



**Symmetry Limited**

Consulting Structural Engineers

**58 Regent Park Road  
Primrose Hill  
London**

Supporting Documentation for  
Matthew Springett Associates  
Planning Application

Structural Engineering Notes

April 2012  
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Structural Engineering Notes

Proposed Drawings



## INTRODUCTION

1.1.1 Symmetrys Limited has been engaged by Westheath Projects Ltd. to review:

- The proposed internal refurbishment works
- The front lower ground floor single storey extension
- The two storey rear extension

Although it is likely that the existing structure is founded on London Clay, at present no soil investigation works have been carried out. With this in mind our initial comments are subject to review following receipt of the both the soil investigations clarifying the nature of the sub soils and water table levels, and a tree identification survey.

Our drawings and this report are included in support of our Client's planning application. Our documents are not intended for, and should not be relied upon by, any third party for any other purpose.

1.1.2 A CAD survey of the existing property has been carried out and passed to us from Matthew Springett Associates.

## 2 EXISTING CONDITION

### 2.1 Existing Site:

2.1.1 58 Regent Park Road is located in Primrose Hill North London. The site is bounded to the North by gardens to properties in Kingstown Street. There are neighbouring properties to the east and west and Regent Park Road is on the south boundary.

2.1.2 The land is generally flat with a gentle fall to the east.

2.1.3 This detached 4 storey structure, circa 1880 is rectangular on plan and at ground level. Access to the rear garden is to the left of the property when looking at the front elevation.

2.1.4 The structure is believed to have been built with cut timber roof and suspended timber joisted floors. These suspended elements are supported off of internal and perimeter masonry walls.

2.1.5 We understand that significant structural refurbishment works have been carried out to the property in the past with the introduction of steel columns and steel beams.

2.1.6 It is anticipated that the existing house is founded of corbelled masonry foundations.

2.1.7 As indicated on the local geographical survey, the underlying soil strata is London Clay.

## 2.2 Proposed Investigation / Opening-Up Works:

2.2.1 In order to design the proposed sub-structure the site soil properties will be required. An interpretive report will need to encompass:

- 2No. boreholes to determine safe bearing loads and cohesion values, traditional piles and sleeved piled foundations, slope stability to aid in the design of retaining structures and underpins, the extent of any ground contamination and ground water levels.
- A series of trial pits to confirm the depth and profile of the existing foundations to the perimeter walls
- 1 No. stand pipe in the boreholes to monitor water levels

2.2.2 Further site investigation will be required during the strip-out phase of the main house to establish the location of existing structure and the span of all floors and roof structure.

## 3 DESIGN PROPOSALS

### 3.1 Internal Refurbishments

3.1.1 It is proposed that many load-bearing walls be removed or altered. The detail of structural support for the internal refurbishment will be developed post planning approval.

### 3.2 The Front Lower Ground Floor Single Extension

3.2.1 The new walls around the proposed single storey extension will be formed using a contiguously piled RC wall. The piles are likely to be around 350mm diameter and 12 to 16m long.

3.2.2 Due to limited access to the site, mini-piles will be used. These will be installed using small tracked mini-piling rigs.

3.2.3 The new ground floor slab will be designed as a suspended slab spanning to the perimeter walls. The slab will be tied into the perimeter piled walls and designed to resist any potential soil pressure associated with heave or from hydrostatic loads from localised standing water or leaking pipes etc.

3.2.4 The suspended slab over this single storey structure will act as a stiff diaphragm and will provide permanent propping to the top of the perimeter piled retaining walls. This will be a reinforced concrete flat slab.

3.2.5 The basic waterproofing strategy is to be confirmed subject to ground conditions. It is anticipated that the face of the walls will be sprayed with a RIW product or a similar approved product. An internal drained cavity system is likely to be installed to complete system creating a Category 3 Basement as defined in BS8102.

### 3.3 The Two Storey Rear Extension

3.3.1 The foundations/retaining walls to the rear extension will be formed using contiguously piled RC walls. The piles will be off-set from the face of the boundary wall by approximately 500mm and are likely to be around 350mm diameter and 12 to 16m long. The piles will be installed using small tracked mini-piling rigs and access will be via the west boundary to the site. Concrete will be pumped down side access route from the street.

3.3.2 The new ground floor slab will be designed as a suspended slab spanning to the perimeter walls. The slab will be tied into the perimeter piled walls and designed to resist any potential soil pressure associated with heave or from hydrostatic loads from localised standing water or leaking pipes etc.

3.3.3 The perimeter walls will be constructed from masonry supported off of reinforced concrete pile caps. The perimeter walls will support the new suspended roof structure.

3.3.4 The suspended reinforced slab at ground floor level will act as a stiff diaphragm and will be supported off of the pile caps.

3.3.5 The basic waterproofing strategy to the lower level will be similar to the front extension, i.e. providing a tanked system Category 3 Basement as defined in BS8102.

## 4 **PARTY WALL MATTERS**

4.1.1 The scope of works falls within the Party Wall Act 1996. Procedures under the Act will be dealt with by the client's Party Wall Surveyor. The Party Wall Surveyor will prepare and serve necessary Notices under the provision of the Acts and agree Party Wall Awards in event of disputes. The Contractor will be required to provide the Party Wall Surveyor with the appropriate drawings, method statements and all other relevant information covering the works notifiable under the Act. The resolution of the matters under the Act and provision of Party Wall Awards will protect the interests of all owners.

## 5 **SUMMARY**

5.1.1 The new walls around the new lower ground floor extensions will be formed using mini piles cut from within the foot print of the existing rear and front gardens.

The piles and their temporary supports will be designed by the piling specialist as propped cantilevers and will be propped around the entire perimeter of the basement during the works. This industry standard method of forming a basement alongside existing structures is adopted to control minor settlement behind the piles heads to within acceptable limits.

Symmetrys Limited will review the piling specialist designs for the piles and the temporary works. The drawings and calculations for these works will also be submitted to Building Control and the necessary the Party Wall Surveyors for approval prior to the works commencing on site.