

Siltbuster Takes the Strain at Gatwick Hydrodemolition Project

Page 1/2

An environmentally friendly process that overcomes the problem of contaminated site run-off has been proving its worth at a £9m refurbishment project at BAA's Gatwick Airport.

The project, at the South Terminal's Multi Storey Car Park (MSCP) 3 is showcasing the latest in environmental management best practice, by using two *Siltbuster* FB50 water treatment units to settle fine solids from run-off water produced by the hydrodemolition of damaged concrete.

The FB50 units are mobile water clarifiers which, thanks to their unique patented design, and ease of operation can be relied upon to remove fine particles from water, allowing treated water to be discharged off-site without causing downstream pollution. The technology is equally at home separating silt, raw cement fines, removing solids from groundwater or treating other forms of site contaminants.



Principal contractor at the Gatwick scheme, the Warings Group, is involved in a 12 month contract to refurbish the 1970s built, five storey car park in that started on site in December. This is part of a rolling upgrade programme being undertaken by client, BAA.

The in-situ concrete frame of MSCP 3 has suffered from extensive chloride attack over the years, particularly to its 80mm thick mesh-reinforced deck which was designed as an exposed concrete surface with no protective sealing layer.

***“A number of alternatives were considered before Siltbuster was selected.*”**

Our final choice came down to the quality of treated water discharged, and the ease of the system in use.”

Warings was initially involved in the pre-construction planning and investigation phase, where the extent of concrete corrosion and the best methods of concrete repair were evaluated. This assessed the best method of repair whilst satisfying the many criteria set out by BAA, not least of which was health and safety and the need to minimise the environmental impact of the works. The company subsequently won the MSCP 3 contract through competitive tendering.

As part of the overall upgrade of the structure, areas of affected deck concrete are being cut out to a depth of 40mm by hydrodemolition subcontractor, Concrete Repair Ltd, using high pressure water lances. Areas of up to 3m² are being removed plus small areas of beams and columns.

One of the issues which had to be tackled at the planning stage was how to handle surface run-off from this hydrodemolition activity. As a client, BAA takes a strong stance on environmental issues, Warings had to demonstrate that the proposed process would not send contaminants down through the system.

According to Warings Pre-construction Manager, Peter Gold, they were looking for a solution that was more effective and robust than traditional methods such as settlement ponds. A number of alternatives were considered before *Siltbuster* was selected.



Siltbuster Takes the Strain at Gatwick Hydrodemolition Project Contd.

Page 2/2

“Our final choice came down to the quality of treated water discharged, and the ease of the system in use. Some others we looked at involved additives which required their own dosing systems, etc. With *Siltbuster*, once installed, units just sit there silently doing their job. There have been no problems at all. They provide a simple and effective solution.”

“By employing the best water treatment technology available, we have reduced our risk as a contractor, while satisfying our client, BAA which is also looking for the highest standards of environmental care on its projects.”

Water entering the *Siltbuster* units flows upwards between a series of parallel plates which create a series of smooth laminar flow paths. Particles settle onto the plates and slide down to the base for removal.

The standard *Siltbuster* FB50 unit has a flow capacity of up to 100m³/h and will remove all particles greater than about 20 microns. However, the slower the flow through the unit, the finer the particles that can be removed, and the units at Gatwick are being used to remove particles down to around 5 micron size.

At Gatwick, each parking level is dammed before hydrodemolition begins and runoff is diverted into the existing rainwater system. From here it is carried by temporary diversion pipes directly into the *Siltbuster* units. After passing through the units, the water is initially sampled and tested before being discharged directly into the airport’s surface water system, with the approval of BAA’s environmental department.

“*Siltbuster* specified the system here at Gatwick, based upon our estimates of the volume of runoff and the type of contaminants to be removed. The system has managed to meet our standards comfortably, removing the concrete fines to produce good quality discharge,” said Peter Gold.

“By employing the best water treatment technology available, we have reduced our risk as a contractor, while satisfying our client, BAA which is also looking for the highest standards of environmental care on its projects.”

Said *Siltbuster* Director, George Anderson: “We have been involved with BAA schemes for some time, and have provided *Siltbuster* units and technical support to various contractors working at Gatwick, Heathrow and Stansted Airports, in addition to hydrodemolition works.”

“*Siltbuster* units are in a different league to standard settlement tanks. To achieve the same performance as one FB50 unit you would need ten 3m x 2m standard settlement tanks. When you consider the pipework and space this would require, it’s little wonder that many are realising this is by far the best way to control site run-off of whatever type.”

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For more information on how *Siltbuster* can help with hydro-demolition Call 1600 772256, Fax 01600 775312, Email george.anderson@siltbuster.com or why not try our website www.siltbuster.com

