



**GLENFIELD INVICTA**  
DELIVERING ENGINEERING SITE  
SOLUTIONS FOR SOUTHERN WATER





As a leader in our industry, we are committed to bringing professional site solutions of the highest quality and safest product on time to our customers, using the latest technology while acting responsibly, respecting the environment, as well as providing meaningful jobs for our employees.

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# Who We Are

EXPECT... Solutions, Not Just Products



From cradle to grave, Glenfield Invicta's end-to-end project and site solutions provide market leading valve and penstock engineering excellence, across a multitude of water and non-water infrastructure applications.

Supported by the vast product portfolio of the AVK group of businesses, Glenfield Invicta combines the strength and unique proposition of Invicta's site solutions, penstocks and environmental expertise, and Glenfield's experience and expertise in specifying and managing large projects.

As market leaders and industry experts, we have been designing, manufacturing and maintaining specialist engineered valves, penstocks and actuators for more than 170 years and stand behind every product we install, offering some of the best extended warranties in the industry.

Our record for the design, supply and installation of engineered valve solutions and pipeline equipment projects delivered safely on time, and to the highest standards in arduous conditions is what sets us apart. This specialist capability has made the Glenfield Invicta and AVK brands synonymous with engineering excellence worldwide.

In addition, we continually invest in our service offerings. Glenfield Invicta Engineering Site Solutions has the people, geographical footprint and systems to support optimised operational efficiency when meeting the needs of our customers.

All products and service solutions are provided in accordance with all the relevant UK, European and International standards.

Our expertise and knowledge set us apart, together with our track record for delivering projects on time and to the highest standards.

# The Strength of Our Partnership

Our Capabilities for Southern Water

Glenfield Invicta are leading specialists in civil, mechanical, and electrical engineering solutions for the water industry.

By combining the expertise and capabilities of our sister businesses within AVK UK, we offer a unique and unified approach to water and wastewater management challenges.

Our success is built on shared values of **Quality, Innovation, Reliability, Sustainability** and **Customer Service**, ensuring that our valued customers benefit from the best solutions at every stage of projects.

With over 170-years of experience, we provide end-to-end project delivery, from design and fabrication to installation, maintenance, and emergency response project delivery.

## THE BENEFITS OF OUR SOLUTIONS

One of the greatest advantages lies in the unmatched expertise we bring to the table. Our **multidisciplinary team of engineers and technicians** are highly skilled in mechanical, electrical and civil disciplines, backed by a proven track record of delivering successful projects. This deep sector knowledge ensures that we can address even the most complex engineering challenges with precision and confidence.

Another key benefit is our extensive geographical reach. With strategically located depots and workshops throughout our customers service area, we are uniquely positioned to respond rapidly to any issues. Our **24/7 availability** ensures that emergencies and unplanned downtime are addressed swiftly, minimising disruption to your operations and to your customers.

Our ability to provide **comprehensive, turnkey services** further strengthens our value. From initial design and fabrication to installation and ongoing maintenance, we offer an integrated approach that simplifies project management. In addition, we leverage advanced technologies, such as smart water systems, to optimise performance and efficiency, ensuring long-term operational success.



# 24-Hour Reactive Services

## Always Ready to Respond

### 24 hours a day, 7 days a week

At Glenfield Invicta, we understand that water and wastewater infrastructure issues can arise at any time. Whether it's an unexpected leak, equipment failure, or an urgent repair, our valued customers can rely on our collaborative team for prompt, effective solutions—**24 hours a day, 7 days a week**. Our rapid-response service ensures that critical assets are restored with minimal downtime, safeguarding operations and customer satisfaction.

### Strategically Positioned for Maximum Coverage

With a network of strategically located depots and workshops across our customer's service area, we ensure fast mobilisation to any site. Our geographical presence is enhanced by combining the resources of Glenfield Invicta and our sister companies within the UK. This integration enables us to deploy teams and equipment efficiently, reducing response times even in rural or remote areas.

### Features of Our Reactive Service Network:

- Fully equipped depots located across various areas of operation.
- Mobile units and engineers stationed at key locations for rapid deployment.
- Advanced tracking and communication systems to coordinate responses efficiently.

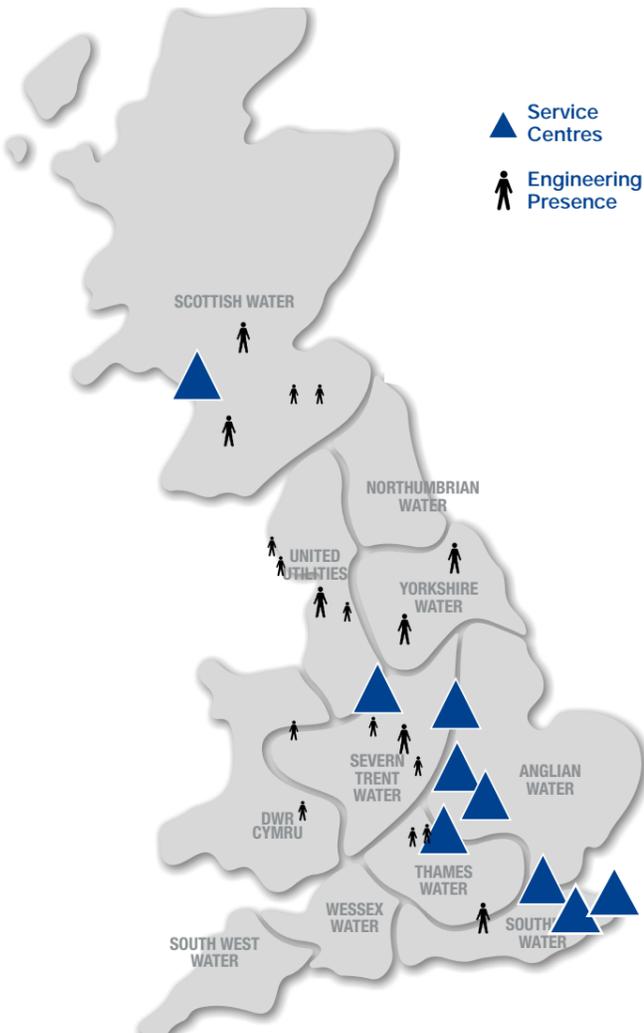
### Rapid Access to Critical Parts and Equipment

One of the key advantages of our 24-hour reactive service is our access to a vast inventory of spare parts, valves, fittings, and other critical components. As part of the AVK Group, Glenfield Invicta benefits from a robust supply chain that guarantees the availability of genuine parts when they're needed most. This reduces delays, allowing us to complete repairs within hours rather than days.

### Our inventory includes:

- Valves, penstocks, and actuators from the AVK group of companies.
- Pipe fittings, clamps, and structural components.
- Bespoke fabricated parts for unique requirements.
- Air valve genuine spare parts

Our customer's operations are critical, and we understand the importance of reliable communication in emergencies. Our **24/7 helpline** ensures that customers have direct access to our reactive service team, ready to deploy support at a moment's notice.

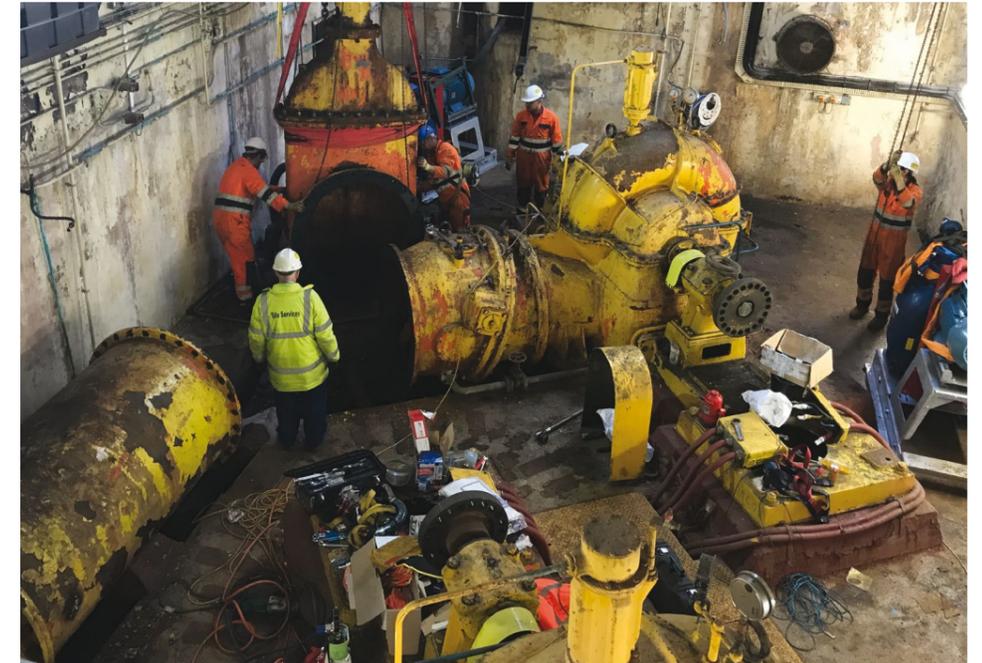


# Multi-Discipline Site Teams

## Versatility & Expertise at Every Stage

The challenges of water and wastewater infrastructure require a team capable of handling complex projects across multiple disciplines.

At Glenfield Invicta, our multi-discipline site teams combine their skills, knowledge, and experience to provide customers with a comprehensive solution. By integrating expertise in mechanical, civil, electrical, and technical fields, we ensure every project is completed with precision, efficiency, and a focus on long-term performance.



### Mechanical Engineering

- Installation, maintenance, and refurbishment of valves, penstocks, and actuators.
- Precision machining, welding, and fabrication for bespoke components.
- Flow control expertise to ensure the smooth operation of assets across the network

### Electrical Engineering

- Installation and refurbishment of actuators and control systems.
- Fault diagnosis and repair of critical electrical components.
- Integration of smart technologies to enhance network efficiency.

### Civil Engineering

- Structural repairs, dig-down operations, and pipeline installation.
- Skilled excavation for leak detection and underground infrastructure repair.
- Design and construction of bespoke access systems, compliant with WIMES standards.

### Technical Expertise

- Advanced diagnostic capabilities for assessing the health of assets.
- Comprehensive site surveys, risk assessments, and method statements.
- Innovative problem-solving to address unique or complex challenges.



# Mechanical Installation

## End-to-end Solutions

At Glenfield Invicta we specialise in providing a comprehensive supply and installation service for valves. Our commitment to quality ensures that we recommend proven, industry leading valves from the AVK Group & third party manufacturers.

### Why Choose Us?

- **Cost Savings:** By offering a single-source solution, we help our customers achieve considerable cost savings.
- **Minimal Plant Shutdowns:** Our efficient processes minimise disruptions during installation, ensuring smooth operations.
- **Reduced Site Programmes:** We streamline project timelines, allowing you to meet deadlines effectively.
- **Long-Term Solutions:** Our focus extends beyond immediate needs, providing solutions that stand the test of time.
- **Extended Warranties:** We stand behind our products, offering extended warranties for your peace of mind.

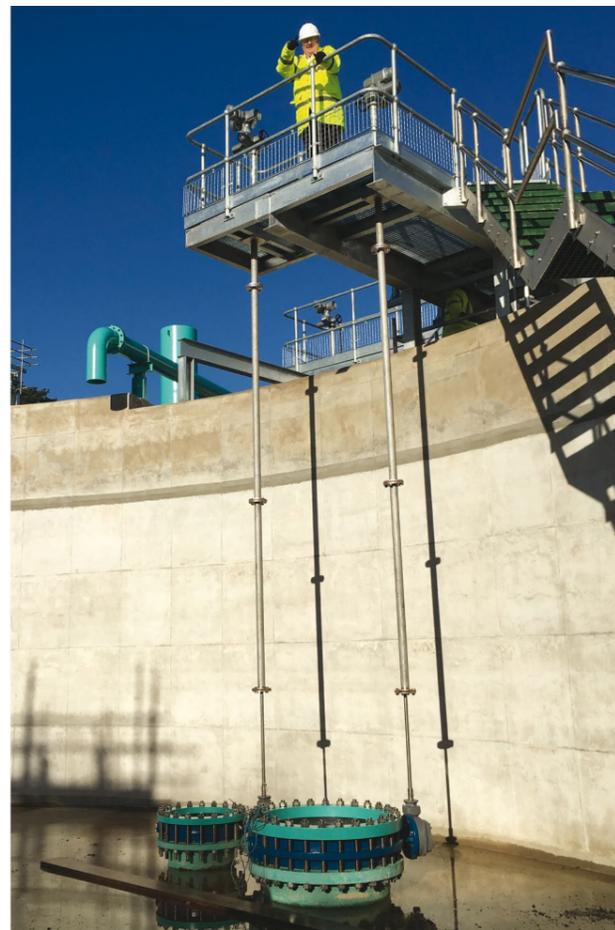
### Our Site Solutions offering includes:

#### Valve, Penstock and Actuator installation and maintenance.

- Extended Warranty for Products We Supply and Install
- Valve Release
- Valve Repacking
- Valve & Penstock Maintenance and Refurbishment (in situ or Workshop Overhaul)
- Actuator Maintenance and Refurbishment (in situ or Workshop Overhaul)
- Equipment Health Check & Monitoring
- Fittings & Ancillary Parts
- Training & Technical Support

### Our service teams are qualified for the following operations:

- Confined Space Working
- Scottish Water Distribution Operations Maintenance Strategy (DOMS) Scheme
- CSCS
- Water Hygiene – Blue Card
- First Aid
- Safety Harness
- Slinger/Signaller
- Pasma
- All Team Supervisors hold an IOSH in Health and Safety for Middle Management



# Mechanical Installation

## End-to-end Solutions

We have earned a well-deserved reputation as the go-to provider for both actuated and non-actuated penstock supply and installation within the UK water industry.

Our reputation is built on two key principles:

**Choosing the Right Solution:** We meticulously select the most appropriate solution right from the inception stage. This ensures that our clients receive the best fit for their specific needs.

**Correct Installation:** Installing the right product correctly is crucial. Our focus on precision helps avoid costly delays and frustrating callbacks due to leakage or faulty operation.

- Design Input
- Site Audit
- Product Selection
- Commissioning
- Associated Ancillaries
- Installation and Actuation
- Testing
- Maintenance
- Extended Warranties
- Product Selection

Choose Glenfield Invicta for reliable valve solutions that exceed expectations. Contact us today to discuss your project: [enquiries@glenfieldinvicta.co.uk](mailto:enquiries@glenfieldinvicta.co.uk)



# Electrical Installation

## Actuators & Controls

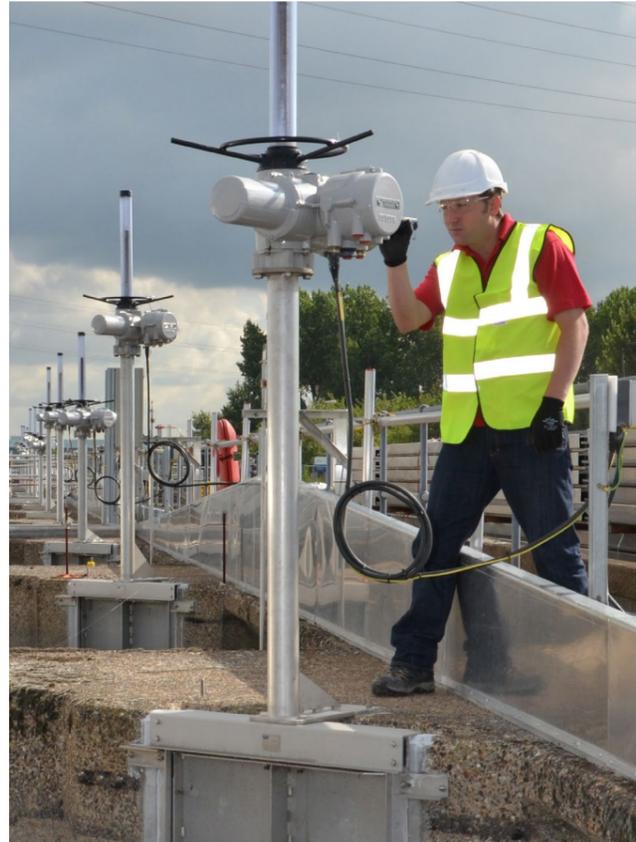
Our highly professional team are experts in the design, installation, repair and maintenance of actuators and electrical controls.

Our reputation is second to none, with a strong background in engineering and electrical application. Our unrivalled level of experience ensures we meet and exceed customers' requirements.

We have grown to become a world leader in the design and manufacture of industrial valve actuators and control systems within the water & sewage sector.

Our innovative research and development activities guarantees we can design any electrical actuation issue and supply and install the correct solution for the application.

We recognise there is a need to consider all manufacturers, therefore we work closely with ALL leading manufacturers to ensure we supply the best product to suit the needs of our customers.



# Electrical Refurbishment

## Actuators

Our knowledge & experience of valve, penstocks and actuators defines how we support the UK water utility companies to manage their business.

Many assets require more intensive attention as they get older, with more frequent inspection and replacing of components to help manage the risk of failure.

By understanding the health of an installed asset and its leading-edge performance, our customers are able to focus their maintenance investment into assets of poor health and with the largest risk of failure, as well as plan a resilient and proactive service programme for both now and future operation.

The longer that healthy assets operate efficiently the more value they deliver to the customer and the environment. Being able to predict and minimise the risk of operational deterioration or complete asset failure is the key objective to drive down the level of reactive maintenance and unplanned outages by identifying potential issues before they occur.

### Actuator & Gearbox Maintenance Repairs

We specialise in the repair, maintenance and life extension of actuators and gearboxes. We offer service agreements for customers who require the benefits of planned maintenance. We will undertake to service equipment at regular intervals, regardless of make, manufacture or age. We supply a full condition report on the work done and the condition of the equipment.

Our Engineering Site Services team are all OEM trained and offer mechanical and electrical repairs to a wide range of equipment including actuators & gearboxes for most manufacturers. We provide a fast and efficient service maintaining efficiency and reliability whilst minimising equipment downtime. Work is carried out by an experienced team of engineers both in situ or at our workshops located throughout the UK.

Throughout the process of initial investigation to reinstatement customers are kept updated.

- Fault investigation
- Isolation & removal from service
- Workshop diagnostics
- Sourcing of components
- Workshop equipment repair
- Soak testing
- Functional checks
- Site installation



# Dig Down, Leak Detection, and Repair

## Protecting Your Network

Waste and wastewater infrastructure is the lifeline of our customers operations.

Ensuring the integrity of underground assets requires precision, efficiency, and minimal disruption. At Glenfield Invicta, we specialise in comprehensive dig-down, leak detection, and repair services that keep your network performing at its best while safeguarding your resources and reducing wastage.

### Precision Dig-Down Services.

Once a leak has been located, our skilled civil engineering teams perform careful excavation to access the affected area. Our **“right-first-time”** approach ensures that we address the issue quickly, cleanly, and safely.

#### Key Features of Our Dig-Down Services:

- **Confined Space Operations** - Trained teams equipped with safety harnesses, ventilation systems, and other tools to work safely in restricted areas.
- **Minimal Disruption** - We prioritise reducing the impact on surrounding infrastructure and communities during excavation.
- **High Safety Standards** - All work is carried out following strict health and safety protocols, including risk assessments and method statements.

### Expert Repairs and Asset Protection

Our repair services go beyond simply fixing the immediate problem. We focus on long-term solutions to restore the integrity of your infrastructure and prevent recurring issues.

#### Comprehensive Repair Services Include:

- **Valve and Pipe Repairs** - Fixing cracks, joint failures, and corrosion issues in valves and pipelines.
- **Replacement of Components** - When necessary, we replace damaged sections with high-quality materials, ensuring reliability and durability.
- **Bespoke Fabrication** - For non-standard components, our in-house fabrication team designs and manufactures customised parts to fit seamlessly with your existing system.
- **Pressure Testing and Commissioning** - Once repairs are complete, we conduct rigorous testing to verify the integrity and performance of the system.



# In-House Capabilities

## EXPECT... Solutions, Not Just Products



We pride ourselves on providing customers with a comprehensive range of in-house engineering services.

From repair and refurbishment to fabrication and reverse engineering, our in-house capabilities allow us to deliver cost-effective, high-quality solutions with fast turnaround times. By keeping critical processes under one roof, we ensure consistency, reliability, and control across every stage of a project.

Our expert teams specialise in extending the life of critical assets through in-house repair and refurbishment. Whether it's valves, pumps, or mechanical equipment, we apply meticulous attention to detail to restore assets to full functionality.

#### Key Offerings:

- **Valves and Actuators** - Complete refurbishment of valves and actuators, including disassembly, cleaning, repair, and pressure testing.
- **Pumps and Equipment** - Precision repair and overhaul of pumps and related mechanical equipment.
- **Reverse Engineering** - When parts are obsolete or unavailable, we use reverse engineering to create replacement components that match the original specifications.

- **On-Site or Workshop Repairs** - Assets can be repaired on-site for convenience or transported to our fully equipped workshops for more extensive work.

### Precision Fabrication and Machining

Our in-house fabrication and machining capabilities ensure that we can create bespoke components tailored to every unique requirement. By controlling the entire process, we deliver solutions with unparalleled accuracy and efficiency.

#### Fabrication Services Include:

- Bespoke pipework and fittings, including tees, bends, and flanges.
- Structural steel design and fabrication to BS EN 1090 standards.
- Permanent access systems, such as ladders, platforms, and handrails, compliant with WIMES standards.

#### Machining Capabilities Include:

- CNC cutting and machining for high-precision components.
- Welding services for a variety of materials, including mild steel, stainless steel, and aluminium.
- Shot blasting and industrial coating to ensure durability and protection against corrosion.



### Fast Turnaround Times

We recognise that delays in repairs or replacements can significantly impact our customer's operations. That's why we've optimised our in-house processes to deliver rapid turnaround times for critical services, including.

- **24-48 Hour Emergency Fabrication and Repairs** - For urgent needs, our team works around the clock to ensure your assets are back in operation as quickly as possible.
- **Stock Readiness** - With a large inventory of valves, fittings, and other components, we can minimise delays caused by waiting for parts.



# Refurbishment & Repair

## Valves & Penstock

Our Engineering Site Solutions team are experts in flow control, our experience and understanding ensures we have the capability to resolve any on-site issues, keeping our customers and their assets in full and optimum operation. Our after sales service solutions increase asset efficiency and reduce maintenance costs.

In addition to supplying new products and providing on-site maintenance and repair services for the complete AVK Group product range, we offer comprehensive valve refurbishment and pressure testing, to enhance the effectiveness and extend the operational life of your assets.

We provide FOC on-site survey and diagnostic report of existing valves, actuators and penstocks. Having access to both AVK and other manufacturers products allows us to source spares for many types of valves.



Before

Intermediate



After

### Gate Valve Refurbishment

Five gate valves with actuators all requiring a complete refurbishment, which had to be carried out while the valves were still 'in-situ' and within a very tight deadline.



Before

Adding to the challenge, the valves had table "D" flanges because of their very tight installation conditions.

#### The work involved:

- Stripping down the valves
- Removal of the actuators
- New bonnet bolts
- New nuts/bolts
- Machined & replaced damaged spindle
- Machined new stem nut
- Installing manual gearboxes
- Shot Blasting
- Repainting
- Pressure Testing

The valves were also converted from electric to manual actuation to improve the ease of operation and increase effectiveness.



After

# Refurbishment & Repair

## Valve Release

We are specialist in water management and leak detection, providing aftersales support to the UK's water companies and industrial customers for many years.

Utilising a state-of-the-art designed technology, we have developed solutions for every situation that allows our engineers to release seized valves, operate difficult to open valves and seat passing valves, where other systems fail.

Our valve-friendly solutions apply different levels of controlled torque to suit each situation and is monitored at all times by our engineers to ensure there is no damage to the valve during the freeing process.

Using a portable actuator or compression vibration tooling and bespoke specialised valve adaptations, we are able to apply forces in a way that operates the valve but does not cause lasting damage.

The systems are small, light and easily manoeuvrable into most installation and locations. It also enables for valves to be operated without being isolated, allowing for a fast and effective solution with zero downtime.

#### Features & benefits:

- Highly skilled team of OEM trained Engineers
- Process releases valves of any size, age, or level of seizure
- We guarantee to release your valve and restore it to working order

We're so confident in our Valve Release Freeing Service that we operate on a 'No Fix - No Fee' basis and only invoice if the valve is successfully released.



# Refurbishment & Repair

## Pumps

Glenfield Invicta offers expert pump refurbishment and repair services to extend the lifespan of critical assets. Our in-house team of specialists ensures that pumps are restored to peak efficiency, reducing operational downtime and costs.

Our dedicated engineering teams handle everything from minor repairs to full pump overhauls, ensuring longevity and optimal performance.

### Features of this service:

- **Full Diagnostic Inspections** – We conduct in-depth assessments to identify wear, damage, and inefficiencies.
- **Strip-Down & Component Replacement** – Worn-out parts are refurbished or replaced with high-quality parts.
- **Re-Sealing, Re-Boring & Dynamic Balancing** – We enhance operational efficiency and reduce vibration-related failures.
- **Corrosion Protection & Coating** – We apply high-performance coatings to protect pumps against corrosion and extend service life.
- **Precision Machining & Fabrication** – Customised machining and fabrication services for obsolete or unique parts.
- **Performance Testing & Verification** – Our fully equipped test facilities ensure all refurbished pumps meet performance specifications.



# Access Steelwork

## Innovative Structural Solutions

When it comes to maintaining and upgrading water and wastewater infrastructure, robust and reliable structural steel solutions are essential.

At Glenfield Invicta, we specialise in designing, fabricating, and installing high-quality structural steel solutions tailored to meet the specific needs of our customers. From permanent access systems to large-scale steel structures, we deliver projects that combine strength, durability, and compliance with the highest industry standards.

Our structural steel expertise covers the full lifecycle of a project, from initial design and fabrication to on-site installation. By keeping every stage in-house, we ensure precision, efficiency, and cost-effectiveness.

### Our Steel Expertise

- **Design and Engineering** - Bespoke structural designs tailored to your specific project requirements.
- **Fabrication** - In-house production of high-quality steel components, including beams, frames, platforms, and access systems.
- **Installation** - Expert teams deliver safe and efficient installation, even in challenging environments.
- **Certification** - All structures are certified to BS EN 1090 standards for structural steelwork.

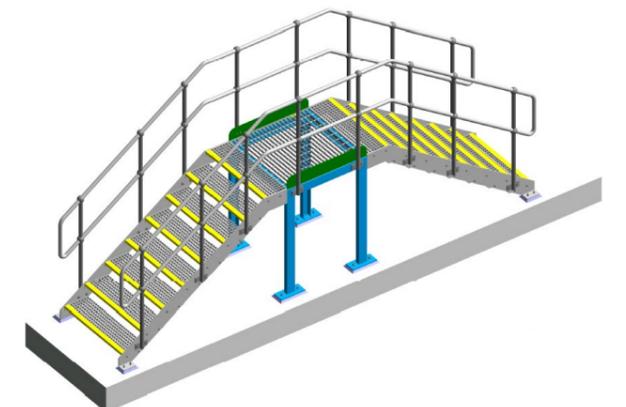
### Customised Access Systems

Safe and reliable access is critical for operating and maintaining our customer's infrastructure. We design and fabricate permanent access systems that ensure compliance with WIMES standards while offering maximum durability and usability.

#### Access Systems We Provide:

- Ladders and walkways designed for safety and ease of use.
- Platforms and gantries for elevated access.
- Handrails and safety barriers to ensure secure working environments.

We're here to support customers with innovative, reliable, and cost-effective solutions. Our structural steel expertise ensures our projects are completed on time, on budget, and to the highest standards of safety and quality.



Extending pump life reduces waste and the carbon footprint associated with new equipment manufacturing.

# Always Ready Stock

## Ready When You Need Us



We understand that reliability is essential when it comes to maintaining critical infrastructure.

We maintain an extensive stock of valves, fittings, and more, ensuring that the parts you need are always available. Combined with our customisation expertise, we deliver solutions to meet even the most unique project requirements, helping to minimise downtime and maximise operational efficiency.

### Extensive Stockholding for Immediate Support

As part of the AVK Group, we have access to one of the most comprehensive inventories of flow control products in the UK. Our strategically located depots ensure that essential parts are always within reach, enabling us to respond quickly to any emergencies.

#### Our Stock Includes:

- A wide range of valves, including gate, butterfly, check, and air valves.
- Ancillary components such as flanges, dismantling joints, and pipe couplings.
- Repair clamps and under-pressure tees for urgent pipeline repairs.
- Extension spindles, guide brackets, and pedestals for valve operations.

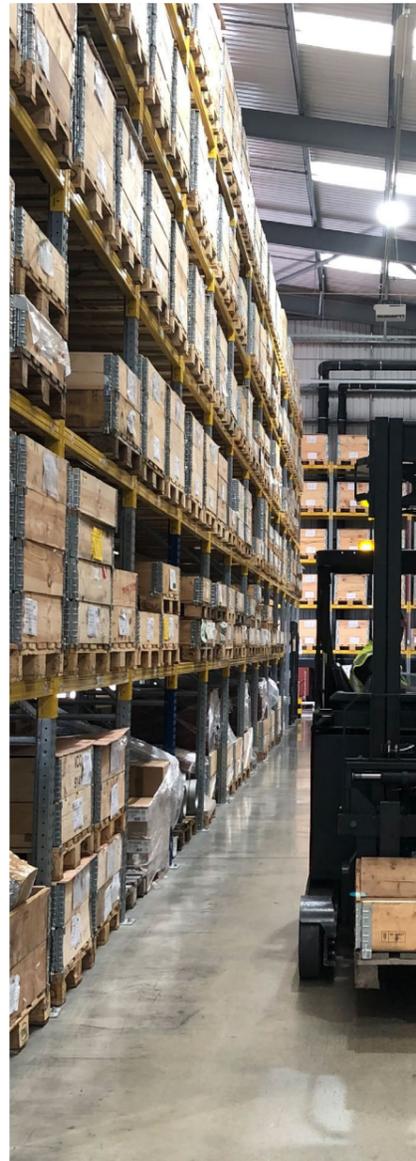
While off-the-shelf products often meet standard requirements, many infrastructure projects demand bespoke solutions. Our in-house fabrication and machining capabilities allow us to create customised components that integrate seamlessly with existing systems.

Our stock and customisation capabilities also align with our **sustainability goals**. By focusing on repair and refurbishment instead of replacement, we reduce waste and extend the life of critical assets. Additionally, our ability to produce custom components in-house helps to lower the carbon footprint associated with transportation and outsourcing.

#### Out of Hours Stock Supply

Emergencies don't follow a 9-to-5 schedule, and neither do we. Customers can rely on our Out of Hours Stock Supply Service to access critical components whenever they are needed—day or night. Our responsive team ensures you have access to essential parts to keep your operations running smoothly.

- **24/7 Availability** - Immediate access to stocked valves, fittings, and repair components at any time.
- **Rapid Dispatch** - Our team ensures same-day or next-day delivery, minimising downtime.
- **Emergency Contact Support** - Dedicated contact lines to quickly arrange urgent supplies



# HIAB Lifting Services

## Precision Lifting, Anytime, Anywhere

Lifting and handling heavy equipment in the water and wastewater industry requires precision, expertise, and the right equipment.

Our HIAB lifting services provide a safe, efficient, and cost-effective way to transport and position heavy assets, including valves, penstocks, pipework, pumps, and structural components.

With our **24/7 call-out service**, customers can rely on us for planned lifting operations and emergency support, ensuring minimal disruption to operations.

### 24/7 Call-Out for Emergency Lifting Services

Emergencies don't wait for normal working hours, which is why we offer a 24/7 HIAB lifting service to ensure customer's assets are handled safely and efficiently—no matter when a problem arises.

#### Our Emergency HIAB Lifting Services Cover:

- **Emergency valve replacements** – ensuring swift response to prevent service disruptions.
- **Pump removal and installation** – reducing downtime at wastewater and water treatment plants.
- **Structural failures or repairs** – emergency lifting of damaged components for immediate repair or replacement.
- **Flood and storm response** – assisting with rapid infrastructure reinforcement during extreme weather events.



# Asset Management & Maintenance

## EXPECT... Long-Term Partnerships

### Valve Health Check

Glenfield Invicta specialises in supporting our customers with automation and control components for actuated and non-actuated valves and penstocks.

We have decades of experience in supporting the Water & Wastewater sector, paired with a trusted supply chain that allows us to evaluate on site assets and determine their performance and life expectancy, based upon obsolescence and spare part availability.

We understand the unique issues that our customers experience in a variety of demanding applications and tailor our service to suit each and every individual site or asset needs.

Assets are often used past the obsolescence date set by the OEM, when breakdowns occur, replacement parts can then be rare and difficult to source. Our expertise in obsolete automation helps us to source rare or re-engineer substitute parts to ensure you can manage maintenance at your facility.

We also advise on a critical spares inventory, ensuring spare parts readily available for any unplanned downtime that may occur. We help you arrange this spares inventory for any manufacturers on site.

### The Power of Predictive Analysis

Glenfield Invicta can collect vital valve and actuator health data from the field and provide a realistic performance information that can generate predictive failure modelling.

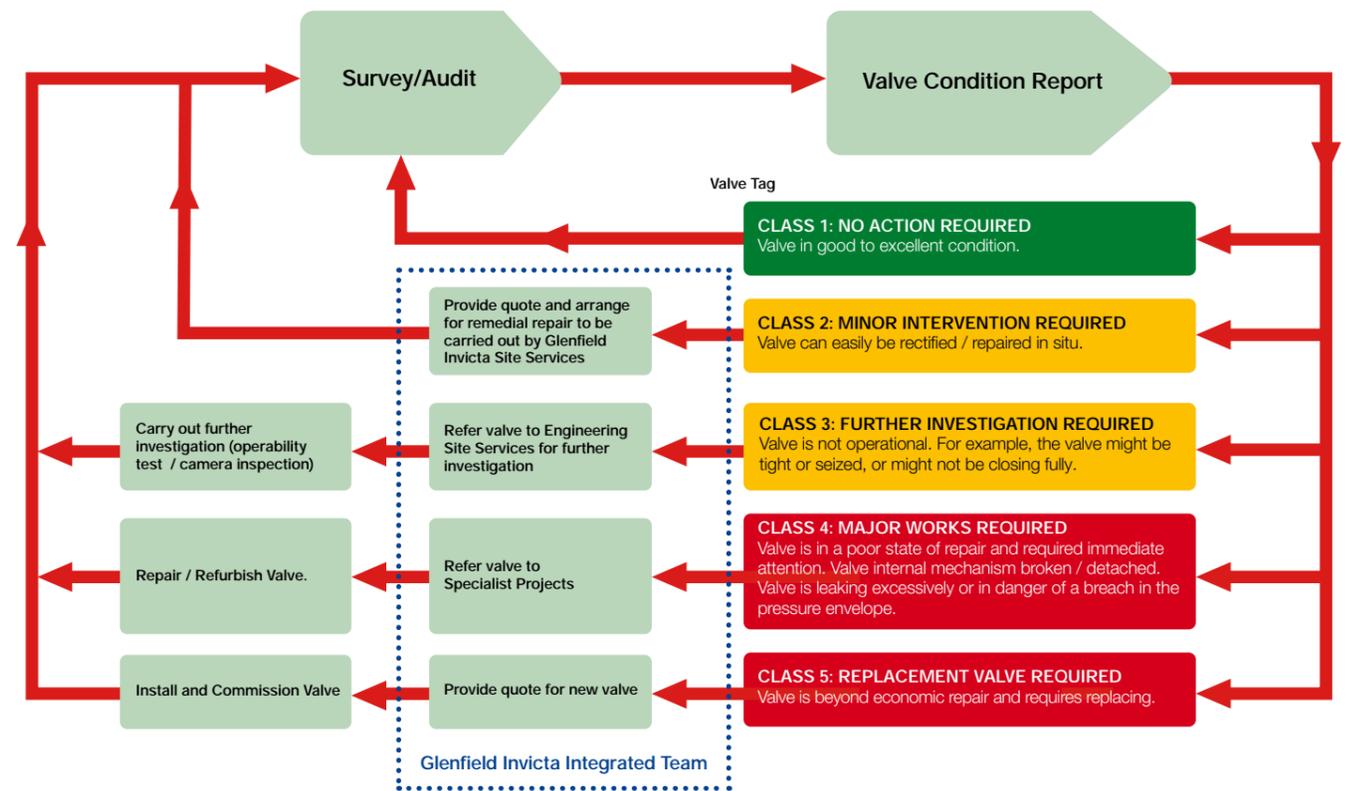
This approach enables us to review diagnostic health data from multiple sources, including condition history to determine trends and predict impending valve deterioration, which means maintenance can be scheduled and performed well before an operator alarm is triggered.

### Do You Know the Health of Your Valves?

Focusing on valve and actuator maintenance, reliability, and performance is essential. Valves play a vital role in process availability. Being aware of when they require attention can significantly impact whether you face unexpected expenses or unplanned downtime. By conducting on-site equipment health checks, we can help avoid downtime, reduce costs, and seamlessly incorporate technology upgrades into daily operations, increasing return on investment.



### Valve Cam



### Valve Cam – Complete Asset Management

A majority of customers operate a Reactive Maintenance Programme and wait until their assets breakdown before carrying out any maintenance, resulting in major downtime and often replacing the asset with new, which can take many weeks to resolve.

We frequently respond to service calls of this nature, but we also provide an alternative: preventative maintenance. We assist our customers by preparing their assets for opening and closing, as well as ensuring proper lubrication. We also offer the ultimate service package, which is an MOT to Water Utility Assets and surpasses the preventative maintenance offer by monitoring the asset through sensor, looking for changes in its condition on a regular basis. This allows us to notify or automatically attend site to repair the issue before the client knows there is a problem.

We initially attend site and inspect the asset(s) and carry out a comprehensive survey, giving each a traffic light score.

- Green** Good condition: little or nothing to do
- Amber** Good Condition: but work needed to bring it back to Green
- Red** Poor condition: to replace or carry out major work to bring in back to Green

A full and comprehensive report is submitted to the client with our recommendations and a cost to bring each asset back to a Green condition. The Quote also includes the price to retrofit sensors and linking each one to our monitoring software AVK Assist. We also include SQ Codes on each which provide the client and ourselves with a record of what has been done to each asset, together with photo's and geo mapping, making it easy to monitor and easy to know what is needed if it were to ever require a future service.

# Smart Water & Pressure Management

## EXPECT... Lasting Innovations

### Streamlining the Installation of Smart Water Valves on Your Network.

In today's world, the integration of smart technologies into our infrastructure is becoming increasingly vital. One area where this is particularly evident is in water management systems. With concerns about water scarcity, leaks, and efficient resource allocation, there's a growing demand for solutions that offer real-time monitoring and control. Smart water valves and assets are at the forefront of this transformation, offering the ability to remotely manage water flow, detect leaks, and optimise usage. However, the installation process for these systems can often be complex and daunting. That's where our expertise comes in.

We specialise in simplifying the installation of smart water valves and assets on your network. Our approach is centred on three key pillars: **expertise**, **efficiency**, and **reliability**.

**Expertise:** Our team comprises experienced professionals who understand the intricacies of smart water technology inside and out. From assessing your infrastructure to selecting the right valves and assets for your specific needs, we provide expert guidance every step of the way. Our knowledge extends beyond just installation; we also offer comprehensive training and support to ensure you get the most out of your smart water system.

**Efficiency:** We understand that downtime can be costly and disruptive. That's why we prioritise efficiency in our installation process. Through meticulous planning and streamlined procedures, we minimise disruption to your operations, ensuring a smooth transition to your new smart water system. Our team works swiftly and effectively, utilising the latest tools and techniques to get the job done efficiently without compromising on quality.

**Reliability:** When it comes to water management, reliability is paramount. You need to have full confidence that your smart water system will perform as expected, day in and day out. That's why we place a strong emphasis on reliability throughout the installation process. From ensuring robust connections to conducting thorough testing and quality assurance checks, we leave no stone unturned in guaranteeing the reliability of your system. Moreover, we offer ongoing maintenance and support services to address any issues promptly and keep your system running smoothly in the long term.



In addition to our technical expertise, we also prioritise customer satisfaction. We understand that every project is unique, and we tailor our approach to meet your specific requirements and preferences. Whether you're upgrading an existing system or implementing a new one from scratch, we work closely with you to deliver results that exceed your expectations.

By choosing Glenfield Invicta for your smart water valve installation needs, you're not just investing in cutting-edge technology – you're investing in peace of mind. Our commitment to expertise, efficiency, and reliability ensures that your smart water system is installed correctly the first time, giving you confidence in the integrity and performance of your infrastructure.

In conclusion, the installation of smart water valves and assets on your network doesn't have to be a daunting task. With the right partner by your side, it can be a seamless and hassle-free experience. At Glenfield Invicta, we have the expertise, efficiency, and reliability to make your smart water installation a success.

Contact us today to learn more about how we can help transform your water management system for the better.



Scan for more info on Smart Water

# Mechanical Installation

## Project Focus - Dry Docks

### Project Overview

The work was focused on refurbishing the Dry Dock, to increase the operational capacity and allow the shipyard to compete for global refurbishment contracts. The main contractor contacted us as Glenfield Invicta installed the existing valves many years ago our engineering team conducted an in-depth survey to find a solution to their problem.

### Specific Requirements

Our Engineering & Design Team conducted a comprehensive survey of the site and established that the valves and cast-iron pipework, which had been in service for almost a century, were beyond economical repair and we were commissioned to refurbish the pump discharge. The project required the removal of the existing steelwork access platform, valves and pipework and the supply and installation of a modern equivalent replacement.

After the cast iron pipework was removed from site it was reassembled and precise measurements taken to create a template, a duplicate carbon steel pipework system was then fabricated in sections. Many of the pipework fittings were custom made including a DN1500 to DN1000 reducing tee and a 40-degree bend.

### Challenge

The logistics of the project were far from straightforward, as the pumping station is 8m deep and in line with the base of the dock. The entry to the pumping station was via a 2.6m<sup>2</sup> access hatch at ground level, with materials having to leave and enter this way. Completion During site work, our engineers adhered to rigorous Health & Safety guidelines. The entire team had successfully completed confined space training, and an emergency response team was readily available at all times.



Extraction of the old pipework, gate valve and check valve



Installation of new pipework, electrically actuated knife gate valve, flange adapter, and slanted seat check valve.



# Project Focus - King George VI Reservoir

### Project Overview

Thames Water engineers identified that two of the top draw-off valves had seized in the closed position and the spindles were rotating but there was no linear movement of the valve gates. A camera survey was conducted to determine the root cause of the failure, this survey clearly showed that the threads had been 'stripped' from both the spindles and the pocket nuts.

The valves were originally designed to be manually opened and closed, but later were retrofitted with an actuator and gearbox arrangement, this arrangement, combined with other gearing on the valve appears to have contributed to excessively high operating torques for valves of this design.

### Specific Requirements

Glenfield Invicta were commissioned to design and implement a solution that would restore the valves to full operational capacity, Barhale's civil engineering team was responsible for project managing the valve repair works. The King George VI project exemplifies the scenarios where Glenfield Invicta's expertise and experience are crucial in tackling complex engineering challenges. The success of this project hinged on the strong collaborative relationships fostered between our engineers and the Barhale, and Thames Water teams and demonstrates we can operate independently, or work as part of a multidisciplinary team.

### Challenge

The outlet valve tower, located in the south of the reservoir, houses eight valves at four draw-off levels, these are 48" wedge gate valves which have been in place for over seventy years. The challenge was to refurbish the top draw-off valves and return the reservoir to a fully operational state and allow water to be drawn off from the top level.

The design of the tower meant that removing the spindles for detailed investigation and replacement would be challenging; these were almost 2.5m (96") long and 11.5cm (4.5") in diameter. A detailed programme of works was developed and agreed, with close attention paid, in particular, to the sequencing of the many of the steps required to remove and reinstall the spindles.

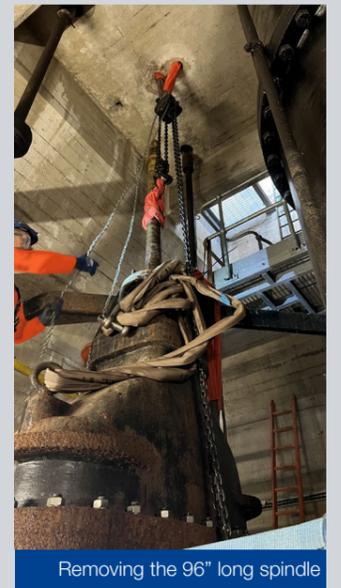
These challenges required comprehensive and thorough risk assessments and detailed method statements to ensure safety at every stage.



View of King George VI Tower



The original valve



Removing the 96" long spindle



Skates used to move valves

# Sustainability

## AVK Group's Commitment to Sustainability.

Glenfield Invicta is part the AVK Group, a family-owned business employing nearly 5,000 employees with over 100 production and sales companies globally.

As a major industrial group of companies with an international footprint and first-class reputation, AVK recognises and embraces its responsibilities to contribute to a sustainable future for our society.

The UN's 17 Sustainable Development Goals (SDGs) guide global sustainable development until 2030. These goals acknowledge the interconnectedness of social, economic, and environmental progress. The AVK Group recognise our shared responsibility. SDGs 6 (clean water and sanitation) and 9 (Industry, Innovation, and Infrastructure) align closely with our business model, but we also engage with other goals strategically or through decentralised initiatives.

### SUSTAINABLE DEVELOPMENT GOALS



## Our Activities

In today's world, sustainability is everyone's responsibility. Our ongoing commitment to optimising processes and production benefits our company, employees, customers, and the environment. Traditionally, we have had a strong focus on innovation and development of new and optimised products of high quality and with a long lifetime and recyclability investments for the benefit of the company, our employees, customers, and the environment.

We recognise the environmental impact which is why we and all the production companies across the group are certified according to ISO 14001 in respect of environmental management.

## Repair, Refurb and Reuse

We have the experience and expertise to assess the viability of repairing and refurbishing assets, which has a positive impact on your Carbon Footprint as well as protecting vital resources and the environment.

### Valve Refurbishment Carbon Savings

#### Glenhove and Gowanbank Pumping Station

**Issue:** The scope of works for both schemes included the removal, refurbishment, and re-installation of 4 x DN900 and 4 x DN600 submerged discharge valves situated in chambers used to store treated drinking water.

**Our approach:** We presented the client with a comprehensive solution that outlined the significant cost, timescales, and the carbon savings to refurbish the eight valves compared to replacing them with new.

**Carbon Saving:** 154 Tonnes\*



\*This figure represents the carbon savings achieved by refurbishing existing valves instead of manufacturing new ones. The calculation is based on the Inventory of Carbon and Energy (ICE) Database, 2019.





IF YOU NEED HELP WITH YOUR PROJECT, PLEASE CONTACT US BELOW AND USE REFERENCE: ESS



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