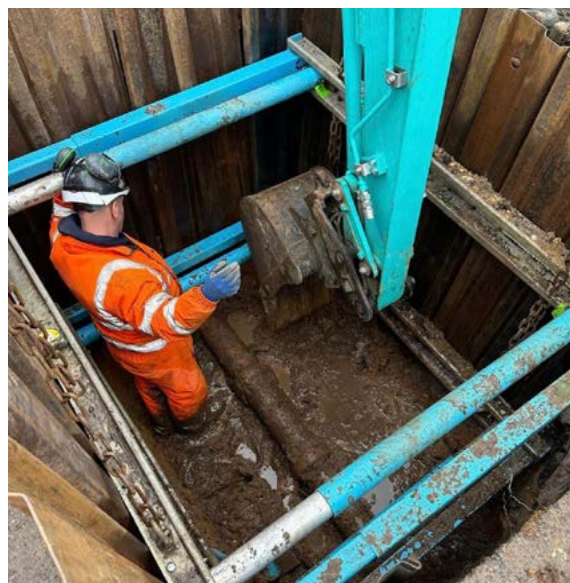
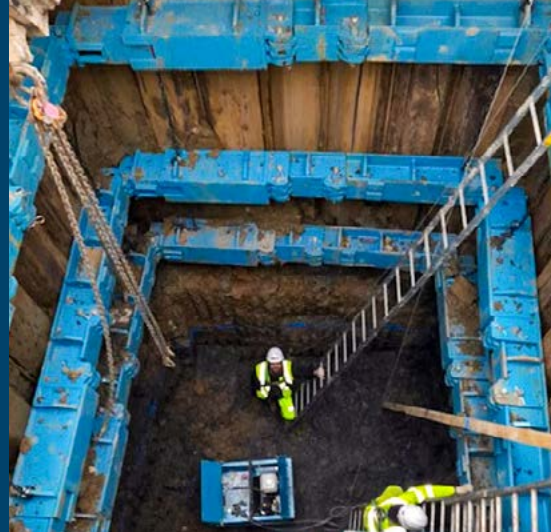


GROUND ENGINEERING



YOUR #01 PARTNER

Early design and planning, as well as best practice collaboration and implementation, lead to a more sustainable building process and a better project. We offer a range of services and equipment for shallow and deep excavations, to help teams to win projects with buildability in mind.

**START
EXPLORING**



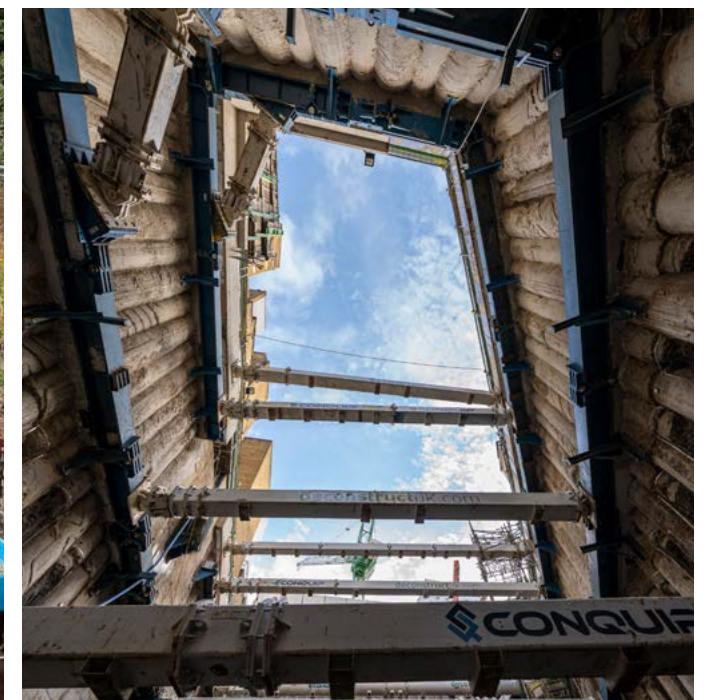


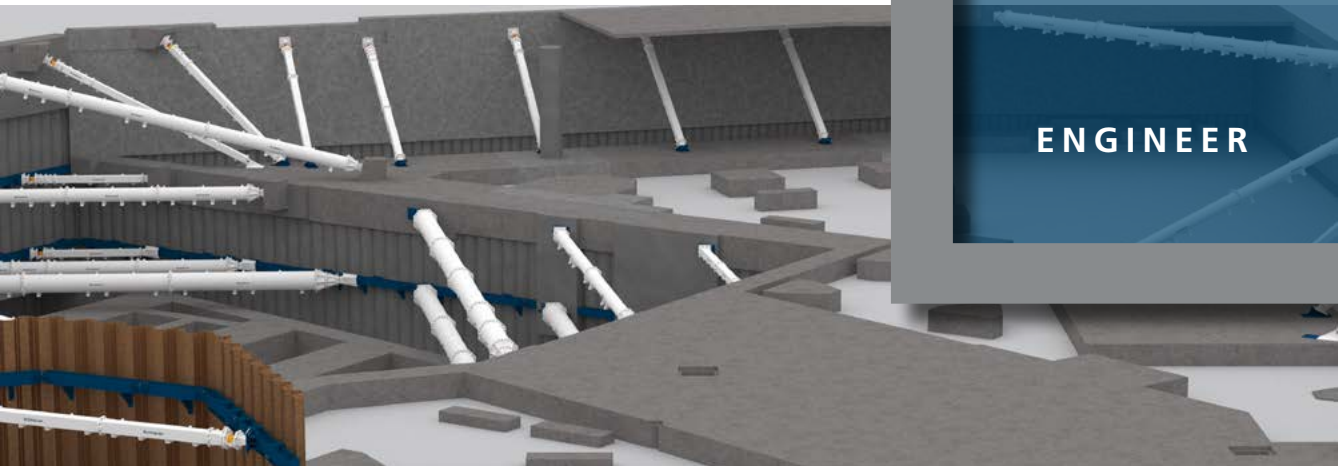
BUILDING TODAY, CREATING TOMORROW

Conquip supplies pre-construction and ground engineering services and equipment to projects of all sizes, both within the UK and around the world. With our integrated design, fabrication and transport services, we offer end-to-end support to our clients throughout the entire project delivery.

Our high-quality manufactured equipment includes a state-of-the-art modular propping system with load monitoring technology, hydraulic braces, frames, box systems, and trench access solutions, proprietary crane loading platforms and modular decking systems. We support this with site supervision options during all stages of installation, use and removal.

We also offer a range of products and services to support all stages of a project from site set-up and logistics management through to building or shaft loadout and façade completion. All products and services are fully supported by our own team of qualified civil, structural and mechanical engineers.





CONSULT

- Through early engagement with our in-house qualified civil and structural design engineers and experienced on-site teams, we work with teams to develop bids that win projects.
- We collaborate with all stakeholders to ensure a comprehensive understanding is achieved in the bid submission to meet target project milestones.

PLAN

- We leverage early-stage efficiencies with consideration for vertical, horizontal, install and removal sequences.
- We produce 3D and 4D phasing models produced to help accelerate programme timescales.



SUPPORT

- We provide a full service during all stages of the installation, usage and removal, ensuring temporary works designs are followed and equipment is operating at optimum levels.
- Supervising installation enables us to guide site teams and address any potential issues.
- Familiarisation training provided on all our equipment.
- Collaborating with site management teams helps us to manage all aspects of temporary works installation, from the delivery of equipment through to system sign-off.



OUR EXPERIENCE



MAJOR PROJECTS

Our in-house team of qualified civil, structural and mechanical engineers deliver value-engineered temporary works and project design engineering for complex projects that often require deep excavation.



GROUNDWORKS, UTILITIES & WATER

We work with many water, wastewater, gas and other utilities contractors on projects ranging from short-term, rapid response emergency pipe repairs and the installation of deep manholes through to the construction delivery of urban water treatment centres.



TRANSPORT

From major railway route upgrades to highways projects, our team's skills and our range of equipment have been used by major contractors to support excavations for mixed rail station developments and road junction construction.



TUNNELLING

We have worked on major projects around the world with complex, deep excavations involving large scale muck-away requirements, and loading in and out of materials with temporary cantilevered decks.



ENERGY

We work with many data centre contractors and on energy infrastructure projects around the UK. We support main contractors with excavation support equipment and temporary works designs for cofferdams and basement digs, as well as temporary loading platforms at the frame stage.

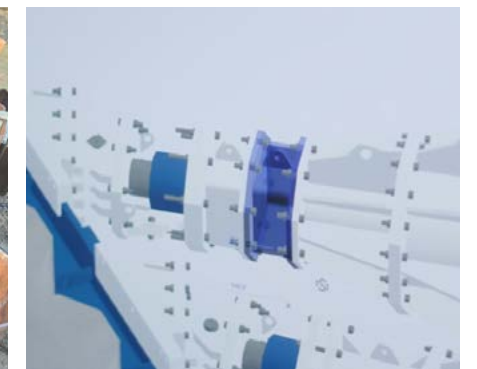


FROM DESIGN TO DELIVERY

Innovation and customer collaboration form the core of our design philosophy. With a focus on delivering buildable solutions that are programme efficient and offer the best value for our clients, our team is fully involved in the collaborative process to ensure that every design meets the unique needs of our clients.

From initial scoping of project requirements through to an engineered design (with geotechnical analysis for major projects), our Temporary Works team utilises state-of-the-art software and adheres to industry standards to provide tailored solutions for excavation support and vertical logistics.

- Specialisation in excavation support and vertical logistic challenges.
- Offering in-house temporary works designs, for temporary propping, box systems, hydraulic braces and waler frames.
- Providing support from initial sizing to in-depth geotechnical analysis.
- Utilisation of DeepEx software for accurate soil modelling and analysis.
- Design of brace frames and props according to Eurocodes and industry guidance.
- Combining propping design with load monitoring for site risk management.
- Providing modular logistics decks for space-constrained sites.
- Offering CantiDeck system installation temporary works design services.





EXCAVATION SUPPORT

We provide a complete end-to-end trench shoring service, including temporary works solutions and 3D modelling from our design team, as well as a range of products including site set-up, shoring equipment and trench work tools.

TEMPORARY WORKS DESIGN

Standard Shoring and Bespoke Shoring design packages are available on a next-day turnaround, providing your project with engineering drawings, calculations, risk assessments and check certificates.

STANDARD

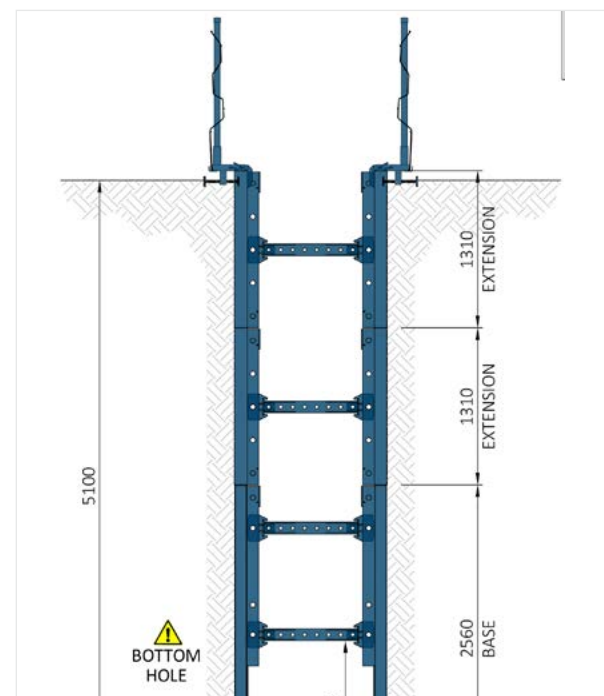
Our hire desk will provide a suitable solution for general site conditions. 24 pre-designed drawing packs are available.

STANDARD & CHECK CERTIFICATE

Verification that soils are suitable for a standard solution drawing, including an additional check certificate.

BESPOKE

Where a standard solution isn't suitable, our Temporary Works Engineers will design a bespoke package covering all aspects of your requirements.



BOX SYSTEMS

We offer standard Trench and Manhole Boxes with extensions for deep drainage applications and Mini, Midi and Lightweight versions, ideal for smaller capacity machines.

BACKHOE TRENCH BOX

- Length(s): 3.0m
- Struts: Incremental
- Working width range: 600-2400mm
- Maximum trench depth: 3.0m
- Safe Working Load: 20kPa



MINI TRENCH BOX

- Length(s): 3.0m
- Struts: Incremental
- Working width range: 600-2800mm
- Maximum trench depth: 4.0m
- Safe Working Load: 28kPa



LIGHTWEIGHT TRENCH BOX

- Length(s): 3.0m
- Struts: Incremental
- Working width range: 550-3985mm
- Maximum trench depth: 4.0m
- Safe Working Load: 27kPa



TRENCH BOX

- Length(s): 3.5m
- Struts: Incremental/High Clearance
- Working width range: 550-3985mm/ 2065-5000mm
- Maximum trench depth: 5.18m
- Safe Working Load: 30/50kPa



BACKHOE MANHOLE BOX

- Length(s): 2.5m, 3.0m
- Struts: Incremental
- Manhole ring size:
 - 2.5m Box: 1050/1200/1350mm
 - 3.0m Box: 1350/1500/1800mm
- Maximum trench depth: 3.0m
- Safe Working Load: 20kPa



MINI MANHOLE BOX

- Length(s): 2.0m, 2.5m, 3.0m
- Struts: Incremental
- Manhole ring size:
 - 2.0m Box: 1050/1200mm
 - 2.5m Box: 1050/1200/1350mm
 - 3.0m Box: 1350/1500/1800mm
- Maximum trench depth: 3.0m
- Safe Working Load:
 - 2.0m Box: 42kPa
 - 2.5m Box: 30kPa
 - 3.0m Box: 30kPa



LIGHTWEIGHT MANHOLE BOX

- Length(s): 2.5m, 3.0m
- Struts: Incremental
- Working width: 1375-4810mm
- Maximum trench depth: 4.0m
- Safe Working Load: 27kPa



MANHOLE BOX

- Length(s): 2.5m, 3.5m, 4.0m
- Struts: Incremental
- Working width: 1550-4990mm
- Maximum trench depth: 5.18m
- Safe Working Load:
 - 2.5m Box: 45/70kPa
 - 3.5m Box: 32/50kPa
 - 4.0m Box: 28/40kPa



MIDI DRAG BOX

- Length(s): 3.0m, 4.0m, 5.0m
- Struts: Fixed
- Working width range: 550-1850mm
- Maximum trench depth: 4.0m
- Safe Working Load: 20kPa



HIGH CLEARANCE DRAG BOX

- Length(s): 5.1m
- Struts: Fixed/Telescopic
- Working width range: 600-1000/1200-5100mm
- Maximum trench depth: 3.2m
- Safe Working Load: 25kPa



DRAG BOX

- Length(s): 5.1m, 7.1m
- Struts: Fixed/Hog Back
- Working width range: 700-3000/2190mm
- Maximum trench depth: 6.0m
- Safe Working Load:
 - 5.1m Box 30kPa
 - 7.1m Box 20kPa



ACCESS & SAFETY

Complementing our range of trench support equipment, we offer various safety and trench access solutions to accommodate all project requirements.

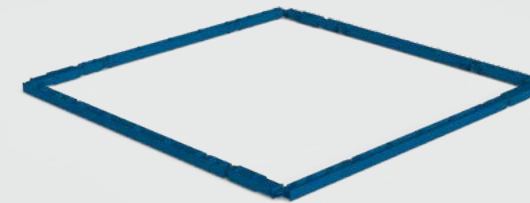
- Edge Protection
- End Panels
- Trench Access Platform
- Davit Fall Arrest System
- Manhole Safety Platform



ALUMINIUM WALER FRAME

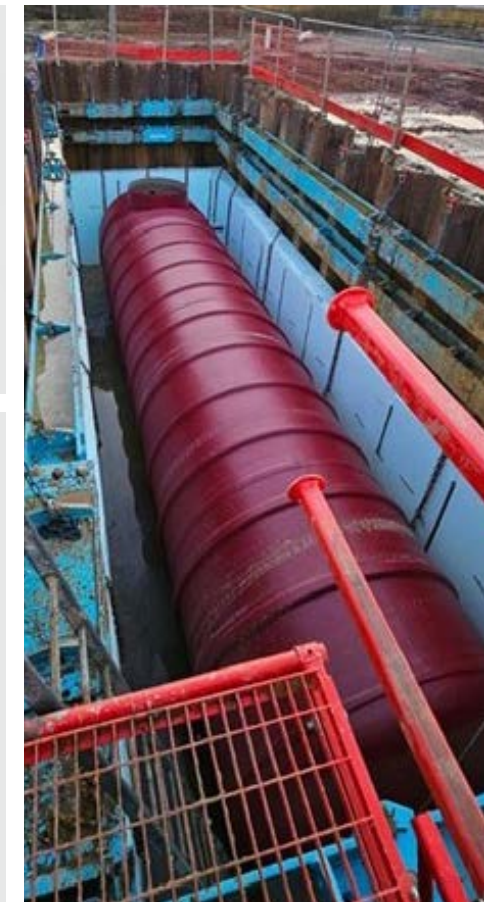
A two-sided support system for a safe and adaptable working area below ground, particularly on utilities projects.

- Used in conjunction with trench sheets for two-sided excavation support.
- Lightweight frame constructed from two hydraulic cylinder struts that attach to rails.
- Shoring fluid allows hydraulic cylinders to be pumped to the appropriate size of the excavation.
- Available in 2, 3, 4 and 5-metre lengths.
- 250, 500 and 1000mm strut extensions available.



300 BRACE

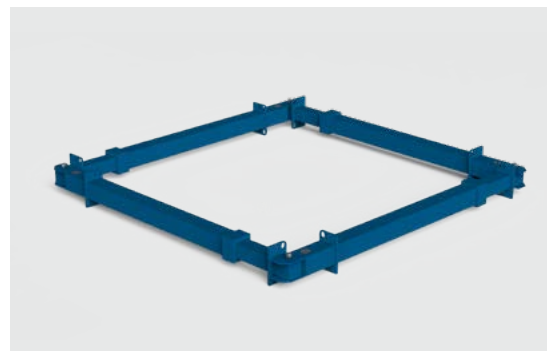
- Can be used for excavations from 2 to 15 metres without centre struts.
- Larger spans achievable with corner and centre struts.
- Used for cofferdams, basements and large interceptor, storage and fuel tanks.
- Modular extensions (0.5 to 6m lengths) and double pinned joints for easy installation and quick connection.
- 600kN double acting hydraulic with built-in lock-off valve.



MANHOLE BRACE

A four-sided hydraulic bracing used with trench sheets to provide a safe and secure excavation area for groundworks.

- Single and double acting braces available.
- Single acting brace (120 x 120mm section size) for excavations between 2 and 4 metres.
- Double acting brace (180 x 180mm section size) for excavations between 1.4 and 7 metres, including sheeting.
- Combination of braces can be used to suit varying excavations.
- Biodegradable fluid.



TEMPORARY PROPPING

We supply a simple to assemble, modular system, primarily based on four section sizes that provide a span range from 1 to 41 metres, at a Safe Working Load of 4000kN.

Our system includes:

- Range of strut sizes up to 1000mm diameter.
- Load monitoring.
- Waling Beams: single and double options, adjustable and fixed angle connections.
- Hydraulic Jacks, Cradles, Birdsmouths, Gallows Brackets and a wide range of ancillary items for connecting to different material types.
- Capability to hydraulically preload and lock off props to give the structural characteristics of a steel propped system.

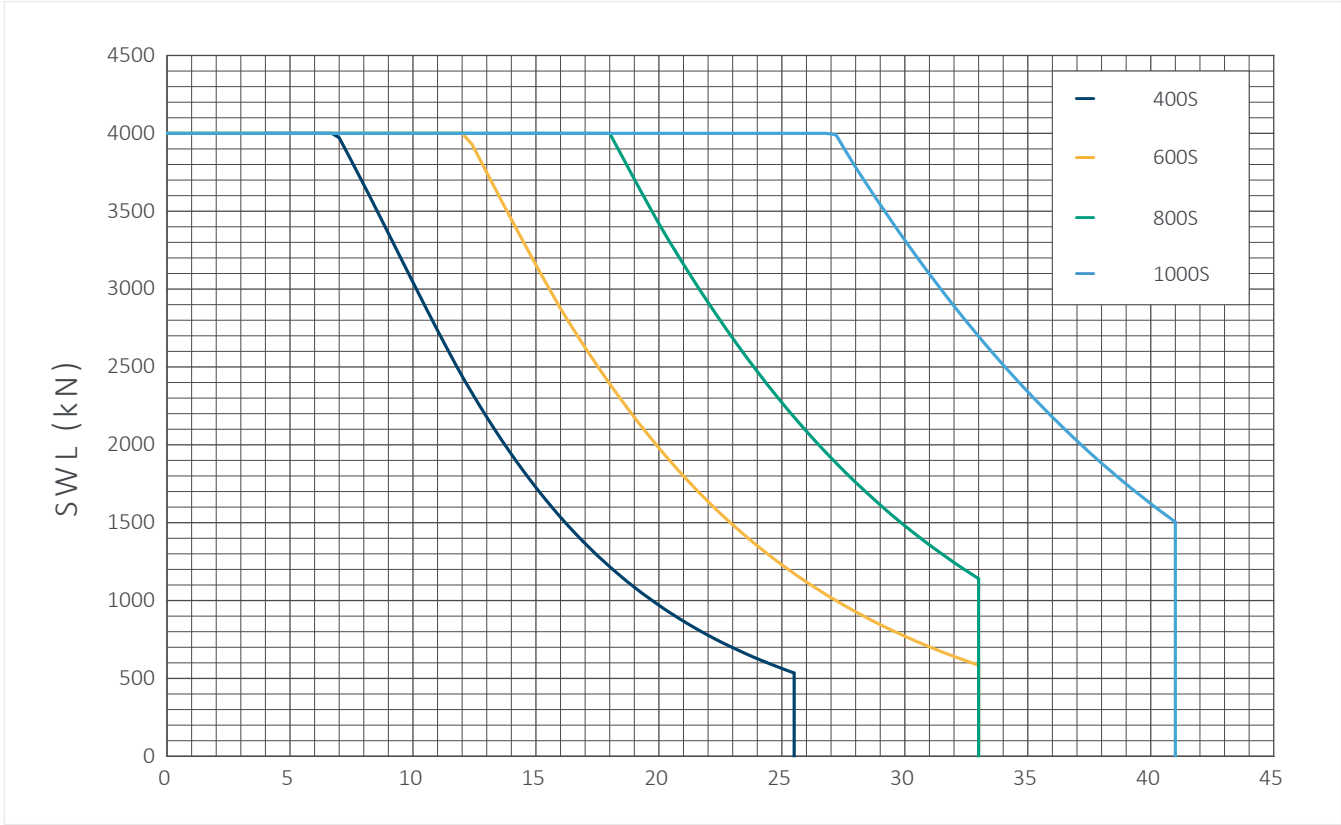


PROP SERIES OVERVIEW

TYPE	SPAN (m)	MAX SECTION WEIGHT (kg)
400 Series	up to 25.5	1660
600 Series	up to 33	2150
800 Series	up to 33	2150
1000 Series	up to 41	3520



PROP SIZING CHART



400 BRACE

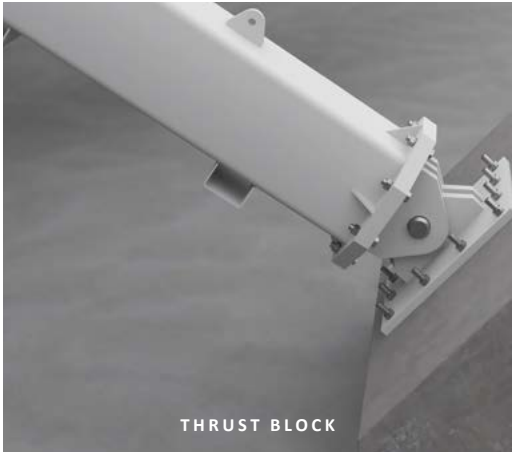
Waler Frames are used to brace or provide additional support to excavation liners, such as RC piled walls or sheet piles, to withstand high loads and help maintain the form of an excavation. Common applications include basement excavations, cofferdams and any deep structures.

- Waling Beam and Gallows Brackets provide additional support.
- Range of connection options to facilitate different support configurations.
- Modular configuration simplifies construction of larger frames, making it ideal for long excavations.
- Adjustable Waling Beam section allows for fine length alteration.
- Bolt-together modular sections are easy to assemble and can be installed using low capacity lifting equipment.
- Max section weight 3000kg.
- Section lengths between 0.25m and 8.0m.

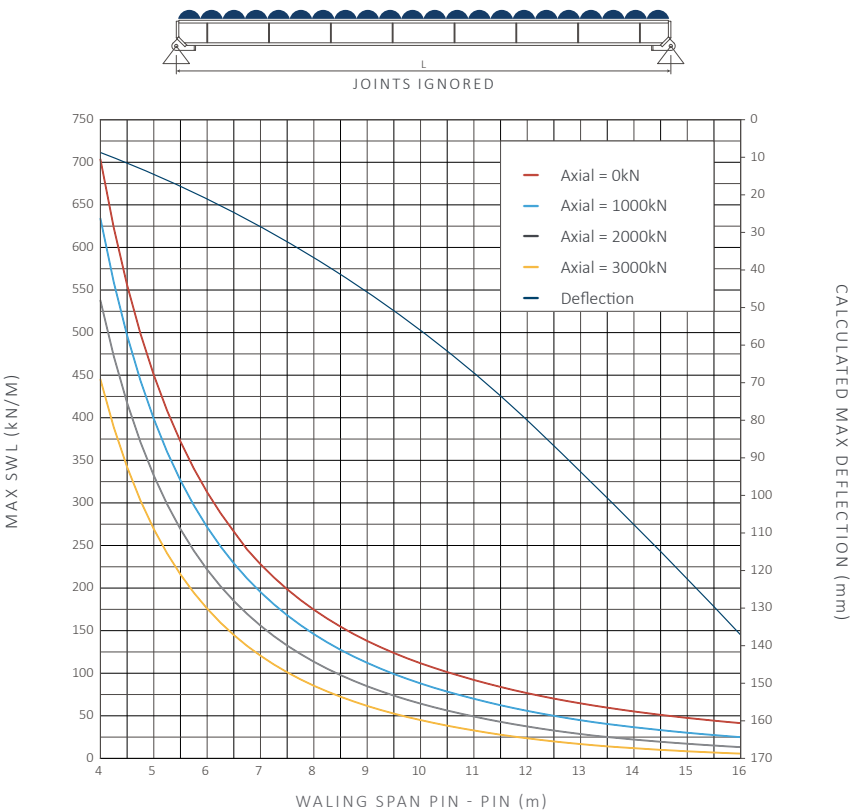


CONNECTIONS & ACCESSORIES

We offer a range of connections and accessories to support our modular propping system.



400 BRACE LOAD CHART | SWL SIMPLY SUPPORTED WALER



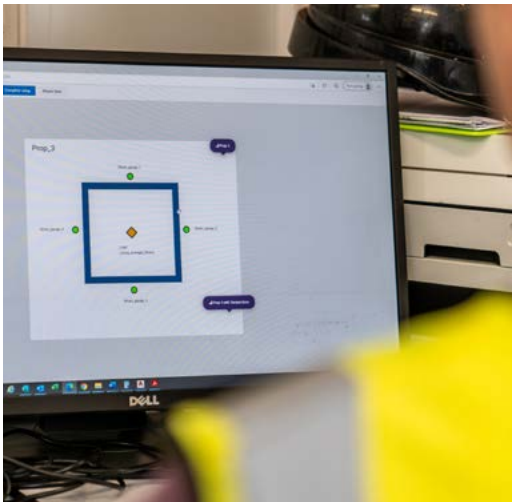
LOAD MONITORING SYSTEM

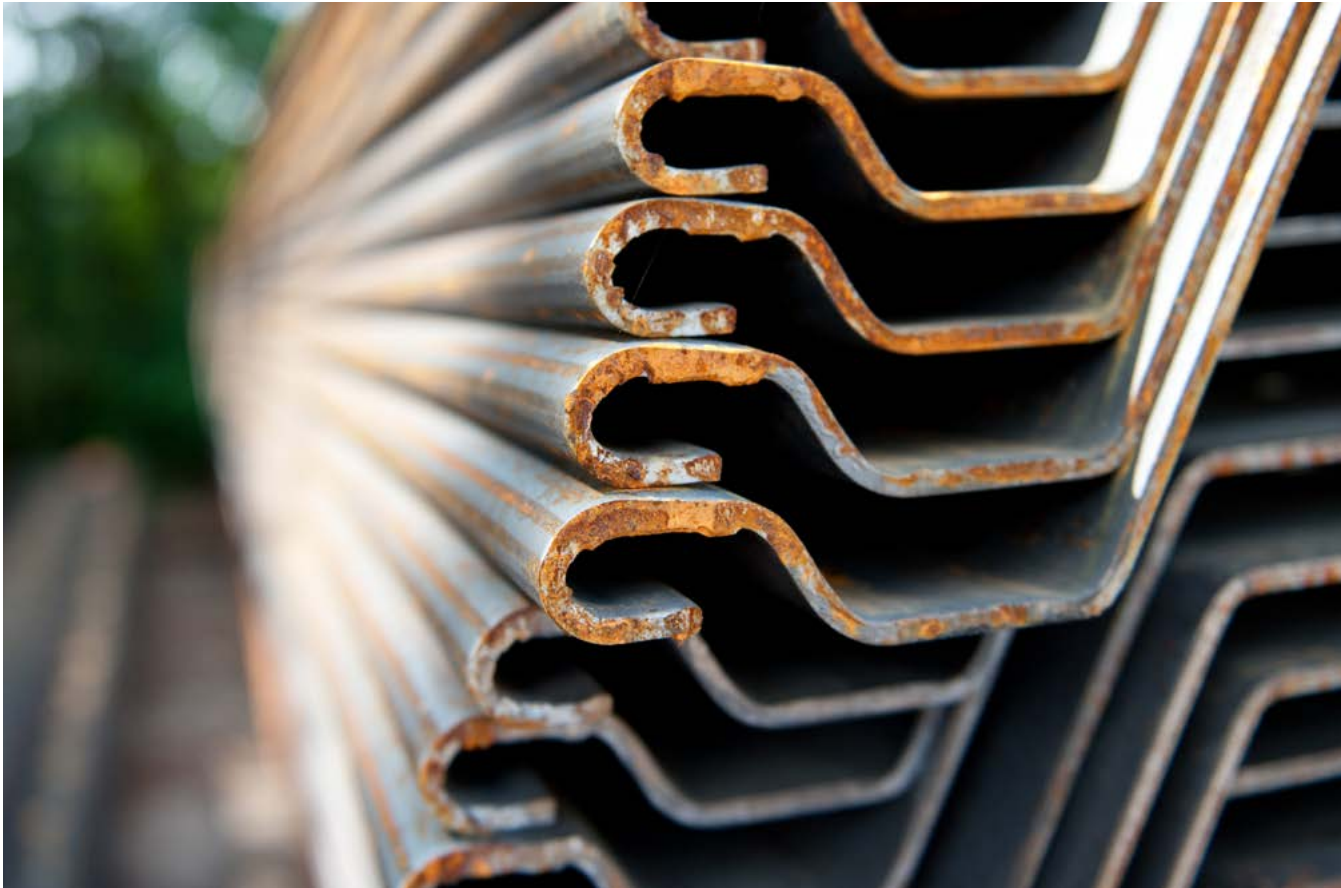
Our Load Monitoring System provides accurate, real-time readings of prop loadings, 24/7.



KEY FEATURES

- All data is live, recorded, available online for quick reviewing and can be downloaded in various metrics such as graphs or tables.
- Automated alerts to the project team to instigate the action plan.
- Pre-set trigger limits using a traffic light system against set values.
- Allows corrective action to be taken before props become overloaded.
- Data can be displayed in various metrics for easy review and is available to download.





SHEETS AND PILES

We can design, supply, install and remove temporary sheet piles used for cofferdams, retaining walls and other areas where temporary works are required to provide ground support.

TRENCH LINING AND EXCAVATION SUPPORT

Our Trench Sheets are lightweight, overlapping trench sheeting profiles, ensuring a high strength-to-weight ratio, which provide a safe environment for those working in trenches.

Typical applications include small trenches and excavations, including basements, sewerage, water, gas or other services. They are particularly useful for when services cross.



SHEET PILES

Interlocking Sheet Piles are predominately used to form permanent walls or barriers for excavations or for temporary support during construction.

- The heavy-duty overlapping sheet profiles ensure high strength-to-weight-ratio, providing a safe environment for operatives working in excavations, and watertight structures for flood defence and marine environments.
- Typical applications include retaining walls for seawalls, canals, car parks, basements, and other ground excavations.



TYPE	AVAILABLE LENGTHS (m)	EFFECTIVE WIDTH (mm)	WEIGHT (kg/m)	WEIGHT (kg/m ²)	MAX SWL* (kNm/m)
GU13N	4 - 10	600 (1200)	59.9	99.8	191 (368)

*Safe Working Load NB: Values in brackets are for interlocked piles/m. All other values apply to a single pile/m unclutched.

TRENCH SHEETS

Steel trench sheets for construction work and temporary deployment.

- Available in a range of lengths in Standard Lap, KKD 600/6, HD2 and BVI 500 variations to suit specific site requirements.
- Provide a safe environment for operatives working in the excavation.
- Quick and easy to use and set up using the Trench Sheet Driving Cap and can be easily lifted and extracted using the Trench Sheet Extractor.



TYPE	AVAILABLE LENGTHS (m)	EFFECTIVE WIDTH (mm)	WEIGHT (kg/m)	WEIGHT (kg/m ²)	SWL* (kNm/m)
Standard (S275)	2 - 5	330	10.8	32.9	8.5
KKD 600/6	3 - 7	600	37.5	62.5	33.7
HD2	4 - 7	742	54.2	73	59
BVI 500 (Interlocking)	4 - 6	494	33.5	67.9	36

*Safe Working Load.



TEMPORARY LOGISTICS DECK

A multi-purpose, modular, engineered logistics solution. Offering versatility as a logistics deck, a bridging system, or vehicle ramp between different construction levels, adapting to diverse project needs.

It is a modular system that allows for custom engineering to fit unique layouts, saving time and costs for projects. In addition, by reducing the carbon footprint of construction activities, the system can be used as part of a sustainable building approach to project construction. This proprietary deck is the optimal choice for projects seeking to enhance efficiency and flexibility while meeting the bespoke requirements of construction.



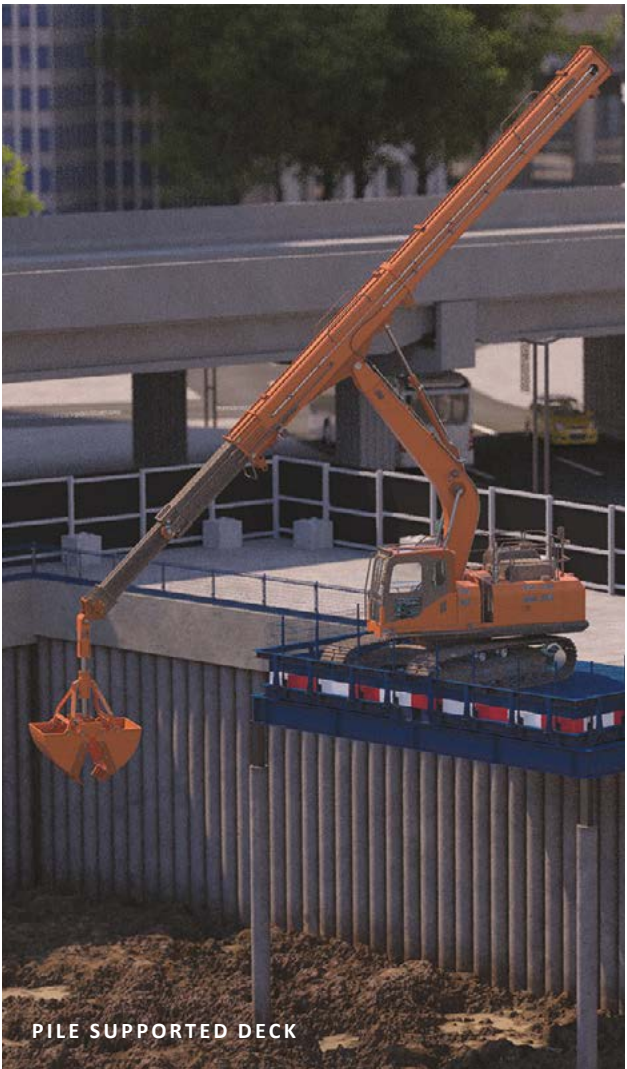
CONFIGURATIONS



SINGLE SPAN DECK



CORNER SUPPORTED DECK



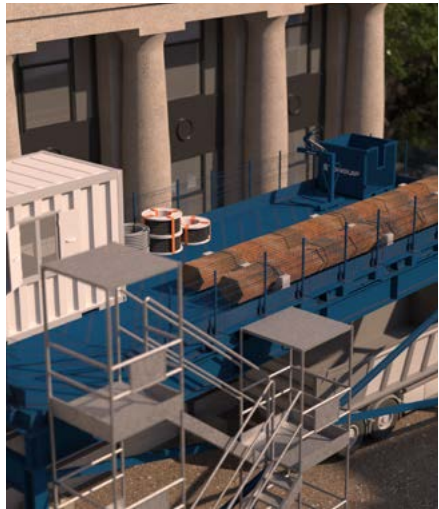
PILE SUPPORTED DECK

Creating dedicated logistical decks in limited spaces, enabling key access to areas of projects for machinery and storage.



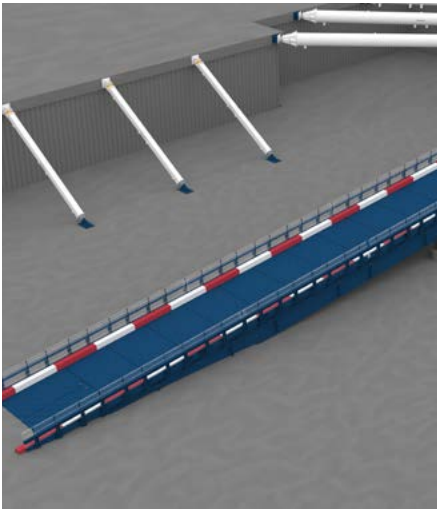
BRIDGING DECK

Provides bridging options for machinery to cross excavations or obstacles.



GANTRY DECK

Elevate storage and cabins away from site working zones.



VEHICLE RAMP

Access for vehicles and machinery between different ground levels.

BULKX

A dig methodology that increases the rate of excavation and enhances the safety of construction projects.

Using BulkX, you can discharge spoil directly into the back of muck away wagons, eliminating double handling and reducing project dig programmes, or into designated locations on-site, providing versatility on varying project sizes or those with frequently changing landscapes.

There are three system options to accommodate varying site conditions:



SMART-RELEASE

- Remote-operated, improving safety.
- Versatile discharge capabilities.
- Capable of supporting 24/7 excavation.
- Skip capacities up to 14m³.



DIRECT-TO-TRUCK

- No gantry or landing frame required.
- Skip discharges when the feet land on the truck.
- No stockpiles or double handling of spoil.
- Skip capacities up to 8m³.



GANTRY

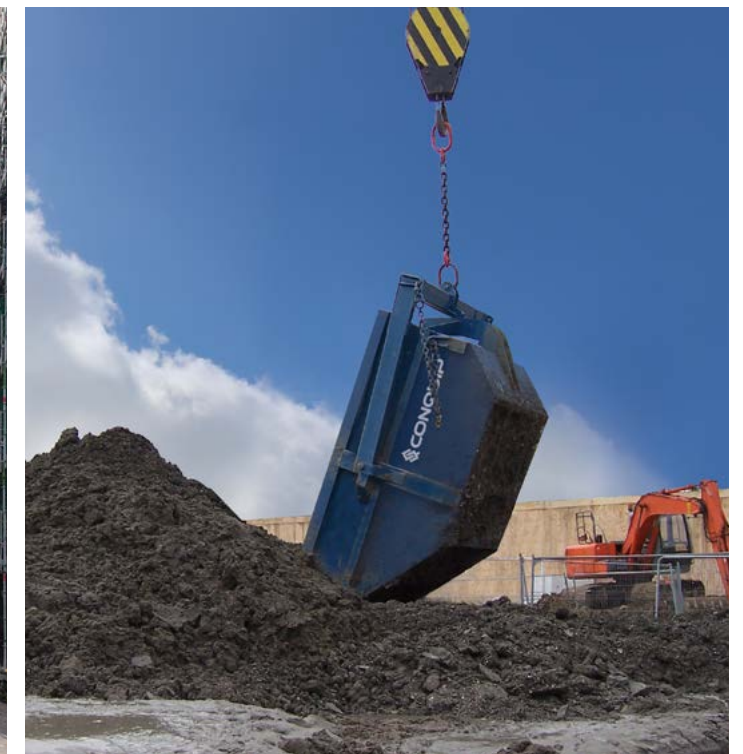
- Heavy-duty gantry for large skip capacities.
- Space-saving gantry for small, restrictive sites.
- Fixed or manoeuvrable options available.
- Skip capacities up to 20m³.



BOAT SKIP

A versatile skip for general muck and waste removal.

- Standard and heavy-duty versions available with sizes from 500 to 4000 litres.
- No personnel required nearby when the skip is emptied.
- Reinforced back of skip to prevent distortion and catch failure.
- The 'bush and shackle' lifting point reduces typical wear from regular use, increasing longevity.



CIRCULAR MUCK SKIP

A traditional crane lift skip used for muck and waste removal.

- Skip empties in response to the centre of gravity of the bale arm, removing the need for operatives to be in the discharge zone.
- Easy method for transporting muck and waste across sites.
- Safety catches prevent accidental tipping.

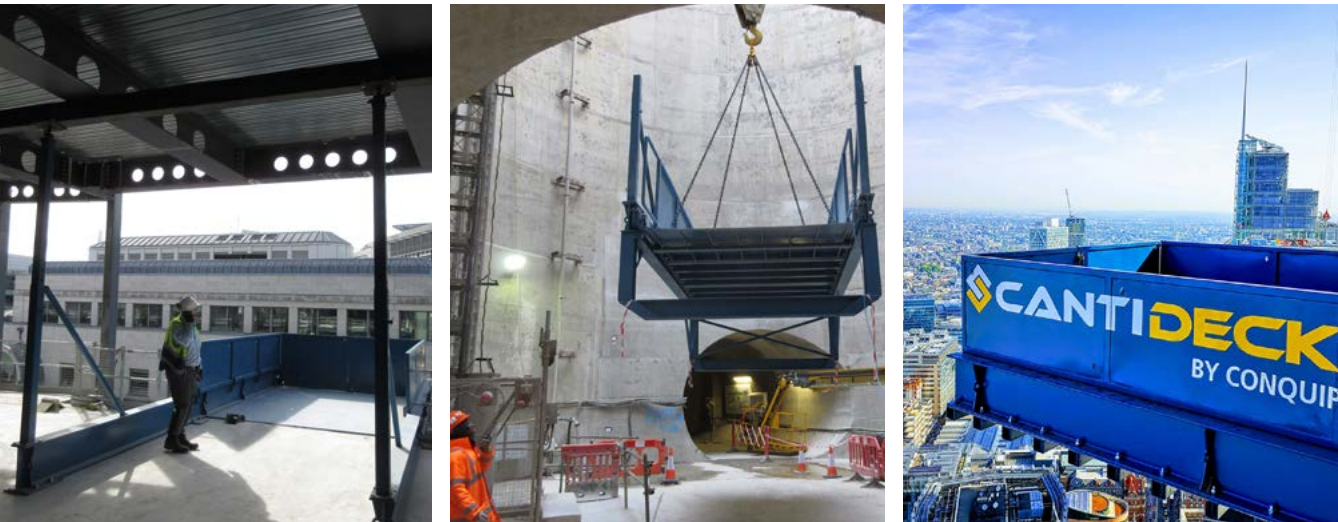




CANTIDECK

A temporary crane loading platform that allows materials and equipment to be loaded in and out of buildings and structures, including tunnels, shafts and steel frames.

Available in two options, Fixed Flush and Super Roller, these platforms improve the safety of personnel working at height, save cost on complex scaffolding systems and improve efficiency when moving goods and materials.

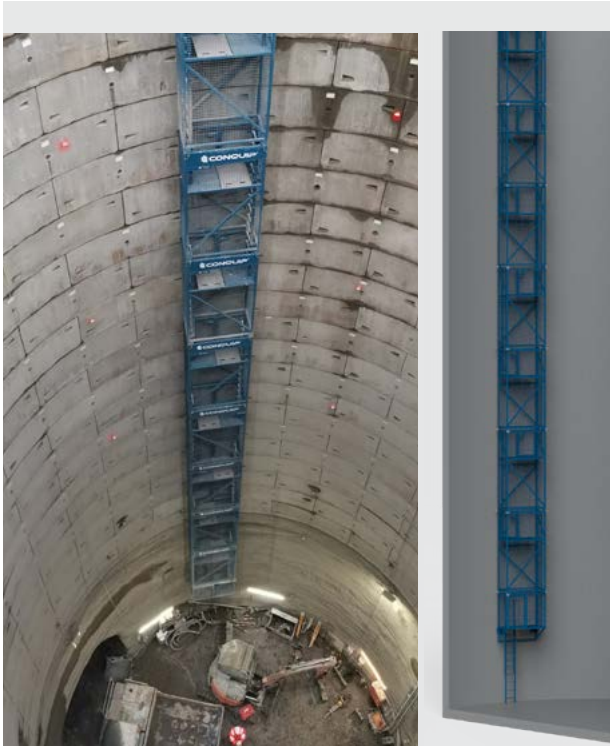


OUT OF THE BOX SOLUTIONS

SHAFT ACCESS PLATFORM

A large, robust, steel platform specifically designed for use in shafts.

The Shaft Access Platform allows personnel to apply a waterproofing membrane to the shaft walls from the safety of the platform. The membrane rolls are held in place by adjustable A-frames to accommodate varying roll sizes. This bespoke design includes various safety features, including handrails and multiple internal harness points to ensure personnel can remain attached at all times.



MODULAR SHAFT LADDER

SHAFT ACCESS LADDER

An innovative, modular ladder system providing simple and safe access to subterranean areas.

The adaptable, modular system can be configured to suit varying shaft depths. Left and right facing panels ensure that in the event of a fall, personnel can only travel the module length (3 metres), rather than the depth of the shaft, greatly improving personnel safety and reducing the risk of injury.



TUNNEL ACCESS PLATFORM

WE ALSO OFFER...

We design engineer, manufacture and stock a wide selection of quality products.



SEE OUR FULL RANGE

SKIPS & CONCRETE WASHOUT

- Concrete Skips
- Waste Skips
- Concrete Washout Equipment



PLANT ATTACHMENTS

- Excavator Mechanical Pipe Lifter
- Excavator Pipe Laying Hook
- Mechanical Manhole Ring Lifter
- Excavator Pouring Bucket
- Excavator Compaction Wheel
- Fork Extensions
- Grabs & Adaptors



SITE SET UP

- Fuel Eco-Hub
- COSHH Stores
- Shelters & Briefing Stations
- Racks & Stillages
- IBC Containers & Fuel Bowzers
- Boot & Wheel Washes



LIFTING & HANDLING

- Goods, Personnel & Rescue Cages
- Excavator Lifting Platform
- Lifting Beams
- Crane Forks Cage
- Chains & Slings





[VIEW FULL CASE STUDY](#)

BOTANIC PLACE

Conquip’s propping solution in the heart of Cambridge.

OVERVIEW

Botanic Place is a landmark 500,000 sq ft commercial office development. The scheme is set to become one of the most sustainable and intelligent workspaces in the city. We worked with Oliver Connell & Son (OCS) - which was appointed by Skanska - to deliver the groundworks, substructure, superstructure and several temporary works packages, including our temporary propping.

THE TEMPORARY PROPPING SOLUTION

On a site with a total of 44 props, careful consideration was given to sequencing, lifting operations, site access and interfaces with permanent works. Detailed methodologies and lift plans were developed collaboratively, ensuring clarity and consistency before installation of the props began.

EARLY ENGAGEMENT AND SCHEME DEVELOPMENT

Through detailed design reviews and collaborative planning, the teams at OCS and Conquip adjusted the scheme to reduce the overall number of props required, while maintaining performance and safety requirements.



[VIEW FULL CASE STUDY](#)

ONE NORTH QUAY

Precision propping for a landmark health and life sciences facility building in Canary Wharf, London.

OVERVIEW

One North Quay is undergoing major construction to develop a health and life sciences facility, supporting scientific research and innovation. We designed and delivered a temporary works scheme at this site for Kilnbridge, the sub-contractors to Canary Wharf Contractors, the main contractor.

OVERCOMING COMPLEX CONSTRAINTS

We assisted with the design and implementation of temporary propping for the deep basement excavation. A key requirement was to work next to three lines of transport infrastructure and dock waterway. Our design, engineering and project management teams worked with precision, collaboration and smart engineering for an efficient and safe propping solution.

CONTINUAL DEVELOPMENT

We value engineered a staged propping scheme on two elevations, regularly monitoring deflections and adjusting designs with sequenced prop positions and connection details aligned to the slab and core construction phases.



ELEPHANT & CASTLE

A landmark and complex project in the centre of a redevelopment masterplan, it's a testament to collaborative engineering.

OVERVIEW

This mixed-use development involves the transformation of the original shopping centre into a London Underground Integrated Ticket Hall, new retail and leisure facilities, university buildings and residential units.

COMPLEXITIES OF ENGINEERING ONE OF LONDON'S BIGGEST BASEMENTS

Morrisroe was responsible for the excavation and construction phases of the basement along with the construction of the above-ground RC structures. We were tasked with designing and delivering the temporary works propping solutions, in collaboration with KDL, Morrisroe's in-house engineering team.

CONQUIP'S BESPOKE SOLUTIONS

To assist the project's build methodology, we introduced bespoke elements, such as a double-to-single waling beam connection to maintain continuity where the double stacked waling beam changed to a single level. A bespoke bracket was also built for corners where the angle was too obtuse to accommodate a standard prop.



THAMES TIDEWAY

Mastering a complex temporary works design for a high profile infrastructure project.

OVERVIEW

Our temporary works design team was involved early in the project, working closely with Costain Vinci Bachy JV and Tideway teams. This meant that we knew all of the temporary works design challenges, as well as any implications that the logistics and programme could have on sequencing and the overall design.

REDESIGN THROUGHOUT THE PROJECT

We worked closely with the project team to overcome certain challenges, such as logistics implications and methodology changes. The success on this project was down to the close collaboration with Tideway and Costain Vinci Bachy JV. Regular meetings and effective communication allowed us to address challenges, share insights, and refine our temporary works design.

DEEP TECHNICAL EXPERTISE AND INNOVATION

We developed prefabricated bolt-on shear keys into the piled wall and designed a retaining scheme that splayed out at an angle to closely match the retaining wall shape. We coordinated with the site teams to reposition our propping and alter the load transfer mechanisms to avoid disruption.



WALTON-ON-THAMES, SURREY

A new industrial park pumping station required drainage infrastructure. As part of the project, we installed two large manhole rings using GU13 interlocking Sheet Piles, working in difficult ground conditions with a high-water table.



LITTLEHAMPTON, HAMPSHIRE

We installed a large crate system on the main A259 bypass in Littlehampton, with live traffic in close proximity. Complex works, traffic streams and night deliveries were navigated to accommodate the client's needs.



GREATER LONDON

We provided a responsive excavation design service, ahead of the installation of a new concrete holding tank at a major London water treatment works site.



HILLS, OXFORDSHIRE

We provided a brace system to enable the installation of a large pump station at 8.5m deep on the project in North Oxford.

NEXT-LEVEL SUPPORT

FOR YOU & YOUR PROJECT

- ✓ Superior engineering knowledge
- ✓ Original Equipment Manufacturer (OEM)
- ✓ A range of on-site technical support and inspection services

PLUS

We are with you during the entire project lifecycle and can provide your site team with supervision, installation, system inspections and much more...



HIRE SERVICE

- Hassle-free equipment rental
- Fully compliant equipment
- Competitive rates
- Regular finance reporting
- Fixed invoicing damage exemption



GET IN TOUCH

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Email us at twengineering@cqgroup.com

www.cqgroup.com

