



**Take
Control
Of Water.**



Total Water Security

Delivering total water security by managing the journey of water from source to sea.

Climate change and population growth are placing the water industry under unprecedented and ever-increasing pressure. The impact on nature and the environment of over-abstraction and pollution of our natural water resources are the subject of intense political, media and public scrutiny.

The adoption of innovative technologies and application of modern, integrated approaches to water management will play a key role in ensuring the water sector's long-term resilience and maintaining a sustainable supply of this most precious resource.



Water Security – Expert's View

"The global population faces significant water security threats related to water supply, water pollution, wastewater removal, sanitation and associated ill health, and the socio-economic impacts of droughts and floods.

Nowhere are these issues more acute than urban spaces and developing world contexts where radical new visions for water infrastructure and ways to cope with extreme events are required for a growing population".

University of Birmingham, Water Sciences Dept.



About SDS Infrastructure

SDS Infrastructure specialises in providing innovative and cost-effective water management infrastructure that enables organisations involved in the construction of roads and highways to **take control of water**.

SDS-engineered systems ensure that, from the point at which rainfall first meets the ground to its final destination, water can be collected, treated, stored, released and, in some cases, reused safely, reliably and sustainably.

SDS surface water management and sustainable drainage systems have been installed in more than 40,000 locations around the UK in every industry.

SDS Infrastructure Full Service

SDS offers a comprehensive range of services that includes the manufacture, supply, installation, adoption and maintenance of SDS water management systems.

We design and engineer each and every system to meet the specific requirements of individual projects, so that our customers receive a full-service solution that is bespoke to them.

By taking responsibility for each element of the project, we ensure that our systems will always operate as intended and to their maximum potential efficiency and effectiveness.



Engineering

SDS creates engineering solutions that accommodate the increasing frequency and intensity of rainfall events. Our continuous assessment of new data, alongside the mapping of potential future scenarios, is integral to the correct design and specification of water management systems that are bespoke to each individual site.



Design

Our in-house design team* will consult with you from the early specification stages of a project to ensure a water management solution is provided to match your unique requirements; then, because we manufacture all the systems we specify, we can create the exact system your project requires.

*Backed by Professional Indemnity Insurance.



Manufacture

Our state-of-the-art manufacturing processes underpin the SDS vision to innovate in design and delivery, ensuring we are able to keep tight control of your project costs whilst guaranteeing product quality and availability.



Supply

Our manufacturing bases are quickly accessible from the UK motorway network, enabling our products to be delivered quickly to all parts of the country, whilst our flexible production processes allow us to turn around most urgent orders.



Installation

Our team of expert installers* ensures that the benefits of every SDS piece of equipment are optimised through correct preparation, installation and connection, guaranteeing peace of mind for both our partners and end customers.

*All work is covered by our Contractors All Risk Insurance and a complete system warranty against any defects.



Adoption & Maintenance

The attention to detail paid during design and installation means SDS water management systems are simple and straightforward to maintain. However, for added protection, we offer complete scheduled maintenance and can adopt our systems where required.

FLOOD PREVENTION

SDS GEOLight® and Weholite surface water attenuation systems help to prevent flooding by collecting and storing water which would otherwise be unable to soak into the ground naturally or overwhelm the sewer system.

The controlled release of stored water to the drainage network, or into the environment or the ground, can be undertaken once weather and land conditions allow; alternatively, the water can be retained for further treatment and/or reuse as a non-potable water supply.



Industry Fact

More than a third (38%) of all roads, rising to 46% by 2050, are located in areas at risk from one or more sources of flooding.*

*Source: Environment Agency
"National assessment of flood and coastal erosion risk in England 2024."

SDS GEOLight®

The surface water attenuation solution of choice in more than 40,000 installations in the UK alone, SDS foundation product GEOLight®, first introduced over 25 years ago, has grown to become the UK's leading sustainable drainage and surface water management system.

SDS GEOLight® is manufactured at production plants in Highbridge and Biddisham, in South West England, and is unique in being constructed entirely of recycled post-consumer PVC waste material, which would otherwise have been disposed of to environmentally unfriendly landfill.



SDS Weholite

Since 2019 SDS has held the exclusive licence to manufacture and sell Weholite High-Density Polyethylene (HDPE) products, in modular and large diameter pipe form, in the UK and Ireland.

The production plant in Newport, South Wales, has been manufacturing products using Weholite HDPE material for more than 25 years and has the capacity to produce over 10,000 tonnes of products each year.



CASE STUDY

A1331 Link Road, Colchester

Client / SDS Customer: Essex Housing / M O'Brien Civil Engineering

The A1331 Link Road is a flagship infrastructure project in North Essex, designed to unlock housing and economic growth through improved transport connectivity. The new 1.8km dual carriageway will support the phased development of the Tendring Colchester Borders Garden Community, a major new settlement of up to 9,000 homes. It will also reduce congestion on local routes and link with the emerging Colchester Rapid Transit System.

As part of the scheme's sustainable drainage strategy, SDS was appointed to design and install its GEOLight® attenuation system to manage surface water runoff from the new road and three new roundabouts. The system was selected for its ability to safeguard existing infrastructure, protect downstream watercourses, and contribute to Essex County Council's sustainability objectives.

This infrastructure is essential to meet planning conditions, protect surrounding communities from flooding, and ensure the long-term performance of the new transport corridor.



CASE STUDY

M4 Smart Motorway, Berkshire

Client / SDS Customer: Highways England / Balfour Beatty

Improvement and upgrading of a 32 mile stretch of the M4 in Berkshire to a smart motorway has been designed to relieve congestion by permanently converting the hard shoulder to a running lane and using technology to monitor traffic flow. As the longest smart motorway project in England and Wales to date, the redeveloped motorway will provide much needed additional road user capacity, ensure faster and safer journey times, and also facilitate economic growth within the region.

SDS was tasked to ensure any surface runoff, that may be contaminated by pollutants from the carriageways, is prevented

from entering the natural surroundings. SDS introduced, within the existing structure of filter drains, a surface water storage solution manufactured from Weholite HDPE material. Alongside modifications to the central reservation and verge drainage systems the scheme design replaces the existing drainage and provides additional storage to maintain current discharge rates to outfalls. The new mitigation measures ensure that any impacts on the water environment, in terms of surface- and ground- water quality, drainage and flood risk, are negligible.



FLOOD PREVENTION

SDS Weholite

Designed for both online and offline situations, SDS Weholite storage and attenuation systems and pipeline products are used across the whole construction industry.

Weholite systems are generally delivered to site as completed units, pre-slung so that they can be lifted straight from the delivery vehicle into place, eliminating the need for confined space entry on-site and shortening programme time.



Weholite pipeline system incorporating manholes and flow controls provides surface water attenuation for a busy road junction.

- 1 WEHOLITE PIPING ATTENUATION SYSTEM** - Suitable for stormwater, sewerage and CSO applications, systems are bespoke-designed and value-engineered to meet individual project requirements. All components are manufactured off-site and installed ready for immediate use, with lifting points for efficient installation.
- 2 MANHOLE/INSPECTION CHAMBER** - Offsite-manufactured from HDPE and BBA HAPAS-certified. HDPE material is light weight, flexible, durable and impact resistant, making it easy to handle and install.

- 3 PIPE & MANHOLE** - Manufactured from HDPE material which has an ultra-low roughness coefficient, is non-toxic and UV-resistant, has a lower carbon footprint than concrete structures, and is resistant to abrasion, corrosion and Hydrogen Sulphide (H₂S). When buried it has a 120-year design life.
- 4 JOINTING SYSTEM** - A wide variety of jointing systems for specific applications ensures effectiveness, water-tightness and durability. Heat extrusion jointing enables fast and economical on-site welding into one homogenous pipeline.

- 5 MANHOLE/INSPECTION CHAMBER** - Available in multiple sizes and any orientation, all manholes are equipped with anti-slip benching and ladders. Offers a suitable location for SDS SYMBiotIC™ smart monitoring and control devices, which provide bespoke measurement and reporting of an extensive range of asset factors, including carbon reduction.
- 6 FLOW CONTROL CHAMBER** - Available in a wide range of sizes, units comprise weir walls, anti-slip benching, flow control device and stub connections. Designed in line with Sewers for Adoption and/or specific Water Company requirements for S104 adoption.

ENVIRONMENT PROTECTION

SDS surface water treatment systems help to protect waterways, coastal waters and the natural environment from contamination by solid and soluble pollutants and toxins.

Surface water drains normally discharge to a watercourse or into groundwater; contamination of the surface water by oil, chemicals or suspended solids can cause these discharges to have a serious impact on the receiving water.

Treated runoff, from which any silts and pollutants hazardous to human, animal and plant health have been removed, can be released safely into the environment or drainage network.

SDS Aqua-Swirl®

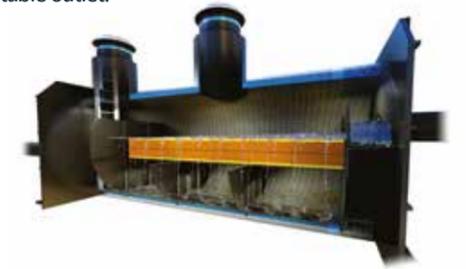
SDS Aqua-Swirl® is a unique, custom engineered, flow-through water quality device that provides a highly efficient surface water treatment solution. It utilises hydrodynamic separation technology to maximise the removal of coarse sediment, debris and free-floating oil from surface water runoff.

SDS Aqua-Swirl® can be used as part of a complete water management programme, for example when connected to a SDS GEOLight® stormwater attenuation or infiltration system, in order to capture the majority of pollutants.

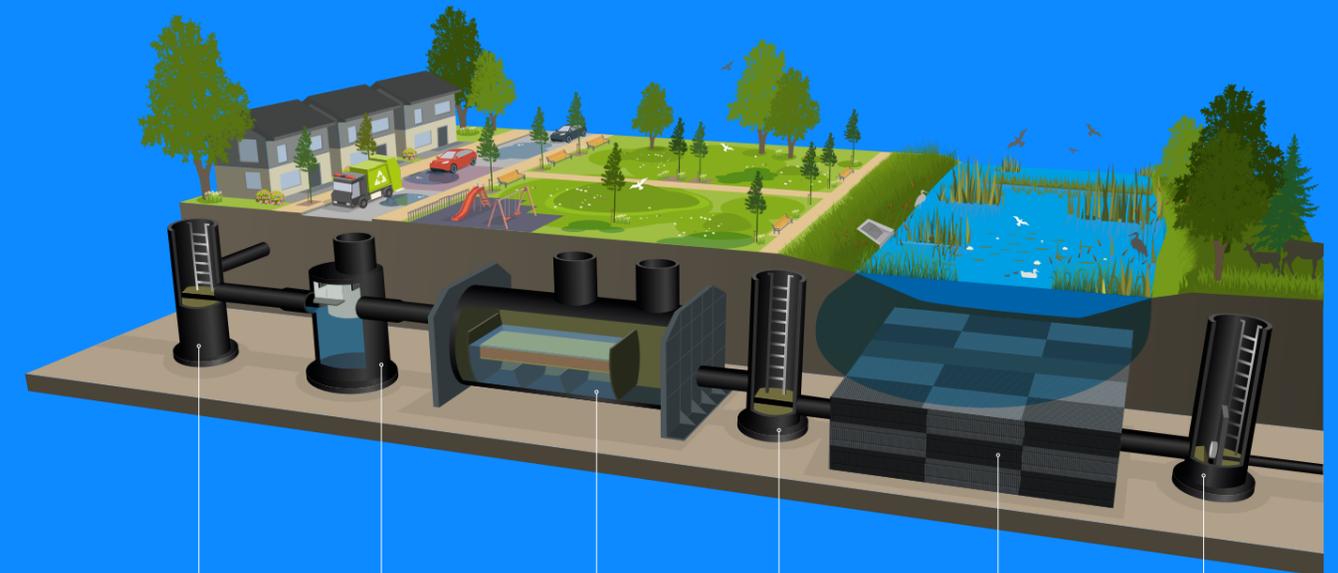


SDS Aqua-Filter™

SDS Aqua-Filter™ is a unique and highly efficient surface water quality treatment solution. By using the SDS Aqua-Swirl® swirl chamber for pre-treatment, followed by a filtration chamber for secondary treatment, SDS Aqua-Filter™ maximises the removal of suspended solids by up to 80%. Nutrients, heavy metals and hydrocarbons are removed, therefore, from surface water runoff prior to its final conveyance to a suitable outlet.



Supported by SDS engineered treatment systems, such as Aqua-Swirl® separation, and Aqua-Filter™ filtration, devices, natural drainage schemes are able to perform more efficiently and for a greatly extended duration, thereby facilitating a solution that is much kinder to the flora and fauna that the environment supports.



- Weholite Manhole** Offsite-manufactured, light weight HDPE, BBA HAPAS-certified manhole, available in multiple sizes and any orientation.
- SDS Aqua-Swirl®** Uses hydrodynamic, gravity-controlled separation technology to remove pollutants attached to silt and debris within surface water runoff.
- SDS Aqua-Filter™** Maximises the removal of suspended solids such as nutrients, heavy metals and hydrocarbons and helps to reduce phosphorus.
- Weholite Manhole** Suitable for immediate use, equipped with lifting points and anti-slip benching, and totally resistant to hydrogen sulphide (H₂S).
- SDS GEOLight®** Unique, DCG-compliant, geocellular stormwater storage system that can support vegetative SuDS to deliver amenity and environmental benefits.
- Weholite Manhole** Incorporates Vortex Flow Control to manage the rate at which stormwater is discharged into a receiving water body or environment.

CASE STUDY

A69 Bridge End, Northumberland

Client / SDS Customer: National Highways / Seymour Civil Engineering

The A69 is an important trans-Pennine arterial route, connecting the north-east and north-west of England, that is heavily used by both hauliers and commuters and is regularly subject to delays at peak travel times.

A newly designed intersection of the A69 and A6079 at Bridge End, at which the existing traditional roundabout is turned into a grade-separated junction, will help to create 18 miles of free-flowing dual carriageway between Newcastle and Hexham and improve access from the A69 and into Hexham. Congestion will be significantly reduced, resulting in shorter, and more reliable, travel times and safer journeys.



SDS was required to minimise pollution via surface water runoff from the new junction of the local watercourses, groundwater and ultimately the River Tyne. The largest SDS Aqua-Swirl™ separator was installed to restore road runoff water quality to acceptable standards and deliver value for money whilst also satisfying National Highways' internal governance processes.

At the 2022 Constructing Excellence North East Awards the project achieved industry recognition by winning two Highly Commended awards including "Civils Project of the Year".



CASE STUDY

M6 Smart Motorway Junctions 21a/26, N.W. England

Client / SDS Customer: National Highways / Costain; WSP

The Smart Motorway project represents a £150 million investment in upgrading a 10-mile stretch of the M6, extending from Warrington's Junction 21a Croft Interchange to the Orrell Interchange at Junction 26 near Wigan. The primary aim of the project is to increase road user capacity by 30% in both directions, thereby reducing journey times and enhancing safety. The scheme involves converting the hard shoulder into an additional lane, creating new emergency areas, and installing advanced roadside technology to optimise traffic management.

To protect the surrounding environment from the effects of highway runoff SDS installed multiple Aqua-Swirls®, of varying capacities, at designated priority outfalls along the motorway. These separators were strategically positioned between Junctions 22 and 23 and on the slip roads at Junction 21a to ensure that highway runoff was properly treated, preventing contamination of nearby water bodies and groundwater.

Rigorous testing using the Environment Agency's M-BAT tool confirmed that dissolved zinc and copper levels in the runoff remained within safe, environmentally acceptable limits, with no adverse effects on groundwater recharge. The installation of the HVSSs ensured that the treatment of runoff did not disrupt the surrounding environment, fully complying with Highways England's environmental standards.



ENVIRONMENT PROTECTION

SDS Aqua-Xchange™

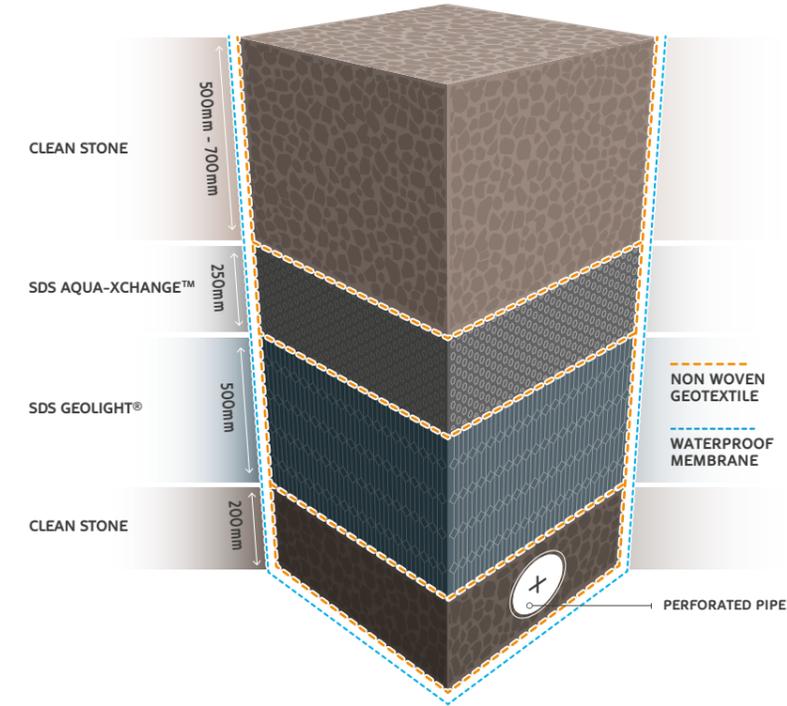
Surface water runoff contaminated by metals, oil, chemicals or other suspended solids, most notably from busy main roads and motorways, can have a serious impact on the receiving water.

SDS Aqua-Xchange™ is an engineered pollution control and enhanced filter media which uses ionic exchange and filtration to remove soluble and solid pollutants from surface water runoff. Its unique and highly efficient composition comprises naturally occurring, loose granular materials that maximise the pollution adsorption process by enabling stormwater to filter through the product's large surface area. This prevents surcharging and allows enough contact time for the pollutants to be captured and ultimately retained for future disposal.

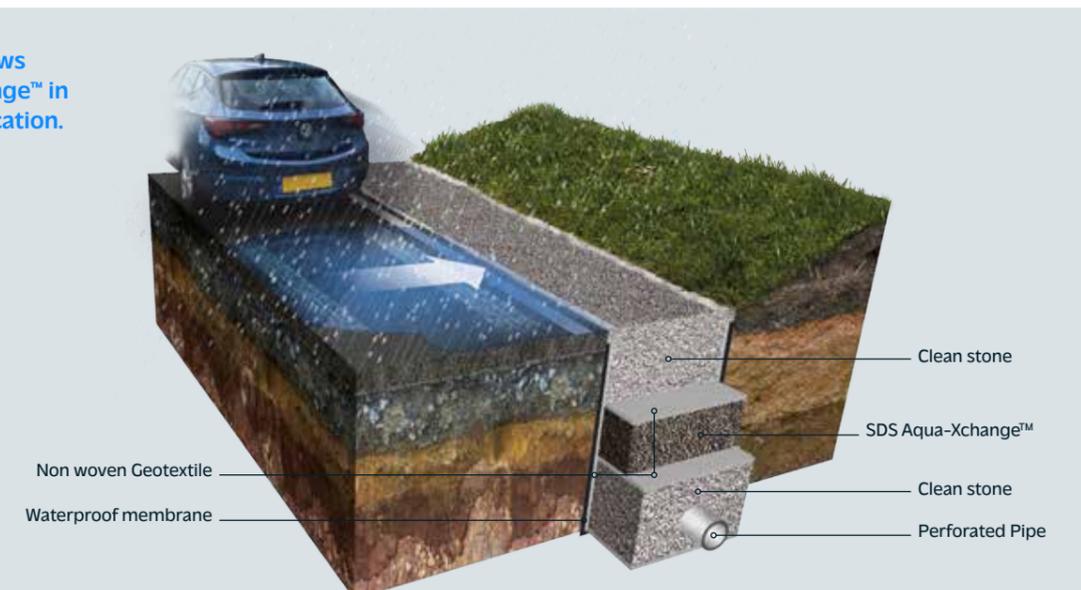
SDS Aqua-Xchange™ has been proven¹ to capture and retain² between 99.5% and 100% of copper and zinc toxic metal pollutants, and 98.6% of cadmium, making it especially beneficial in areas with a high risk of metals pollution, and where the water treatment flow rate is greater, such as the road and rail networks as well as industrial estates and distribution centres.

The graphic [right] shows a typical application on a linear development, such as a road scheme, where a 250mm layer of SDS Aqua-Xchange™ is introduced into a filter drain, beneath a layer of standard aggregate. The use of a linear filter drain allows a flexible design system, removing the need for large areas of additional land take. The linear design also offers a huge treatment capacity which can be more than eight times greater than in an end-of-pipe treatment device.

Solids suspended in the runoff are filtered and collected in the aggregate, while soluble pollutants are captured by the layer of SDS Aqua-Xchange™ beneath. By introducing SDS GEOLight™ tanks beneath the Aqua-Xchange™, the drain can also provide attenuation capacity and reduce downstream flood risk.



The graphic shows SDS Aqua-Xchange™ in a highway application.



¹ Tests were carried out in accordance with the British Water Code of Practice 'Assessment of Manufactured Treatment Devices Designed to Treat Surface Water Runoff'.

² Metals retention under the influence of road salt application.

CASE STUDY

M4 Junctions 43/47, S. Wales

Customer / Client: Welsh Government / Centregreat Engineering

Sections of the M4 motorway between Junctions 43 and 47 have been upgraded to improve traffic flow and safety along one of South Wales' busiest road transport corridors. The works presented a significant environmental challenge, with highway runoff carrying dissolved metals such as copper and zinc posing a risk to nearby rivers and aquatic ecosystems. Protecting water quality while maintaining motorway operations was a key priority for the Welsh Government and delivery partner Centregreat Engineering.

SDS Aqua-Xchange™ has been deployed across multiple motorway junctions, fitting within constrained verge spaces and allowing rapid installation with minimal disruption to traffic.

Intercepting pollutants before they reach sensitive watercourses such as the River Tawe and its tributaries, Aqua-Xchange™ ensures long-term operation whilst supporting compliance with statutory water quality standards.



CASE STUDY

M3 Junction 2, S.E. England

Client / SDS Customer: National Highways / Environ Civils; Connect Plus Services

The stretch of the M3 between Junctions 2 and 3 carries around 135,000 vehicles daily and has been recently upgraded to a smart motorway. A large section lies adjacent to St Ann's Lake, near Thorpe Park, which forms part of the South West London Waterbodies Special Protection Area (SPA) and borders a Site of Special Scientific Interest (SSSI).

St Ann's Lake supports protected wildfowl species and offers valuable recreational use. However, historic surface water runoff from the M3 eastbound carriageway has contributed to a decline in water quality, rated 'Poor' by Defra in 2022; with 31 outfalls discharging into the lake, the risk of pollution is significant.

SDS Aqua-Xchange™ filtration media has been introduced into the drainage system extending alongside the M3 eastbound carriageway with a capacity to treat surface water runoff from an area of circa 50,000m² or approx. 2.7km of motorway, effectively removing pollutants before discharge into St Ann's Lake.

The upgraded drainage system will also reduce flooding risks on the M3 carriageway, improving overall safety and contributing to the long-term resilience of the motorway infrastructure.



SDS helps you take control of water.

SDS treats each and every project with equal importance and with the same desire and determination to deliver the best solution and best value for the job.

The knowledge our staff collectively share of our specialist sector ranks amongst the industry's best and our advice to anyone, whether a customer or not, is free.

We take no work for granted and are proud to have been serving some of our customers operating in the highways industry for more than two decades.

Here are just a few of the comments and feedback we have received from our customers:

"We selected the SDS Aqua-Xchange™ system for the M3 drainage improvement works after considering various alternatives. Key factors in specifying Aqua-Xchange™ included the minimal crew required for installation, ease of installation including simple bag emptying with minimal disruption to local traffic, and absence of required maintenance. Installation in fact proceeded very smoothly despite the challenging site, and we are confident the material will perform well."

Iulian Oprea, Senior Project Manager, Connect Plus Services.

"The Health & Safety aspect of the Weholite system has been a huge benefit. Since the chambers were supplied pre-formed with an orifice plate and penstock arrangement, there was no need for site gangs to provide formwork onsite in the trench. Due to their light weight, the units could be easily handled without the requirement for specialist lifting plans, again reducing time and risk within the trench. By using Weholite, the first system has been installed in less than three days, shaving around two-and-a-half months off the programme and delivering potentially significant commercial savings."

Glenn Boyd, Verge Manager, Balfour Beatty.

"The whole project, including the addition of Aqua-Xchange™, was extremely straightforward, and not significantly different to a conventional filter drain refurbishment. We were able to complete the works during ten overnight closures, with minimal disruption to the travelling public. It was very refreshing to work closely with the SDS team and to experience their real commitment to seeing the environmental benefits of this product being realised."

Ben Dobson, Director, BDB Special Projects.

"Despite the very short timeframe in which to complete the installation of the drainage system, the unfavourable weather and the requirement to work under floodlight, we were able to rely upon SDS, once more, to get the job done in time and to the high standards we expect and which they consistently deliver."

Allan Crozier, Senior Project Manager, P.J. Careys.

"Safe, tidy and impressive work rate by all within our Central and Eastern section at RAF Lossiemouth. Works have comprised a new wastewater treatment works, 90m x 90m oversized attenuation tank, roads, drainage and associated infrastructure."

Malachey Doyle, Project Manager, Lagan Aviation & Infrastructure.

"SDS played a crucial role in designing a bespoke SuDS solution for this substantial development. As we continue to take on further rail development projects, we will be turning to SDS for their invaluable knowledge and expertise in this specialist and increasingly important sector."

Nico Wessels, Site Manager, VolkerFitzpatrick.

Take Control Of Water.

SDS | INFRASTRUCTURE



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