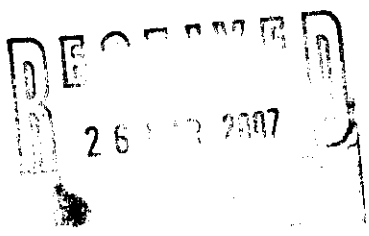
PRICE & MYERS
CONSULTING ENGINEERS

30 Newman Street London W1T 1LT
Tel: 020 7631 5128 Fax: 020 7462 1390
E-mail: name@pricemyers.com
www.pricemyers.com

St Stephen's Hampstead Phase IIA, 9199

Engineer's Specification

Contents:



Prepared by: **Balazs Bicsak**
November 2006

Reference: **9199/4**

REVISIONS
Revisions are highlighted in the text

Rev.	Date	Clauses			Notes
		Deleted	Amended	Added	
-	-			All	Issued for Tender
A	10/11/06			D20/115*	Issued for Tender

A33 GENERAL

HEALTH AND SAFETY

313* The Contractor must liase with the Planning Supervisor and inform the Health and Safety Executive of the works by filling in and submitting an F10 form prior to starting work on site.

SETTING OUT

321 The Contractor shall check or agree the existing dimensions shown on the drawings and must give written notice to the Architect if he is not satisfied with their accuracy.

322* No measured survey is available for the site. All reduced levels shown on the drawings have been derived from a photogrammetric survey carried out in 1998. The Contractor should carry out the site investigation work set out on drawing 9199/E100 as soon as possible after work starts on site.

323 The Contractor shall be responsible for all necessary setting out and datum lines and levels to enable the works to be set out to the requirements and accuracies of this specification.

371 Unless otherwise indicated on the drawings the setting out dimensions and levels of the finished works shall be within the maximum tolerances given below.

Description	Maximum Tolerance
All dimensions of 3m and over	+/- 5mm
All dimensions less than 3m	+/- 3mm

STABILITY AND TEMPORARY WORKS

491 The Contractor will be held responsible for the stability and protection of the existing walls, floors, ceilings, roofs and any other part of the existing and adjacent properties which are not specified to be removed, and will be liable for their replacement or repair to an equal standard, to the satisfaction of the Architect.

TEMPORARY WORKS DESIGNER / CO-ORDINATOR

492 Confirm details of the person responsible for all temporary works design (called the 'temporary works designer / co-ordinator') when returning the tender.
Full design details (drawings and calculations) are required for comment by the Engineer for all temporary support systems.
Three paper copies of all details for comment are to be issued allowing ten working days for preparation of comments by the Engineer.

493 When installing steel beams into an opening wider than 3m in an existing structure, allow for the use of folding wedges or other means to pre-deflect the beam to give a mid-point deflection of span/400 before transferring load from temporary works into the beam.

D20 EXCAVATING AND FILLING

110 A number of site investigations have been carried out. Please ask for copies if required.

113 The Contractor is expected to visit the site and note the visible conditions.

114 All work to be in accordance with BS 8000: Part 1 (Workmanship on building sites: Code of practice for excavation and filling).

115* It is thought that the existing drainage is in poor condition (fractured/damaged). Contractor should allow for over ground drain connections to existing manholes, to avoid getting the underpinning excavations filled up with rainwater from the large roof areas.

EXCAVATING

151 Before beginning any excavation the Contractor must ensure that he has located any live services in the neighbourhood of the intended excavation.

162 In the planning of the works the Contractor should take account of the nature of the site and should allow for maintaining the ground at the required levels and in a suitable condition to receive the final works, including any landscaping. Any parts of the site which are allowed to deteriorate through heavy traffic will be consolidated or brought up to level as necessary at the Contractor's expense.

206 Prices for excavations shall include for excavation in whatever type of soil is encountered or in hardcore, rubble etc. and for removing small roots, disused drains and small isolated obstructions.

207* The Contractor should note that there are a number of mature trees on the site and that there are substantial tree roots present in the areas of proposed excavations. Allow for liaison with the Tree Officer on site and see the Architect's details for dealing with roots greater than 50mm in diameter.

243 No excavation within 3 metres of an existing foundation is to be taken below the level of the existing foundation unless a method statement has been agreed in writing with the Engineer.

251 The Contractor shall be responsible for setting up and maintaining an accurate site datum level for the work. Immediately upon taking possession of the site, the Contractor shall carry out and record a check level grid of the site that shall be agreed

between the Architect and the Contractor. No alteration of levels shall be undertaken until agreement has been reached and the Architect's instructions have been received.

252 Excavations shall be carried out to the lengths, widths and depths shown on the drawings. The method of excavation should be to the approval of the Engineer.

261 The Engineer and Building Inspector shall be given the opportunity of examining all excavations, filling and hardcore before they are concreted or covered up. The Contractor shall give at least 24 hours' notice of when excavations will be ready for inspection. If a good foundation is not obtained at the level shown, the Engineer is to be informed. No concrete is to be laid until the bottom has been approved.

262 Excavations shall not be left exposed longer than necessary in order to avoid deterioration from the weather or other causes, and if necessary they should be protected. In clay formations the excavations shall not be left exposed for more than 24 hours. If the formation deteriorates it shall be cleaned out and reformed to the Engineer's satisfaction before any concrete is placed.

291 The Engineer is to be informed immediately if any significant change in strata occurs at formation level.

311 The Contractor shall keep excavations free from water for as long as the Engineer may consider necessary having regard to the nature of the work, and shall construct temporary ditches, drains, and sumps, and provide any pumps that may be necessary to achieve this. The Contractor shall notify the Engineer immediately if water percolation or waterlogging becomes apparent and he shall obtain the written permission of the Engineer before carrying out any continuous pumping or other method of removal of the water.

312 The position of any sumps which the Contractor may wish to construct to remove water shall be subject to the approval of the Engineer.

313 Should it be found that pumping appears to result in disturbance or 'boiling of the ground' the Contractor is to notify the Engineer whose instructions shall be closely adhered to and carried out without delay.

360 Should any excavation be taken below the level required to obtain a suitable foundation, the Contractor will be required to fill in the excavation to the proper level with 1:8 mass concrete as directed at his own expense. Should there be any overbreak on the width of the foundation the Contractor may be required to backfill outside the required width with 1:8 mass concrete at his own expense.

370 The ground to be excavated shall be protected to prevent freezing, by a layer of insulating material. Excavations shall be protected against freezing, and frozen materials shall not be used for backfilling.

FILLING

710 Hardcore for filling shall consist of selected clean broken stone, concrete, hard sound brick, slag or other approved materials, and shall be chemically inert. The materials shall be broken down to a maximum 75mm gauge with a sufficient proportion of fines for thorough compaction. Hardcore shall be well consolidated by means of roller, vibrating plate or mechanical punner. Care shall be taken that no damage is caused to foundation walls and services.

725 Unless otherwise directed all trenches, pits etc. shall be backfilled with hardcore as specified above, this material being carefully tamped around the foundations, pipes, etc. and thoroughly consolidated to the Engineer's approval throughout in order to obtain even bearing. The filling shall be in layers not exceeding 150mm thick. When timbering is withdrawn all cavities remaining in or adjoining the trench shall be solidly filled.

731 All hardcore is to be blinded with 50mm of GEN 1 concrete, which is to be consolidated to fill all the interstices of the hardcore and to provide a firm level surface.

D50 UNDERPINNING

110 Before starting the work the Contractor is to check for any services that could be damaged by the underpinning work.

120 The Contractor shall be responsible for ensuring that his operations do not in any way impair the safety or condition of the building both before and during the execution of the work and immediately inform the Engineer if he considers that more stringent procedures than those specified are necessary.

130 Underpinning is to be carried out in short sections of about 1 metre in length. The bottoms of the foundation shall be inspected and approved by the Engineer and the Building Inspector before concrete is poured. The underpinning is to be carried out to the satisfaction of the Engineer and the Building Inspector.

150 The body of the underpinning is to be constructed in 1:2:4 mix concrete and is to be cast to the widths shown unless otherwise directed by the Engineer. Excavation and concreting of any section of underpinning shall be carried out on the same day.

160 The mass concrete is to be stopped off 75mm below the underside of the existing footing and the final pinning up over the whole of the footing is to be carried out with 1:3 mix cement to sharp sand dry pack mortar, well rammed in 24 hours after the mass concrete has been poured.

170 Excavation to any section of underpinning shall not be started until at least 48 hours after completion of any adjacent sections of the work.

180* The sides of the previous underpinning bays are to be roughened or keyed to the satisfaction of the Engineer and Building Inspector. **Where shown on the drawings allow for pins to be tied together with high tensile reinforcing bars.**

190 Sequence of underpinning to be as shown. All sections marked 1 to be excavated, cast and dry packed before starting excavation of section marked 2 and all sections marked 2 to be complete before excavation for sections marked 3 etc.

200 The Contractor is to keep a record of the sequence and dimensions of the underpinning actually carried out, including details of excavation, casting concrete and pinning up for each section.

210 Excavated material intended for backfilling is to be kept protected from drying out or wetting and is to be placed in maximum 150mm layers, carefully compacted with a pneumatic or electric percussion tool with compacting plate.

E05 IN SITU CONCRETE CONSTRUCTION GENERALLY

111 All work to be in accordance with BS 8000: Part 2 (Workmanship on building sites: Code of practice for concrete works).

E10 IN SITU CONCRETE, CASTING AND CURING

CONCRETES

103 Concrete shall comply with the requirements of BS 8500: Part 2 and BS EN 206. The concrete for this project is to be in accordance as shown below:

Use	Concrete Designation	Consistence	Notes
Mass Concrete	GEN3	S3	Use of RA and RCA permitted
Reinforced Concrete Ground Slab	RC35	S3	Use of RA and RCA permitted

MATERIALS, BATCHING & MIXING

215 Ready-mixed concrete must be supplied by a registered company from a plant holding current Certification of Product Conformity of the Quality Scheme for Ready Mixed Concrete (QSRMC), or equivalent third party scheme. The Contractor shall provide the Engineer with confirmation of the supplier's certification at least two weeks before any concrete is delivered to site. Each concrete must be obtained from only one source unless otherwise approved. Retain all delivery notes, as required by BS8500, for inspection.

216 When agreed with the Engineer, site-mixed concrete may be used. An agreed pre-batched and bagged proprietary concrete must be used unless an alternative site batched concrete has been agreed with the Engineer.

256 The cement shall be Portland cement designation CEM 1 to BS EN 197 unless otherwise agreed with the Engineer.

306 COARSE AGGREGATE
- graded as 4/20 in accordance with BS EN 12620.
- shall not contain hollow shells.
- shell content shall be category SC_{10} in accordance with table 10 of BS EN 12620.

416 The Contractor shall provide details of all admixtures to be used in the concrete and agree their use with the Engineer before any concrete is delivered to site.

491 During cold weather the Contractor shall ensure that the concrete has a minimum temperature of 5°C (41°F) when placed and he shall take all necessary measured to ensure that the temperature of the placed concrete will not fall below 5°C (41°F) for the specified curing period.

CURING AND PROTECTION

812 The Contractor is to provide suitable curing for all concrete elements to comply with the requirements of BS 8110-1:1997, Table 6.1.

841 The Contractor is to protect all concrete surfaces to be exposed in the finished work from dirt, staining, rust marks and other disfiguration.