

Case Study

Stoke Gifford, Bristol

SuDS protect state of the art train servicing facility



SDS Systems

GEOlight® Attenuation Tanks.

Client

VolkerFitzpatrick.

End Customer

Network Rail.

Project

Stoke Gifford Train Maintenance Depot.

Purpose

To provide a state of the art service and maintenance facility for new rolling stock.

Brief to SDS

To ensure that the facility remains flood free and to protect the local watercourses and surrounding land from contaminated floodwater.

Timing

Construction of the facility began in 2013 and will be completed in 2015.

Project Background Information

The depot, which is a short distance from Bristol Parkway Station, will service up to 34 trains on the new Intercity Express electrified rail link between London and South Wales.

The site is part of a wider £5.7 billion development on the Great Western (GWR) and East Coast Mainlines and the depot will be operational from early 2016. It will serve as a crucial maintenance facility for Hitachi Rail Europe's service delivery operations for at least the next 27 years.

The facility comprises a maintenance building with two full length internal roads, stabling and servicing roads, a carriage wash plant and a wheel lathe building, as well as 20km of new track. Office and staff accommodation have also been constructed.

Project Objectives

To minimise the site's impact on its natural and built surroundings and deliver ecological benefit to the locality.

Project Requirements

To provide both pollution and flood prevention solutions whilst creating a new wetland resource of significant ecological and amenity value.

Project Costs

£80 million.

Surface Water System Requirements

The SDS system protects the local watercourses and surrounding land from the risk of flooding and contamination.

SDS Product Features

This GEOLight® "SuDS" installation comprises a network of attenuation tanks, along with associated piping and flow control devices. It has the capacity to capture up to 7 million litres of excess surface water runoff from heavy and prolonged rainfall. SDS worked in close collaboration with design and engineering consultants, Arup, and specialist contractor, VolkerFitzpatrick, to design the most cost effective engineering solution for the project.

Capacity

The total combined capacity of the GEOLight® tanks is approx. 7,000m³.

Issues overcome

SDS was able to overcome the restrictions of an absence of storage space on site, compounded by a single point of site access, by using the location of its manufacturing facility to great advantage. Materials and equipment were produced and brought onto site, installation completed and any residual materials removed from site, all on the same day.

GWR's very public move to a greener, cleaner and more reliable rail network has been evidenced in every decision it has taken and the appointment of SDS demonstrates the confidence both it and its contractors have vested, in an area of the country where flooding has generated extensive negative publicity.

Nico Wessels, Site Manager, VolkerFitzpatrick, said: "SDS played a crucial role in designing a bespoke SuDS solution for this substantial development. As we continue to take on further rail development projects, we will be turning to SDS for their invaluable knowledge and expertise in this specialist and increasingly important sector."



Left and top right show Hitachi Rail's train maintenance depot in Ashford, Kent, which has been in operation since 2009.

Two bottom right show Hitachi Rail's train maintenance depot during construction at Stoke Gifford.