SPECIALIST PILING SOLUTIONS ltd

PILING & SCREWPILING SPECIALISTS

OUR PROMISE TO YOU

Specialist Piling Solutions is your trusted partner, delivering a comprehensive range of services from initial design to project completion. With a proven track record of reliability, efficiency, and competence, we stand ready to serve your needs for all types of projects across the UK.

Our team of highly experienced and qualified engineers will meticulously design your foundation schemes and oversee our skilled, CSCS-certified workforce, ensuring a cost-effective piling solution that instils confidence.

Sincerely,

Julian Calcinotto
Managing Director

SPECIALIST PILING

OUR SERVICES

Controlled Flight Auger (CFA)
Pre-Cast
Steel Cased Driven (SCD)
Screwpiling
Sheet Pile Wall
Contiguous Pile Wall

OUR SECTORS

Education
Healthcare
Residential
Commercial
Industrial
Transportation
Environmental

CONTROLLED FLIGHT AUGER (CFA)

Continuous Flight Auger (CFA) Piling is a quick, low-vibration method to create deep foundations. It involves drilling with an auger, followed by concrete filling and reinforcement insertion, making it ideal for urban areas and diverse soil conditions.

STEP-BY-STEP

Site Preparation
Survey the site and mark pile locations.

Equipment Setup
Deploy the CFA rig and support machinery.

Drilling
Drill to the required depth with a continuous flight auger, removing soil and maintaining hole stability.

Concrete Placement
Pump concrete through the auger shaft as it's withdrawn, filling the hole.

Reinforcement
Insert a prefabricated reinforcement cage into the wet concrete for structural strength.

Quality Control
Monitor the process and test the completed piles for integrity and load capacity.

Completion
Allow concrete to cure and cap the piles for load distribution.

BENEFITS

- Minimal vibration, protecting nearby structures.
- Efficient and adaptable to various soil types.
- Continuous process ensures stability and speed.
- CFA Piling combines efficiency with reliability, making it a preferred choice for modern construction needs.

We offer diameters from 300mm to 600mm (not limited to 600mm) and depths up to 25 meters for tailored foundation solutions.

PRE-CAST

Pre-Cast Piling involves driving pre-manufactured concrete or steel piles into the ground, offering a robust foundation for various structures. This method is known for its strength, efficiency, and suitability for a wide range of ground conditions.

STEP-BY-STEP

Site Preparation
Conduct a detailed survey and mark out pile positions according to the structural design.

Pile Selection
Choose pre-cast concrete piles based on load requirements and soil conditions.

Transportation
Deliver pre-manufactured piles to the site.

Driving Equipment Setup
Position the piling rig and hammer over the marked locations.

Pile Driving
Drive the piles into the ground using a hydraulic or diesel hammer until the desired depth or resistance is achieved.

Alignment Checks
Ensure piles are correctly aligned and positioned as per the design specifications.

Jointing (if required)
For deeper foundations, join additional pile sections to reach the required depth.

Cutting and Capping
Trim piles to the correct height and cap them to distribute structural loads evenly.

BENEFITS

- **Durability**
  Pre-cast piles are highly resistant to environmental factors.
- **Speed**
  Installation is quick as piles are manufactured off-site.
- **Versatility**
  Suitable for both tensile and compressive loads.
- Pre-Cast Piling is a reliable foundation method, offering durability and adaptability for construction projects across diverse environments.

Precast concrete piles are a flexible and eco-friendly foundation option. These ready-made piles, customised in size and length, are driven into the ground using specialised equipment, providing quick installation, cost savings, and structural reliability.

Choosing this method not only boosts project efficiency but also aligns with sustainable and responsible building practices.

Controlled manufacturing ensures stability, while design flexibility meets specific load-bearing requirements.

SHEET PILE WALL

Sheet Pile Walls are constructed using interlocking steel sheets driven into the ground to provide earth retention and excavation support. Ideal for waterfront structures, retaining walls, and temporary construction shoring.

STEP-BY-STEP

Design & Planning
Assess site conditions and determine the wall's dimensions and materials based on structural requirements.

Material Selection
Choose sheet piles based on the project's environmental conditions and load demands – options are not limited to steel. Additionally, sealants are included within the piles

Transport & Handling
Deliver the chosen sheet piles to the construction site.

Driving Equipment Setup
Position cranes or piling rigs equipped with vibratory or impact hammers.

Driving Sheet Piles
Install the sheet piles by driving them into the ground to the required depth, ensuring interlocks are engaged for wall continuity.

Alignment & Adjustment
Regularly check and adjust the alignment to adhere to design specifications.

Anchoring (if required)
Install tie-back anchors or bracing for additional stability in high-load or high-wall scenarios.

BENEFITS

- **Flexibility**
  Can be used in various configurations to suit different site conditions.
- **Rapid Installation**
  Quick to install, providing immediate support.
- **Reusable**
  Steel sheet piles can be reused in temporary applications.
- Sheet Pile Walls offer a versatile and effective solution for earth retention and water defence, combining speed and efficiency with robust performance.

Sheet piling, using interlocking steel sheets, is a versatile construction method for retaining soil. It's applicable in various scenarios, with vibratory and vibration-free installation rigs available.

Common uses include supporting excavations, crafting seawalls, and forming barriers against groundwater.

In technical terms, sheet piles are sequentially installed for desired depth, creating a sturdy wall for permanent or temporary lateral support, minimising groundwater ingress. Anchors can be added for extra lateral reinforcement.

STEEL CASED DRIVEN (SCD)

Steel Cased Driven Piles, commonly used in foundation construction, consist of steel tubes driven into the ground to provide deep foundation support, usually bottom driven. They are known for their high load-bearing capacity and suitability for challenging soil conditions.

STEP-BY-STEP

Design & Planning
Determine the pile specifications based on the structural requirements and site soil analysis.

Pile Fabrication
Steel tubes are fabricated to the required lengths and diameters, with one end often sealed.

Site Preparation
Mark the pile locations on site according to the design layout.

Driving Equipment Setup
Mobilise the driving rig, equipped with a hydraulic or diesel hammer, to the site.

Pile Driving
Position the steel tubes at the marked locations and drive them into the ground using the hammer until the desired depth or resistance is achieved.

Depth Verification
Confirm that each pile has reached its designated depth and meets structural requirements, and install reinforcements

Capping
Once all piles are in place, cut them to the correct elevation and cap them to facilitate load distribution to the foundation.

BENEFITS

- **Durability**
  Steel piles offer excellent resistance to environmental degradation and physical wear.
- **Load Capacity**
  Capable of supporting substantial loads, making them ideal for heavy structures.
- **Versatility**
  Effective in a wide range of soil types, including those unsuitable for other piling methods.
- Steel Cased Driven Piles provide a reliable and efficient foundation solution, ensuring stability and durability for various construction projects.

Our method uses sleek, thin-walled steel casings with a sealed lead section, driven into the ground with an internal weight mechanism. Casings can be welded for desired depth. If needed, protruding casings address ground level challenges.

SCD piling in restricted access
Piles can be pre-augured for heave or vibration concerns, minimising noise and vibration. This approach is cost-effective, generating minimal spoil.

SCREW PILING

Screw Piling, also known as helical piling, involves the use of steel shafts with helical flights that are screwed into the ground to provide foundation support. This method is quick, minimally invasive, and effective in various soil types, making it ideal for both temporary and permanent structures.

STEP BY STEP

Site Evaluation
Conduct a thorough assessment of the site to determine soil conditions and load requirements.

Pile Design
Select the appropriate screw pile size, length, and number of helical flights based on the structural demands and soil characteristics.

Equipment Mobilisation
Bring in the hydraulic machinery equipped with a torque motor, which is necessary for installing the screw piles.

Installation
Attach the screw pile to the machinery and rotate it into the ground to the specified depth and torque, ensuring optimal load capacity.

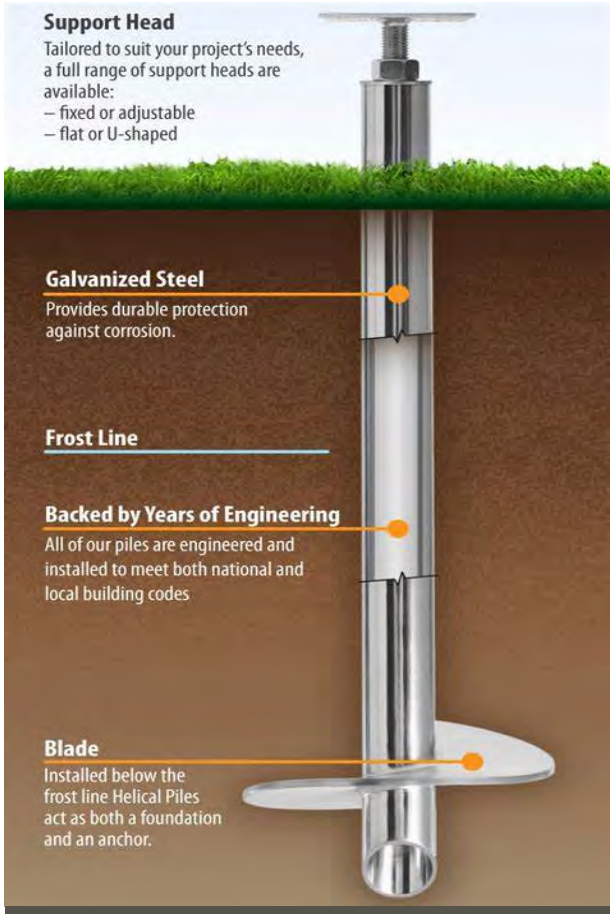
Verification
Monitor the installation torque to verify the pile capacity and ensure it meets the design requirements.

Load Connection
Once installed, connect the piles to the structure's foundation, using either top-mounted brackets or direct integration into the structural framework.

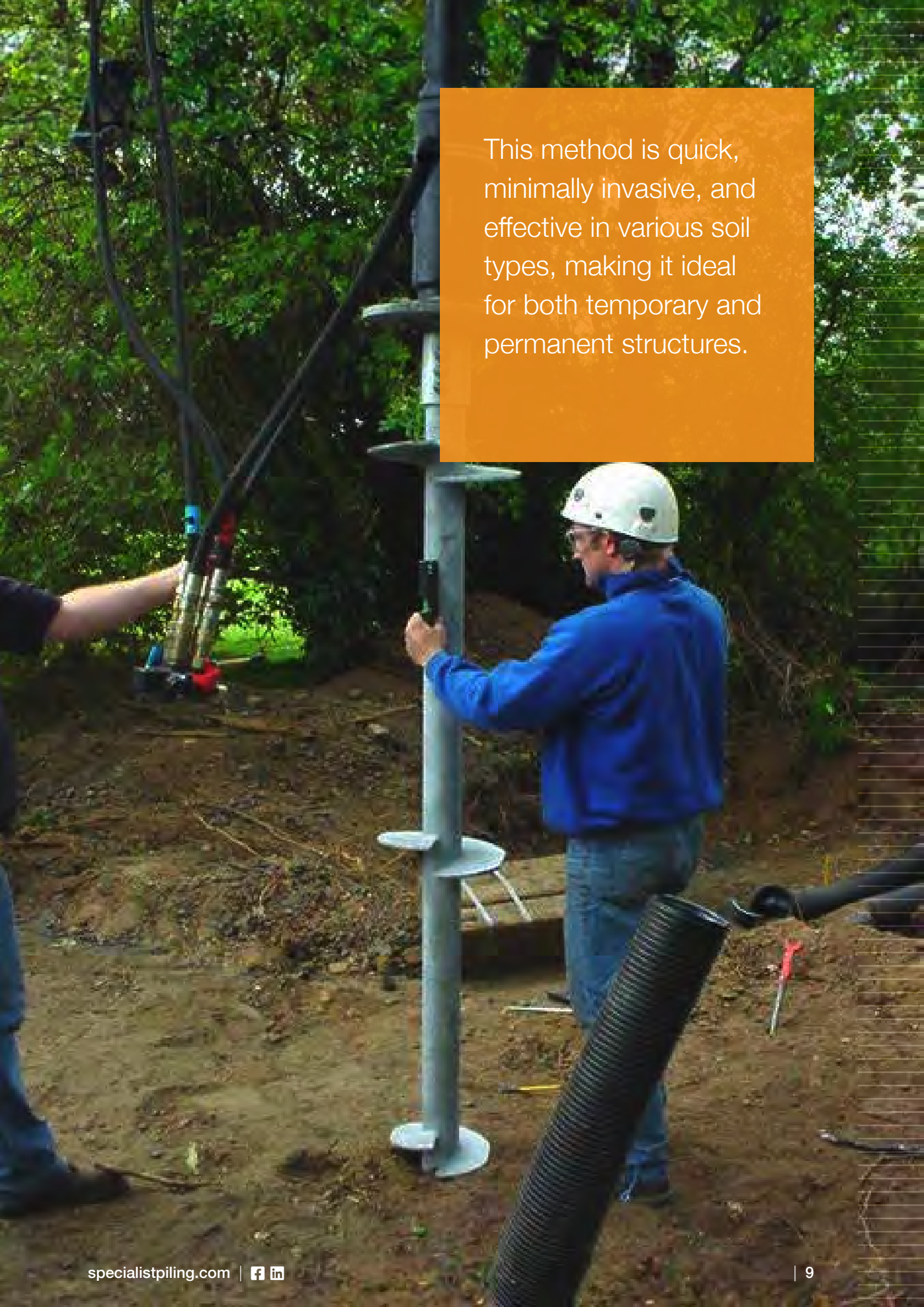
BENEFITS

- **Speed**
  Installation is fast, often completing within minutes per pile.
- **Environmentally Friendly**
  Minimal soil disturbance and vibration protect surrounding structures and ecosystems.
- **Versatility**
  Adaptable to a wide range of environments, including those with limited access or sensitive landscapes.

Screw Piling offers a sustainable and efficient foundation solution, combining ease of installation with robust performance for various construction needs.



More on this can be found with our sister company, ScrewPiling UK on page 16 of this brochure.



This method is quick, minimally invasive, and effective in various soil types, making it ideal for both temporary and permanent structures.

SECANT PILE WALLS

Secant Pile Walls are constructed by overlapping “primary” (unreinforced) and “secondary” (reinforced) concrete piles to form a continuous, interlocking barrier. This method is ideal for earth retention, groundwater control, and deep excavation support, especially in urban construction.

STEP-BY-STEP

Design & Planning
Determine wall dimensions, pile diameters, and spacing based on-site conditions and structural requirements.

Primary Piles Installation
Drill and pour the primary concrete piles at designated intervals. These piles are typically unreinforced and made with a weaker concrete mix.

Secondary Piles Installation
Once the primary piles have cured, drill and pour the secondary piles between them. These piles contain reinforcement bars or cages and are made with a stronger concrete mix to ensure structural integrity.

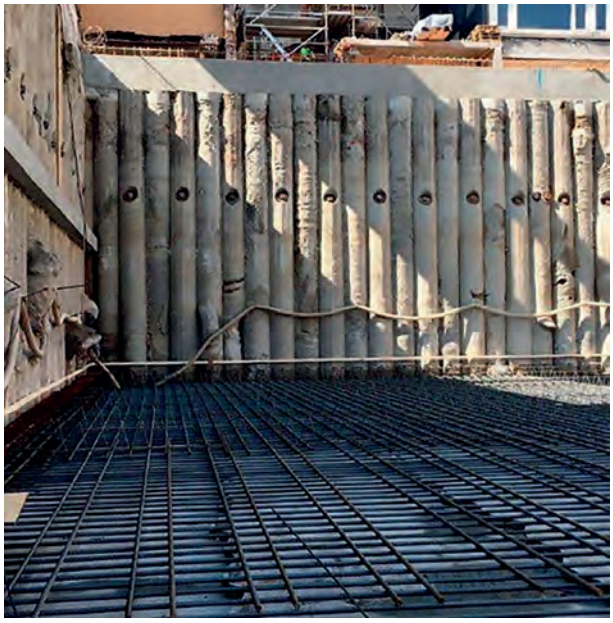
Interlocking
Ensure that the secondary piles cut into the primary piles, creating an overlapping, interlocking pattern that forms a continuous wall.

Alignment & Quality Control
Regularly check the alignment and integrity of the piles during installation to ensure the wall meets design specifications.

Excavation Support (if required)
Install internal bracing or anchors if the secant pile wall is used for excavation support.

BENEFITS

- **Versatility**
  Suitable for a wide range of soil conditions and project requirements.
- **Water Tightness**
  Offers excellent groundwater control, reducing the need for dewatering.
- **Minimal Disturbance**
  Reduced noise and vibration levels make it ideal for sensitive urban environments.
- Secant Pile Walls provide a robust solution for challenging construction scenarios, combining structural strength with flexibility and environmental sensitivity.



CONTIGUOUS PILED WALL

Contiguous Pile Walls are formed by installing closely spaced reinforced concrete piles to create a continuous wall. This method is primarily used for earth retention and excavation support in conditions where groundwater infiltration is not a significant concern.

STEP-BY-STEP

Design & Planning
Determine the wall's length, pile diameter, and spacing based on the project's requirements and site conditions.

Pile Installation
Drill holes at the marked locations and install reinforced concrete piles with small gaps between them. The gaps typically range from 50mm to 150mm, depending on the soil and design requirements.

Concrete Pouring
After placing the reinforcement cages, pour concrete into the drilled holes to form the piles.

Quality Control
Ensure the piles are correctly aligned and spaced, and that the concrete is of the specified strength and quality.

Excavation
Begin the excavation process adjacent to the pile wall, providing lateral support to the adjacent soil.

Capping Beam
Construct a reinforced concrete capping beam along the top of the piles to tie them together and provide additional structural integrity.

BENEFITS

- **Flexibility**
  Suitable for a variety of soil types and construction conditions.
- **Cost-Effectiveness**
  Often more economical than other retaining wall options, especially in non-water-bearing soils.
- **Adaptability**
  Can be designed to accommodate different load conditions and wall heights.
- Contiguous Pile Walls offer a practical and efficient solution for earth retention, particularly in urban construction where space and safety are paramount.

Auger drilling, followed by concrete filling and reinforcement insertion, making are ideal for urban areas and diverse soil conditions.

AFCB TRAINING GROUND (CFA)

Client: AFC Bournemouth
Pile Type: CFA
Location: Bournemouth, Dorset
Architect: AFL Architects
Contractor: AFCB Contract Management
Category: Leisure

AFC Bournemouth has enlisted the services of Specialist Piling Solutions to support them in the transformation of a sprawling 57-acre area into a cutting-edge, multi-million-pound training complex. Recently, a revised planning permission was granted, paving the way for the immediate commencement of this ambitious project.

This development will be executed in multiple phases, ultimately consolidating AFC Bournemouth's first team, development squad, academy, and pre-academy training operations at a single, unified location—a first for the club.

The centre will boast top-tier amenities, featuring nine full-size pitches, three junior pitches, three specialised goalkeeping pitches, an indoor artificial full-size pitch, and an outdoor artificial full-size pitch. Additionally, it will house state-of-the-art facilities for medical treatment, fitness training, sports science research, and rehabilitation. Administrative offices and a state-of-the-art press conference theatre will also be part of this impressive facility.

SPECIFICATIONS

- 533 CFA up to 23m
- 300/350mm in diameter
- Total Depth 8448m
- Soil & Clay surface

ROSEBANK WAY (CFA & SCREW PILING)

Client: Calcinotto
Pile Type: CFA, Screw Pile
Location: Ealing, London
Units: 25
Contractor: Premiere Real Estates
Category: Residential, Mixed-Use

The development located in North Acton, West London, within the London Borough of Ealing. The area is experiencing significant regeneration, largely driven by the Elizabeth Line (Crossrail), set to run from Acton Main Line.

This transit project is a catalyst for ongoing investment in the area, improving connectivity and potentially increasing property values and economic activity.

The site encompasses a 5/6 storey building within the following will reside;

- 23 self-contained apartments (1,836 sq. m / 19,763 sq. ft GIA).
- 2 commercial units on the ground floor.
- 53 parking spaces & 3 disabled parking bays.
- Specialist Piling Solutions were appointed to provide 187 CFA at depths around 20m.

SPECIFICATIONS

- 187 CFA
- 150 x 300mm
- 37 x 350mm
- 6 Screw Pile
- 76R
- Maximum length 24.2m
- Total depth: 2,786.8m
- 9.82 Ton of Steel
- 275.4m^3 of Concrete
- Ground Conditions: Clay & Topsoil

TITCHFIELDS

Client: Hampshire Homes
Pile Type: Pre-cast
Location: Fareham, Southampton
Ground: Clay & Sand
Contractor: Hampshire Homes
Category: Residential

The development is in Titchfield within the Fareham Borough. In 2020, Fareham Borough Council granted outline approval for this project.

This project aims to provide essential housing for the area while also improving local infrastructure, including vital crossing points and upgraded pathways and cycle lanes connecting to nearby amenities.

Specialist Piling Solutions were appointed to deliver a total of 709 piles ranging from 190mm to 235mm diameter, using a Precast-Concrete (PCC) solution. SPS opted to use this method to allow for 95 unit because of ground conditions – top soil underlaying clay

SPECIFICATIONS

- 95 Units
- 39 Affordable Homes
- 56 Units
- 709 PCC
- 64 x 235mm
- 645 x 190mm
- 7.5m Clay & 11.8m Sand across site
- Top Soil underlaying Clay
- Timeframe: 4-5 weeks

SCREWPILING

At ScrewPiling UK, we recognise the critical importance of solid foundations for any construction project. Our expertise in screw pile solutions streamlines the construction process, offering a rapid, efficient, and sustainable approach to meet a wide range of foundation needs including extensions, temporary structures, solar panel installations, foundation repairs, underpinning, new build foundations, accommodations for tree roots, and wind turbine installations.

EXTENSIONS & NEW BUILDS

For both home extensions and new constructions, our screw piles provide a swift, eco-friendly foundation alternative, ensuring minimal disruption and immediate structural support.

Our process includes a detailed site assessment, custom design and engineering, precise installation, and rigorous quality checks to guarantee a stable and durable foundation.

BENEFITS:

- Eco-friendly and energy-efficient.
- Quick installation with minimal site disruption.
- Customisable to specific project requirements.

TEMPORARY STRUCTURES & SOLAR PANELS

Our screw piles offer an ideal foundation solution for temporary structures and solar panel installations, characterised by speedy setup, low environmental impact, and versatility across different soil types.

The installation process is streamlined to ensure quick deployment and easy removal or reusability, aligning with the sustainability goals of modern projects.

BENEFITS

- Rapid deployment and easy removal.
- Minimal ecological footprint.
- Cost-effective with immediate load-bearing capability.

FOUNDATION REPAIRS & UNDERPINNING

Screw piles excel in stabilising and repairing existing foundations, offering a non-invasive, quick, and precise solution to subsidence, instability, or ground settlement issues.

Our approach includes thorough site assessment, custom pile design, and careful installation, providing a reliable and long-lasting foundation repair and underpinning solution.

BENEFITS

- Immediate stabilisation and load transfer.
- Tailored to specific soil and load requirements.
- Minimal vibration and disruption during installation.

ACCOMMODATING TREE ROOTS & WIND TURBINE INSTALLATIONS

Our screw pile solutions are designed to work in harmony with nature, allowing for the preservation of tree roots while providing a stable foundation.

They are also well-suited for anchoring wind turbines, offering durability against the elements and adaptability to various environmental conditions.

BENEFITS

- Preserves natural landscape and tree health.
- Durable and reliable in diverse environmental settings.
- Supports renewable energy initiatives with minimal ecological impact.

Low-strain tests like the TDR (Transient Dynamic Response) method swiftly assess concrete piled foundation integrity.

BEAUCROFT LANE, WIMBORNE

RESIDENTIAL

In Wimborne, a notable replacement and extension of a garage was completed ahead of its anticipated schedule. Initially projected to span a week, the project was finished within two days.

The outcome is a spacious double garage, now boasting an area of 56 square meters, enhancing the property's functionality and aesthetic.

The completion of this project was made possible through our 8-ton Kubota x60 (Excavator), allowing for the installation of 17 screwpiles, each delving to an average depth of 5 meters, laying a foundation for the extended structure.

This project was in collaboration with MPS Building LTD, setting the standards for residential projects in the south coast.

ScrewPiling UK provided 17 Screwpiles at 5 metres & 76mm using our 8 ton excavator.

ROSEBANK WAY, ACTON

COMMERCIAL

Nestled in North Acton, West London, within the London Borough of Ealing, Rosebank Way is at the heart of a dynamic revitalization, fuelled by the upcoming Elizabeth Line (Crossrail) from Acton Main Line.

Serving as a catalyst for ongoing investment, the transit project is set to boost connectivity and has the potential to elevate property values and spur economic activity.

The site encompasses a 5/6 storey building within the following will reside:

- 23 self-contained apartments (1,836 sq m / 19,763 sq ft GIA).
- 2 commercial units on the ground floor.
- 53 parking spaces & 3 disabled parking bays.
- Ground Conditions Clay & Topsoil.

ScrewPiling UK provided 6 screwpiles at 8m depth, 15Kn Torque & averaging 86mm diameter.

ST JAMES' VILLAS, WINCHESTER

RESIDENTIAL

Located in Winchester, our recent residential extension project showcased our commitment to quality and efficiency.

The addition of a basement necessitated the installation of 22x 76RR Diameter screwpiles, a task made challenging by restricted access within the property.

Utilising our specialised equipment, specifically the 65kg 700H Handheld Torque, we were able to overcome these constraints and achieve an impressive average depth of 6 meters. Despite the complexity of the task, our team completed the project well ahead of schedule, finishing in just three days, well within the one-week deadline.

Our skilled professionals at ScrewPiling UK brought their expertise to bear, ensuring the seamless execution of the project and turning our client's vision into reality.

This successful endeavour showcases our dedication to delivering exceptional results on every project we undertake.

ScrewPiling UK provided 22 screwpiles at 6m depth, 15Kn Torque & averaging 76mm diameter.

PROCESS SUMMARY

Our comprehensive process, applicable across all services, includes:

Site Assessment

Evaluating soil conditions and project requirements.

Design & Engineering

Customising screw piles for optimal support.

Installation

Efficiently installing screw piles with specialised equipment.

Structural Integration

Ensuring secure attachment and load distribution.

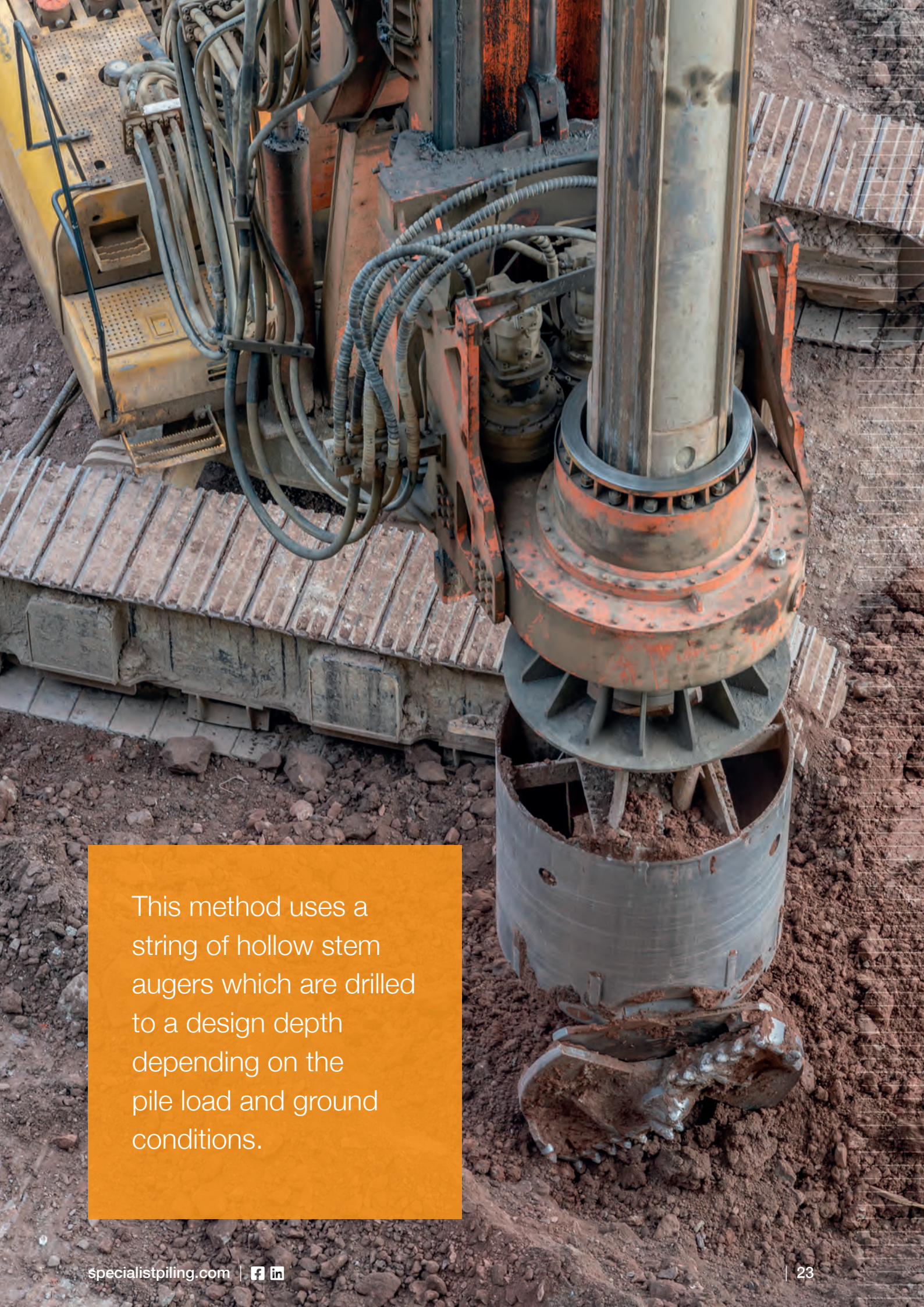
Quality Assurance

Conducting final inspections and load testing for peace of mind.

CONCLUSION

ScrewPiling UK is dedicated to providing cost-efficient, rapid, and environmentally conscious foundation solutions across a variety of sectors.

Our versatile screw pile systems offer a modern alternative to traditional foundation methods, ensuring the longevity, stability, and sustainability of your construction projects.



This method uses a string of hollow stem augers which are drilled to a design depth depending on the pile load and ground conditions.

HAVE A TRICKY PROJECT?
WE ARE HERE TO HELP!

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SOCIAL

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OUR ACCREDITATIONS

Smas WORKSAFE

Constructionline Gold Member

CHAS® Accredited Contractor CHAS.co.uk

BUILDER'S PROFILE