Omega Hydrotechnics Ltd

Statement of Company Capabilities

28th February 2025

Company Information.

Omega Hydrotechnics Ltd was established in March 2018.

The company is based in Lincoln but offer specialist polyurethane resin injection solutions throughout the United Kingdom and Ireland.

The company was set up by John Dolan.
John has 12 years' experience in polyurethane resin injection systems.
Initially starting as Grouting Framework Manager for May Gurney in 2010.
This continued after the purchase of the company by Kier through to the establishing of Omega Hydrotechnics Ltd in 2018.
Throughout his time as framework manager, he established a high understanding of the systems being used and through this, spent the latter part of his time at Kier working directly with The Canal & River Trust in the early-stage design of bespoke solutions on various schemes throughout the network.
The knowledge gained during this period has allowed him to continue developing unique bespoke solutions that our clients have come to expect and trust.

The company is CHAS Accredited to Elite standard proving our commitment to both our clients and workforce regarding Safety, environment, and corporate responsibilities we put at the front of our business dealings.

Omega Hydrotechnics Ltd offer bespoke solutions for the following.

- Polyurethane resin injection,
- Leak sealing,
- Resin Injection & Grouting,
- Ground stabilisation,
- Slab Lifting.

Whilst the company only has a limited number of years behind them, we already have a proven track record in delivering unique solutions to various requirements backed up with a "no compromise" attitude to safety.
All our workforce are highly trained and certified, which includes yearly reviews of safety training and renewal of certificates as and when required.
Even though we are a small company, our internal safety systems echo our commitment to providing both our clients and workforce the peace of mind that their wellbeing will always come before profit.
This approach is one of the differentiators we have against our opposition in the marketplace and is why we have established long term partnerships, already, with a number of leading companies within our industry.

Omega Hydrotechnics Ltd offer a tailored approach to our customers' requirements from pre-start to completion of contracts.
This approach is the same regardless of scheme value and starts with early contractor involvement to establish exactly what the issues are and what the customer requires or expects.
From this early involvement, we can provide a detailed cost-effective solution to the problem.
During the construction phase of the works, we provide daily updates to show what stage the works are at and any issues that may have arisen during this time. We are completely transparent during this stage and when issues arise or changes need to be made, we can react quickly and honestly with our customers to come up with solutions that are beneficial to all parties.
On completion of the works, we provide detailed information to assist clients in understanding what has been completed and how final accounts have been produced.
This detailed information is also used to populate any safety files that need to be produced.
Even after completion of the works we provide a continuous back up service should any issues or queries need to be addressed.

Completed Contracts.

The following information demonstrates Omega Hydrotechnics Ltd competence in delivering bespoke solutions within the polyurethane resin injection industry.

These are only a small example of schemes completed and additional information can be provided on request for further successful schemes completed.

1. **Saltersford Lock. Weaver Navigation. Project Number P/10115**

   Client – Kier & Canal & River Trust.

   Scope – Seal leaks between side-by-side locks to allow main contract repair works to progress within the wide lock.

   Omega Hydrotechnics Ltd were approached by Kier Integrated Services to provide a solution and budget to seal the leaks from the narrow lock into the wide lock which was preventing the dewatering of said lock to allow major downstream cill works to be completed.

   The final agreed solution involved installing a grout curtain behind the existing narrow lock wall over a length of 14m to a depth of 10m and inject polyurethane resin to seal all leak paths between the locks.

   Photos –

   Pre-start Photo of one of the cracks within the narrow lock wall

Completion photo following injection.
Resin has expanded through the ground strata from an injection depth of 10m into the existing structure and sealed the leak.

2. **Blenheim Palace – Resin Injection to Grand Cascade**

Client – Land & Water Services.

Scope – Seal leaks within Grand Lake and Grand Cascade.

Omega Hydrotechnics Ltd were requested to produce a detailed bespoke solution to seal leaks for the Grand Lake which were destabilising the Grand Cascade on the World Heritage Site at Blenheim Palace.
The solution was 2-fold, the first involved in installing a 60m long grout curtain to a depth of 3m to prevent water from the lake passing through fissures under the approach washing out underneath the structure of the Grand Cascade.
The second part of the works involved injecting resin through the Grand Cascade structure to seal up voids and leak paths beneath.

Total resin used on the scheme was more than 7000 litres which, at the time, was the largest single amount of resin injected on one scheme.

Photos –
Phase 1 of the works involved the installation of a 60m grout curtain to a depth of 3m
At this time, this is the largest polyurethane resin grout curtain injected in the UK.

Phase 2 involved sealing voids and fissures beneath the Grand Cascade.
Expanded resin can be seen within the main structure.

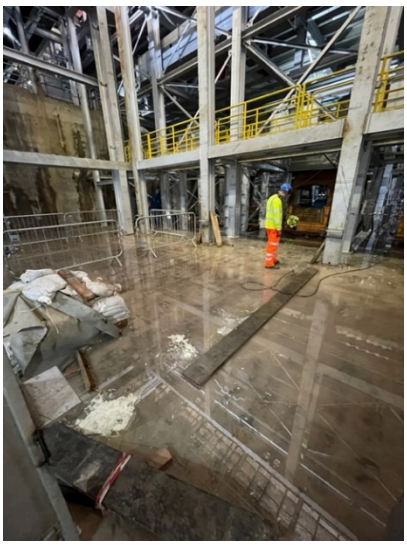
Completion photo of Grand Cascade once reopened

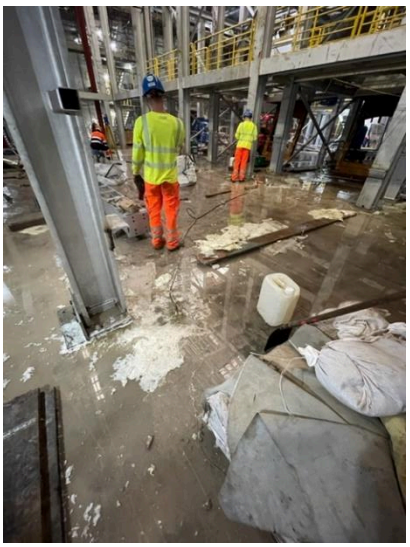
3. Guardian Industries SRG Global Goole Glass

Client - Guardian Industries UK Ltd

Scope – Omega Hydrotechnics Ltd were requested to attend the glass works at Goole to provide a solution to seal the existing floor under the glass furnace during the construction of the new furnace. These works were part of our collaboration with Prime Resins in the USA as their preferred European installer.
The works required the injection of Prime 900 XLV hydrophilic resin to be injected to a depth of 2m below the existing floor to seal all leak paths through the existing concrete slab to prevent water getting below the furnace which could produce potentially explosive steam due to the furnace operating temperature of 2000°C.
Due to extremely tight programme constraints to was only possible to seal the area's most at risk. It has been agreed that Omega Hydrotechnics Ltd will return during the next planned shutdown to complete the remaining areas of floor and to address additional leakage noted through the existing concrete walls.

Photos –
Injection within the existing furnace area.





Completed area now drying out.

4. Lake Windermere Boat House

Client – Lakeshore Properties Ltd

Scope – Omega Hydrotechnics Ltd were tasked with stabilising an existing 150-year-old boat house built on the shore of Lake Windermere which was slowly sinking into the lake following adjacent construction works.
In conjunction with the structural engineer, we developed a solution that involved injecting 6m below the structure into the existing lakebed to stabilise the silts above the hard rock layer and stabilise the original foundation structure.

Photos –
Resin injection down 6m into existing silt layer in lake.

Resin injected has expanded from 6m below through silts and original granular material to surface.

Photo of area once completed and cleaned up.

5. National Lock Grouting P11643 – Lock 30w HNC

Client – Kier Integrated Service Ltd

Scope – Omega Hydrotechnics Ltd were tasked to provide a solution to seal existing leaks within the existing lock walls and prevent future movement within the structure.
The works were part of the 2020-2021 National lock Grouting.

Photos
Pre-start photos of existing leaks through lock approach wall from within lock

Completion photo showing leaks sealed

6. Carr Mill Reservoir

Client – Kier Integrated Services & Canal & River Trust

Scope – Omega Hydrotechnics Ltd were tasked with sealing leaks through the existing reservoir spillway wash wall as part of the remedial works identified in the Panel Engineer 10-year inspection.

In total 43 Linm of spillway wall was treated.
Injection depth was 2m below the existing spillway floor.
On completion of the works, all leaks had been sealed and the spillway completely dried which was the first time this has happened in a number of years.

<u>Photos</u>
Prestart photos of the spillway wash wall sowing extensive leaks passing through.

The existing spillway was continuously wet from the leakage through the spillway wash wall.

Completion photo of the spillway wash wall completely sealed.
No water now passes through onto the spillway.

Completion of the existing spillway which following the resin injection had dried out for the first time in several years.

7. Slade Brook Reservoir

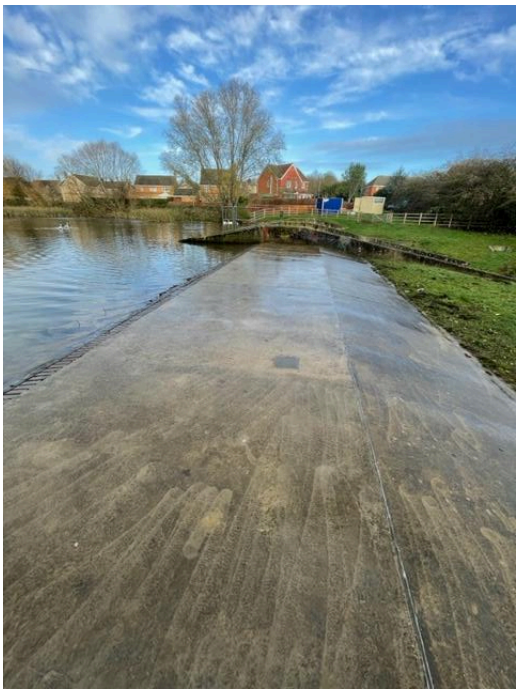
Client – North Northamptonshire Council

Scope – Omega Hydrotechnics Ltd were the preferred supplier to complete a number of repairs to the existing reservoir following the Panel Engineer10 year Inspection.
it was noted within the inspection a number of leaks were evident on both auxiliary spillways. Additional leaks were also noted within the 'Draw Down' chamber.
In total 30m of resin injection to a depth of 3m was completed along the spillway apron to seal the leaks passing below the original construction.
Additional resin injection was completed to a depth of 3m below the existing chamber to seal structural leaks entering the chamber.

Photos
Omega Hydrotechnics Ltd specialist 3m long lances were inserted at 500mm centres and our resins injected to seal the leaks.

Following injection around the chamber structure, our resins had expanded and sealed all the leaks within the chamber.

On completion of the works, both auxiliary spillways were cleaned and all drill holes made good and the site handed back to the client.



8. Widnes Chemical Plant

Scope – Omega Hydrotechnics Ltd were tasked with stabilising the ground under a number of Nitric Acid silos that were moving due to ground subsidence.
The issues were twofold, ground water passing below had caused the ground to destabilise and this in turn was causing movement of the bund and silos.

The solution used was to inject our polyurethane resin under the bund and silos to both stabilise the ground and seal this ground to prevent any future movement.
This involved drilling through the base of the bund to a depth of 2m and injecting the resin. This was completed over the whole bund area with injections being placed at 500mm centres in a grid pattern of the whole area.

Photos

Our systems require minimum storage area and equipment is kept within the site vehicle.

Due to water movement under the bund and structures the silos were starting to move and become unstable.

Resin was injected into the ground to a depth of 2m. The resin then stabilised the ground under the bund and silos preventing future movement.

Following the success of this scheme, we have completed a number of schemes at their West Thurrock site, stabilising various bunds and silos which have been affected by movement.
From the success of all these schemes, we have now been tasked with stabilising a Caustic Soda silo at their West Thurrock site. The silo holds when full 6500 ton of liquid.
Following our extensive investigation works a solution was presented to the client.
Works are due to start in the summer of 2025.

9. Cocker Aqueduct

Client – The Canal & River Trust

Scope – extensive leakage had started to cause damage to the listed aqueduct structure. Omega Hydrotechnics Ltd were tasked with sealing the leaks through the structure to ensure the long-term future of the structure.

Pre-start dye testing was completed to confirm the exact locations of the leak paths.

Once the works were completed all leaks had been sealed and the structure protected from any future damage.

Additional Works Completed.

Omega Hydrotechnics Ltd have completed the following schemes, information can be provided on request.

Client – Canal & River Trust

Scheme –

Plantation Farm – scheme involved dye testing over a length of 100m along an existing canal to identify where existing leaks into an adjacent housing development were coming from.
Once the leaks paths had been identified, we resin injected several areas totalling 50m to a depth of 2m to seal all leak paths.

Montgomery Canal – scheme involved installing resin injection to seal leaks through two bridge abutments around existing stop plank groves.
This was part of a multi-million-pound scheme completed by volunteers over a period of 5 years to return sections of the original canal to allow boats to return and use the length of the canal network.

Client – Kier Integrated Services Ltd

Scheme –

Lock 6 Leeds/Liverpool canal on National Lock grouting 2020-2021 – seal leaks in lock
Wanless Culvert – seal leaks from canal into existing culvert running under the canal
Winnington Bridge – seal and strengthen existing steel deck structure on bridge.
Saltersford Lock Remedial Grouting – fill and resin inject sink hole in lock landing and reinstate grass areas.
Marple Embankment – Resin injection to voids in embankment adjacent to canal caused by badger setts.
Palmerston Embankment – resin inject existing culvert leaking into canal
Lock 16 Ashton Canal – P11925 - National Grouting 2021-2022 – resin inject to seal leaks through lock.
Swan Mill Embankment – Resin injection to seal leaks through canal wash wall into third part land.
Lock 3 Leeds/Liverpool canal, Lock 65 Leeds/Liverpool Canal, Lock 16 Ashton Canal, on the National Grouting Framework 2021-2022. All 3 schemes involved sealing long term leaks from within the locks.

Client – Land & Water Services Ltd

Regents Canal Wash Wall – resin injection to 600m of leaking canal wash wall

Client – Various Private Clients

20 The Mount York – resin stabilise existing 2-storey building to prevent further movement.
67 Station Road Bristol – seal artesian well from flooding existing land. Total depth of injection was 26m.

The above examples give a broad idea of the type of works completed by Omega Hydrotechnics Ltd and are not exhaustive should further examples be required.

Additional references can be provided by previous clients if required, please contact John Dolan at john.dolan@omegahydrotechnics.co.uk for further information.