



PROJECT:

Heathrow Airport Mayfield Farm Treatment Works

NEED

The Mayfield Farm treatment works is a wetland system treating deicing runoff from the southern catchment area of Heathrow Airport. The original system, constructed in 2001, was unable to keep up with increasing air traffic and deicing operations at Heathrow.

A substantial increase in overall treatment capacity was required. However, the system had to fit in the available site area of the existing treatment works and re-use the value of existing capital assets as much as possible.

SOLUTION

A comprehensive upgrade and refurbishment of the existing system was undertaken by NWC and our UK-based partner, ARM. This included converting the existing horizontal flow wetlands to aerated reed beds, converting several lagoon segments to aeration, and installing nutrient addition at various stages of the treatment process. Instrumentation and controls were added to allow the system to be integrated in the airport-wide data monitoring network.

The resulting upgrades increased overall treatment capacity from 374 to 3,500 kg/d of BOD removal, while maintaining maximum flow throughput of 80 liters per second. All of the existing treatment stages were upgraded and re-purposed, and no additional land was required, despite the almost 10-fold increase in treatment capacity.

BENEFIT

The greatly increased treatment capacity at Mayfield Farm enhances safe airfield operations and aircraft deicing while maintaining environmental compliance. Reusing existing capital assets resulted in substantial cost savings, and the reed beds themselves provide valuable wildlife habitat in this area of London.

LOCATION

London, United Kingdom

PROJECT TYPE

Airport Deicing

COMPLETION DATE

2011

DESIGN CAPACITY

6,900 m³/d

3,500 kg/d BOD

TREATMENT

Aerated Subsurface Flow
Wetlands, Flow Balancing
Lagoons, Aerated Lagoons,
Floating Treatment Wetlands

