

Case Study

The Quarry, Erith

SDS installs sustainable drainage system at residential development



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SDS Systems

SDS GEOLight® Attenuation Tanks.

Client

Anderson Design and Build Limited.

End Customer

L&G.

Project

Redevelopment of a former landfill site into a 600 home residential development and school.

Purpose

To meet the demands for additional outer London housing and provide educational support.

Brief to SDS

To ensure the development remains flood free.

Timing

Work commenced on site in 2016 with the first properties made available in late 2017.

Project Background Information

The Quarry was originally mined as an important source of gravel and loam, subsequently used as a landfill site for bricks, masonry and other inert building materials and finally lay neglected to become overgrown with brambles and invasive Japanese knotweed. The site, which is located to the west of Erith town centre, spans approximately 20 hectares.

Project Objectives

The development should provide much needed mixed housing, in particular for commuters working in London, who can take advantage of the planned Crossrail line which cuts journey times to just 30 minutes. It should also provide a 3 form-entry primary school with 630 places, due to open in September 2018.

Project Requirements

The site is designated a Grade One Site of Borough Importance for Nature Conservation (SINC) and benefits from the Thames Gateway Regeneration Scheme; it must therefore reflect a careful balance between ecology and development (by providing a generous proportion of play space, open space and ecology areas).

No development is permitted to take place in these 'ecology rich' areas other than the provision of footpaths and cycle-ways and the construction of sustainable drainage features, including wet ponds and swales, to manage surface water drainage and promote biodiversity.

SDS Product Features

SDS GEOLight® tanks have been installed beneath new wet pond features including three low level lakes and an area of natural grassland and scrub, surrounded by small wooded areas. These 'wildlife areas' provide a habitat for notable protected species including newts, lizards and slow worms.

Capacity

The SDS GEOLight® attenuation tanks have the combined capacity to store up to 6,070m³ of water.

Issues Overcome

Due to its historic use, the site has a unique topography, with level changes from north to south varying between 5 metres and 35 metres towards the east and west; this created challenges for access, internal roads and the drainage systems which were successfully overcome. Indeed, the car parking takes advantage of the natural gradients of the site, the majority situated 'undercroft' i.e. below ground but open to the outside.

The 3.5 hectare ecology area will be managed with a "hands-off" approach by a designated management company, protecting them from further deterioration and allowing the ecological value to be conserved.

Ben Rayner, Principal Engineer, Stomor Group, said: "SDS helped us to engineer a successful SuDS outcome at an extremely challenging brownfield location. SDS GEOLight® tanks were integral to the drainage solution, providing attenuation to meet the very low site discharge rate on a steeply sloping site with limited space and no opportunity to infiltrate. Using below-ground storage in conjunction with surface water drainage features facilitated environmental and wildlife benefits above-ground, while achieving sufficient surface water storage necessary to satisfy planning requirements at this sensitive location."



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