BYRNELOOBY

PROJECT AT A GLANCE

DATE	PROJECT TITLE	LOCATION
2014 - 2016	Bishopton Development	Glasgow
PROJECT VALUE	**CLIENT**	**COUNTRY**
£50,000	BAE Systems	Scotland

WETLAND EFFLUENT TREATMENT SYSTEMS

DISCIPLINE: REMEDIATION

PROJECT DESCRIPTION

Through its involvement in the management of leachate from landfill sites, TerraConsult has developed expertise in the design and operation of constructed wetlands for the treatment of effluents.

Constructed wetlands are engineered systems that use natural processes in vegetation, soil, and organisms to treat wastewater. As is the case with natural wetlands, constructed wetlands can remove a range of potential pollutants including suspended solids, organic & inorganic nutrients, pathogens and heavy metals. Constructed wetlands also provide secondary benefits such as ecological habitat creation and flood storage.

The Bishopton Development Site is a large former munition manufacturing site which is being redeveloped for residential housing and other mixed uses. As part of the remediation works heavily contaminated soils were deposited in a landfill, which produced a leachate requiring effluent treatment before discharge to the local surface water system.

OUR ROLE

As part of a D&B contract, TerraConsult designed an integrated leachate effluent treatment system which incorporated a 2,000 m2 constructed wetland system and flow balancing control to manage against the effects of storm events to the operational landfill cell. The system has been installed, taken through biological process commissioning and is now operational.

The design incorporates contingencies for the ongoing expansion of the landfill and to ensure that any leachable contaminants from an adjacent soil washing pad are degraded prior to discharge into a nearby surface water course

The integrated system adopted provides for a sustainable solution to deal with intermediate strength landfill leachates, where ammonia concentrations are below the normal threshold for conventional treatment plants (<200 mg/l) but above that usually treated in reed beds (5 to 20 mg/l).