

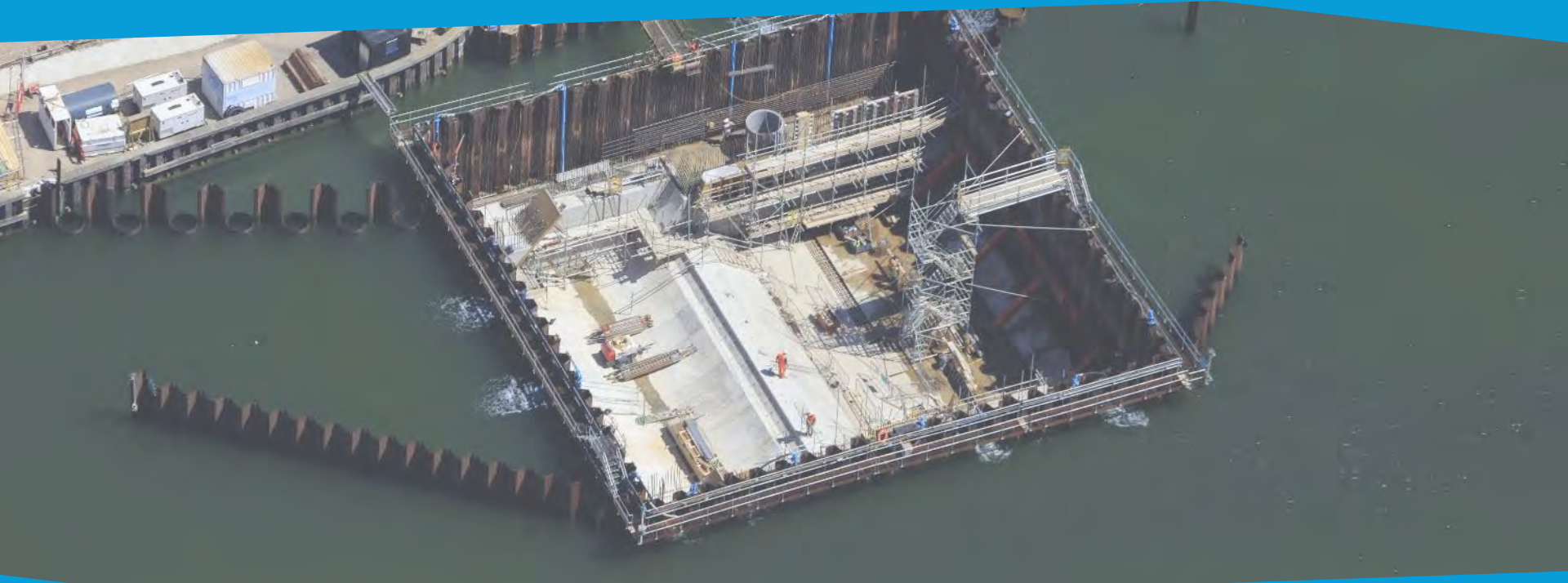


WJ GROUNDWATER
Expert in Groundwater



WJ UK
Expert in Water Management

Groundwater Control Capability



WJ UK are groundwater control experts combining a global reach with local expertise and an impressive track record



WJ UK

Expert in Water Management

Our Team

WJ UK employ over 70 staff so you can rest assured we have the numbers, knowledge and experience required to deliver your project.

Our drilling and dewatering operative staff are all competent, CSCS, CPCS, NVQ qualified, and experienced in the groundwater management environment.



WJ UK and its staff are active members of the British Drilling Association, Ground Source Heat Pump Association and Heat Pump Federation highlighting our commitment to best practice and driving industry standards.





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Groundwater Control (Dewatering)

WJ are global leaders in construction dewatering and with the experience of thousands of successful projects all over the world we have delivered 100's of projects over £1M and over 50 no. projects over £5M in value.

We offer a wide range of groundwater & surface management solutions including wellpoints, deepwells, ejectors/ejectors, sump pumping and over-pumping – whatever your water control requirement WJ are there to assist.



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HS2

mace **DRAGADOS**



42

Design Notes Issued



927

Wells Drilled



16.90 km

Meterage Drilled



1758

Environmental Surveys



I&M Systems

West Coast
Mainline
Connection

Balfour Beatty **VINCI**

NORTH

Washwood Heath
Rolling Stock Depot
Curzon
Street
Station
Birmingham
Interchange
Station

LM

EKFB

CENTRAL

Calvert Infrastructure
Maintenance Depot

ALIGN

North Chiltern
Tunnel portal

SKANSKA

COSTAIN

STRABAG

mace

DRAGADOS

Balfour Beatty

VINCI

SYSTRA

Old Oak
Common
Station

Euston
Station



15

Dewatering Systems



73,299,577,286

Litres Pumped



7212

Water Samples tested

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Thames Tideway (UK)

- Groundwater Control for a new 25km long 'super' sewer along the route of the River Thames in central London.
- WJ involvement at more than half of the 24 formal Thames Tideway sites.
- WJ involvement from the early planning and design stages as well as throughout the construction phase.
- WJ delivered a wide range of services including pumping tests, surface, shaft and tunnel dewatering systems, wellpoints, deepwell and ejectors, water abstraction wells, groundwater monitoring, remediation and probing.



Location: London, UK
Client: Thames Tideway

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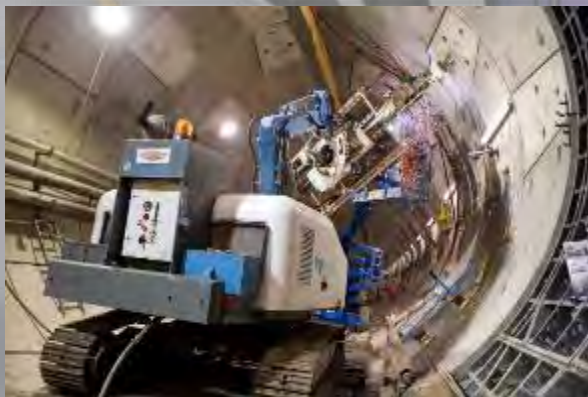
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Crossrail (UK)



- Dewatering for a new 117km underground train line underneath London.
- WJ involvement from early planning stages undertaking pumping tests.
- During construction works WJ provided a wide range of services across the network to aid construction of station boxes, tunnels, cross passages portals and support structures.
- WJ services include surface and in-tunnel wellpoint, deepwell, ejector systems, recharge systems, passive wells, pumping tests, abstraction well drilling and decommissioning and probing.
- Allowed WJ to develop our expertise for in-tunnel drilling and dewatering.

Location: London, UK

Client: Crossrail

40
1981
2021
YEARS



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HS2



"WJ performed extremely well providing technical and operational input throughout the design and construction process including with a number of challenges throughout the works. I would have no hesitation but to use them for similar scopes of work in the future based on their professionalism, knowledge and conduct."

Martin Stanley - Geotechnical Manager Costain Vinci Bachy JV Tideway East

"WJ have proved invaluable on this project to date and have brought to the table a wealth of technical knowledge which they transferred easily to operational implementation saving time and money on the project. The whole WJ team, right up to senior management level, have willingly engaged with SCS to solve technical and schedule challenges to ensure that the program has stayed on track and gone the extra mile to support the project."

Richard Patten - Engineering Director SCS JV HS2 S1-S2

"Initial field works were carried out well and to spec. Communication and the working relationship of the site teams and reporting/technical teams of Socotec and WJ has been good. It was a very collaborative approach which resulted in a product the end client was happy with."

Nicholas Vowles-Sheridan - SOCOTEC HS2 Curzon St Station

"Very good subcontractor to work with, helpful and willing to 'go the extra mile' for a critical project for BBV."

Oliver Coe - Sub Agent BBV JV Marston Box

"WJ were able to integrate into the wider team allowing effective delivery for all parties. Their capacity to adapt to changing site conditions proved invaluable in enabling works to complete on time."

David Brown - Engineering Manager Tideway West

"Great communication and transparency from management and commercial team."

Christina Trigle - Tunnel Sub Agent Riverlinx JV Silvertown Tunnel

"WJ have not only provided expert delivery of works to date they have freely given expert advice that has proved invaluable to the BBV team."

Chris Dusek- Senior Groudwater Lead BBV JV HS2 N1-N2

"Good communication with the site team and good reactivity from the site team too."

Audrey Brun- Sub Agent BBV JV HS2 Bromford Tunnel West

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Well Drilling Services

WJ UK operate 7 no. specialist drilling rigs capable of drilling wellpoints, ejector wells, passive relief wells, recharge wells and deepwells from 100mm (4") up to 400mm (24") diameter and ranging up to 200m in depth for both surface and in-shaft/tunnel environments.

At WJ we continually invest in our drilling crews, rigs and ancillary equipment to ensure we remain at the forefront of our industry.





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In-Tunnel/Shaft Drilling & Groundwater Control Services



We offer a fleet of articulated mast drilling rigs which enable us to achieve full radial tunnel access for probe, ejector, TAMS and wellpoint drilling services. This coupled with bespoke in-tunnel pumping equipment has enabled us to deliver cost effective and efficient solutions for our customers

WJ are the world's leading contractor for in-tunnel drilling and in-tunnel construction dewatering systems. WJ have worked, and are currently delivering, our services on the largest UK and overseas infrastructure projects.





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Pumping Test Services

WJ has an unrivalled capability to perform a wide range of pumping tests including:

- Step testing
- Constant rate testing (CRT)
- Multiple well abstraction to recharge testing
- Hydraulic balance testing



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Remediation & Treatment

WJ design, install and operate rapidly deployable water treatment and solids control solutions. Our range of pump and treat options together with early contractor engagement allows us to provide a bespoke, well budgeted and targeted treatment scheme.

WJ has experience in dealing with petroleum hydrocarbons, chlorinated solvents, metals and pesticides.

Treatment technologies and options include:

- Suspended Solids control (via Lamella plate settlement tanks, or duplex bag filters)
- CO₂ pH balancing and correction
- Oil/Water separators
- Chemical dosing
- Plate/tower air strippers
- Carbon and sand filters
- Ion exchange filters





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Instrumentation & Monitoring

WJ can collect high quality data electronically via direct or remote streaming data links from various geotechnical and/or water monitoring instrumentation deployed across the project, allowing 'real-time' data to be distributed to WJ engineers and customers.

Real time monitoring trigger alerts can be used to warn operators and project teams of problems such as pump failures, power supply issues and pre-set (project specific) trigger alert thresholds to ensure early action is taken to minimise disruption to the project and reduce risk

Data can be easily accessed or transferred via API interface into other systems as required. Data can be viewed online using our data visualisation platform with preconfigured SCADA, Web GIS and trending screens.



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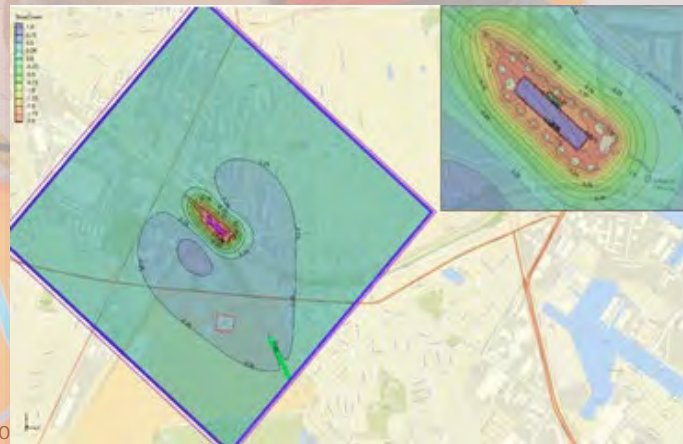
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Design & Consultancy Services

WJ have a dedicated design team and can offer a range of in-house technical and design services including:

- Statutory Permitting & Licencing Applications
- Initial assessments of information to produce conceptual groundwater models
- Design Statements and calculations
- Design of pumping tests
- Pumping test interpretation, analysis and reporting
- 2D & 3D groundwater modelling and CAD drawings





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Equipment Capability

WJ hold a wide range of construction dewatering and groundwater treatment equipment in each country and at our International export yard facility in Nottinghamshire, which includes bespoke pumping plant test bay & test tank, fabrication & plant maintenance bays, equipment warehousing, electrical workshop and outdoor storage yard





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Equipment Capability Cont.



WJ have the following plant & equipment available to meet the needs of any size and complexity of project anywhere in the world:

- 2500+ submersible electric borehole pumps ranging from 0.37kw through to 37kw
- 80+ piston vacuum wellpoint pumps (both electric and diesel available)
- 50+ electric vacuum pumps
- 300+ submersible electric sump pumps
- 15 No. Surface electric Ejector pumps (in containerised units)
- 200+ no. electrical pump control cabins (12 channel through to 42 channel) complete with Auto Mains Failure (AMF) functionality
- 10 no. dedicated electrical pumping test cabins
- 200+ monitoring data logger control units
- 10000+ VWT and diver dataloggers
- 300+ electrical pump starter panels (DOL, SS and VSD options available)
- Over 100km of 4" and 6" poly discharge pipe

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