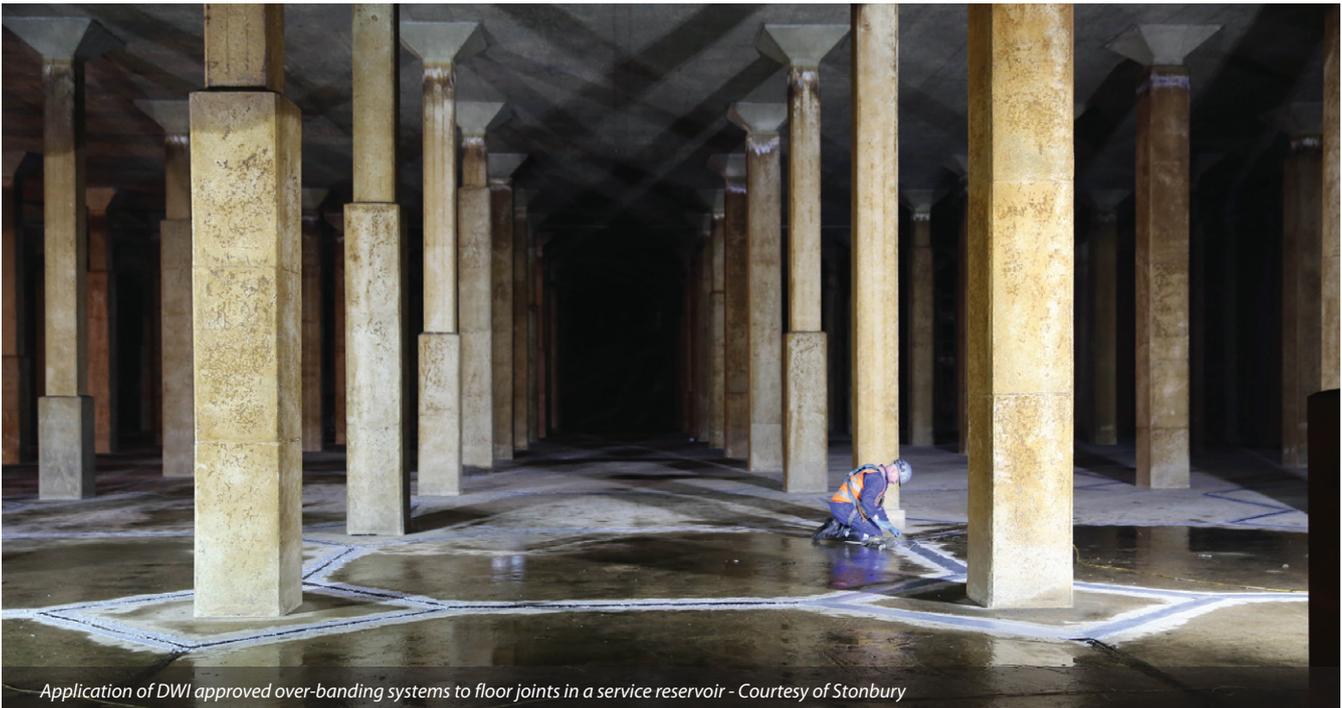


DWI Regulation 31

creating an environment where all water companies buy into a single code of practice to create unity and encourage best practice

The water industry is highly-regulated, most particularly to ensure that drinking water is safeguarded and fit for human consumption. The Drinking Water Inspectorate (DWI), formed in 1990, holds responsibility for regulation in England and Wales. The DWI inspects the laboratories where water companies rigorously test their drinking water and ensure that water operations are of a high standard. These standards are set down in national regulations for England and Wales and comply with laws set down by the European Union.



Application of DWI approved over-banding systems to floor joints in a service reservoir - Courtesy of Stonbury

The role of the DWI

The DWI's responsibilities include:

- Technical auditing of water companies' operating practices.
- Assessment of water company sampling programmes and results.
- Assessment of incidents potentially affecting drinking water quality or sufficiency.
- The investigation of consumer complaints about drinking water quality.
- The management of water company programmes for improving drinking water quality, including the Inspectorate's input into Ofwat's Periodic Review of water prices.
- Enforcement activities.
- Management of the Inspectorate's scientific evidence and Defra's water quality and health research programme.
- The management of industry data.
- Oversight of Local Authority enforcement of regulations for private water supplies.
- Management of product approvals.

It is in the DWI's role to issue and assess approval for the use of products that fall under Regulation 31. Regulation 31 of the Water Supply (Water Quality) Regulations 2016 implements Article 10 of the Council of the European Union Drinking Water Directive (DWD) in England and Wales for all chemicals and construction products

used by water undertakers, from the source of the water, up to the point of delivery to the consumer's building. It defines which construction products and materials may be used safely, having been found not to prejudice water quality and consumer safety.

Article 10 of the Drinking Water Directive

Article 10 of the DWD states under 'Quality assurance of treatment, equipment and materials' that:

Member States shall take all measures necessary to ensure that no substances or materials for new installations used in the preparation or distribution of water intended for human consumption or impurities associated with such substances or materials for new installations remain in water intended for human consumption in concentrations higher than is necessary for the purpose of their use and do not, either directly or indirectly, reduce the protection of human health provided for in this Directive; the interpretative document and technical specifications pursuant to Article 3 and Article 4 (1) of Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (1) shall respect the requirements of this Directive.

List of approved products

The DWI's list of approved products is a live document that is reviewed on a regular basis. In recent years, the list has seen a

reduction in the number of products available for use. This has focused the attention of suppliers and created an environment for greater collaboration between water industry specialists and product developers, keen to keep a strong foothold in this specialist sector.

Michael Campling, Contracts Director at Stonbury, specialist contractor to the water industry, explains how Stonbury has been working closely with Northumbrian Water and Anglian Water, with the aim of creating an environment where all water companies buy into a single code of practice, which will create unity and encourage best practice. A final code of practice was drafted in collaboration with the DWI and is being presented to Water UK with a view to this being adopted.

The ambition is to create an approved list of contractors, who can prove that they are competent in delivering Regulation 31 compliant projects; have extensive knowledge and are dedicated to operating within the Regulation 31 Code of Practice, including being proficient in using Regulation 31 compliant products in a safe, efficient and effective manner, for example; observing temperatures and conditions of humidity.

Specialist products

In addition, Stonbury is working with manufacturers and suppliers of specialist products, such as BASF, Sika UK, Flexcrete, Natural Cement and Acothane, to ensure that Regulation 31 approved products are better understood by industry applicators and are used to their greatest potential in the delivery of water projects. Regulation 31 products should be knowledgeably selected based on the best product for the situation, including consideration to time requirements and budgets.

Although manufacturers have been producing products to meet European Union standards for many years, the DWI's regulations are more rigorous, placing additional protections on drinking water quality and so raising the bar for product manufacturers. BASF, in particular, have responded to these extensive testing regimes, which are required to achieve Regulation 31 approval, by adapting existing materials and working on application methods to improve their effectiveness.

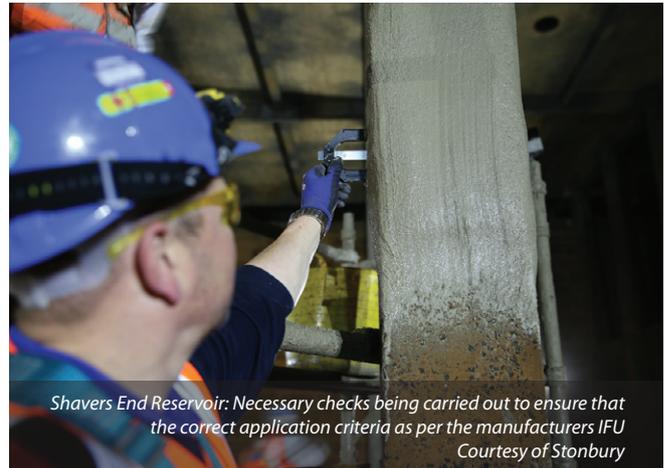
BASF collaborated with Stonbury to develop their over-banding system into a complete reservoir solution. The manufacturer to contractor partnership allows a better understanding of the requirements needed under Regulation 31 and across the supply chain.

Working with contractors has helped BASF to gain better knowledge of the capability of their products under different conditions, enabling them to advise on how their products can not only meet the requirements of Regulation 31, but provide a quick solution that minimises disruption to the client without impairing the quality of the product or the service that it delivers.

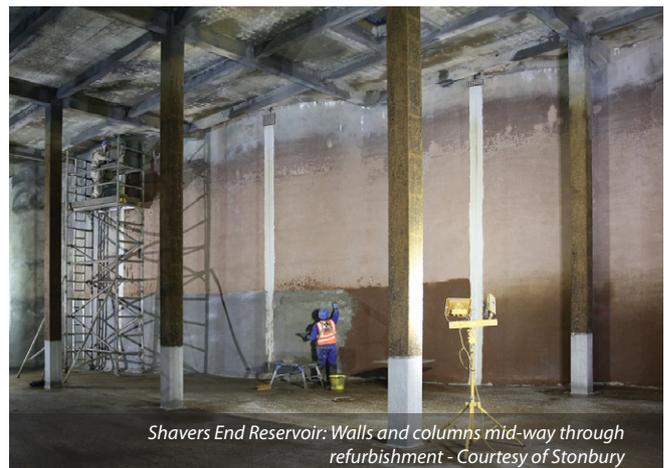
In particular, BASF and Stonbury have collaborated to improve the Instructions For Use document issued for each approved product. A process of finessing to incorporate many years of experience and best practice will equip them to be pertinent working documents in line with the DWI and water companies' mandate.

Darren Priddle, sales manager for BASF, says:

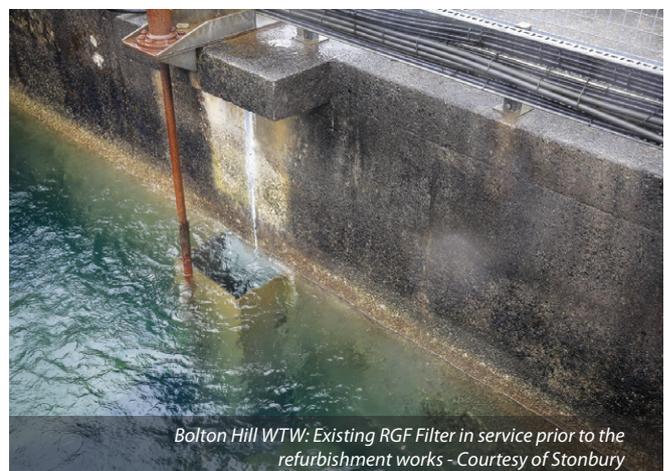
"Our work with Stonbury has been extremely effective. They have been very proactive in looking at what the market is striving to achieve and we have an unrivalled solution at the moment. From a commercial point of view, Regulation 31 has not impacted the lifecycle cost. We have ensured that our clients have the best product for their requirements, suiting the environment in which they are to be used, providing excellent



*Shavers End Reservoir: Necessary checks being carried out to ensure that the correct application criteria as per the manufacturers IFU
Courtesy of Stonbury*



Shavers End Reservoir: Walls and columns mid-way through refurbishment - Courtesy of Stonbury



Bolton Hill WTW: Existing RGF Filter in service prior to the refurbishment works - Courtesy of Stonbury



*Bolton Hill WTW: RGF filter fully completed and back in service
Courtesy of Stonbury*

workability, meeting DWI regulations and enabling working times to be adhered to.

“Stonbury has also played an important role in identifying the correct requirements of the job, obtaining information about water quality and dosage levels, for example, before advice is given on coatings. Water companies’ operations are changing and it is important that relevant information is passed on to contractors to enable them to provide the best solution to the client.”

Case studies

Below are two case studies that demonstrate how Stonbury is using its expertise in Regulation 31 approved products to help water companies upgrade their infrastructure, whilst causing minimal disruption and downtime of operations, to provide a professional and lasting finish and performance.

Shavers End Reservoir, South Staffordshire Water: Shavers End Reservoir in Dudley was constructed in 1927, becoming operational in 1928. Requiring both internal and external refurbishment, South Staffordshire Water approached Stonbury to reline the internal walls of the reservoir, as the existing walls had degraded. The design specification required the refurbishment to deliver a proposal that would last for a minimum of 10 years.

The refurbishment commenced in March 2018, with a completion date in July 2018. Stonbury used high pressure turbo water jets to jet back to sound concrete, before applying 10mm of render directly to the substrate, without primers. Natural Cement (Natcem 35, a product that is fast-setting, fast-curing and resistant to chloride penetration) chippings and media were used to comply with Regulation 31 requirements. The materials chosen were very fine and provided the fastest option for drying, as required by the client. As a result, no humidification was required.

Over-banding was necessary to reinforce the old joints. Externally repairs were made to the sides of the reservoir and the roof perimeter was prepared and new drainage channels were cut.

Once the materials were mixed up and rendered to the reservoir substrate, only 24 hours were required for the render to dry (only requiring the surface to then be cleaned), so enabling the reservoir to be reinstated in the quickest possible time.

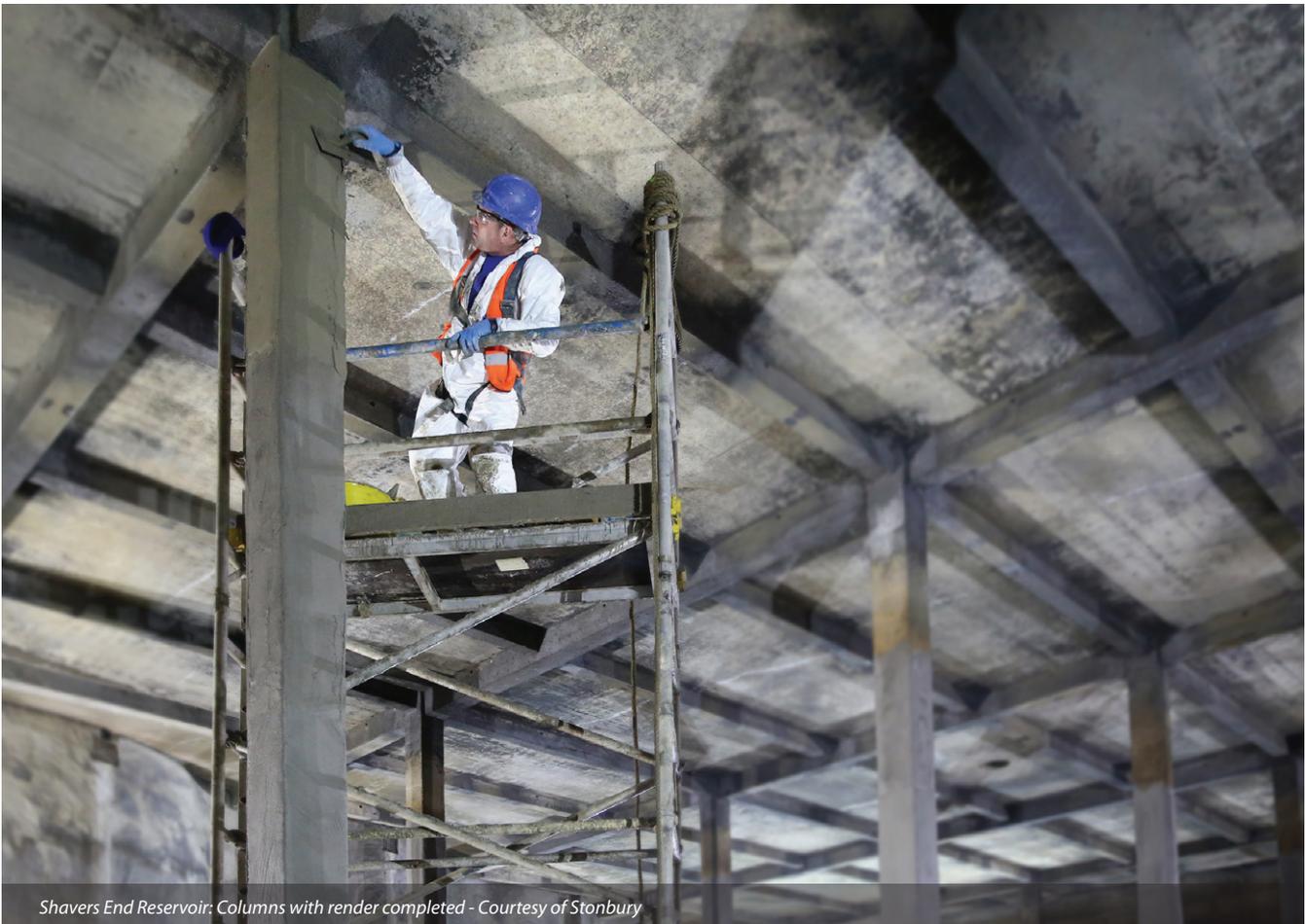
Bolton Hill RGF Filters, Dŵr Cymru Welsh Water: Stonbury was commissioned by Industrial Pipework Services (IPS) for Dŵr Cymru Welsh Water to carry out repairs to 8 (No.) filter tanks at Bolton Hill, due to the degradation of the original concrete of the tanks.

Work commenced in February 2017 and was completed in November 2017. The open tanks are 4m deep, 11m long and 8m wide, and so it was necessary to fabricate a tent and frame to enable work to be undertaken in a controlled environment.

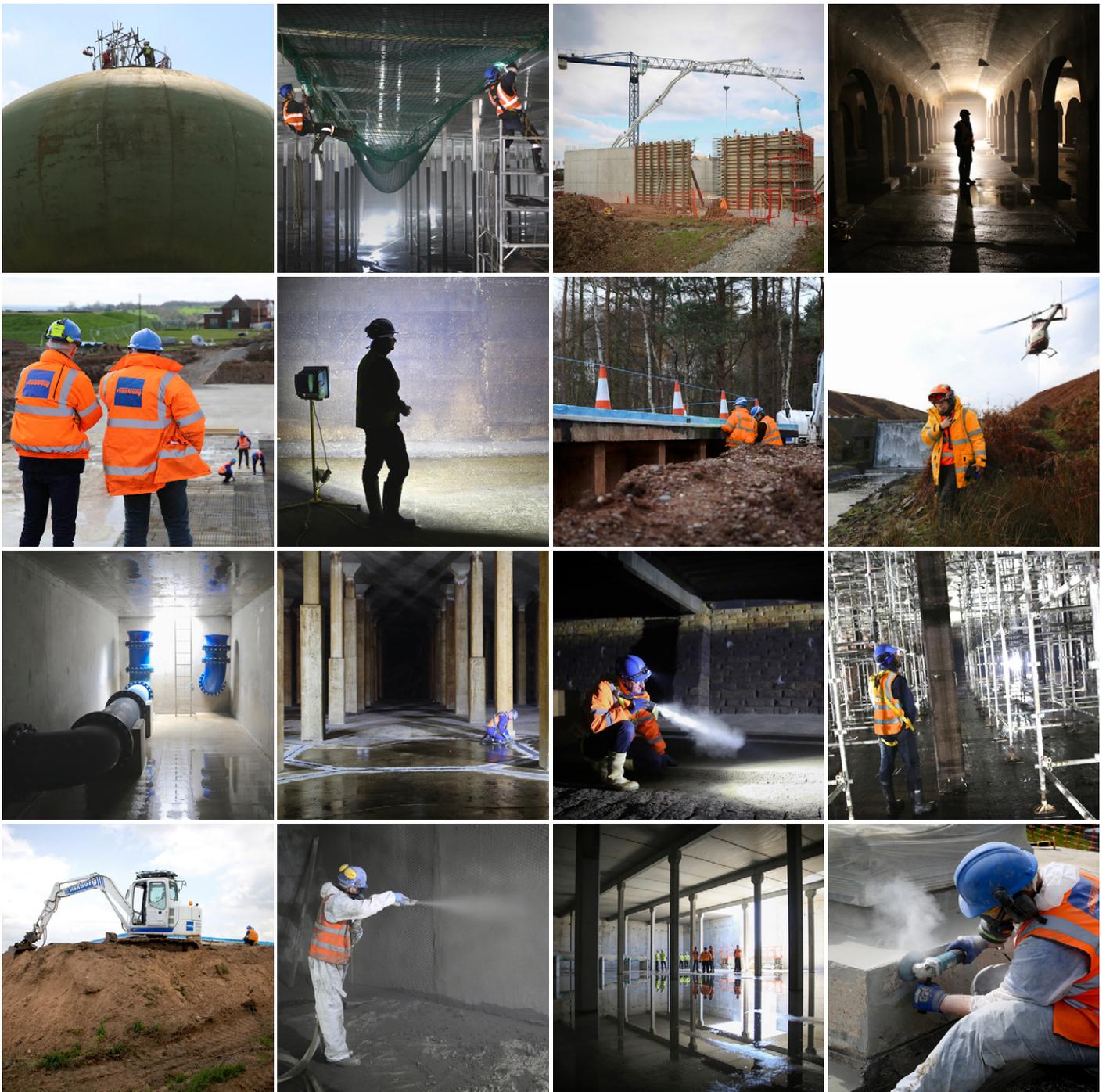
Each tank was emptied and refurbished, one at a time, with just 3-weeks for each tank to be turbo jet washed to 3,000 PSI to remove all organic matter and deleterious and debonded material, before Regulation 31 compliant Flexcrete 844 was applied to all surfaces and finished with three coats of Regulation 31 compliant MasterSeal M808.

Pull-off tests were carried out on the render before the MasterSeal M808 was applied, with results exceeding specified requirements. Dehumidifiers were then used to regulate drying conditions and temperature and humidity levels were monitored carefully. Stonbury found that the best temperatures for coating were between 15° and 19°C.

The editor and publishers would like to thank Stonbury for providing the above article for publication.



Shavers End Reservoir: Columns with render completed - Courtesy of Stonbury



INDUSTRY LEADERS IN THE REFURBISHMENT OF WATER RETAINING STRUCTURES AND ASSOCIATED ASSETS

REFURB/MAINTENANCE: IMPOUNDING & SERVICE RESERVOIRS - WATER TOWERS - CLEAN & SEWAGE TREATMENT WORKS DAMS - SPILLWAYS - AQUEDUCTS - PIPE BRIDGES - PIPEWORK - BUNDS - TANKS & VESSELS - WATER COURSES

SERVICES: INSPECTION/SURVEY - RELINING - SPECIALIST COATINGS - CORROSION PROTECTION - WATERPROOFING CONCRETE & STEEL REPAIRS - CLEANING & CHLORINATION - FLOOD ALLEVIATION **DESIGN/INSTALL:** STEEL WATER CONTROL STRUCTURES - SECURITY WORKS INC LPC4 ACCESS COVERS - ACCESS LADDERS, HANDRAILS & WALKWAYS

SURGE VESSELS - M&E **CIVILS:** NEW BUILD RESERVOIRS & TANKS - LAGOONS - DEEP EXCAVATION - STREETWORKS INTERNAL, EXTERNAL & UNDERGROUND PIPEWORK - VALVES - DRAINAGE - RETAINING WALLS - ACCESS ROADS, HARD

STANDING & PARKING AREAS - CABINETS - SMALL BUILDING INSTALLATION - DEMOLITION - FLOOR SLABS & SCREEDS