



GEA

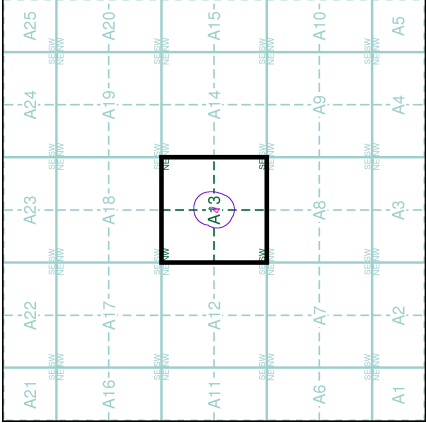
Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain



Historical Aerial Photography - Segment A13



Order Details

Order Number: 269786608_1_1
Customer Ref: J20268
National Grid Reference: 525500, 185970
Slice: A
Site Area (Ha): 0.1
Search Buffer (m): 100

Site Details

30, Ferncroft Avenue, LONDON, NW3 7PH



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Express Preliminary UXO Risk Assessment

Client	GEA Ltd
Project	30 Ferncroft Avenue, London
Site Address	30 Ferncroft Avenue, Hampstead, London, NW3 7PH
Report Reference	EP12383-00
Date	02/12/20
Originator	HW

Assessment Objective

This preliminary risk assessment is a qualitative screening exercise to assess the likely potential of encountering unexploded ordnance (UXO) at the 30 Ferncroft Avenue, London site. The assessment involves the consideration of the basic factors that affect the potential for UXO to be present at a site as outlined in Stage One of the UXO risk management process.

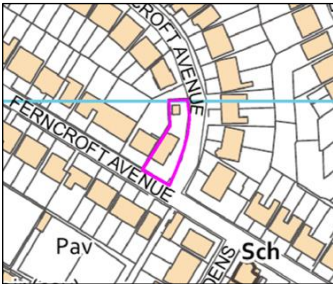
Background

This assessment uses the sources of information available in-house to 1st Line Defence Ltd to enable the placement of a development site in context with events that may have led to the presence of German air-delivered or Allied military UXO. The report will identify any immediate necessity for risk mitigation or additional research in the form of a Detailed UXO Risk Assessment. It makes use of 1st Line Defence's extensive historical archives, library and unique geo-databases, as well as internet resources, and is researched and compiled by UXO specialists and graduate researchers.

The assessment directly follows CIRIA C681 guidelines "Unexploded Ordnance, a Guide for the Construction Industry". The document will therefore assess the following factors:

- Basic Site Data
- Previous Military Use
- Indicators of potential aerial delivered UXO threat
- Consideration of any Mitigating Factors
- Extent of Proposed Intrusive Works
- Any requirement for Further Work

It should be noted that the vast majority of construction sites in the UK will have a low or negligible risk of encountering UXO and should be able to be screened out at this preliminary stage. The report is meant as a common sense 'first step' in the UXO risk management process. The content of the report and conclusions drawn are based on basic, preliminary research using the information available to 1st Line Defence at the time this report was produced. It should be noted that the only way to entirely negate risk from UXO to a project would be to support the works proposed with appropriate UXO risk mitigation measures. It is rarely possible to state that there is absolutely 'no' risk from UXO to a project.

Risk Assessment Considerations	
Site location and description/current use	The site is located in Hampstead, within the London Borough of Camden. Recent aerial imagery dated 2019 shows the site is primarily occupied by a multi-storey property, situated in the southern sector. A single-storey structure and a parcel of grassland are additionally located in the north. The site is bordered to the north by a multi-storey structure built along Hollycroft Avenue, which itself forms the eastern boundary. Ferncroft Avenue represents the southern perimeter and further multi-storey properties denote the western boundary. The site is approximately centred on the OS grid reference: TQ 2550085970. 
Are there any indicators of current/historical military activity on/close to the site?	In-house records do not indicate that the site footprint had any former military use. No features such as WWII defensive positions, encampments or firing ranges are recorded to have been located at or in the immediate vicinity of the site. In addition, no information or ordnance being stored, produced, or disposed of within the proposed site boundary could be found. The closest indicator of a local Allied footprint was a weapon pit, situated approximately 400m to the north of the site although given the distance, this is not considered a realistic source of Allied UXO contamination. The closest recorded Heavy Anti-Aircraft (HAA) battery was situated approximately 2km to the east of the site. The range of a fired projectile can be up to 15km.
What was the pre- and post-WWII history of the site?	Pre-war OS mapping dated 1934-1936 shows the site was developed, having been occupied by a large structure in the southern sector and smaller building in the north. Almost the entire observable area was similarly developed with semi-detached houses built along a network of roadways visible throughout. The only area not occupied by housing was a <i>Reservoir (Metropolitan Water Board)</i> situated approximately 90m to the south-west. Post-war OS mapping dated 1956 did not record any notable changes either on-site or in the immediate vicinity.
Was the area subject to bombing during WWII?	During WWII the site was situated within the Municipal Borough of Hampstead which sustained an overall very-high density of bombing with an average of 166 items of ordnance falling per 1,000 acres according to official Home Office bombing statistics. This comprised 321 high explosive (HE) bombs, 6 parachute mines, 31 oil bombs, 5 phosphorous bombs, 10 V-1 pilotless aircraft bombs, and 3 V-2 long range rockets, culminating in 376 incidents across 2,265 acres. No HE bombs were recorded either on or in the immediate vicinity of the site according to a combination of London bomb census mapping and a local bomb map acquired from <i>Hampstead at War: 1939-1945</i>.¹ The nearest incident noted on both is recorded on Reddington Road, approximately 220m east of the boundary.

¹ Hampstead Borough Council., *Hampstead at War: 1939-1945*, Camden History Society., 1978

Is there any evidence of bomb damage on/close to the site?	On this occasion, post-war aerial photography dated 1946 was available for examination. None of the obvious indicators of bomb damage amongst developed areas i.e. discoloured roofing, cratering, or scattered earth were observable either on-site or in the immediate vicinity. This correlates with London County Council (LCC) bomb damage mapping wherein no damage was recorded on-site. The closest notable damage according to this source was situated approximately 70m to the north-west along Hollycroft Avenue.
To what degree would the site have been subject to access?	The site was developed throughout WWII, having been occupied by housing and the associated grounds. Given the lack of damage observable either on-site or in the immediate vicinity, it is considered likely that the property remained occupied throughout the war period, thereby increasing the likelihood of any local ordnance being noted and removed. Although, it may be noted that the discovery of UXO in the rear gardens of properties would generally rely on the vigilance of individual residents.
To what degree has the site been developed post-WWII?	The site has undergone little development since WWII.
What is the nature and extent of the intrusive works proposed?	Information provided by the client indicates that proposed intrusive works comprise one cable percussive borehole to a maximum depth of 20m, as well as a number of hand dug trial pits, in close proximity to the existing foundations on site, and shallow sampling to approximately 4m. The overall development is understood to include the refurbishment of the existing property on site, including an extension of the single level basement.

Summary and Conclusions
During WWII the site was situated within the Municipal Borough of Hampstead which sustained an overall very-high density of bombing with an average of 166 items of ordnance falling per 1,000 acres according to official Home Office bombing statistics. Despite this, no HE bombs were recorded either on or in the immediate vicinity of the site according to a combination of London bomb census mapping and a local bomb map acquired from <i>Hampstead at War: 1939-1945</i>. Furthermore, a combination of LCC bomb damage mapping and post-war imagery dated 1946 were available for consultation during the production of this report. The former did not record any damage either on-site or in the immediate vicinity. The latter showed the site/surrounding structures to have been neat and uniform; lacking any of the traditional indicators of bomb damage i.e. discoloured roofing, cratering, or scattered earth. The site was developed throughout WWII, having been occupied by housing and associated gardens. Given the lack of damage observable either on-site or in the immediate vicinity across multiple sources, it is considered likely that the property remained occupied, therefore increasing the likelihood of any ordnance being noted and removed. Though, the discovery of UXO in the rear gardens of residential properties is generally thought to have relied on the vigilance of individual residents. In summary, due to a variety of sources indicating that no incidents occurred in the immediate vicinity of the site, the lack of damage discernible on or bordering the site, and the anticipated frequent level of on-site access throughout WWII, the site is not considered to hold a significant risk of UXO contamination.





Recommendations

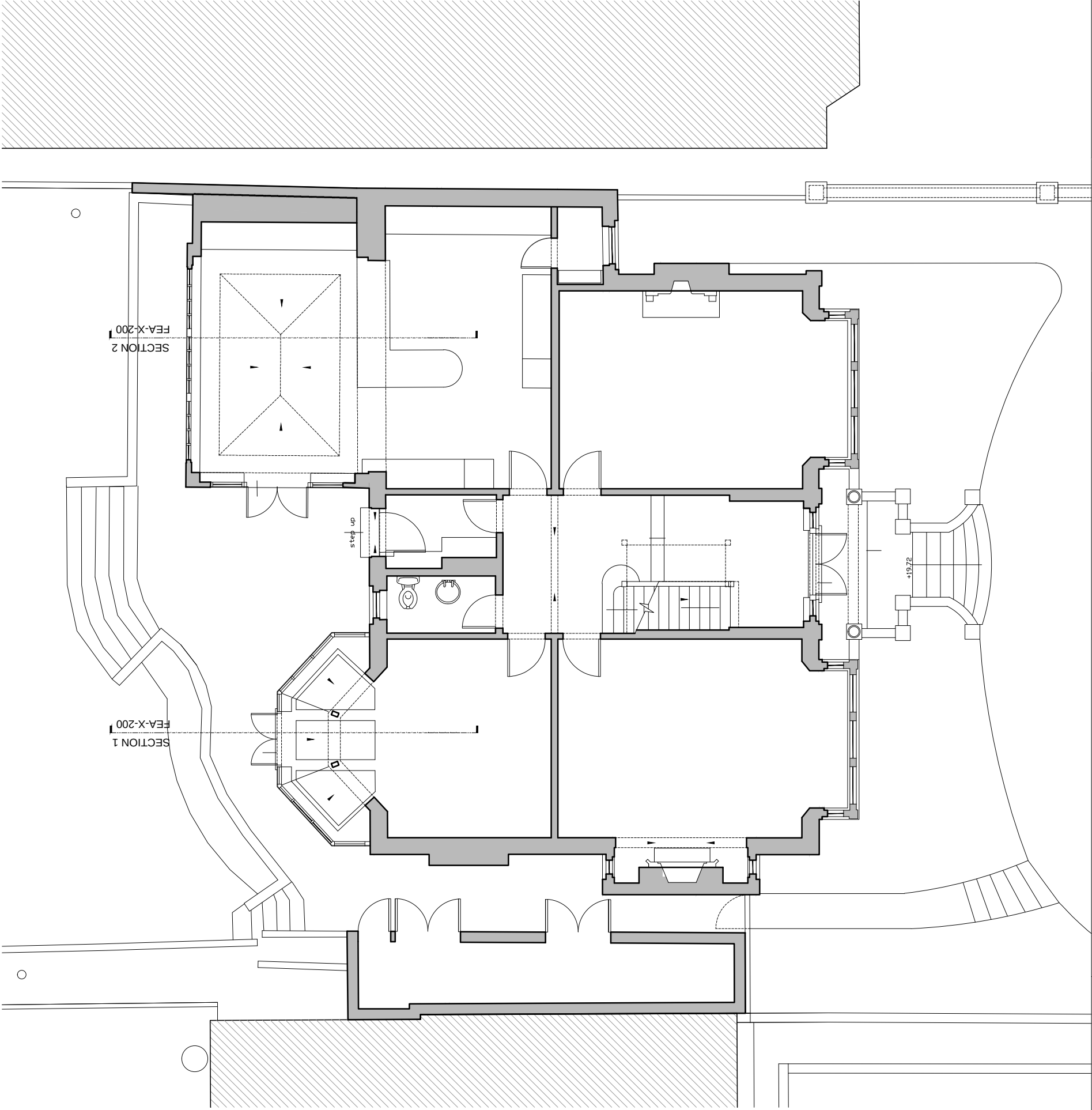
Preliminary research for this site has not indicated any significant cause for concern or highlighted any factors which would indicate that the risk of encountering UXO is elevated above the background level for this area of London. Whilst it would be possible to conduct a Detailed UXO Risk Assessment for this site, it is not anticipated that any further research would significantly alter the findings of this report. **It is therefore not recommended that any further action is taken for this site.**

If the client has any anecdotal or empirical evidence of UXO risk on site, please contact 1st Line Defence.

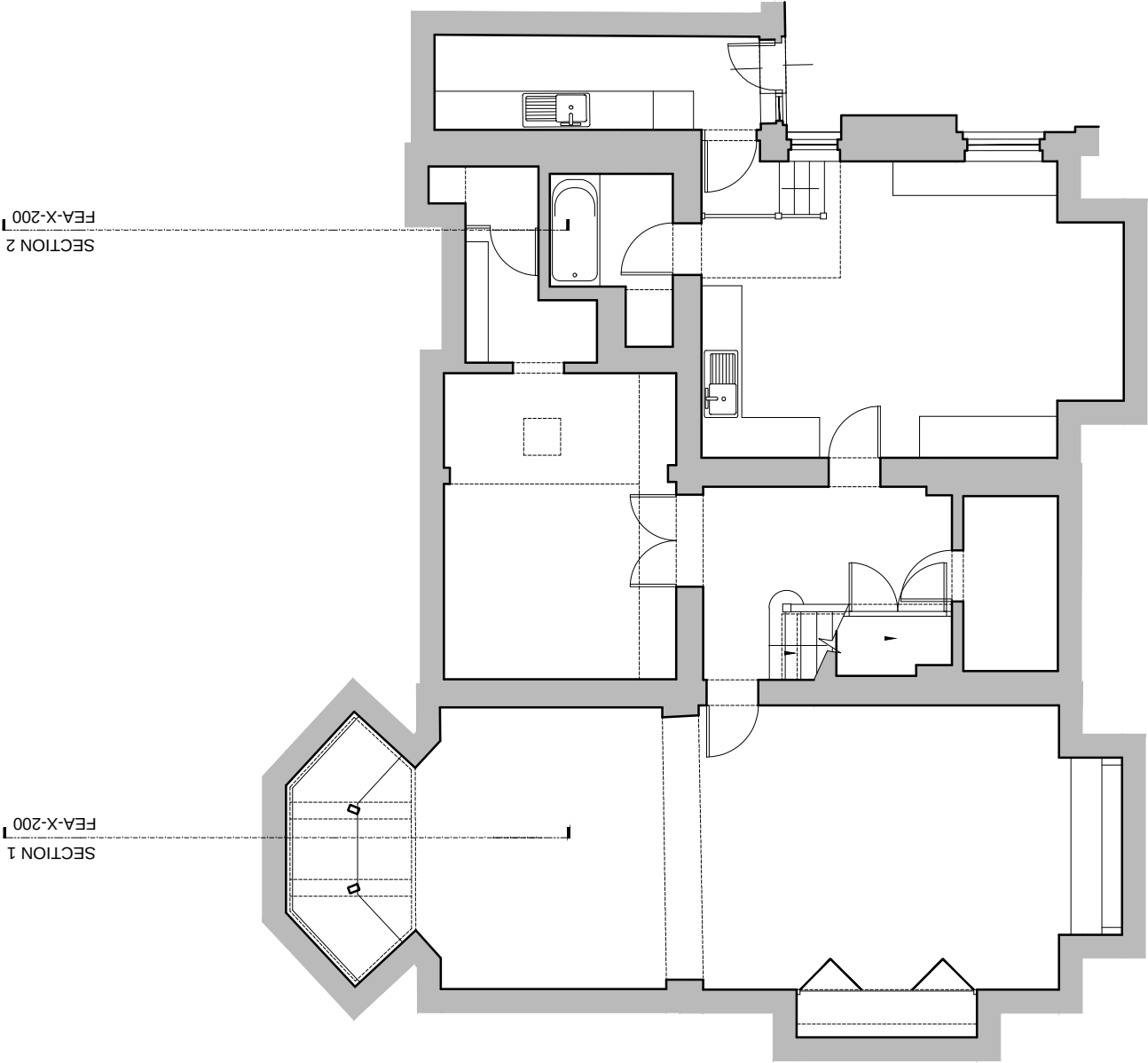
It should be noted that although the risk from unexploded ordnance on this site has been assessed as low/minimal, this does not mean there is 'no' risk of encountering UXO. This preliminary report has been undertaken with due diligence, and all reasonable care has been taken to access and analyse relevant historical information. By necessity, when dealing historical evidence, and when making assessments of UXO risk, various assumptions have to be made which we have discussed and justified within this report. Our reports take a common-sense and practical approach to the assessment of UXO risk, and we strive to be reasonable and pragmatic in our conclusions. As referenced, it would be possible to undertake further research into this site, but based on the evidence to hand, this is not deemed strictly necessary, and no reasonably justifiable requirement for proactive on-site mitigation has been identified.

It should however be stressed that if any suspect items are encountered during the proposed works, 1st Line Defence should be contacted for advice/assistance, and to re-assess the risk as necessary. Furthermore, we would recommend that ground personnel are always made aware of the potential for encountering UXO, what to look out for and what to do in the unlikely event that a suspect item is encountered, and that a UXO Risk Management Plan is put together for the proposed works. We would be happy to provide a template and guidance for this – contact us on 01992 245020. Should the scope of works change or additional works be proposed, 1st Line Defence should be contacted to re-evaluate the risk.

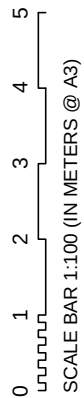
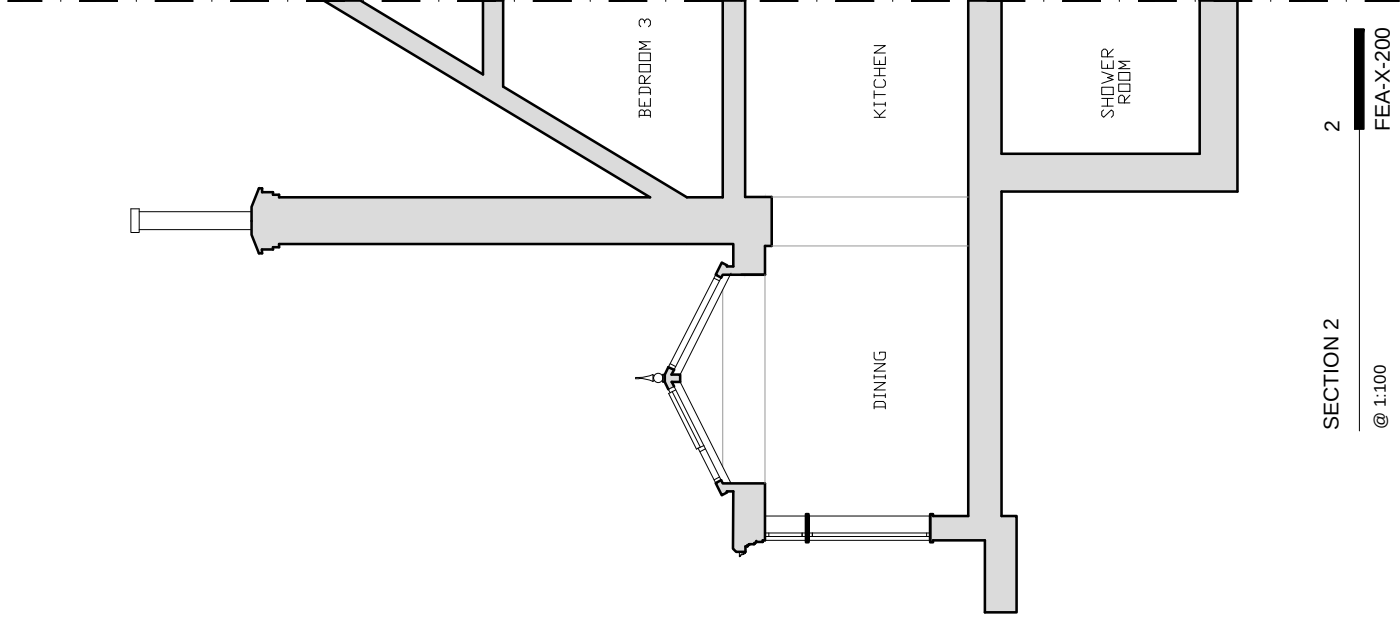
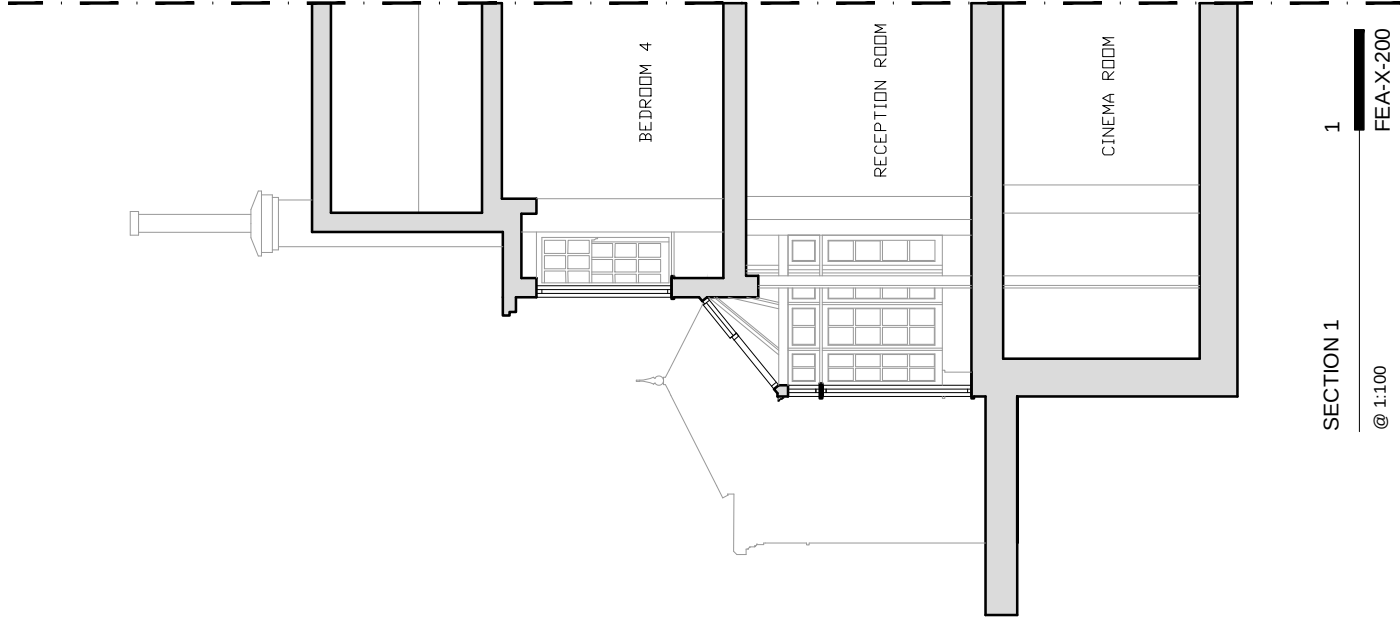




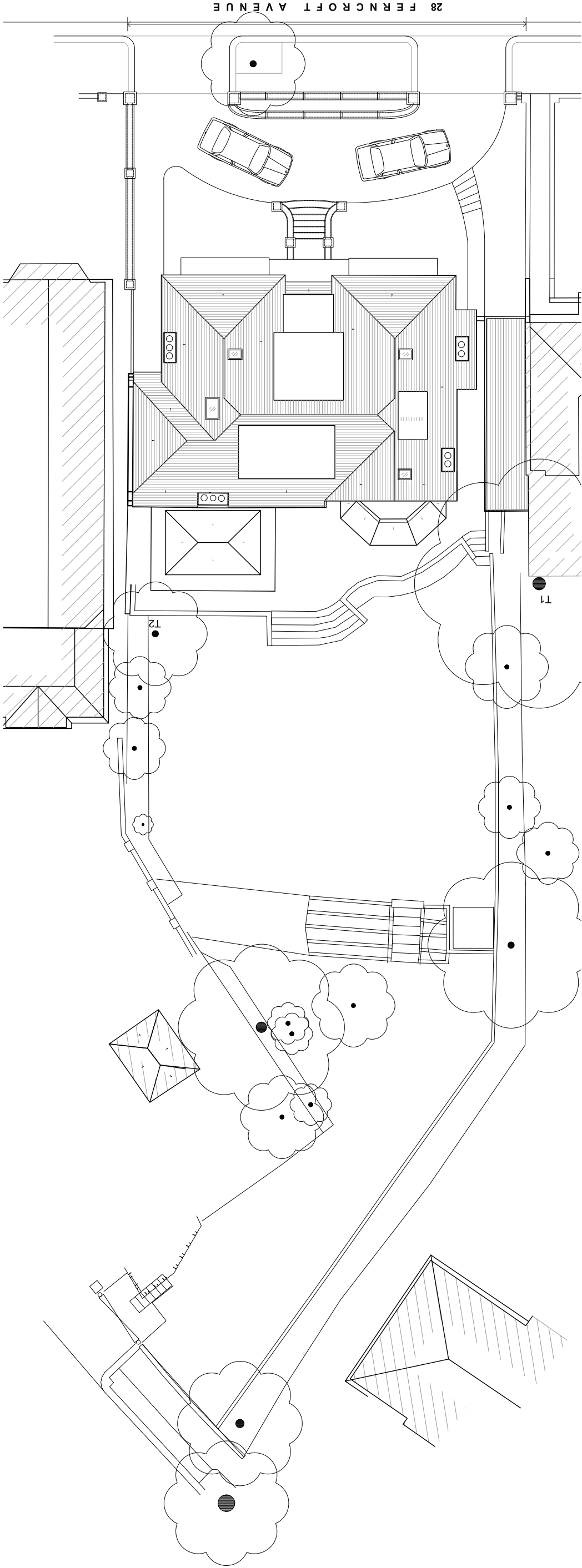
general notes THIS DRAWING IS COPYRIGHT OF STUDIO MARK RUTHVEN. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE DESIGNER'S RISK ASSESSMENT, SPECIFICATION AND ALL OTHER RELEVANT DOCUMENTATION AND DRAWINGS. STUDIO MARK RUTHVEN ACCEPTS NO LIABILITY FOR ANY EXPENSE, LOSS OR DAMAGE OF ANY KIND ARISING FROM ANY VARIATION MADE TO THIS DRAWING OR IN THE EXECUTION OF THE WORK TO WHICH IT RELATES WHICH HAS NOT BEEN REFERRED TO THEM AND THEIR APPROVAL OBTAINED. FOR THE PURPOSE OF CONSTRUCTION DO NOT SCALE FROM THIS DRAWING OR THE COMPUTER DIGITAL DATA. ONLY FIGURED DIMENSIONS ARE TO BE USED. IF IN DOUBT ASK.	notes	CLIFTON INTERIORS LTD 168 Regents Park Road Primrose Hill, London NW1 8XN t : 020 7586 5533 f : 020 7586 1987 e : info@cliftoninteriors.com www.cliftoninteriors.com						project name 28 FERNCROFT AVENUE LONDON NW3 7PH		StudioMarkRuthven architecture 92 Prince of Wales Road, London, NW5 3NE 11 & 13 Patwell Street, Bruton, BA10 0EQ T 020 7485 0050			
		drawing title EXISTING GROUND FLOOR PLAN		scale 1:100 @ A3 1:50@A1		date 02.02.17		project ref. FEA		drawing no. FEA-X-101		revision .	
		rev/notes		date by checked		drawn by .		checked .					
		* for construction do not scale from this drawing. * check all dimensions on site.											



general notes
--



general notes THIS DRAWING IS COPYRIGHT OF STUDIO MARK RUTHVEN. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE DESIGNER'S RISK ASSESSMENT, SPECIFICATION AND ALL OTHER RELEVANT DOCUMENTATION AND DRAWINGS. STUDIO MARK RUTHVEN ACCEPT NO LIABILITY FOR ANY EXPENSE, LOSS OR DAMAGE OF WHATSOEVER NATURE AND HOWEVER ARISING FROM ANY VARIATION MADE TO THIS DRAWING OR IN THE EXECUTION OF THE WORK TO WHICH IT RELATES WHICH HAS NOT BEEN REFERRED TO THEM AND THEIR APPROVAL OBTAINED FOR THE PURPOSE OF CONSTRUCTION DO NOT SCALE FROM THIS DRAWING OR THE COMPUTER DIGITAL DATA. ONLY FIGURED DIMENSIONS ARE TO BE USED. IF IN DOUBT ASK.	notes	CLIFTON INTERIORS LTD 168 Regents Park Road Primrose Hill, London NW1 8XN t: 020 7586 5533 f: 020 7586 1987 e: info@cliftoninteriors.com www.cliftoninteriors.com										project name 28 FERNCROFT AVENUE LONDON NW3 7PH drawing title EXISTING SECTIONS		project ref. FEA		drawing no. FEA-X-200		revision .	
		rev notes		date by checked		scale 1:100 @ A3 1:50@A1		date 02.02.17		drawn by VA		checked MR							
		* for construction do not scale from this drawing. * check all dimensions on site.																	
purpose of issue	PLANNING																		



0 2 4 6 8 10
SCALE BAR 1:200 (IN METERS @ A3)

general notes

THIS DRAWING IS COPYRIGHT OF STUDIO MARK RUTHVEN. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE DESIGNER'S RISK ASSESSMENT, SPECIFICATION AND ALL OTHER RELEVANT DOCUMENTATION AND DRAWINGS. STUDIO MARK RUTHVEN ACCEPTS NO LIABILITY FOR ANY LOSS OR DAMAGE ON THE DRAWING, EITHER IN WHOLE OR IN PART, ARISING FROM ANY USE OF THE DRAWING, INCLUDING BUT NOT LIMITED TO, THE EXECUTION OF THE WORK TO WHICH IT RELATES WHICH HAS NOT BEEN REFERRED TO THEM AND THEIR APPROVAL OBTAINED.

FOR THE PURPOSE OF CONSTRUCTION DO NOT SCALE FROM THIS DRAWING OR THE COMPUTER DIGITAL DATA. ONLY FIGURED DIMENSIONS ARE TO BE USED.

IF IN DOUBT ASK.



CLIFTON INTERIORS LTD
168 Regents Park Road
Primrose Hill, London NW1 8XN
t : 020 7586 5533
f : 020 7586 1987
e : info@cliftoninteriors.com
www.cliftoninteriors.com

notes

rev/notes date by checked date by checked
* for construction do not scale from this drawing.
* check all dimensions on site.

project name
28 FERNCROFT AVENUE
LONDON NW3 7PH

drawing title
EXISTING
SITE
PLAN

scale 1:200 @ A3

date 02.02.17

drawn by .

checked .

StudioMarkRuthven
architecture

92 Prince of Wales Road, London, NW5 3NE
11 & 13 Patwell Street, Bruton, BA10 0EQ
T 020 7485 0050

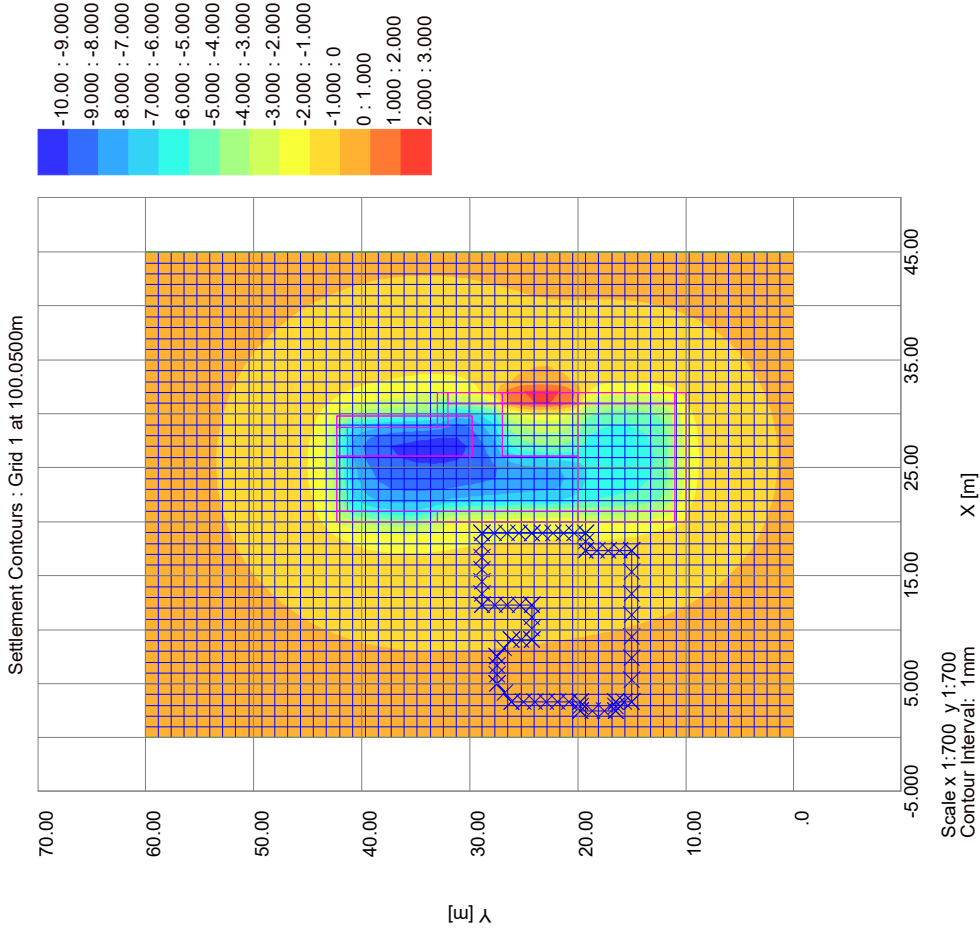
project ref. FEA

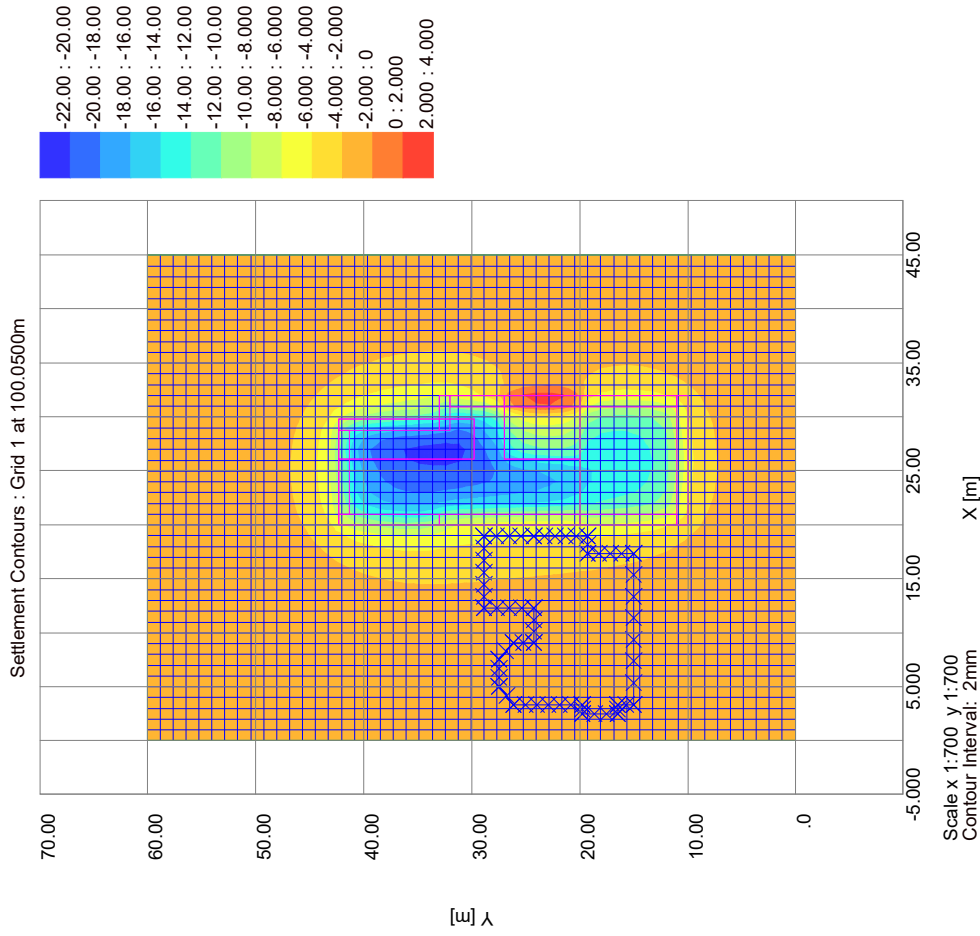
drawing no. FEA-X-002

revision .

purpose of issue
PLANNING

Job No.	Sheet No.		Rev.
J20268			
Drg. Ref.			
Made by ML	Date	Checked	







GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Titles

Job No.: J20268
Job Title: 30 Ferncroft Avenue, London NW3 7PH
Sub-title: Analysis of Vertical Movements due to Basement Excavation
Calculation Heading: Undrained Short-term Movements
Initials: ML
Checker:
Date Saved:
Date Checked:
Notes:
File Name: Undrained.pdd
File Path: G:\CURRENT\20-\J20268 - 30 Ferncroft Avenue\APPENDIX\GMA

History

Date	Time	By	Notes
17-Feb-2021	21:55	Matt Legg	New
17-Feb-2021	22:17	Matt Legg	
17-Feb-2021	22:59	Matt Legg	
26-Feb-2021	00:39	Matt Legg	
26-Feb-2021	18:07	Matt Legg	Open

Analysis Options

General

Global Poisson's ratio: 0.50
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: 55.00 [m OD]
Displacements at load centroids: Yes
GSA piled raft data : No

Elastic

Elastic : Yes
Analysis: Boussinesq
Stiffness for horizontal displacement calculations: Weighted average
Using legacy heave correction factor: No

Consolidation

Consolidation : No

Soil ProfilesUndrained

Layer ref.	Name	Level at top	Number of intermediate displacement levels	Youngs Modulus : Top	Youngs Modulus : Btm.	Poissons ratio	Non-linear curve
		[mOD]		[kN/m²]	[kN/m²]		
1	WG	100.05	1	9000.0	9000.0	0.50000	None
2	CLAYGATE	99.500	1	22500.	27692.	0.50000	None
3	CLAYGATE	98.000	1	27692.	31154.	0.50000	None
4	CLAYGATE	97.000	2	31154.	38077.	0.50000	None
5	CLAYGATE	95.000	2	38077.	45000.	0.50000	None
6	CLAYGATE	93.000	2	45000.	51923.	0.50000	None
7	CLAYGATE	91.000	2	51923.	58846.	0.50000	None
8	CLAYGATE	89.000	3	58846.	69231.	0.50000	None
9	LC	86.000	5	115390.	144760.	0.50000	None
10	LC	81.000	6	144760.	180010.	0.50000	None
11	LC	75.000	10	180010.	238760.	0.50000	None
12	LC	65.000	10	238760.	297510.	0.50000	None

Soil ProfilesDrained

Layer ref.	Name	Level at top	Number of intermediate displacement levels	Youngs Modulus : Top	Youngs Modulus : Btm.	Poissons ratio	Non-linear curve
		[mOD]		[kN/m²]	[kN/m²]		
1	WG	100.05	1	6000.0	6000.0	0.20000	None
2	CLAYGATE	99.500	1	15000.	18462.	0.20000	None
3	CLAYGATE	98.000	1	18462.	20769.	0.20000	None
4	CLAYGATE	97.000	2	20769.	25385.	0.20000	None
5	CLAYGATE	95.000	2	25385.	30000.	0.20000	None
6	CLAYGATE	93.000	2	30000.	34615.	0.20000	None
7	CLAYGATE	91.000	2	34615.	39231.	0.20000	None
8	CLAYGATE	89.000	3	39231.	46154.	0.20000	None
9	LC	86.000	5	86154.	108090.	0.20000	None
10	LC	81.000	6	108090.	134410.	0.20000	None
11	LC	75.000	10	134410.	178270.	0.20000	None
12	LC	65.000	10	178270.	222140.	0.20000	None

Soil Zones

Zone	Name	X min [m]	X max [m]	Y min [m]	Y max [m]	Profile
1	Zone 1	0.0	45.000	0.0	60.000	Undrained

Polygonal Load Data

Load ref.	Name	Position : Level	Position : Polygon	Coords.	Position : Polygon Rect. tolerance	No. of Rectangles	Value : Normal (local z)
		[m]		[m]	[kN]		[kN/m²]
1	Pool Excavation	93.25000	(26.1,42.3)	(29.8,42.3)	10.000	1	-120.00
			(29.8,29.8)	(26.1,29.8)			
			(26.1,42.3)				
2	Basement 1	98.00000	(20,10)	(20,20)	10.000	1	-44.000
			(31.9,10)	(31.9,20)			
3	Basement 2	99.00000	(26.1,20)	(26.1,27)	10.000	1	-14.000
			(31.9,20)	(26.1,20)			
4	Basement 3	96.00000	(20,20)	(20,42.3)	10.000	3	-80.000
			(26.1,29.8)	(26.1,42.3)			
			(29.8,33)	(31.9,33)			
			(26.1,27)	(26.1,20)			
5	Strip 1	98.00000	(20,11)	(20,20)	10.000	1	34.000
			(21,11)	(20,11)			
6	Strip 2	98.00000	(20,10)	(20,11)	10.000	1	34.000
			(31.9,10)	(31.9,11)			
7	Strip 3	98.00000	(30.9,11)	(30.9,20)	10.000	1	34.000
			(31.9,11)	(30.9,11)			
8	Strip 4	96.00000	(20,20)	(20,33)	10.000	1	125.00
			(21,20)	(20,20)			
9	Strip 5	96.00000	(20,33)	(20,42.3)	10.000	1	35.000
			(21,33)	(20,33)			
10	Strip 6	96.00000	(21,42.3)	(28.8,42.3)	10.000	1	35.000
			(28.8,41.3)	(21,41.3)			
			(21,42.3)				
11	Strip 7	93.25000	(28.8,42.3)	(29.8,42.3)	10.000	1	35.000
			(29.8,33)	(28.8,33)			
			(28.8,42.3)				
12	Strip 8	96.00000	(28.8,33)	(31.9,33)	10.000	1	35.000
			(28.8,32)	(28.8,33)			
13	Strip 9	99.00000	(31.9,27)	(31.9,20)	10.000	1	125.00
			(30.9,27)	(31.9,27)			
14	Strip 10	96.00000	(31.9,32)	(31.9,27)	10.000	1	125.00
			(30.9,32)	(31.9,32)			

Polygonal Loads' Rectangles



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

No.	Centre x	Centre y	Angle of local x from global X [Degrees]	Width x [m]	Depth y [m]
Load 1 : Pool Excavation (Edge 2 optimal)					
1	27.92000	36.07500	0.0	3.7000	12.530
Load 2 : Basement 1 (Edge 2 optimal)					
1	25.97000	15.00000	90.000	10.000	11.940
Load 3 : Basement 2 (Edge 2 optimal)					
1	29.00500	23.50500	90.000	7.0100	5.8700
Load 4 : Basement 3 (Edge 1 optimal)					
1	27.92000	28.41000	0.0	3.7000	2.8000
2	30.85500	30.02000	0.0	2.1700	6.0200
3	23.03500	31.17000	0.0	6.0700	22.340
Load 5 : Strip 1 (Edge 2 optimal)					
1	20.50000	15.50000	90.000	9.0000	1.0000
Load 6 : Strip 2 (Edge 2 optimal)					
1	25.97000	10.50000	90.000	1.0000	11.940
Load 7 : Strip 3 (Edge 2 optimal)					
1	31.44000	15.50000	90.000	9.0000	1.0000
Load 8 : Strip 4 (Edge 2 optimal)					
1	20.50000	26.51500	90.000	13.030	1.0000
Load 9 : Strip 5 (Edge 2 optimal)					
1	20.50000	37.68500	90.000	9.3100	1.0000
Load 10 : Strip 6 (Edge 2 optimal)					
1	24.88500	41.84000	0.0	7.7700	1.0000
Load 11 : Strip 7 (Edge 2 optimal)					
1	29.27000	37.68500	0.0	1.0000	9.3100
Load 12 : Strip 8 (Edge 2 optimal)					
1	30.35500	32.53000	0.0	3.1700	1.0000
Load 13 : Strip 9 (Edge 2 optimal)					
1	31.44000	23.50500	-90.000	7.0100	1.0000
Load 14 : Strip 10 (Edge 2 optimal)					
1	31.44000	29.52000	-90.000	5.0200	1.0000

Displacement Lines

Name	X1	Y1	Z1	X2	Y2	Z2	Intervals	Calculate	Detailed Results
	[m]	[m]	[m]	[m]	[m]	[m]	[No.]		
28A	17.30000	15.00000	99.55000	3.35000	15.00000	99.55000	7	Yes	Yes
28B	3.35000	15.00000	99.55000	3.35000	16.46000	99.55000	2	Yes	Yes
28C	3.35000	16.46000	99.55000	2.50000	16.46000	99.55000	2	Yes	Yes
28D	2.50000	16.46000	99.55000	2.50000	19.79000	99.55000	3	Yes	Yes
28E	2.50000	19.79000	99.55000	3.35000	19.79000	99.55000	2	Yes	Yes
28F	3.35000	19.79000	99.55000	3.35000	26.14000	99.55000	6	Yes	Yes
28G	3.35000	26.14000	99.55000	5.03000	27.49000	99.55000	2	Yes	Yes
28H	5.03000	27.49000	99.55000	7.55000	27.49000	99.55000	3	Yes	Yes
28I	7.55000	27.49000	99.55000	9.09000	26.14000	99.55000	2	Yes	Yes
28J	9.09000	26.14000	99.55000	9.09000	24.26000	99.55000	2	Yes	Yes
28K	9.09000	24.26000	99.55000	12.26000	24.26000	99.55000	3	Yes	Yes
28L	12.26000	24.26000	98.65000	12.26000	28.91000	98.65000	4	Yes	Yes
28M	12.26000	28.91000	98.65000	18.93000	28.91000	98.65000	6	Yes	Yes
28N	18.93000	28.91000	98.65000	18.93000	24.26000	98.65000	4	Yes	Yes
28O	18.93000	24.26000	98.65000	18.93000	19.26000	98.65000	5	Yes	Yes
28P	18.93000	19.26000	99.55000	17.30000	19.26000	99.55000	2	Yes	Yes
28Q	17.30000	19.26000	99.55000	17.30000	15.00000	99.55000	4	Yes	Yes

Displacement Grids

Name	Extrusion: Direction	X1	Y1	Z1	X2	Y2	Z2	Intervals Along Line [No.]	Extrusion: Distance [m]	Extrusion: Intervals Along [No.]	Calculate	Detailed Results
		[m]	[m]	[m]	[m]	[m]	[m]					
Grid 1	Global X	0.00000	0.00000	100.05000	-	60.00000	100.05000	50	45.00000	45	Yes	Yes

Warnings

(1)The load at (27.920, 36.075, 93.250)m lies wide of all soil zones. Displacements at its centre have been requested. The first soil profile will be used.

Results : Immediate : Load Centres : Polygonal

Ref.	Name	x	y	z	δz	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [µ]
		[m]	[m]	[mOD]	[mm]	[mOD]			
1	Pool Excavation	27.92000	36.07500	93.25000	-9.24202	93.125	-132.97	-385.71	-148.15E-6
2	Basement 1	25.97000	15.00000	98.00000	-5.50807	97.753	-44.001	-125.94	-106.25E-6
3	Basement 2	29.00500	23.50500	99.00000	-2.48209	98.500	-13.676	-27.859	-233.99E-6
4	Basement 3	23.99562	30.89573	96.00000	-8.49269	95.755	-80.091	-226.75	-190.66E-6
5	Strip 1	20.50000	15.50000	98.00000	-2.59548	97.753	-10.471	-38.154	118.12E-6
6	Strip 2	25.97000	10.50000	98.00000	-2.43098	97.753	-10.470	-38.245	119.77E-6
7	Strip 3	31.44000	15.50000	98.00000	-2.39255	97.753	-10.435	-37.422	107.16E-6
8	Strip 4	20.50000	26.51500	96.00000	-1.84636	95.755	41.501	61.444	889.25E-6
9	Strip 5	20.50000	37.68500	96.00000	-4.85586	95.755	-44.809	-126.29	-114.80E-6
10	Strip 6	24.88500	41.84000	96.00000	-4.83815	95.755	-44.706	-119.49	-206.21E-6
11	Strip 7	29.27000	37.68500	93.25000	-6.51761	93.125	-89.730	-263.72	-61.323E-6
12	Strip 8	30.35500	32.53000	96.00000	-5.07041	95.755	-43.600	-100.51	-427.14E-6
13	Strip 9	31.44000	23.50500	99.00000	-3.93101	98.500	89.548	156.01	0.0021724
14	Strip 10	31.44000	29.52000	96.00000	-1.40238	95.755	43.129	69.923	838.55E-6

Results : Consolidation : Load Centres : Polygonal

None

Results : Total : Load Centres : Polygonal

None

Results : Immediate : Displacement Data : Lines

Ref.	Name	x	y	z	δz	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [µ]
		[m]	[m]	[mOD]	[mm]	[mOD]			
1	28A	17.30000	15.00000	99.55000	-0.60730	99.525	0.0	0.0	0.0
1	28A	15.30714	15.00000	99.55000	-0.29471	99.525	0.0	0.0	0.0
1	28A	13.31429	15.00000	99.55000	-0.12079	99.525	0.0	0.0	0.0
1	28A	11.32143	15.00000	99.55000	-0.03026	99.525	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [µ]
		[m]	[m]	[mOD]	[mm]				
1	28A	9.32857	15.00000	99.55000	0.02256	99.525	0.0	0.0	0.0
1	28A	7.33571	15.00000	99.55000	0.05446	99.525	0.0	0.0	0.0
1	28A	5.34286	15.00000	99.55000	0.07398	99.525	0.0	0.0	0.0
1	28A	3.35000	15.00000	99.55000	0.08574	99.525	0.0	0.0	0.0
2	28B	3.35000	15.00000	99.55000	0.08574	99.525	0.0	0.0	0.0
2	28B	2.35000	15.73000	99.55000	0.08498	99.525	0.0	0.0	0.0
2	28B	3.35000	16.46000	99.55000	0.08420	99.525	0.0	0.0	0.0
3	28C	3.35000	16.46000	99.55000	0.08420	99.525	0.0	0.0	0.0
3	28C	2.92500	16.46000	99.55000	0.08621	99.525	0.0	0.0	0.0
3	28C	2.50000	16.46000	99.55000	0.08789	99.525	0.0	0.0	0.0
4	28D	3.35000	16.46000	99.55000	0.08789	99.525	0.0	0.0	0.0
4	28D	2.50000	17.57000	99.55000	0.08709	99.525	0.0	0.0	0.0
4	28D	2.50000	18.68000	99.55000	0.08616	99.525	0.0	0.0	0.0
4	28D	2.50000	19.79000	99.55000	0.08521	99.525	0.0	0.0	0.0
5	28E	2.50000	19.79000	99.55000	0.08521	99.525	0.0	0.0	0.0
5	28E	2.92500	19.79000	99.55000	0.08289	99.525	0.0	0.0	0.0
5	28E	3.35000	19.79000	99.55000	0.08052	99.525	0.0	0.0	0.0
6	28F	3.35000	19.79000	99.55000	0.08052	99.525	0.0	0.0	0.0
6	28F	3.35000	20.84833	99.55000	0.07933	99.525	0.0	0.0	0.0
6	28F	3.35000	21.90667	99.55000	0.07815	99.525	0.0	0.0	0.0
6	28F	3.35000	22.96500	99.55000	0.07700	99.525	0.0	0.0	0.0
6	28F	3.35000	24.02333	99.55000	0.07587	99.525	0.0	0.0	0.0
6	28F	3.35000	25.08167	99.55000	0.07479	99.525	0.0	0.0	0.0
6	28F	3.35000	26.14000	99.55000	0.07378	99.525	0.0	0.0	0.0
7	28G	3.35000	26.14000	99.55000	0.07378	99.525	0.0	0.0	0.0
7	28G	4.19000	26.81500	99.55000	0.06573	99.525	0.0	0.0	0.0
7	28G	5.03000	27.49000	99.55000	0.05588	99.525	0.0	0.0	0.0
8	28H	5.03000	27.49000	99.55000	0.05588	99.525	0.0	0.0	0.0
8	28H	5.87000	27.49000	99.55000	0.04480	99.525	0.0	0.0	0.0
8	28H	6.71000	27.49000	99.55000	0.03146	99.525	0.0	0.0	0.0
8	28H	7.55000	27.49000	99.55000	0.01539	99.525	0.0	0.0	0.0
9	28I	7.55000	27.49000	99.55000	0.01539	99.525	0.0	0.0	0.0
9	28I	8.32000	26.81500	99.55000	-0.00050	99.525	0.0	0.0	0.0
9	28I	9.09000	26.14000	99.55000	-0.01891	99.525	0.0	0.0	0.0
10	28J	9.09000	26.14000	99.55000	-0.01891	99.525	0.0	0.0	0.0
10	28J	9.09000	25.20000	99.55000	-0.01581	99.525	0.0	0.0	0.0
10	28J	9.09000	24.26000	99.55000	-0.01257	99.525	0.0	0.0	0.0
11	28K	9.09000	24.26000	99.55000	-0.01257	99.525	0.0	0.0	0.0
11	28K	10.14667	24.26000	99.55000	-0.04514	99.525	0.0	0.0	0.0
11	28K	11.20333	24.26000	99.55000	-0.08671	99.525	0.0	0.0	0.0
11	28K	12.26000	24.26000	99.55000	-0.14017	99.525	0.0	0.0	0.0
12	28L	12.26000	24.26000	98.65000	-0.14017	98.325	-23.305E-6	-0.0016160	29.115E-9
12	28L	12.26000	25.42250	98.65000	-0.14755	98.325	-22.297E-6	-0.0014125	25.339E-9
12	28L	12.26000	26.58500	98.65000	-0.15491	98.325	-20.534E-6	-0.0010547	18.702E-9
12	28L	12.26000	27.74750	98.65000	-0.16219	98.325	-18.207E-6	-579.94E-6	9.8926E-9
12	28L	12.26000	18.91000	98.65000	-0.16924	98.325	-15.552E-6	-34.050E-6	-237.37E-12
13	28M	12.26000	28.91000	98.65000	-0.16924	98.325	-15.552E-6	-34.050E-6	-237.37E-12
13	28M	13.37167	28.91000	98.65000	-0.25149	98.325	-24.238E-6	-0.0011445	20.184E-9
13	28M	14.48333	28.91000	98.65000	-0.36127	98.325	-38.414E-6	-0.0028764	51.997E-9
13	28M	15.59500	28.91000	98.65000	-0.50986	98.325	-62.152E-6	-0.0055729	101.44E-9
13	28M	16.70667	28.91000	98.65000	-0.71390	98.325	-103.13E-6	-0.0097919	178.57E-9
13	28M	17.81833	28.91000	98.65000	-0.99733	98.325	-176.44E-6	-0.016462	300.03E-9
13	28M	18.93000	28.91000	98.65000	-1.38411	98.325	-313.46E-6	-0.027172	493.99E-9
14	28N	18.93000	28.91000	98.65000	-1.38411	98.325	-313.46E-6	-0.027172	493.99E-9
14	28N	18.93000	27.74750	98.65000	-1.33799	98.325	-425.23E-6	-0.037482	681.81E-9
14	28N	18.93000	26.58500	98.65000	-1.29946	98.325	-537.63E-6	-0.047465	863.47E-9
14	28N	18.93000	25.42250	98.65000	-1.26547	98.325	-630.95E-6	-0.055574	1.0109E-6
14	28N	18.93000	24.26000	98.65000	-1.23498	98.325	-686.97E-6	-0.060393	1.0985E-6
15	28O	18.93000	24.26000	98.65000	-1.23498	98.325	-686.97E-6	-0.060393	1.0985E-6
15	28O	18.93000	23.26000	98.65000	-1.21238	98.325	-696.59E-6	-0.061219	1.1135E-6
15	28O	18.93000	22.26000	98.65000	-1.19670	98.325	-668.83E-6	-0.058835	1.0702E-6
15	28O	18.93000	21.26000	98.65000	-1.19777	98.325	-607.75E-6	-0.053568	974.43E-9
15	28O	18.93000	20.26000	98.65000	-1.23203	98.325	-522.37E-6	-0.046126	839.11E-9
15	28O	18.93000	19.26000	98.65000	-1.27949	98.325	-424.99E-6	-0.037459	681.41E-9
16	28P	18.93000	19.26000	99.55000	-1.27944	99.525	0.0	0.0	0.0
16	28P	18.11500	19.26000	99.55000	-0.94574	99.525	0.0	0.0	0.0
16	28P	17.30000	19.26000	99.55000	-0.71048	99.525	0.0	0.0	0.0
17	28Q	17.30000	19.26000	99.55000	-0.71048	99.525	0.0	0.0	0.0
17	28Q	17.30000	18.19500	99.55000	-0.69909	99.525	0.0	0.0	0.0
17	28Q	17.30000	17.13000	99.55000	-0.67826	99.525	0.0	0.0	0.0
17	28Q	17.30000	16.06500	99.55000	-0.64768	99.525	0.0	0.0	0.0
17	28Q	17.30000	15.00000	99.55000	-0.60730	99.525	0.0	0.0	0.0

Results : Consolidation : Displacement Data : Lines

None

Results : Total : Displacement Data : Lines

None

Results : Immediate : Displacement Data : Grids

Ref.	Name	x	y	z	δz	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [µ]
		[m]	[m]	[mOD]	[mm]				
1	Grid 1	0.00000	0.00000	100.05000	0.08766	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	0.00000	100.05000	0.08845	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	0.00000	100.05000	0.08908	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	0.00000	100.05000	0.08952	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	0.00000	100.05000	0.08975	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	0.00000	100.05000	0.08975	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	0.00000	100.05000	0.08950	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	0.00000	100.05000	0.08895	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	0.00000	100.05000	0.08809	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	0.00000	100.05000	0.08668	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	0.00000	100.05000	0.08530	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	0.00000	100.05000	0.08332	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	0.00000	100.05000	0.08091	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	0.00000	100.05000	0.07808	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	0.00000	100.05000	0.07481	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	0.00000	100.05000	0.07112	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	0.00000	100.05000	0.06707	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	0.00000	100.05000	0.06271	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	0.00000	100.05000	0.05816	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	0.00000	100.05000	0.05355	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	0.00000	100.05000	0.04903	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	0.00000	100.05000	0.04481	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	0.00000	100.05000	0.04105	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	0.00000	100.05000	0.03795	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	0.00000	100.05000	0.03566	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	0.00000	100.05000	0.03430	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	0.00000	100.05000	0.03393	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	0.00000	100.05000	0.03459	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	0.00000	100.05000	0.03623	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	0.00000	100.05000	0.03877	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	0.00000	100.05000	0.04209	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	0.00000	100.05000	0.04601	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	0.00000	100.05000	0.05036	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	0.00000	100.05000	0.05493	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	0.00000	100.05000	0.05955	99.912	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	2.00000	1.20000	100.05000	0.09012	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	1.20000	100.05000	0.09040	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	1.20000	100.05000	0.09042	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	1.20000	100.05000	0.09017	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	1.20000	100.05000	0.08960	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	1.20000	100.05000	0.08867	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	1.20000	100.05000	0.08734	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	1.20000	100.05000	0.08557	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	1.20000	100.05000	0.08331	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	1.20000	100.05000	0.08051	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	1.20000	100.05000	0.07714	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	1.20000	100.05000	0.07316	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	1.20000	100.05000	0.06856	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	1.20000	100.05000	0.06334	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	1.20000	100.05000	0.05754	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	1.20000	100.05000	0.05125	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	1.20000	100.05000	0.04461	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	1.20000	100.05000	0.03781	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	1.20000	100.05000	0.03110	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	1.20000	100.05000	0.02476	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	1.20000	100.05000	0.01910	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	1.20000	100.05000	0.01440	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	1.20000	100.05000	0.01092	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	1.20000	100.05000	0.00884	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	1.20000	100.05000	0.00829	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	1.20000	100.05000	0.00929	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	1.20000	100.05000	0.01179	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	1.20000	100.05000	0.01566	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	1.20000	100.05000	0.02069	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	1.20000	100.05000	0.02661	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	1.20000	100.05000	0.03313	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	1.20000	100.05000	0.03995	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	1.20000	100.05000	0.04678	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	1.20000	100.05000	0.05338	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	1.20000	100.05000	0.05956	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	1.20000	100.05000	0.06519	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	1.20000	100.05000	0.07020	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	1.20000	100.05000	0.07456	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	1.20000	100.05000	0.07827	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	1.20000	100.05000	0.08136	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	1.20000	100.05000	0.08386	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	1.20000	100.05000	0.08583	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	1.20000	100.05000	0.08732	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	1.20000	100.05000	0.08837	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	2.40000	100.05000	0.09010	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	2.40000	100.05000	0.09067	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	2.40000	100.05000	0.09101	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	2.40000	100.05000	0.09109	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	2.40000	100.05000	0.09087	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	2.40000	100.05000	0.09031	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	2.40000	100.05000	0.08936	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	2.40000	100.05000	0.08797	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	2.40000	100.05000	0.08608	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	2.40000	100.05000	0.08362	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	2.40000	100.05000	0.08052	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	2.40000	100.05000	0.07670	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	2.40000	100.05000	0.07209	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	2.40000	100.05000	0.06662	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	2.40000	100.05000	0.06024	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	2.40000	100.05000	0.05292	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	2.40000	100.05000	0.04468	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	2.40000	100.05000	0.03561	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	2.40000	100.05000	0.02590	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	2.40000	100.05000	0.01582	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	2.40000	100.05000	0.00575	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	2.40000	100.05000	-0.00385	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	2.40000	100.05000	-0.01248	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	2.40000	100.05000	-0.01968	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	2.40000	100.05000	-0.02504	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	2.40000	100.05000	-0.02823	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	2.40000	100.05000	-0.02909	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	2.40000	100.05000	-0.02756	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	2.40000	100.05000	-0.02373	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	2.40000	100.05000	-0.01779	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	2.40000	100.05000	-0.01010	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	2.40000	100.05000	-0.00107	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	2.40000	100.05000	0.00880	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	2.40000	100.05000	0.01903	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	2.40000	100.05000	0.02915	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	2.40000	100.05000	0.03881	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	2.40000	100.05000	0.04773	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	2.40000	100.05000	0.05575	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	2.40000	100.05000	0.06279	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	2.40000	100.05000	0.06886	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	2.40000	100.05000	0.07398	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	2.40000	100.05000	0.07822	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	2.40000	100.05000	0.08167	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	2.40000	100.05000	0.08441	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	2.40000	100.05000	0.08651	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	2.40000	100.05000	0.08806	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	3.60000	100.05000	0.09115	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	3.60000	100.05000	0.09157	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	3.60000	100.05000	0.09173	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	3.60000	100.05000	0.09158	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	3.60000	100.05000	0.09107	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	3.60000	100.05000	0.09016	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	3.60000	100.05000	0.08877	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	3.60000	100.05000	0.08684	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	3.60000	100.05000	0.08428	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	3.60000	100.05000	0.08099	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	3.60000	100.05000	0.07686	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	3.60000	100.05000	0.07177	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	3.60000	100.05000	0.06560	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	3.60000	100.05000	0.05820	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	3.60000	100.05000	0.04945	99.912	0.0	0.0	



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	5.00000	4.80000	100.05000	0.08972	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	4.80000	100.05000	0.08783	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	4.80000	100.05000	0.08527	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	4.80000	100.05000	0.08192	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	4.80000	100.05000	0.07764	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	4.80000	100.05000	0.07228	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	4.80000	100.05000	0.06564	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	4.80000	100.05000	0.05751	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	4.80000	100.05000	0.04765	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	4.80000	100.05000	0.03580	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	4.80000	100.05000	0.02173	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	4.80000	100.05000	0.00527	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	4.80000	100.05000	-0.01363	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	4.80000	100.05000	-0.03479	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	4.80000	100.05000	-0.05766	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	4.80000	100.05000	-0.08131	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	4.80000	100.05000	-0.10445	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	4.80000	100.05000	-0.12560	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	4.80000	100.05000	-0.14336	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	4.80000	100.05000	-0.15660	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	4.80000	100.05000	-0.16452	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	4.80000	100.05000	-0.16670	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	4.80000	100.05000	-0.16304	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	4.80000	100.05000	-0.15370	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	4.80000	100.05000	-0.13920	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	4.80000	100.05000	-0.12037	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	4.80000	100.05000	-0.09839	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	4.80000	100.05000	-0.07471	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	4.80000	100.05000	-0.05078	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	4.80000	100.05000	-0.02789	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	4.80000	100.05000	-0.00692	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	4.80000	100.05000	0.01164	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	4.80000	100.05000	0.02764	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	4.80000	100.05000	0.04116	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	4.80000	100.05000	0.05241	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	4.80000	100.05000	0.06164	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	4.80000	100.05000	0.06915	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	4.80000	100.05000	0.07516	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	4.80000	100.05000	0.07993	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	4.80000	100.05000	0.08363	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	4.80000	100.05000	0.08645	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	6.00000	100.05000	0.09286	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	6.00000	100.05000	0.09293	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	6.00000	100.05000	0.09265	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	6.00000	100.05000	0.09195	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	6.00000	100.05000	0.09076	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	6.00000	100.05000	0.08899	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	6.00000	100.05000	0.08653	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	6.00000	100.05000	0.08325	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	6.00000	100.05000	0.07899	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	6.00000	100.05000	0.07358	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	6.00000	100.05000	0.06677	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	6.00000	100.05000	0.05827	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	6.00000	100.05000	0.04775	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	6.00000	100.05000	0.03481	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	6.00000	100.05000	0.01896	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	6.00000	100.05000	-0.00028	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	6.00000	100.05000	-0.02340	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	6.00000	100.05000	-0.05077	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	6.00000	100.05000	-0.08240	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	6.00000	100.05000	-0.11769	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	6.00000	100.05000	-0.15517	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	6.00000	100.05000	-0.19248	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	6.00000	100.05000	-0.22680	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	6.00000	100.05000	-0.25577	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	6.00000	100.05000	-0.27687	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	6.00000	100.05000	-0.28956	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	6.00000	100.05000	-0.29309	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	6.00000	100.05000	-0.28734	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	6.00000	100.05000	-0.27254	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	6.00000	100.05000	-0.24934	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	6.00000	100.05000	-0.21899	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	6.00000	100.05000	-0.18348	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	6.00000	100.05000	-0.14543	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	6.00000	100.05000	-0.10765	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	6.00000	100.05000	-0.07244	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	6.00000	100.05000	-0.04118	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	6.00000	100.05000	-0.01440	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	6.00000	100.05000	0.00801	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	6.00000	100.05000	0.02644	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	6.00000	100.05000	0.04143	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	6.00000	100.05000	0.05352	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	6.00000	100.05000	0.06319	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	6.00000	100.05000	0.07086	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	6.00000	100.05000	0.07659	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	6.00000	100.05000	0.08159	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	6.00000	100.05000	0.08516	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	7.20000	100.05000	0.09352	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	7.20000	100.05000	0.09339	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	7.20000	100.05000	0.09286	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	7.20000	100.05000	0.09184	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	7.20000	100.05000	0.09025	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	7.20000	100.05000	0.08797	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	7.20000	100.05000	0.08488	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	7.20000	100.05000	0.08080	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	7.20000	100.05000	0.07554	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	7.20000	100.05000	0.06883	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	7.20000	100.05000	0.06035	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	7.20000	100.05000	0.04969	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	7.20000	100.05000	0.03663	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	7.20000	100.05000	0.01964	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	7.20000	100.05000	-0.00120	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	7.20000	100.05000	-0.02717	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	7.20000	100.05000	-0.05935	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	7.20000	100.05000	-0.09887	99.912	0.0	0.0	



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	8.00000	8.40000	100.05000	0.07160	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	8.40000	100.05000	0.06347	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	8.40000	100.05000	0.05313	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	8.40000	100.05000	0.04004	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	8.40000	100.05000	0.02343	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	8.40000	100.05000	0.00234	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	8.40000	100.05000	-0.02453	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	8.40000	100.05000	-0.05886	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	8.40000	100.05000	-0.10287	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	8.40000	100.05000	-0.15934	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	8.40000	100.05000	-0.23152	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	8.40000	100.05000	-0.32217	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	8.40000	100.05000	-0.42980	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	8.40000	100.05000	-0.54311	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	8.40000	100.05000	-0.64595	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	8.40000	100.05000	-0.72778	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	8.40000	100.05000	-0.78490	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	8.40000	100.05000	-0.81745	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	8.40000	100.05000	-0.82644	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	8.40000	100.05000	-0.81239	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	8.40000	100.05000	-0.77495	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	8.40000	100.05000	-0.71330	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	8.40000	100.05000	-0.62759	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	8.40000	100.05000	-0.52193	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	8.40000	100.05000	-0.40736	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	8.40000	100.05000	-0.30004	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	8.40000	100.05000	-0.21061	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	8.40000	100.05000	-0.14001	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	8.40000	100.05000	-0.08528	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	8.40000	100.05000	-0.04308	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	8.40000	100.05000	-0.01055	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	8.40000	100.05000	0.01455	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	8.40000	100.05000	0.03395	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	8.40000	100.05000	0.04898	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	8.40000	100.05000	0.06062	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	8.40000	100.05000	0.06962	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	8.40000	100.05000	0.07655	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	8.40000	100.05000	0.08184	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	9.60000	100.05000	0.09446	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	9.60000	100.05000	0.09389	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	9.60000	100.05000	0.09279	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	9.60000	100.05000	0.09106	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	9.60000	100.05000	0.08858	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	9.60000	100.05000	0.08518	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	9.60000	100.05000	0.08068	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	9.60000	100.05000	0.07481	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	9.60000	100.05000	0.06726	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	9.60000	100.05000	0.05760	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	9.60000	100.05000	0.04526	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	9.60000	100.05000	0.02951	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	9.60000	100.05000	0.00933	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	9.60000	100.05000	-0.01666	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	9.60000	100.05000	-0.05038	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	9.60000	100.05000	-0.09451	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	9.60000	100.05000	-0.15293	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	9.60000	100.05000	-0.23135	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	9.60000	100.05000	-0.33859	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	9.60000	100.05000	-0.48930	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	9.60000	100.05000	-0.70545	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	9.60000	100.05000	-0.94741	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	9.60000	100.05000	-1.14814	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	9.60000	100.05000	-1.29259	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	9.60000	100.05000	-1.38547	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	9.60000	100.05000	-1.43575	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	9.60000	100.05000	-1.44929	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	9.60000	100.05000	-1.42805	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	9.60000	100.05000	-1.37020	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	9.60000	100.05000	-1.27000	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	9.60000	100.05000	-1.11860	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	9.60000	100.05000	-0.91224	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	9.60000	100.05000	-0.66761	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	9.60000	100.05000	-0.45522	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	9.60000	100.05000	-0.30812	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	9.60000	100.05000	-0.20401	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	9.60000	100.05000	-0.12856	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	9.60000	100.05000	-0.07298	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	9.60000	100.05000	-0.03156	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	9.60000	100.05000	-0.00039	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	9.60000	100.05000	0.02323	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	9.60000	100.05000	0.04125	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	9.60000	100.05000	0.05505	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	9.60000	100.05000	0.06563	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	9.60000	100.05000	0.07374	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	9.60000	100.05000	0.07993	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	10.80000	100.05000	0.09475	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	10.80000	100.05000	0.09393	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	10.80000	100.05000	0.09253	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	10.80000	100.05000	0.09042	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	10.80000	100.05000	0.08746	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	10.80000	100.05000	0.08347	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	10.80000	100.05000	0.07821	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	10.80000	100.05000	0.07139	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	10.80000	100.05000	0.06261	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	10.80000	100.05000	0.05136	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	10.80000	100.05000	0.03695	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	10.80000	100.05000	0.01844	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	10.80000	100.05000	-0.00549	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	10.80000	100.05000	-0.03666	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	10.80000	100.05000	-0.07768	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	10.80000	100.05000	-0.13242	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	10.80000	100.05000	-0.20675	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	10.80000	100.05000	-0.31019	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	10.80000	100.05000	-0.45979	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	10.80000	100.05000	-0.69268	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	10.80000	100.05000	-1.18249	9			



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	11.00000	12.00000	100.05000	0.00715	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	12.00000	100.05000	-0.02051	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	12.00000	100.05000	-0.05682	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	12.00000	100.05000	-0.10509	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	12.00000	100.05000	-0.17031	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	12.00000	100.05000	-0.26029	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	12.00000	100.05000	-0.38810	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	12.00000	100.05000	-0.57796	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	12.00000	100.05000	-0.88345	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	12.00000	100.05000	-1.52184	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	12.00000	100.05000	-2.77643	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	12.00000	100.05000	-3.83116	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	12.00000	100.05000	-4.20567	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	12.00000	100.05000	-4.39975	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	12.00000	100.05000	-4.49435	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	12.00000	100.05000	-4.51743	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	12.00000	100.05000	-4.47652	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	12.00000	100.05000	-4.36432	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	12.00000	100.05000	-4.15207	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	12.00000	100.05000	-3.75350	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	12.00000	100.05000	-2.57745	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	12.00000	100.05000	-1.40043	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	12.00000	100.05000	-0.80914	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	12.00000	100.05000	-0.51595	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	12.00000	100.05000	-0.33480	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	12.00000	100.05000	-0.21439	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	12.00000	100.05000	-0.13103	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	12.00000	100.05000	-0.07176	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	12.00000	100.05000	-0.02877	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	12.00000	100.05000	0.00280	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	12.00000	100.05000	0.02653	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	12.00000	100.05000	0.04434	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	12.00000	100.05000	0.05785	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	12.00000	100.05000	0.06816	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	12.00000	100.05000	0.07601	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	13.20000	100.05000	0.09500	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	13.20000	100.05000	0.09367	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	13.20000	100.05000	0.09164	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	13.20000	100.05000	0.08875	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	13.20000	100.05000	0.08481	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	13.20000	100.05000	0.07960	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	13.20000	100.05000	0.07281	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	13.20000	100.05000	0.06407	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	13.20000	100.05000	0.05284	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	13.20000	100.05000	0.03845	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	13.20000	100.05000	0.01995	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	13.20000	100.05000	-0.00398	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	13.20000	100.05000	-0.03518	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	13.20000	100.05000	-0.07631	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	13.20000	100.05000	-0.13128	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	13.20000	100.05000	-0.20600	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	13.20000	100.05000	-0.30980	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	13.20000	100.05000	-0.45823	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	13.20000	100.05000	-0.67976	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	13.20000	100.05000	-1.03522	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	13.20000	100.05000	-1.75326	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	13.20000	100.05000	-3.12378	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	13.20000	100.05000	-4.29016	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	13.20000	100.05000	-4.73383	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	13.20000	100.05000	-4.96445	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	13.20000	100.05000	-5.07499	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	13.20000	100.05000	-5.09944	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	13.20000	100.05000	-5.04740	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	13.20000	100.05000	-4.91034	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	13.20000	100.05000	-4.63393	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	13.20000	100.05000	-4.18001	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	13.20000	100.05000	-2.88890	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	13.20000	100.05000	-1.59829	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	13.20000	100.05000	-0.93169	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	13.20000	100.05000	-0.59298	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	13.20000	100.05000	-0.38440	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	13.20000	100.05000	-0.24721	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	13.20000	100.05000	-0.15337	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	13.20000	100.05000	-0.08739	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	13.20000	100.05000	-0.03998	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	13.20000	100.05000	-0.00530	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	13.20000	100.05000	0.02043	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	13.20000	100.05000	0.03977	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	13.20000	100.05000	0.05443	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	13.20000	100.05000	0.06561	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	13.20000	100.05000	0.07416	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	14.40000	100.05000	0.09497	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	14.40000	100.05000	0.09339	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	14.40000	100.05000	0.09104	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	14.40000	100.05000	0.08775	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	14.40000	100.05000	0.08333	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	14.40000	100.05000	0.07752	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	14.40000	100.05000	0.06999	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	14.40000	100.05000	0.06032	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	14.40000	100.05000	0.04784	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	14.40000	100.05000	0.03208	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	14.40000	100.05000	0.01169	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	14.40000	100.05000	-0.01467	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	14.40000	100.05000	-0.04907	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	14.40000	100.05000	-0.09447	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	14.40000	100.05000	-0.15522	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	14.40000	100.05000	-0.23792	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	14.40000	100.05000	-0.35289	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	14.40000	100.05000	-0.51715	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	14.40000	100.05000	-0.76111	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	14.40000	100.05000	-1.14798	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	14.40000	100.05000	-1.90763	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	14.40000	100.05000	-3.32696	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	14.40000	100.05000	-4.53937				



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	14.00000	15.60000	100.05000	-0.17633	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	15.60000	100.05000	-0.26529	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	15.60000	100.05000	-0.38867	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	15.60000	100.05000	-0.56428	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	15.60000	100.05000	-0.82352	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	15.60000	100.05000	-1.23037	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	15.60000	100.05000	-2.01472	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	15.60000	100.05000	-3.46137	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	15.60000	100.05000	-4.69971	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	15.60000	100.05000	-5.19688	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	15.60000	100.05000	-5.45667	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	15.60000	100.05000	-5.57258	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	15.60000	100.05000	-5.58181	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	15.60000	100.05000	-5.49765	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	15.60000	100.05000	-5.31449	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	15.60000	100.05000	-4.99663	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	15.60000	100.05000	-4.45665	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	15.60000	100.05000	-3.09191	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	15.60000	100.05000	-1.73515	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	15.60000	100.05000	-1.01944	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	15.60000	100.05000	-0.64900	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	15.60000	100.05000	-0.42138	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	15.60000	100.05000	-0.27303	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	15.60000	100.05000	-0.17249	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	15.60000	100.05000	-0.10225	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	15.60000	100.05000	-0.05192	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	15.60000	100.05000	-0.01506	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	15.60000	100.05000	0.01243	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	15.60000	100.05000	0.03322	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	15.60000	100.05000	0.04914	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	15.60000	100.05000	0.06141	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	15.60000	100.05000	0.07090	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	16.80000	100.05000	0.09466	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	16.80000	100.05000	0.09257	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	16.80000	100.05000	0.08960	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	16.80000	100.05000	0.08555	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	16.80000	100.05000	0.08020	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	16.80000	100.05000	0.07325	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	16.80000	100.05000	0.06433	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	16.80000	100.05000	0.05296	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	16.80000	100.05000	0.03848	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	16.80000	100.05000	0.02003	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	16.80000	100.05000	-0.00357	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	16.80000	100.05000	-0.03395	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	16.80000	100.05000	-0.07344	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	16.80000	100.05000	-0.12531	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	16.80000	100.05000	-0.19440	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	16.80000	100.05000	-0.28793	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	16.80000	100.05000	-0.41712	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	16.80000	100.05000	-0.60018	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	16.80000	100.05000	-0.86919	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	16.80000	100.05000	-1.28926	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	16.80000	100.05000	-2.09160	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	16.80000	100.05000	-3.56056	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	16.80000	100.05000	-5.82083	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	16.80000	100.05000	-5.33227	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	16.80000	100.05000	-5.59315	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	16.80000	100.05000	-5.69518	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	16.80000	100.05000	-5.67773	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	16.80000	100.05000	-5.53944	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	16.80000	100.05000	-5.34053	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	16.80000	100.05000	-4.99237	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	16.80000	100.05000	-4.42198	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	16.80000	100.05000	-3.04038	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	16.80000	100.05000	-1.68086	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	16.80000	100.05000	-0.97388	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	16.80000	100.05000	-0.61649	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	16.80000	100.05000	-0.40079	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	16.80000	100.05000	-0.26129	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	16.80000	100.05000	-0.16668	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	16.80000	100.05000	-0.10015	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	16.80000	100.05000	-0.05198	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	16.80000	100.05000	-0.01630	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	16.80000	100.05000	0.01065	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	16.80000	100.05000	0.03122	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	16.80000	100.05000	0.04728	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	16.80000	100.05000	0.05974	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	16.80000	100.05000	0.06949	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	18.00000	100.05000	0.09440	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	18.00000	100.05000	0.09206	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	18.00000	100.05000	0.08879	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	18.00000	100.05000	0.08437	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	18.00000	100.05000	0.07858	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	18.00000	100.05000	0.07111	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	18.00000	100.05000	0.06156	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	18.00000	100.05000	0.04942	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	18.00000	100.05000	0.03402	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	18.00000	100.05000	0.01447	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	18.00000	100.05000	-0.01045	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	18.00000	100.05000	-0.04242	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	18.00000	100.05000	-0.08378	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	18.00000	100.05000	-0.13788	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	18.00000	100.05000	-0.20959	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	18.00000	100.05000	-0.30612	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	18.00000	100.05000	-0.43864	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	18.00000	100.05000	-0.62526	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	18.00000	100.05000	-0.89815	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	18.00000	100.05000	-1.32408	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	18.00000	100.05000	-2.14123	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	18.00000	100.05000	-3.64312	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	18.00000	100.05000	-4.94411	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	18.00000	100.05000	-5.48038	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	18.00000	100.05000	-5.73785	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	18.00000	100.05000	-5.80503	99.912	0.0		



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	17.00000	19.20000	100.05000	-0.64019	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	19.20000	100.05000	-0.90775	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	19.20000	100.05000	-1.31693	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	19.20000	100.05000	-2.11025	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	19.20000	100.05000	-3.70441	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	19.20000	100.05000	-5.16595	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	19.20000	100.05000	-5.77405	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	19.20000	100.05000	-6.02798	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	19.20000	100.05000	-6.01534	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	19.20000	100.05000	-5.75348	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	19.20000	100.05000	-5.35983	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	19.20000	100.05000	-4.94382	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	19.20000	100.05000	-4.44381	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	19.20000	100.05000	-3.72227	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	19.20000	100.05000	-2.19066	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	19.20000	100.05000	-0.95556	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	19.20000	100.05000	-0.54781	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	19.20000	100.05000	-0.38031	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	19.20000	100.05000	-0.27006	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	19.20000	100.05000	-0.18940	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	19.20000	100.05000	-0.12812	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	19.20000	100.05000	-0.08062	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	19.20000	100.05000	-0.04331	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	19.20000	100.05000	-0.01369	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	19.20000	100.05000	0.01001	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	19.20000	100.05000	0.02906	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	19.20000	100.05000	0.04442	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	19.20000	100.05000	0.05681	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	19.20000	100.05000	0.06679	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	20.40000	100.05000	0.09368	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	20.40000	100.05000	0.09089	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	20.40000	100.05000	0.08705	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	20.40000	100.05000	0.08196	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	20.40000	100.05000	0.07535	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	20.40000	100.05000	0.06691	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	20.40000	100.05000	0.05620	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	20.40000	100.05000	0.04270	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	20.40000	100.05000	0.02570	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	20.40000	100.05000	0.00427	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	20.40000	100.05000	-0.02284	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	20.40000	100.05000	-0.05730	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	20.40000	100.05000	-0.10146	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	20.40000	100.05000	-0.15860	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	20.40000	100.05000	-0.23336	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	20.40000	100.05000	-0.33248	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	20.40000	100.05000	-0.46587	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	20.40000	100.05000	-0.64838	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	20.40000	100.05000	-0.90213	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	20.40000	100.05000	-1.25263	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	20.40000	100.05000	-1.53985	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	20.40000	100.05000	-3.39829	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	20.40000	100.05000	-5.70821	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	20.40000	100.05000	-6.46745	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	20.40000	100.05000	-6.72101	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	20.40000	100.05000	-6.57184	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	20.40000	100.05000	-5.62150	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	20.40000	100.05000	-4.37260	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	20.40000	100.05000	-3.74101	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	20.40000	100.05000	-3.10802	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	20.40000	100.05000	-2.16841	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	20.40000	100.05000	0.75677	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	20.40000	100.05000	1.14870	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	20.40000	100.05000	-0.09601	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	20.40000	100.05000	-0.19097	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	20.40000	100.05000	-0.17774	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	20.40000	100.05000	-0.14199	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	20.40000	100.05000	-0.10366	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	20.40000	100.05000	-0.06847	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	20.40000	100.05000	-0.03788	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	20.40000	100.05000	-0.01193	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	20.40000	100.05000	0.00983	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	20.40000	100.05000	0.02793	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	20.40000	100.05000	0.04290	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	20.40000	100.05000	0.05522	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	20.40000	100.05000	0.06530	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	21.60000	100.05000	0.09327	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	21.60000	100.05000	0.09025	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	21.60000	100.05000	0.08614	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	21.60000	100.05000	0.08074	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	21.60000	100.05000	0.07376	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	21.60000	100.05000	0.06487	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	21.60000	100.05000	0.05365	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	21.60000	100.05000	0.03953	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	21.60000	100.05000	0.02181	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	21.60000	100.05000	-0.00044	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	21.60000	100.05000	-0.02848	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	21.60000	100.05000	-0.06400	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	21.60000	100.05000	-0.10930	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	21.60000	100.05000	-0.16761	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	21.60000	100.05000	-0.24346	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	21.60000	100.05000	-0.34332	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	21.60000	100.05000	-0.47649	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	21.60000	100.05000	-0.65623	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	21.60000	100.05000	-0.90015	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	21.60000	100.05000	-1.21828	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	21.60000	100.05000	-1.40550	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	21.60000	100.05000	-3.43416	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	21.60000	100.05000	-6.07136	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	21.60000	100.05000	-6.93308	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	21.60000	100.05000	-7.18756	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	21.60000	100.05000	-6.94133	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	21.60000	100.05000	-5.70024	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	21.60000	100.05000	-4.11550	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	21.60000	100.05000	-3.32508	99.912			



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	20.00000	22.80000	100.05000	-1.42446	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	22.80000	100.05000	-3.49549	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	22.80000	100.05000	-6.19340	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	22.80000	100.05000	-7.09468	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	22.80000	100.05000	-7.35387	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	22.80000	100.05000	-7.07392	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	22.80000	100.05000	-5.76262	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	22.80000	100.05000	-4.09537	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	22.80000	100.05000	-3.23530	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	22.80000	100.05000	-2.43430	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	22.80000	100.05000	-1.29513	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	22.80000	100.05000	2.02441	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	22.80000	100.05000	2.19182	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	22.80000	100.05000	0.37687	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	22.80000	100.05000	0.03865	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	22.80000	100.05000	-0.06341	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	22.80000	100.05000	-0.08549	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	22.80000	100.05000	-0.07718	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	22.80000	100.05000	-0.05783	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	22.80000	100.05000	-0.03557	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	22.80000	100.05000	-0.01384	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	22.80000	100.05000	0.00595	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	22.80000	100.05000	0.02335	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	22.80000	100.05000	0.03830	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	22.80000	100.05000	0.05096	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	22.80000	100.05000	0.06154	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	24.00000	100.05000	0.09233	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	24.00000	100.05000	0.08891	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	24.00000	100.05000	0.08434	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	24.00000	100.05000	0.07837	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	24.00000	100.05000	0.07071	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	24.00000	100.05000	0.06102	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	24.00000	100.05000	0.04884	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	24.00000	100.05000	0.03359	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	24.00000	100.05000	0.01456	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	24.00000	100.05000	-0.00923	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	24.00000	100.05000	-0.03904	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	24.00000	100.05000	-0.07657	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	24.00000	100.05000	-0.12413	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	24.00000	100.05000	-0.18493	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	24.00000	100.05000	-0.26344	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	24.00000	100.05000	-0.36601	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	24.00000	100.05000	-0.50177	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	24.00000	100.05000	-0.68380	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	24.00000	100.05000	-0.92990	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	24.00000	100.05000	-1.25309	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	24.00000	100.05000	-1.46225	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	24.00000	100.05000	-3.55434	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	24.00000	100.05000	-6.27832	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	24.00000	100.05000	-7.20307	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	24.00000	100.05000	-7.47805	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	24.00000	100.05000	-7.20479	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	24.00000	100.05000	-5.89155	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	24.00000	100.05000	-4.21513	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	24.00000	100.05000	-3.33983	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	24.00000	100.05000	-2.51771	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	24.00000	100.05000	-1.35293	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	24.00000	100.05000	1.99139	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	24.00000	100.05000	2.17537	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	24.00000	100.05000	0.36720	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	24.00000	100.05000	0.03048	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	24.00000	100.05000	-0.07148	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	24.00000	100.05000	-0.09343	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	24.00000	100.05000	-0.08471	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	24.00000	100.05000	-0.06476	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	24.00000	100.05000	-0.04178	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	24.00000	100.05000	-0.01931	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	24.00000	100.05000	0.00122	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	24.00000	100.05000	0.01930	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	24.00000	100.05000	0.03488	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	24.00000	100.05000	0.04809	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	24.00000	100.05000	0.05916	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	25.20000	100.05000	0.09184	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	25.20000	100.05000	0.08825	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	25.20000	100.05000	0.08347	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	25.20000	100.05000	0.07725	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	25.20000	100.05000	0.06929	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	25.20000	100.05000	0.05924	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	25.20000	100.05000	0.04662	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	25.20000	100.05000	0.03086	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	25.20000	100.05000	0.01120	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	25.20000	100.05000	-0.01332	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	25.20000	100.05000	-0.04401	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	25.20000	100.05000	-0.08259	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	25.20000	100.05000	-0.13140	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	25.20000	100.05000	-0.19367	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	25.20000	100.05000	-0.27396	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	25.20000	100.05000	-0.37869	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	25.20000	100.05000	-0.51714	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	25.20000	100.05000	-0.70271	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	25.20000	100.05000	-0.95380	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	25.20000	100.05000	-1.28438	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	25.20000	100.05000	-1.50462	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	25.20000	100.05000	-3.61244	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	25.20000	100.05000	-6.35707	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	25.20000	100.05000	-7.30799	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	25.20000	100.05000	-7.61750	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	25.20000	100.05000	-7.39213	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	25.20000	100.05000	-6.14003	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	25.20000	100.05000	-4.52977	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	25.20000	100.05000	-3.67886	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	25.20000	100.05000	-2.86368	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	25.20000	100.05000	-1.68223	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	25.20000	100.05000	1.70454	99.912	0.0	0.0	0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	23.00000	26.40000	100.05000	-7.42470	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	26.40000	100.05000	-7.79312	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	26.40000	100.05000	-7.68118	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	26.40000	100.05000	-6.65710	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	26.40000	100.05000	-5.27795	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	26.40000	100.05000	-4.54537	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	26.40000	100.05000	-3.76551	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	26.40000	100.05000	-2.57593	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	26.40000	100.05000	0.85986	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	26.40000	100.05000	1.36660	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	26.40000	100.05000	-0.07366	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	26.40000	100.05000	-0.21520	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	26.40000	100.05000	-0.21518	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	26.40000	100.05000	-0.18192	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	26.40000	100.05000	-0.14200	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	26.40000	100.05000	-0.10359	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	26.40000	100.05000	-0.06919	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	26.40000	100.05000	-0.03932	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	26.40000	100.05000	-0.01380	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	26.40000	100.05000	0.00778	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	26.40000	100.05000	0.02592	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	26.40000	100.05000	0.04105	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	26.40000	100.05000	0.05359	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	27.60000	100.05000	0.09087	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	27.60000	100.05000	0.08701	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	27.60000	100.05000	0.08189	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	27.60000	100.05000	0.07525	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	27.60000	100.05000	0.06679	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	27.60000	100.05000	0.05611	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	27.60000	100.05000	0.04274	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	27.60000	100.05000	0.02604	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	27.60000	100.05000	0.00523	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	27.60000	100.05000	-0.02072	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	27.60000	100.05000	-0.05320	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	27.60000	100.05000	-0.09402	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	27.60000	100.05000	-0.14567	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	27.60000	100.05000	-0.21157	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	27.60000	100.05000	-0.29647	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	27.60000	100.05000	-0.40713	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	27.60000	100.05000	-0.55321	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	27.60000	100.05000	-0.74855	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	27.60000	100.05000	-1.01220	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	27.60000	100.05000	-1.35903	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	27.60000	100.05000	-1.60074	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	27.60000	100.05000	-1.73288	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	27.60000	100.05000	-6.52721	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	27.60000	100.05000	-7.55078	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	27.60000	100.05000	-7.99348	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	27.60000	100.05000	-8.05550	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	27.60000	100.05000	-7.75985	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	27.60000	100.05000	-7.25982	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	27.60000	100.05000	-6.71145	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	27.60000	100.05000	-5.98209	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	27.60000	100.05000	-4.79672	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	27.60000	100.05000	-1.87605	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	27.60000	100.05000	-0.32229	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	27.60000	100.05000	-0.49234	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	27.60000	100.05000	-0.41461	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	27.60000	100.05000	-0.32550	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	27.60000	100.05000	-0.24773	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	27.60000	100.05000	-0.18333	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	27.60000	100.05000	-0.13062	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	27.60000	100.05000	-0.08750	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	27.60000	100.05000	-0.05211	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	27.60000	100.05000	-0.02298	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	27.60000	100.05000	0.00105	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	27.60000	100.05000	0.02087	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	27.60000	100.05000	0.03720	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	27.60000	100.05000	0.05062	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	28.80000	100.05000	0.09043	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	28.80000	100.05000	0.08647	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	28.80000	100.05000	0.08122	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	28.80000	100.05000	0.07443	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	28.80000	100.05000	0.06577	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	28.80000	100.05000	0.05485	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	28.80000	100.05000	0.04117	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	28.80000	100.05000	0.02408	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	28.80000	100.05000	0.00276	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	28.80000	100.05000	-0.02387	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	28.80000	100.05000	-0.05723	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	28.80000	100.05000	-0.09923	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	28.80000	100.05000	-0.15248	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	28.80000	100.05000	-0.22055	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	28.80000	100.05000	-0.30842	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	28.80000	100.05000	-0.42311	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	28.80000	100.05000	-0.57457	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	28.80000	100.05000	-0.77694	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	28.80000	100.05000	-1.04931	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	28.80000	100.05000	-1.40633	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	28.80000	100.05000	-1.65945	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	28.80000	100.05000	-3.81042	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	28.80000	100.05000	-6.61850	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	28.80000	100.05000	-7.67546	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	28.80000	100.05000	-8.18265	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	28.80000	100.05000	-9.37629	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	28.80000	100.05000	-8.34628	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	28.80000	100.05000	-8.12453	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	28.80000	100.05000	-7.69852	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	28.80000	100.05000	-6.99502	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	28.80000	100.05000	-5.77620	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	28.80000	100.05000	-2.78701	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	28.80000	100.05000	-0.96189	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	28.80000	100.05000	-0.82264	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	28.80000	100.05000	-0.59599	99.912	0.0		



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	26.00000	30.00000	100.05000	-8.83902	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	30.00000	100.05000	-8.92531	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	30.00000	100.05000	-8.55924	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	30.00000	100.05000	-7.83092	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	30.00000	100.05000	-6.30624	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	30.00000	100.05000	-3.18185	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	30.00000	100.05000	-1.27026	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	30.00000	100.05000	-1.03527	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	30.00000	100.05000	-0.73224	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	30.00000	100.05000	-0.51791	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	30.00000	100.05000	-0.36828	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	30.00000	100.05000	-0.26119	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	30.00000	100.05000	-0.18232	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	30.00000	100.05000	-0.12271	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	30.00000	100.05000	-0.07666	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	30.00000	100.05000	-0.04047	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	30.00000	100.05000	-0.01167	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	30.00000	100.05000	0.01145	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	30.00000	100.05000	0.03011	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	30.00000	100.05000	0.04520	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	31.20000	100.05000	0.08970	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	31.20000	100.05000	0.08562	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	31.20000	100.05000	0.08024	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	31.20000	100.05000	0.07327	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	31.20000	100.05000	0.06439	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	31.20000	100.05000	0.05317	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	31.20000	100.05000	0.03908	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	31.20000	100.05000	0.02144	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	31.20000	100.05000	-0.00065	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	31.20000	100.05000	-0.02837	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	31.20000	100.05000	-0.06329	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	31.20000	100.05000	-0.10756	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	31.20000	100.05000	-0.16414	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	31.20000	100.05000	-0.23716	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	31.20000	100.05000	-0.33246	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	31.20000	100.05000	-0.45834	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	31.20000	100.05000	-0.62671	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	31.20000	100.05000	-0.85444	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	31.20000	100.05000	-1.16366	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	31.20000	100.05000	-1.56913	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	31.20000	100.05000	-1.86912	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	31.20000	100.05000	-4.03804	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	31.20000	100.05000	-6.83984	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	31.20000	100.05000	-7.90449	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	31.20000	100.05000	-8.46312	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	31.20000	100.05000	-8.78253	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	31.20000	100.05000	-9.11335	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	31.20000	100.05000	-9.31538	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	31.20000	100.05000	-8.94165	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	31.20000	100.05000	-8.12450	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	31.20000	100.05000	-6.47335	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	31.20000	100.05000	-3.41141	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	31.20000	100.05000	-1.51854	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	31.20000	100.05000	-1.19142	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	31.20000	100.05000	-0.82828	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	31.20000	100.05000	-0.57962	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	31.20000	100.05000	-0.40909	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	31.20000	100.05000	-0.28873	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	31.20000	100.05000	-0.20123	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	31.20000	100.05000	-0.13359	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	31.20000	100.05000	-0.08598	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	31.20000	100.05000	-0.04717	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	31.20000	100.05000	-0.01656	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	31.20000	100.05000	0.00782	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	31.20000	100.05000	0.02738	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	31.20000	100.05000	0.04310	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	32.40000	100.05000	0.08943	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	32.40000	100.05000	0.08536	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	32.40000	100.05000	0.07997	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	32.40000	100.05000	0.07300	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	32.40000	100.05000	0.06410	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	32.40000	100.05000	0.05285	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	32.40000	100.05000	0.03870	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	32.40000	100.05000	0.02095	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	32.40000	100.05000	-0.00133	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	32.40000	100.05000	-0.02936	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	32.40000	100.05000	-0.06482	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	32.40000	100.05000	-0.10998	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	32.40000	100.05000	-0.16803	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	32.40000	100.05000	-0.24348	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	32.40000	100.05000	-0.34283	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	32.40000	100.05000	-0.47559	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	32.40000	100.05000	-0.65591	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	32.40000	100.05000	-0.90524	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	32.40000	100.05000	-1.25611	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	32.40000	100.05000	-1.74893	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	32.40000	100.05000	-2.21986	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	32.40000	100.05000	-4.39213	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	32.40000	100.05000	-7.03062	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	32.40000	100.05000	-9.01844	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	32.40000	100.05000	-8.55073	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	32.40000	100.05000	-8.86949	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	32.40000	100.05000	-9.20953	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	32.40000	100.05000	-9.40124	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	32.40000	100.05000	-8.92869	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	32.40000	100.05000	-7.56462	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	32.40000	100.05000	-5.70610	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	32.40000	100.05000	-3.91935	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	32.40000	100.05000	-2.27111	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	32.40000	100.05000	-1.31610	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	32.40000	100.05000	-0.88481	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	32.40000	100.05000	-0.61505	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	32.40000	100.05000	-0.43337	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	32.40000	100.05000	-0.30581	99.912	0.0	0.0	



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	29.00000	33.60000	100.05000	-7.25359	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	33.60000	100.05000	-4.67514	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	33.60000	100.05000	-2.99722	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	33.60000	100.05000	-1.98612	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	33.60000	100.05000	-1.30484	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	33.60000	100.05000	-0.89125	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	33.60000	100.05000	-0.62357	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	33.60000	100.05000	-0.44116	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	33.60000	100.05000	-0.31221	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	33.60000	100.05000	-0.21835	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	33.60000	100.05000	-0.14835	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	33.60000	100.05000	-0.09508	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	33.60000	100.05000	-0.05385	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	33.60000	100.05000	-0.02152	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	33.60000	100.05000	0.00409	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	33.60000	100.05000	0.02450	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	33.60000	100.05000	0.04084	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	34.80000	100.05000	0.08913	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	34.80000	100.05000	0.08519	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	34.80000	100.05000	0.07996	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	34.80000	100.05000	0.07317	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	34.80000	100.05000	0.06449	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	34.80000	100.05000	0.05348	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	34.80000	100.05000	0.03959	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	34.80000	100.05000	0.02210	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	34.80000	100.05000	0.00005	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	34.80000	100.05000	-0.02785	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	34.80000	100.05000	-0.06340	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	34.80000	100.05000	-0.10909	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	34.80000	100.05000	-0.16848	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	34.80000	100.05000	-0.24680	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	34.80000	100.05000	-0.35180	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	34.80000	100.05000	-0.49543	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	34.80000	100.05000	-0.69671	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	34.80000	100.05000	-0.98788	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	34.80000	100.05000	-1.42958	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	34.80000	100.05000	-2.16255	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	34.80000	100.05000	-3.75824	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	34.80000	100.05000	-5.92473	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	34.80000	100.05000	-7.42787	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	34.80000	100.05000	-8.16745	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	34.80000	100.05000	-8.60350	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	34.80000	100.05000	-8.87487	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	34.80000	100.05000	-9.17926	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	34.80000	100.05000	-9.31629	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	34.80000	100.05000	-8.72618	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	34.80000	100.05000	-7.08081	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	34.80000	100.05000	-4.36525	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	34.80000	100.05000	-2.66524	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	34.80000	100.05000	-1.79217	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	34.80000	100.05000	-1.23395	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	34.80000	100.05000	-0.86285	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	34.80000	100.05000	-0.61069	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	34.80000	100.05000	-0.43484	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	34.80000	100.05000	-0.30894	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	34.80000	100.05000	-0.21656	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	34.80000	100.05000	-0.14732	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	34.80000	100.05000	-0.09444	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	34.80000	100.05000	-0.05344	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	34.80000	100.05000	-0.02125	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	34.80000	100.05000	0.00425	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	34.80000	100.05000	0.02457	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	34.80000	100.05000	0.04083	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	36.00000	100.05000	0.08911	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	36.00000	100.05000	0.08530	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	36.00000	100.05000	0.08023	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	36.00000	100.05000	0.07364	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	36.00000	100.05000	0.06520	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	36.00000	100.05000	0.05448	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	36.00000	100.05000	0.04094	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	36.00000	100.05000	0.02387	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	36.00000	100.05000	0.00231	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	36.00000	100.05000	-0.02503	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	36.00000	100.05000	-0.05994	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	36.00000	100.05000	-0.10495	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	36.00000	100.05000	-0.16370	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	36.00000	100.05000	-0.24154	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	36.00000	100.05000	-0.34655	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	36.00000	100.05000	-0.49122	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	36.00000	100.05000	-0.69563	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	36.00000	100.05000	-0.99387	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	36.00000	100.05000	-1.44923	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	36.00000	100.05000	-2.20368	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	36.00000	100.05000	-3.81815	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	36.00000	100.05000	-5.97348	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	36.00000	100.05000	-7.43644	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	36.00000	100.05000	-8.13565	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	36.00000	100.05000	-8.54241	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	36.00000	100.05000	-8.79407	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	36.00000	100.05000	-9.08431	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	36.00000	100.05000	-9.20872	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	36.00000	100.05000	-8.60419	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	36.00000	100.05000	-6.94161	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	36.00000	100.05000	-4.21346	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	36.00000	100.05000	-2.52338	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	36.00000	100.05000	-1.68475	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	36.00000	100.05000	-1.16463	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	36.00000	100.05000	-0.82035	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	36.00000	100.05000	-0.58425	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	36.00000	100.05000	-0.41784	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	36.00000	100.05000	-0.29763	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	36.00000	100.05000	-0.20882	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	36.00000	100.05000	-0.14187	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	36.00000	100.05000	-0.09053	99.912	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	32.00000	37.20000	100.05000	-1.58761	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	37.20000	100.05000	-1.09265	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	37.20000	100.05000	-0.76917	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	37.20000	100.05000	-0.54839	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	37.20000	100.05000	-0.39266	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	37.20000	100.05000	-0.27978	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	37.20000	100.05000	-0.19600	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	37.20000	100.05000	-0.13255	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	37.20000	100.05000	-0.08368	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	37.20000	100.05000	-0.04551	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	37.20000	100.05000	-0.01538	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	37.20000	100.05000	0.00859	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	37.20000	100.05000	0.02776	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	37.20000	100.05000	0.04312	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	38.40000	100.05000	0.08929	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	38.40000	100.05000	0.08587	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	38.40000	100.05000	0.08129	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	38.40000	100.05000	0.07530	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	38.40000	100.05000	0.06761	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	38.40000	100.05000	0.05782	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	38.40000	100.05000	0.04545	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	38.40000	100.05000	0.02983	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	38.40000	100.05000	0.01009	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	38.40000	100.05000	-0.01495	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	38.40000	100.05000	-0.04696	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	38.40000	100.05000	-0.08827	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	38.40000	100.05000	-0.14228	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	38.40000	100.05000	-0.21402	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	38.40000	100.05000	-0.31111	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	38.40000	100.05000	-0.44545	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	38.40000	100.05000	-0.63632	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	38.40000	100.05000	-0.91664	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	38.40000	100.05000	-1.34786	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	38.40000	100.05000	-2.06893	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	38.40000	100.05000	-3.63673	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	38.40000	100.05000	-5.73098	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	38.40000	100.05000	-7.12609	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	38.40000	100.05000	-7.76357	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	38.40000	100.05000	-8.12373	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	38.40000	100.05000	-8.34699	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	38.40000	100.05000	-8.62737	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	38.40000	100.05000	-8.76024	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	38.40000	100.05000	-8.18172	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	38.40000	100.05000	-6.56023	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	38.40000	100.05000	-3.88428	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	38.40000	100.05000	-2.25317	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	38.40000	100.05000	-1.47462	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	38.40000	100.05000	-1.00868	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	38.40000	100.05000	-0.70792	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	38.40000	100.05000	-0.50409	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	38.40000	100.05000	-0.36063	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	38.40000	100.05000	-0.25650	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	38.40000	100.05000	-0.17894	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	38.40000	100.05000	-0.11994	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	38.40000	100.05000	-0.07428	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	38.40000	100.05000	-0.03847	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	38.40000	100.05000	-0.01009	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	38.40000	100.05000	0.01257	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	38.40000	100.05000	0.03073	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	38.40000	100.05000	0.04532	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	39.60000	100.05000	0.08948	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	39.60000	100.05000	0.08631	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	39.60000	100.05000	0.08204	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	39.60000	100.05000	0.07645	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	39.60000	100.05000	0.06926	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	39.60000	100.05000	0.06010	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	39.60000	100.05000	0.04852	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	39.60000	100.05000	0.03391	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	39.60000	100.05000	0.01548	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	39.60000	100.05000	-0.00787	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	39.60000	100.05000	-0.03764	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	39.60000	100.05000	-0.07596	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	39.60000	100.05000	-0.12590	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	39.60000	100.05000	-0.19201	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	39.60000	100.05000	-0.28114	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	39.60000	100.05000	-0.40404	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	39.60000	100.05000	-0.57816	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	39.60000	100.05000	-0.83370	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	39.60000	100.05000	-1.22834	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	39.60000	100.05000	-1.89678	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	39.60000	100.05000	-3.39376	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	39.60000	100.05000	-5.40476	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	39.60000	100.05000	-6.72188	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	39.60000	100.05000	-7.30147	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	39.60000	100.05000	-7.62512	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	39.60000	100.05000	-7.83040	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	39.60000	100.05000	-8.11121	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	39.60000	100.05000	-8.26721	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	39.60000	100.05000	-7.74025	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	39.60000	100.05000	-6.19642	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	39.60000	100.05000	-3.60613	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	39.60000	100.05000	-2.05018	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	39.60000	100.05000	-1.32966	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	39.60000	100.05000	-0.90574	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	39.60000	100.05000	-0.63461	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	39.60000	100.05000	-0.45151	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	39.60000	100.05000	-0.32258	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	39.60000	100.05000	-0.22868	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	39.60000	100.05000	-0.15840	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	39.60000	100.05000	-0.10464	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	39.60000	100.05000	-0.06280	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	39.60000	100.05000	-0.02981	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	39.60000	100.05000	-0.00354	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	39.60000	100.05000	0.01752	99.912			



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	35.00000	40.80000	100.05000	-0.39160	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	40.80000	100.05000	-0.27963	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	40.80000	100.05000	-0.17736	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	40.80000	100.05000	-0.13524	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	40.80000	100.05000	-0.08732	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	40.80000	100.05000	-0.04974	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	40.80000	100.05000	-0.01991	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	40.80000	100.05000	0.00399	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	40.80000	100.05000	0.02324	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	40.80000	100.05000	0.03879	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	40.80000	100.05000	0.05135	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	42.00000	100.05000	0.08995	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	42.00000	100.05000	0.08737	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	42.00000	100.05000	0.08384	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	42.00000	100.05000	0.07918	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	42.00000	100.05000	0.07316	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	42.00000	100.05000	0.06550	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	42.00000	100.05000	0.05582	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	42.00000	100.05000	0.04366	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	42.00000	100.05000	0.02841	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	42.00000	100.05000	0.00924	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	42.00000	100.05000	-0.01494	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	42.00000	100.05000	-0.04566	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	42.00000	100.05000	-0.08508	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	42.00000	100.05000	-0.13626	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	42.00000	100.05000	-0.20371	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	42.00000	100.05000	-0.29423	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	42.00000	100.05000	-0.41844	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	42.00000	100.05000	-0.59402	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	42.00000	100.05000	-0.85374	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	42.00000	100.05000	-1.27557	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	42.00000	100.05000	-2.25550	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	42.00000	100.05000	-3.30680	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	42.00000	100.05000	-3.83960	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	42.00000	100.05000	-4.15385	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	42.00000	100.05000	-4.34566	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	42.00000	100.05000	-4.47287	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	42.00000	100.05000	-4.69047	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	42.00000	100.05000	-4.86513	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	42.00000	100.05000	-4.60752	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	42.00000	100.05000	-4.02567	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	42.00000	100.05000	-2.38891	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	42.00000	100.05000	-1.37415	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	42.00000	100.05000	-0.91799	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	42.00000	100.05000	-0.64005	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	42.00000	100.05000	-0.45566	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	42.00000	100.05000	-0.32696	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	42.00000	100.05000	-0.23363	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	42.00000	100.05000	-0.16387	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	42.00000	100.05000	-0.11043	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	42.00000	100.05000	-0.06870	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	42.00000	100.05000	-0.03564	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	42.00000	100.05000	-0.00917	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	42.00000	100.05000	0.01219	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	42.00000	100.05000	0.02950	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	42.00000	100.05000	0.04354	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	42.00000	100.05000	0.05492	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	43.20000	100.05000	0.09018	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	43.20000	100.05000	0.08792	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	43.20000	100.05000	0.08488	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	43.20000	100.05000	0.08066	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	43.20000	100.05000	0.07529	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	43.20000	100.05000	0.06844	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	43.20000	100.05000	0.05980	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	43.20000	100.05000	0.04939	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	43.20000	100.05000	0.03548	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	43.20000	100.05000	0.01861	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	43.20000	100.05000	-0.00251	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	43.20000	100.05000	-0.02908	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	43.20000	100.05000	-0.06272	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	43.20000	100.05000	-0.10573	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	43.20000	100.05000	-0.16129	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	43.20000	100.05000	-0.23400	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	43.20000	100.05000	-0.33051	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	43.20000	100.05000	-0.46066	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	43.20000	100.05000	-0.63934	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	43.20000	100.05000	-0.88851	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	43.20000	100.05000	-1.22460	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	43.20000	100.05000	-1.57057	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	43.20000	100.05000	-1.83763	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	43.20000	100.05000	-2.02426	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	43.20000	100.05000	-2.14575	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	43.20000	100.05000	-2.21761	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	43.20000	100.05000	-2.24591	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	43.20000	100.05000	-2.20131	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	43.20000	100.05000	-2.04261	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	43.20000	100.05000	-1.75309	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	43.20000	100.05000	-1.34104	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	43.20000	100.05000	-0.95918	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	43.20000	100.05000	-0.68698	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	43.20000	100.05000	-0.49678	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	43.20000	100.05000	-0.36102	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	43.20000	100.05000	-0.26162	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	43.20000	100.05000	-0.18702	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	43.20000	100.05000	-0.12980	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	43.20000	100.05000	-0.08506	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	43.20000	100.05000	-0.04956	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	43.20000	100.05000	-0.02107	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	43.20000	100.05000	0.00199	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	43.20000	100.05000	0.02075	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	43.20000	100.05000	0.03605	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	43.20000	100.05000	0.04854	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	43.20000	100.05000	0.05870	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	44.40000	100.05000	0.09039	99.912	0.0	0.0	0.



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	38.00000	44.40000	100.05000	-0.06020	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	44.40000	100.05000	-0.03065	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	44.40000	100.05000	-0.00657	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	44.40000	100.05000	0.01316	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	44.40000	100.05000	0.02936	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	44.40000	100.05000	0.04268	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	44.40000	100.05000	0.05361	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	44.40000	100.05000	0.06254	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	45.60000	100.05000	0.09053	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	45.60000	100.05000	0.08893	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	45.60000	100.05000	0.08664	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	45.60000	100.05000	0.08354	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	45.60000	100.05000	0.07948	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	45.60000	100.05000	0.07429	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	45.60000	100.05000	0.06775	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	45.60000	100.05000	0.05961	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	45.60000	100.05000	0.04955	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	45.60000	100.05000	0.03717	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	45.60000	100.05000	0.02197	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	45.60000	100.05000	0.00331	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	45.60000	100.05000	-0.01958	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	45.60000	100.05000	-0.04772	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	45.60000	100.05000	-0.08234	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	45.60000	100.05000	-0.12489	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	45.60000	100.05000	-0.17701	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	45.60000	100.05000	-0.24021	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	45.60000	100.05000	-0.31525	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	45.60000	100.05000	-0.40094	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	45.60000	100.05000	-0.49272	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	45.60000	100.05000	-0.58260	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	45.60000	100.05000	-0.66183	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	45.60000	100.05000	-0.72396	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	45.60000	100.05000	-0.76553	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	45.60000	100.05000	-0.78483	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	45.60000	100.05000	-0.78038	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	45.60000	100.05000	-0.75052	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	45.60000	100.05000	-0.69485	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	45.60000	100.05000	-0.61656	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	45.60000	100.05000	-0.52385	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	45.60000	100.05000	-0.42815	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	45.60000	100.05000	-0.33924	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	45.60000	100.05000	-0.26215	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	45.60000	100.05000	-0.19775	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	45.60000	100.05000	-0.14481	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	45.60000	100.05000	-0.10148	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	45.60000	100.05000	-0.06596	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	45.60000	100.05000	-0.03674	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	45.60000	100.05000	-0.01260	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	45.60000	100.05000	0.00740	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	45.60000	100.05000	0.02400	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	45.60000	100.05000	0.03777	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	45.60000	100.05000	0.04918	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	45.60000	100.05000	0.05859	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	45.60000	100.05000	0.06632	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	46.80000	100.05000	0.09059	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	46.80000	100.05000	0.08932	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	46.80000	100.05000	0.08744	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	46.80000	100.05000	0.08484	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	46.80000	100.05000	0.08142	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	46.80000	100.05000	0.07702	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	46.80000	100.05000	0.07147	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	46.80000	100.05000	0.06459	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	46.80000	100.05000	0.05612	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	46.80000	100.05000	0.04577	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	46.80000	100.05000	0.03320	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	46.80000	100.05000	0.01797	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	46.80000	100.05000	-0.00042	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	46.80000	100.05000	-0.02256	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	46.80000	100.05000	-0.04913	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	46.80000	100.05000	-0.08082	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	46.80000	100.05000	-0.11826	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	46.80000	100.05000	-0.16178	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	46.80000	100.05000	-0.21107	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	46.80000	100.05000	-0.26477	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	46.80000	100.05000	-0.32015	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	46.80000	100.05000	-0.37334	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	46.80000	100.05000	-0.42019	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	46.80000	100.05000	-0.45715	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	46.80000	100.05000	-0.48176	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	46.80000	100.05000	-0.49250	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	46.80000	100.05000	-0.48851	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	46.80000	100.05000	-0.46958	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	46.80000	100.05000	-0.43650	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	46.80000	100.05000	-0.39159	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	46.80000	100.05000	-0.33886	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	46.80000	100.05000	-0.28320	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	46.80000	100.05000	-0.22906	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	46.80000	100.05000	-0.17940	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	46.80000	100.05000	-0.13558	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	46.80000	100.05000	-0.09779	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	46.80000	100.05000	-0.06560	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	46.80000	100.05000	-0.03834	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	46.80000	100.05000	-0.01531	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	46.80000	100.05000	0.00410	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	46.80000	100.05000	0.02045	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	46.80000	100.05000	0.03420	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	46.80000	100.05000	0.04573	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	46.80000	100.05000	0.05535	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	46.80000	100.05000	0.06334	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	46.80000	100.05000	0.06992	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	48.00000	100.05000	0.09056	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	48.00000	100.05000	0.08959	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	48.00000	100.05000	0.08810	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	48.00000	100.05000	0.08599	99.912	0.0	0.0	



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	41.00000	48.00000	100.05000	0.04357	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	48.00000	100.05000	0.05308	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	48.00000	100.05000	0.06107	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	48.00000	100.05000	0.06774	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	48.00000	100.05000	0.07325	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	49.20000	100.05000	0.09040	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	49.20000	100.05000	0.08973	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	49.20000	100.05000	0.08860	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	49.20000	100.05000	0.08693	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	49.20000	100.05000	0.08466	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	49.20000	100.05000	0.08169	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	49.20000	100.05000	0.07792	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	49.20000	100.05000	0.07324	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	49.20000	100.05000	0.06752	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	49.20000	100.05000	0.06062	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	49.20000	100.05000	0.05238	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	49.20000	100.05000	0.04264	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	49.20000	100.05000	0.03121	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	49.20000	100.05000	0.01793	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	49.20000	100.05000	0.00266	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	49.20000	100.05000	-0.01469	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	49.20000	100.05000	-0.03407	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	49.20000	100.05000	-0.05528	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	49.20000	100.05000	-0.07788	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	49.20000	100.05000	-0.10112	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	49.20000	100.05000	-0.12402	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	49.20000	100.05000	-0.14535	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	49.20000	100.05000	-0.16386	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	49.20000	100.05000	-0.17839	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	49.20000	100.05000	-0.18802	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	49.20000	100.05000	-0.19215	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	49.20000	100.05000	-0.19051	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	49.20000	100.05000	-0.18320	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	49.20000	100.05000	-0.17071	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	49.20000	100.05000	-0.15389	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	49.20000	100.05000	-0.13389	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	49.20000	100.05000	-0.11199	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	49.20000	100.05000	-0.08945	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	49.20000	100.05000	-0.06731	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	49.20000	100.05000	-0.04630	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	49.20000	100.05000	-0.02690	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	49.20000	100.05000	-0.00932	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	49.20000	100.05000	0.00638	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	49.20000	100.05000	0.02024	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	49.20000	100.05000	0.03236	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	49.20000	100.05000	0.04289	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	49.20000	100.05000	0.05195	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	49.20000	100.05000	0.05969	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	49.20000	100.05000	0.06623	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	49.20000	100.05000	0.07172	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	49.20000	100.05000	0.07625	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	50.40000	100.05000	0.09011	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	50.40000	100.05000	0.08971	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	50.40000	100.05000	0.08891	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	50.40000	100.05000	0.08766	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	50.40000	100.05000	0.08590	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	50.40000	100.05000	0.08354	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	50.40000	100.05000	0.08053	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	50.40000	100.05000	0.07678	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	50.40000	100.05000	0.07222	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	50.40000	100.05000	0.06669	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	50.40000	100.05000	0.06015	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	50.40000	100.05000	0.05248	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	50.40000	100.05000	0.04360	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	50.40000	100.05000	0.03442	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	50.40000	100.05000	0.02191	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	50.40000	100.05000	0.00907	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	50.40000	100.05000	-0.00499	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	50.40000	100.05000	-0.02006	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	50.40000	100.05000	-0.03579	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	50.40000	100.05000	-0.05169	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	50.40000	100.05000	-0.06710	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	50.40000	100.05000	-0.08130	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	50.40000	100.05000	-0.09354	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	50.40000	100.05000	-0.10313	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	50.40000	100.05000	-0.10951	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	50.40000	100.05000	-0.11232	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	50.40000	100.05000	-0.11139	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	50.40000	100.05000	-0.10680	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	50.40000	100.05000	-0.09884	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	50.40000	100.05000	-0.08803	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	50.40000	100.05000	-0.07501	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	50.40000	100.05000	-0.06054	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	50.40000	100.05000	-0.04534	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	50.40000	100.05000	-0.03007	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	50.40000	100.05000	-0.01523	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	50.40000	100.05000	-0.00119	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	50.40000	100.05000	0.01182	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	50.40000	100.05000	0.02367	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	50.40000	100.05000	0.03493	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	50.40000	100.05000	0.04376	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	50.40000	100.05000	0.05206	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	50.40000	100.05000	0.05928	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	50.40000	100.05000	0.06549	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	50.40000	100.05000	0.07077	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	50.40000	100.05000	0.07520	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	50.40000	100.05000	0.07885	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	51.60000	100.05000	0.08967	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	51.60000	100.05000	0.08952	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	51.60000	100.05000	0.08903	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	51.60000	100.05000	0.08815	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	51.60000	100.05000	0.08684	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	51.60000	100.05000	0.08504	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	51.60000	100.05000	0.08270	99.912	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	44.00000	51.60000	100.05000	0.07815	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	51.60000	100.05000	0.08104	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	52.80000	100.05000	0.08909	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	52.80000	100.05000	0.08916	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	52.80000	100.05000	0.08894	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	52.80000	100.05000	0.08839	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	52.80000	100.05000	0.08748	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	52.80000	100.05000	0.08616	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	52.80000	100.05000	0.08440	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	52.80000	100.05000	0.08215	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	52.80000	100.05000	0.07938	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	52.80000	100.05000	0.07603	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	52.80000	100.05000	0.07208	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	52.80000	100.05000	0.06750	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	52.80000	100.05000	0.06227	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	52.80000	100.05000	0.05640	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	52.80000	100.05000	0.04991	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	52.80000	100.05000	0.04285	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	52.80000	100.05000	0.03534	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	52.80000	100.05000	0.02751	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	52.80000	100.05000	0.01955	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	52.80000	100.05000	0.01171	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	52.80000	100.05000	0.00426	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	52.80000	100.05000	-0.00249	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	52.80000	100.05000	-0.00827	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	52.80000	100.05000	-0.01279	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	52.80000	100.05000	-0.01585	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	52.80000	100.05000	-0.01729	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	52.80000	100.05000	-0.01705	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	52.80000	100.05000	-0.01515	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	52.80000	100.05000	-0.01171	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	52.80000	100.05000	-0.00691	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	52.80000	100.05000	-0.00099	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	52.80000	100.05000	0.00578	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	52.80000	100.05000	0.01310	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	52.80000	100.05000	0.02070	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	52.80000	100.05000	0.02834	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	52.80000	100.05000	0.03581	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	52.80000	100.05000	0.04294	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	52.80000	100.05000	0.04963	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	52.80000	100.05000	0.05580	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	52.80000	100.05000	0.06139	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	52.80000	100.05000	0.06639	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	52.80000	100.05000	0.07079	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	52.80000	100.05000	0.07461	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	52.80000	100.05000	0.07786	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	52.80000	100.05000	0.08058	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	52.80000	100.05000	0.08280	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	54.00000	100.05000	0.08837	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	54.00000	100.05000	0.08863	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	54.00000	100.05000	0.08864	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	54.00000	100.05000	0.08838	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	54.00000	100.05000	0.08781	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	54.00000	100.05000	0.08692	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	54.00000	100.05000	0.08565	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	54.00000	100.05000	0.08400	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	54.00000	100.05000	0.08192	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	54.00000	100.05000	0.07939	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	54.00000	100.05000	0.07640	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	54.00000	100.05000	0.07293	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	54.00000	100.05000	0.06899	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	54.00000	100.05000	0.06458	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	54.00000	100.05000	0.05973	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	54.00000	100.05000	0.05451	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	54.00000	100.05000	0.04900	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	54.00000	100.05000	0.04330	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	54.00000	100.05000	0.03757	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	54.00000	100.05000	0.03196	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	54.00000	100.05000	0.02667	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	54.00000	100.05000	0.02189	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	54.00000	100.05000	0.01781	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	54.00000	100.05000	0.01462	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	54.00000	100.05000	0.01244	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	54.00000	100.05000	0.01138	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	54.00000	100.05000	0.01147	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	54.00000	100.05000	0.01272	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	54.00000	100.05000	0.01504	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	54.00000	100.05000	0.01832	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	54.00000	100.05000	0.02242	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	54.00000	100.05000	0.02715	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	54.00000	100.05000	0.03233	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	54.00000	100.05000	0.03776	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	54.00000	100.05000	0.04329	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	54.00000	100.05000	0.04875	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	54.00000	100.05000	0.05403	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	54.00000	100.05000	0.05902	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	54.00000	100.05000	0.06366	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	54.00000	100.05000	0.06789	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	54.00000	100.05000	0.07169	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	54.00000	100.05000	0.07505	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	54.00000	100.05000	0.07796	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	54.00000	100.05000	0.08043	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	54.00000	100.05000	0.08247	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	54.00000	100.05000	0.08412	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	55.20000	100.05000	0.08750	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	55.20000	100.05000	0.08792	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	55.20000	100.05000	0.08814	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	55.20000	100.05000	0.08813	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	55.20000	100.05000	0.08786	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	55.20000	100.05000	0.08732	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	55.20000	100.05000	0.08647	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	55.20000	100.05000	0.08532	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	55.20000	100.05000	0.08382	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	55.20000	100.05000	0.08197	99.912	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	1.00000	56.40000	100.05000	0.08705	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	56.40000	100.05000	0.08744	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	56.40000	100.05000	0.08764	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	56.40000	100.05000	0.08762	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	56.40000	100.05000	0.08738	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	56.40000	100.05000	0.08689	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	56.40000	100.05000	0.08615	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	56.40000	100.05000	0.08513	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	56.40000	100.05000	0.08383	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	56.40000	100.05000	0.08225	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	56.40000	100.05000	0.08038	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	56.40000	100.05000	0.07825	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	56.40000	100.05000	0.07585	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	56.40000	100.05000	0.07323	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	56.40000	100.05000	0.07043	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	56.40000	100.05000	0.06749	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	56.40000	100.05000	0.06449	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	56.40000	100.05000	0.06149	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	56.40000	100.05000	0.05858	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	56.40000	100.05000	0.05585	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	56.40000	100.05000	0.05341	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	56.40000	100.05000	0.05132	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	56.40000	100.05000	0.04968	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	56.40000	100.05000	0.04854	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	56.40000	100.05000	0.04795	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	56.40000	100.05000	0.04792	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	56.40000	100.05000	0.04847	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	56.40000	100.05000	0.04955	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	56.40000	100.05000	0.05113	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	56.40000	100.05000	0.05314	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	56.40000	100.05000	0.05550	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	56.40000	100.05000	0.05812	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	56.40000	100.05000	0.06091	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	56.40000	100.05000	0.06379	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	56.40000	100.05000	0.06668	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	56.40000	100.05000	0.06951	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	56.40000	100.05000	0.07221	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	56.40000	100.05000	0.07473	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	56.40000	100.05000	0.07705	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	56.40000	100.05000	0.07912	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	56.40000	100.05000	0.08094	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	56.40000	100.05000	0.08249	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	56.40000	100.05000	0.08377	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	56.40000	100.05000	0.08478	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	56.40000	100.05000	0.08553	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	57.60000	100.05000	0.08534	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	57.60000	100.05000	0.08602	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	57.60000	100.05000	0.08656	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	57.60000	100.05000	0.08693	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	57.60000	100.05000	0.08713	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	57.60000	100.05000	0.08713	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	57.60000	100.05000	0.08694	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	57.60000	100.05000	0.08653	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	57.60000	100.05000	0.08591	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	57.60000	100.05000	0.08505	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	57.60000	100.05000	0.08398	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	57.60000	100.05000	0.08268	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	57.60000	100.05000	0.08117	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	57.60000	100.05000	0.07947	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	57.60000	100.05000	0.07759	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	57.60000	100.05000	0.07558	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	57.60000	100.05000	0.07346	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	57.60000	100.05000	0.07130	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	57.60000	100.05000	0.06915	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	57.60000	100.05000	0.06706	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	57.60000	100.05000	0.06511	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	57.60000	100.05000	0.06336	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	57.60000	100.05000	0.06186	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	57.60000	100.05000	0.06068	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	57.60000	100.05000	0.05985	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	57.60000	100.05000	0.05940	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	57.60000	100.05000	0.05936	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	57.60000	100.05000	0.05972	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	57.60000	100.05000	0.06047	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	57.60000	100.05000	0.06157	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	57.60000	100.05000	0.06297	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	57.60000	100.05000	0.06463	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	57.60000	100.05000	0.06648	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	57.60000	100.05000	0.06847	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	57.60000	100.05000	0.07052	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	57.60000	100.05000	0.07259	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	57.60000	100.05000	0.07462	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	57.60000	100.05000	0.07655	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	57.60000	100.05000	0.07836	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	57.60000	100.05000	0.08001	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	57.60000	100.05000	0.08148	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	57.60000	100.05000	0.08274	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	57.60000	100.05000	0.08379	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	57.60000	100.05000	0.08463	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	57.60000	100.05000	0.08525	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	57.60000	100.05000	0.08566	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	58.80000	100.05000	0.08407	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	58.80000	100.05000	0.08485	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	58.80000	100.05000	0.08550	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	58.80000	100.05000	0.08602	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	58.80000	100.05000	0.08639	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	58.80000	100.05000	0.08660	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	58.80000	100.05000	0.08665	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	58.80000	100.05000	0.08652	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	58.80000	100.05000	0.08621	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	58.80000	100.05000	0.08572	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	58.80000	100.05000	0.08505	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	58.80000	100.05000	0.08420	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	58.80000	100.05000	0.08318	99.9			



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Undrained Short-term Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	4.00000	60.00000	100.05000	0.08544	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	60.00000	100.05000	0.08581	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	60.00000	100.05000	0.08605	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	60.00000	100.05000	0.08615	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	60.00000	100.05000	0.08609	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	60.00000	100.05000	0.08589	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	60.00000	100.05000	0.08554	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	60.00000	100.05000	0.08505	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	60.00000	100.05000	0.08442	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	60.00000	100.05000	0.08366	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	60.00000	100.05000	0.08280	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	60.00000	100.05000	0.08185	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	60.00000	100.05000	0.08084	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	60.00000	100.05000	0.07979	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	60.00000	100.05000	0.07874	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	60.00000	100.05000	0.07771	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	60.00000	100.05000	0.07674	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	60.00000	100.05000	0.07586	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	60.00000	100.05000	0.07511	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	60.00000	100.05000	0.07451	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	60.00000	100.05000	0.07408	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	60.00000	100.05000	0.07383	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	60.00000	100.05000	0.07379	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	60.00000	100.05000	0.07393	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	60.00000	100.05000	0.07427	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	60.00000	100.05000	0.07478	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	60.00000	100.05000	0.07544	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	60.00000	100.05000	0.07622	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	60.00000	100.05000	0.07711	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	60.00000	100.05000	0.07806	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	60.00000	100.05000	0.07904	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	60.00000	100.05000	0.08002	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	60.00000	100.05000	0.08097	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	60.00000	100.05000	0.08187	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	60.00000	100.05000	0.08268	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	60.00000	100.05000	0.08340	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	60.00000	100.05000	0.08400	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	60.00000	100.05000	0.08447	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	60.00000	100.05000	0.08480	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	60.00000	100.05000	0.08500	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	60.00000	100.05000	0.08505	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	60.00000	100.05000	0.08495	99.912	0.0	0.0	0.0

Results : Consolidation : Displacement Data : Grids

None

Results : Total : Displacement Data : Grids

None



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Titles

Job No.: J20268
Job Title: 30 Ferncroft Avenue, London NW3 7PH
Sub-title: Analysis of Vertical Movements due to Basement Excavation
Calculation Heading: Drained Total Movements
Initials: ML
Checker:
Date Saved:
Date Checked:
Notes:
File Name: Drained.pdd
File Path: G:\CURRENT\20-\J20268 - 30 Ferncroft Avenue\APPENDIX\GMA

History

Date	Time	By	Notes
17-Feb-2021	21:55	Matt Legg	New
17-Feb-2021	22:17	Matt Legg	
17-Feb-2021	22:59	Matt Legg	
26-Feb-2021	00:41	Matt Legg	
26-Feb-2021	18:17	Matt Legg	Open

Analysis Options

General

Global Poisson's ratio: 0.20
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: 55.00 [m OD]
Displacements at load centroids: Yes
GSA piled raft data : No

Elastic

Elastic : Yes
Analysis: Boussinesq
Stiffness for horizontal displacement calculations: Weighted average
Using legacy heave correction factor: No

Consolidation

Consolidation : No

Soil ProfilesUndrained

Layer ref.	Name	Level at top	Number of intermediate displacement levels	Youngs Modulus : Top	Youngs Modulus : Btm.	Poissons ratio	Non-linear curve
		[mOD]		[kN/m²]	[kN/m²]		
1	WG	100.05	1	9000.0	9000.0	0.50000	None
2	CLAYGATE	99.500	1	22500.	27692.	0.50000	None
3	CLAYGATE	98.000	1	27692.	31154.	0.50000	None
4	CLAYGATE	97.000	2	31154.	38077.	0.50000	None
5	CLAYGATE	95.000	2	38077.	45000.	0.50000	None
6	CLAYGATE	93.000	2	45000.	51923.	0.50000	None
7	CLAYGATE	91.000	2	51923.	58846.	0.50000	None
8	CLAYGATE	89.000	3	58846.	69231.	0.50000	None
9	LC	86.000	5	115390.	144760.	0.50000	None
10	LC	81.000	6	144760.	180010.	0.50000	None
11	LC	75.000	10	180010.	238760.	0.50000	None
12	LC	65.000	10	238760.	297510.	0.50000	None

Soil ProfilesDrained

Layer ref.	Name	Level at top	Number of intermediate displacement levels	Youngs Modulus : Top	Youngs Modulus : Btm.	Poissons ratio	Non-linear curve
		[mOD]		[kN/m²]	[kN/m²]		
1	WG	100.05	1	6000.0	6000.0	0.20000	None
2	CLAYGATE	99.500	1	15000.	18462.	0.20000	None
3	CLAYGATE	98.000	1	18462.	20769.	0.20000	None
4	CLAYGATE	97.000	2	20769.	25385.	0.20000	None
5	CLAYGATE	95.000	2	25385.	30000.	0.20000	None
6	CLAYGATE	93.000	2	30000.	34615.	0.20000	None
7	CLAYGATE	91.000	2	34615.	39231.	0.20000	None
8	CLAYGATE	89.000	3	39231.	46154.	0.20000	None
9	LC	86.000	5	86154.	108090.	0.20000	None
10	LC	81.000	6	108090.	134410.	0.20000	None
11	LC	75.000	10	134410.	178270.	0.20000	None
12	LC	65.000	10	178270.	222140.	0.20000	None

Soil Zones

Zone	Name	X min [m]	X max [m]	Y min [m]	Y max [m]	Profile
1	Zone 1	0.0	45.000	0.0	60.000	Drained

Polygonal Load Data

Load ref.	Name	Position : Level	Position : Polygon	Coords.	Position : Polygon Rect. tolerance	No. of Rectangles	Value : Normal (local z)
		[m]		[m]	[kN]		[kN/m²]
1	Pool Excavation	93.25000	(26.1,42.3)	(29.8,42.3)	10.000	1	-120.00
			(29.8,29.8)	(26.1,29.8)			
			(26.1,42.3)				
2	Basement 1	98.00000	(20,10)	(20,20)	10.000	1	-44.000
			(31.9,10)	(31.9,20)			
3	Basement 2	99.00000	(26.1,20)	(26.1,27)	10.000	1	-14.000
			(31.9,20)	(26.1,20)			
4	Basement 3	96.00000	(20,20)	(20,42.3)	10.000	3	-80.000
			(26.1,29.8)	(26.1,42.3)			
			(29.8,33)	(31.9,33)			
			(26.1,27)	(26.1,20)			
5	Strip 1	98.00000	(20,11)	(20,20)	10.000	1	34.000
			(21,11)	(20,11)			
6	Strip 2	98.00000	(20,10)	(20,11)	10.000	1	34.000
			(31.9,10)	(31.9,11)			
7	Strip 3	98.00000	(30.9,11)	(30.9,20)	10.000	1	34.000
			(31.9,11)	(30.9,11)			
8	Strip 4	96.00000	(20,20)	(20,33)	10.000	1	125.00
			(21,20)	(20,20)			
9	Strip 5	96.00000	(20,33)	(20,42.3)	10.000	1	35.000
			(21,33)	(20,33)			
10	Strip 6	96.00000	(21,42.3)	(28.8,42.3)	10.000	1	35.000
			(28.8,41.3)	(21,41.3)			
			(21,42.3)				
11	Strip 7	93.25000	(28.8,42.3)	(29.8,42.3)	10.000	1	35.000
			(29.8,33)	(28.8,33)			
			(28.8,42.3)				
12	Strip 8	96.00000	(28.8,33)	(31.9,33)	10.000	1	35.000
			(28.8,32)	(28.8,33)			
13	Strip 9	99.00000	(31.9,27)	(31.9,20)	10.000	1	125.00
			(30.9,27)	(31.9,27)			
14	Strip 10	96.00000	(31.9,32)	(31.9,27)	10.000	1	125.00
			(30.9,32)	(31.9,32)			

Polygonal Loads' Rectangles



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

No.	Centre x	Centre y	Angle of local x from global X [Degrees]	Width x [m]	Depth y [m]
Load 1 : Pool Excavation (Edge 2 optimal)					
1	27.92000	36.07500	0.0	3.7000	12.530
Load 2 : Basement 1 (Edge 2 optimal)					
1	25.97000	15.00000	90.000	10.000	11.940
Load 3 : Basement 2 (Edge 2 optimal)					
1	29.00500	23.50500	90.000	7.0100	5.8700
Load 4 : Basement 3 (Edge 1 optimal)					
1	27.92000	28.41000	0.0	3.7000	2.8000
2	30.85500	30.02000	0.0	2.1700	6.0200
3	23.03500	31.17000	0.0	6.0700	22.340
Load 5 : Strip 1 (Edge 2 optimal)					
1	20.50000	15.50000	90.000	9.0000	1.0000
Load 6 : Strip 2 (Edge 2 optimal)					
1	25.97000	10.50000	90.000	1.0000	11.940
Load 7 : Strip 3 (Edge 2 optimal)					
1	31.44000	15.50000	90.000	9.0000	1.0000
Load 8 : Strip 4 (Edge 2 optimal)					
1	20.50000	26.51500	90.000	13.030	1.0000
Load 9 : Strip 5 (Edge 2 optimal)					
1	20.50000	37.68500	90.000	9.3100	1.0000
Load 10 : Strip 6 (Edge 2 optimal)					
1	24.88500	41.84000	0.0	7.7700	1.0000
Load 11 : Strip 7 (Edge 2 optimal)					
1	29.27000	37.68500	0.0	1.0000	9.3100
Load 12 : Strip 8 (Edge 2 optimal)					
1	30.35500	32.53000	0.0	3.1700	1.0000
Load 13 : Strip 9 (Edge 2 optimal)					
1	31.44000	23.50500	-90.000	7.0100	1.0000
Load 14 : Strip 10 (Edge 2 optimal)					
1	31.44000	29.52000	-90.000	5.0200	1.0000

Displacement Lines

Name	X1	Y1	Z1	X2	Y2	Z2	Intervals	Calculate	Detailed Results
	[m]	[m]	[m]	[m]	[m]	[m]	[No.]		
28A	17.30000	15.00000	99.55000	3.35000	15.00000	99.55000	7	Yes	Yes
28B	3.35000	15.00000	99.55000	3.35000	16.46000	99.55000	2	Yes	Yes
28C	3.35000	16.46000	99.55000	2.50000	16.46000	99.55000	2	Yes	Yes
28D	2.50000	16.46000	99.55000	2.50000	19.79000	99.55000	3	Yes	Yes
28E	2.50000	19.79000	99.55000	3.35000	19.79000	99.55000	2	Yes	Yes
28F	3.35000	19.79000	99.55000	3.35000	26.14000	99.55000	6	Yes	Yes
28G	3.35000	26.14000	99.55000	5.03000	27.49000	99.55000	2	Yes	Yes
28H	5.03000	27.49000	99.55000	7.55000	27.49000	99.55000	3	Yes	Yes
28I	7.55000	27.49000	99.55000	9.09000	26.14000	99.55000	2	Yes	Yes
28J	9.09000	26.14000	99.55000	9.09000	24.26000	99.55000	2	Yes	Yes
28K	9.09000	24.26000	99.55000	12.26000	24.26000	99.55000	3	Yes	Yes
28L	12.26000	24.26000	98.65000	12.26000	28.91000	98.65000	4	Yes	Yes
28M	12.26000	28.91000	98.65000	18.93000	28.91000	98.65000	6	Yes	Yes
28N	18.93000	28.91000	98.65000	18.93000	24.26000	98.65000	4	Yes	Yes
28O	18.93000	24.26000	98.65000	18.93000	19.26000	98.65000	5	Yes	Yes
28P	18.93000	19.26000	99.55000	17.30000	19.26000	99.55000	2	Yes	Yes
28Q	17.30000	19.26000	99.55000	17.30000	15.00000	99.55000	4	Yes	Yes

Displacement Grids

Name	Extrusion: Direction	X1	Y1	Z1	X2	Y2	Z2	Intervals Along Line [No.]	Extrusion: Distance [m]	Extrusion: Intervals Along [No.]	Calculate	Detailed Results
		[m]	[m]	[m]	[m]	[m]	[m]					
Grid 1	Global X	0.00000	0.00000	100.05000	-	60.00000	100.05000	50	45.00000	45	Yes	Yes

Warnings

(1)The load at (27.920, 36.075, 93.250)m lies wide of all soil zones. Displacements at its centre have been requested. The first soil profile will be used.

Results : Immediate : Load Centres : Polygonal

Ref.	Name	x	y	z	δz	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [µ]
		[m]	[m]	[mOD]	[mm]	[mOD]			
1	Pool Excavation	27.92000	36.07500	93.25000	-19.62258	93.125	-132.97	-308.56	-0.0032935
2	Basement 1	25.97000	15.00000	98.00000	-12.94931	97.753	-44.001	-100.75	-0.0017162
3	Basement 2	29.00500	23.50500	99.00000	-6.82239	98.500	-13.676	-22.287	-691.65E-6
4	Basement 3	23.99562	30.89573	96.00000	-19.53294	95.755	-80.091	-181.40	-0.0025311
5	Strip 1	20.50000	15.50000	98.00000	-6.81876	97.753	-10.471	-30.523	-339.56E-6
6	Strip 2	25.97000	10.50000	98.00000	-6.28633	97.753	-10.470	-30.596	-338.72E-6
7	Strip 3	31.44000	15.50000	98.00000	-6.29483	97.753	-10.435	-29.937	-343.46E-6
8	Strip 4	20.50000	26.51500	96.00000	-5.78429	95.755	41.501	49.155	0.0016910
9	Strip 5	20.50000	37.68500	96.00000	-11.64174	95.755	-44.809	-101.03	-0.0014200
10	Strip 6	24.88500	41.84000	96.00000	-11.44348	95.755	-44.706	-95.596	-0.0014607
11	Strip 7	29.27000	37.68500	93.25000	-14.38731	93.125	-89.730	-210.98	-0.0022039
12	Strip 8	30.35500	32.53000	96.00000	-12.16901	95.755	-43.600	-80.409	-0.0015331
13	Strip 9	31.44000	23.50500	99.00000	-5.67267	98.500	89.548	124.81	0.0047734
14	Strip 10	31.44000	29.52000	96.00000	-4.86880	95.755	43.129	55.939	0.0017162

Results : Consolidation : Load Centres : Polygonal

None

Results : Total : Load Centres : Polygonal

None

Results : Immediate : Displacement Data : Lines

Ref.	Name	x	y	z	δz	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [µ]
		[m]	[m]	[mOD]	[mm]	[mOD]			
1	28A	17.30000	15.00000	99.55000	-2.40183	99.525	0.0	0.0	0.0
1	28A	15.30714	15.00000	99.55000	-1.56805	99.525	0.0	0.0	0.0
1	28A	13.31429	15.00000	99.55000	-1.09353	99.525	0.0	0.0	0.0
1	28A	11.32143	15.00000	99.55000	-0.79629	99.525	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [µ]
		[m]	[m]	[mOD]	[mm]				
1	28A	9.32857	15.00000	99.55000	-0.59706	99.525	0.0	0.0	0.0
1	28A	7.33571	15.00000	99.55000	-0.45665	99.525	0.0	0.0	0.0
1	28A	5.34286	15.00000	99.55000	-0.35394	99.525	0.0	0.0	0.0
1	28A	3.35000	15.00000	99.55000	-0.27673	99.525	0.0	0.0	0.0
2	28B	3.35000	15.00000	99.55000	-0.27673	99.525	0.0	0.0	0.0
2	28B	15.73000	99.55000	0.28541	99.525	0.0	0.0	0.0	0.0
2	28B	3.35000	16.46000	99.55000	-0.29387	99.525	0.0	0.0	0.0
3	28C	3.35000	16.46000	99.55000	-0.29387	99.525	0.0	0.0	0.0
3	28C	2.92500	16.46000	99.55000	-0.27893	99.525	0.0	0.0	0.0
3	28C	2.50000	16.46000	99.55000	-0.26481	99.525	0.0	0.0	0.0
4	28D	3.35000	16.46000	99.55000	-0.26481	99.525	0.0	0.0	0.0
4	28D	2.50000	17.57000	99.55000	-0.27578	99.525	0.0	0.0	0.0
4	28D	2.50000	18.68000	99.55000	-0.28614	99.525	0.0	0.0	0.0
4	28D	2.50000	19.79000	99.55000	-0.29583	99.525	0.0	0.0	0.0
5	28E	2.50000	19.79000	99.55000	-0.29583	99.525	0.0	0.0	0.0
5	28E	2.92500	19.79000	99.55000	-0.31185	99.525	0.0	0.0	0.0
5	28E	3.35000	19.79000	99.55000	-0.32880	99.525	0.0	0.0	0.0
6	28F	3.35000	19.79000	99.55000	-0.32880	99.525	0.0	0.0	0.0
6	28F	3.35000	20.84833	99.55000	-0.33843	99.525	0.0	0.0	0.0
6	28F	3.35000	21.96667	99.55000	-0.34723	99.525	0.0	0.0	0.0
6	28F	3.35000	22.96500	99.55000	-0.35515	99.525	0.0	0.0	0.0
6	28F	3.35000	24.02333	99.55000	-0.36214	99.525	0.0	0.0	0.0
6	28F	3.35000	25.08167	99.55000	-0.36813	99.525	0.0	0.0	0.0
6	28F	3.35000	26.14000	99.55000	-0.37306	99.525	0.0	0.0	0.0
7	28G	3.35000	26.14000	99.55000	-0.37306	99.525	0.0	0.0	0.0
7	28G	4.19000	26.81500	99.55000	-0.41832	99.525	0.0	0.0	0.0
7	28G	5.03000	27.49000	99.55000	-0.46923	99.525	0.0	0.0	0.0
8	28H	5.03000	27.49000	99.55000	-0.46923	99.525	0.0	0.0	0.0
8	28H	5.87000	27.49000	99.55000	-0.52399	99.525	0.0	0.0	0.0
8	28H	6.71000	27.49000	99.55000	-0.58603	99.525	0.0	0.0	0.0
8	28H	7.55000	27.49000	99.55000	-0.65656	99.525	0.0	0.0	0.0
9	28I	7.55000	27.49000	99.55000	-0.65656	99.525	0.0	0.0	0.0
9	28I	8.32000	26.81500	99.55000	-0.72463	99.525	0.0	0.0	0.0
9	28I	9.09000	26.14000	99.55000	-0.79980	99.525	0.0	0.0	0.0
10	28J	9.09000	26.14000	99.55000	-0.79980	99.525	0.0	0.0	0.0
10	28J	9.09000	25.20000	99.55000	-0.78864	99.525	0.0	0.0	0.0
10	28J	9.09000	24.26000	99.55000	-0.77599	99.525	0.0	0.0	0.0
11	28K	9.09000	24.26000	99.55000	-0.77599	99.525	0.0	0.0	0.0
11	28K	10.14667	24.26000	99.55000	-0.90133	99.525	0.0	0.0	0.0
11	28K	11.20333	24.26000	99.55000	-1.05189	99.525	0.0	0.0	0.0
11	28K	12.26000	24.26000	99.55000	-1.23454	99.525	0.0	0.0	0.0
12	28L	12.26000	24.26000	98.65000	-1.23454	98.325	-23.305E-6	-0.0012928	13.027E-9
12	28L	12.26000	25.42250	98.65000	-1.26035	98.325	-22.297E-6	-0.0011300	11.256E-9
12	28L	12.26000	26.58500	98.65000	-1.28387	98.325	-20.534E-6	-843.77E-6	8.1414E-9
12	28L	12.26000	27.74750	98.65000	-1.30484	98.325	-18.207E-6	-463.96E-6	4.0077E-9
12	28L	12.26000	28.91000	98.65000	-1.32280	98.325	-15.552E-6	-27.240E-6	-746.50E-12
13	28M	12.26000	28.91000	98.65000	-1.32280	98.325	-15.552E-6	-27.240E-6	-746.50E-12
13	28M	13.37167	28.91000	98.65000	-1.58337	98.325	-24.238E-6	-915.64E-6	8.7023E-9
13	28M	14.48333	28.91000	98.65000	-1.91243	98.325	-38.414E-6	-0.0023011	23.395E-9
13	28M	15.59500	28.91000	98.65000	-2.31438	98.325	-62.152E-6	-0.0044584	46.160E-9
13	28M	16.70667	28.91000	98.65000	-2.88435	98.325	-103.13E-6	-0.0078336	81.517E-9
13	28M	17.81833	28.91000	98.65000	-3.61209	98.325	-176.44E-6	-0.013169	136.83E-9
13	28M	18.93000	28.91000	98.65000	-4.57132	98.325	-313.46E-6	-0.021738	224.36E-9
14	28N	18.93000	28.91000	98.65000	-4.57132	98.325	-313.46E-6	-0.021738	224.36E-9
14	28N	18.93000	27.74750	98.65000	-4.45948	98.325	-425.23E-6	-0.029985	309.97E-9
14	28N	18.93000	26.58500	98.65000	-4.36014	98.325	-537.63E-6	-0.037972	392.58E-9
14	28N	18.93000	25.42250	98.65000	-4.26723	98.325	-630.95E-6	-0.044459	459.55E-9
14	28N	18.93000	24.26000	98.65000	-4.17932	98.325	-686.97E-6	-0.048315	499.32E-9
15	28O	18.93000	24.26000	98.65000	-4.17932	98.325	-686.97E-6	-0.048315	499.32E-9
15	28O	18.93000	23.26000	98.65000	-4.10977	98.325	-696.59E-6	-0.048975	506.13E-9
15	28O	18.93000	22.26000	98.65000	-4.05329	98.325	-668.83E-6	-0.047068	486.46E-9
15	28O	18.93000	21.26000	98.65000	-4.02954	98.325	-607.75E-6	-0.042854	442.99E-9
15	28O	18.93000	20.26000	98.65000	-4.06973	98.325	-522.37E-6	-0.036901	381.51E-9
15	28O	18.93000	19.26000	98.65000	-4.13259	98.325	-424.99E-6	-0.029967	309.78E-9
16	28P	18.93000	19.26000	99.55000	-4.13257	99.525	0.0	0.0	0.0
16	28P	18.11500	19.26000	99.55000	-3.34786	99.525	0.0	0.0	0.0
16	28P	17.30000	19.26000	99.55000	-2.77131	99.525	0.0	0.0	0.0
17	28Q	17.30000	19.26000	99.55000	-2.77131	99.525	0.0	0.0	0.0
17	28Q	17.30000	18.19500	99.55000	-2.71502	99.525	0.0	0.0	0.0
17	28Q	17.30000	17.13000	99.55000	-2.63523	99.525	0.0	0.0	0.0
17	28Q	17.30000	16.06500	99.55000	-2.53091	99.525	0.0	0.0	0.0
17	28Q	17.30000	15.00000	99.55000	-2.40183	99.525	0.0	0.0	0.0

Results : Consolidation : Displacement Data : Lines

None

Results : Total : Displacement Data : Lines

None

Results : Immediate : Displacement Data : Grids

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	0.00000	0.00000	100.05000	-0.07216	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	0.00000	100.05000	-0.07988	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	0.00000	100.05000	-0.08827	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	0.00000	100.05000	-0.09740	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	0.00000	100.05000	-0.10730	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	0.00000	100.05000	-0.11804	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	0.00000	100.05000	-0.12968	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	0.00000	100.05000	-0.14225	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	0.00000	100.05000	-0.15582	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	0.00000	100.05000	-0.17042	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	0.00000	100.05000	-0.18609	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	0.00000	100.05000	-0.20284	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	0.00000	100.05000	-0.22067	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	0.00000	100.05000	-0.23952	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	0.00000	100.05000	-0.25930	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	0.00000	100.05000	-0.27987	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	0.00000	100.05000	-0.30099	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	0.00000	100.05000	-0.32235	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	0.00000	100.05000	-0.34356	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	0.00000	100.05000	-0.36413	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	0.00000	100.05000	-0.38350	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	0.00000	100.05000	-0.40107	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	0.00000	100.05000	-0.41625	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	0.00000	100.05000	-0.42846	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	0.00000	100.05000	-0.43721	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	0.00000	100.05000	-0.44214	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	0.00000	100.05000	-0.44304	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	0.00000	100.05000	-0.43985	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	0.00000	100.05000	-0.43268	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	0.00000	100.05000	-0.42180	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	0.00000	100.05000	-0.40762	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	0.00000	100.05000	-0.39068	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	0.00000	100.05000	-0.37156	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	0.00000	100.05000	-0.35089	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	0.00000	100.05000	-0.32927	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	0.00000	100.05000	-0.30727	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	0.00000	100.05000	-0.28534	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	0.00000	100.05000	-0.26389	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	0.00000	100.05000	-0.24319	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	0.00000	100.05000	-0.22344	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	0.00000	100.05000	-0.20478	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	0.00000	100.05000	-0.18728	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	0.00000	100.05000	-0.17095	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	0.00000	100.05000	-0.15579	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	0.00000	100.05000	-0.14176	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	0.00000	100.05000	-0.12881	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	1.00000	100.05000	-0.07968	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	1.20000	100.05000	-0.08331	99.912	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	2.00000	1.20000	100.05000	-0.09777	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	1.20000	100.05000	-0.10809	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	1.20000	100.05000	-0.11935	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	1.20000	100.05000	-0.13163	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	1.20000	100.05000	-0.14501	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	1.20000	100.05000	-0.15957	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	1.20000	100.05000	-0.17540	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	1.20000	100.05000	-0.19258	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	1.20000	100.05000	-0.21119	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	1.20000	100.05000	-0.23129	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	1.20000	100.05000	-0.25291	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	1.20000	100.05000	-0.27604	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	1.20000	100.05000	-0.30063	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	1.20000	100.05000	-0.32653	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	1.20000	100.05000	-0.35351	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	1.20000	100.05000	-0.38118	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	1.20000	100.05000	-0.40903	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	1.20000	100.05000	-0.43640	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	1.20000	100.05000	-0.46248	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	1.20000	100.05000	-0.48640	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	1.20000	100.05000	-0.50723	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	1.20000	100.05000	-0.52411	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	1.20000	100.05000	-0.53631	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	1.20000	100.05000	-0.54327	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	1.20000	100.05000	-0.54464	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	1.20000	100.05000	-0.54037	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	1.20000	100.05000	-0.53055	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	1.20000	100.05000	-0.51566	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	1.20000	100.05000	-0.49630	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	1.20000	100.05000	-0.47328	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	1.20000	100.05000	-0.44748	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	1.20000	100.05000	-0.41985	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	1.20000	100.05000	-0.39128	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	1.20000	100.05000	-0.36254	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	1.20000	100.05000	-0.33430	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	1.20000	100.05000	-0.30703	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	1.20000	100.05000	-0.28108	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	1.20000	100.05000	-0.25666	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	1.20000	100.05000	-0.23388	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	1.20000	100.05000	-0.21276	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	1.20000	100.05000	-0.19328	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	1.20000	100.05000	-0.17537	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	1.20000	100.05000	-0.15895	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	1.20000	100.05000	-0.14392	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	2.40000	100.05000	-0.08759	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	2.40000	100.05000	-0.09726	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	2.40000	100.05000	-0.10787	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	2.40000	100.05000	-0.11950	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	2.40000	100.05000	-0.13226	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	2.40000	100.05000	-0.14625	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	2.40000	100.05000	-0.16160	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	2.40000	100.05000	-0.17842	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	2.40000	100.05000	-0.19685	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	2.40000	100.05000	-0.21703	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	2.40000	100.05000	-0.23910	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	2.40000	100.05000	-0.26319	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	2.40000	100.05000	-0.28942	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	2.40000	100.05000	-0.31787	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	2.40000	100.05000	-0.34855	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	2.40000	100.05000	-0.38137	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	2.40000	100.05000	-0.41611	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	2.40000	100.05000	-0.45235	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	2.40000	100.05000	-0.48942	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	2.40000	100.05000	-0.52643	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	2.40000	100.05000	-0.56219	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	2.40000	100.05000	-0.59538	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	2.40000	100.05000	-0.62458	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	2.40000	100.05000	-0.64843	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	2.40000	100.05000	-0.66579	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	2.40000	100.05000	-0.67579	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	2.40000	100.05000	-0.67791	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	2.40000	100.05000	-0.67202	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	2.40000	100.05000	-0.65836	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	2.40000	100.05000	-0.63756	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	2.40000	100.05000	-0.61058	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	2.40000	100.05000	-0.57865	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	2.40000	100.05000	-0.54316	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	2.40000	100.05000	-0.50556	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	2.40000	100.05000	-0.46717	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	2.40000	100.05000	-0.42915	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	2.40000	100.05000	-0.39238	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	2.40000	100.05000	-0.35745	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	2.40000	100.05000	-0.32475	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	2.40000	100.05000	-0.29445	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	2.40000	100.05000	-0.26658	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	2.40000	100.05000	-0.24110	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	2.40000	100.05000	-0.21787	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	2.40000	100.05000	-0.19676	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	2.40000	100.05000	-0.17759	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	2.40000	100.05000	-0.16021	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	3.60000	100.05000	-0.09593	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	3.60000	100.05000	-0.10669	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	3.60000	100.05000	-0.11855	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	3.60000	100.05000	-0.13161	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	3.60000	100.05000	-0.14602	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	3.60000	100.05000	-0.16190	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	3.60000	100.05000	-0.17944	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	3.60000	100.05000	-0.19880	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	3.60000	100.05000	-0.22018	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	3.60000	100.05000	-0.24381	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	3.60000	100.05000	-0.26992	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	3.60000	100.05000	-0.29876	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	3.60000	100.05000	-0.33057	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	3.60000	100.05000	-0.36558	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	3.60000	100.05000	-0.40386	99.912	0.0	0.0	



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	5.00000	4.80000	100.05000	-0.17852	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	4.80000	100.05000	-0.19847	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	4.80000	100.05000	-0.22065	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	4.80000	100.05000	-0.24536	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	4.80000	100.05000	-0.27291	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	4.80000	100.05000	-0.30369	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	4.80000	100.05000	-0.33810	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	4.80000	100.05000	-0.37659	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	4.80000	100.05000	-0.41963	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	4.80000	100.05000	-0.46767	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	4.80000	100.05000	-0.52108	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	4.80000	100.05000	-0.58000	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	4.80000	100.05000	-0.64423	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	4.80000	100.05000	-0.71295	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	4.80000	100.05000	-0.78453	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	4.80000	100.05000	-0.85637	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	4.80000	100.05000	-0.92506	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	4.80000	100.05000	-0.98678	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	4.80000	100.05000	-1.03792	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	4.80000	100.05000	-1.07551	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	4.80000	100.05000	-1.09749	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	4.80000	100.05000	-1.10273	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	4.80000	100.05000	-1.09093	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	4.80000	100.05000	-1.06261	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	4.80000	100.05000	-1.01916	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	4.80000	100.05000	-0.96282	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	4.80000	100.05000	-0.89673	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	4.80000	100.05000	-0.82458	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	4.80000	100.05000	-0.75022	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	4.80000	100.05000	-0.67701	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	4.80000	100.05000	-0.60745	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	4.80000	100.05000	-0.54305	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	4.80000	100.05000	-0.48451	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	4.80000	100.05000	-0.43193	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	4.80000	100.05000	-0.38506	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	4.80000	100.05000	-0.34342	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	4.80000	100.05000	-0.30652	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	4.80000	100.05000	-0.27380	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	4.80000	100.05000	-0.24478	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	4.80000	100.05000	-0.21899	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	4.80000	100.05000	-0.19604	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	6.00000	100.05000	-0.11367	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	6.00000	100.05000	-0.12684	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	6.00000	100.05000	-0.14146	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	6.00000	100.05000	-0.15773	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	6.00000	100.05000	-0.17583	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	6.00000	100.05000	-0.19603	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	6.00000	100.05000	-0.21860	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	6.00000	100.05000	-0.24388	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	6.00000	100.05000	-0.27227	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	6.00000	100.05000	-0.30423	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	6.00000	100.05000	-0.34031	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	6.00000	100.05000	-0.38115	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	6.00000	100.05000	-0.42752	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	6.00000	100.05000	-0.48025	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	6.00000	100.05000	-0.54027	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	6.00000	100.05000	-0.60854	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	6.00000	100.05000	-0.68586	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	6.00000	100.05000	-0.77267	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	6.00000	100.05000	-0.86852	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	6.00000	100.05000	-0.97151	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	6.00000	100.05000	-1.07771	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	6.00000	100.05000	-1.18120	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	6.00000	100.05000	-1.27511	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	6.00000	100.05000	-1.35307	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	6.00000	100.05000	-1.41030	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	6.00000	100.05000	-1.44380	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	6.00000	100.05000	-1.45212	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	6.00000	100.05000	-1.43492	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	6.00000	100.05000	-1.39287	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	6.00000	100.05000	-1.32778	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	6.00000	100.05000	-1.24293	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	6.00000	100.05000	-1.14338	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	6.00000	100.05000	-1.03564	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	6.00000	100.05000	-0.92661	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	6.00000	100.05000	-0.82206	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	6.00000	100.05000	-0.72571	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	6.00000	100.05000	-0.63926	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	6.00000	100.05000	-0.56295	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	6.00000	100.05000	-0.49620	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	6.00000	100.05000	-0.43804	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	6.00000	100.05000	-0.38743	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	6.00000	100.05000	-0.34333	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	6.00000	100.05000	-0.30482	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	6.00000	100.05000	-0.27109	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	6.00000	100.05000	-0.24145	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	6.00000	100.05000	-0.21532	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	7.20000	100.05000	-0.12297	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	7.20000	100.05000	-0.13744	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	7.20000	100.05000	-0.15357	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	7.20000	100.05000	-0.17157	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	7.20000	100.05000	-0.19172	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	7.20000	100.05000	-0.21430	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	7.20000	100.05000	-0.23969	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	7.20000	100.05000	-0.26833	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	7.20000	100.05000	-0.30073	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	7.20000	100.05000	-0.33754	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	7.20000	100.05000	-0.37753	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	7.20000	100.05000	-0.42766	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	7.20000	100.05000	-0.48310	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	7.20000	100.05000	-0.54725	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	7.20000	100.05000	-0.62181	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	7.20000	100.05000	-0.70874	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	7.20000	100.05000	-0.81018	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	7.20000	100.05000	-0.92819	99.912	0.0	0.	



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	8.00000	8.40000	100.05000	-0.33045	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	8.40000	100.05000	-0.37249	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	8.40000	100.05000	-0.42093	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	8.40000	100.05000	-0.47710	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	8.40000	100.05000	-0.54271	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	8.40000	100.05000	-0.61992	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	8.40000	100.05000	-0.71151	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	8.40000	100.05000	-0.82106	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	8.40000	100.05000	-0.95309	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	8.40000	100.05000	-1.11317	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	8.40000	100.05000	-1.30755	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	8.40000	100.05000	-1.54096	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	8.40000	100.05000	-1.80887	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	8.40000	100.05000	-2.08587	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	8.40000	100.05000	-2.33636	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	8.40000	100.05000	-2.53630	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	8.40000	100.05000	-2.67642	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	8.40000	100.05000	-2.75589	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	8.40000	100.05000	-2.77633	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	8.40000	100.05000	-2.73872	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	8.40000	100.05000	-2.64265	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	8.40000	100.05000	-2.48716	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	8.40000	100.05000	-2.27381	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	8.40000	100.05000	-2.01293	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	8.40000	100.05000	-1.72961	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	8.40000	100.05000	-1.45956	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	8.40000	100.05000	-1.22671	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	8.40000	100.05000	-1.03442	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	8.40000	100.05000	-0.87740	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	8.40000	100.05000	-0.74911	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	8.40000	100.05000	-0.64374	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	8.40000	100.05000	-0.55657	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	8.40000	100.05000	-0.48388	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	8.40000	100.05000	-0.42275	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	8.40000	100.05000	-0.37092	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	8.40000	100.05000	-0.32664	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	8.40000	100.05000	-0.28852	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	8.40000	100.05000	-0.25549	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	9.60000	100.05000	-0.14213	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	9.60000	100.05000	-0.15933	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	9.60000	100.05000	-0.17862	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	9.60000	100.05000	-0.20033	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	9.60000	100.05000	-0.22481	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	9.60000	100.05000	-0.25251	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	9.60000	100.05000	-0.28397	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	9.60000	100.05000	-0.31988	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	9.60000	100.05000	-0.36108	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	9.60000	100.05000	-0.40863	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	9.60000	100.05000	-0.46391	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	9.60000	100.05000	-0.52869	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	9.60000	100.05000	-0.60530	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	9.60000	100.05000	-0.69684	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	9.60000	100.05000	-0.80751	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	9.60000	100.05000	-0.94306	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	9.60000	100.05000	-1.11161	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	9.60000	100.05000	-1.32494	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	9.60000	100.05000	-1.60094	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	9.60000	100.05000	-1.96872	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	9.60000	100.05000	-2.47723	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	9.60000	100.05000	-3.02628	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	9.60000	100.05000	-3.48894	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	9.60000	100.05000	-3.82673	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	9.60000	100.05000	-4.04673	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	9.60000	100.05000	-4.16612	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	9.60000	100.05000	-4.19643	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	9.60000	100.05000	-4.14169	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	9.60000	100.05000	-3.99849	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	9.60000	100.05000	-3.75580	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	9.60000	100.05000	-3.39703	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	9.60000	100.05000	-2.91724	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	9.60000	100.05000	-2.35326	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	9.60000	100.05000	-1.85455	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	9.60000	100.05000	-1.49224	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	9.60000	100.05000	-1.22175	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	9.60000	100.05000	-1.01436	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	9.60000	100.05000	-0.85214	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	9.60000	100.05000	-0.72314	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	9.60000	100.05000	-0.61906	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	9.60000	100.05000	-0.53398	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	9.60000	100.05000	-0.46357	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	9.60000	100.05000	-0.40465	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	9.60000	100.05000	-0.35484	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	9.60000	100.05000	-0.31235	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	9.60000	100.05000	-0.27579	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	10.80000	100.05000	-0.15183	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	10.80000	100.05000	-0.17043	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	10.80000	100.05000	-0.19136	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	10.80000	100.05000	-0.21497	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	10.80000	100.05000	-0.24170	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	10.80000	100.05000	-0.27205	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	10.80000	100.05000	-0.30668	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	10.80000	100.05000	-0.34639	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	10.80000	100.05000	-0.39220	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	10.80000	100.05000	-0.44541	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	10.80000	100.05000	-0.50773	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	10.80000	100.05000	-0.58140	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	10.80000	100.05000	-0.66945	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	10.80000	100.05000	-0.77600	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	10.80000	100.05000	-0.90683	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	10.80000	100.05000	-1.07025	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	10.80000	100.05000	-1.27874	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	10.80000	100.05000	-1.55215	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	10.80000	100.05000	-1.92553	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	10.80000	100.05000	-2.47416	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	10.80000	100.05000	-3.23328				



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	11.00000	12.00000	100.05000	-0.63412	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	12.00000	100.05000	-0.73356	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	12.00000	100.05000	-0.85502	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	12.00000	100.05000	-1.00586	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	12.00000	100.05000	-1.19687	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	12.00000	100.05000	-1.44471	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	12.00000	100.05000	-1.77679	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	12.00000	100.05000	-2.24313	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	12.00000	100.05000	-2.95288	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	12.00000	100.05000	-4.33006	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	12.00000	100.05000	-6.90685	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	12.00000	100.05000	-9.08389	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	12.00000	100.05000	-9.91407	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	12.00000	100.05000	-10.35606	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	12.00000	100.05000	-10.57363	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	12.00000	100.05000	-10.62397	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	12.00000	100.05000	-10.52280	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	12.00000	100.05000	-10.25555	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	12.00000	100.05000	-9.76400	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	12.00000	100.05000	-8.87407	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	12.00000	100.05000	-6.47564	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	12.00000	100.05000	-4.02711	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	12.00000	100.05000	-2.73263	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	12.00000	100.05000	-2.04670	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	12.00000	100.05000	-1.59838	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	12.00000	100.05000	-1.28283	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	12.00000	100.05000	-1.05076	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	12.00000	100.05000	-0.87468	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	12.00000	100.05000	-0.73778	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	12.00000	100.05000	-0.62908	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	12.00000	100.05000	-0.54122	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	12.00000	100.05000	-0.46905	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	12.00000	100.05000	-0.40895	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	12.00000	100.05000	-0.35827	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	12.00000	100.05000	-0.31509	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	13.20000	100.05000	-0.17105	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	13.20000	100.05000	-0.19246	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	13.20000	100.05000	-0.21666	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	13.20000	100.05000	-0.24409	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	13.20000	100.05000	-0.27530	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	13.20000	100.05000	-0.31094	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	13.20000	100.05000	-0.35187	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	13.20000	100.05000	-0.39913	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	13.20000	100.05000	-0.45407	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	13.20000	100.05000	-0.51846	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	13.20000	100.05000	-0.59462	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	13.20000	100.05000	-0.68570	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	13.20000	100.05000	-0.79601	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	13.20000	100.05000	-0.93156	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	13.20000	100.05000	-1.10105	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	13.20000	100.05000	-1.31734	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	13.20000	100.05000	-1.60034	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	13.20000	100.05000	-1.98276	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	13.20000	100.05000	-2.52351	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	13.20000	100.05000	-3.34664	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	13.20000	100.05000	-4.89913	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	13.20000	100.05000	-7.72560	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	13.20000	100.05000	-10.14249	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	13.20000	100.05000	-11.12329	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	13.20000	100.05000	-11.64601	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	13.20000	100.05000	-11.89879	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	13.20000	100.05000	-11.95133	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	13.20000	100.05000	-11.82371	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	13.20000	100.05000	-11.49898	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	13.20000	100.05000	-10.90771	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	13.20000	100.05000	-9.85188	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	13.20000	100.05000	-7.20496	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	13.20000	100.05000	-4.51080	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	13.20000	100.05000	-3.04996	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	13.20000	100.05000	-2.26047	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	13.20000	100.05000	-1.74755	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	13.20000	100.05000	-1.39086	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	13.20000	100.05000	-1.13185	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	13.20000	100.05000	-0.93760	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	13.20000	100.05000	-0.78800	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	13.20000	100.05000	-0.67012	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	13.20000	100.05000	-0.57538	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	13.20000	100.05000	-0.49790	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	13.20000	100.05000	-0.43358	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	13.20000	100.05000	-0.37947	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	13.20000	100.05000	-0.33345	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	14.40000	100.05000	-0.18040	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	14.40000	100.05000	-0.20318	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	14.40000	100.05000	-0.22898	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	14.40000	100.05000	-0.25827	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	14.40000	100.05000	-0.29165	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	14.40000	100.05000	-0.32986	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	14.40000	100.05000	-0.37381	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	14.40000	100.05000	-0.42468	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	14.40000	100.05000	-0.48395	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	14.40000	100.05000	-0.55358	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	14.40000	100.05000	-0.63615	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	14.40000	100.05000	-0.73517	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	14.40000	100.05000	-0.85543	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	14.40000	100.05000	-1.00368	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	14.40000	100.05000	-1.18960	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	14.40000	100.05000	-1.42755	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	14.40000	100.05000	-1.73959	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	14.40000	100.05000	-2.16152	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	14.40000	100.05000	-2.75637	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	14.40000	100.05000	-3.65281	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	14.40000	100.05000	-5.30016	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	14.40000	100.05000	-8.23615	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	14.40000	100.05000					



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	14.00000	15.60000	100.05000	-1.26974	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	15.60000	100.05000	-1.52522	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	15.60000	100.05000	-1.85982	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	15.60000	100.05000	-2.31099	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	15.60000	100.05000	-2.94369	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	15.60000	100.05000	-3.88817	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	15.60000	100.05000	-5.59336	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	15.60000	100.05000	-8.59217	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	15.60000	100.05000	-11.17081	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	15.60000	100.05000	-12.27195	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	15.60000	100.05000	-12.86041	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	15.60000	100.05000	-13.12505	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	15.60000	100.05000	-13.14210	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	15.60000	100.05000	-12.93970	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	15.60000	100.05000	-12.50752	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	15.60000	100.05000	-11.78034	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	15.60000	100.05000	-10.56492	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	15.60000	100.05000	-7.74858	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	15.60000	100.05000	-4.90139	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	15.60000	100.05000	-3.32460	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	15.60000	100.05000	-2.45736	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	15.60000	100.05000	-1.89510	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	15.60000	100.05000	-1.50713	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	15.60000	100.05000	-1.22749	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	15.60000	100.05000	-1.01872	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	15.60000	100.05000	-0.85817	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	15.60000	100.05000	-0.73152	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	15.60000	100.05000	-0.62945	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	15.60000	100.05000	-0.54566	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	15.60000	100.05000	-0.47580	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	15.60000	100.05000	-0.41681	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	15.60000	100.05000	-0.36647	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	16.80000	100.05000	-0.19815	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	16.80000	100.05000	-0.22354	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	16.80000	100.05000	-0.25236	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	16.80000	100.05000	-0.28517	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	16.80000	100.05000	-0.32265	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	16.80000	100.05000	-0.36565	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	16.80000	100.05000	-0.41522	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	16.80000	100.05000	-0.47271	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	16.80000	100.05000	-0.53982	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	16.80000	100.05000	-0.61878	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	16.80000	100.05000	-0.71253	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	16.80000	100.05000	-0.82503	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	16.80000	100.05000	-0.96167	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	16.80000	100.05000	-1.12999	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	16.80000	100.05000	-1.34072	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	16.80000	100.05000	-1.60962	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	16.80000	100.05000	-1.96059	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	16.80000	100.05000	-2.43191	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	16.80000	100.05000	-3.08982	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	16.80000	100.05000	-4.06670	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	16.80000	100.05000	-5.81385	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	16.80000	100.05000	-8.86286	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	16.80000	100.05000	-11.48994	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	16.80000	100.05000	-12.62244	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	16.80000	100.05000	-13.21344	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	16.80000	100.05000	-13.44788	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	16.80000	100.05000	-13.40647	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	16.80000	100.05000	-13.12850	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	16.80000	100.05000	-12.61600	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	16.80000	100.05000	-11.81282	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	16.80000	100.05000	-10.53366	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	16.80000	100.05000	-7.67629	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	16.80000	100.05000	-4.81869	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	16.80000	100.05000	-3.25674	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	16.80000	100.05000	-2.41441	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	16.80000	100.05000	-1.87531	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	16.80000	100.05000	-1.50444	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	16.80000	100.05000	-1.23589	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	16.80000	100.05000	-1.03361	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	16.80000	100.05000	-0.87637	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	16.80000	100.05000	-0.75097	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	16.80000	100.05000	-0.64886	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	16.80000	100.05000	-0.56427	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	16.80000	100.05000	-0.49320	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	16.80000	100.05000	-0.43281	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	16.80000	100.05000	-0.38100	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	18.00000	100.05000	-0.20639	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	18.00000	100.05000	-0.23300	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	18.00000	100.05000	-0.26322	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	18.00000	100.05000	-0.29765	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	18.00000	100.05000	-0.33701	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	18.00000	100.05000	-0.38220	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	18.00000	100.05000	-0.43432	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	18.00000	100.05000	-0.49476	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	18.00000	100.05000	-0.56532	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	18.00000	100.05000	-0.64831	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	18.00000	100.05000	-0.74676	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	18.00000	100.05000	-0.86474	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	18.00000	100.05000	-1.00776	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	18.00000	100.05000	-1.18348	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	18.00000	100.05000	-1.40270	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	18.00000	100.05000	-1.68117	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	18.00000	100.05000	-2.04268	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	18.00000	100.05000	-2.52518	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	18.00000	100.05000	-3.19496	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	18.00000	100.05000	-4.18758	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	18.00000	100.05000	-5.96798	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	18.00000	100.05000	-9.08541	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	18.00000	100.05000	-11.79597	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	18.00000	100.05000	-12.97886	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	18.00000	100.05000	-13.56168	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	18.00000	100.05000	-13.72232				



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	17.00000	19.20000	100.05000	-2.59254	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	19.20000	100.05000	-3.25442	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	19.20000	100.05000	-4.21621	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	19.20000	100.05000	-5.95290	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	19.20000	100.05000	-9.24123	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	19.20000	100.05000	-12.25323	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	19.20000	100.05000	-13.57580	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	19.20000	100.05000	-14.14879	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	19.20000	100.05000	-14.14624	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	19.20000	100.05000	-13.61494	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	19.20000	100.05000	-12.77710	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	19.20000	100.05000	-11.85029	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	19.20000	100.05000	-10.71958	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	19.20000	100.05000	-9.11513	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	19.20000	100.05000	-5.94953	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	19.20000	100.05000	-3.34300	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	19.20000	100.05000	-2.39094	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	19.20000	100.05000	-1.94455	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	19.20000	100.05000	-1.62787	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	19.20000	100.05000	-1.38185	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	19.20000	100.05000	-1.18397	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	19.20000	100.05000	-1.02161	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	19.20000	100.05000	-0.88649	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	19.20000	100.05000	-0.77277	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	19.20000	100.05000	-0.67617	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	19.20000	100.05000	-0.59347	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	19.20000	100.05000	-0.52221	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	19.20000	100.05000	-0.46046	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	19.20000	100.05000	-0.40671	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	20.40000	100.05000	-0.22122	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	20.40000	100.05000	-0.25002	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	20.40000	100.05000	-0.28278	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	20.40000	100.05000	-0.32014	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	20.40000	100.05000	-0.36289	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	20.40000	100.05000	-0.41198	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	20.40000	100.05000	-0.46862	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	20.40000	100.05000	-0.53427	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	20.40000	100.05000	-0.61082	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	20.40000	100.05000	-0.70069	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	20.40000	100.05000	-0.80700	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	20.40000	100.05000	-0.93387	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	20.40000	100.05000	-1.08683	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	20.40000	100.05000	-1.27339	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	20.40000	100.05000	-1.50393	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	20.40000	100.05000	-1.79311	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	20.40000	100.05000	-2.16200	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	20.40000	100.05000	-2.64166	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	20.40000	100.05000	-3.27790	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	20.40000	100.05000	-4.12670	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	20.40000	100.05000	-5.01531	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	20.40000	100.05000	-5.98543	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	20.40000	100.05000	-12.87224	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	20.40000	100.05000	-14.48082	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	20.40000	100.05000	-15.04978	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	20.40000	100.05000	-14.77602	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	20.40000	100.05000	-13.05145	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	20.40000	100.05000	-10.76090	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	20.40000	100.05000	-9.40142	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	20.40000	100.05000	-7.99078	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	20.40000	100.05000	-5.93762	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	20.40000	100.05000	-0.61624	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	20.40000	100.05000	0.45656	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	20.40000	100.05000	-1.45872	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	20.40000	100.05000	-1.55413	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	20.40000	100.05000	-1.44219	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	20.40000	100.05000	-1.29210	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	20.40000	100.05000	-1.14350	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	20.40000	100.05000	-1.00750	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	20.40000	100.05000	-0.88659	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	20.40000	100.05000	-0.78033	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	20.40000	100.05000	-0.68738	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	20.40000	100.05000	-0.60615	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	20.40000	100.05000	-0.53512	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	20.40000	100.05000	-0.47292	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	20.40000	100.05000	-0.41836	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	21.60000	100.05000	-0.22767	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	21.60000	100.05000	-0.25744	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	21.60000	100.05000	-0.29131	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	21.60000	100.05000	-0.32997	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	21.60000	100.05000	-0.37422	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	21.60000	100.05000	-0.42501	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	21.60000	100.05000	-0.48362	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	21.60000	100.05000	-0.55155	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	21.60000	100.05000	-0.63071	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	21.60000	100.05000	-0.72353	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	21.60000	100.05000	-0.83318	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	21.60000	100.05000	-0.96379	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	21.60000	100.05000	-1.12084	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	21.60000	100.05000	-1.31173	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	21.60000	100.05000	-1.54660	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	21.60000	100.05000	-1.83951	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	21.60000	100.05000	-2.21023	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	21.60000	100.05000	-2.68650	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	21.60000	100.05000	-3.30489	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	21.60000	100.05000	-4.09135	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	21.60000	100.05000	-4.79918	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	21.60000	100.05000	-8.64984	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	21.60000	100.05000	-13.50731	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	21.60000	100.05000	-15.31358	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	21.60000	100.05000	-15.88223	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	21.60000	100.05000	-15.41366	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	21.60000	100.05000	-13.13972	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	21.60000	100.05000	-10.21707	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	21.60000	100.05000	-8.53394				



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	20.00000	22.80000	100.05000	-4.86964	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	22.80000	100.05000	-8.80541	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	22.80000	100.05000	-13.78433	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	22.80000	100.05000	-15.67066	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	22.80000	100.05000	-16.24893	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	22.80000	100.05000	-15.71151	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	22.80000	100.05000	-13.29443	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	22.80000	100.05000	-10.20218	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	22.80000	100.05000	-8.37273	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	22.80000	100.05000	-6.60540	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	22.80000	100.05000	-4.13154	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	22.80000	100.05000	1.91496	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	22.80000	100.05000	2.53732	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	22.80000	100.05000	-0.49181	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	22.80000	100.05000	-1.09255	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	22.80000	100.05000	-1.22315	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	22.80000	100.05000	-1.19540	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	22.80000	100.05000	-1.11016	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	22.80000	100.05000	-1.00711	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	22.80000	100.05000	-0.90291	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	22.80000	100.05000	-0.80449	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	22.80000	100.05000	-0.71448	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	22.80000	100.05000	-0.63351	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	22.80000	100.05000	-0.56130	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	22.80000	100.05000	-0.49722	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	22.80000	100.05000	-0.44049	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	24.00000	100.05000	-0.23832	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	24.00000	100.05000	-0.26972	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	24.00000	100.05000	-0.30550	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	24.00000	100.05000	-0.34635	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	24.00000	100.05000	-0.39313	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	24.00000	100.05000	-0.44690	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	24.00000	100.05000	-0.50894	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	24.00000	100.05000	-0.58082	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	24.00000	100.05000	-0.66454	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	24.00000	100.05000	-0.76261	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	24.00000	100.05000	-0.87825	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	24.00000	100.05000	-1.01565	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	24.00000	100.05000	-1.18032	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	24.00000	100.05000	-1.37965	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	24.00000	100.05000	-1.62365	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	24.00000	100.05000	-1.92617	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	24.00000	100.05000	-2.30659	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	24.00000	100.05000	-2.79217	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	24.00000	100.05000	-3.41987	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	24.00000	100.05000	-4.22155	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	24.00000	100.05000	-4.97834	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	24.00000	100.05000	-8.95983	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	24.00000	100.05000	-13.99468	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	24.00000	100.05000	-15.93156	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	24.00000	100.05000	-16.54430	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	24.00000	100.05000	-16.02190	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	24.00000	100.05000	-13.60108	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	24.00000	100.05000	-10.48905	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	24.00000	100.05000	-8.62612	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	24.00000	100.05000	-6.81240	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	24.00000	100.05000	-4.28253	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	24.00000	100.05000	1.81823	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	24.00000	100.05000	2.47777	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	24.00000	100.05000	-0.53455	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	24.00000	100.05000	-1.12958	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	24.00000	100.05000	-1.25761	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	24.00000	100.05000	-1.22748	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	24.00000	100.05000	-1.13957	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	24.00000	100.05000	-1.03367	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	24.00000	100.05000	-0.92662	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	24.00000	100.05000	-0.82549	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	24.00000	100.05000	-0.73296	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	24.00000	100.05000	-0.64969	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	24.00000	100.05000	-0.57544	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	24.00000	100.05000	-0.50954	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	24.00000	100.05000	-0.45120	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	25.20000	100.05000	-0.24240	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	25.20000	100.05000	-0.27446	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	25.20000	100.05000	-0.31099	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	25.20000	100.05000	-0.35274	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	25.20000	100.05000	-0.40057	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	25.20000	100.05000	-0.45557	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	25.20000	100.05000	-0.51905	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	25.20000	100.05000	-0.59263	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	25.20000	100.05000	-0.67835	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	25.20000	100.05000	-0.77877	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	25.20000	100.05000	-0.89718	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	25.20000	100.05000	-1.03784	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	25.20000	100.05000	-1.20634	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	25.20000	100.05000	-1.41017	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	25.20000	100.05000	-1.65950	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	25.20000	100.05000	-1.96837	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	25.20000	100.05000	-2.35651	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	25.20000	100.05000	-2.85185	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	25.20000	100.05000	-3.49255	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	25.20000	100.05000	-4.31253	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	25.20000	100.05000	-5.09554	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	25.20000	100.05000	-9.11312	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	25.20000	100.05000	-14.19443	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	25.20000	100.05000	-16.18917	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	25.20000	100.05000	-16.87653	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	25.20000	100.05000	-16.45491	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	25.20000	100.05000	-14.16003	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	25.20000	100.05000	-11.16457	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	25.20000	100.05000	-9.36971	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	25.20000	100.05000	-7.56997	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	25.20000	100.05000	-5.00596	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	25.20000	100.05000	1.18197	99			



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	23.00000	26.40000	100.05000	-16.47167	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	26.40000	100.05000	-17.28439	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	26.40000	100.05000	-17.09505	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	26.40000	100.05000	-15.24388	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	26.40000	100.05000	-12.71138	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	26.40000	100.05000	-11.13679	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	26.40000	100.05000	-9.41225	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	26.40000	100.05000	-6.84177	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	26.40000	100.05000	-0.57453	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	26.40000	100.05000	0.72414	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	26.40000	100.05000	-1.52994	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	26.40000	100.05000	-1.70594	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	26.40000	100.05000	-1.60901	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	26.40000	100.05000	-1.45334	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	26.40000	100.05000	-1.29209	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	26.40000	100.05000	-1.14133	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	26.40000	100.05000	-1.00558	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	26.40000	100.05000	-0.88529	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	26.40000	100.05000	-0.77946	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	26.40000	100.05000	-0.68663	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	26.40000	100.05000	-0.60528	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	26.40000	100.05000	-0.53396	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	26.40000	100.05000	-0.47140	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	27.60000	100.05000	-0.24779	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	27.60000	100.05000	-0.28078	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	27.60000	100.05000	-0.31842	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	27.60000	100.05000	-0.36148	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	27.60000	100.05000	-0.41089	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	27.60000	100.05000	-0.46779	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	27.60000	100.05000	-0.53357	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	27.60000	100.05000	-0.60994	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	27.60000	100.05000	-0.69906	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	27.60000	100.05000	-0.80366	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	27.60000	100.05000	-0.92721	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	27.60000	100.05000	-1.07425	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	27.60000	100.05000	-1.25071	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	27.60000	100.05000	-1.46451	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	27.60000	100.05000	-1.72638	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	27.60000	100.05000	-2.05105	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	27.60000	100.05000	-2.45911	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	27.60000	100.05000	-2.97955	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	27.60000	100.05000	-3.65192	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	27.60000	100.05000	-4.51207	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	27.60000	100.05000	-5.34702	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	27.60000	100.05000	-9.43463	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	27.60000	100.05000	-14.61703	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	27.60000	100.05000	-16.77166	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	27.60000	100.05000	-17.74124	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	27.60000	100.05000	-17.90162	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	27.60000	100.05000	-17.31256	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	27.60000	100.05000	-16.26800	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	27.60000	100.05000	-15.05737	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	27.60000	100.05000	-13.44108	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	27.60000	100.05000	-10.90206	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	27.60000	100.05000	-5.47309	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	27.60000	100.05000	-2.42028	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	27.60000	100.05000	-2.44713	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	27.60000	100.05000	-2.15949	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	27.60000	100.05000	-1.86846	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	27.60000	100.05000	-1.61301	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	27.60000	100.05000	-1.39528	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	27.60000	100.05000	-1.21063	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	27.60000	100.05000	-1.05366	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	27.60000	100.05000	-0.91961	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	27.60000	100.05000	-0.80459	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	27.60000	100.05000	-0.70544	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	27.60000	100.05000	-0.61964	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	27.60000	100.05000	-0.54513	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	27.60000	100.05000	-0.48021	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	28.80000	100.05000	-0.24899	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	28.80000	100.05000	-0.28224	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	28.80000	100.05000	-0.32020	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	28.80000	100.05000	-0.36365	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	28.80000	100.05000	-0.41356	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	28.80000	100.05000	-0.47109	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	28.80000	100.05000	-0.53767	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	28.80000	100.05000	-0.61507	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	28.80000	100.05000	-0.70552	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	28.80000	100.05000	-0.81185	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	28.80000	100.05000	-0.93771	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	28.80000	100.05000	-1.08780	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	28.80000	100.05000	-1.26835	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	28.80000	100.05000	-1.48765	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	28.80000	100.05000	-1.75691	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	28.80000	100.05000	-2.09148	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	28.80000	100.05000	-2.51262	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	28.80000	100.05000	-3.04988	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	28.80000	100.05000	-3.74300	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	28.80000	100.05000	-4.62738	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	28.80000	100.05000	-5.48954	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	28.80000	100.05000	-9.60908	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	28.80000	100.05000	-14.83580	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	28.80000	100.05000	-17.06436	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	28.80000	100.05000	-18.17107	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	28.80000	100.05000	-18.60110	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	28.80000	100.05000	-18.53193	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	28.80000	100.05000	-18.02744	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	28.80000	100.05000	-17.06457	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	28.80000	100.05000	-15.50571	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	28.80000	100.05000	-12.90967	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	28.80000	100.05000	-7.36261	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	28.80000	100.05000	-3.78158	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	28.80000	100.05000	-3.17788	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	28.80000	100.05000	-2.57242	99			



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	26.00000	30.00000	100.05000	-19.55168	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	30.00000	100.05000	-19.62083	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	30.00000	100.05000	-18.78374	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	30.00000	100.05000	-17.17532	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	30.00000	100.05000	-14.03908	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	30.00000	100.05000	-8.22109	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	30.00000	100.05000	-4.46016	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	30.00000	100.05000	-3.65366	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	30.00000	100.05000	-2.88339	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	30.00000	100.05000	-2.31735	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	30.00000	100.05000	-1.89996	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	30.00000	100.05000	-1.58365	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	30.00000	100.05000	-1.33717	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	30.00000	100.05000	-1.14041	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	30.00000	100.05000	-0.98019	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	30.00000	100.05000	-0.84760	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	30.00000	100.05000	-0.73645	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	30.00000	100.05000	-0.64231	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	30.00000	100.05000	-0.56191	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	30.00000	100.05000	-0.49278	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	31.20000	100.05000	-0.24822	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	31.20000	100.05000	-0.28150	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	31.20000	100.05000	-0.31955	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	31.20000	100.05000	-0.36318	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	31.20000	100.05000	-0.41337	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	31.20000	100.05000	-0.47135	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	31.20000	100.05000	-0.53862	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	31.20000	100.05000	-0.61708	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	31.20000	100.05000	-0.70911	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	31.20000	100.05000	-0.81780	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	31.20000	100.05000	-0.94715	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	31.20000	100.05000	-1.10243	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	31.20000	100.05000	-1.29069	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	31.20000	100.05000	-1.52146	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	31.20000	100.05000	-1.80781	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	31.20000	100.05000	-2.16788	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	31.20000	100.05000	-2.62702	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	31.20000	100.05000	-3.22038	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	31.20000	100.05000	-3.99370	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	31.20000	100.05000	-4.98205	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	31.20000	100.05000	-5.94495	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	31.20000	100.05000	-10.10768	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	31.20000	100.05000	-15.32973	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	31.20000	100.05000	-17.58242	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	31.20000	100.05000	-18.80212	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	31.20000	100.05000	-19.49627	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	31.20000	100.05000	-20.13922	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	31.20000	100.05000	-20.44110	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	31.20000	100.05000	-19.59286	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	31.20000	100.05000	-17.81132	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	31.20000	100.05000	-14.42821	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	31.20000	100.05000	-8.71356	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	31.20000	100.05000	-4.98295	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	31.20000	100.05000	-3.99492	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	31.20000	100.05000	-0.09916	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	31.20000	100.05000	-2.45820	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	31.20000	100.05000	-1.99372	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	31.20000	100.05000	-1.64677	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	31.20000	100.05000	-1.37997	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	31.20000	100.05000	-1.16957	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	31.20000	100.05000	-1.00009	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	31.20000	100.05000	-0.86119	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	31.20000	100.05000	-0.74570	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	31.20000	100.05000	-0.64857	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	31.20000	100.05000	-0.56610	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	31.20000	100.05000	-0.49553	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	32.40000	100.05000	-0.24619	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	32.40000	100.05000	-0.27923	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	32.40000	100.05000	-0.31703	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	32.40000	100.05000	-0.36039	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	32.40000	100.05000	-0.41031	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	32.40000	100.05000	-0.46804	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	32.40000	100.05000	-0.53510	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	32.40000	100.05000	-0.61344	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	32.40000	100.05000	-0.70553	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	32.40000	100.05000	-0.81455	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	32.40000	100.05000	-0.94472	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	32.40000	100.05000	-1.10161	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	32.40000	100.05000	-1.29279	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	32.40000	100.05000	-1.52861	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	32.40000	100.05000	-1.82359	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	32.40000	100.05000	-2.19837	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	32.40000	100.05000	-2.68294	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	32.40000	100.05000	-3.32175	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	32.40000	100.05000	-4.18103	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	32.40000	100.05000	-5.34449	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	32.40000	100.05000	-6.63052	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	32.40000	100.05000	-10.80135	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	32.40000	100.05000	-15.71847	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	32.40000	100.05000	-17.82044	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	32.40000	100.05000	-18.98818	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	32.40000	100.05000	-19.68222	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	32.40000	100.05000	-20.34504	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	32.40000	100.05000	-20.62755	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	32.40000	100.05000	-19.58925	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	32.40000	100.05000	-16.90014	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	32.40000	100.05000	-13.16816	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	32.40000	100.05000	-9.50365	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	32.40000	100.05000	-6.23284	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	32.40000	100.05000	-4.24848	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	32.40000	100.05000	-3.22001	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	32.40000	100.05000	-2.53441	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	32.40000	100.05000	-2.04512	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	32.40000	100.05000	-1.68173	99.91			



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	29.00000	33.60000	100.05000	-16.26961	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	33.60000	100.05000	-11.38467	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	33.60000	100.05000	-7.95280	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	33.60000	100.05000	-5.75302	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	33.60000	100.05000	-4.21812	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	33.60000	100.05000	-3.22545	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	33.60000	100.05000	-2.54444	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	33.60000	100.05000	-2.05378	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	33.60000	100.05000	-1.68761	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	33.60000	100.05000	-1.40664	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	33.60000	100.05000	-1.18599	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	33.60000	100.05000	-1.00927	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	33.60000	100.05000	-0.86537	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	33.60000	100.05000	-0.74653	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	33.60000	100.05000	-0.64721	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	33.60000	100.05000	-0.56337	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	33.60000	100.05000	-0.49202	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	34.80000	100.05000	-0.23878	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	34.80000	100.05000	-0.27080	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	34.80000	100.05000	-0.30743	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	34.80000	100.05000	-0.34948	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	34.80000	100.05000	-0.39794	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	34.80000	100.05000	-0.45404	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	34.80000	100.05000	-0.51932	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	34.80000	100.05000	-0.59576	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	34.80000	100.05000	-0.68590	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	34.80000	100.05000	-0.79308	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	34.80000	100.05000	-0.92176	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	34.80000	100.05000	-1.07801	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	34.80000	100.05000	-1.27020	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	34.80000	100.05000	-1.51021	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	34.80000	100.05000	-1.81523	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	34.80000	100.05000	-2.21100	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	34.80000	100.05000	-2.73750	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	34.80000	100.05000	-3.46100	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	34.80000	100.05000	-4.50309	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	34.80000	100.05000	-6.13604	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	34.80000	100.05000	-9.30391	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	34.80000	100.05000	-13.46018	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	34.80000	100.05000	-16.46861	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	34.80000	100.05000	-18.08003	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	34.80000	100.05000	-19.05063	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	34.80000	100.05000	-19.64617	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	34.80000	100.05000	-20.23539	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	34.80000	100.05000	-20.40692	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	34.80000	100.05000	-19.13171	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	34.80000	100.05000	-15.88262	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	34.80000	100.05000	-10.74746	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	34.80000	100.05000	-7.28449	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	34.80000	100.05000	-5.34936	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	34.80000	100.05000	-4.05199	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	34.80000	100.05000	-3.14694	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	34.80000	100.05000	-2.49990	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	34.80000	100.05000	-2.02471	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	34.80000	100.05000	-1.66649	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	34.80000	100.05000	-1.39002	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	34.80000	100.05000	-1.17216	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	34.80000	100.05000	-0.99736	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	34.80000	100.05000	-0.85489	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	34.80000	100.05000	-0.73720	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	34.80000	100.05000	-0.63887	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	34.80000	100.05000	-0.55592	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	34.80000	100.05000	-0.48535	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	36.00000	100.05000	-0.23345	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	36.00000	100.05000	-0.26468	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	36.00000	100.05000	-0.30039	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	36.00000	100.05000	-0.34138	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	36.00000	100.05000	-0.38861	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	36.00000	100.05000	-0.44328	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	36.00000	100.05000	-0.50691	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	36.00000	100.05000	-0.58145	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	36.00000	100.05000	-0.66941	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	36.00000	100.05000	-0.77411	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	36.00000	100.05000	-0.90001	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	36.00000	100.05000	-1.05322	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	36.00000	100.05000	-1.24226	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	36.00000	100.05000	-1.47929	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	36.00000	100.05000	-1.78212	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	36.00000	100.05000	-2.17762	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	36.00000	100.05000	-2.70797	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	36.00000	100.05000	-3.44308	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	36.00000	100.05000	-4.50979	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	36.00000	100.05000	-6.18241	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	36.00000	100.05000	-9.38341	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	36.00000	100.05000	-13.51241	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	36.00000	100.05000	-16.43536	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	36.00000	100.05000	-17.96068	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	36.00000	100.05000	-18.86809	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	36.00000	100.05000	-19.42098	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	36.00000	100.05000	-19.98018	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	36.00000	100.05000	-20.12618	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	36.00000	100.05000	-18.82316	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	36.00000	100.05000	-15.54215	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	36.00000	100.05000	-10.38614	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	36.00000	100.05000	-6.94850	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	36.00000	100.05000	-5.08813	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	36.00000	100.05000	-3.87298	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	36.00000	100.05000	-3.02737	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	36.00000	100.05000	-2.41749	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	36.00000	100.05000	-1.96539	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	36.00000	100.05000	-1.62204	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	36.00000	100.05000	-1.35553	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	36.00000	100.05000	-1.14463	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	36.00000	100.05000	-0.97486				



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	32.00000	37.20000	100.05000	-4.83139	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	37.20000	100.05000	-3.67510	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	37.20000	100.05000	-2.87894	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	37.20000	100.05000	-2.30659	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	37.20000	100.05000	-1.88170	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	37.20000	100.05000	-1.55785	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	37.20000	100.05000	-1.30541	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	37.20000	100.05000	-1.10480	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	37.20000	100.05000	-0.94270	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	37.20000	100.05000	-0.80982	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	37.20000	100.05000	-0.69957	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	37.20000	100.05000	-0.60711	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	37.20000	100.05000	-0.52889	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	37.20000	100.05000	-0.46220	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	38.40000	100.05000	-0.21978	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	38.40000	100.05000	-0.24889	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	38.40000	100.05000	-0.28213	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	38.40000	100.05000	-0.32021	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	38.40000	100.05000	-0.36400	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	38.40000	100.05000	-0.41460	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	38.40000	100.05000	-0.47339	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	38.40000	100.05000	-0.54213	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	38.40000	100.05000	-0.62312	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	38.40000	100.05000	-0.71940	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	38.40000	100.05000	-0.83505	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	38.40000	100.05000	-0.97571	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	38.40000	100.05000	-1.14928	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	38.40000	100.05000	-1.36711	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	38.40000	100.05000	-1.64597	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	38.40000	100.05000	-2.01136	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	38.40000	100.05000	-2.50363	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	38.40000	100.05000	-3.19021	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	38.40000	100.05000	-4.19410	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	38.40000	100.05000	-5.78350	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	38.40000	100.05000	-8.87303	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	38.40000	100.05000	-12.86084	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	38.40000	100.05000	-15.62953	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	38.40000	100.05000	-17.01503	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	38.40000	100.05000	-17.81662	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	38.40000	100.05000	-18.30503	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	38.40000	100.05000	-18.84237	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	38.40000	100.05000	-19.00887	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	38.40000	100.05000	-17.76689	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	38.40000	100.05000	-14.58187	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	38.40000	100.05000	-9.54770	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	38.40000	100.05000	-6.24772	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	38.40000	100.05000	-4.52787	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	38.40000	100.05000	-3.44071	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	38.40000	100.05000	-2.70000	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	38.40000	100.05000	-2.17022	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	38.40000	100.05000	-1.77717	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	38.40000	100.05000	-1.47689	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	38.40000	100.05000	-1.24191	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	38.40000	100.05000	-1.05433	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	38.40000	100.05000	-0.90205	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	38.40000	100.05000	-0.77670	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	38.40000	100.05000	-0.67227	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	38.40000	100.05000	-0.58441	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	38.40000	100.05000	-0.50986	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	38.40000	100.05000	-0.44613	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	39.60000	100.05000	-0.21160	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	39.60000	100.05000	-0.23942	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	39.60000	100.05000	-0.27113	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	39.60000	100.05000	-0.30740	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	39.60000	100.05000	-0.34903	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	39.60000	100.05000	-0.39705	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	39.60000	100.05000	-0.45271	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	39.60000	100.05000	-0.51764	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	39.60000	100.05000	-0.59394	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	39.60000	100.05000	-0.68439	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	39.60000	100.05000	-0.79270	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	39.60000	100.05000	-0.92397	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	39.60000	100.05000	-1.08534	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	39.60000	100.05000	-1.28704	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	39.60000	100.05000	-1.54414	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	39.60000	100.05000	-1.87960	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	39.60000	100.05000	-2.32988	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	39.60000	100.05000	-2.95674	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	39.60000	100.05000	-3.87547	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	39.60000	100.05000	-5.34589	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	39.60000	100.05000	-8.27888	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	39.60000	100.05000	-12.08523	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	39.60000	100.05000	-14.68398	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	39.60000	100.05000	-15.94180	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	39.60000	100.05000	-16.66172	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	39.60000	100.05000	-17.10949	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	39.60000	100.05000	-17.64744	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	39.60000	100.05000	-17.86455	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	39.60000	100.05000	-16.73455	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	39.60000	100.05000	-13.71675	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	39.60000	100.05000	-8.86848	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	39.60000	100.05000	-5.73452	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	39.60000	100.05000	-4.14609	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	39.60000	100.05000	-3.15699	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	39.60000	100.05000	-2.48779	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	39.60000	100.05000	-2.00987	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	39.60000	100.05000	-1.65453	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	39.60000	100.05000	-1.38187	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	39.60000	100.05000	-1.16732	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	39.60000	100.05000	-0.99509	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	39.60000	100.05000	-0.85430	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	39.60000	100.05000	-0.73784	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	39.60000	100.05000	-0.64033	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	39.60000	100.05000					



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	35.00000	40.80000	100.05000	-1.82899	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	40.80000	100.05000	-1.51734	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	40.80000	100.05000	-1.27591	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	40.80000	100.05000	-1.08416	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	40.80000	100.05000	-0.92884	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	40.80000	100.05000	-0.80100	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	40.80000	100.05000	-0.69443	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	40.80000	100.05000	-0.60464	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	40.80000	100.05000	-0.52832	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	40.80000	100.05000	-0.46298	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	40.80000	100.05000	-0.40669	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	42.00000	100.05000	-0.19310	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	42.00000	100.05000	-0.21797	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	42.00000	100.05000	-0.24620	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	42.00000	100.05000	-0.27831	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	42.00000	100.05000	-0.31498	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	42.00000	100.05000	-0.35699	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	42.00000	100.05000	-0.40536	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	42.00000	100.05000	-0.46134	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	42.00000	100.05000	-0.52652	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	42.00000	100.05000	-0.60298	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	42.00000	100.05000	-0.69344	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	42.00000	100.05000	-0.80153	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	42.00000	100.05000	-0.93224	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	42.00000	100.05000	-1.09245	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	42.00000	100.05000	-1.29203	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	42.00000	100.05000	-1.54540	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	42.00000	100.05000	-1.87463	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	42.00000	100.05000	-2.31560	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	42.00000	100.05000	-2.93330	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	42.00000	100.05000	-3.87671	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	42.00000	100.05000	-5.77622	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	42.00000	100.05000	-7.80685	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	42.00000	100.05000	-8.95083	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	42.00000	100.05000	-9.65240	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	42.00000	100.05000	-10.08725	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	42.00000	100.05000	-10.36751	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	42.00000	100.05000	-10.77450	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	42.00000	100.05000	-11.03626	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	42.00000	100.05000	-10.45916	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	42.00000	100.05000	-9.19126	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	42.00000	100.05000	-6.16324	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	42.00000	100.05000	-4.12829	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	42.00000	100.05000	-3.10683	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	42.00000	100.05000	-2.44491	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	42.00000	100.05000	-1.97910	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	42.00000	100.05000	-1.63472	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	42.00000	100.05000	-1.37081	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	42.00000	100.05000	-1.16287	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	42.00000	100.05000	-0.99537	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	42.00000	100.05000	-0.85804	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	42.00000	100.05000	-0.74384	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	42.00000	100.05000	-0.64777	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	42.00000	100.05000	-0.56620	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	42.00000	100.05000	-0.49640	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	42.00000	100.05000	-0.43628	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	42.00000	100.05000	-0.38422	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	43.20000	100.05000	-0.18303	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	43.20000	100.05000	-0.20631	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	43.20000	100.05000	-0.23264	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	43.20000	100.05000	-0.26251	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	43.20000	100.05000	-0.29647	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	43.20000	100.05000	-0.33523	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	43.20000	100.05000	-0.37964	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	43.20000	100.05000	-0.43075	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	43.20000	100.05000	-0.48989	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	43.20000	100.05000	-0.55874	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	43.20000	100.05000	-0.63949	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	43.20000	100.05000	-0.73498	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	43.20000	100.05000	-0.84899	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	43.20000	100.05000	-0.98662	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	43.20000	100.05000	-1.15482	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	43.20000	100.05000	-1.36330	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	43.20000	100.05000	-1.62574	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	43.20000	100.05000	-1.96193	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	43.20000	100.05000	-2.40100	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	43.20000	100.05000	-2.98429	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	43.20000	100.05000	-3.73746	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	43.20000	100.05000	-4.50610	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	43.20000	100.05000	-5.11198	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	43.20000	100.05000	-5.54356	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	43.20000	100.05000	-5.82669	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	43.20000	100.05000	-5.98973	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	43.20000	100.05000	-6.04438	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	43.20000	100.05000	-5.93016	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	43.20000	100.05000	-5.56355	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	43.20000	100.05000	-4.91566	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	43.20000	100.05000	-4.01494	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	43.20000	100.05000	-3.16563	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	43.20000	100.05000	-2.53088	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	43.20000	100.05000	-2.06305	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	43.20000	100.05000	-1.71025	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	43.20000	100.05000	-1.43743	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	43.20000	100.05000	-1.22153	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	43.20000	100.05000	-1.04723	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	43.20000	100.05000	-0.90410	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	43.20000	100.05000	-0.78492	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	43.20000	100.05000	-0.68454	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	43.20000	100.05000	-0.59918	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	43.20000	100.05000	-0.52602	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	43.20000	100.05000	-0.46293	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	43.20000	100.05000	-0.40821	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	43.20000	100.05000	-0.36055	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	44.40000	100.05000	-0.17261	99.912			



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [µ]
1	Grid 1	38.00000	44.40000	100.05000	-0.81347	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	44.40000	100.05000	-0.71176	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	44.40000	100.05000	-0.62479	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	44.40000	100.05000	-0.54993	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	44.40000	100.05000	-0.48511	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	44.40000	100.05000	-0.42870	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	44.40000	100.05000	-0.37940	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	44.40000	100.05000	-0.33617	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	45.60000	100.05000	-0.16197	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	45.60000	100.05000	-0.18195	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	45.60000	100.05000	-0.20439	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	45.60000	100.05000	-0.22964	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	45.60000	100.05000	-0.25810	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	45.60000	100.05000	-0.29025	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	45.60000	100.05000	-0.32666	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	45.60000	100.05000	-0.36800	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	45.60000	100.05000	-0.41511	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	45.60000	100.05000	-0.46896	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	45.60000	100.05000	-0.53078	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	45.60000	100.05000	-0.60204	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	45.60000	100.05000	-0.68455	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	45.60000	100.05000	-0.78049	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	45.60000	100.05000	-0.89246	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	45.60000	100.05000	-1.02344	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	45.60000	100.05000	-1.17651	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	45.60000	100.05000	-1.35429	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	45.60000	100.05000	-1.55750	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	45.60000	100.05000	-1.78241	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	45.60000	100.05000	-2.01799	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	45.60000	100.05000	-2.24592	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	45.60000	100.05000	-2.44617	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	45.60000	100.05000	-2.60350	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	45.60000	100.05000	-2.70904	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	45.60000	100.05000	-2.75792	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	45.60000	100.05000	-2.74761	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	45.60000	100.05000	-2.67068	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	45.60000	100.05000	-2.53087	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	45.60000	100.05000	-2.33490	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	45.60000	100.05000	-2.10169	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	45.60000	100.05000	-1.85704	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	45.60000	100.05000	-1.62357	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	45.60000	100.05000	-1.41380	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	45.60000	100.05000	-1.23121	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	45.60000	100.05000	-1.07443	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	45.60000	100.05000	-0.94024	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	45.60000	100.05000	-0.82518	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	45.60000	100.05000	-0.72615	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	45.60000	100.05000	-0.64050	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	45.60000	100.05000	-0.56610	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	45.60000	100.05000	-0.50119	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	45.60000	100.05000	-0.44435	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	45.60000	100.05000	-0.39441	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	45.60000	100.05000	-0.35041	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	46.80000	100.05000	-0.31154	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	46.80000	100.05000	-0.15124	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	46.80000	100.05000	-0.16958	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	46.80000	100.05000	-0.19010	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	46.80000	100.05000	-0.21307	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	46.80000	100.05000	-0.23884	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	46.80000	100.05000	-0.26778	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	46.80000	100.05000	-0.30035	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	46.80000	100.05000	-0.33705	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	46.80000	100.05000	-0.37851	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	46.80000	100.05000	-0.42543	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	46.80000	100.05000	-0.47867	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	46.80000	100.05000	-0.53920	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	46.80000	100.05000	-0.60815	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	46.80000	100.05000	-0.68678	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	46.80000	100.05000	-0.77644	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	46.80000	100.05000	-0.87843	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	46.80000	100.05000	-0.99374	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	46.80000	100.05000	-1.12256	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	46.80000	100.05000	-1.26353	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	46.80000	100.05000	-1.41285	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	46.80000	100.05000	-1.56366	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	46.80000	100.05000	-1.70661	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	46.80000	100.05000	-1.83166	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	46.80000	100.05000	-1.93013	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	46.80000	100.05000	-2.00574	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	46.80000	100.05000	-2.02447	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	46.80000	100.05000	-2.01404	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	46.80000	100.05000	-1.96393	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	46.80000	100.05000	-1.87623	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	46.80000	100.05000	-1.75677	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	46.80000	100.05000	-1.61520	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	46.80000	100.05000	-1.46330	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	46.80000	100.05000	-1.31196	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	46.80000	100.05000	-1.16886	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	46.80000	100.05000	-1.03805	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	46.80000	100.05000	-0.92081	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	46.80000	100.05000	-0.81682	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	46.80000	100.05000	-0.72502	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	46.80000	100.05000	-0.64409	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	46.80000	100.05000	-0.57271	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	46.80000	100.05000	-0.50968	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	46.80000	100.05000	-0.45393	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	46.80000	100.05000	-0.40454	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	46.80000	100.05000	-0.36071	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	46.80000	100.05000	-0.32175	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	48.00000	100.05000	-0.28707	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	48.00000	100.05000	-0.14056	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	48.00000	100.05000	-0.15729	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	48.00000	100.05000	-0.17593	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	48.00000	100.05000	-0.19671	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	48.00000	100.05000	-0.21989	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	48.00000	100.05000	-0.24578	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	48.00000	100.05000	-0.27470	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	48.00000	100.05000	-0.30704	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	48.00000	100.05000	-0.34326	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	48.00000	100.05000	-0.38384	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	48.00000	100.05000	-0.42934	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	48.00000	100.05000	-0.48037	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	48.00000	100.05000	-0.53758	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	48.00000	100.05000	-0.60162	99.912	0.0	0.0	0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	41.00000	48.00000	100.05000	-0.40889	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	48.00000	100.05000	-0.36629	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	48.00000	100.05000	-0.32809	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	48.00000	100.05000	-0.29385	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	48.00000	100.05000	-0.26313	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	49.20000	100.05000	-0.13003	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	49.20000	100.05000	-0.14522	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	49.20000	100.05000	-0.16207	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	49.20000	100.05000	-0.18075	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	49.20000	100.05000	-0.20148	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	49.20000	100.05000	-0.22449	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	49.20000	100.05000	-0.25002	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	49.20000	100.05000	-0.27836	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	49.20000	100.05000	-0.30980	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	49.20000	100.05000	-0.34469	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	49.20000	100.05000	-0.38335	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	49.20000	100.05000	-0.42616	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	49.20000	100.05000	-0.47343	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	49.20000	100.05000	-0.52546	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	49.20000	100.05000	-0.58240	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	49.20000	100.05000	-0.64424	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	49.20000	100.05000	-0.71061	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	49.20000	100.05000	-0.78071	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	49.20000	100.05000	-0.85310	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	49.20000	100.05000	-0.92569	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	49.20000	100.05000	-0.99870	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	49.20000	100.05000	-1.05991	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	49.20000	100.05000	-1.11498	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	49.20000	100.05000	-1.15786	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	49.20000	100.05000	-1.18608	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	49.20000	100.05000	-1.19798	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	49.20000	100.05000	-1.19281	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	49.20000	100.05000	-1.17082	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	49.20000	100.05000	-1.13326	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	49.20000	100.05000	-1.08240	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	49.20000	100.05000	-1.02129	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	49.20000	100.05000	-0.95338	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	49.20000	100.05000	-0.88209	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	49.20000	100.05000	-0.81034	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	49.20000	100.05000	-0.74038	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	49.20000	100.05000	-0.67369	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	49.20000	100.05000	-0.61117	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	49.20000	100.05000	-0.55322	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	49.20000	100.05000	-0.49995	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	49.20000	100.05000	-0.45124	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	49.20000	100.05000	-0.40688	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	49.20000	100.05000	-0.36658	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	49.20000	100.05000	-0.33005	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	49.20000	100.05000	-0.29698	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	49.20000	100.05000	-0.26706	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	49.20000	100.05000	-0.24001	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	50.40000	100.05000	-0.11975	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	50.40000	100.05000	-0.13347	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	50.40000	100.05000	-0.14862	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	50.40000	100.05000	-0.16534	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	50.40000	100.05000	-0.18379	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	50.40000	100.05000	-0.20413	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	50.40000	100.05000	-0.22656	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	50.40000	100.05000	-0.25125	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	50.40000	100.05000	-0.27843	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	50.40000	100.05000	-0.30828	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	50.40000	100.05000	-0.34101	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	50.40000	100.05000	-0.37681	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	50.40000	100.05000	-0.41580	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	50.40000	100.05000	-0.45806	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	50.40000	100.05000	-0.50354	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	50.40000	100.05000	-0.55202	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	50.40000	100.05000	-0.60304	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	50.40000	100.05000	-0.65585	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	50.40000	100.05000	-0.70932	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	50.40000	100.05000	-0.76194	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	50.40000	100.05000	-0.81188	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	50.40000	100.05000	-0.85711	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	50.40000	100.05000	-0.89555	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	50.40000	100.05000	-0.92530	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	50.40000	100.05000	-0.94482	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	50.40000	100.05000	-0.95310	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	50.40000	100.05000	-0.94966	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	50.40000	100.05000	-0.93469	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	50.40000	100.05000	-0.90902	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	50.40000	100.05000	-0.87404	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	50.40000	100.05000	-0.83158	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	50.40000	100.05000	-0.78372	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	50.40000	100.05000	-0.73257	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	50.40000	100.05000	-0.68001	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	50.40000	100.05000	-0.62762	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	50.40000	100.05000	-0.57659	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	50.40000	100.05000	-0.52775	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	50.40000	100.05000	-0.48161	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	50.40000	100.05000	-0.43844	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	50.40000	100.05000	-0.39836	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	50.40000	100.05000	-0.36135	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	50.40000	100.05000	-0.32733	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	50.40000	100.05000	-0.29614	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	50.40000	100.05000	-0.26763	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	50.40000	100.05000	-0.24162	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	50.40000	100.05000	-0.21793	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	51.60000	100.05000	-0.10981	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	51.60000	100.05000	-0.12215	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	51.60000	100.05000	-0.13571	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	51.60000	100.05000	-0.15060	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	51.60000	100.05000	-0.16694	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	51.60000	100.05000	-0.18485	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	51.60000	100.05000	-0.20447	99.912	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [µ]
1	Grid 1	44.00000	51.60000	100.05000	-0.21772	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	51.60000	100.05000	-0.19705	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	52.80000	100.05000	-0.10027	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	52.80000	100.05000	-0.11132	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	52.80000	100.05000	-0.12341	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	52.80000	100.05000	-0.13562	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	52.80000	100.05000	-0.15104	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	52.80000	100.05000	-0.16675	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	52.80000	100.05000	-0.18384	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	52.80000	100.05000	-0.20240	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	52.80000	100.05000	-0.22208	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	52.80000	100.05000	-0.24416	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	52.80000	100.05000	-0.26747	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	52.80000	100.05000	-0.29241	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	52.80000	100.05000	-0.31895	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	52.80000	100.05000	-0.34689	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	52.80000	100.05000	-0.37635	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	52.80000	100.05000	-0.40675	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	52.80000	100.05000	-0.43780	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	52.80000	100.05000	-0.46889	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	52.80000	100.05000	-0.49966	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	52.80000	100.05000	-0.52904	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	52.80000	100.05000	-0.55627	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	52.80000	100.05000	-0.58046	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	52.80000	100.05000	-0.60073	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	52.80000	100.05000	-0.61623	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	52.80000	100.05000	-0.62647	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	52.80000	100.05000	-0.63090	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	52.80000	100.05000	-0.62936	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	52.80000	100.05000	-0.62194	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	52.80000	100.05000	-0.60897	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	52.80000	100.05000	-0.59101	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	52.80000	100.05000	-0.56880	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	52.80000	100.05000	-0.54318	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	52.80000	100.05000	-0.51504	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	52.80000	100.05000	-0.48566	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	52.80000	100.05000	-0.45463	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	52.80000	100.05000	-0.42382	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	52.80000	100.05000	-0.39339	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	52.80000	100.05000	-0.36378	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	52.80000	100.05000	-0.33529	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	52.80000	100.05000	-0.30815	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	52.80000	100.05000	-0.28249	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	52.80000	100.05000	-0.25838	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	52.80000	100.05000	-0.23585	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	52.80000	100.05000	-0.21489	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	52.80000	100.05000	-0.19545	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	52.80000	100.05000	-0.17749	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	54.00000	100.05000	-0.09119	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	54.00000	100.05000	-0.10105	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	54.00000	100.05000	-0.11179	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	54.00000	100.05000	-0.12347	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	54.00000	100.05000	-0.13615	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	54.00000	100.05000	-0.14988	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	54.00000	100.05000	-0.16474	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	54.00000	100.05000	-0.18075	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	54.00000	100.05000	-0.19796	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	54.00000	100.05000	-0.21638	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	54.00000	100.05000	-0.23603	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	54.00000	100.05000	-0.25685	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	54.00000	100.05000	-0.27880	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	54.00000	100.05000	-0.30174	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	54.00000	100.05000	-0.32549	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	54.00000	100.05000	-0.34981	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	54.00000	100.05000	-0.37487	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	54.00000	100.05000	-0.39876	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	54.00000	100.05000	-0.42249	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	54.00000	100.05000	-0.44499	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	54.00000	100.05000	-0.46567	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	54.00000	100.05000	-0.48390	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	54.00000	100.05000	-0.49909	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	54.00000	100.05000	-0.51072	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	54.00000	100.05000	-0.51834	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	54.00000	100.05000	-0.52169	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	54.00000	100.05000	-0.52064	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	54.00000	100.05000	-0.51524	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	54.00000	100.05000	-0.50570	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	54.00000	100.05000	-0.49239	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	54.00000	100.05000	-0.47580	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	54.00000	100.05000	-0.45649	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	54.00000	100.05000	-0.43507	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	54.00000	100.05000	-0.41215	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	54.00000	100.05000	-0.38829	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	54.00000	100.05000	-0.36401	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	54.00000	100.05000	-0.33975	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	54.00000	100.05000	-0.31585	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	54.00000	100.05000	-0.29261	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	54.00000	100.05000	-0.27023	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	54.00000	100.05000	-0.24886	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	54.00000	100.05000	-0.22860	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	54.00000	100.05000	-0.20950	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	54.00000	100.05000	-0.19159	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	54.00000	100.05000	-0.17486	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	54.00000	100.05000	-0.15929	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	55.20000	100.05000	-0.08259	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	55.20000	100.05000	-0.09136	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	55.20000	100.05000	-0.10087	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	55.20000	100.05000	-0.11117	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	55.20000	100.05000	-0.12228	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	55.20000	100.05000	-0.13427	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	55.20000	100.05000	-0.14714	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	55.20000	100.05000	-0.16093	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	55.20000	100.05000	-0.17566	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	55.20000	100.05000	-0.19131	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	55.20000	100.05000	-0.20786	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	55.20000	100.05000	-0.22527	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	55.20000	100.05000	-0.24345	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	55.20000	100.05000	-0.26228	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	55.20000	100.05000	-0.28159	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	55.20000	100.05000	-0.30117	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	55.20000	100.05000	-0.32076	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	55.20000	100.05000	-0.34002	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	55.20000	100.05000	-0.35859	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	55.20000	100.05000	-0.37607	99.912	0.0	0.0	0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[µ]
1	Grid 1	1.00000	56.40000	100.05000	-0.08228	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	56.40000	100.05000	-0.09068	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	56.40000	100.05000	-0.09973	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	56.40000	100.05000	-0.10946	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	56.40000	100.05000	-0.11988	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	56.40000	100.05000	-0.13103	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	56.40000	100.05000	-0.14289	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	56.40000	100.05000	-0.15548	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	56.40000	100.05000	-0.16877	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	56.40000	100.05000	-0.18272	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	56.40000	100.05000	-0.19729	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	56.40000	100.05000	-0.21238	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	56.40000	100.05000	-0.22788	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	56.40000	100.05000	-0.24366	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	56.40000	100.05000	-0.25952	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	56.40000	100.05000	-0.27525	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	56.40000	100.05000	-0.29060	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	56.40000	100.05000	-0.30529	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	56.40000	100.05000	-0.31901	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	56.40000	100.05000	-0.33145	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	56.40000	100.05000	-0.34230	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	56.40000	100.05000	-0.35126	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	56.40000	100.05000	-0.35808	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	56.40000	100.05000	-0.36257	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	56.40000	100.05000	-0.36458	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	56.40000	100.05000	-0.36405	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	56.40000	100.05000	-0.36102	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	56.40000	100.05000	-0.35556	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	56.40000	100.05000	-0.34786	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	56.40000	100.05000	-0.33813	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	56.40000	100.05000	-0.32666	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	56.40000	100.05000	-0.31373	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	56.40000	100.05000	-0.29966	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	56.40000	100.05000	-0.28476	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	56.40000	100.05000	-0.26931	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	56.40000	100.05000	-0.25359	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	56.40000	100.05000	-0.23781	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	56.40000	100.05000	-0.22219	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	56.40000	100.05000	-0.20689	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	56.40000	100.05000	-0.19202	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	56.40000	100.05000	-0.17771	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	56.40000	100.05000	-0.16401	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	56.40000	100.05000	-0.15098	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	56.40000	100.05000	-0.13864	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	56.40000	100.05000	-0.12702	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	57.60000	100.05000	-0.06694	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	57.60000	100.05000	-0.07382	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	57.60000	100.05000	-0.08122	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	57.60000	100.05000	-0.08915	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	57.60000	100.05000	-0.09765	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	57.60000	100.05000	-0.10670	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	57.60000	100.05000	-0.11633	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	57.60000	100.05000	-0.12653	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	57.60000	100.05000	-0.13728	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	57.60000	100.05000	-0.14857	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	57.60000	100.05000	-0.16034	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	57.60000	100.05000	-0.17254	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	57.60000	100.05000	-0.18510	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	57.60000	100.05000	-0.19791	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	57.60000	100.05000	-0.21085	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	57.60000	100.05000	-0.22377	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	57.60000	100.05000	-0.23649	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	57.60000	100.05000	-0.24882	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	57.60000	100.05000	-0.26054	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	57.60000	100.05000	-0.27142	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	57.60000	100.05000	-0.28123	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	57.60000	100.05000	-0.28975	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	57.60000	100.05000	-0.29677	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	57.60000	100.05000	-0.30211	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	57.60000	100.05000	-0.30561	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	57.60000	100.05000	-0.30720	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	57.60000	100.05000	-0.30682	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	57.60000	100.05000	-0.30448	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	57.60000	100.05000	-0.30026	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	57.60000	100.05000	-0.29427	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	57.60000	100.05000	-0.28668	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	57.60000	100.05000	-0.27767	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	57.60000	100.05000	-0.26745	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	57.60000	100.05000	-0.25627	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	57.60000	100.05000	-0.24434	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	57.60000	100.05000	-0.23189	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	57.60000	100.05000	-0.21912	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	57.60000	100.05000	-0.20622	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	57.60000	100.05000	-0.19335	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	57.60000	100.05000	-0.18065	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	57.60000	100.05000	-0.16823	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	57.60000	100.05000	-0.15618	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	57.60000	100.05000	-0.14458	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	57.60000	100.05000	-0.13348	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	57.60000	100.05000	-0.12281	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	57.60000	100.05000	-0.11290	99.912	0.0	0.0	0.0
1	Grid 1	0.00000	58.80000	100.05000	-0.05990	99.912	0.0	0.0	0.0
1	Grid 1	1.00000	58.80000	100.05000	-0.06597	99.912	0.0	0.0	0.0
1	Grid 1	2.00000	58.80000	100.05000	-0.07247	99.912	0.0	0.0	0.0
1	Grid 1	3.00000	58.80000	100.05000	-0.07942	99.912	0.0	0.0	0.0
1	Grid 1	4.00000	58.80000	100.05000	-0.08682	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	58.80000	100.05000	-0.09468	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	58.80000	100.05000	-0.10299	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	58.80000	100.05000	-0.11175	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	58.80000	100.05000	-0.12093	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	58.80000	100.05000	-0.13051	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	58.80000	100.05000	-0.14045	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	58.80000	100.05000	-0.15070	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	58.80000	100.05000	-0.16117	99.912	0.0	0.0	0.0



GEOTECHNICAL AND ENVIRONMENTAL ASSOCIATES

30 Ferncroft Avenue, London NW3 7PH

Analysis of Vertical Movements due to Basement Excavation
Drained Total Movements

Job No.	Sheet No.	Rev.
LJ20268		
Drg. Ref.		
Made by ML	Date	Checked

Ref.	Name	x	y	z	δz	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [µ]
1	Grid 1	[m]	[m]	[mOD]	[mm]				
1	Grid 1	4.00000	60.00000	100.05000	-0.07694	99.912	0.0	0.0	0.0
1	Grid 1	5.00000	60.00000	100.05000	-0.08375	99.912	0.0	0.0	0.0
1	Grid 1	6.00000	60.00000	100.05000	-0.09091	99.912	0.0	0.0	0.0
1	Grid 1	7.00000	60.00000	100.05000	-0.09843	99.912	0.0	0.0	0.0
1	Grid 1	8.00000	60.00000	100.05000	-0.10627	99.912	0.0	0.0	0.0
1	Grid 1	9.00000	60.00000	100.05000	-0.11441	99.912	0.0	0.0	0.0
1	Grid 1	10.00000	60.00000	100.05000	-0.12281	99.912	0.0	0.0	0.0
1	Grid 1	11.00000	60.00000	100.05000	-0.13142	99.912	0.0	0.0	0.0
1	Grid 1	12.00000	60.00000	100.05000	-0.14018	99.912	0.0	0.0	0.0
1	Grid 1	13.00000	60.00000	100.05000	-0.14900	99.912	0.0	0.0	0.0
1	Grid 1	14.00000	60.00000	100.05000	-0.15781	99.912	0.0	0.0	0.0
1	Grid 1	15.00000	60.00000	100.05000	-0.16650	99.912	0.0	0.0	0.0
1	Grid 1	16.00000	60.00000	100.05000	-0.17496	99.912	0.0	0.0	0.0
1	Grid 1	17.00000	60.00000	100.05000	-0.18306	99.912	0.0	0.0	0.0
1	Grid 1	18.00000	60.00000	100.05000	-0.19069	99.912	0.0	0.0	0.0
1	Grid 1	19.00000	60.00000	100.05000	-0.19771	99.912	0.0	0.0	0.0
1	Grid 1	20.00000	60.00000	100.05000	-0.20399	99.912	0.0	0.0	0.0
1	Grid 1	21.00000	60.00000	100.05000	-0.20940	99.912	0.0	0.0	0.0
1	Grid 1	22.00000	60.00000	100.05000	-0.21383	99.912	0.0	0.0	0.0
1	Grid 1	23.00000	60.00000	100.05000	-0.21719	99.912	0.0	0.0	0.0
1	Grid 1	24.00000	60.00000	100.05000	-0.21940	99.912	0.0	0.0	0.0
1	Grid 1	25.00000	60.00000	100.05000	-0.22040	99.912	0.0	0.0	0.0
1	Grid 1	26.00000	60.00000	100.05000	-0.22019	99.912	0.0	0.0	0.0
1	Grid 1	27.00000	60.00000	100.05000	-0.21875	99.912	0.0	0.0	0.0
1	Grid 1	28.00000	60.00000	100.05000	-0.21614	99.912	0.0	0.0	0.0
1	Grid 1	29.00000	60.00000	100.05000	-0.21239	99.912	0.0	0.0	0.0
1	Grid 1	30.00000	60.00000	100.05000	-0.20761	99.912	0.0	0.0	0.0
1	Grid 1	31.00000	60.00000	100.05000	-0.20189	99.912	0.0	0.0	0.0
1	Grid 1	32.00000	60.00000	100.05000	-0.19535	99.912	0.0	0.0	0.0
1	Grid 1	33.00000	60.00000	100.05000	-0.18812	99.912	0.0	0.0	0.0
1	Grid 1	34.00000	60.00000	100.05000	-0.18032	99.912	0.0	0.0	0.0
1	Grid 1	35.00000	60.00000	100.05000	-0.17209	99.912	0.0	0.0	0.0
1	Grid 1	36.00000	60.00000	100.05000	-0.16354	99.912	0.0	0.0	0.0
1	Grid 1	37.00000	60.00000	100.05000	-0.15481	99.912	0.0	0.0	0.0
1	Grid 1	38.00000	60.00000	100.05000	-0.14599	99.912	0.0	0.0	0.0
1	Grid 1	39.00000	60.00000	100.05000	-0.13718	99.912	0.0	0.0	0.0
1	Grid 1	40.00000	60.00000	100.05000	-0.12847	99.912	0.0	0.0	0.0
1	Grid 1	41.00000	60.00000	100.05000	-0.11992	99.912	0.0	0.0	0.0
1	Grid 1	42.00000	60.00000	100.05000	-0.11159	99.912	0.0	0.0	0.0
1	Grid 1	43.00000	60.00000	100.05000	-0.10353	99.912	0.0	0.0	0.0
1	Grid 1	44.00000	60.00000	100.05000	-0.09578	99.912	0.0	0.0	0.0
1	Grid 1	45.00000	60.00000	100.05000	-0.08837	99.912	0.0	0.0	0.0

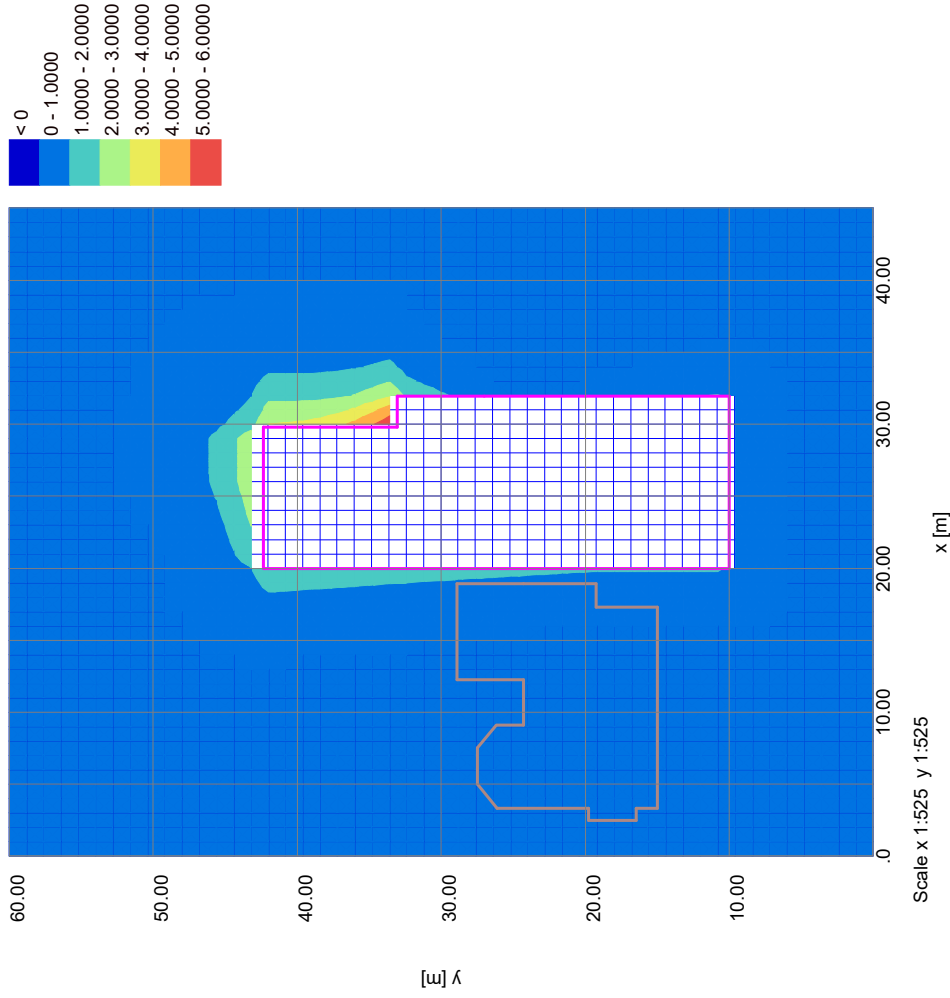
Results : Consolidation : Displacement Data : Grids

None

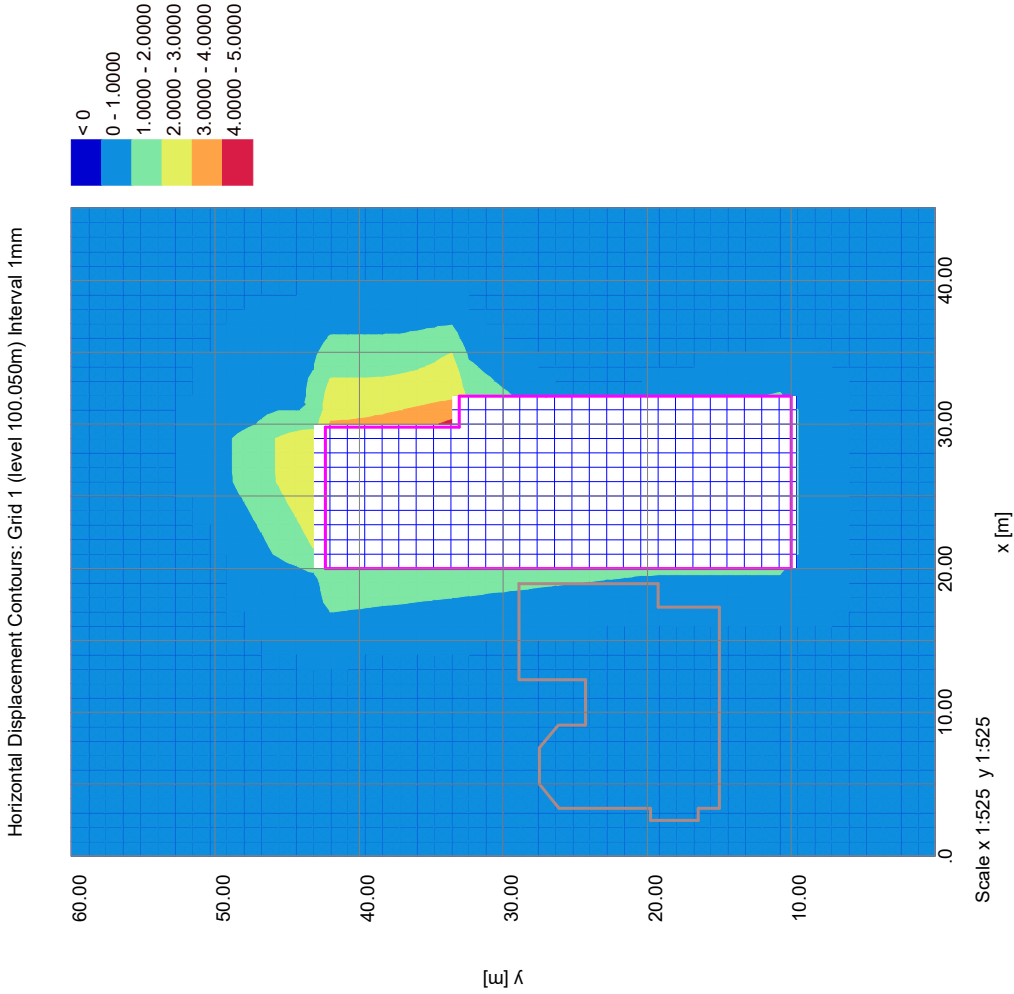
Results : Total : Displacement Data : Grids

None

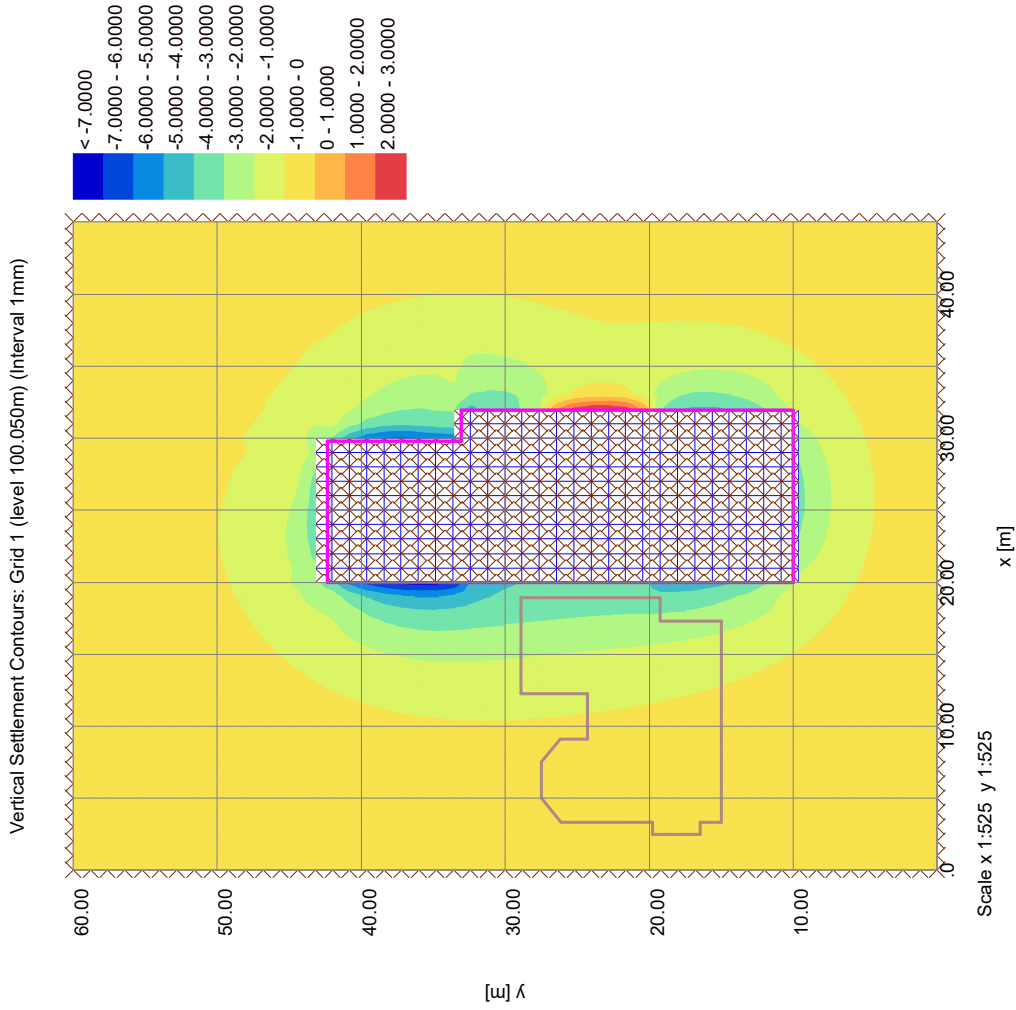
Vertical Settlement Contours: Grid 1 (level 100.050m) (Interval 1mm)



Job No.	Sheet No.		Rev.
J20268			
Drg. Ref.			
Made by ML	Date 26-Feb-2021	Checked	Date



Job No.	Sheet No.		Rev.
J20268			
Drg. Ref.			
Made by ML	Date 26-Feb-2021	Checked	Date



Job No.	Sheet No.		Rev.
J20268			
Drg. Ref.			
Made by ML	Date 26-Feb-2021	Checked	Date

