BASEMENT CONSTRUCTION METHOD STATEMENT

AT

51 Wieland Road,
Northwood,
HA6 3QX.

July 2015

Report Ref: 3529-ST001

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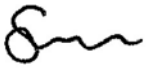
DOCUMENT RECORD

Document Ref: **3529-ST001**					
Revision	Date	Remarks	Collaborators		Signature
-	13/07/15	Issued for Approval	Prepared by:	Daniel Aitken *BEng MIStructE*	
			Checked by:	Steve Catton Principal Engineer	
			Approved by:	Graham White Principal	

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APPENDICES

1. INTRODUCTION

1.1 The proposed development at 51 Wieland Road includes the demolition of an existing property and the construction of a new two storey and room in the roof with basement detached property. The proposed superstructure is a traditional load bearing masonry construction whilst the substructure is of reinforced concrete construction. This report considers the construction methodology for forming the basement, taking into account the proximity of the neighbouring properties and site specific soil conditions that exist beneath the property.

2. SITE TOPOGRAPHY AND UNDERLYING SOILS

2.1 A topographical survey drawing of the site indicates the existing ground levels to be reasonably level with a rise of around 600mm from right to left. The proposed basement excavation is to extend approximately 3.0m below proposed external ground level which is indicated on the attached construction methodology section drawings. A swimming pool incorporated to the front of the basement deepens the construction to approximately 4.5m below ground level.

2.2 The British Geological Survey records indicate the site to be underlain by the London Clay Formation to an unknown depth over the Lambeth Group. This geology has been confirmed by an intrusive site investigation undertaken at this site by Structa LLP, a copy of borehole logs from report 3529-GE001 dated 18 August 2014 is attached.

2.3 The site investigation did not encounter the water table within the depth of the borehole (to 11.45m BGL)

3. PROPOSED BASEMENT CONSTRUCTION & TEMPORARY RETAINING STRUCTURES

3.1 The proposed basement is located approximately on the existing footprint of the building though extending approximately a further 4m to the rear. This will place the closest point of the basement as 1.5m from the basement to No. 49 Wieland Road and 0.9m to No. 53 Wieland Road. The front basement wall is positioned approximately 9m from the boundary with the highway, and rear wall to the basement is 32m from the rear site boundary. Where the proposed basement is in close proximity to the site boundaries, it is considered that temporary support will be required to the excavations in order to support the adjoining soils, boundary walls and buildings. The temporary support could be extended to the full perimeter of the basement to assist construction, and will likely be provided by a bored pile wall which would cause minimal vibration compared to other methods.

3.2 The bored piled wall can either be formed as a Secant or a Contiguous retaining wall however the geotechnical report states that any groundwater seepage occurring during construction should be able to be adequately controlled with the use of conventional sump pumping techniques.

3.3 The detailed design of the piled retaining wall will determine the requirement for any temporary propping required between the tops of the piles during the excavation and construction processes. The specialist designer will specify either a cantilevered piled retaining wall which does not require temporary propping, or a propped piled retaining wall which does require temporary propping between the tops of the piles. The permanent condition of the pile wall to be propped by the ground floor construction.

3.4 The detailed design and installation of any temporary works measures will be undertaken by specialist contractors using best practice, relevant construction standards, design parameters contained within the site investigation report by Structa LLP, and Structural Engineers advice to minimise the risk of movement or damage to the adjoining owner's buildings, boundary walls and supporting soil. There is a substantial body of experience in the construction of basements within London Clay and thus an experienced competent contractor should readily be available to carry out the works safely. The piles can be designed to provide an adequate stiffness to provide temporary and permanent support for the structure.

3.5 Design of the piled wall propping and de-propping sequence is the responsibility of the contractor. It is the responsibility of the contractor to ensure that the design of the piled wall and basement construction sequence is such that soil settlement is kept to a minimum and any damage to adjoining buildings is mitigated.

4. CONSTRUCTION SEQUENCE

The following sequence of works could be considered for the construction of the basement:-

- Demolish the existing house and clear the site of obstructions.
- Install the piling platform across the footprint of the basement.
- Install the cantilever or propped piled retaining wall to the perimeter of the proposed basement, to provide support to the surrounding soils during the basement excavation.
- Construct reinforced concrete capping beam along the tops of the piles.
- Install temporary propping between the tops of the piles, if specified by the specialist designer.
- Excavate soils within the basement footprint, installing any further temporary propping as required and as works progress. Utilise dewatering measures within the excavation, as required.
- Prepare the formation in preparation for constructing the new reinforced concrete basement floor slab. These works are to be inspected and approved by the Building Control Officer prior to the pouring of concrete. Pour the basement slab.
- Construct the load bearing walls within the basement.
- Construct the ground floor which will provide the permanent propping to the basement structure. Removal of the temporary propping is to be sequenced in conjunction with the construction of the floor.
- Basement construction complete. Commence construction of the superstructure above.

5. CONCLUSIONS

5.1 Based on the information available at this time it is possible to conclude that there is a safe and effective method of excavating and constructing the basement without significant impact on the public highway or neighbouring properties.

APPENDIX A

Borehole Logs

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Window Sample No.
WS1
Sheet 1 of 3

Project Name: **51 Wieland Road, Northwood**	Co-ords: -	Hole Type **WS**
Location: **51 Wieland Road, Northwood**	Level: **-**	Scale **1:25**
Client: **Seabrook Architects LLP**	Project No. **124-14-002**	Dates: **09/07/2014**
		Logged By **OS**

Samples and In Situ Testing			Depth (m)	Level (m AOD)	Stratum Description	Legend	W/S	Well
Depth (m)	Type	Results						
0.10	ES1				MADE GROUND: Stiff brown slightly sandy becoming less sandy with depth slightly gravelly CLAY. Gravel is subangular to subrounded brick and quartzite. (Topsoil)			
0.40	D2		0.50					
0.60	ES3				Firm becoming stiff with depth light brown mottled grey and orange brown becoming silty with depth CLAY with occasional fine to coarse sand pockets and selenite crystals. Occasional roots and rootlets in upper part. (Probable London Clay)			
1.00	ES4							1
1.20-1.65	D5	N=3 (0,0,0,0,2,1)						
1.60	D6							
2.00-2.45	D7	N=12 (1,2,2,3,3,4)						2
2.50	D8							
3.00-3.45	D9	N=16 (2,2,2,4,4,6)						3
3.50	D10							
4.00-4.45	D11	N=19 (2,2,3,5,5,6)						4

Continued next sheet

Remarks

Hand dug inspection from ground level to 1.2m bgl. Windowless sampling from 1.2m bgl to completed depth. Groundwater not encountered. Installed with combined gas and groundwater monitoring standpipe on completion.

Key

D - Disturbed Sample	C/S - SPT/CPT
ES - Environmental Sample	W - Water Sample
B - Bulk Sample	W/S - Water Strike
U - Undisturbed Sample	NR - No Recovery
INV - Insitu hand shear vane test	

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Window Sample No.
WS1
Sheet 2 of 3

Project Name: **51 Wieland Road, Northwood**	Co-ords: -	Hole Type **WS**
Location: **51 Wieland Road, Northwood**	Level: **-**	Scale **1:25**
Client: **Seabrook Architects LLP**	Project No. **124-14-002**	Dates: **09/07/2014**
		Logged By **OS**

Samples and In Situ Testing			Depth (m)	Level (m AOD)	Stratum Description	Legend	W/S	Well
Depth (m)	Type	Results						
5.00-5.45	D13	N=19 (2,3,3,5,5,6)			Firm becoming stiff with depth light brown mottled grey and orange brown becoming silty with depth CLAY with occasional fine to coarse sand pockets and selenite crystals. Occasional roots and rootlets in upper part. (Probable London Clay)			
5.50	D14				5.00m - 9.40m: Clay becoming brown with orange brown partings.			
6.00-6.45	D15	N=21 (2,3,3,4,7,7)						6
6.50	D16							
7.00-7.45	D17	N=19 (2,2,4,4,5,6)						7
7.50	D18							
8.00-8.45	D19	N=24 (3,3,5,5,6,8)						8
8.50	D20							
8.90	ES21							
9.00-9.45	D22	N=24 (3,4,4,6,7,7)						9
			9.40		Stiff grey silty CLAY with occasional selenite crystals and rare subangular medium gravel of siltstone. (Probable London Clay)			
9.60	D23				9.70m - 9.90m: Stiff grey slightly sandy slightly gravelly clay. fine siltstone and			
9.80	D24							

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Remarks

Hand dug inspection from ground level to 1.2m bgl. Windowless sampling from 1.2m bgl to completed depth. Groundwater not encountered. Installed with combined gas and groundwater monitoring standpipe on completion.

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Window Sample No.
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Sheet 3 of 3

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Location: **51 Wieland Road, Northwood**	Level: **-**	Scale **1:25**
Client: **Seabrook Architects LLP**	Project No. **124-14-002**	Dates: **09/07/2014**
		Logged By **OS**

Samples and In Situ Testing			Depth (m)	Level (m AOD)	Stratum Description	Legend	W/S	Well
Depth (m)	Type	Results						
10.00-10.45	D25	N=26 (3,4,5,6,7,8)			Remaining Detail : 9.70m - 9.90m : occasional selenite crystals.			
10.60	D26							
11.00-11.45	D27	N=26 (4,4,4,7,7,8)						
			11.45		End of Borehole at 11.45 m			

11
12
13
14

Remarks

Hand dug inspection from ground level to 1.2m bgl. Windowless sampling from 1.2m bgl to completed depth. Groundwater not encountered. Installed with combined gas and groundwater monitoring standpipe on completion.

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APPENDIX B

Basement Details

Title: CONSTRUCTION METHODOLOGY - KEY PLAN

Ref: 3529-SK001 By: DA Date: 13.07.15

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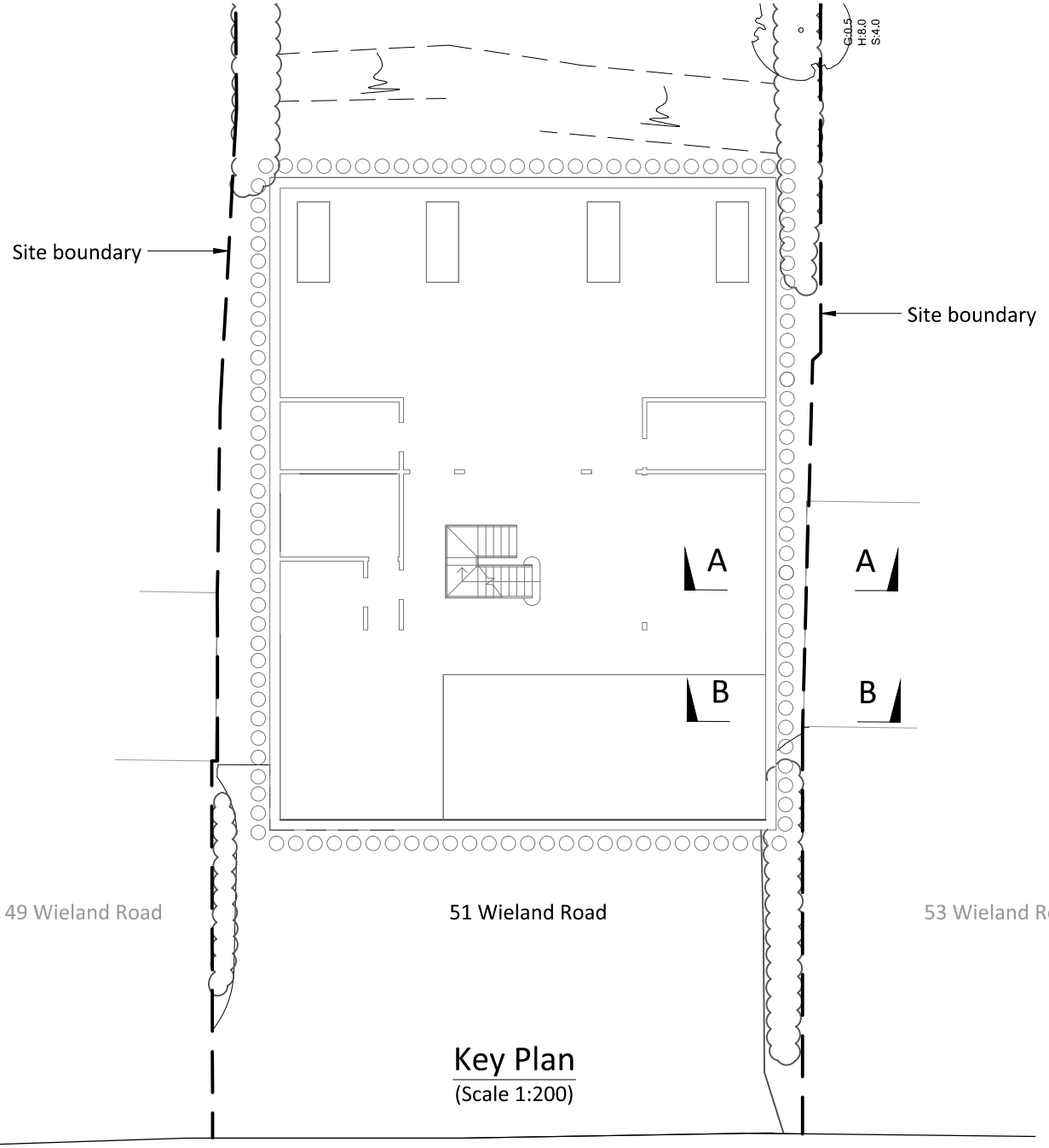

Key Plan
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Title: CONSTRUCTION METHODOLOGY - SECTIONS

Ref: 3529-SK002 By: DA Date: 13.07.15

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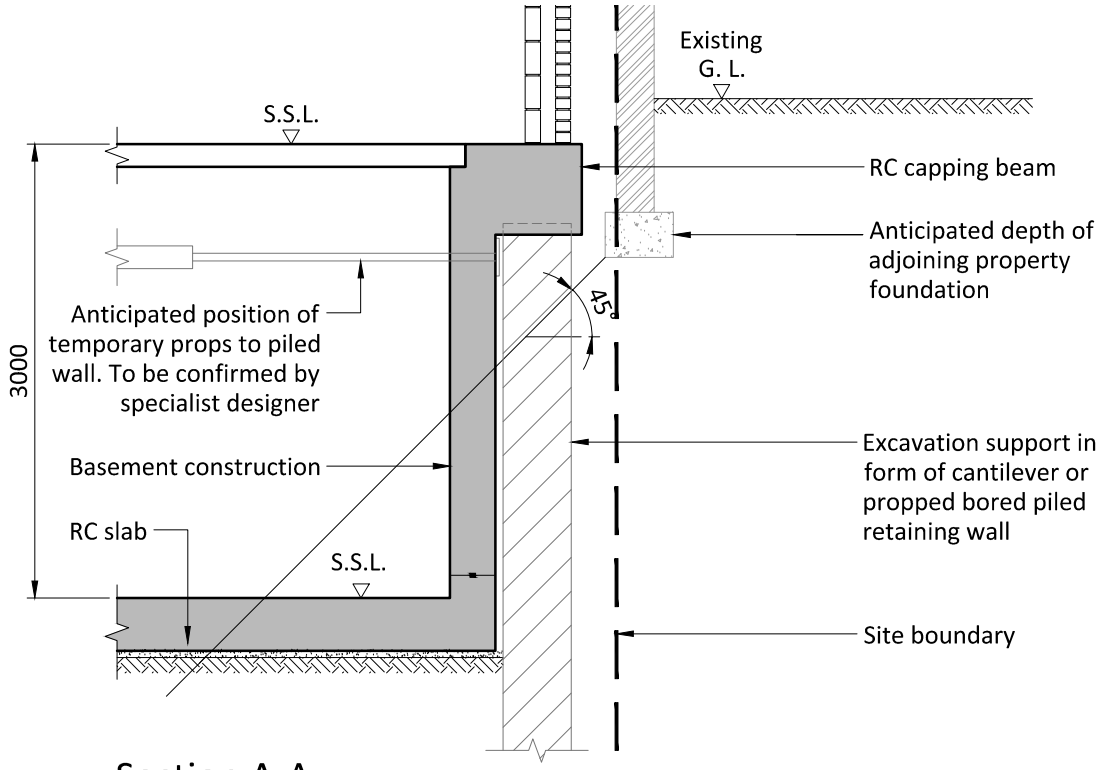
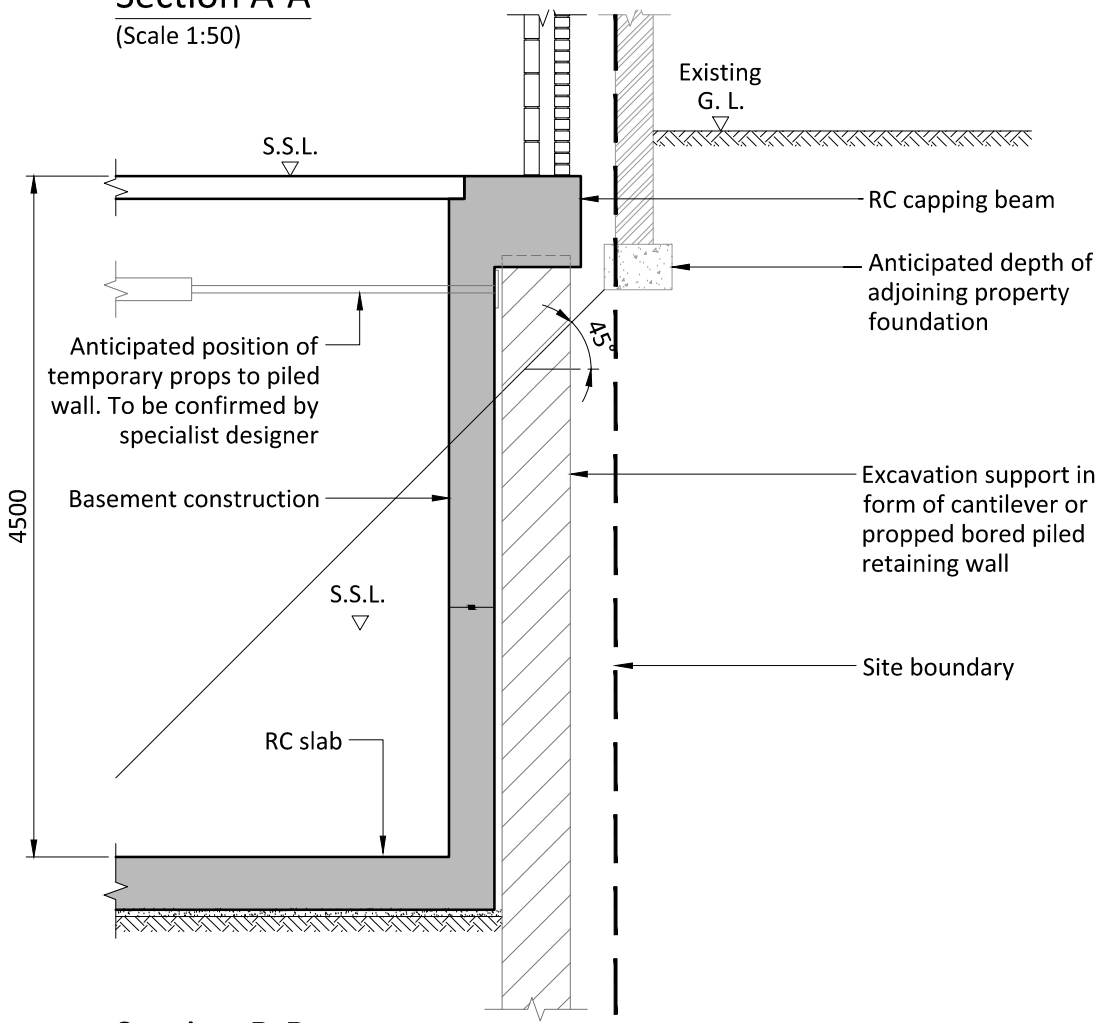


Section A-A

(Scale 1:50)



Section B-B

(Scale 1:50)