

Welcome to...

**Maximising Commercial
Construction with Expert
Piling Techniques**

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ROGER BULLIVANT

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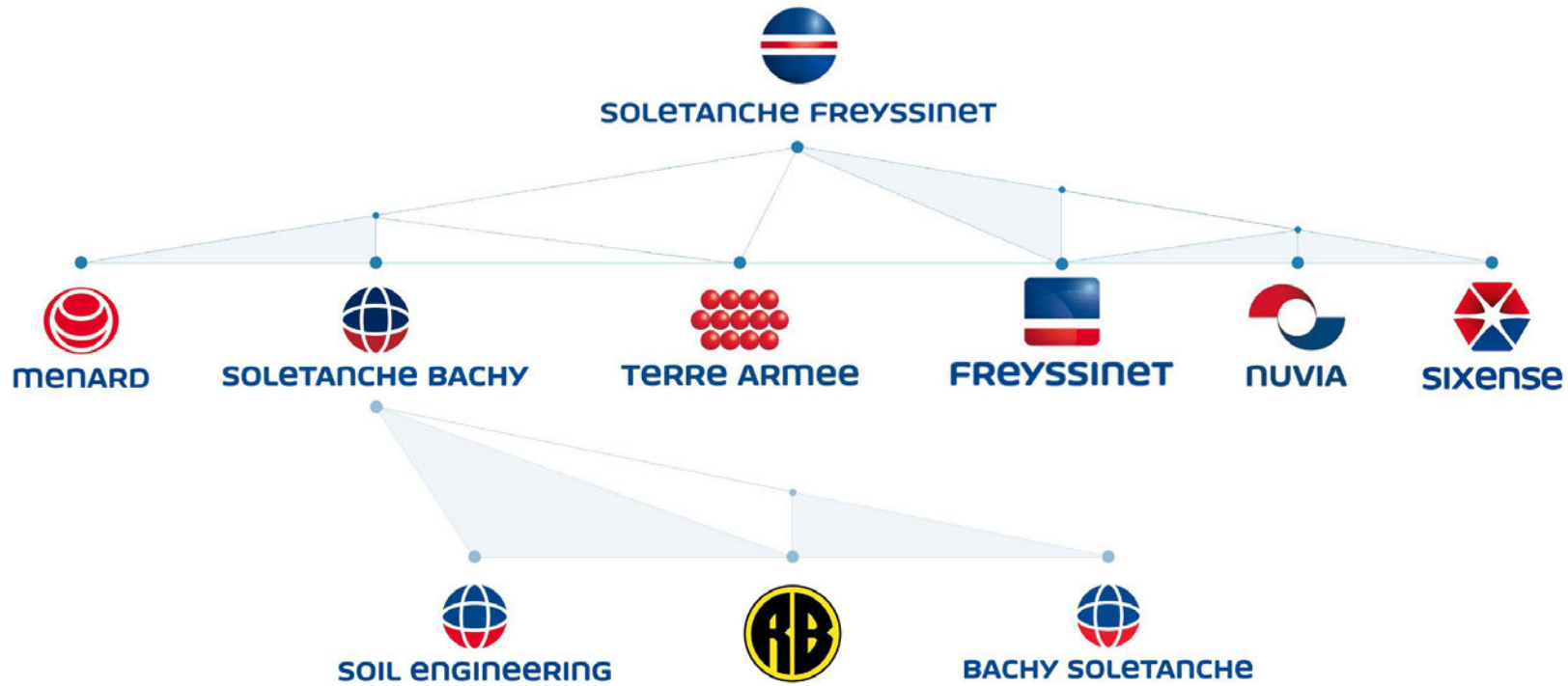
05 Questions



Our Business



About ROGER BULLIVANT



Ground Engineering Specialist of the Year



2023

SPECIALISTS

AWARDS



Safety & Sustainability



Roger Bullivant Limited is working towards reducing its carbon footprint by 40% by 2030.

What have we done so far?



Low Carbon Concrete in all Precast Products

Reduced cement content by 50% by replacing it with an alternative cementitious material, reducing its embodied carbon.



PV Panels on Manufacturing Facility & Green Tariffs

3000kWp system to create a renewable energy source, reducing greenhouse emissions.



Zero Emission Forklift Fleet in Manufacturing Facility

Electric trucks can save an average of 679,805 kilograms of CO₂ a year.



Supporting the National Forest

We make a significant donation each year to support the continued creation and management of woodlands.



Recycled Driven Steel Tubular Piles

Produced from recycled steel casings salvaged from the oil and gas industry.



The Process



Project review

Site investigation

Loads and Layout

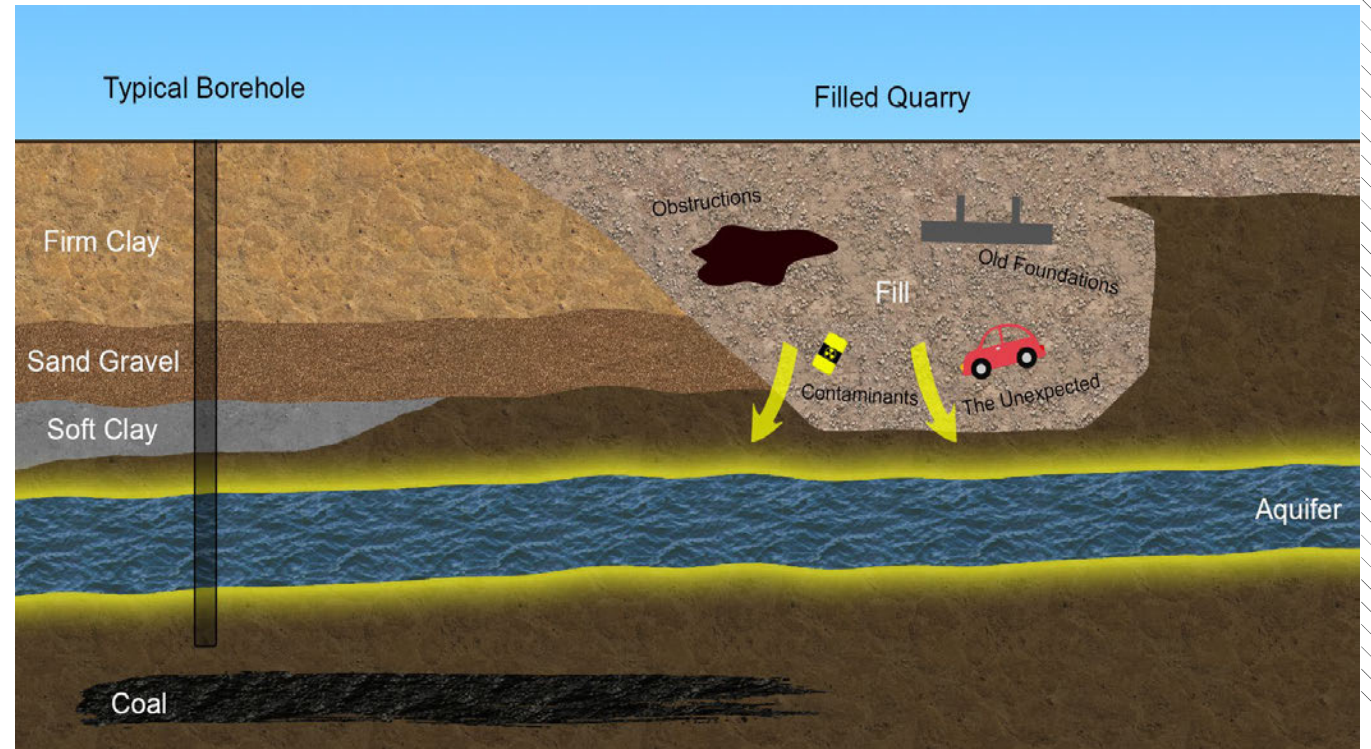
Specification/Requirements

Environment

Preliminary solution

Design Development

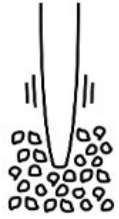
Final foundation solution & design



Our Techniques



Ground Improvement



VIBRO STONE COLUMNS



HELICAL DISPLACEMENT INCLUSIONS

Piling



DRIVEN PRECAST
CONCRETE PILES



DRIVEN STEEL
TUBULAR PILES



RB COMBIPILE



CFA PILES



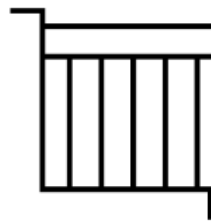
CHD PILES



CHAD PILES



CDA PILES



CONTIGUOUS PILED
RETAINING WALLS

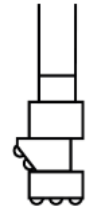
Restricted Access



BOTTOM DRIVEN MINIPILES



SECTIONAL FLIGHT
AUGER (SFA) PILES



ODEX PILES



JACK PILES & RAFTS



DRILL BAR

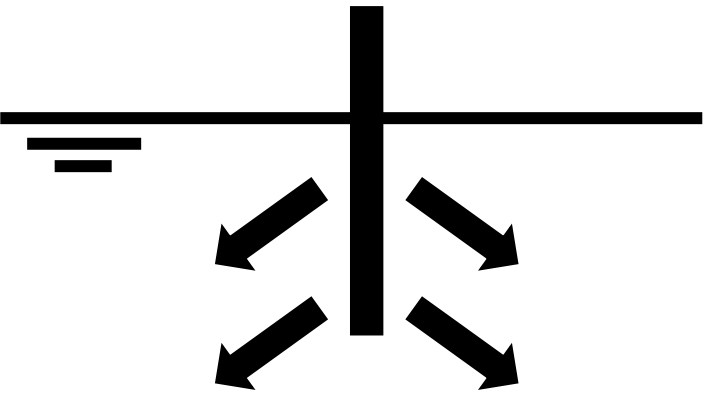
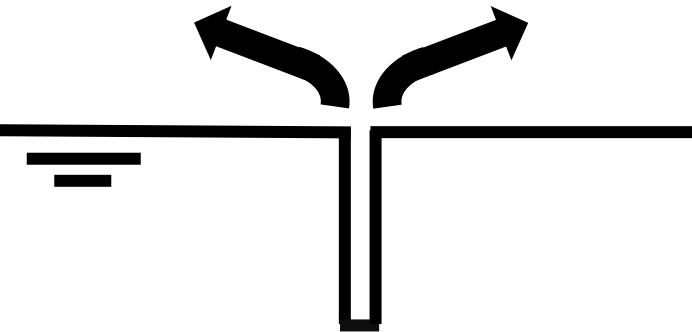


GRUNDOMAT

Project Solutions



Displacement vs Replacement

Displacement Piles	Replacement Piles
<ul style="list-style-type: none">- Preformed Steel/Concrete- Insitu Concrete- Vibro Stone Column	<ul style="list-style-type: none">- Insitu Concrete
 A schematic diagram showing a vertical pile being driven into the ground. The ground surface is a horizontal line. Below it, a vertical line represents the pile. Four arrows point outwards from the pile, indicating the displacement of soil during the process.	 A schematic diagram showing a vertical pile being cast in place. The ground surface is a horizontal line. Below it, a vertical line represents the pile. Two arrows point outwards from the top of the pile, indicating the displacement of soil during the casting process.





Project: Data Centre, Hayes

Original Solution : Continuous Flight Auger Piles (CFA)

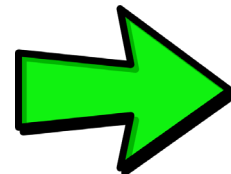
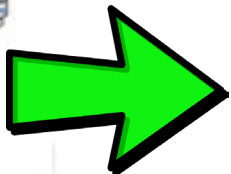
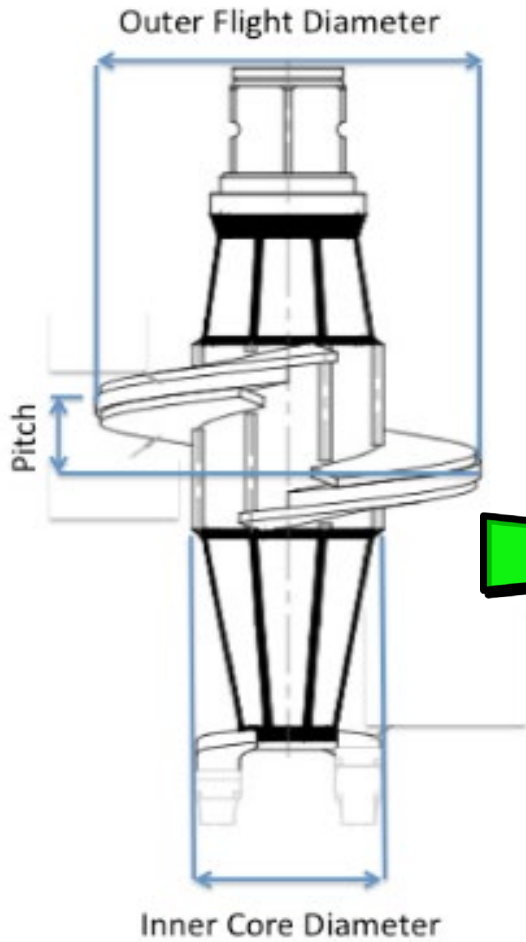
RBL Solution: Continuous Helical Displacement Piles (CHD)

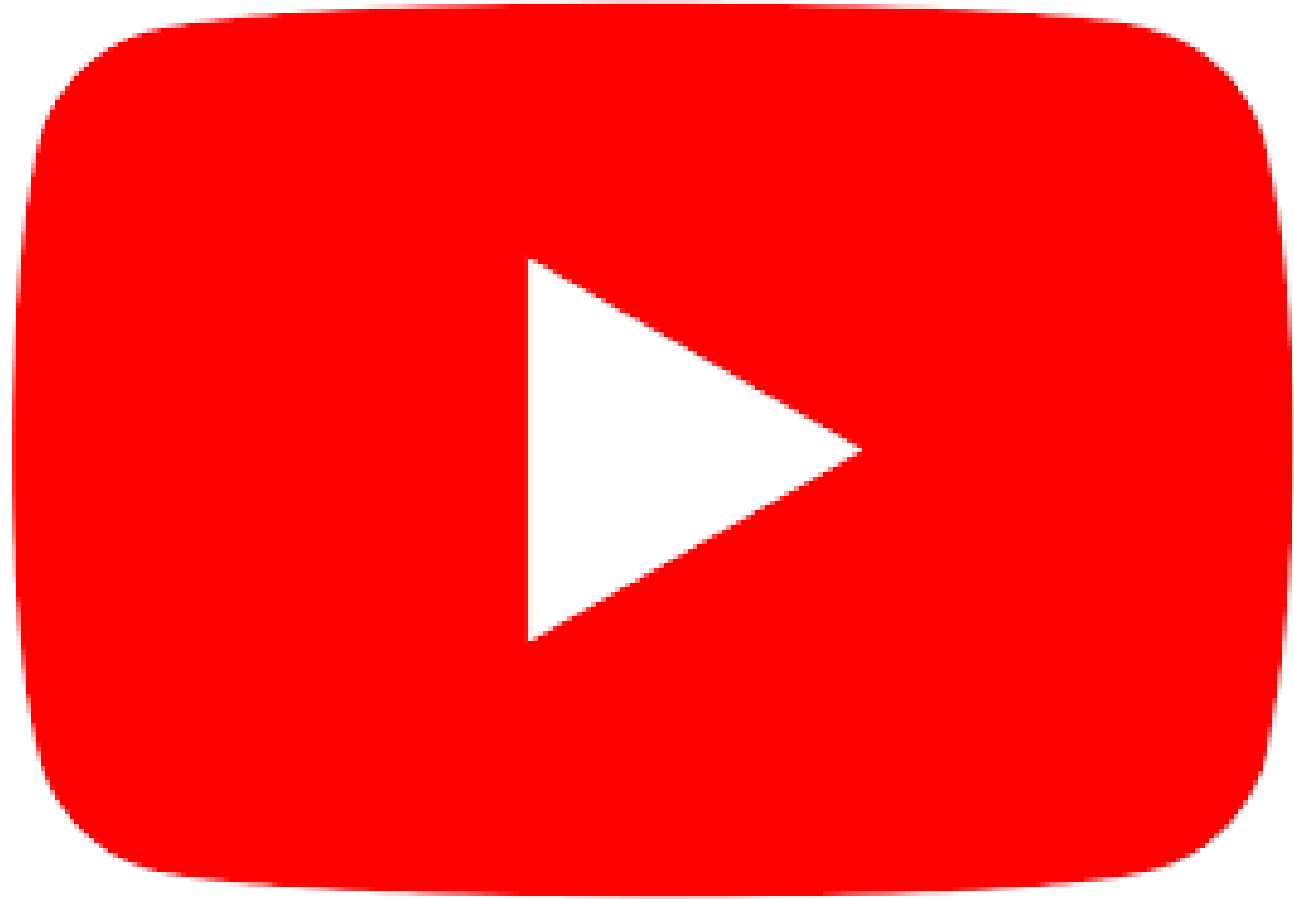
Key issues/requirements

- Reduced Contaminated Spoil off site
- Speed of Installation
- Thames Water Sewer easement
- Network Rail Restrictions
- High Loads

Project Solution

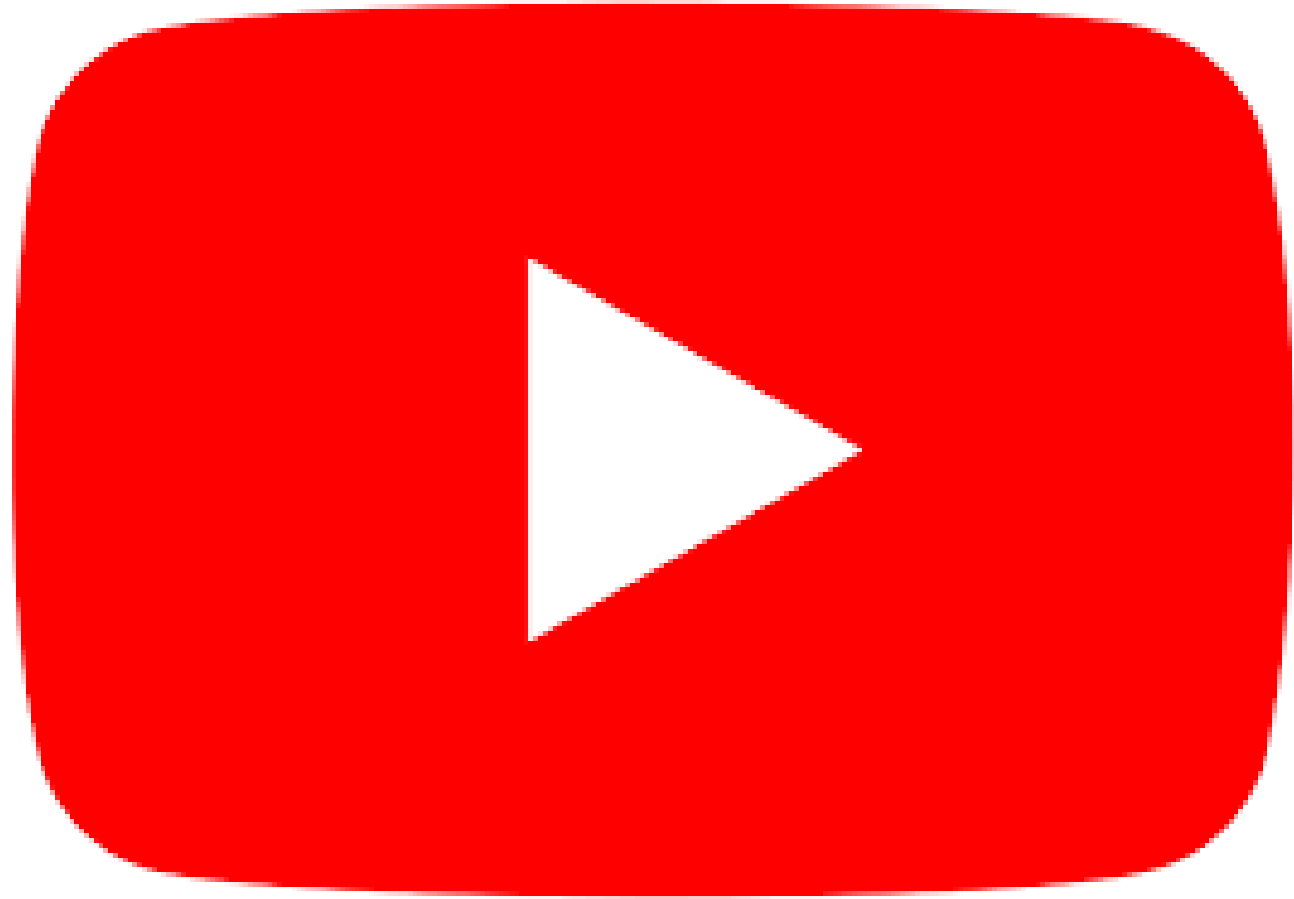
- Pre-auger Pile locations
- 2,500 no. 300/600mm & 400/700mm CHD Piles max 22.0m
- 77 No 600mm CFA piles to 26.0m
- 141No Male / Female Secant Piles 750mm





Project Solutions: Driven Precast Concrete Piles and Caps







Access 18, Avonmouth

Driven Precast Concrete Piles
Precast Caps

Key issues/requirements

- Quick programme
- Hard driving conditions

Project Solution

- 3 rigs employed
- Coordination with client to ensure steel erection could commence
- Static load testing
- Driven Precast Concrete Piles (250mm sq.) & Precast Caps (800mm sq.)
- 75 piles installed per day
- Pre-auger localised areas of dense soil layers
- Precast caps reduced design thickness of insitu slab



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Melksham Oak Community School New Teaching Block

Driven Precast Concrete Piles
RBeam

Key issues/requirements

- Steel frame
- Quick Program
- Adjacent existing school
- Residential location
- Delivery restrictions

Project Solution

- 177 no. (250mm sq.) Driven Precast Concrete Piles (Quiet hammer)
- 280lm RBeam
- 70 no. Holding down bolts for steel frame



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Care Home TRL Site, Crowthorne

Driven Precast Concrete Piles Sectional Flight Auger Piles (SFA)

Key issues/requirements

- Steel frame / Traditional mix
- Lift pit slabs / Crane base
- Holding Down Bolt sets
- Quick Program
- Residential location

Project Solution

- 186 no. (200mm sq.), 120 no. (250mm sq.) & 46 no. (300mm sq.) Driven Precast Concrete Piles (Quiet hammer)
- 300 SFA pile for crane base
- 3400lm pile in 10 days
- 750lm RBeam in 7 weeks
- Holding down bolts for steel frame
- Lift pit bases



Industrial Mezzanine, Nisbets, Avonmouth

Driven Precast Concrete Piles

Key issues/requirements

- Nighttime working
- 12m headroom
- Very poor ground to 16m
- Working inside existing building
- Narrow access for materials

Project Solution

- TR1 reduced headroom piling rig
- DPF-HD90 filters on rig and forklift
- Detailed planning and scheduling
- Precast piles better suited to very soft ground
- Segmental piles 72 no. (250mm sq.) 514kN



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Western Relief Road, Spalding

Driven Precast Concrete Piles
Cased CFA Piles

Key issues/requirements

- Settlement performance for load transfer platform
- Programme for completion
- Gas transfer slab sensitivity
- Very soft tidal flat deposits
- Railway line between working areas

Project Solution

- Preliminary pile testing of Driven Precast Concrete Piles and early involvement
- Multiple rigs employed
- Multiple pile types employed
- Sequencing, scheduling and close liaison throughout due to railway, gas main, programme requirements



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Big Yellow Storage, Hove

Contiguous Piled Retaining wall

Key issues/requirements

- 2 storey basement
- Groundwater table below excavation
- 6m Made Ground over Chalk
- Crane Base, Contig Piles, Load Bearing Piles

Project Solution

- CFA Piling
- Designed for temporary cantilever to reduce propping- programme acceleration
- 14 different reinforcement cage types for economic design



Commercial Property, The Majestic, Leeds

Sectional Flight Auger Piles

Key issues/requirements

- Works in existing basement
- Historic Building
- City Centre Location
- 100-year-old basement walls

Project Solution

- Mini rig craned into the building
- 450mm Crane base/column piles,
300mm Contiguous Piles
- Low vibration, restricted access
solution



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Thank you for listening!
Any Questions?

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in [@rogerbullivantlimited](https://www.linkedin.com/company/rogerbullivantlimited)

