CONSTRUCTION METHOD STATEMENT

2 HOLLAND VILLAS ROAD

REVISION- A

Andrew Smith
8/6/2014
1 Introduction

The existing building is a four storey detached property with a swimming pool at the lower ground level and a basement partially under the house. The building is constructed from traditional materials with tiled roofs, masonry walls and timber floors. The basement constructed in 2004 using contiguous piled wall and watertight reinforced concrete construction inside.

The neighbouring properties are of similar construction

1.1 Proposal

It is proposed to extend the existing basement wholly within the rear garden, retaining the existing basement structure.

1.2 Ground Conditions

A soil report was carried out by Fastrack dated July 2014 (see appendix A), and this indicates made ground over sandy clay to a depth of 3.4m, below this dense sand to 5.1m where clay was indicated. This corresponds with the data from the March 2004 soils report by LBH Wembley (see appendix B) which encountered made ground over Langley Silt to 3m, then river terrace gravels to approximately 6m, over London Clay.

The historic ground water level is understood to be approximately 3.0m below ground level.

1.3 Structural Design

1.3.1 Proposal

The existing basement was constructed using a cantilever contiguous piled wall and this method of construction will be repeated for the basement extension. Prior to starting on site the current water table will be established, if found to be higher than the proposed basement base slab a Secant pile wall will installed instead of a contiguous piled wall to prevent water and fines seeping into the excavation.

The basement will be constructed from reinforced concrete, designed to level III, in accordance with BS8102:2009 for water retaining structures. To achieve this Caltite Concrete is specified.

1.3.1.1 Condition 1

Along the boundary with No 1 Holland Villas Road the existing basement construction, namely contiguous piled wall with reinforced concrete wall will be retained and extended to form the new outline. The contiguous piled wall is designed to cantilever and historic records indicate that the original piles were constructed to a Toe depth of -9.0m below ground level.
1.3.1.2 Condition 2
Adjacent to the existing lower ground floor and swimming pool a new cantilever contiguous piled wall is proposed, designed for the surcharge of the existing structure. Internally a watertight reinforced concrete wall will be built. In the permanent condition the top and bottom slabs are designed to prop the basement wall.

1.3.1.3 Condition 3
Adjacent to the boundary with No. 3 Holland Villas Road a new cantilever contiguous piled wall is proposed, designed for the surcharge of the neighbouring land and trees. Internally a watertight reinforced concrete wall will be built. In the permanent condition the top and bottom slabs are designed to prop the basement wall.

1.4 Method Statement
The proposed method statement for the basement extension is outlined below:

- Contactor to establish ground water level
- Piling contractor to review all setting out as shown on the drawings to ensure minimum clearance dimensions are achievable, with particular reference to the exiting lower ground floor construction.
- The final pile design will be by the specialist sub-contractor approved by the Structural Engineer. Piles designed as cantilever in the temporary condition and propped in the permanent condition.
- Install contiguous Piled wall to all four sides of the extension
- Cut-off level to be indicated on drawings.
- Expose existing capping structure to current basement piled wall.
- Locally reduce level to install capping beam to piled call. Alongside and adjacent to existing structures this will need to be carried out in stages to avoid undermining said structures.
- Excavate to formation level of new basement slab
- During excavation any standing water is to be monitoring and pumped out as required.
- Monitoring of the piled wall is also to be carried out to ensure movements are within allowable limits
- Locally demolish existing basement walls, roof slab and piled wall
• Expose edge and clean existing basement slab
• Construct new basement slab, ensure watertight joint to existing basement slab and lap existing membranes as per manufactures instructions.
• Install waterproofing to Contiguous piled wall
• Construct RC basement walls upto ground floor level, including walls, columns around internal lightwell
• Construct ground floor slab and support beam.
• Propping to ground floor slab to be removed once cube results achieve required strength or one week which ever greater.
• Make good walls and joints where necessary with aid of waterproof products.
## BOREHOLE LOG

### Property Address:
2 Holland Villas Road, W14 8BP

### Client Claim Ref:
N/A

### Survey date:
27/06/2014

### Operative:
SE1

### Borehole ID:
BH1

### Hole Type:
HA

### Scale:
1:27

### Water Strikes Depth (m)

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Results Type</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.80</td>
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<tr>
<td>2.70</td>
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<td></td>
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<tr>
<td>3.40</td>
<td></td>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Legend

- **Insitu Tests**
- **Samples**
- **Depth**

### Stratum Description and Observations

- **Mid/ dark brown CLAY containing stone**
- **Mid brown sandy CLAY**
  - Noted to be soft to firm at 1.00m
- **Mid brown sandy CLAY containing sand pockets**
- **SAND**
  - Noted to become dense at 4.00m
- **End of Borehole at 5.00 m**

### Remarks:
- Borehole closed at 5.00m clay was noted on the tip of the auger at 5.10m
- Borehole was noted to be wet on completion
- N.b. Unless otherwise stated small vane paddle used

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**Key:**
- Water Strike: 
- Disturbed Sample: 
- Insitu vane test: 
- Mackintosh Probe Test: 

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Tyndales Farm, Southend Road, Woodham Mortimer
Maldon, Essex, CM9 6TQ

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Fax: 0844 3358907
Email: enquiries@fastrack-geotechnical.co.uk
Web: www.fastrack-geotechnical.co.uk
12 March 2004

Our ref: LBH3328
Your ref: 

Michael Bekhor
Michael Alexander Consulting Engineers
Foundation House
No 4 Percy Road
London
N12 8DQ

Dear Mr Bekhor

Re: No 2 HOLLAND VILLAS ROAD, HOLLAND PARK, LONDON, W14

Further to your letter of instruction dated 29th February 2004 we attended site on 8th March to carry out the fieldwork, and we now report our conclusions. We enclose copies of our borehole and dynamic probing records, laboratory test results and site plan indicating the location of the exploratory positions.

Ground Conditions
The boreholes have indicated that beneath a limited thickness of made ground the Langley Silt (Brickworth) is present to a depth of between 2.30 m and 3.00 m, beneath which River Terrace Gravel was encountered and proved to a depth of at least 6.00 m below ground level. The dynamic probes would seem to indicate that the London Clay is present at about 7.00 m depth, although this could represent a layer of less dense sand or clay. Desiccation was visually identified within Borehole Nos 3 and 4 within the Langley Silt to depths of 1.50 m and 2.00 m respectively, although the laboratory testing has not conclusively confirmed this.

Ground water was observed within two of the boreholes at a depth of around 3.00 m. However, it is likely that a fluctuating ground water table is present within the River Terrace Gravel.

Research of our archives has revealed two site investigations carried out approximately 280 m to the north of the site. One of these investigation encountered between 2.70 m and 3.30 m of Langley Silt overlying River Terrace Gravel to a depth of 7.10 m, the other encountered Langley Silt to a depth of 3.30 m and River Terrace Gravel to a depth of 8.50 m. The London Clay was encountered beneath the River Terrace Gravel in both investigations.

Recommendations
The proposed development of this site is understood to comprise the construction of a basement measuring approximately 12 m by 6 m and roughly 3 m deep. The investigation has revealed the presence of a limited thickness of made ground overlying the Langley Silt and then River Terrace Gravel. The proposed basement will extend below the base of the Langley Silt. Although the boreholes have indicated that ground water may be present at about 3.0 m depth this is not an equilibrium measurement and may not necessarily indicate the true level of any ground water table, which may be present at a depth higher than the recorded water strike. Some form of ground water control measures may therefore need to be considered.
Basement Construction

It is understood that it is proposed to construct a temporary cantilever piled wall around the proposed basement and then to construct a rigid box type structure within this temporary excavation which will act as the final basement construction.

The following parameters may be considered in the assessment of lateral pressures that will act upon the basement retaining wall.

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Effective Cohesion (c' - kN/m²)</th>
<th>Effective Friction Angle (φ' - degrees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Langley Silt</td>
<td>Zero</td>
<td>25</td>
</tr>
<tr>
<td>River Terrace Gravel</td>
<td>Zero</td>
<td>33</td>
</tr>
<tr>
<td>London Clay</td>
<td>Zero</td>
<td>23</td>
</tr>
</tbody>
</table>

Basement Heave

Excavation of the basement will lead to an unloading of the River Terrace Gravel and underlying London Clay. However, the limited size of the basement and the presence of 3.0 m of gravel beneath is unlikely to result in any significant heave movements.

It is considered that some lateral swelling movements may occur due to recovery of the currently desiccated clay soils following removal of the tree. Over time these may impact upon the temporary piled wall which could potentially transfer the loadings onto the sides of the basement box structure. In order to prevent any untoward movements occurring it is recommended that the intervening gap between the temporary pile wall and rigid box structure be loosely filled with granular soils so that they can absorb any potential movement.

We trust that we have provided you with sufficient information for your requirements, but should you wish to discuss anything in greater detail then please do not hesitate to contact us.

Yours sincerely

Chris Sondermann
for LBH WEMBLEY
Geotechnical & Environmental

Encs
**BOREHOLE**

**No 1**

**PROJECT:** No 2, Holland Villas Road, Holland Park, London, SW14

**CLIENT:** Mr and Mrs Meissner

**METHOD OF BORING:** Dynamic window sampler

**GROUND WATER:** Measured at 3.10 m immediately upon completion

**Date:** 09/02/2004

**REMARKS:**

<table>
<thead>
<tr>
<th>Samples</th>
<th>Depth m</th>
<th>Testing</th>
<th>Legend</th>
<th>Depth m</th>
<th>Site Level = Not Measured</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.50</td>
<td>D</td>
<td></td>
<td>0.30</td>
<td></td>
<td>MADE GROUND (100 mm thickness of mortar over orange-brown silty sand)</td>
</tr>
<tr>
<td>2</td>
<td>0.90</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td>Firm pale brown silty sandy, locally very sandy, CLAY with scattered gravel</td>
</tr>
<tr>
<td>3</td>
<td>1.50</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1.90</td>
<td>D</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2.50</td>
<td>D</td>
<td></td>
<td>2.80</td>
<td></td>
<td>Pale greenish brown silty SAND with scattered gravel</td>
</tr>
<tr>
<td>6</td>
<td>2.90</td>
<td>D</td>
<td></td>
<td>4.00</td>
<td></td>
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**LBH WEMBLEY Geotechnical & Environmental**
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<thead>
<tr>
<th>Depth (m)</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>0.40</td>
<td>MADE GROUND (100 mm thickness of mortar over poor quality reinforced concrete)</td>
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<tr>
<td>2.30</td>
<td>Pale greenish brown silty SAND with scattered gravel</td>
</tr>
<tr>
<td>3.00</td>
<td>Firm pale brown silty sandy, locally very sandy, CLAY with scattered gravel</td>
</tr>
</tbody>
</table>
### BOREHOLE

**No 3**

**Date:** 09/03/2004

**CLIENT:** Mr and Mrs Meissner

**METHOD OF BORING:** Dynamic window sampler

**GROUND WATER:** Not encountered

**REMARKS:**

<table>
<thead>
<tr>
<th>Samples No</th>
<th>Type</th>
<th>Depth m</th>
<th>Testing</th>
<th>Legend</th>
<th>Depth m</th>
<th>Site Level (Not Measured)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>D</td>
<td>0.50</td>
<td></td>
<td></td>
<td>0.50</td>
<td></td>
<td>MADE GROUND (100 mm thickness of mortar over dark brownish grey, becoming brown, silty sandy clay with scattered gravel and brick fragments)</td>
</tr>
<tr>
<td>2</td>
<td>D</td>
<td>0.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;Stiff&quot; grey and brown silty sandy CLAY with scattered gravel and occasional fine gravel - desiccated soil</td>
</tr>
<tr>
<td>3</td>
<td>D</td>
<td>1.50</td>
<td></td>
<td></td>
<td>1.50</td>
<td></td>
<td>Firm brown and grey silty sandy CLAY with scattered gravel</td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>1.90</td>
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</table>
PROJECT: No 2, Holland Villas Road, Holland Park, London, SW14
CLIENT: Mr and Mrs Meissner

METHOD OF BORING: Dynamic window sampler
GROUND WATER: Measured at 3.00 m immediately upon completion

REMKS:

<table>
<thead>
<tr>
<th>Samples</th>
<th>Depth m</th>
<th>Site Level</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>No 1</td>
<td>0.50</td>
<td>0.50</td>
<td>MADE GROUND (100 mm thickness of mortar over dark brownish grey, becoming brown, silty sandy clay with scattered gravel and brick fragments)</td>
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<tr>
<td>No 2</td>
<td>0.90</td>
<td></td>
<td>&quot;Firm&quot; grey and brown silty sandy, locally very sandy, CLAY with scattered gravel and occasional fine red lutite - desiccated soil</td>
</tr>
<tr>
<td>No 3</td>
<td>1.50</td>
<td>2.00</td>
<td>Firm grey and brown silty sandy, locally very sandy, CLAY with scattered gravel</td>
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<tr>
<td>No 4</td>
<td>1.90</td>
<td>2.80</td>
<td>Pale orange-brown silty SAND with scattered gravel</td>
</tr>
<tr>
<td>No 5</td>
<td>2.50</td>
<td>5.00</td>
<td></td>
</tr>
</tbody>
</table>

LBH WEMBLEY Geotechnical & Environmental
### BOREHOLE
**No 4**

**PROJECT:**  No 2, Holland Villas Road, Holland Park, London, SW14

**CLIENT:**  Mr and Mrs Meisner

**METHOD OF BORING:**  Dynamic window sampler

**GROUND WATER:**  Measured at 3.00 m immediately upon completion

**REMARKS:**

<table>
<thead>
<tr>
<th>No</th>
<th>Type</th>
<th>Depth m</th>
<th>Testing</th>
<th>Legend</th>
<th>Depth m</th>
<th>Site Level ±</th>
<th>Not Measured</th>
<th>Description</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.00</td>
<td></td>
<td></td>
<td>Pale orange-brown silty sandy GRAVEL</td>
</tr>
</tbody>
</table>

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**Project No:** LBH3328  
**Sheet 2 of 2**  

**LBH WEMBLEY Geotechnical & Environmental**
Remarks: Apparatus BS1377:Part 9:1990 - DPH
Remarks: Apparatus BS1377:Part 2:1990 - DPH
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<thead>
<tr>
<th>Borehole No</th>
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<th>Description</th>
<th>Natural Moisture Content (%)</th>
<th>Liquid Limit (%)</th>
<th>Plastic Limit (%)</th>
<th>Plasticity Index</th>
<th>% passing 0.425 mm BS sieve</th>
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<tbody>
<tr>
<td>3</td>
<td>0.90</td>
<td>Grey and brown silty sandy CLAY with scattered gravel and occasional fine rootlets - desiccated soil</td>
<td>21</td>
<td>46</td>
<td>18</td>
<td>28</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>1.50</td>
<td>Grey and brown silty sandy CLAY with scattered gravel and occasional fine rootlets - desiccated soil</td>
<td>20</td>
<td>36</td>
<td>17</td>
<td>19</td>
<td>100</td>
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