



Toneway Junction:

The Road to High Capacity

CASE STUDY

Posing a major pinch point on the Taunton highway network in Somerset, the Toneway Corridor Capacity Improvement Scheme intends to increase the capacity at the Toneway Creech Castle junction by widening and adding lanes. New integrated crossings will also be featured to offer better access to cyclists and pedestrians as part of the improved junction.

With Griffiths appointed by Somerset County Council as the principal contractor, ACO Water Management's expertise was required to help design and implement the site's drainage system.



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THE PROJECT

Toneway Creech Castle junction improvements

THE BRIEF

To provide an optimised drainage solution that still catered for the high-capacity requirements present within an urban highway environment.

THE SOLUTION

ACO's combined Kerb and Drain system, which eliminates the necessity for multiple gully units. The KerbDrain HB480E+ drainage channels boast a high capacity, perfectly catering to the most demanding areas.

as the most cost-effective way of draining the carriageways as it negates the need for multiple gullies.

Work on the project first commenced in early 2021, where challenges arose in the initial design plan. In order to avoid exceeding channel capacity, long runs of kerb drainage would be required along with an additional outlet. However, such an installation would also need further pipework and concrete chambers to implement – posing a costly process.

Before this issue could be addressed, the scheme was put on hold due to the widespread disruption brought about by the pandemic. Once the project restarted on 9th August 2021, Griffiths issued a redesign whereby two additional kerb gullies previously planned for on two long runs of HB480 KerbDrain units were taken out. By this stage, ACO had access to its higher capacity range for meeting the new design parameters.

Matthew Denniff, South West Regional Sales Engineer at ACO Water Management, explained: "When the project recommenced, KerbDrain E+ Class range was available to us. This worked perfectly as the HB480E+ profiles could be implemented on the 45m runs at the end of standard HB480 lines. The additional capacity allowed us to remove the two kerb outlets as requested and meant that Griffiths didn't need to carry out the costly installation of additional pipework and chambers."

Delivering Value

A solution would be needed to mitigate standing water on the highway from surface runoff, but at the same time keep in line with the council's budget constraints. It is for this reason that ACO's combined drain and kerb system, KerbDrain, was specified to run along the junction. Through its integrated one-piece design, KerbDrain was viewed





Traversing crossings

Challenges also had to be addressed when designing the parallel integrated crossings for the junction. Due to the KerbDrain centre stone being unable to transport water around a 90-degree bend in the crossing designs, the actual centre stones needed to be standard solid concrete with KerbDrain units either side. However, water still needed to be able to flow across to reach the gully at the end of the run.

“We overcame this design obstacle by using the HB480 profiles in crossing locations, as it is deep enough for the end cap for the outlet. From here, we could easily connect the components to either side of a 150mm Twinwall pipe that runs underneath the solid concrete centre stones. Runoff could then still be piped across and discharged at the end of the run,” said Denniff.

Moving forward

With design challenges successfully navigated, 400m of HB480 and 100m of HB480E+ KerbDrain units were installed to run along the carriageway and crossing areas - ready for project completion in August 2022.

Will Jones, Senior Engineer at Griffiths, said: “Thanks to ACO’s product offerings, we were able to realise our redesign plans and work around the associated challenges. Drawing upon their expertise has been vital in enabling us to value engineer the junction’s drainage system and meet the council’s expectations.”

For more information about ACO’s KerbDrain system, please visit www.aco.co.uk/products/kerbdrain

For more information about Griffiths, please visit www.griffiths.co.uk

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