



JK FABRICATIONS LTD

# COMPANY PROFILE BROCHURE

ENVIRONMENTAL ENGINEERING  
SOLUTIONS

# Company Overview

At JK Fabrications Ltd we are an engineering company that takes pride in our family roots, with an aim to continue to successfully grow our business. Our company values are incorporated into everything we carry out and we seek to work with like-minded companies.

Established in 1998, JK Fabrications Ltd specialises in efficient, effective and environmentally sensitive solutions to the Water Treatment, Waste Water, Waste to Energy, and Pharmaceuticals Industry.

With over 30 years of experience delivering expertise in the industry, JK Fabrications Ltd has become one of the front runners and will keep challenging ourselves and others to improve our Environment as we believe that 'Our Environment, is our Future'.

With ease of access to Northern Irelands principal motorway network and equal distance between both Belfast Airports and Dublin Airport, JK Fabrications Ltd 50,000 Sq/ft premises in Newry is the perfect location to produce and deliver your project.

## Why Choose JK Fabrications Ltd?

At JK Fabrications Ltd we offer our services throughout the UK and Ireland delivering every project to the highest possible standards while ensuring the long-term success of our business by contributing economically, environmentally and socially to the communities in which we operate. By staying true to our company values we are able to grow and maintain relationships and build a sustainable business.



Cost Effective



Quality



Customer Focused



Quicker Turnaround Time



The Full Package

# Services



## Design

At JK Fabrications Ltd we have a fully equipped in-house design team with over 65 years' combined technical, manufacturing and sector-specific experience, that are highly skilled and trained using the very latest design software.



## Manufacture

We have built our reputation by producing specialised products for the waste to energy, wastewater, water treatment, and pharmaceutical industries. Our experienced welders and fabricators along with our state of the art machinery make sure that your project is taken to the next level.



## Installation

JK Fabrications Ltd have a dedicated core team of engineers, mechanical fitters and coded welders who have over 30 years of experience in the supply and installation of our fabricated products to a wide range of projects throughout the UK and Ireland.



## Commissioning

Our experienced commissioning engineers will attend the site to oversee the installation of systems, plants and equipment. They will commission, test and optimise the equipment as well as providing the operators with operation and maintenance manuals.



# PRODUCTS

JK Fabrications Ltd offers a portfolio of products designed to effectively meet the demand to treat water and wastewater. From stainless steel pipework to picket fence thickeners, our team at JK Fabrications Ltd evaluates the needs of our clients and helps them find the best solution.

With our 50,000 sp ft workshop and state of the art design team we are able to bring our clients projects to life and ensure that their wastewater and water treatment keeps running.



# Conical Settlement Tank

JK Fabrications Conical range are high quality sedimentation tanks, offering treatment over a large surface. They have a wide variety of applications where settlement or storage is required.

All submerged components are manufactured with 304 or 316 stainless steel, while all handrailings and supports are manufactured in mild steel. All units are custom made to satisfy the required treatment capabilities.

## STANDARD CONICAL SETTLEMENT TANK

### KEY FEATURES AND BENEFITS



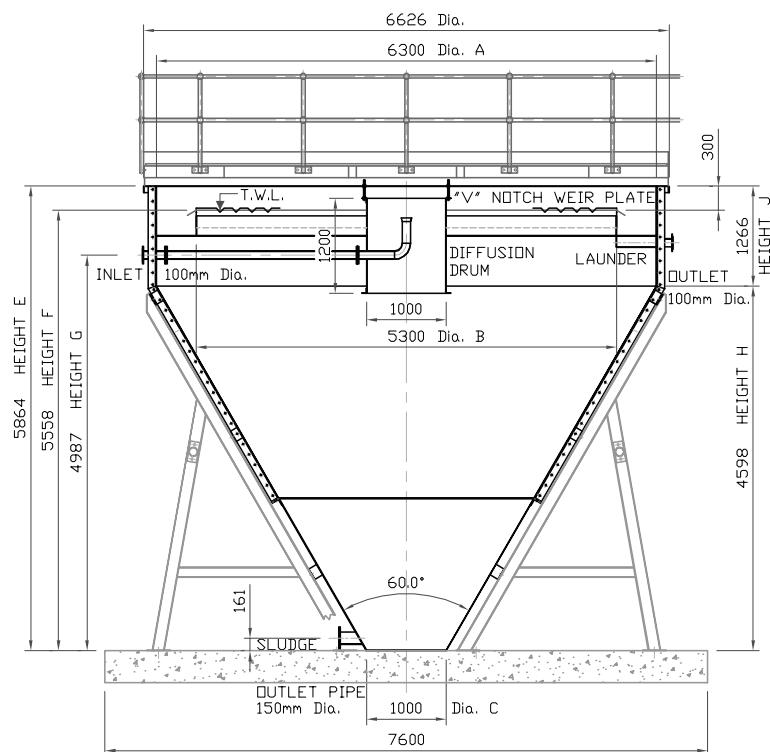
Tanks can be made to withstand very strong alkalis or acidic PH levels.



Structural design and manufacture in accordance with BS EN 1993 parts 4-1 and 3-2.



Supplied complete with internal launders, diffuser drum, scum board, and piping.



## STANDARD RATE TANK DATA

Model Reference	INT. Diameter (A)	Launder Diameter (B)	Base Diameter (C)	Height (E)	Surface Area	T.W.L. Capacity	Weight
63-53	6300mm	5300mm	1000mm	5864mm	22 s.q.m	83 m <sup>3</sup>	8.7 Tonne
52-44	5200mm	4400mm	825mm	4840mm	15.2 s.q.m	47 m <sup>3</sup>	6.2 Tonne
41-34	4100mm	3450mm	650mm	3816mm	9.3 s.q.m	23 m <sup>3</sup>	4.1 Tonne
31-26	3100mm	2600mm	500mm	2886mm	5.3 s.q.m	10 m <sup>3</sup>	2.5 Tonne
25-21	2500mm	2100mm	400mm	2327mm	3.5 s.q.m	5 m <sup>3</sup>	1.6 Tonne

# Picket Fence Thickener

For over 30 years JK Fabrications Ltd has been designing, manufacturing, installing and commissioning Picket Fence Thickeners (PFTs) for the wastewater industry throughout the UK and Ireland.

Our thickeners have been installed for operation at potable water treatment plants and wastewater works, for which the process conditions can be particularly difficult. These projects have included PFT's spanning from 1.5 meters to 20 meters. These thickener plants have been fabricated from a range of materials, including stainless steel and galvanised and/or painted mild steel.



For our clients' peace of mind, we design all Picket Fence Thickeners to the relevant British Standards and Wimes standards as well as the client's own, on-site requirements. We immerse steelwork in galvanised mild steel with epoxy paint coating as standard, other materials, such as stainless steel are available on request. All our units have a design life that exceeds 20 years and are able to handle high sludge loads.

## Features and Benefits



Full overhead gantry bridge mounted either on the tank wall or on externally located supports.

Automatic Sensor for Directional Drive.

Emergency stop and circuit breakers included.

# Scraper Systems

JK Fabrications Ltd offer two types of scraper systems, circular and rectangular, for settlement and flotation tanks. The primary goal of these scraper systems is to help with the desludging and descumming of primary and final settling tanks.

All structures are designed to withstand all loads and stresses and are manufactured to the highest engineering standards for quality. All bridges are manufactured in mild steel with a galvanised finish and all submerged materials are stainless steel, GRP or protective coated GMS to ensure longevity.

## Rotating Bridge Scraper System

Our Rotating Bridge Scraper System is designed to remove settled sludge and scum from Circular Settlement Tanks. The equipment in a tank comprises of galvanised fabricated bridge structures complete with an underwater scraper system and surface scum removal.

We offer two types of Rotating Bridge Scraper System, Half Bridge Scrapers which have a diameter range of 5 meters to 35 meters and Full-Bridge Scrapers, which have a diameter range of 25 meters to 50 meters.



## Rectangular Scraper System

Our Rectangular Scraper Systems are designed for primary and secondary settlement tanks up to 20 meters in width. Our Scraper incorporates a range of features designed to offer the most cost-effective option whilst minimising maintenance requirements throughout the product lifecycle.

All our systems have a targeted design life that exceeds 20 years and are able to handle high sludge loads.



## Features and Benefits



Motored gears, bearings, etc. are supplied coated according to the customer requirements.

All electrical components are installed, tested and certified by experienced electricians.

All materials are locally sourced from our approved supplier list.

# Vessels

JK Fabrications Ltd specialises in the manufacturing of many different types of vessels including storage and pressure vessels. We have provided many custom fabricated vessels to a range of companies around the UK and Ireland for a variety of products and applications.

## Storage Vessels

One of the most commonly requested vessels is the storage vessel as they are required in various industrial processes. Used primarily to store liquids, these vessels are also available in a range of sizes depending on the exact role or product to be stored. When it comes to the material used to manufacture the vessels we would always suggest the use of stainless steel due to the advantages it has over other materials, however, to keep cost to a minimum, internal liners of different materials are used in addition to the vessels external material.

## Pressure Vessels

JK Fabrications Ltd can meet all your needs for pressure vessels. Our design and manufacturing facilities offer fast, efficient and cost-effective designs. Generally, pressure vessels carry specific requirements that require a custom fabrication solution. At JK Fabrications Ltd we can build a wide variety of solutions, fabricated to unique customer specifications and required codes. In the production of pressure vessels, the processes of pre-bending and rolling are key, in order to obtain the client's desired tolerance. JK Fabrications Ltd offers 4-roll plate bending ideal in these processes to meet the correct tolerance.



## Features and Benefits



DWI approved for the manufacture of stainless steel vessels and tanks for use in potable water.



All Pressurised Vessels are designed, manufactured and commissioned in accordance with the Pressure Equipment Directive (PED) 2014/68/EU Standard.



Manufacturing capability of pressure vessels to BS13445 or PD5500.

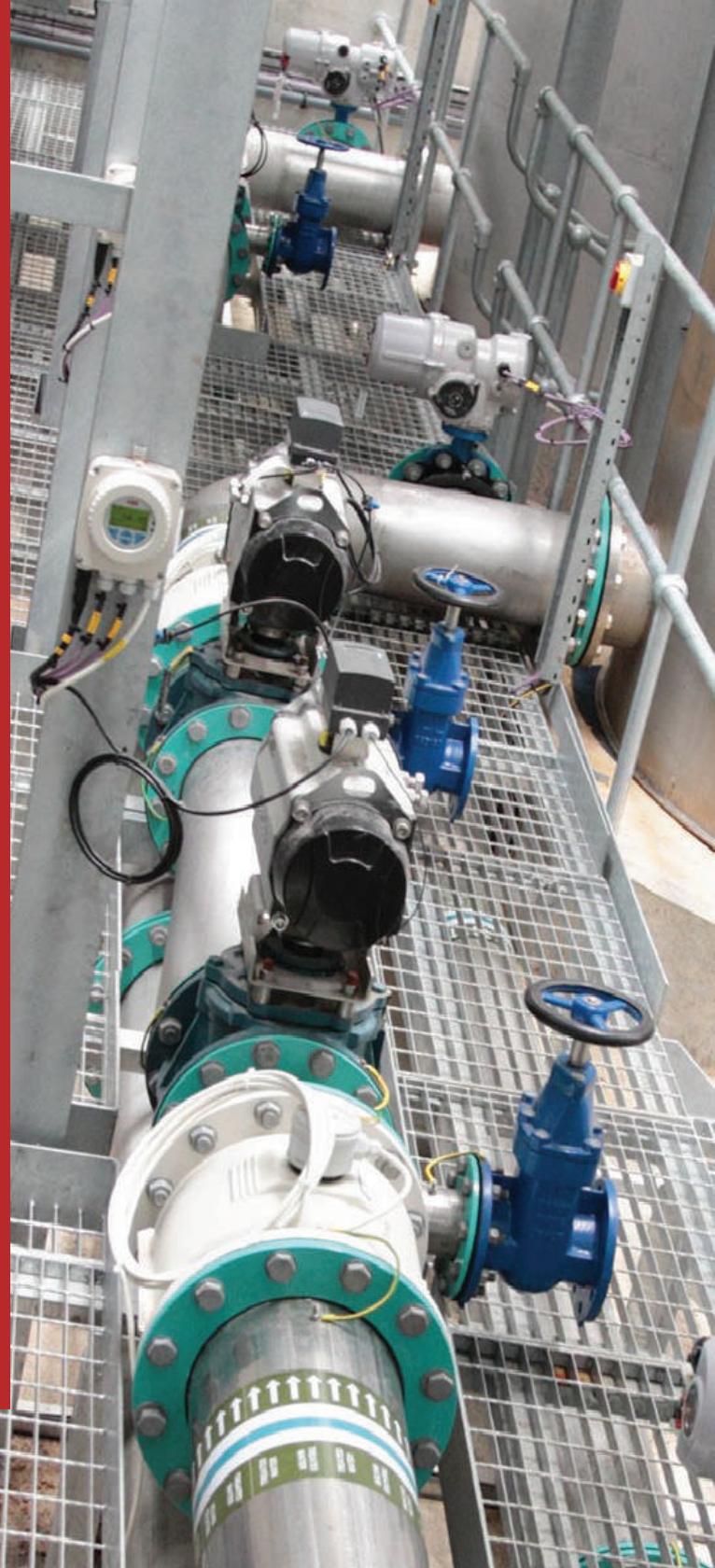
# Pipework

At JK Fabrications Ltd we offer all ranges and sizes of both stainless steel and mild steel pipework.

We have full in-house capacity of providing an off-site pipework fabrication service, on-site pipework fabrication and installation service. We accept pipework enquiries for any size project, stand-alone or as a part of a package along with our other engineering solutions.

Our experienced welders and fabrications are coded to BS-EN287 Part 1, with all our welding procedures being certified in accordance with BS EN288-3, BS EN ISO 15614:2004 and A2 2012.

We can provide non-destructive testing such as dye penetration tests, UT testing, MPI testing and X-Ray testing at our workshop depending on the client's requirements.



## Features and Benefits



In-house CNC profiler allows the development of bespoke products for non-standard applications.



DWI approved for the manufacture of stainless steel pipework for use in potable water.

# RECENT PROJECTS







## Crossness and Beckton Thermal Hydrolysis Plants

**Contractor** - Imtech Process and Laing O'Rourke

**Location** - East London

**Price** - £4,000,000

**Contract Length** - 4 years

### Project Scope:

Due to an increase in population, the Crossness and Beckton Sewage Treatment Works needed a large upgrade to provide an improved sludge treatment capacity. Tamesis joint-venture of Imtech Process and Laing O'Rourke were awarded the multi-million-pound project, contracting JK Fabrications Ltd as the design and build sub-contractor for the mechanical elements of the scheme.

This included the design, manufacture, and installation of various diameter stainless steel pipework, ranging from Ø100mm to Ø1200mm. JK Fabrications Ltd were also contracted to design, manufacture and install various sizes of mild steel de-sludge pipework ranging from Ø100mm to Ø1200mm and various sizes of inlet baffles.

# WASTE TO ENERGY



# Anaerobic Digestion Demonstrator (Lt-AD) Plants

**Contractor -** NVP Energy

**Location -** Multiple locations across UK and Ireland

**Contract Length -** 2 years

## Project Scope:

Through a successful application for the Horizon 2020 Grant, a partnership between JK Fabrications Ltd and NVP Energy was established to help deliver the low-temperature anaerobic digestion (Lt-AD) demonstrator projects.

It started in 2015 where JK Fabrications Ltd designed and manufactured the first of their Stainless Steel Digesters in accordance with the process specification detailed by NVP Energy. The 10.5m x Ø3.5m digester was then delivered and installed into the ABP Food Group process plant in Lurgan, Co. Armagh, Northern Ireland by JK Fabrications Ltd.

In 2016 the partnership expanded on the success of the original design by developing a second, larger digester, (12m x Ø4.5m) which was placed by the Arrabawn Co-Operative Group a dairy processor in Kilconnell, Co. Galway, Ireland. Once again JK Fabrications Ltd designed, manufactured, delivered and installed the second of their stainless steel digesters in accordance with the process specification detailed by NVP Energy.

2017 saw a further two Stainless Steel Vessels (12m x Ø3.5m) being manufactured by JK Fabrications Ltd for NVP Energy. This time the digesters were destined for the Heineken Brewery Plant in England and the Blith Wells Waste Water Treatment Works in Wales. Again the delivery and installation of the digesters were also undertaken by JK Fabrications Ltd.

This was a conceptual design brought to JK Fabrications Ltd by NVP Energy which we then fully developed, bringing the concept to life.





## Wakefield Anaerobic Digestion Plant

**Contractor** - Imtech UK and RosRoca Envirotec

**Location** - South Kirkby, England

**Price** - £2,000,000

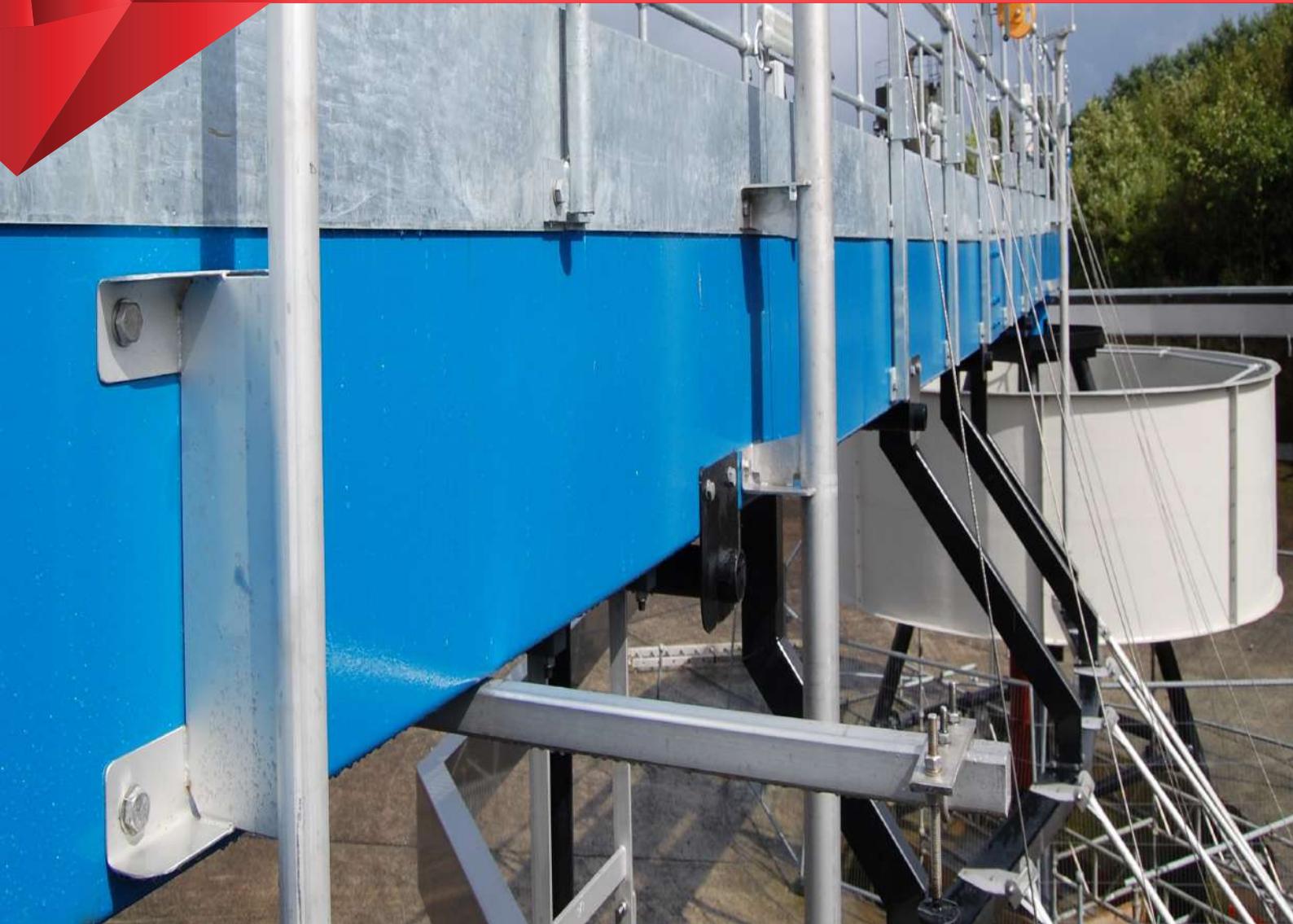
**Contract Length** - 3 years

### Project Scope:

Shanks Group began construction on its municipal waste treatment facility in South Kirkby, Wakefield, England. The plant uses autoclave and anaerobic digestion (AD) technology to treat waste and processes up to 230,000 tonnes of municipal waste a year, while also increasing the local authorities landfill diversion rate towards 90%.

JK Fabrications Ltd joined the project in 2015, working with Imtech UK and RosRoca Envirotec, employed as a design and build sub-contractor for the mechanical elements of the project. As part of the design element, JK Fabrications Ltd developed a modular pipe rade system. This allowed the majority of the pipework to be assembled off-site simplifying the initial process, minimising the install period on-site and reducing site safety risks. Also designed, manufactured, installed were 4 No. Pasteurisation Stainless Steel Vessels of size 6.5m x Ø3.5m.

# WASTEWATER



## Culmore Waste Water Treatment Works (WwTW)

### **Project Scope:**

JK Fabrications Ltd were contracted by Lagan Water on behalf of NI Water for the complete refurbishment of the two aging rotating scraper systems that had been in constant service for a number of years.

The project consisted of the complete design, manufacture, and installation of two rotating 15 metre long Half Bridge Scraper systems, along with Diffusion Drums, Launder Channels, Weir Plates, Pipework, and Mesh Flooring walkways, as well as this JK Fabrications Ltd designed Automated Scum Removal System. Onsite activities also included the decommissioning of the two existing scraper bridges before works started.

**Contractor -** Lagan Water

**Location -** Co. Derry/  
Londonderry,  
Northern Ireland

**Contract Length -** 4 months



## Oldham Waste Water Treatment Works (WwTW)

**Contractor** - Black and Veatch

**Location** - Oldham, England

**Price** - £1,500,000

**Contract Length** - 1 year

### Project Scope:

In 2015, Black and Veatch were awarded the Oldham WwTW contract by United Utilities to deliver the upgrade at the aging Oldham Wastewater Treatment Works. As part of this scheme, the existing Picket Fence Thickener (PST) tanks had to be refurbished.

JK Fabrications Ltd was sub-contracted by Black and Veatch for the refurbishment of the existing Primary Settlement Tank facilities. This contract included the decommissioning and disposal of the 6 pre-existing rectangular scraper bridges which had been in service for over 20 years. JK Fabrications Ltd were then to design, manufacture, install and commission 6 new bespoke 15-meter Rectangular Scraper Bridges, including weir plates and associated pipework.



## Didcot Waste Water Treatment Works (WwTW)

### Project Scope:

JK Fabrications Ltd were selected as a Thames Water framework contractor to carry out work on the upgrade of the Didcot Water Treatment Works (WwTW).

JK Fabrications Ltd were contracted to design, manufacture and install a complete 8.43m Picket Fence Thickener, which included the GRP Tank (8960 Ømm) (including GRP roof), Stainless Steel Picket Fence, diffusing drums, weir plates, and access pipework. Also supplied was the galvanised fixed bridge and access walkways and stairs.

To complete the project, JK Fabrications Ltd also undertook the full testing and commissioning of the Picket Fence before it was handed to the client for introduction into the works.

**Contractor** - Eight2O

**Location** - Didcot, England

**Contract Length** - 7 months

# WATER TREATMENT



## Claylake Water Treatment Works (WTW)

**Contractor** - Doosan Enpure Ltd

**Location** - Co. Armagh, Northern Ireland

**Price** - £250,000

**Contract Length** - 3 months

### Project Scope:

NI Water commissioned a project for additional conventional treatment as part of a Remedial Works Scheme. The Claylake remedial process is located in a new building built over existing refurbished slow sand filters.

Sub-Contracted in, under Enpure Ltd, JK Fabrications Ltd were tasked with the design, manufacture, and installation of coated Mild Steel Rapid Gravity Filter (RGF) Tanks, Dissolved Air Flotation (DAF), Manganese Filter Tanks as well as Stainless Steel Granular Activated Carbon (GAC) Tanks. Also involved within this project was the design, manufacture, and installation of all associated stainless steel process pipework along with galvanised mild steel walkways and stairways installed throughout the building.



## Irton Water Treatment Works (WTW)

### Project Scope:

Due to deterioration in raw water quality and increased risk of pesticides within the raw water supply, the Irton Quality Scheme was developed. JK Fabrications Ltd were sub-contracted by Glan Agua to design, manufacture, supply and install the process pipework and the pressurised GAC as part of the upgrade scheme on the existing Irton WTW.

**Contractor** - Glan Agua

**Location** - Yorkshire, England

**Contract Length** - 5 months



## Dunore Point Water Treatment Works (WTW)

**Contractor** - Dalriada Water Services

**Location** - Co. Antrim, Northern Ireland

**Price** - £2,000,000

**Contract Length** - 1 year

### Project Scope:

Dunore Point is a 33-acre Northern Ireland Water Treatment Works on the shore of Lough Neagh in South Antrim. The project entailed the upgrade on Dunore Point Water Treatment Works with a total capacity of 180 MI/d.

JK Fabrications Ltd was sub-contracted by Dalriada Water Services to complete the design, manufacture, installation, and commission of all process pipework, baffles, weirs, and troughs.

The scheme included the complete mechanical fit-out of the new Manganese and GAC filter galleries, the plant gallery, DAF cells, and associated works.

# PHARMACEUTICALS



## Norbrook Laboratories, Carnbane Works

**Contractor** - JK Fabrications Ltd

**Location** - Co. Down, Northern Ireland

**Price** - £250,000

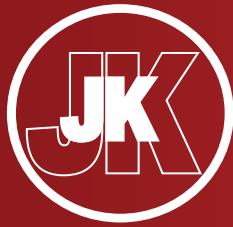
**Contract Length** - 6 months

### Project Scope:

Norbrook Laboratories came to JK Fabrications Ltd with the view to upgrade their Carnbane Works premises, following on from the upgrade to their other two factories. The upgrade consisted of the supply, delivery, installation, and testing of 304 stainless steel chilled and cooling water pipework ranging from 100mm to 200mm in diameter. Also included in the supply and installation was the lagging and cladding for all required pipework.

JK Fabrications Ltd also supplied and installed a stainless steel, grade 304, 10,000 Litre Hot / Cold pressurised vessel, along with all associated pipework. The Vessel was designed and manufactured to the Pressure Equipment Directive (PED) 2014 / 68 / EU Standard.

JK Fabrications Ltd in-house design team collaborated with the Norbrook design team to assist them with the detailed design to help deliver this scheme.



## JK FABRICATIONS LTD

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