Sustainable services

Gloucester Gateway

CASE STUDY

The Gloucester Gateway M5 motorway services created a new sustainable standard in an area of outstanding natural beauty. The structures are built into the undulating hills softened with organic forms and green roofs. An ambitious landscaping solution required ACO to create a Sustainable Drainage System controlling rainwater run-off, while providing a high-quality habitat for wildlife to flourish.

ACO

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THE PROJECT
A new motorways services on the M5 near Gloucester.

THE BRIEF
Creating a new motorway service area that was sensitive to its local green field surroundings, reduce flood risk, maximises bio-diversity and creates amenity areas.

THE SOLUTION
ACO KerbDrain, Qmax and ACO Swale Inlets combined to integrate with a full SuDS solutions, creating amenity areas for people and wildlife alike.

The Gloucester Gateway M5 motorway services is unique, it is a franchise free services, a partnership project between a family business and a charity, that has created around 400 permanent local jobs targeted at local people and supports more than 200 local and regional food and craft producers in its farm shops, butcher and fish counters, lifestyle sections and kitchens.

The design of the site needed to be similarly sensitive to the needs of the locality, given the site's location on the edge of an area of outstanding natural beauty. This involved shielding much of the site from key vantage points by means by means of large scale screens created by curving green roofs over both the main buildings.

The drainage strategy also reflected this principal, linking together an extensive array of sustainable drainage features across the site including swales, bio-retention areas and filtration strips, which ultimately discharge water to a pond and wetland area.

ACO worked with project designers BWB Consulting Engineers, and the specialist contractor, The Buckingham Group, to deliver a sustainable drainage system across the 265 car parking spaces plus 35 HGV bays. ACO KerbDrain was the main channel drainage solution of the site, selected due to its combined kerb and drainage usage. 447 metres were used to demarcate the parking bays while conveying water away from the impermeable surfaces. Rodding eyes and gully top units were also integrated as part of the design, for easy access for maintenance.

The SuDS design linkage involved specially adapted connections that were installed in five locations on the back of the ACO KerbDrain runs. This linked to five ACO Swale inlets, draining water at regular intervals into the swale, to feed planters used to green the public areas around the service facilities. The surface finish and the flared outlet of the ACO Swale inlets, unit encourages water dispersion and reduces excessive flow velocities into the swale, reducing soil erosion.

The design also called for 150 metres of ACO Qmax 350 high-capacity slot drainage, in the HGV parking bays. The F900 Load Class of Qmax, with the integrated ductile iron edge channels, meant the drainage solution could cope with the heavy vehicles pressures and four Qmax 225/350 outlet chambers were also supplied for maintenance ease.

The result was a site that reduces flood risk, maximises bio-diversity and creates amenity areas to be enjoyed by all. The clients, Westmorland Ltd and the Gloucester Gateway

Trust partnered with the Building with Nature scheme to ensure the building benefits wildlife and increases biodiversity. Water has been used to attract new species in the ponds, and the site also has bat boxes and raptor boxes for kestrels, as well as insects in the stone wall cladding of the buildings. Over 1000 trees have been planted on site, including an orchard ,with the 'growing communities' project.

For more information on ACO Water Management visit **www.aco.co.uk**

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