

AquaticEngineering

Working Above Water, On Water & Under Water

Case Study : Abberton Reservoir - Silt Curtain



Client: Essex & Suffolk Water (Northumbrian Water)

Contractor: Carillion

Duration: 4yrs

Value: £150,000,000

Engineer: MWH

AquaticEngineering completed a significant excavation and dredging project on Abberton Reservoir for Carillion and Essex & Suffolk Water. The scheme will eventually raise the main dam and top water level of the reservoir by 3.2metres. This enlargement will require far less additional land than a new reservoir would with the surface area increasing from 4.7 square kilometres to 6.7 square kilometres. Enlarging the capacity of Abberton Reservoir will secure additional water resources (60% capacity increase) and improve the Reservoir's value for biodiversity with large new wetlands being created.



Initially a 350m x 8.4m curtain was deployed around the existing offtake pumping station in autumn 2010 to protect the water supply from turbidity created by rising water levels on newly engineered bank profiles.

This huge 1200ha site with a reservoir of 485ha is one of Europe's top wetland sites (SSSI; RAMSAR; SPA) with up to 40,000 ducks, swans and geese visiting each year. Essex Wildlife Trust manages the reserve which is situated on a well-protected bay of the reservoir, created in 1975 with the advice of Sir Peter Scott. This varied site also attracts large numbers of passage waders such as ruff and spotted redshank from the coast in winter along with thousands of golden plover. The reservoir boasts an impressive list of visiting rarities in winter or whilst passing through on migration. Mature hedges and thickets in the surrounding grassland provide nesting habitat for a wide range of small birds, particularly warblers, nightingales and finches.







The team successfully excavated over 10,000m³ of clay and silt from the reservoir bed thus creating a flow channel to a temporary drinking water pumping station which will be commissioned whilst the existing facility undergoes a major refit to cope with higher abstraction levels.



Working closely with MWH, the global leader of the wet infrastructure sector, the team undertook an 8 week programme with minimal impact on water quality and wildlife. A 350m long and 9m deep silt curtain enveloped the works throughout the contract and at no time did turbidity levels rise at the off take pumping station, although only metres away from the excavation. An additional 200m long emergency curtain remained on standby throughout the contract period but was never required or mobilised.







Despite unseasonably strong winds throughout the project it was completed on time and to specification



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