

Banbury School Oxfordshire

ACO KerbDrain® and ACO ParkDrain® sustainable drainage systems help create a new eco school environment with minimal distribution to existing installation.



Designers of a new extension to Banbury School in Oxfordshire have used two monocast drainage systems from water management specialist, ACO Technologies, to create an external environment that is in harmony with the building's ecological ambitions.

The systems, ACO KerbDrain and ACO ParkDrain, which are both manufactured from Vienite™ - a breakthrough recycled material, form a drainage network that quickly removes surface water from new areas of hardstanding to a series of soakaways that recharge local groundwater and reduce flood risk by ensuring there is no additional load on the existing main sewers.

The new £6million extension, which is known as the Stanbridge Building, is one of Oxfordshire County Council's largest publicly funded projects. It comprises 27 state-of-the-art classrooms set across two wings linked by a glazed circular hub. Designed to maximise energy efficiency and minimise CO2 emissions, the architects, Mouchel, have used the external envelope of the building to introduce new pathways and open piazzas that help integrate the structure within the layout of existing school buildings.

"Along with the new open areas between the buildings, we increased the size of the adjacent car park - an area that had been prone to surface water ponding during the winter. To ensure we minimised the environmental impact of these changes, we looked for a sustainable drainage solution that would protect the existing mains drains," says David Johnson, Project Architect at Mouchel. "Replacing the point gullies in the car park with a channel system gave us the performance we needed and using a monocast design, where there are no separate gratings, gave additional security benefits that suited the school environment. Linking these to a series of four soakaways at the perimeter of the car park completed the SUDS network. In operation, because we have brought the existing car parking areas into the new catchment, we have now succeeded in reducing total mains discharge volumes from the site."

Project:

£6 million extension to Banbury School - one of Oxfordshire County Council's largest publicly funded projects.

Problem:

Quick removal of surface water from new areas of hard standing.

Objective:

Recharge local groundwater and reduce flood risk by ensuring there is no additional load on the existing main sewers.

Brief:

1. Provide sustainable drainage systems.
2. Minimise environmental impact during refurbishment.

Solution:

Two ACO monocast drainage systems linked to a series of soakaways.

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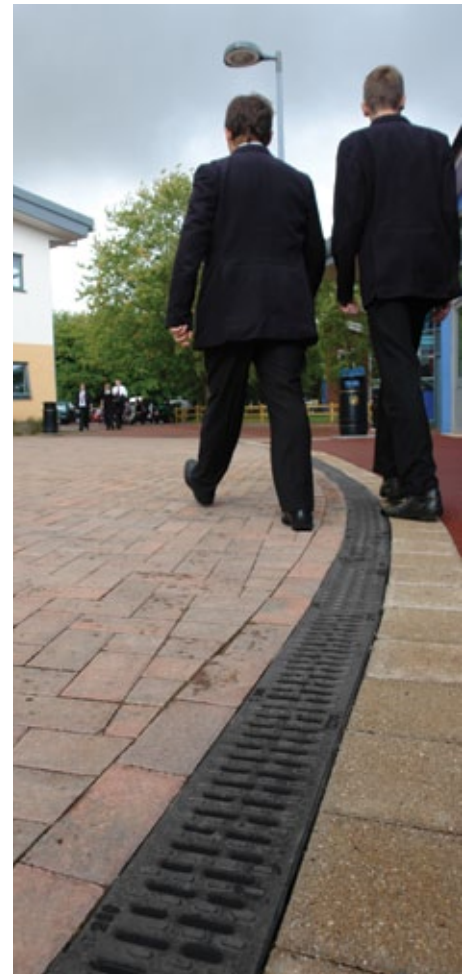
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For the car park, Mouchel selected the ACO ParkDrain system. Rated Load Class C250, three linked runs have been installed. The system was also used to drain the visually sensitive paved area surrounding the glazed entrance hub. Along the curved kerb line of the refurbished car park access road and a new service road to the Stanbridge Building, the combined kerb/channel system, ACO KerbDrain, has been used. This system, which has an identical profile to an HB2 kerbstone and carries a Load Class D400 rating, minimises in-carriageway groundwork and installation time.

Vienite™, the material from which both ACO ParkDrain and ACO KerbDrain are manufactured,

uses locally-sourced recycled materials and can itself be fully recycled. "Being able to specify a recycled material with a low-carbon footprint reinforces the environmental credentials of the project," concludes David Johnson.

All ACO Technologies' monocast highway drainage systems carry the BSI Kitemark™. This clarifies the manufacturing and performance standards met by the products and provides engineers and contractors with absolute assurance that each complies fully with all the requirements of the Highways Agency and BS EN 1433:2002 Annex D. They form part of a comprehensive range of water management and drainage systems that cover virtually all internal and external applications from heavyside, high-load civils projects to bespoke architectural systems set in demanding, visually-sensitive arenas.



ACO ParkDrain, a monocast channel drainage system was used in a number of areas throughout the school to provide a sustainable drainage system.

ACO Water Management

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