

Case Study

Kestrel Park, Barnsley

SDS Weholite stormwater attenuation system ensures new business park remains flood risk free



SDS Systems

SDS Weholite Attenuation Tank;
SDS Weholite Manholes;
SDS Weholite Flow Control Chamber;
SDS Weholite Jointing Systems.

SDS Customer

Manor Construction;
BDB Design Build (main contractor).

Client

Carnell Management Services.

Project

Kestrel Park.

Purpose

To encourage business growth in Barnsley, provide new employment opportunities for residents and boost the local economy.

Brief to SDS

To provide a stormwater management system that will maintain current safe rates of stormwater dispersal.

Timing

Completion of works in early 2026.

Project Background Information

'Kestrel Park' is a new, high quality business park strategically located just off Junction 36 of the M1, approx. 5.7km south of Barnsley town centre. It is being developed in an area which sits inside the South Yorkshire Investment Zone and which has seen sustained development over the past decade.

With a prominent roadside position fronting the Dearne Valley Parkway, this £12 million, 77,411 sq ft industrial development comprises seven warehouse, industrial and trade units with offices, built to a high specification and ranging in size from 3,010 to 21,535 sq ft.

The units have been built to meet BREEAM 'Very Good' sustainability standards and incorporate multiple green features including solar panels, EV charging points, cycle

parking, LED lighting and fully fitted offices/amenities, all within a secure landscaped site.

Project Objectives

To ensure the buildings and associated access, parking and service yard areas remain flood risk-free, despite the increase in impermeable areas, greater traffic volume and potential for heavier, climate change-induced rainfall.

Project Requirements

To design and install a surface water management system which complies with the current versions of the 'Design Manual for Road & Bridges' ('DMRB'), the 'Specification for Highway Works' ('SHW'), and the Local Authority Design Guide & Specification.

SDS Product Features

An attenuation tank comprising a mix of 6 metre long by 3.5, 2.8 and 1.2 metre diameter Weholite HDPE pipes, bonded together by 21 joints, has been installed, extending to a total length in excess of 100 metres.

The tank also features four Weholite manholes and an oversize Weholite Chamber incorporating a Vortex Flow Control and HDPE penstock.

This sustainable drainage system has been adopted by the incumbent Water Company, Yorkshire Water.

Issues Overcome

Two statutorily designated nature conservation sites, along with five non-statutorily designated sites, lie within 2km of the new business park's boundary;

furthermore, the development falls within the Impact Risk Zone for Dearne Valley Wetlands Site of Special Scientific Interest (SSSI). In order to mitigate the risk of these sites' contamination by pollutants contained within surface water runoff, a number of oil and grit separators have been installed upstream of the attenuation tank whilst a flow control device ensures that the rate of discharge from the tank does not exceed the pre-existing peak run-off rate.

In order to guard against the risk of leptospirosis, also known as Weil's disease, the installation crew were required to wear protective clothing. Though rare in the UK, this infection is spread through contact with soil and freshwater such as from a river, canal or lake, that contains the urine of infected animals, most commonly rats, mice, cows, pigs and dogs.

Results

Surface water from the total site area of 1.77 hectares is allowed to discharge into the wider site attenuation system at up to 15 litres per second.

The 100-year +40% climate change rainfall events are attenuated in a private storage basin and on the surface of localised areas of the site away from buildings.

Although the development site is located in Flood Zone 1 on the Environment Agency flood maps, which is defined in Planning Practice Guidance as a low-risk area, the introduction of positive drainage will result in the removal of overland flows, thereby reducing or eradicating entirely any current risk and giving a positive benefit as a result of this development

Jason Cartwright, Key Account Manager, SDS said: "The attenuation scheme has addressed Natural England's prior concerns that, without appropriate mitigation, the development would damage or potentially even destroy, through water and air pollution, key features for which Dearne Valley Wetlands has been designated a Site of Special Scientific Interest."

Managing Director of commercial property developer Carnell Management Services, Martyn Carnell, said: "As always for our sustainable development projects, at Kestrel Park we've focused on strong environmental, social and governance credentials."

