

## ACO makes Derby connection

*ACO KerbDrain provides single solution for ambitious city centre transport improvement scheme.*

**Project:**

Connecting Derby: City Inner Ring Road.

**Objective:**

The cost effective integration of the surface water management system serving both new and refurbished highways created to complete the city's inner ring road.

**Brief:**

1. Be optimised to the requirements of all users and forms of transportation.
2. Minimise the extent of new in-carriageway and below ground infrastructure.
3. Minimise the cost of installation and ongoing maintenance.

**Solution:**

Interlinked runs of ACO KerbDrain provide the optimum rate of surface water removal while allowing the newly installed runs to be easily tied into the existing sewer connections. High installation rate minimises disruption at busy arterial junctions and, by using the wide range of KerbDrain accessories, a seamless kerbline has been created that incorporates bus stops, pedestrian crossing, cycle paths and traffic islands.

The adaptability and design versatility of ACO Water Management's award-winning combined drainage and kerb system, ACO KerbDrain, has been fully utilised by Derby City Council in realising its ambitious 'Connecting Derby' city centre transport improvement scheme. A mix of new road, and existing highway refurbishment, the requirements of the diverse drainage environments across the project have been met by different products and accessories from within the KerbDrain range.

With its objective to increase the flow, not the volume, of vehicles around the city, the Connecting Derby project completes the inner ring road which was first started in the 1970's. The scheme cost totalling £36million has considered the interests of all users and forms of transportation – vehicles, cyclists, buses and

pedestrians – improving access for each by upgrading the links to and the environment around the city's main arterial highway junctions. In total, close to 1.5km of new road has been built with a further 1.5km of online improvements (widening, car parking, cycle paths etc) made to the existing routes.

The major challenge facing the drainage designers was to find the most efficient and cost effective way of tying new connections into the existing sewers and discharge watercourses. "Using point gullies would have been prohibitively expensive, both in terms of initial capital cost and in their ongoing maintenance, as large numbers would have been required to meet the hydraulic performance needed," says Murray Parker, Project Engineer at Derby City Council. "We had used ACO KerbDrain on other urban projects and found it to be the ideal solution as it minimises the impact on below ground services – a significant benefit at complex junctions – is easy to install and has a wide range of accessories that enable us to create a seamless, high performance system that incorporates bus stops, roundabouts, pedestrian crossings etc."

Two KerbDrain sizes have been installed: the highest capacity KerbDrain 480 and the mid capacity KerbDrain 305. All the units have a half-battered profile, are 500mm in length and are sealed during installation to prevent any infiltration into the surrounding sub-soil. The range of accessories used include drop kerbs with perforated flush centre stones, 90 degree quadrants, bus stop kerbs, external radius sets, access units and gullies.

"As outlet connections to existing sewers can be made at any point along a KerbDrain run we were able to fully value-engineer the design – a process that has eliminated the need to install any additional carrier pipework," says Murray Parker. "The use of an environmentally sustainable material in its construction also made a significant contribution to the project achieving a very high 'Considerate Constructors' rating of 36 out of 40."



*The combination of ACO KerbDrain radius and drop kerb creates a seamless and continuous kerblines across the entire project.*

All KerbDrain units are manufactured in one piece from Vienite™, ACO's high strength, sustainable material that meets the environmental and sustainability targets for construction products. Vienite's high durability characteristics make it four times stronger than traditional concrete. It also has a low rate of water absorption, is resistant to freeze-thaw attack and has excellent chemical resistance.

The entire ACO KerbDrain range is independently tested by EU approved notified bodies to Load Class D400 and is certified BS EN 1433:2002 Group 4, meeting all the performance requirements of the Highways Agency. Each stone carries both the CE mark and the BSI Kitemark™ – an assurance that the system is subjected to rigorous, ongoing independent testing.



*KerbDrain drop kerbs and flush centre stones have been used to integrate new cycle paths into the ring road highway network.*



*New ACO KerbDrain traffic islands which improve the flow of traffic at arterial junctions have been installed with minimal disruption.*

## **ACO Water Management**

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