

CASE STUDY

SDS

Water
Infrastructure
Systems

RAF Lossiemouth

RAF base equipped with Scotland's largest Weholite surface water attenuation tank



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→ SDS SYSTEMS

SDS Weholite Surface Water Attenuation Tanks, Manholes and Conveyance Piping.

→ CLIENT

Lagan Aviation & Infrastructure.

→ END CUSTOMER

Defence Infrastructure Organisation (DIO).

→ PURPOSE

To prepare and future-proof the RAF base for the introduction of Boeing P-8A Poseidon Maritime Patrol Aircraft.

→ BRIEF TO SDS

To ensure the full operational capabilities of the air base are not compromised by flooding from heavy rainfall.

→ TIMING

Autumn Winter 2021/22.

→ PROJECT BACKGROUND INFORMATION

RAF Lossiemouth in Moray, north-east Scotland, is one of two RAF Quick Reaction Alert (QRA) stations, whose aircraft and crews are on continual high alert in order to scramble and intercept unidentified aircraft approaching UK airspace.

The MOD has committed to a £3bn investment for the transformation of the base, which is staffed by more than 3,000 military and civilian personnel.

→ PROJECT OBJECTIVES

To disperse surface water quickly and efficiently from the air-side paved surfaces of the base.

→ PROJECT REQUIREMENTS

To implement a drainage scheme that enables sustainability objectives to be met at every stage of the project.

→ SURFACE WATER SYSTEM REQUIREMENTS

The system complies with the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) which have made SuDS a requirement for all new developments constructed after April 2007.

Special attention has been paid to the potential flood risk due to the coastal location of the site in an area of Scotland which is known for its wet and harsh weather, particularly in Winter when snow melt can create significant volumes of standing water.



→ SDS PRODUCT FEATURES

The Weholite tank, measuring over 8,000 square metres, is constructed predominantly of 260 individual pipes of 14 metres in length and 50 pipes of approx. 7 metres in length, all with a 1.2 metre diameter.

In excess of 4.4 kilometres of 1200mm diameter 4K pipe, together with 10 manholes, have been manufactured and installed by SDS, with a combined bill of materials weight of over 300 tonnes.

→ ISSUES OVERCOME

All stormwater attenuation is situated below ground due to the restriction of having open bodies of water in close proximity, which might attract unwanted birds to the airfield.

Due to site levels and the relatively high water table, soakaways were deemed unsuitable for stormwater discharge, therefore the flow rate is restricted to 5 litres per second per hectare of impermeable area before discharging into the drainage system.

Oil interceptors located between the drainage system and the neighbouring Covesea Burn help to prevent any contaminated runoff from the runway from entering the natural environment.



Malachey Doyle, Project Manager, Lagan Aviation & Infrastructure:

"Safe, tidy and impressive work rate by all within our Central and Eastern section at RAF Lossiemouth. Works have comprised a new wastewater treatment works, 90m x 90m oversized attenuation tank, roads, drainage and associated Infrastructure."

Lagan Aviation & Infrastructure have delivered over 60 airport projects worldwide and operate out of two main offices, Belfast in Northern Ireland and Washington in the USA. They have established a network of trusted contractors and supplier organisations of which SDS is proud to be a part.

