



GROUND ENGINEERING



YOUR #01 PARTNER

Early design and planning, as well as best practice collaboration and implementation, lead to a more sustainable building process, buildability and a better project. We offer a range of services 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, trench shoring boxes 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.





DESIGN

- In-house qualified civil and structural design engineers.
- Scheme design and CAT 3 checking on temporary excavation propping using Conquip’s modular propping system, from shallow to deep basements.
- Excavation monitoring, prop loading, wall deflections.
- Piled wall and geotechnical design services. 2D and 3D analysis.
- Steel gantries, steel frames (top-down construction and logistics decks).
- Steel design, detailing and fabrication services.
- Bespoke design capabilities.
- Trench shoring, utilities and drainage excavation support.
- CantiDeck temporary loading platforms.
- Tower crane foundations and crane load reviews.
- Working platforms, crane mats.
- Site logistics and swept path analysis.

MANUFACTURE

- In-house fabrication facilities and manufacturing expertise.
- Able to address any complexities or challenges quickly by producing the required components or assemblies and delivering them to site, minimising downtime.
- We can design and fabricate bespoke solutions and provide your team with any necessary training on them.
- We are accredited to ISO 9001 for manufacturing and our welders are coded to BS EN 9606.

DELIVERY

- FORS Gold and CLOCS Champion accredited.
- In-house transportation service providing reliable and on-time deliveries to sites across the UK.

SERVICE

- We provide a full service during all stages of the installation, usage and removal phases, giving our clients assurances that the temporary works design has been followed and the equipment continues to operate to optimum levels.



CONSULT

- We work with your pre-construction and bid teams to develop ideas and innovations that help you win projects.
- We also offer support with budgets and concept designs.

PLAN

- Leveraging early-stage efficiencies with consideration for vertical, horizontal, install and removal sequences.
- Site planning, logistics and waste management.
- 3D and 4D phasing models to accelerate programme times.

ENGINEER

- Collaborate with all stakeholders to ensure a comprehensive understanding is achieved regarding project interfaces.
- Working closely together allows us to optimise the propping or pile wall design and value engineer the amount of propping required.
- We ensure an efficient build methodology that provides further reductions in cost and programme time.

SUPPORT

- Supervising installation enables us to guide site teams where required and address any issues that may arise.
- Familiarisation training on all our equipment, either on-site or at one of our depots, ensures site teams are knowledgeable and safe when they use it.
- Collaborating with site management teams helps us carry out full temporary works installation, managing all aspects from the delivery of equipment through to system sign off.
- Installation and removal options available.

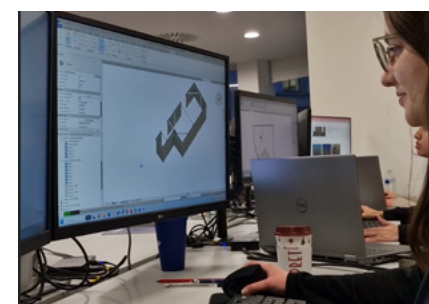
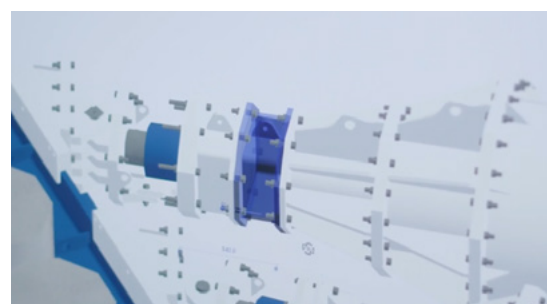


FROM DESIGN TO DELIVERY

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 engages in a collaborative process to ensure that every design meets the unique needs of our clients. From initial scoping of project requirements through to comprehensive geotechnical analysis, our Temporary Works team utilises state-of-the-art software and adheres to industry standards to provide tailored solutions for excavation support and vertical logistic challenges.

- Specialisation in excavation support and vertical logistic challenges.
- Offering both standard and bespoke designs prioritising efficiency, safety and client satisfaction.
- 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.
- Offering standard or bespoke trench shoring solutions.
- Providing modular logistics decks for space-constrained sites.
- Offering CantiDeck system installation temporary works design services.





DEEP EXCAVATION SUPPORT

We offer a complete deep excavation propping and support range, from early stages of conceptualising a scheme, through delivery to site and installation and to the point of removal when the project is completed.

- Modular temporary propping system for excavation support.
- System spans up to 41 metres, with Safe Working Loads up to 4000kN.
- Waling Beams: single and double beam solutions including adjustable and fixed angle connections.
- Hydraulic Jacks, Gallows Brackets and a wide range of ancillary items to accommodate all orientations and connections to different material types.
- Unique system allowing props to be hydraulically preloaded and then locked off to give the structural characteristics of a steel propped system.

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:

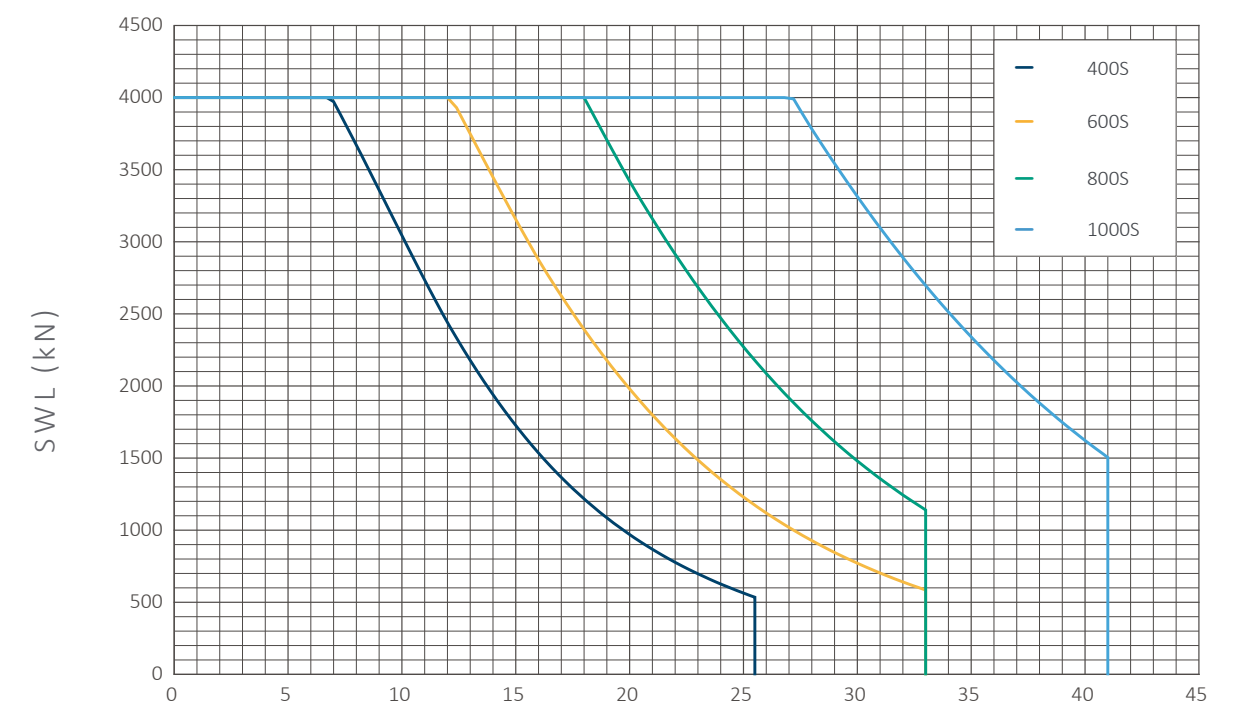
- ✓ RANGE OF STRUT SIZES UP TO 1000mm DIAMETER
- ✓ HYDRAULIC JACK, CRADLE, BIRDSMOUTH AND VARIOUS CONNECTIONS
- ✓ LOAD MONITORING



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	2650
1000 Series	up to 41	3520

PROP SIZING CHART



406 WALER BRACE

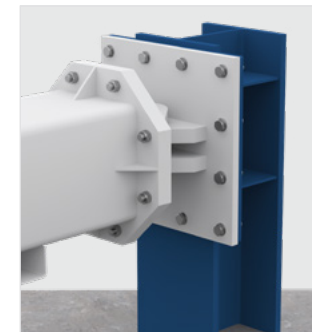
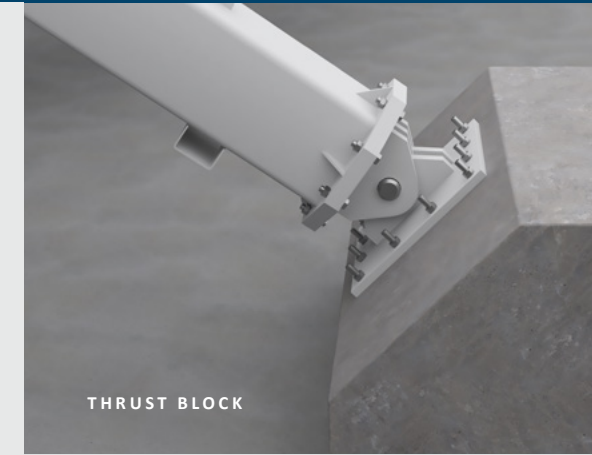
Waler Frames are used to brace or provide additional support to excavation liners, such as RC piled walls or sheet piles to withstand high loads and help maintain the form of an excavation. Common applications include basement excavations, cofferdams and any deep structures.

- 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.

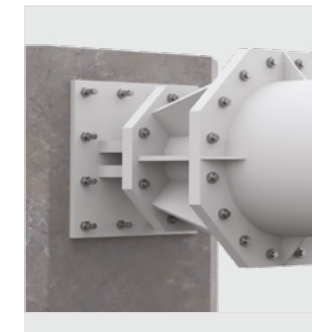


CONNECTIONS & ACCESSORIES

We offer a range of connections and accessories.



STEEL KINGPOST



CONCRETE CORBEL

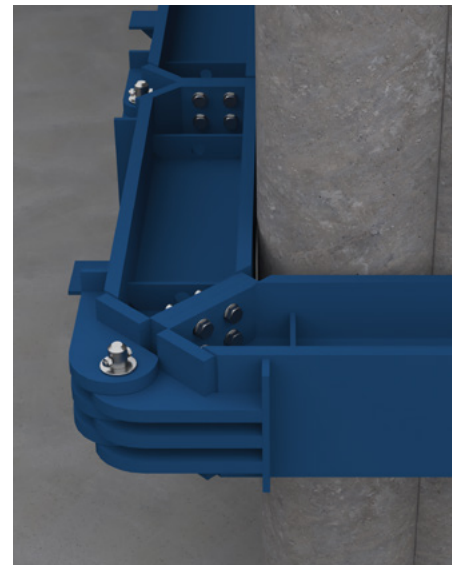
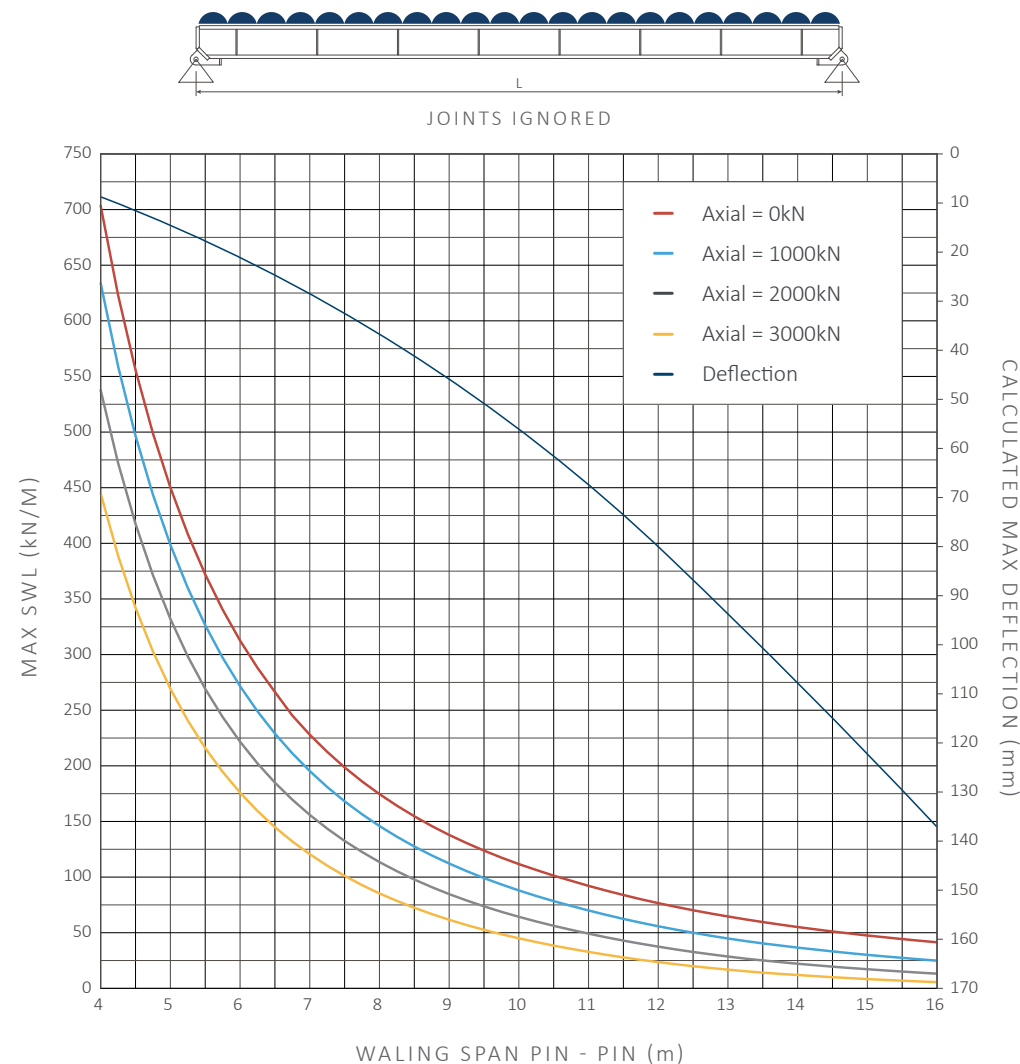


BIRDS MOUTH



CAST-IN STEEL CORBEL

LOAD CHART - SWL SIMPLY SUPPORTED WALER



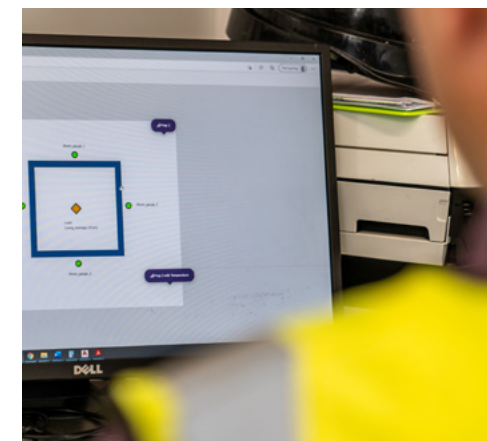
LOAD MONITORING SYSTEM

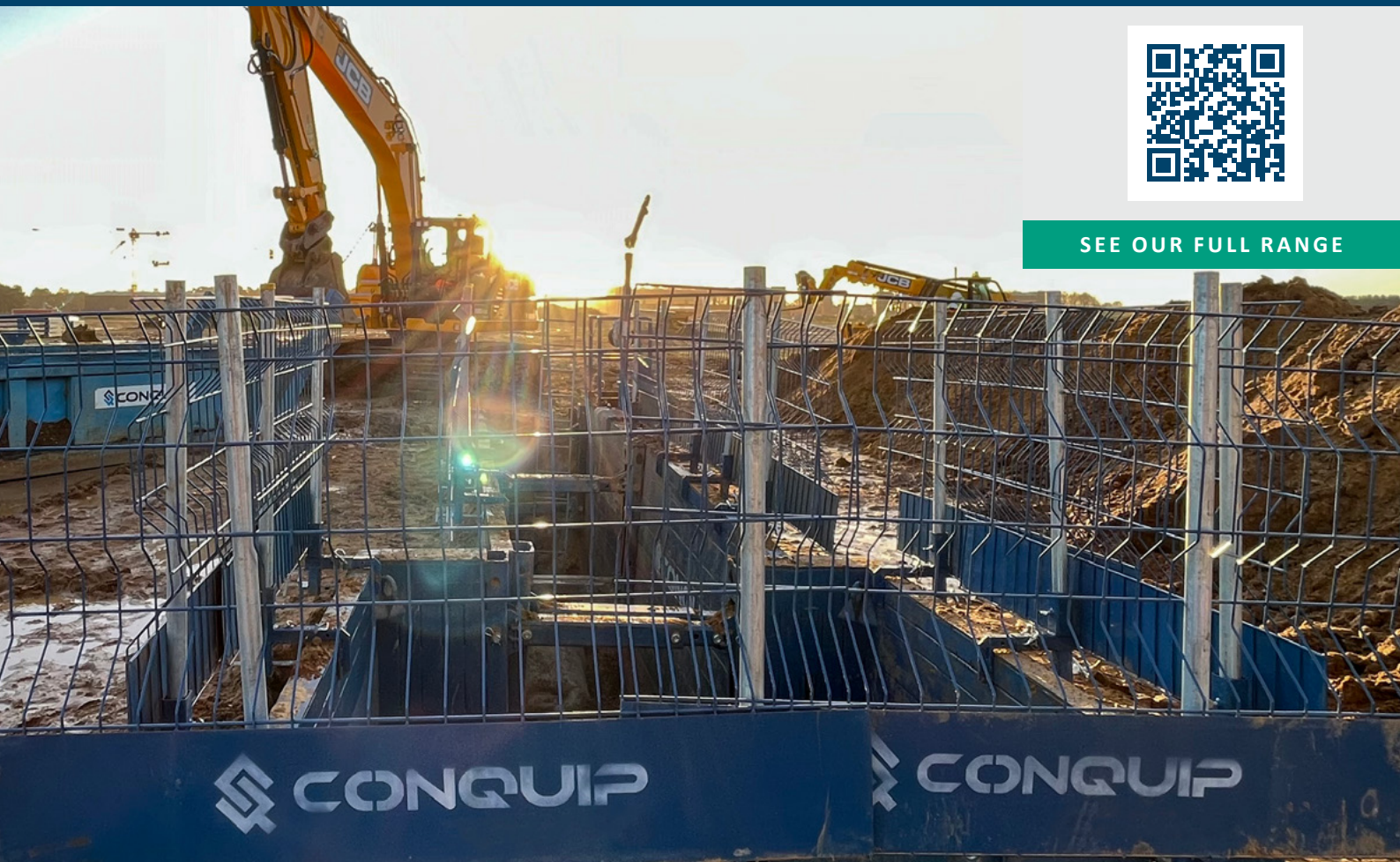
Our Load Monitoring System provides accurate, real-time readings of prop loadings, 24/7. All data is live, recorded, available online for quick reviewing and can be downloaded in various metrics such as graphs or tables.



KEY FEATURES:

- Accurate, real-time readings of prop loadings that can be monitored 24/7.
- 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.





SEE OUR FULL RANGE

TRENCH SHORING

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.

SHORING BOXES

Our shoring boxes are robust and durable, ensuring they can withstand the rigours of installation and extraction. We offer standard Trench and Manhole Boxes with extensions for deep drainage applications and lightweight versions, ideal for smaller capacity machines.



TRENCH BOX

A ground support system for lining trench walls.

- ✓ SIMPLE TO ASSEMBLE
- ✓ EASILY REPLACEABLE PARTS AND SPARES
- ✓ HIRE SERVICE AND IN-HOUSE TRANSPORT

- Base and Extension Boxes are up to 3.5 metres in length and working widths up to 4 metres.
- Extension Boxes allow trench depths up to 5.18 metres
- Ancillaries include lifting and extraction chains, edge protection and trench access solutions.

DID YOU KNOW?

We provide Edge Protection Panels free of charge with all shoring box hire orders.



	LENGTH (mm)	HEIGHT BASE (mm)	HEIGHT EXTENSION (mm)	MAX DEPTH (mm)	INTERNAL WIDTH (mm)		EXTERNAL WIDTH (mm)		WEIGHT BASE (kg)		WEIGHT EXTENSION (kg)		SWL** (kN/m ²)	
					Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
STANDARD	3500	2560	1310	5180*	550	3985	766	4201	2177	2611	1163	1180	30	50
LIGHTWEIGHT	3000	2000	1000	4000*	550	3985	660	4095	1097	1531	643	860	27	27

*Based on a Base Box with 2no. Extension Boxes, greater depths may be achievable with a bespoke design.
**Safe Working Load



SCAN TO VIEW PRODUCT

MANHOLE BOX

A ground support system for forming a concrete manhole.

- ✓ AVAILABLE IN 2.5, 3, 3.5, AND 4-METRE LENGTHS
- ✓ STANDARD AND LIGHTWEIGHT VERSIONS
- ✓ LIFTING ATTACHMENTS AND END PANELS ANCILLARIES



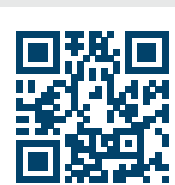
NEED SOMETHING EXTRA?

We provide a range of technical information and installation support, including:

- User guides with step-by-step instructions.
- Assembly, installation and extraction videos.

	LENGTH (mm)	HEIGHT BASE (mm)	HEIGHT EXTENSION (mm)	MAX TRENCH DEPTH (mm)	INTERNAL WIDTH (mm)		EXTERNAL WIDTH (mm)		WEIGHT BASE (kg)		WEIGHT EXTENSION (kg)		SWL** (kN/m ²)	
					Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
STANDARD MANHOLE BOX	2500	2560	1310	5180*	1550	4990	1770	5200	2557	3011	1433	1650	45	70
	3500	2560	1310	5180*	1550	4990	1770	5200	3077	3511	1713	1930	32	50
	4000	2560	1310	5180*	1550	4990	1770	5200	3327	3761	1813	2030	28	40
LIGHTWEIGHT MANHOLE BOX	2500	2000	1000	4000*	1375	4810	1485	4920	1117	1611	763	980	27	
	3000	2000	1000	4000*	1375	4810	1485	4920	1297	1731	823	1040	27	

*Based on a Base Box with 2no. Extension Boxes, greater depths may be achievable with a bespoke design.
**Safe Working Load



SCAN TO VIEW PRODUCT



TRENCH 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



PLANT ATTACHMENTS

A range of attachments for handling concrete pipe sections and installing deep drainage utilities.

- ✓ EXCAVATOR MECHANICAL PIPE LIFTER
- ✓ EXCAVATOR PIPE LAYING HOOK
- ✓ MECHANICAL MANHOLE RING LIFTER





TRENCH SHEETS

TRENCH SHEETS FOR CONSTRUCTION WORK AND TEMPORARY DEPLOYMENT

Our Trench Sheets are lightweight, overlapping trench sheeting profiles, ensuring a high strength to weight ratio, which provides 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.

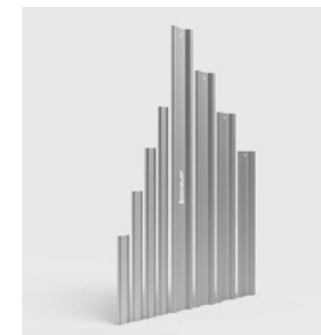
When digging larger trenches where the ground is stable or self-supporting, our Drag Boxes would be a more viable option.



SHEETS AND PILES

SHEET PILING AND COFFERDAMS

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.



TYPE	AVAILABLE LENGTHS	TOTAL WIDTH	EFFECTIVE WIDTH	THICKNESS	DEPTH	PAN WIDTH	WEIGHT	SECTION MODULUS	SWL*
STANDARD	2m - 5m	350mm	330mm	3.4mm	35mm	110mm	10.8kg/m 32.9kg/m ²	48cm ³ /m	8.5kNm/m
HD2	4m - 7m	764mm	742mm	8mm	90mm	267mm	54.2kg/m 73.0kg/m ²	252cm ³ /m	59kNm/m

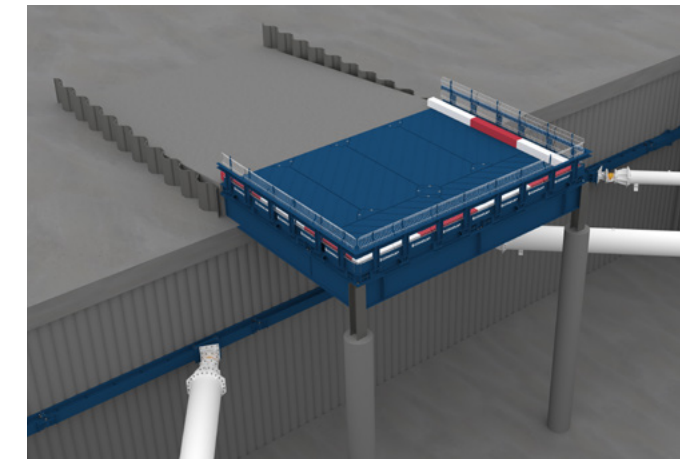
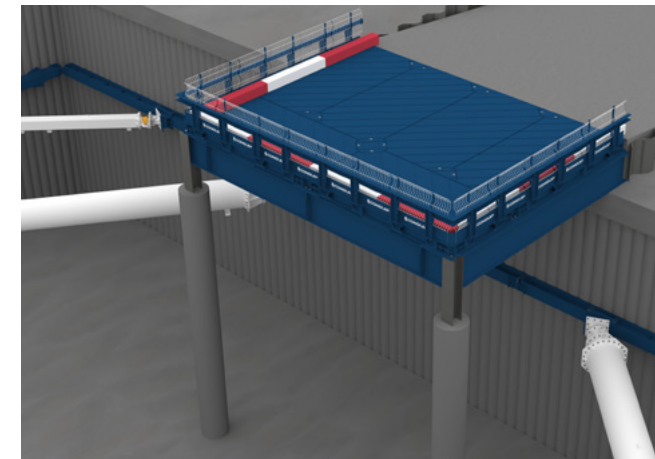
* SWL = Safe Working Load



TEMPORARY LOGISTICS DECK

Our Temporary Logistics Deck is a multi-purpose, modular, engineered logistics solution. Offering versatility as a logistics deck, a bridging system, or vehicle ramp between differing construction levels, it adapts 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.





BULKX

BulkX is 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.
- Fully electric with replaceable batteries.
- Skip capacities up to 16m³.



DIRECT-TO-TRUCK

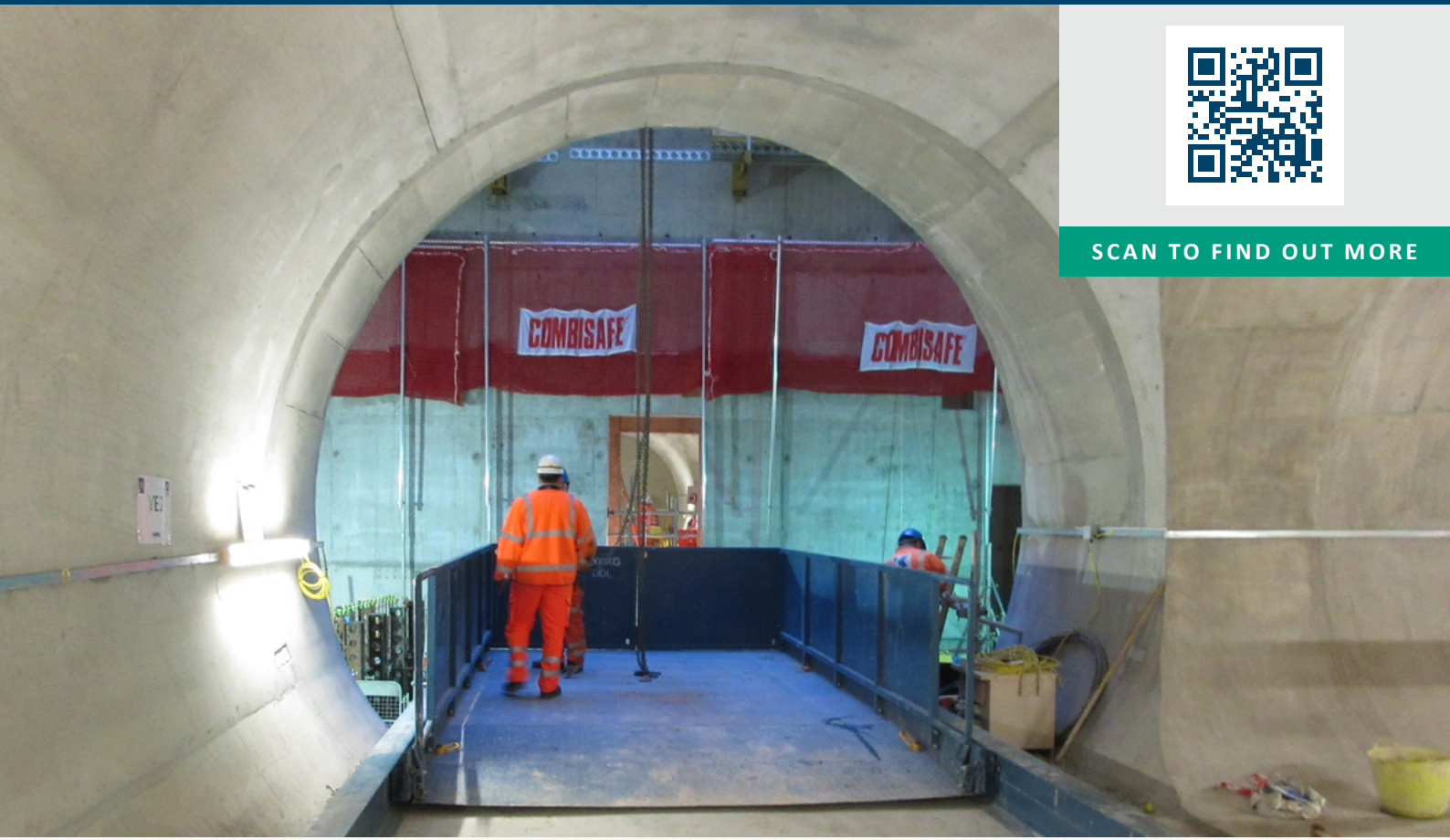
- No gantry or landing frame required.
- Skip discharges when the feet land on the truck.
- No stockpiles or double handling of spoil.
- Skip capacities up to 8m³.



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.





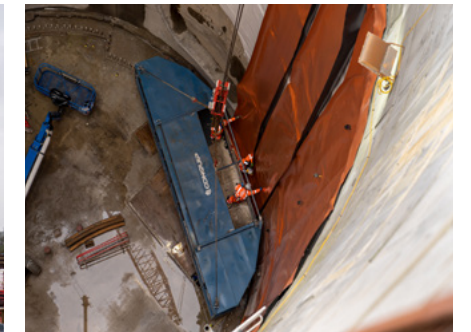
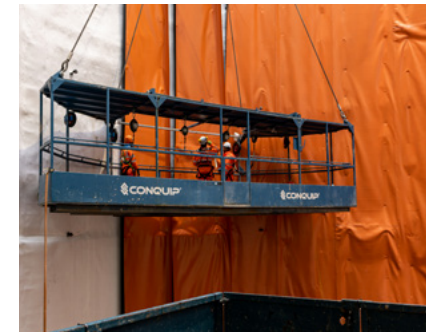
SCAN TO FIND OUT MORE

OUT OF THE BOX SOLUTIONS

ACCESS PLATFORM

The Access Platform is a large, robust, steel platform specifically designed for use in shafts. It 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 features various safety features, including handrails and multiple internal harness points to ensure personnel can remain attached at all times.



CANTIDECK

CantiDeck is 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.



MODULAR SHAFT LADDER

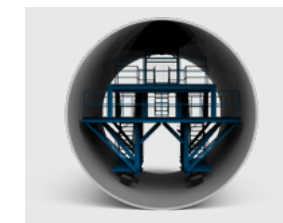
An innovative, modular ladder system providing simple and safe access to subterranean areas.

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.



MODULAR SHAFT LADDER

TUNNEL ACCESS PLATFORM



WE ALSO OFFER...

We pride ourselves on stocking a wide selection of quality products, positioning us as a 'one-stop shop' for all your project needs.



SEE OUR FULL RANGE



SKIPS

- Concrete Skips
- Tipping Skips
- Boat Skips



SITE SET UP

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



PLANT ATTACHMENTS

- Excavator Pouring Bucket
- Excavator Compaction Wheel
- Fork Extensions
- Grabs & Adaptors



LIFTING & HANDLING

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



ELEPHANT & CASTLE, LONDON

A landmark and complex project in the heart 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 (ITH), 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, GREENWICH

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, to ensure that we knew all the temporary works design challenges and any implications that the logistics and programme would have on sequencing or 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.

NEXT-LEVEL SUPPORT

FOR YOU & YOUR PROJECT

- ✓ SUPERIOR ENGINEERING KNOWLEDGE
- ✓ ORIGINAL EQUIPMENT MANUFACTURER (OEM)
- ✓ A RANGE OF SERVICES TO HELP TEAMS TO WIN PROJECTS WITH BUILDABILITY IN MIND
- ✓ WITH YOU DURING THE ENTIRE PROJECT LIFECYCLE
- ✓ SUPERVISION, INSTALLATION, SYSTEM INSPECTION AND MORE



HIRE SERVICE

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



GET IN TOUCH

Call us on 0333 300 3470

Email us at twengineering@cqgroup.com

www.cqgroup.com



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SEE HOW ELSE WE CAN HELP