Parker House

Planning & Conservation Area Consent Applications

SD11: Basement Impact Assessment

Prepared for Camden Council & E C Harris

November 2012

paul davis + partners
architects urban designers

11-0188 – REV A

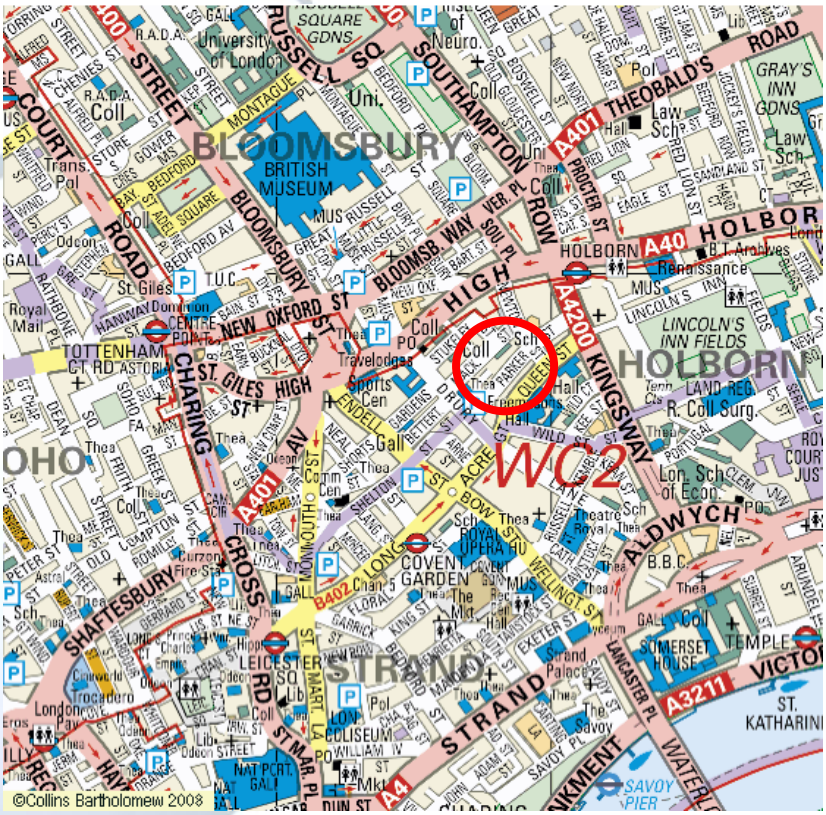
BASEMENT IMPACT ASSESSMENT

FOR

E C HARRIS LLP

AT

25-37 PARKER STREET
COVENT GARDEN
LONDON WC2B 5PA



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CLIENT The London Borough of Camden

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1.0 INTRODUCTION

EC Harris LLP has been appointed by Camden Council to project manage the redevelopment of the site of a residential hostel at Parker Street near central London. The hostel is at present owned and run by Camden Council. Rolton Group Ltd (RGL) has been appointed by EC Harris to provide Geo-environmental, Civil and Structural engineering services in respect of the design of the works.

The site is occupied by a brick-built 5-storey building fronting on to Parker Street. It is proposed to redevelop the site with private flats, preserving the façade but essentially rebuilding the accommodation behind to provide more modern residential housing. An enlarged new basement will be constructed beneath approximately half of the ground floor.

The proposed work on site will include construction against neighbouring properties in addition to construction of the new basement and therefore, in accordance with the requirements of the London Borough of Camden's planning guidance, a Basement Impact Assessment (BIA) is required for the purposes of ensuring that the ground, groundwater and structures on and around the site are not adversely affected.

Guidance on the procedures for undertaking a Basement Impact Assessment (BIA) is given in the following documents:

- *Camden Planning Guidance 'Basements and Lightwells' CPG 4*, London Borough of Camden
- *Camden Geological, Hydrogeological and Hydrological Study, Guidance for Subterranean Development*, Arup

Rolton Group Ltd (RGL) has been instructed by EC Harris LLP (acting as Project Managers for the London Borough of Camden) to undertake the necessary investigations and prepare a BIA for the proposed redevelopment work. For full details of our desk studies and intrusive investigations reference should be made to RGL report:

- *Geotechnical and Geo-environmental Report for EC Harris LLP at 25-37 Parker Street, Covent Garden, London*, dated October 2012.

The present report summarises the findings of the desk studies and investigation works and presents the findings of our Basement Impact Assessment. The report is arranged as follows:

- Section 2 describes the existing site and building.
- Section 3 describes the proposed development scheme.
- Section 4 describes desk studies and intrusive investigations undertaken
- Section 5 presents the initial screening to determine what issues require more detailed assessment.
- Section 6 presents the detailed stage of the BIA.
- Section 7 discusses the findings and conclusions of the BIA.
- Section 8 lists main reference documents.

- Appendix A presents the site location plan.
- Appendix B presents the borehole logs from the site investigation
- Appendix C presents a plan and sections illustrating the works adjacent to the boundaries.
- Appendix D contains copyright information about this report.

2.0 SITE AND EXISTING BUILDING

The site is located on the north side of Parker Street (a narrow two-way street) – the postal address is 25-37 Parker Street, London WC2B 5PA. The frontage on to Parker Street is approximately 55m in length; the site is then just over 20m deep; the property also includes a small block of workshops connected to the rear.

Beyond the north boundary there is a Primary School which fronts onto Macklin Street. To the west of the site is a block of flats; to the east of the site there is a block of offices and flats. The centre of the site is approximately located at National Grid Reference 530419 181340.

Ground levels in the vicinity fall gently to the south east – the site is at a level of around 23.5m AOD. The surrounding area is a mix of commercial properties and offices with residential flats with Pubs, Theatres and Schools. The site and surrounding land is either covered by buildings or is generally hard surfaced with roads or pavements – there are a few small trees along Parker Street.

A Site Location Plan is presented in Appendix A and a plan of the site and surrounding properties is presented in Appendix C.

3.0 PROPOSED DEVELOPMENT

The site is to be redeveloped for residential flats.

It is proposed to retain the brick façade fronting on to Parker Street and completely remodel and rebuild the accommodation behind.

The new building will have a large basement below street level beneath around half of the plot area. This basement is set-back from the front elevation to Parker Street, however it will abut the adjoining properties to the north and east (a school and an office block, respectively). The building will be extended upwards by the addition of two storeys above the height of the front façade.

No precise details are known of the form of construction but it is presumed that the building will be framed in some way – either in concrete or steel. Floors are likely to be of precast concrete or insitu concrete on metal decking.

Foundations to the new building will consist of bored cast-insitu piles and ground beams. The basement will be constructed by using contiguous concrete piles to form the perimeter walls with an internal wall cast against these piles formed of waterproof concrete.

Storm and foul drainage will be to gravity sewers for off-site disposal.

4.0 SITE INVESTIGATION

4.1 General

The site has been subject to a Phase 1 Geo-environmental Desk Study and a preliminary phase of intrusive ground investigation works, consisting of boreholes, trial pits and laboratory testing on recovered soil samples. Ground gas monitoring has also been undertaken.

The findings of the Desk Study and intrusive works together with interpretation of these are given in the following RGL report:

- *Geotechnical and Geo-environmental Report for EC Harris at 25-37 Parker Street, Covent Garden, London WC2B 5PA*, dated October 2012.

4.2 Geology

The British Geological Survey map for North London (BGS Sheet 256, 1:50,000) indicates that the site, immediately surrounding land and land further to the north, is underlain by Thames River Terrace Deposits (Lynch Hill Gravel) which are described as 'gravel, sandy and clayey in part'. These superficial deposits are underlain by the London Clay Formation, described as 'clay, silty in part'.

Boreholes have confirmed that the site is underlain by 2.5m to 3.5m of made ground consisting of sandy gravel containing fragments of brick, concrete and pottery. The made ground is underlain by the River Terrace Deposits – in one borehole this consisted of firm clay from 2.5m to 3.5m then dense sandy gravel to 5.5m depth; in the other borehole the shallow clay appeared to have been removed and the made ground rested directly on dense sandy gravel from 3.5m to 5.8m depth. The River Terrace Deposits were confirmed to be underlain by London Clay – this was present from 5.5m depth and 5.8m depth respectively to the full depth of the boreholes (15.5m) and beyond.

Borehole logs are presented in Appendix B.

4.3 Groundwater

No groundwater was encountered when drilling the boreholes and excavating the shallow trial pits. Post investigation monitoring of the standpipes in the boreholes showed, initially, groundwater levels to be at 3.4m and 4.2m depth but in April and May of 2012 much shallower groundwater was recorded with levels at around 0.35-0.6m below ground level. The later groundwater presence is suspected to relate to surface water inundation of the ground following heavy rainfall.

From our experience of sites in the vicinity, shallow groundwater presence tends to be in the form of perched seepages associated with granular or porous strata or pockets and that a steady permanent

groundwater level is likely to be at 3-4m below ground level. Groundwater presence is affected by existing obstructions such as basements and by the presence of buried services (live or redundant).

At this site it would be anticipated that there is likely to be a seasonal presence of groundwater in the River Terrace Deposits generally flowing in a north to south direction consistent with the fall in ground levels towards the south.

Shallow groundwater presence in the made ground will be affected by the permeability of the ground cover and prevailing weather conditions.

5.0 SCREENING

In accordance with the guidance issued by the London Borough of Camden, indicated in Section 1.0 above, an initial screening exercise is carried out to identify what detailed investigations and assessments are required in order to develop a fully detailed and comprehensive BIA. The screening results are indicated below:

5.1 SURFACE FLOW AND FLOODING

Question 1: Is the site within the catchment of the pond chains on Hampstead Heath?
Answer: ***No, the site is located around 4km to the south of Hampstead Heath and at ground levels some 20m below those at the southern edge of the Heath local to the ponds.***

Question 2: As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off) be materially changed from the existing route?
Answer: ***No, the site is presently entirely hard surfaced and therefore the amount of water to be disposed of via the stormwater system and the locations for this discharge will remain substantially unchanged.***

Question 3: Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?
Answer: ***No, the proposed redevelopment of the site will result in the same proportion of hard surfaced/paved external areas.***

Question 4: Will the proposed basement result in changes to the profile of the inflows (instantaneous and long-term) of surface water being received by adjacent properties or downstream watercourses?
Answer: ***No.***

Question 5: Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?
Answer: ***No.***

Question 6: Is the site in an area known to be at risk from surface water flooding, such as South Hampstead, West Hampstead, Gospel Oak and King's Cross, or is it at risk from flooding, for example because the proposed basement is below the static water level of a nearby surface water feature?
Answer: ***Environment Agency mapping shows that the site is not at risk from flooding from rivers. A Hydrological report by Arup for Camden Council shows that the site is not likely to be affected by flooding and that also there are no historic watercourses in this part of London. The site is not located near to any existing surface water features.***

5.2 SUBTERRANEAN (GROUNDWATER) FLOW

Question 1a: Is the site located directly above an aquifer?
Answer: ***Yes, the Lynch Hill Gravel is indicated to be a Secondary Aquifer although the nearest recorded water abstraction is some 684m from the site to the south (and therefore not from the Lynch Hill Gravel). The nearest abstraction location underlain by the Lynch Hill Gravel is some 742m to the north west of the site (Keppel Street).***

Question 1b: Will the proposed basement extend beneath the water table surface?
Answer: ***No.***

Question 2: Is the site within 100m of a watercourse, well (used/disused) or potential spring line?
Answer: ***No***

Question 3: Is the site within the catchment of the pond chains on Hampstead Heath?
Answer: ***No, the site is located at around 4km south of the ponds on Hampstead Heath and at ground levels of around 23.5m above ordnance datum (AOD). Hampstead Heath is generally at least 50m AOD.***

Question 4: Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?
Answer: ***No, the site is entirely hard surfaced at present and this will remain the same.***

Question 5: As part of the site drainage, will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground (e.g. via soakaways and/or SUDS)?
Answer: ***No, the site is not considered suited to the use of soakaways because of the geology and the proximity of other buildings.***

Question 6: Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than, the mean water level in any local pond (not just the pond chains on Hampstead Heath) or spring line.
Answer: ***No, there are no ponds or similar within at least 100m of the site.***

5.3 SLOPE STABILITY

Question 1: Does the existing site include slopes, natural or manmade, greater than 7 degrees? (approximately 1 in 8)
Answer: ***There are no slopes steeper than 7 degrees in the vicinity. The site and surrounding land is near flat with only a very shallow gradient to the south east.***

Question 2: Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7 degrees? (approximately 1 in 8)
Answer: ***No, the site ground profile is not going to be significantly changed.***

Question 3: Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7 degrees? (approximately 1 in 8)
Answer: ***No, surrounding properties are also near flat and level.***

Question 4: Is the site within a wider hillside setting in which the general slope is greater than 7 degrees? (approximately 1 in 8)
Answer: ***No***

Question 5: Is the London Clay the shallowest strata at the site?
Answer: ***No, the London Clay is located at a depth of 5.5-5.8m below ground level – it is overlain by 2.5-3.5m of made ground then 2.3-3.0m of clay or gravel.***

Question 6: Will any tree/s be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained?
Answer: ***No trees are proposed to be felled. Temporary scaffolding and steelwork erection works will be required in proximity to the trees along Parker Street – the strategy for these works to be agreed with Camden Council.***

Question 7: Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?
Answer: ***No***

Question 8: Is the site within 100m of a watercourse or a potential spring line?
Answer: ***No***

Question 9: Is the site within an area of previously worked ground?
Answer: ***No. Historic mapping shows no past workings at the site.***

Question 10: Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?
Answer: ***Yes, the site is located over a Secondary Aquifer (the Lynch Hill Gravel). It is not anticipated that dewatering will be required.***

Question 11: Is the site within 50m of the Hampstead Heath ponds?
Answer: ***No, it is over 4km from Hampstead Heath.***

Question 12: Is the site within 5m of a highway or pedestrian right of way?
Answer: ***Yes, the development fronts on to the footpath at the side of Parker Street.***

Question 13: Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?
Answer: ***Yes. The development includes construction of a basement up to the boundaries on the north and east sides (a school and block of flats, respectively).***

Question 14: Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?
Answer: ***No, the site is not located over or in close proximity to any Railway or Underground lines in any tunnels.***

5.4 RESULTS OF SCREENING

5.4.1 Surface Flow and Flooding

- There are no issues that appear to require more detailed assessment.

5.4.2 Subterranean (Groundwater) Flow

- There are no issues that appear to require more detailed assessment.

5.4.3 Slope Stability

- Construction works are proposed within 5m of a highway and pedestrian rights of way.
- The proposed basement will be at a lower level than adjacent property.

A more detailed assessment is therefore required of slope and ground stability and how these will be affected both temporarily and permanently.

6.0 DETAILED ASSESSMENT SLOPE (GROUND) STABILITY

6.1 Further Investigations

It is proposed that once the building is vacated further investigations will be undertaken to confirm ground conditions across the site and to confirm the extent and construction of foundations and the basement presently beneath the south east corner of the building. The following assessment is based on site conditions not being materially different to those identified to date.

6.2 Demolition and Site Clearance

Demolition initially will only be undertaken to ground floor level, including the ground floor slab itself. Support to the proposed basement will then be installed before excavation is undertaken below ground floor (and the level of surrounding properties).

6.3 Basement Construction

6.3.1 Piling

The proposed basement extends up to the boundary along part of the north boundary (a school) and most of the east boundary (an office block). The perimeter of the proposed basement will be formed by constructing a contiguous piled wall. Piles will be formed by use of temporary steel casing to ensure support of the ground at all times and to permit placement of concrete. A pile diameter of 400-450mm will be required with full reinforcement provided to a depth of 6-8m below ground level. The piles will also be load-bearing and provide direct support to the weight of the building.

The use of a bored pile design minimises noise and vibration and is regularly used in the industry when piling close to existing buildings. The soil removed by the piling operation is solely the soil volume equal to the volume of the pile concrete that is immediately placed during piling. Groundwater is not extracted or affected in any way – there is no requirement to pump or otherwise extract or move groundwater.

The contiguous piling system leaves a gap between piles at depth of around 150mm so that groundwater flow below the underside of the basement is not prevented. Piles will be of up to around 20m in length.

From the above, it is considered that the proposed piling will not adversely affect the structural stability of adjacent properties (either foundations or superstructures) or groundwater, either in the temporary case during construction or after completion of all construction works.

A plan and sections showing the proposed basement construction relative to ground conditions and the location of adjacent properties are presented in Appendix C.

6.3.2 Excavation

The contiguous piled wall will act as support to the surrounding ground and buildings. Excavation below ground level will only be undertaken after the contiguous piles have been installed and have gained sufficient strength to act as cantilever supports.

Excavation will be undertaken within the contiguous piled wall by use of conventional plant and machinery including breaking out of old foundations and drains.

The contiguous piles will need additional temporary lateral support in the form of raking shores until such time as the basement floor and walls have been so progressed as to permanently provide lateral ground support.

The basement floor and walls will be constructed in waterproof reinforced concrete – this overcomes the need for use of waterproof membranes and external drains etc.

6.3.3 Groundwater

The contiguous piled wall will not entirely prevent groundwater seepages from entering the excavation. Groundwater seepages between the piles will need to be disposed of by use of sumps and pumps – it should not be necessary to adopt dewatering techniques.

Such water will be collected by small pumps as required and disposed of (by agreement with the relevant authority) to the foul sewer system via a suitable collection system or silt trap as required.

The works are not therefore considered likely to significantly affect the groundwater regime at the site or in the near vicinity.

6.4 Excavation and Ground Stability Generally

All other excavations away from the basement will be shored, propped or otherwise made stable to permit safe entry by personnel and ensure continuous stability of the surrounding ground. The integrity of the formation to excavations will be preserved by placement of blinding concrete immediately after reaching the require foundation depth and arrangement.

All voids under, around or above the indicated foundations and below the existing ground surface level will be filled with compacted structural concrete. Disturbed or loosened soils above foundation formation level will be replaced in compacted concrete. All blinding concrete and mass concrete will have a minimum compressive strength of 10N/mm².

7.0 CONCLUSIONS AND RECOMMENDATIONS

This Basement Impact Assessment has identified that the proposed redevelopment works at the site will likely have no significant effect on surface water flow, the risk of flooding or on subterranean groundwater flow.

The only potential adverse impact of the work will be on the stability of adjacent ground and building foundations as a result of excavation for the new basement.

A contiguous piled perimeter wall to the basement is proposed as the most effective design to ensure:

- Minimum noise and vibration.
- Continuous support of the ground and adjacent properties.
- Minimal interference with the groundwater regime.

It will be necessary to develop a full methodology for the piling work including any noise and vibration monitoring as the Local Authority may require and also any monitoring of adjacent buildings as may be required.

The findings of this BIA must be fully incorporated into construction details and specifications in order to obtain agreement with adjoining owners and before any works commence on site.

The works described in this BIA assume full-time and appropriate supervision is provided on site at all times including during the piling, excavation and construction works and that any anomalous ground or groundwater conditions (or conditions different to those described here) will be identified and immediately reported to Rolton Group for our consideration and advice and revision to this BIA as necessary. Conditions that should be reported to RGL include (but are not confined to):

- Soft or especially loose soils or the presence of voids in the ground.
- Different soil types than recorded to date on exploratory logs.
- Shallow groundwater.
- Evidence of damage, deterioration or any form of instability (past or present) to existing foundations, walls or structures.
- Any evidence of possible ground movement or building movement.
- Unrecorded drain runs or other buried services.
- Any evidence of buried wastes or contaminated materials.

This report does not replace the need for the preparation of appropriate methods of work, specifications and risk assessments.

8.0 REFERENCES

1. *Camden Planning Guidance 'Basements and Lightwells' CPG 4*, London Borough of Camden
2. *Camden Geological, Hydrogeological and Hydrological Study, Guidance for Subterranean Development*, Arup
3. *North London Solid and Drift Geology, Sheet 256, 1:50,000,* British Geological Survey
4. *British Geological Survey* website: www.bgs.ac.uk/

APPENDIX A
SITE LOCATION PLAN

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ENGINEERING THE FUTURE

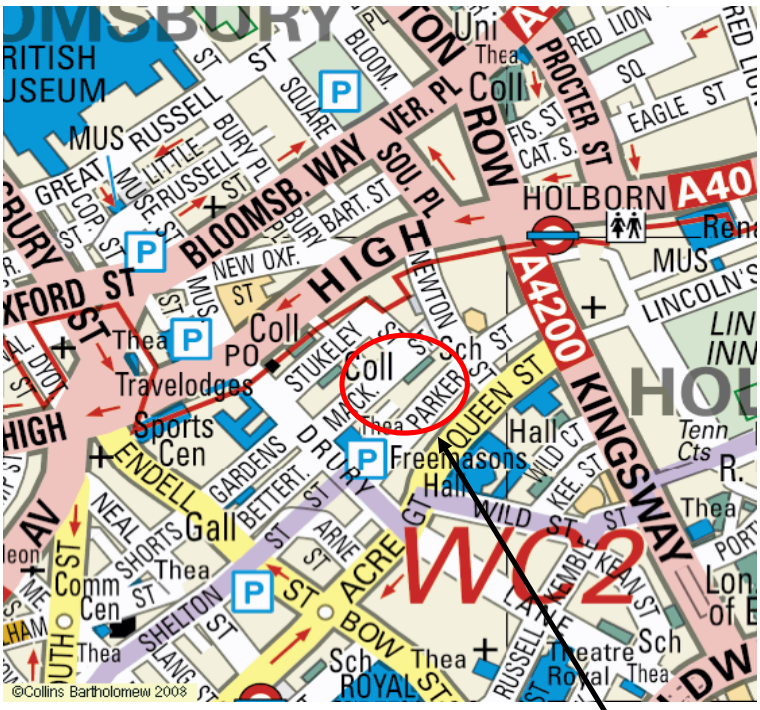
Rolton Group

The Charles Parker Building, Midland Rd.

Higham Ferrers, Wellingborough, Northants

Phone: 0870 726 0000 Fax: 0870 726 0222

Project No.	**PARKER STREET**
Figure Title	**Site Location Plan**
Date	**Sept**
Figure Number	**1**
Scale	**N.T.S.**
Prepared by	**TEM**



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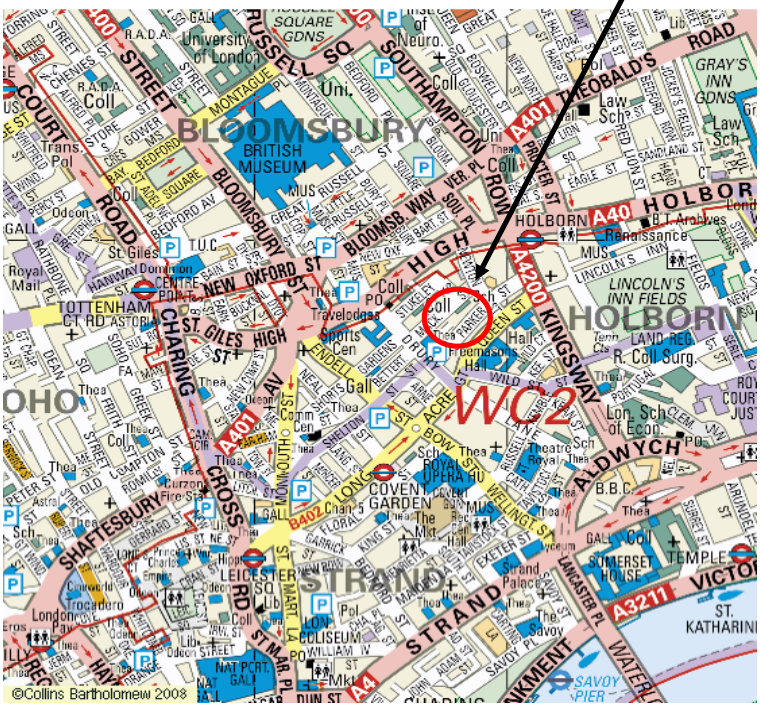


APPENDIX B
BOREHOLE LOGS

BOREHOLE RECORD - Cable Percussion

Project PARKER STREET HOSTEL, CAMDEN | Engineer ROLTON GROUP | **Borehole** BH1 | Project No PC114733

Client ROLTON GROUP

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
							G.L.	
						Paving slab.** [MADE GROUND]	0.05	
							0.20	
0.50	B					Reinforced concrete.** [MADE GROUND]		
0.50	D							
1.00	E					Loose to medium dense black and brown slightly clayey sandy gravel with occasional rootlets, glass, plastic, 10mm reinforcing bar, brick and a low cobble content. Gravel is subangular to angular fine to coarse quartzite. [MADE GROUND]		
1.50- 2.00	B							
1.50	D							
1.50- 1.88		1.50 (DRY)			C7			
2.00	E							
2.50- 3.00	B							
2.50	D							
2.50- 2.95		2.50 (DRY)			C10			
3.50- 4.00	B			14			3.50	
3.50	D					Dense to very dense orangish brown silty SAND and GRAVEL. Gravel is subangular to rounded fine to coarse quartzite and flint.		
3.50- 3.95		2.50 (DRY)			C49			
4.00	W							
4.50- 5.00	B							
4.50	D							
4.50- 4.95		4.50 (4.20)			C51			
5.50	D							
5.80	D						5.80	
6.00- 6.45	U21	4.50 (DRY)				Firm orangish brown slightly sandy CLAY.	6.00	
6.50	D					Firm to stiff dark brown occasionally grey fissured slightly sandy CLAY with some light brown silt partings upto 1-2mm in thickness on surfaces. Fissures are randomly orientated extremely closely to closely spaced.		
6.50	D			31				
7.50	D							
7.50- 7.95	D	4.50 (DRY)			S18			
8.50	D							
9.00- 9.45	U42	4.50 (DRY)						
9.50	D			23				

Boring

Depth	Hole Dia	Technique	Crew
1.20		Inspection Pit	SLAY
15.50	0.15	Cable Percussion	SLAY

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			17/10/11	08:00
4.50	4.50	4.20	17/10/11	18:00
4.50	4.50	3.50	18/10/11	08:00
15.50	4.50	DRY	18/10/11	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during boring

Remarks

Inspection pit hand excavated to 1.20m depth.
E sample = 1 x vial, 1 x plastic jar and 1 amber jar
Water was added to assist boring between 3.50m and 4.50m.
** Drillers description.
A 50mm standpipe was installed to 6.00m with a slotted section from 1.00m to 6.00m with flush lockable protective cover. Backfill details from base of hole: bentonite seal up to 6.00m, gravel filter up to 1.00m, bentonite seal up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:1999 + A2:2010

Logged by PST
Checked by DRB
Figure 1 of 2
24/01/2012

geotechnics

BOREHOLE RECORD – Cable Percussion

Project PARKER STREET HOSTEL, CAMDEN | Engineer ROLTON GROUP | Borehole BH1 | Project No PC114733

Client ROLTON GROUP

Scale 1:50

Sampling			Properties			Strata		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
10.50-10.95	D	4.50			S19			
10.50	D	(DRY)						
11.50	D							
12.00-12.45	U32	4.50 (DRY)						
12.50	D			27				
13.50-13.95	D	4.50			S22			
13.50	D	(DRY)						
14.50	D							
15.00-15.45	U32	4.50 (DRY)						
15.50	D					End of Borehole	15.50	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:1999 + A2:2010

Logged by PST
Checked by DRB
Figure 2 of 2
24/01/2012

geotechnics

BOREHOLE RECORD - Cable Percussion

Project PARKER STREET HOSTEL, CAMDEN | Engineer ROLTON GROUP | Borehole BH2 | Project No PC114733

Client ROLTON GROUP

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
							G.L.	
						Tarmacadam.** [MADE GROUND]	0.05	
							0.20	
0.50	D					Concrete.** [MADE GROUND]		
0.50	E							
						Very Loose brown and black slightly clayey sandy gravel with some brick and pottery. Gravel is subangular to angular brick, concrete and quartzite. [MADE GROUND]		
1.50- 2.00	B							
1.50	D							
1.50- 1.95		1.50 (DRY)			C2			
2.50- 3.00	B						2.50	
2.50	D					Firm orangish brown sandy very gravelly CLAY with a low cobble content. Gravel is subangular to rounded fine to coarse quartzite and flint.		
2.50- 2.95		2.50 (DRY)			C8			
3.00	E							
3.50- 4.00	B			16			3.50	
3.50	D					Dense orangish brown slightly silty very sandy GRAVEL. Gravel is subangular to rounded fine to coarse quartzite and flint. Between 3.50-4.00m, clayey.		
3.50- 3.95		2.50 (DRY)			C42			
4.50- 5.00	B			5.5				
4.50	D							
4.50- 4.95		4.50 (4.10)			C47			
5.00	W							
5.50	D						5.50	
						Firm brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium quartzite.		
6.00- 6.45	D	5.50 (DRY)			S14		6.00	
						Firm to stiff dark brown and grey fissured slightly sandy CLAY with some silt partings 1 to 5mm in thickness on surfaces. Fissures are randomly orientated extremely closely to closely spaced.		
6.50	D							
7.50	D			27				
7.50- 7.95	U22	6.00 (DRY)						
8.00	D							
9.00- 9.45	D	6.00			S21			
9.00	D	(DRY)		29				
10.00	D							

Boring

Depth	Hole Dia	Technique	Crew
1.20		Inspection Pit	SLAY
15.50	0.15	Cable Percussion	SLAY

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			19/10/11	08:00
6.00	5.50	DRY	19/10/11	18:00
6.00	6.00	DRY	20/10/11	08:00
15.50	6.00	DRY	20/10/11	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	In Mins	Depth Sealed	Remarks on Groundwater
					None encountered during boring.

Remarks

Inspection pit hand excavated to 1.20m depth.
E sample = 1 x vial, 1 x plastic jar and 1 amber jar
** Drillers description.
Water was added to assist boring between 3.50m and 5.00m.
A 50mm standpipe was installed to 6.00m with a slotted section from 1.00m to 6.00m with flush lockable protective cover. Backfill details from base of hole: bentonite seal up to 6.00m, gravel filter up to 1.00m, bentonite seal up to 0.20m, concrete up to ground level.

Logged by PST
Checked by DRB
Figure 1 of 2
24/01/2012

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:1999 + A2:2010

geotechnics

BOREHOLE RECORD - Cable Percussion

Project PARKER STREET HOSTEL, CAMDEN | Engineer ROLTON GROUP | **Borehole** BH2 | Project No PC114733

Client ROLTON GROUP

Sampling			Properties			Strata	Scale 1:50	
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
10.50-10.95	U25	6.00 (DRY)						
11.00	D			24				
12.00-12.45	D	6.00			S20			
12.00	D	(DRY)						
13.00	D							
13.50-13.95	U24	6.00 (DRY)						
14.00	D			27				
15.00	D							
15.00-15.45	D	6.00 (DRY)			S23			
						End of Borehole	15.45	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:1999 + A2:2010

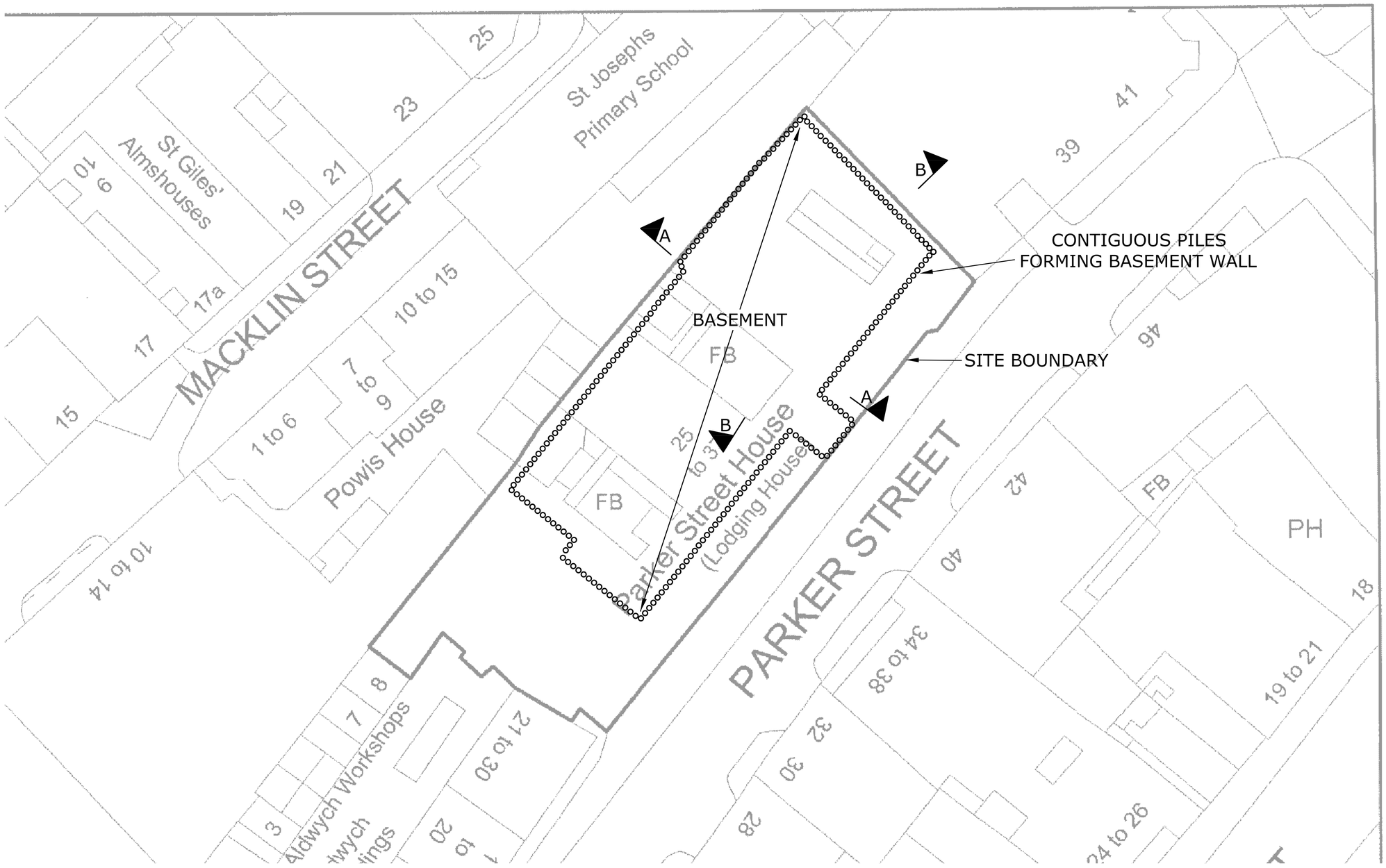
Logged by PST
Checked by DRB
Figure 2 of 2
24/01/2012

geotechnics

APPENDIX C
PROPOSED BASEMENT WORKS

11-0188/FIG/2 - BASEMENT WALL PILE ARRANGEMENT
11-0188/FIG/3 - BASEMENT SECTION A-A
11-0188/FIG/4 - BASEMENT SECTION B-B

10mm 20mm 30mm 40mm 50mm 100mm



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LYNCH WOOD
PETERBOROUGH PE2 6FT

THE DAVID ROLTON BUILDING
TWELVE QUARTZ POINT
STONEBRIDGE ROAD
BIRMINGHAM B46 3JL

Rev.	Date	Description of Issue	Chkd

Revisions

Issue Purpose:
PRELIMINARY

Project
EC HARRIS
PARKER STREET HOUSE
CAMDEN COUNCIL

Drawing Title:
BASEMENT WALL
PILE ARRANGEMENT

Designer's Risk Assessment Reference:
N/A

Specification Reference:
N/A

Drawn By: LW
Checked By: PA

Scales: 1:200@A1
1:400@A3
Date: OCT '12

Drawing No. 11-0188/FIG/2 P1
Rev.

10mm 20mm 30mm 40mm 50mm 100mm

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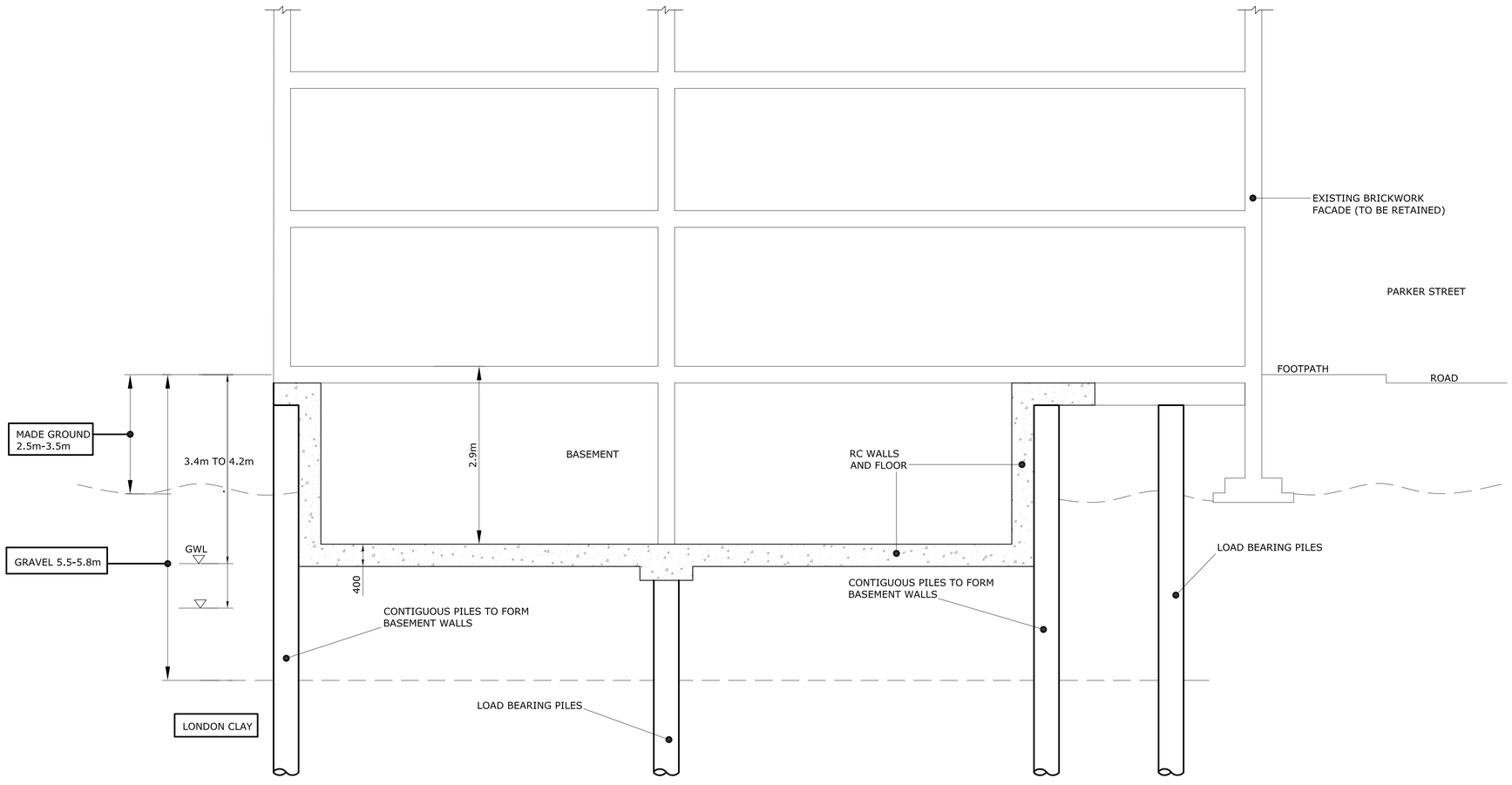


SECTION A-A

Rev.	Date	Description of Issue	Chkd

Revisions

Issue Purpose:
PRELIMINARY

Project
EC HARRIS
PARKER STREET HOUSE
CAMDEN COUNCIL

Drawing Title:
BASEMENT
SECTION A-A

Designer's Risk Assessment Reference:
N/A

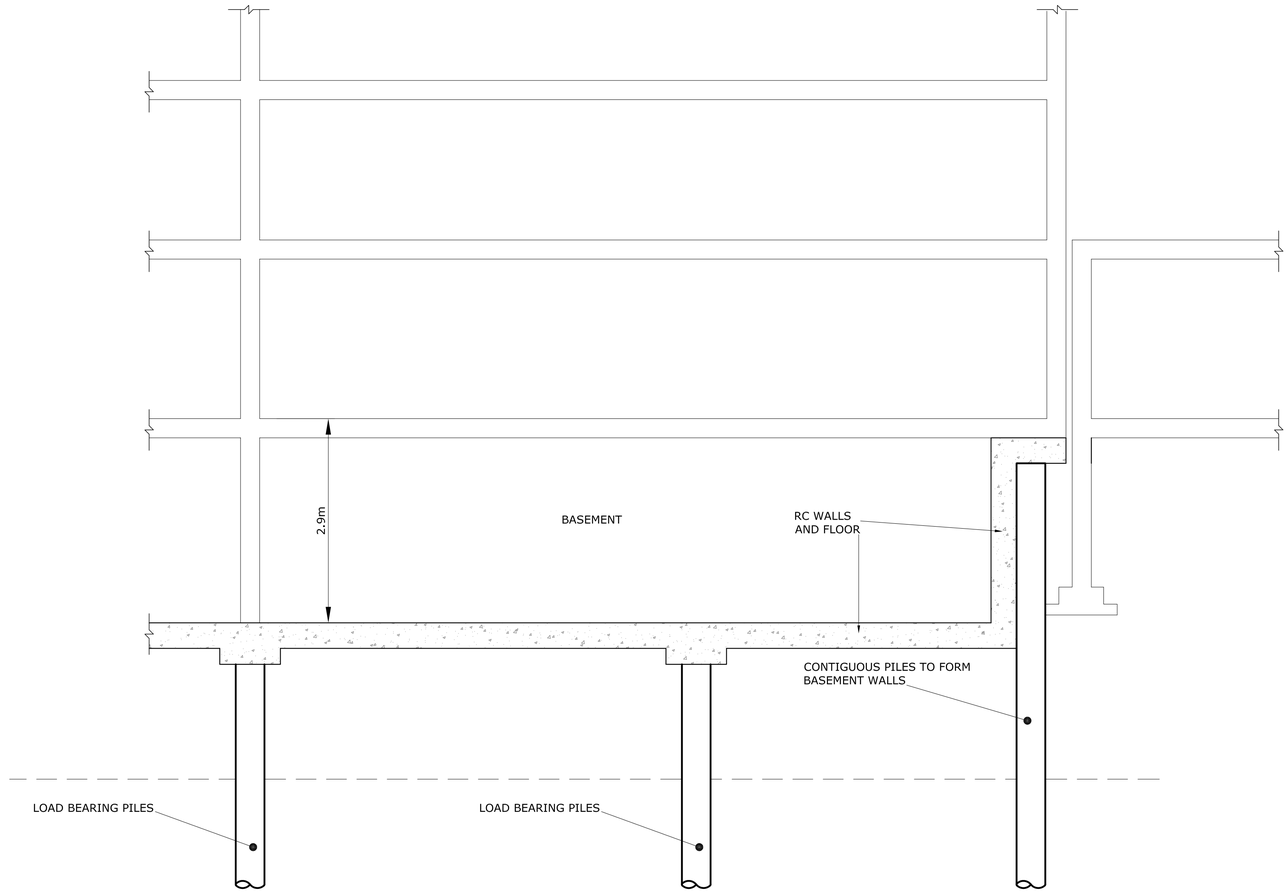
Specification Reference:
N/A

Drawn By: LW
Checked By: PA

Scales: 1:50@A1
1:100@A3
Date: OCT '12

Drawing No. 11-0188/FIG/3 P1
Rev.

10mm 20mm 30mm 40mm 50mm 100mm



SECTION B-B

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Rev.	Date	Description of Issue	Chkd

Revisions

Issue Purpose:
PRELIMINARY

Project
EC HARRIS
PARKER STREET HOUSE
CAMDEN COUNCIL

Drawing Title:
BASEMENT
SECTION B-B

Designer's Risk Assessment Reference:
N/A

Specification Reference:
N/A

Drawn By: LW
Checked By: PA

Scales: 1:50@A1
1:100@A3
Date: OCT '12

Drawing No. 11-0188/FIG/4 P1
Rev.

APPENDIX D
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