Ref: 11/17802
August 2016

Basement Impact Assessment (Hydrogeological and Structural)

At

Ornan Court, 2 Ornan Road, London, NW3 4PT

For

Ornan Court Limited

VOLUME 3 of 8

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8.1 Structural Calculations

3.1 Ground Movement Assessment Report (Part 1)

6.0 Groundwater

It is proposed to excavate to a minimum level of approximately 3.5m below ground level. There is no recognised aquifer at shallow depth below the site, which lies on London Clay, and no groundwater was encountered during the ground investigations in either 2011 or 2014.

Readings taken from standpipes 1+2 (installed in 2011) suggest a water lying at a depth of 2.3m below ground level. The readings in standpipes 3-5 are more variable, ranging from 1.73m to 2.87m bgl. The indicated water levels lie within the proposed basement excavation depth, but due to the lack of noticeable seepages during boring, it is suspected that these levels reflect either long-term water level within the London Clay (which would have accumulated slowly within the standpipes), or, possibly, seepage from the Made Ground that has accumulated within the boreholes. It is understood that this will be checked by purging of the standpipes and subsequent monitoring (see section 4.2 of the Basement Impact Assessment).

Due to its construction within low permeability deposits the development is not predicted significantly to affect current groundwater conditions.

7.0 Conclusions and Recommendations

From the above, it is concluded that, given good workmanship, the basement to Ornan Court can be constructed without imposing more than very slight damage on the adjoining properties. The development is not likely to disrupt any existing local groundwater flows.

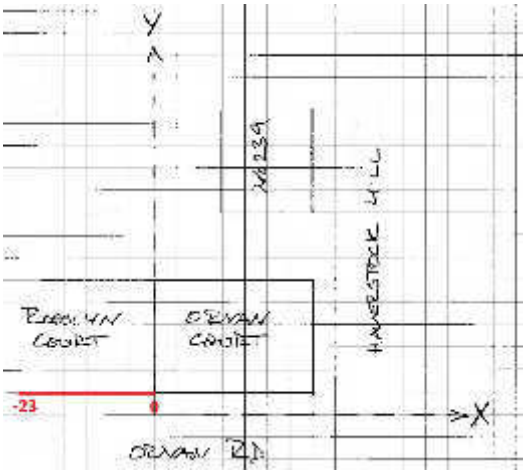
References:

1 Stroud M A (1989) 'The standard penetration test – its application and interpretation'. In 'Penetration testing in the UK', Thomas Telford pub.

2 Burland JB (1997). 'Assessment of risk of damage to buildings due to tunnelling and excavation'. In 'Earthquake Geotechnical engineering' Ishihara (Ed). Balkema pub.

3 Gaba A R, Simpson B, Powrie W, Beadman D R (2003) Embedded retaining walls - guidance for economic design, CIRIA Report C580, London. ISBN: 978-0-86017-580-3.

(Figures 4-9 follow below)


Y
X
-23
0
X
HAVERSTOCK HILL

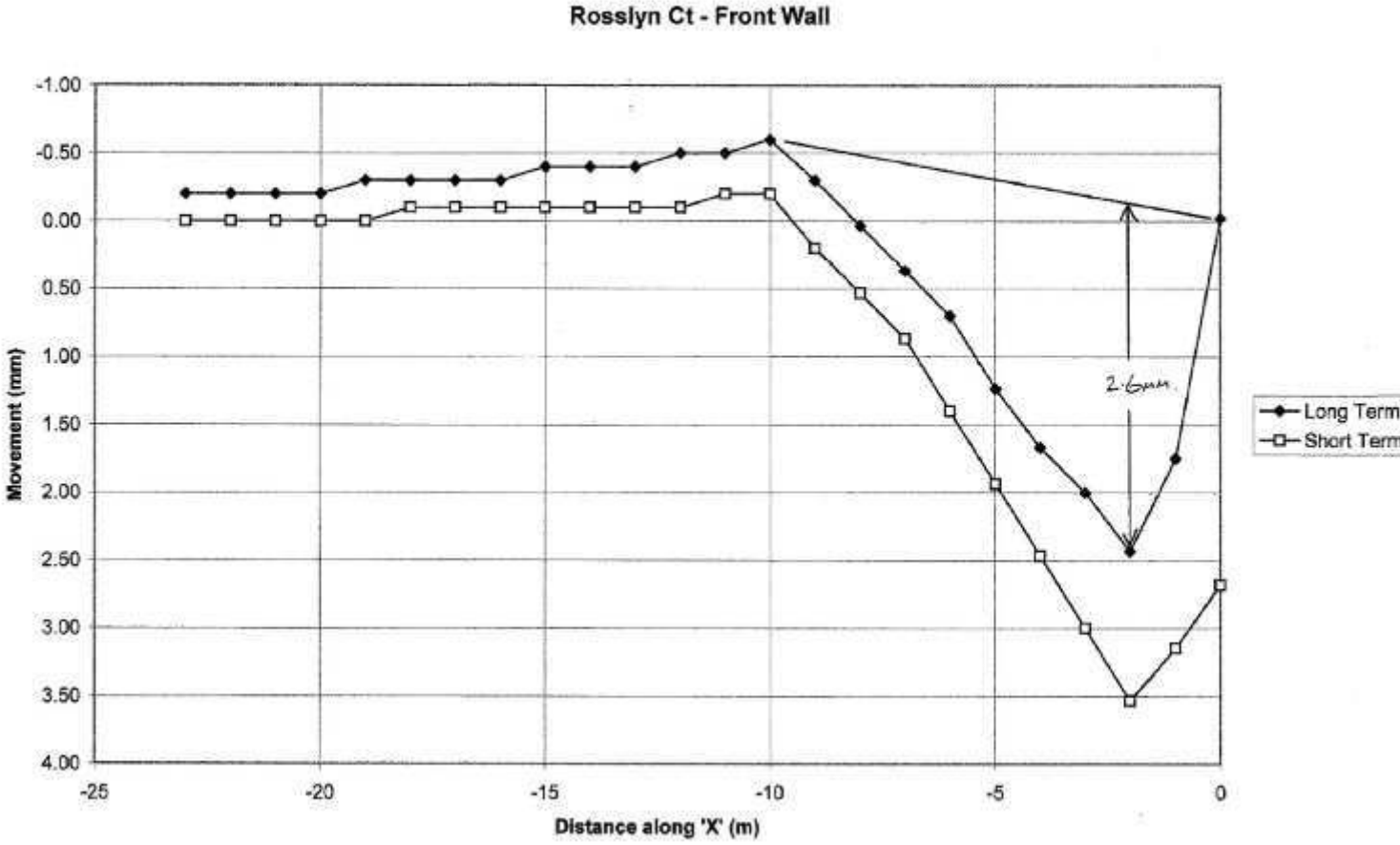
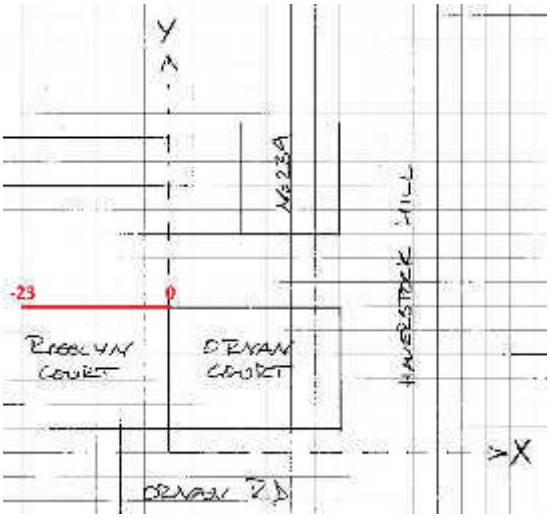

Rosslyn Ct - Front Wall
-1.00
-0.50
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
Movement (mm)
-25
-20
-15
-10
-5
0
Distance along 'X' (m)
2.6mm
Long Term
Short Term

Figure 4


Y
X
-23
0
ROSSLYN COURT
ORNAN COURT
HAVERSTOCK HILL

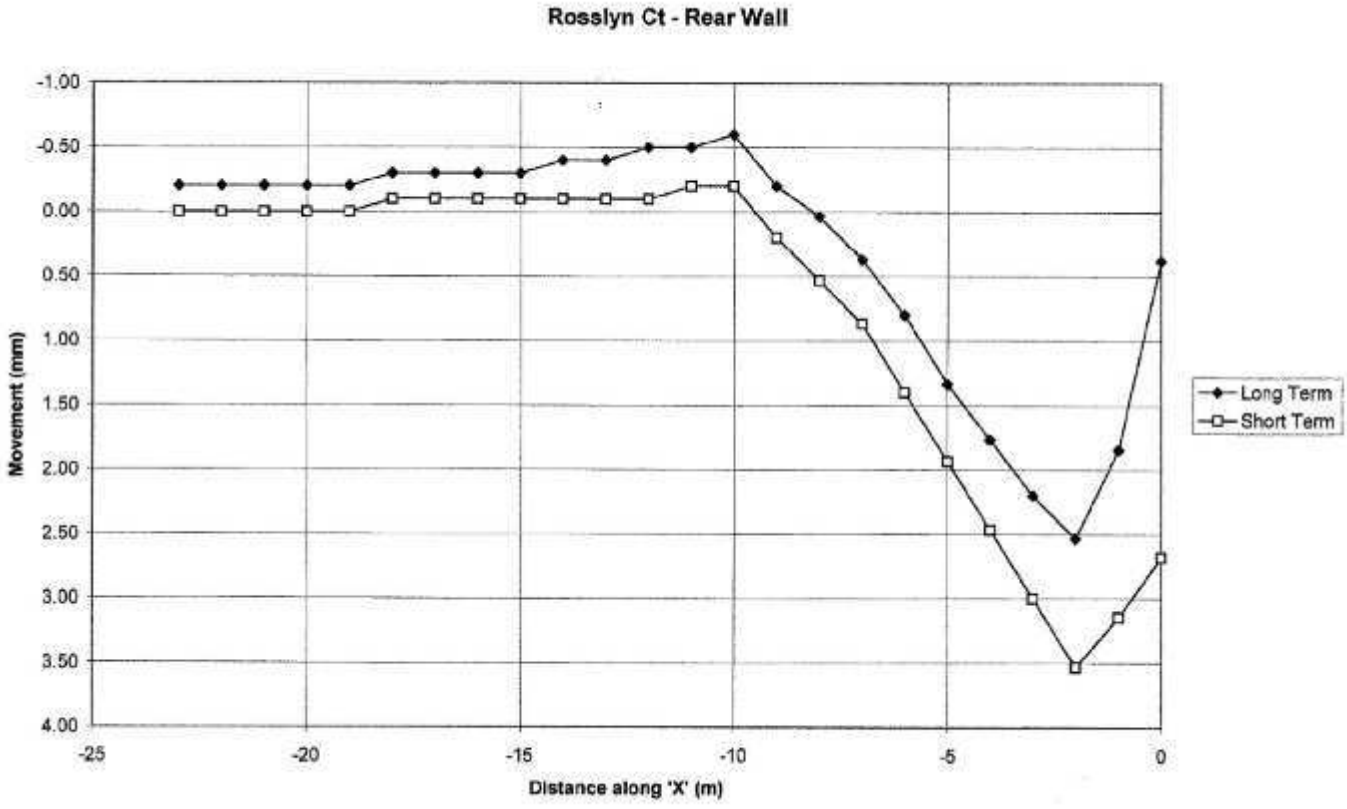
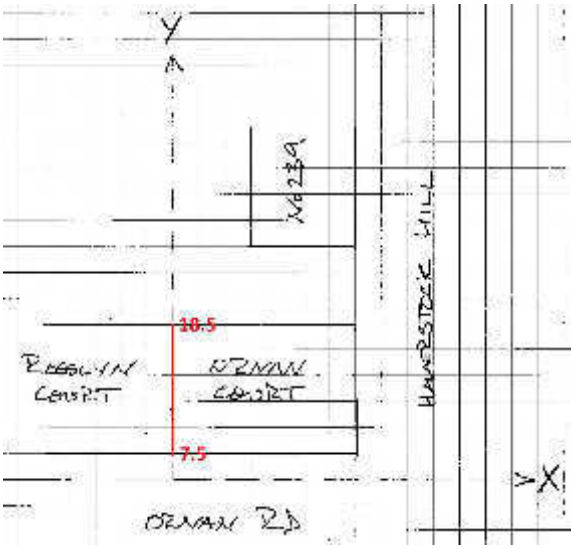

Rosslyn Ct - Rear Wall
Movement (mm)
-1.00
-0.50
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
-25
-20
-15
-10
-5
0
Distance along 'X' (m)
Long Term
Short Term

Figure 5


Y
X
10.5
7.5

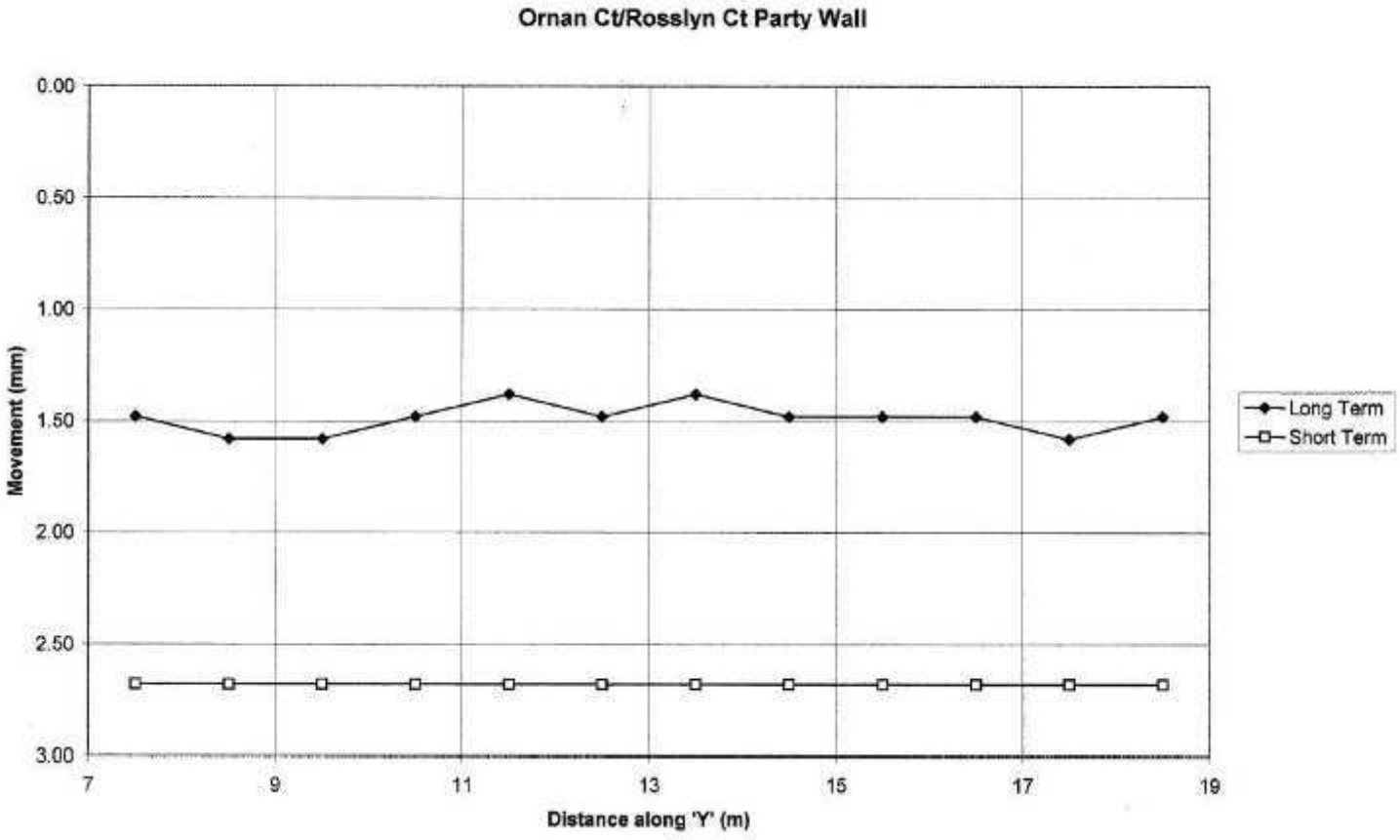
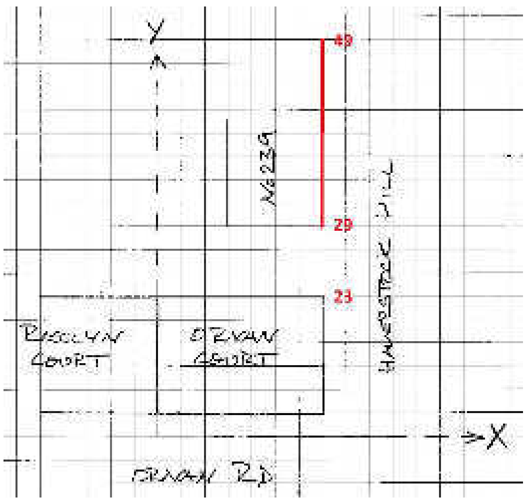

Ornan Ct/Rosslyn Ct Party Wall
Movement (mm)
0.00
0.50
1.00
1.50
2.00
2.50
3.00
7
9
11
13
15
17
19
Distance along 'Y' (m)
Long Term
Short Term

Figure 6



No 239 Front Wall

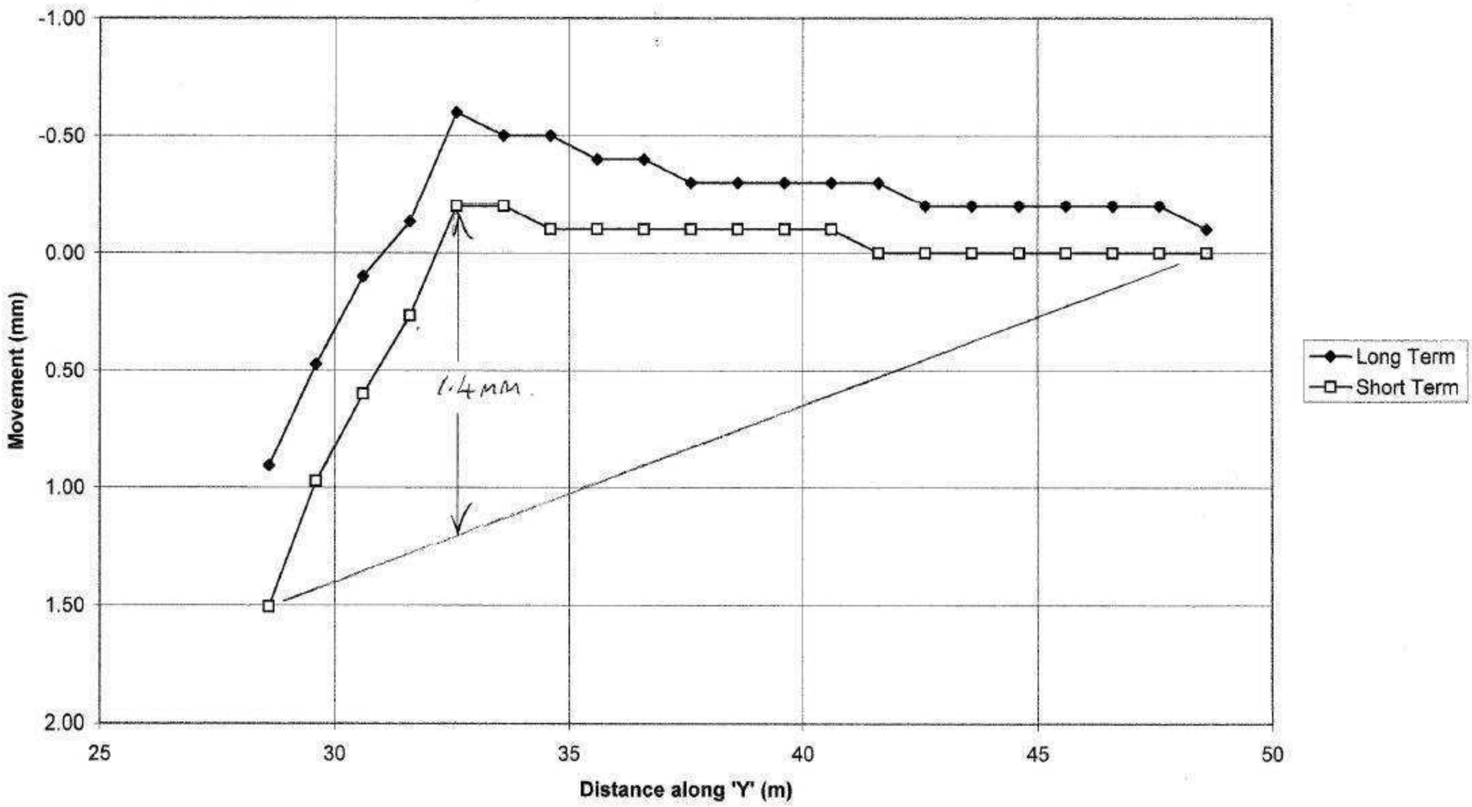
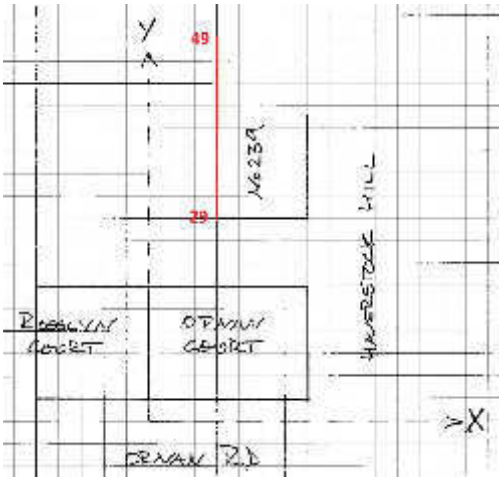


Figure 7


Y
49
29
X

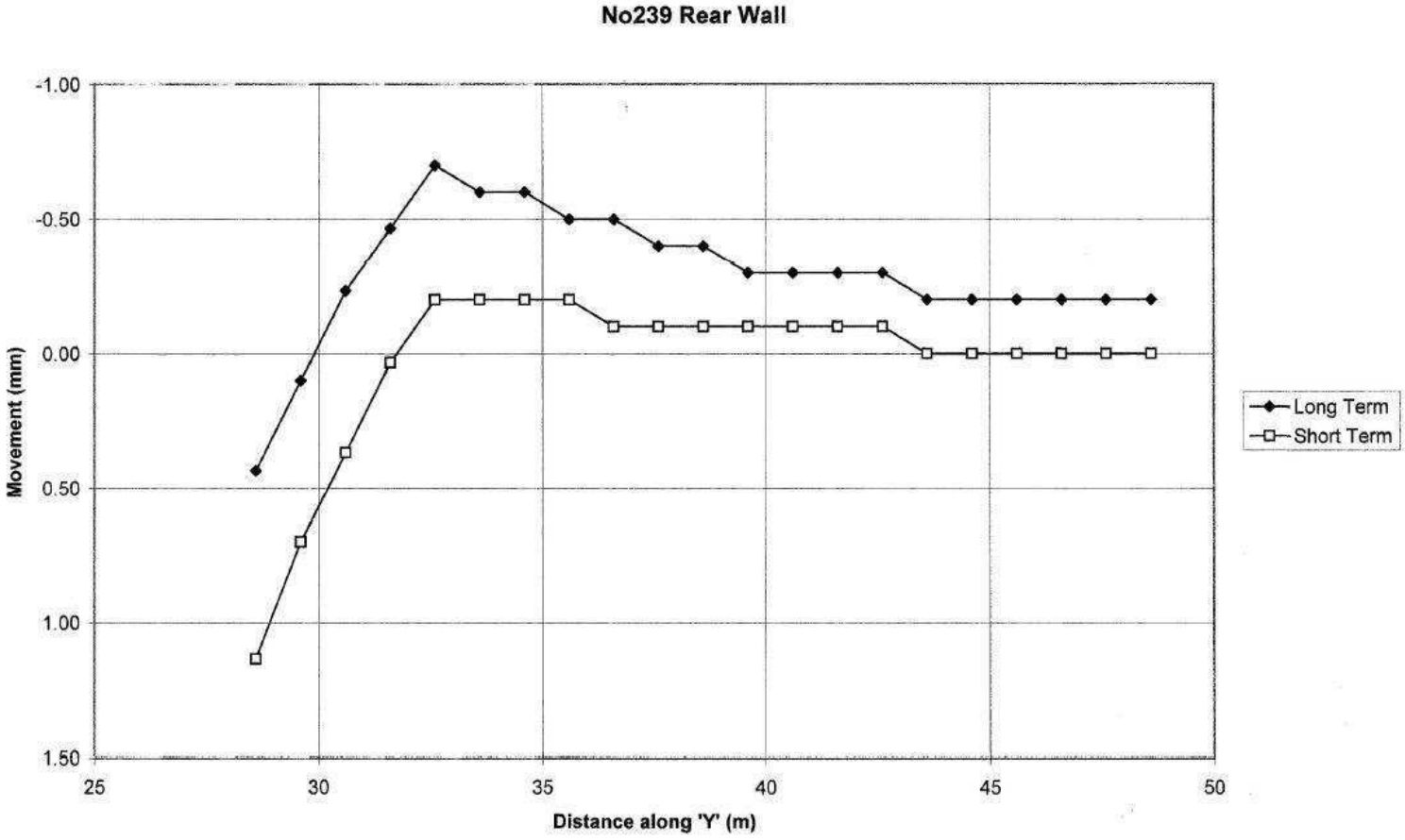
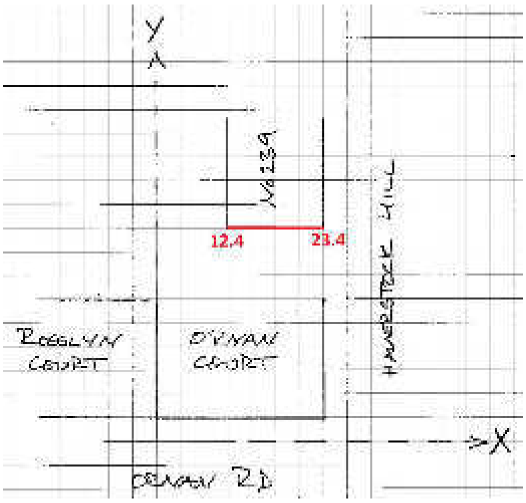
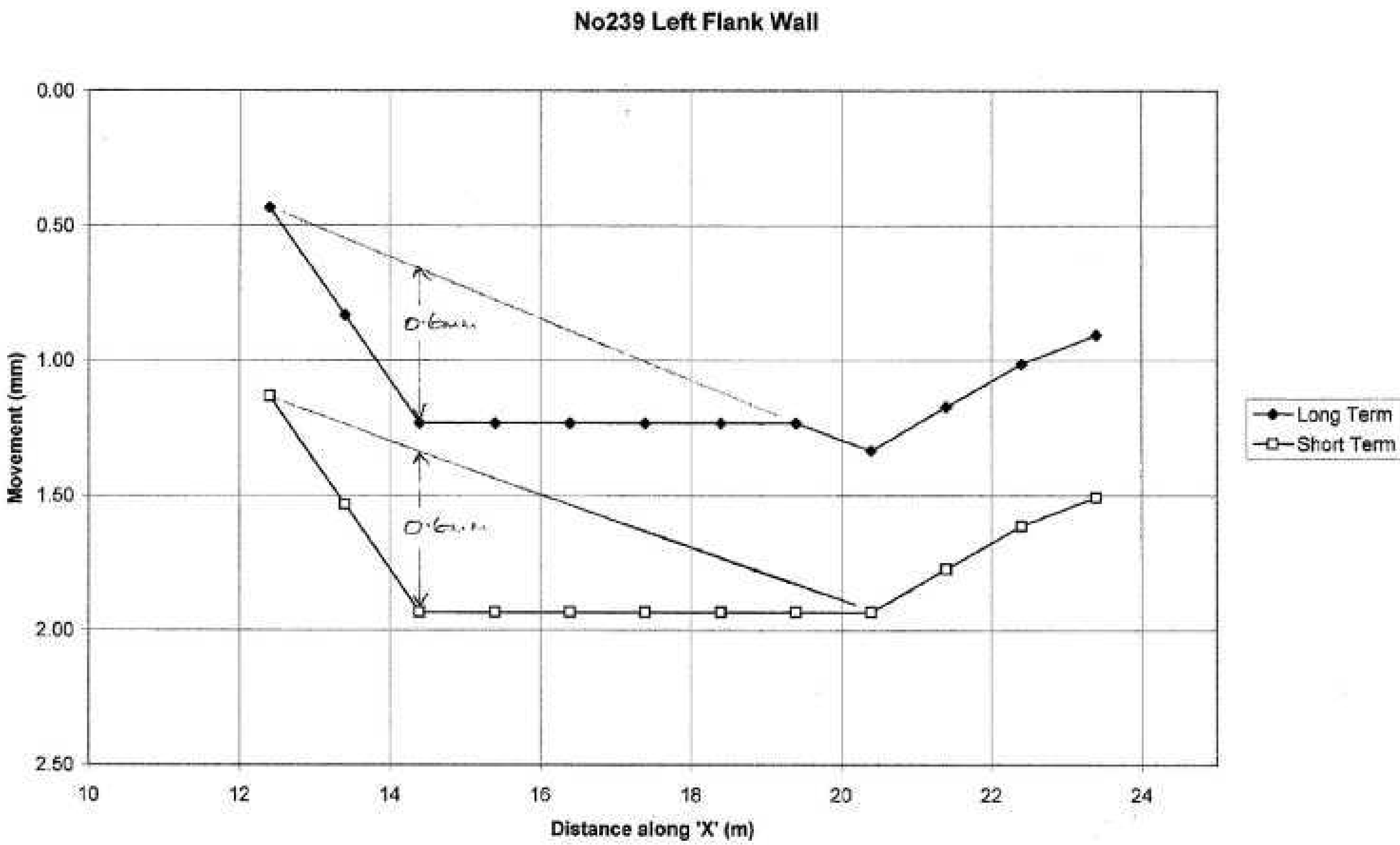

No239 Rear Wall
-1.00
-0.50
0.00
0.50
1.00
1.50
Movement (mm)
25
30
35
40
45
50
Distance along 'Y' (m)
Long Term
Short Term

Figure 8



Y
No239
12.4
23.4
HAVERSTOCK HILL
ROSSLYN COURT
X



No239 Left Flank Wall
Movement (mm)
0.00
0.50
1.00
1.50
2.00
2.50
10
12
14
16
18
20
22
24
Distance along 'X' (m)
Long Term
Short Term

Figure 9

1.0 Introduction

In connection with the proposal to construct a basement beneath Ornan Court, Ornan Road, London NW3, Applied Geotechnical Engineering Ltd (AGE) has been instructed by Site Analytical Services Ltd (SAS), on behalf of their client, to provide information on the effect of basement construction on the neighbouring properties; Rosslyn Court on Ornan Road, and the adjacent house on Haverstock Hill, which is taken in this report to be number 239.

The structural engineer for the project is Martin Redston Associates (MRA).

A plan of the proposed basement of the property is given below in Figure 1. The orientation of X and Y co-ordinate axes, used later in this report, is also given in this figure.

It is understood that the existing building, Ornan Court, is to be retained. The basement is to be constructed beneath the existing footprint, and additional excavations to basement depth, to provide lightwells, will be made to the front and rear. The construction of the basement will involve excavation to approximately 3.2m depth. This will be achieved within underpins supporting the existing building structure.

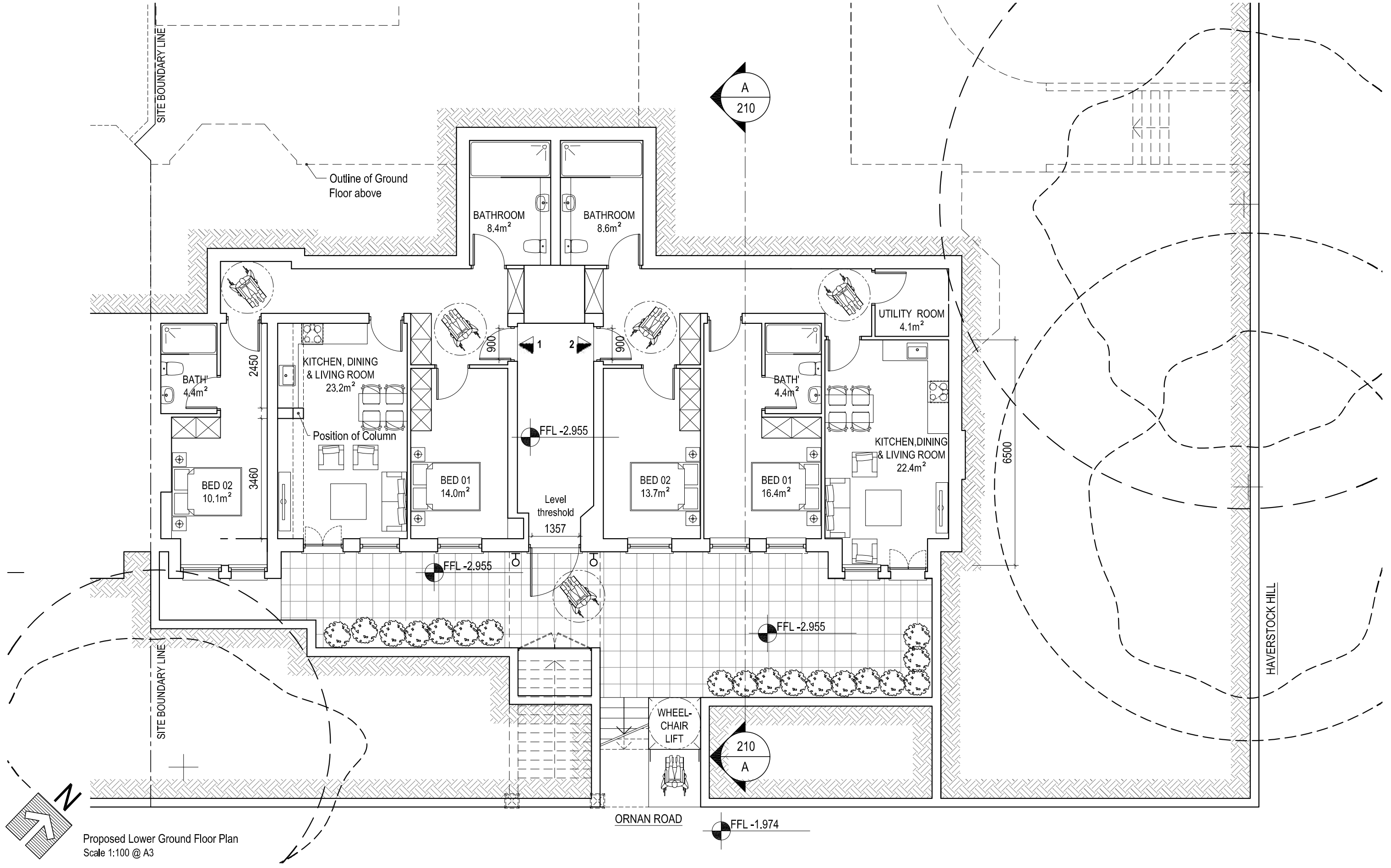
The site lies on the corner of Ornan Road and Haverstock Hill. Ornan Court is bounded on the left by a party wall that separates it from Rosslyn Court, and to the right by Haverstock Hill. To the rear, across approximately 6-10m of open ground, lies No 239 Haverstock Hill. Right and left are as viewed from the front of Ornan Court on Ornan Road, unless otherwise stated below.

It is required that a predicted-damage assessment be made on Rosslyn Court and No 239 Haverstock Hill. It is understood that No 239 Haverstock Hill has a full basement and is founded at approximately 3m depth. For the purposes of this report it is assumed that Rosslyn Court is founded 1m below ground level (mbgl).

2.0 Information Provided

The following relevant information has been used for these calculations:-

i) SAS Borehole logs (BH1-5) and laboratory test results.
ii) MRA Drawings 06.462/1F, /2D, /5, /6C, /7J, /10O, /15, /17, /20A.
iii) MRA Sketch 'Foundation Loads Rv B1'.
iv) Email correspondence MRA-AGE dated 21-28/11/14



Proposed Lower Ground Floor Plan
Scale 1:100 @ A3

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General Notes:
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Rev.	Description	Date	Signed	Checked

General Notes:

New Windows and Doors to front elevation at Lower Ground Floor have been shown aligned with the Windows at the Ground Floor level.

- Gross Internal Areas -

Flat 1	83.7m²
Flat 2	88.1m²

Scale	Date	Drawn by	Checked by
1:100 @ A3	16.10.2015	AL	DS

Drawing Title
Proposed Lower Ground Floor Plan

Project
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Project no.	Drawing no.	Revision
15/0159	101	03