

Appendix 4
Tender Package for Commencement Pile

77 Avenue Road

Structural Specification D30 Piling



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REVISIONS: -

Revisions are highlighted in the text

REV	DATE	CLAUSES			NOTES
		DELETED	AMENDED	ADDED	
T1	01.03.17				Issued for TENDER

D30 PILING

To be read with Preliminaries/ General conditions.

NOTE: Where changes have been made to the standard NBS clauses these are identified in **bold** type.

005 PROJECT DESCRIPTION

Site Location: 77 AVENUE ROAD

The Works comprise: New build 2-level basement and concrete framed 3 storey house

010 INFORMATION TO BE PROVIDED WITH TENDER

- Submit:
 - Information listed in SPERW, table B1.1.
 - Other information:
 - Choice of piling type in accordance with this specification and appropriate details as listed in standard NBS clauses 140-180. To include confirmation of the pile size/diameter.
 - Three copies of Piling design calculations for use in a submission for Building Regulations approval.

020 INFORMATION TO BE PROVIDED BEFORE WORK STARTS

Submit as listed in SPERW, table B1.1 and as required by this specification, at least 5 working days before piling starts; if no other time limit is stated in the SPERW.

- Integrity Test results:
 - Initial test results: Submit after each test within 24 hours.

- **Full report: Submit after completion of each phase of testing within 5 working days.**

GENERAL

110 PILING SPECIFICATION

- **Standard: Comply with the current edition of 'Specification for piling and embedded retaining walls' (SPERW).**
- **Substitution of British Standard for SPERW requirements: none.**
- **References to Engineer in SPERW: For the purpose of this contract, interpret such references as being to the person named in section A10 as administering the contract on behalf of the Employer.**
- **Design working life category: 5**

130 PILES

- **Standard: To SPERW, sections B2-B6, as appropriate to the pile type.**
- **Permitted types: Mini-piles, cored and mechanically bonded to existing cap**
- **SPERW section B1.2 Project Specification information is given as follows; submit proposals as indicated in the relevant clauses:**
 - (a) **Role of the Engineer - See clause 110 and Contract Documents**
 - (b) **Location and description of the site - See clause 005**
 - (c) **Nature of the works - See clause 005**
 - (d) **Working area - See clause 005**
 - (e) **Sequence of the works and other works proceeding at the same time - See clause 005**
 - (f) **Contract drawings - See clause 210**
 - (g) **Office and other facilities for the Engineer - See the Contract Documents**
 - (h) **Submission of information (in addition to Table B1.1) - See clause 010**
 - (i) **Responsibility for design, including any division of responsibility - See clause 210**
 - (j) **Design standards and criteria for the piles or walls including design life - See clauses 110 & 210**
 - (k) **Constraints on design - None**
 - (l) **Working platform and commencing surface level - See clause 300**
 - (m) **Schedule of Specified Working Loads or Representative Actions - See pile schedule on drawings as noted in clause 210**
 - (n) **Pile or wall element dimensions - Nominal pile sizes are shown on the drawings & see clause 130**

- (o) Preliminary piles and trial bores/drives/panels - To be determined by the Contractor see clause 665
- (p) Performance criteria for the structure to be supported on the piles or by the wall - See clause 250
- (q) Performance criteria for piles under test or wall elements during service - See clause 280
- (r) Sampling and testing of materials (other than concrete) - Not required
- (s) Permissible damage criteria for existing critical structures or services - None permitted
- (t) Additional temporary works plant and duration of loading for which the working platform should be designed - See clause 300. Provide the temporary works co-ordinator with equipments loads proposed
- (u) Site datum and site grid - See clause 290
- (v) Restrictions on permissible working hours - See the Contract Documents
- (w) Restrictions on noise and vibration levels - See the Contract Documents
- (x) Site Investigation including geotechnical and geo-environmental information, and the need for further Site Investigation - See clauses 210 & 230
- (y) Disposal of excavated material and trimmed excess pile and wall material - See clauses 655 & 685
- (z) Other particular technical requirements - The Contractor is required to work to a Quality Management system established in accordance with BS EN ISO 9001:2000. Details shall be provided prior to commencement of work on site.

180 AUGURED CAST-IN-PLACE PILES

- Standard: To SPERW, section B4.
- Method of construction: **Bored mini-pile**
 - Splitting of auger: **To subcontractors approved method statement**
- Filling:
 - Material: **RC40**
 - Placing: Inject through hollow stem of auger.
 - Control of concreting/ grouting: **Subcontractor designed**
- Pile group designation: **North core**
 - Diameter: **220mm mini-piles (subcontractor to submit alternative proposals for approval if different to the above)**
 - Length: **Subcontractor designed**
 - Reinforcement:
- Quantity: **Subcontractor designed**

- Extent: **Subcontractor designed**
- Other requirements: **Mechanical bonding to pile-cap (existing)**

Extent: **North core (existing) only**

SYSTEM PERFORMANCE

210 CONTRACTOR DESIGN

- Standard: To **8004**.
- Design responsibility:
 - Piles: Complete design in accordance with SPERW, clause B1.4, option 2.
 - Other: **To be installed through existing pile-cap**
- Pile layout: **as drawing 1028/101 - T1**
- Site investigation: Confirm as adequate or propose further investigation as considered necessary **with tender submission**.
- Performance criteria for piles:
 - **Minimum factor of safety: 3**

230 GROUND INVESTIGATION

- Report: Prepared by **To be carried out**

250 PERFORMANCE CRITERIA FOR STRUCTURE TO BE SUPPORTED ON THE PILES

- Permitted settlement at working load (maximum): **5mm**

260 SPECIFIED WORKING LOADS FOR PILES

- **400KN (sls)**

290 SETTING OUT PILES

- **Agree site datums and basic grid with main contractor and CA.**
- **The piles are set out from the drawn grid on the AutoCAD drawings. The piles are located on the drawings to scale.**

300 COMMENCING SURFACE AND PILING MAT

- **N/A**

320 PILE LENGTH - TOE LEVEL

- Pile cut-off level: **generally 75mm above pilecap formation level - see drawings (note - pile-cap is existing, therefore exact formation level not known).**
- Depth of pile toe beneath site datum (minimum): **To subcontractor design**
- Other requirements: **None**

PRODUCTS

400 GENERALLY

The contractor is to provide the CA with details of any special products proposed for use in accordance with clause 20 and any requirement given in clauses 410 to 460.

470 CONCRETE GENERALLY

- Standards: To BS 8500-2 and SPERW, section B19.
- Project compressive strength testing of concrete:
- Exchange of information: Provide concrete producer with information required by BS 8500-1, clauses 4 and 5.

475 DESIGNATED CONCRETE FOR PILES

- **Designated concrete: RC40**
- **Reinforcement/ embedded metal: Yes**
- **Aggregates:**
 - **Size (maximum): 20mm.**
 - **Recycled coarse aggregates: Permitted to 20% mass fraction.**
 - **Other requirements: None.**
- **Other requirements for cement and combinations: None**
- **Consistence class: Minimum S3.**
- **Chloride class: C10.40. (TBC)**
- **Other requirements for admixtures: Details of proposed admixtures to be give to the CA allowing two weeks for comment by the CA before their use in the concrete.**
- **Other requirements: N/A**

530 REINFORCEMENT GENERALLY

- Steel reinforcement: To **BS 4449.**
- Type/ Grade: **500B.**
- Cutting and bending: To **BS 8666.**
- Supplier: **Obtain from companies holding valid certificates of approval for product conformity issued by the UK Certification Authority for Reinforcing Steels (CARES).**

540 COVER TO REINFORCEMENT

- Cover (nominal): **75mm.**
- Method of ensuring correct cover: **Submit details.**

550 LAPS IN REINFORCEMENT

- Length (minimum): **600mm.**

570 SONIC LOGGING DUCTS

- Material: **Contractors' choice.**

EXECUTION

- 612 PILE TRIMMING: **Method of cutting down top of piles: this must minimise the use of hand held tools.**
- 615 RECORDS AND SUBMISSION OF INFORMATION DURING THE WORKS
- Generally: As required in SPERW, tables B1.1, B1.6 and elsewhere, as appropriate for the pile types, materials and tests specified.
 - Amendments to requirements: **none.**
- 620 WELDING PROCEDURE
- Requirements additional to SPERW, section B6: **none.**
- 625 NON-DESTRUCTIVE TESTING OF WELDS
- Requirements: To SPERW, clause B6.6. **Contractor to agree method and scope of testing with CA before piling starts.**
- 650 PERFORMANCE OF WORKING PILES
- Substandard performance: Give notice if the performance of any pile will be less than that of a similar pile whose test behaviour has been accepted.
- 655 TESTING EXCAVATED MATERIAL
- **The contractor is to carry out testing as required by the Local authority to ensure material can be classified as inert or non-hazardous whenever possible. See clause 685.**
- 665 PREBORING FOR PILES
- **Required for the following: identify and allow removal of any obstructions that may affect subsequent pile installation.**
 - Depth (maximum): **10m**
 - Diameter (maximum): **100mm**
 - Filling to voids: **Contractor to provide proposals to suit subsequent pile installation.**
 - Restrictions: **None**
 - Records: Submit, giving location, depth and diameter of and filling to prebores.
- The Contractor shall confirm in his Tender that sufficient time has been allowed in the piling programme for dealing with obstructions in the made ground.**
- The use of preboring is not specified but is permitted at locations subject to prior approval by the CA. The Contractor shall state in his Tender whether he proposes to use trial bores and his method of backfilling, and that sufficient time has been allowed in the piling programme for dealing with obstructions in the made ground.**
- 680 PROHIBITION OF SUPPORT FLUID
- Usage: **Not permitted.**

- 685 EXCAVATED MATERIAL
- Disposal: **Contractors' responsibility to remove from site.**
- 690 DISPOSAL OF PILE HEADS
- Cutting down and disposal: Contractor's responsibility.
- 700 PLACING CONCRETE IN DRY BORINGS AND CASINGS
- **Requirements SPERW, clause B3.5.2.3. The contractor is to demonstrate their proposals for placing concrete ensure the requirements of the SPERW are met.**
- 705 MONITORING CONSTRUCTION OF AUGURED PILES
- Requirements additional to SPERW, clause B4.4.9 and B4.5:
 - Monitor the following and record with pile records: **all new piles** to north core
- 710 INSTRUMENT FAILURE
- Manual monitoring: Use a stop watch.
- 720 PREPARATORY PREBORING FOR LOW FRICTION SLEEVING OR SURROUND
- Requirement: Carry out to base of low friction treatment.
 - Preboring diameter: **to suit sleeving.**
- 725 SUPPORT TO PREBORED HOLE FOR LOW FRICTION SLEEVING OR SURROUND
- Method of achieving temporary stability: **submit proposals before piling starts.**
 - Depth: To suit sleeving length and ground conditions.

COMPLETION

- 910 HEALTH AND SAFETY FILE
- Requirement: Collate and submit a full set of pile records for inclusion in the health and safety file.
 - Content:
 - Record drawings: With each pile numbered and giving the 'as built' location of each pile relative to **the site grid.**
 - Records: Copy of each record submitted during the progress of the work.
 - Latest date for submission: **15 working days after the completion of the piling work.**
- 920 PILING GUARANTEE
- Type: Insurance backed. Administered by an independent insurance protection company.
 - Guarantee period (minimum): **12 years.**
 - Documentation: Provide certificates/ guarantees at completion of piling works.

