



Commercial Integrated Water Management



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Case Studies

2012 Olympics, London



Works comprised construction of a temporary arena and cross country course for the London 2012 Olympics in Greenwich Park. The design remit for this prestige project was complex.

Major elements of the sustainable water management design were constructed on the top of a steel structural platforms. The system was designed to manage the surface water run-off from the

platforms to be harvested for irrigation of the overlying sand and fibre performance surfaces to meet exacting performance standards of international equestrian eventing.



Durkan, Greenwich Wharf



Multi-phase development by Durkan partnering with London and Regional Properties to provide apartments. Areas between the blocks included community space with recreational areas.

SEL installed a Permavoid podium deck drainage system provided a very shallow (85mm) high strength, highly efficient drainage collection and attenuation system. The podium deck was c.7,600sq.m

The lightweight nature of the system enabled easy access to the far reaches of areas with difficult access and structural benefits since an 85mm unit will replace 255mm of voided stone.



Jersey Airport, Fire Training Facility



Fire training drills left a legacy of hydrocarbon and foam contam in the near surface soils. The Contract comprised the construction of an evaporation cell to retain and reuse precipitation falling on the site.

The cell design was by Professor John Knapton and comprised a permeable paving system isolated from the surrounding ground capable of supporting repeated heavy vehicle loading.

Two layers of 150mm deep Permavoid Storage Cells were incorporated into the pavement design below layers of voided stone all within a fully welded HDPE impermeable membrane.



Springfields Retail Park, Spalding



High water table, poor ground conditions and unstable sub-soils rendered the traditional drainage system costly and difficult to build. SEL and EPG partnered to develop a shallow suds scheme.

The design used source control techniques and allowed for a series of shallow Permavoid storage tanks across the site, located within the car parks to deal with micro-catchments.

The attenuation was installed within the car park construction at or above formation. Pipe sizes were kept to a minimum, averaging less than 225mm diameter.



Bet 365 Head Office, Stoke



Following a site survey, it was found that due to the level of contaminated land, deep excavations for a stormwater solution would be unfeasible and very costly at this brownfield site.

The shallow drainage solution provided two levels of surface water treatment, storing more than 400m³ of stormwater beneath the development's car park, at a depth of just 1m.

The shallower system limited the need for strenuous excavation on-site, saving vital time and cost while reducing potential health and safety risks.



Coronation Street Studios, Manchester



Due to the site being on Brownfield land, having a high water table and a shallow outfall, a shallow solution would negate the need for pumping stations and reduce the need for temporary works.

28 separate Permavoid attenuation tanks installed throughout the site, providing a combined storage capability of 420,000 litres. High strength Permavoid cells were combined with strategically

located Permachannel and Permavoid Biomat cells for the capture, treatment, storage and controlled discharge of rainwater at source.

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Trackwork Moll Sleeper Factory, Doncaster



68,000 sq ft bespoke sleeper production facility including two storey office and external yards. The site at Doncaster is located at a former rail sidings containing contaminated soils.

Permachannel and Permachannel slotdrain oil and silt treatment system to capture and treat the surface water runoff before it is attenuated within a SudsAgg voided sub-base layer.

Flow control chambers throttle the forward flow of the runoff and encourage runoff to enter into the SudsAgg for later release as the system empties to sewer at the limited discharge rate.



Hanworth Trading Estate, Feltham



Hanworth Trading Estate is a development in Feltham, London, that comprises of eight individual industrial units. Immediately adjacent is the Longford River.

The site had a high water tables and required specific design and construction measures to avoid issues such as deep excavations, temporary dewatering and flotation of attenuation structures.

The design used Permachannel to capture and treat the runoff before it is attenuated. This then passes forward through a diffuser conduit into SudsAgg voided sub-base before infiltrating into the ground.



Project Greengrass, British Sugar, Peterborough



The project comprised a new head office for British Sugar and it's 350 staff and a 340 space car park. The car park utilised permeable paving within the parking bays of the main and overspill car parks.

SEL worked with Bowmer & Kirkland to rationalise the existing drainage design to improve the buildability and create cost savings. A layer of SudsAgg voided sub-base was used below the

parking and access routes to attenuate the runoff from all hard-standings which then allowed the attenuation tank size to be reduced as it now only accepted runoff from the roof.





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