in the design of drainage for windfarms and has extensive experience in all aspects of the design and supervision of sustainable drainage systems for on-shore wind projects. We provide services to a number of major wind farm developers in the Irish, UK, and European renewable energy markets.

We have been involved in the assessment and design of drainage and pollution protection measures for over 35 wind development sites over the past 5 years, and are currently engaged as a specialist consultant for several on-shore wind farm projects in the UK and Ireland, providing various levels of input to all stages of the project development. Our services to the wind farm sector have also included hydrological assessment and environmental monitoring.

Capability

Site Selection (Pre-planning)

- Preparation of Preliminary Hydrological Assessments

Planning Process

- Preparation of Hydrology, Drainage, and Silt Management chapters for EIS
- Preparation of SuDS Design Philosophy Statements for CMS
- Development of Pollution Prevention Plans.

Construction and Post-Construction

- Preliminary and detailed design of sustainable drainage and pollution control features
- Site supervision
- Preparation of construction and post-construction phase SuDS management and maintenance plans
- Baseline and construction phase water quality and environmental monitoring and reporting.

Example Clients:

SSE Renewables
RES Group
TCI Renewables

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