

## ACO Q-Ceptor Bypass Oil Separators used in National Stations Improvement Programme

ACO provides collection and treatment of surface water run off to new car park extension.



The expansion of the Northallerton Railway Station car park was part of the Network Rail's government funded National Stations Improvement Programme (NSIP). The £150m programme is in partnership with train operators and is aimed at improving the facilities at 150 medium-sized stations throughout the UK. At Northallerton railway station this project covered the development of 100 additional parking spaces using fallow ground next to the existing car park.

Steps to prevent pollution are required at any site, such as car parks, where there is risk of surface water being contaminated by hydrocarbons. Sustainable drainage systems (SUDS) require source control of surface water runoff and, as part of this approach, oil separators treat water before being discharged. For this project, First Transpennine Express commissioned Pell Frischmann as consulting engineers.

### ACO Scope of supply

ACO has provided six [Q-Ceptor](#) Bypass Oil Separators with a treated flow rate of 10 l/s for installation in the car park to remove oil and silt from the surface water before discharge to surface water. [ACO's ParkDrain](#) monocast channel system was used to drain the surface water.

### Project:

Northallerton Railway Station Car Park – provision of 100 additional car parking spaces on a piece of fallow ground.

### Objective:

ACO provides collection and treatment of surface water run off to new car park extension.

### Solution:

[Q-Ceptor](#) NSB 10 Class 1 Bypass Oil Separators and [ACO ParkDrain](#) to new car park extension.

### Results:

Six [Q-Ceptor](#) Bypass Oil Separators were placed discretely throughout the site to provide efficient oil separation and acceptable fall away into soakaway. [ACO's ParkDrain](#) monocast channel system was used to drain the surface water.

The ACO [Q-Ceptor](#) units are class 1 which means they filter to better than 5 mg/l using a coalescing filter. The separators were provided with 750 diameter x 1000mm extension shafts and solid covers and frames to class D400 (capable of withstanding a 40 tonnes test load and for use where cars and lorries have access.)

The separators work by retaining runoff to allow oil to float to the top and silt to settle to the bottom of the tank before the water is discharged. The ACO [Q-Ceptor](#) class 1 separators use a coalescing filter to treat the water which allows drops of oil that are too small to coalesce until large enough to float up to the retained oil. The filter is located so that it can be easily removed for cleaning. They are compact, lightweight and designed for easy handling, installation and maintenance. The body of the separators are constructed from polyethylene to protect them from damage and ensure lasting durability.

### Reduce risk of contamination

Bypass oil separators were selected for the Northallerton Railway Station project as these can be used to reduce risk of contamination and small spills. They are capable of treating flows of up to 6.5mm/h, which means that in an area of low environmental risk such as this, higher flows can bypass the filter in the device and flow directly to discharge. The separators are compliant with the Environment Agency's PPG3 guidelines.

The site of the car park expansion had falls which prevented the use of just one separator without very deep excavation. The compact design of the ACO [Q-Ceptor](#) meant that the units could be placed discretely throughout the site with acceptable fall away into soakaway.

When asked why [ACO products](#) were selected for the project, Andrew Hoyland, Divisional Director for Building Structures at Pell Frischmann said, "We tend to use [ACO products](#) as a matter of course. We find them reliable, technically good and we get great support from [ACO](#). For this project the small size of the separator was also an advantage for the layout of the site."

ACO [Q-Ceptor](#) oil separators are available in a range of sizes and with different options to best suit an application. As well as the class 1 bypass units provided for Northallerton Railway Station, they are available as class 2 (treating to less than 100mg/l) and as full retention devices. Full retention separators treat the full runoff flow and are used where there is a higher risk of significant hydrocarbon spillages. A range of optional features such as sample pump connection; alarming systems to cover oil, silt and high levels and automatic closure devices ensure easy ongoing operation. All models are designed for ease of maintenance and robust, reliable, long-term operation.



ACO Q-Ceptor and ACO ParkDrain during installation.



ACO ParkDrain efficiently collects surface water run off.



The station now has 100 additional parking spaces.

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