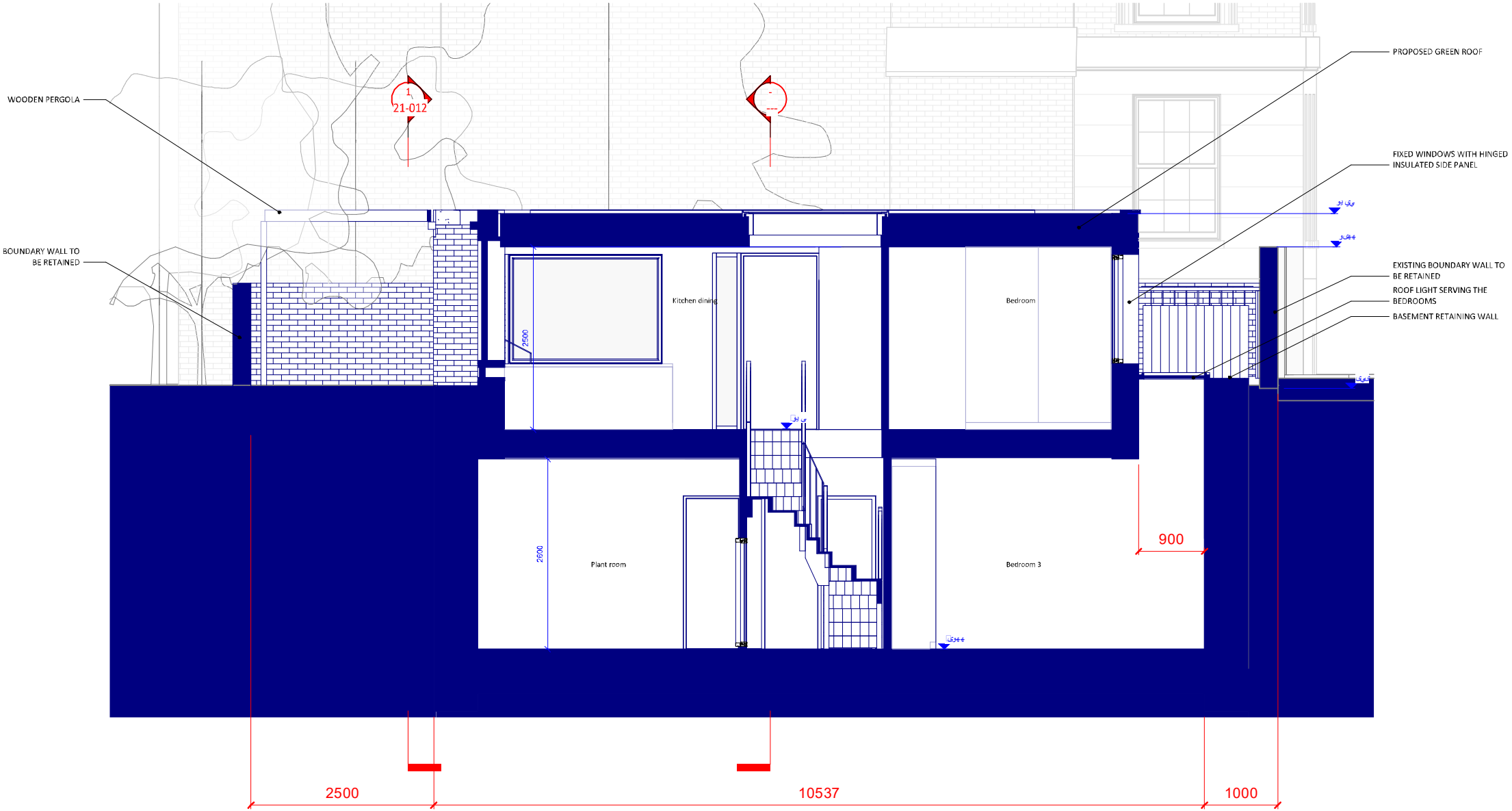
APPENDICES

Appendices

APPENDIX A DEVELOPMENT SCHEMATIC



Unagru Architecture & Urbanism

Unagru Limited
Unit LG3 Cell Studios, 23-27 Arcola Street
E8 2DJ London
www.unagru.com
mail@unagru.com

SCALE 1 : 50 @ A3

1:50 0M 1M 2M

1:1 0 10 20 30 40MM

Project Name

Liddington place

Drawing Title

Proposed Sections - Sheet 2

Notes

Unagru Limited takes no responsibility for dimensions obtained by scaling from this drawing. If no dimension is shown the recipient must ascertain the dimension specifically from the architect or by site measurement and may not rely on the drawing. Supply of the drawing in digital form is solely for convenience and no reliance may be placed on any data in digital form. All data must be checked against hard copy. This drawing is issued for design intent only and should not be used for construction unless stated. All work must comply with relevant British Standards and Building Regulation requirements.

A-21-002

Status		PRELIMINARY
Date	12/04/18	Job No. 093
Rev		

APPENDICES

APPENDIX B PHOTOGRAPHIC RECORD

Plate 1: View of site from Lidlington Place.

Plate 2: View of neighboring car park.

LMB
Ground Investigation
Land Contamination
Hydrogeology
Engineering Geology

Photographic Record

Project: Lidlington Place

Plates 1 & 2

Plate 3: View south of tower block and bar.

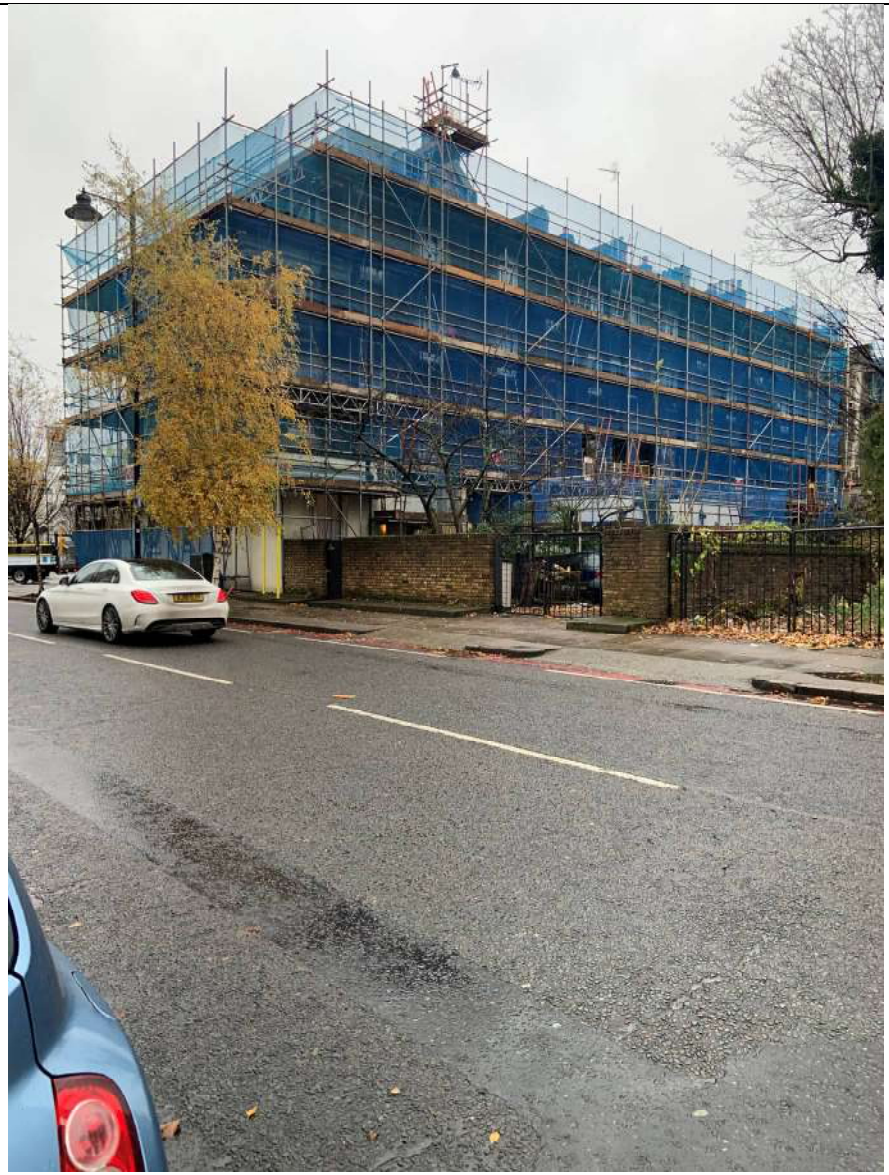


Plate 4: View west along Lidlington Place

Plate 5: View of 76 Oakley Square with lower ground floor.

Plate 6: View of rear of Harrington Square with lower ground floor.

APPENDICES

APPENDIX C RESPONSES FROM BELOW GROUND ASSET HOLDERS

philip@lmbgeosolutions.com

From: CRL_Safeguarding <CRL_Safeguarding@tfl.gov.uk>
Sent: 06 December 2019 13:27
To: 'philip@lmbgeosolutions.com'
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH

Please note,

Crossrail is not affected by these works.

Best regards,

Will Orlik
Safeguarding Officer (Crossrail)
CRL_Safeguarding@tfl.gov.uk

Infrastructure Protection Team
Floor 7 B5 : 5 Endeavour Square : London : E20 1JN

From: philip@lmbgeosolutions.com [mailto:philip@lmbgeosolutions.com]
Sent: 06 December 2019 12:37
To: LULHVpowerassets; OPburiedse@networkrail.co.uk; CRL_Safeguarding
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Importance: High

Dear Sir/Madame
Our client will be developing the property at the above address including a basement and we would be interested in finding out if you hold any below ground assets in the nearby vicinity.

I have attached a location plan for your information.

Best regards,

Philip Lewis
Bsc (Hons), Msc, FGS, CGeol
Director
LMB Geosolutions Ltd
Tel. +44 7739735097

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LinkedIn

LMB Geosolutions Ltd is a private limited company registered in England & Wales.

please don't print this e-mail unless you really need to

****

****

philip@lmbgeosolutions.com

From: McKenna Thomas <Thomas.McKenna@networkrail.co.uk> on behalf of OP Buried Services Enquiries <OPBuriedServicesEnquiries@networkrail.co.uk>
Sent: 09 December 2019 08:48
To: philip@lmbgeosolutions.com
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH

Dear Sir/Madam,

With regards to your enquiry, Network Rail does not believe there is any Network Rail owned apparatus or underground services within the area you have defined. As there is always the possibility that new works could be planned and undertaken in this area by Network Rail this information is valid as at today's date and is supplied for general guidance only.

Please be aware that this response is based on Network Rail's records and knowledge and no guarantee can be given regarding accuracy or completeness. CAT scans, safe digging practices (as contained in HSE publications) and other appropriate investigative techniques should always be carried out.

There may be other apparatus or underground services owned or operated by Utility Companies and accordingly you should contact individual utilities for information.

If, in connection with your investigations and/or work, you become aware of Network Rail apparatus or underground services within your area of work, please ensure these are notified to our Asset Protection team via the following link as a matter of urgency so that appropriate measures for avoidance of risk and damage can be put in place.

Contact details can be found in the following link: Network Rail Asset Protection Teams

If you require any further clarification on any of the information please contact opburiedservicesenquiries@networkrail.co.uk.

Regards,

Thomas McKenna
Distribution Administrator

National Records Centre | Audax Road | York YO30 4US
E: thomas.mckenna@networkrail.co.uk
W: www.networkrail.co.uk

At Network Rail we work flexibly – so whilst it suits me to email now, I do not expect a response or action outside of your own working hours

_____

From: philip@lmbgeosolutions.com <philip@lmbgeosolutions.com>
Sent: 06 December 2019 12:37
To: LULHVpowerassets@tfl.gov.uk; OP Buried Services Enquiries <OPBuriedServicesEnquiries@networkrail.co.uk>; 'CRL_Safeguarding' <CRL_Safeguarding@tfl.gov.uk>
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Importance: High

Dear Sir/Madame
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I have attached a location plan for your information.

Best regards,

Philip Lewis
Bsc (Hons), Msc, FGS, CGeol
Director
LMB Geosolutions Ltd
Tel. +44 7739735097

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Connect with me on
LinkedIn

****
****

philip@lmbgeosolutions.com

From: Location Enquiries <SMBLocationEnquiries@tfl.gov.uk>
Sent: 10 December 2019 09:05
To: 'philip@lmbgeosolutions.com'
Subject: FW: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Attachments: Pages of Pages of LID Thames Water Search.pdf; Pages of Pages of LID_Site Details for (BIA Quote).pdf

Importance: High

Philip

Thank you for your enquiry.

I can confirm that London Underground assets will not be affected by borehole works at 75-76 Oakley Square Lidlington Place London NW1 1NH as per the site boundary marked on the attached plans.

Kind regards

Shahina Inayathusein MAPM MIAM
Safeguarding Engineer (LU+DLR)
Infrastructure Protection -TfL Engineering
Email: locationenquiries@tube.tfl.gov.uk
Find out more about Infrastructure Protection - https://youtu.be/0hGoJMTBOEg

---

From: philip@lmbgeosolutions.com [mailto:philip@lmbgeosolutions.com]
Sent: 09 December 2019 10:09
To: Location Enquiries
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Importance: High

Thanks Shahina
I have attached two plans detailing the site location, marked in purple on one and in red on the other. The borehole will be roughly in the middle of the site.
Please let me know if you require further information.
Best regards,
Philip

From: Location Enquiries <SMBLocationEnquiries@tfl.gov.uk>
Sent: 09 December 2019 08:39
To: 'philip@lmbgeosolutions.com' <philip@lmbgeosolutions.com>
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH

Philip

Thank you for your enquiry.

In order to enable me to provide you with a correct response can you send a O/S plan showing surrounding streets with your site clearly outlined and showing the position of the borehole.

You are correct that London Underground Northern line does run along Eversholt Street.

Kind regards

Shahina Inayathusein MAPM MIAM
Safeguarding Engineer (LU+DLR)
Infrastructure Protection -TfL Engineering
Email: locationenquiries@tube.tfl.gov.uk
Find out more about Infrastructure Protection - https://youtu.be/0hGoJMTBOEg

---

From: philip@lmbgeosolutions.com [mailto:philip@lmbgeosolutions.com]
Sent: 06 December 2019 12:35
To: Location Enquiries
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Importance: High

Dear Sir/Madame
Our client is undertaking a single storey (c.3-4m bgl) basement development at the above site. We will be completing site investigation works to support the design with a borehole extending to a maximum depth of 10m below ground level.

We understand that a branch of the northern line runs along (or near to) Eversholt Street and we would be grateful if you could let us know the protocol for completing site investigation works and basement development in this area.

We would also be interested in finding out if you hold any other below ground assets in the nearby vicinity.

I have attached a location plan for your information.

Best regards,

Philip Lewis
Bsc (Hons), Msc, FGS, CGeol
Director
LMB Geosolutions Ltd
Tel. +44 7739735097

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****

****

philip@lmbgeosolutions.com

From: Location Enquiries <SMBLocationEnquiries@tfl.gov.uk>
Sent: 11 December 2019 08:49
To: 'philip@lmbgeosolutions.com'
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Attachments: Pages of Pages of LID_Site Details for (BIA Quote).pdf

Philip

Thank you for your enquiry.

Below is a 1:1250 plan showing London Underground Northern Line tunnels (outline in red) and London Underground Zone of interest (outlined in purple)

I can also confirm that London Underground assets will not be affected by basement works at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH (marked on the below plan and as per attached plan provided by you)

Kind regards

Shahina Inayathusein MAPM MIAM
Safeguarding Engineer (LU+DLR)
Infrastructure Protection -TfL Engineering
Email: locationenquiries@tube.tfl.gov.uk

Find out more about Infrastructure Protection - https://youtu.be/0hGoJMTBOEg

---

From: philip@lmbgeosolutions.com [mailto:philip@lmbgeosolutions.com]
Sent: 10 December 2019 09:20
To: Location Enquiries
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Importance: High

Thank you Shahina.

Would it be possible to get plans showing tunnel location and crown depth as I'd like to ensure that its outside the zone of influence of the basement excavation when we undertake a Ground Movement Assessment.

Best regards,
Philip

From: Location Enquiries <SMBLocationEnquiries@tfl.gov.uk>
Sent: 10 December 2019 09:05
To: 'philip@lmbgeosolutions.com' <philip@lmbgeosolutions.com>
Subject: FW: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Importance: High

Philip

Thank you for your enquiry.

I can confirm that London Underground assets will not be affected by borehole works at 75-76 Oakley Square Lidlington Place London NW1 1NH as per the site boundary marked on the attached plans.

Kind regards

Shahina Inayathusein MAPM MIAM
Safeguarding Engineer (LU+DLR)
Infrastructure Protection -TfL Engineering
Email: locationenquiries@tube.tfl.gov.uk
Find out more about Infrastructure Protection - https://youtu.be/0hGoJMTBOEg

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From: philip@lmbgeosolutions.com [mailto:philip@lmbgeosolutions.com]
Sent: 09 December 2019 10:09
To: Location Enquiries
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Importance: High

Thanks Shahina
I have attached two plans detailing the site location, marked in purple on one and in red on the other. The borehole will be roughly in the middle of the site.
Please let me know if you require further information.
Best regards,
Philip

From: Location Enquiries <SMBLocationEnquiries@tfl.gov.uk>
Sent: 09 December 2019 08:39
To: 'philip@lmbgeosolutions.com' <philip@lmbgeosolutions.com>
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH

Philip

Thank you for your enquiry.

In order to enable me to provide you with a correct response can you send a O/S plan showing surrounding streets with your site clearly outlined and showing the position of the borehole.

You are correct that London Underground Northern line does run along Eversholt Street.

Kind regards

Shahina Inayathusein MAPM MIAM
Safeguarding Engineer (LU+DLR)
Infrastructure Protection -TfL Engineering
Email: locationenquiries@tube.tfl.gov.uk
Find out more about Infrastructure Protection - https://youtu.be/0hGoJMTBOEg

---

From: philip@lmbgeosolutions.com [mailto:philip@lmbgeosolutions.com]
Sent: 06 December 2019 12:35
To: Location Enquiries
Subject: RE: Basement Development at land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Importance: High

Dear Sir/Madame
Our client is undertaking a single storey (c.3-4m bgl) basement development at the above site. We will be completing site investigation works to support the design with a borehole extending to a maximum depth of 10m below ground level.

We understand that a branch of the northern line runs along (or near to) Eversholt Street and we would be grateful if you could let us know the protocol for completing site investigation works and basement development in this area.

We would also be interested in finding out if you hold any other below ground assets in the nearby vicinity.

I have attached a location plan for your information.

Best regards,

Philip Lewis
Bsc (Hons), Msc, FGS, CGeol
Director
LMB Geosolutions Ltd
Tel. +44 7739735097

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Ground Investigation
Land Contamination
Hydrogeology
Engineering Geology

LMB Geosolutions Ltd is a private limited company registered in England & Wales.

Constructionline

smas worksafe consultant

SSIP

please don't print this e-mail unless you really need to

philip@lmbgeosolutions.com

From: LULHVpowerassets@tfl.gov.uk
Sent: 08 December 2019 09:34
To: philip@lmbgeosolutions.com
Subject: NRSWA Request Response - Your Reference 75-76 Oakley Square
Attachments: R10003.pdf; R2508_8.pdf; R2508_8A.pdf; R2508_8B.pdf; R2508_8C.pdf; R2508_8D.pdf; R2533_3.pdf; R2533_3A.pdf; NRSWA mapshot.png

Our Ref:NBBJQJ1N
Your Ref: **75-76 Oakley Square**
Date:**08 December 2019**

Name: **Philip Lewis**
Company Name: **LMB Geosolutions Ltd**

Dear Sir/Madam .

We acknowledge receipt of your Letter / New Roads & Street Works Act Enquiry dated **06/12/19** relating to the following enquiry:
75-76 Oakley Square, Lidlington Place, London NW1 1NH

We do have apparatus in the immediate area in question, please see the attached drawings and map snapshot:

Drawing No(s):

R10003
R2508_8
R2508_8A
R2508_8B
R2508_8C
R2508_8D
R2533_3
R2533_3A

Please note we only manage High Voltage, Pilot and Fibre Optic cables for London Underground distribution network.

For further assistance please contact **Sylvie Stroud on 0203 054 8354.**

Please ensure that any contractors or sub-contractors engaged by you for these works are made aware of this response and its contents. In some cases our cable ducts may be used by a third party, for which we have no information or drawing records.

Yours sincerely,

On Behalf of the H.V. Cables Manager

Title: NRSWA co-ordinator

Email: **LULHVpowerassets@tfl.gov.uk**

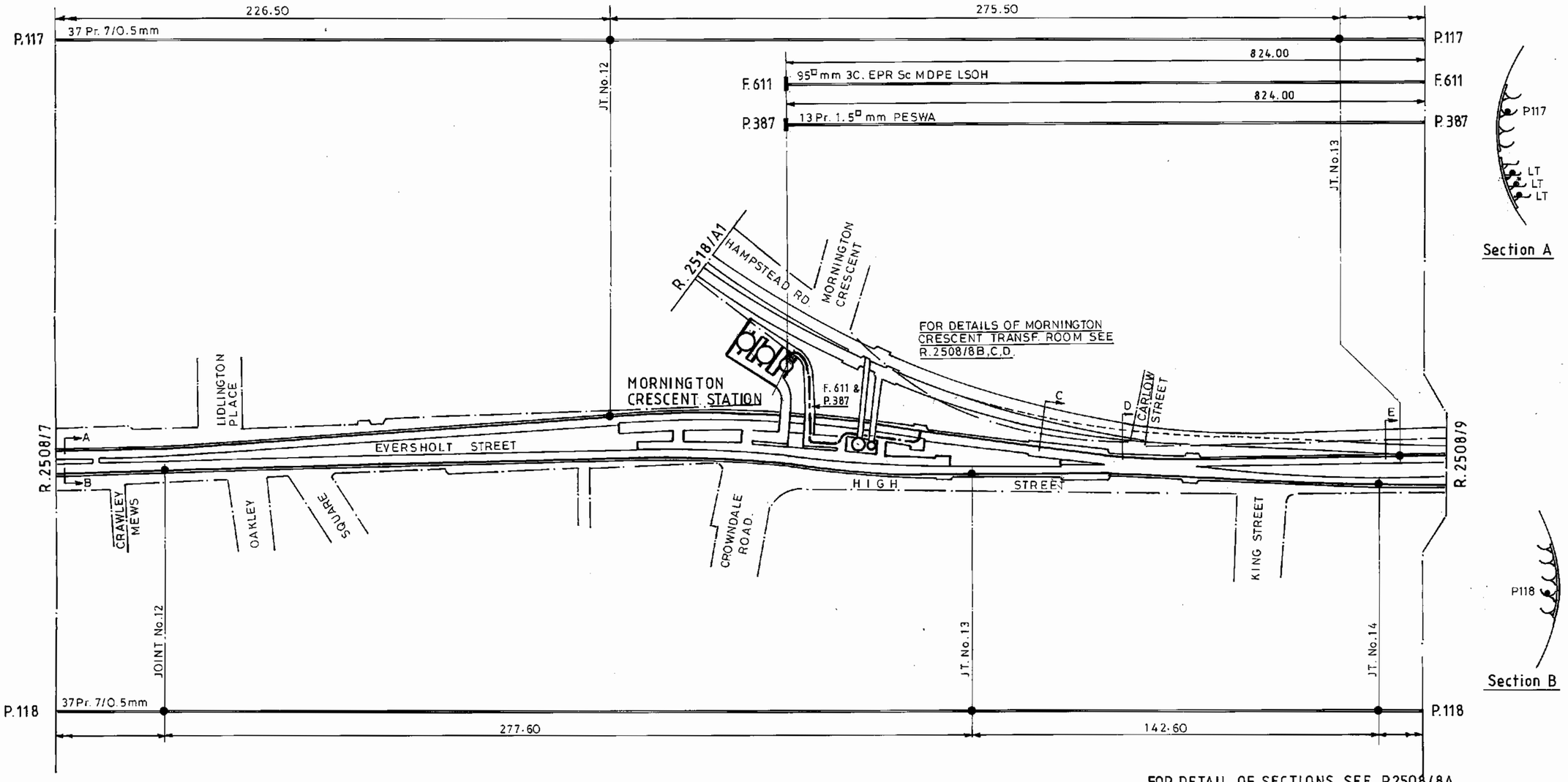
London Underground NRSWA
Power & Electrical
Units 7 & 8,Station Road

Drawing Office
Tufnell Park
London
N19 5UW
Tel: 0203 054 8418

****

****

R.2508/8



3	DEC. 1999.	R.M.
REDRAWN . FDR. 611 & P.387 ADDED, METRIC DIM'S. ADDED TO DRG.		

NORTHERN LINE.

EMBANKMENT—EDGWARE.

DRAWN.	R.M.
CHECKED.	
APPROVED.	
DATE.	DEC. '99
SCALE.	1:1056

LONDON UNDERGROUND LTD.
DEPT. OF THE POWER SUPPLY ENG.
GENERATING STATION COTTAGE
10 HOSKINS STREET
LONDON S.E.10 9PB.
TELEPHONE:- 0181-293-5548
FAX No:- 0171-918-8611

DRAWING No. R.2508/8

REV 3

R2508/8A

Section 'C'

Section 'D'

Section 'E'

FOR ROUTE PLAN SEE R2508/8

NORTHERN LINE.
EMBANKMENT — EDGWARE

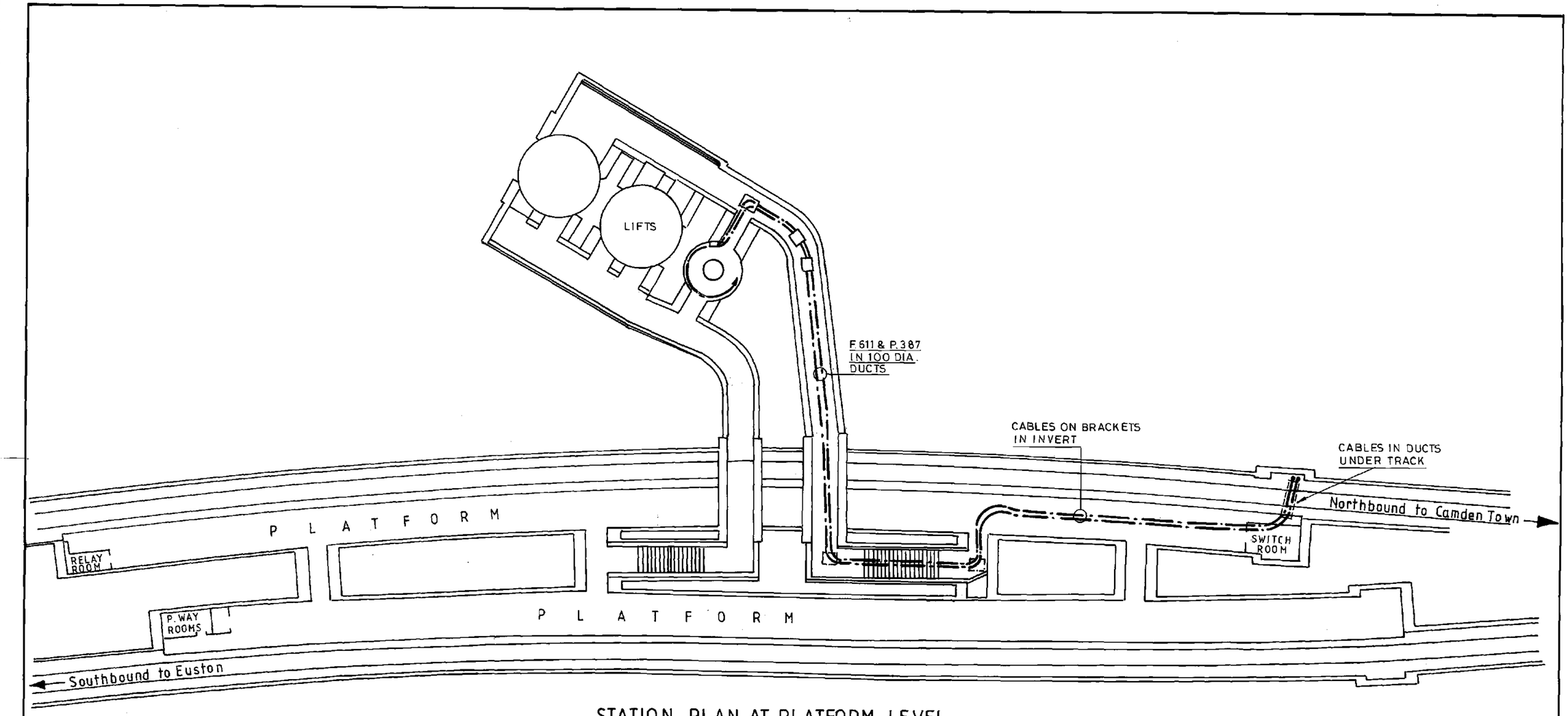
DRAWN	R.M.
CHECKED	
APPROVED	
DATE	JAN. '00
SCALE	

LONDON UNDERGROUND LTD.
DEPT OF THE POWER SUPPLY ENG
GENERATING STATION COTTAGE
10 HOSKINS STREET
LONDON S.E. 10 9PB
TELEPHONE - 0181-293-5548
FAX No.- 0171-918-8611

DRAWING No R.2508/8A

REV 0

R.2508/8B



STATION PLAN AT PLATFORM LEVEL.

NORTHERN LINE.

EMBANKMENT—EDGWARE

CABLE ROUTE INTO MORNINTON CRESCENT TXR.

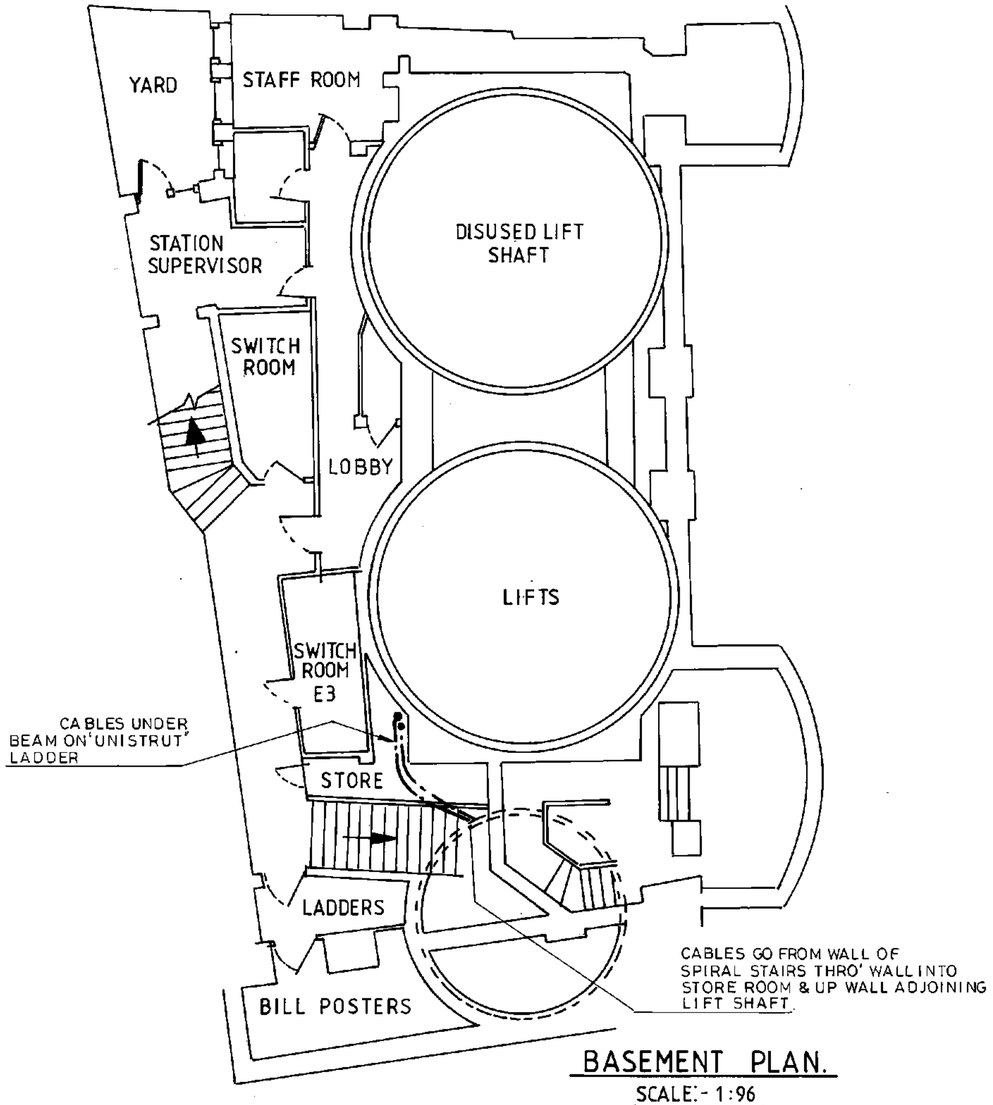
DRAWN	R.M.
CHECKED	
APPROVED	
DATE	JAN.'00
SCALE	1:240

LONDON UNDERGROUND LTD.
DEPT. OF THE POWER SUPPLY ENG.
GENERATING STATION COTTAGE
10 HOSKINS STREET
LONDON S.E.10 9PB.
TELEPHONE:- 0181-293-5548
FAX No:- 0171-918-8611

DRAWING No. R.2508/8B

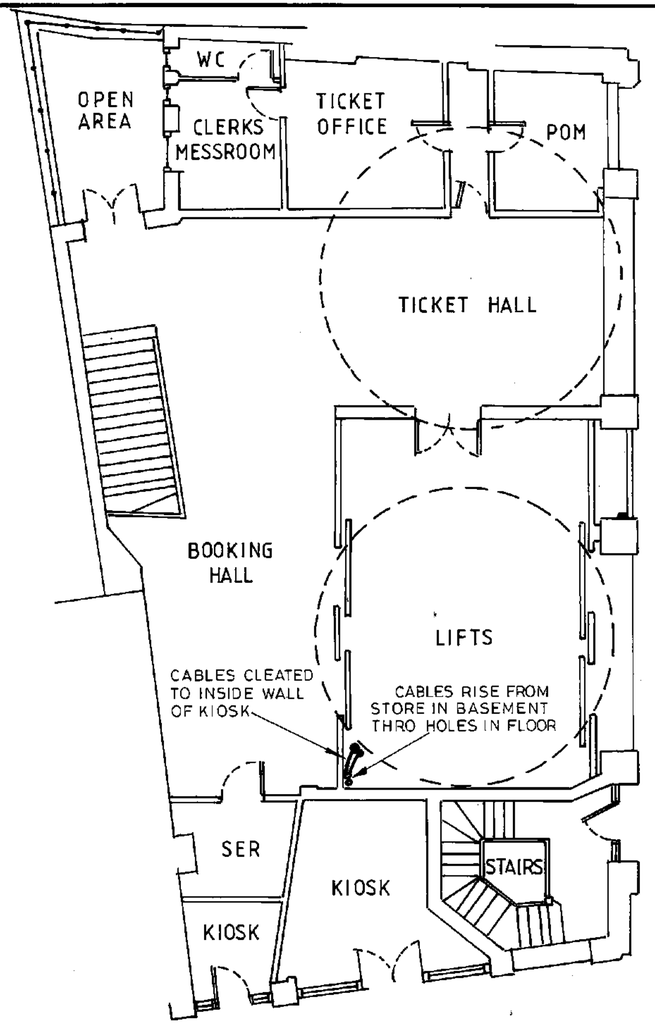
REV 0

R.2508/8C



BASEMENT PLAN.

SCALE:- 1:96



GROUND FLOOR PLAN.

SCALE:- 1:96

NORTHERN LINE.

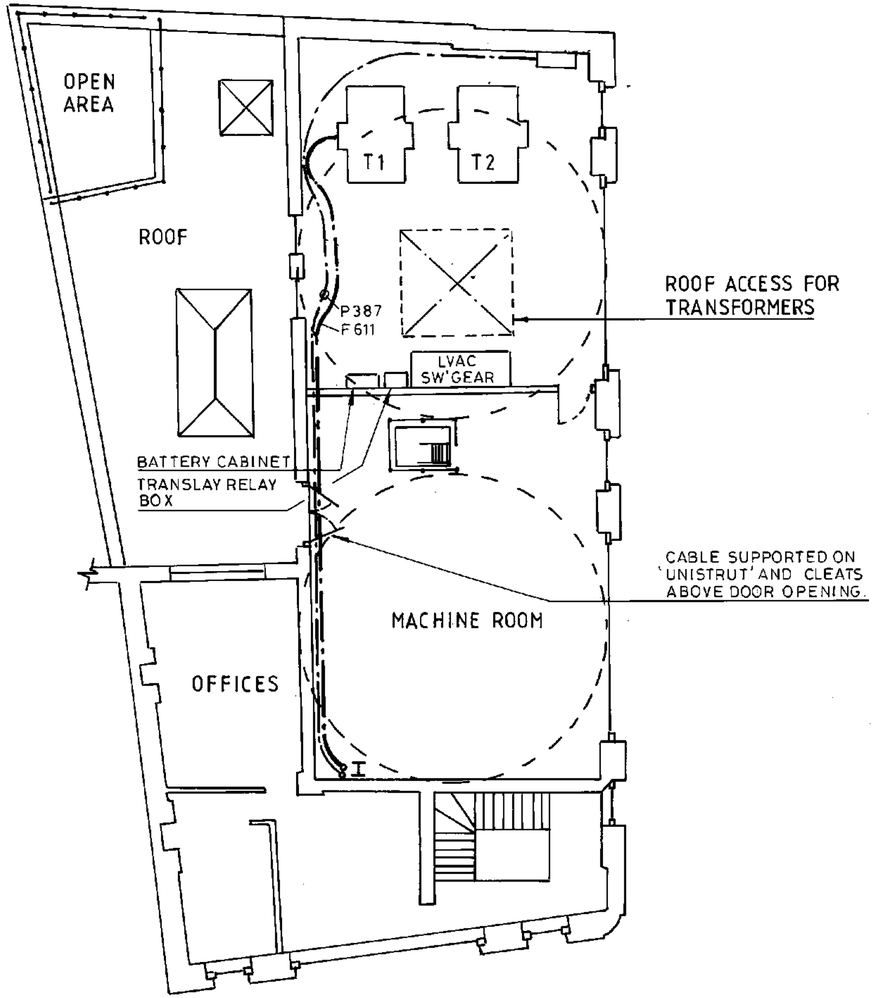
EMBANKMENT—EDGWARE.

MORNINGTON CRESCENT STATION.

DRAWN. R.M	
CHECKED.	
APPROVED.	
DATE. DEC. '99	
SCALE. AS SHOWN.	DRAWING No. R.2508/8C. REV 0

LONDON UNDERGROUND LTD.
DEPT. OF THE POWER SUPPLY ENG.
GENERATING STATION COTTAGE
10 HOSKINS STREET
LONDON S.E.10 9PB.
TELEPHONE:- 0181-293-5548
FAX No:- 0171-918-8611

R.2508/8D



FIRST FLOOR PLAN.

SCALE:- 1:96

NORTHERN LINE.
EMBANKMENT—EDGWARE.
MORNINGTON CRESCENT TRANSFORMER ROOM.

DRAWN.	R. M.
CHECKED.	
APPROVED.	
DATE	DEC. '99
SCALE.	AS SHOWN

LONDON UNDERGROUND LTD.
DEPT. OF THE POWER SUPPLY ENG.
GENERATING STATION COTTAGE
10 HOSKINS STREET
LONDON S.E.10 9PB
TELEPHONE:- 0181-293-5548
FAX No:- 0171-918-8611

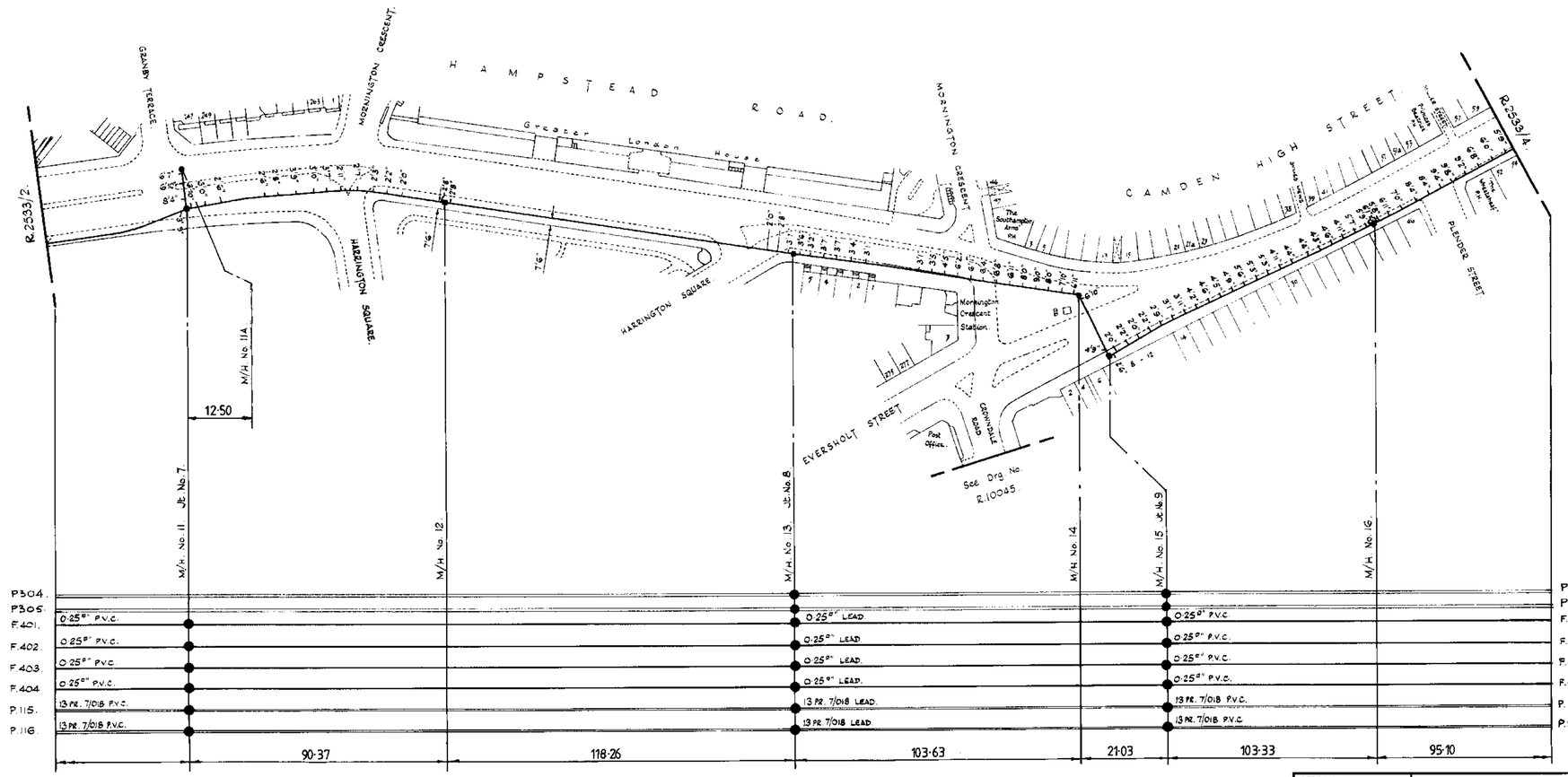
DRAWING No. R.2508/8D

REV O

R2533/3

NOTES.

1. Dimensions for Route Lengths are given in Metres.
2. Positional Dimensions for Route are given in Feet and Inches.
3. For Cross Section and Manhole details see Drg. No. R2533/3A.



1	Oct. 1987.	P304, P305 ADDED.	
2	12/2/2002 GM	System Audit. Nov. 2001 Update. Notes 1, 2 & 3 added. Title amended to include 'Euston Sub Station'. New Title block.	

Euston Sub Station/Cobourg St. Switch House.—
Camden Town Sub Station.
Road Duct Route.

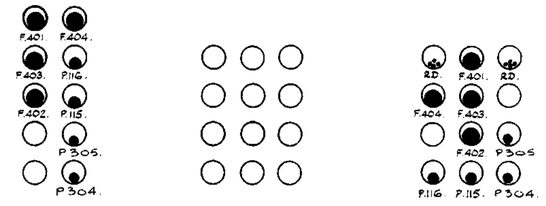
REDRAWN: B.T.N.
CHECKED: R.WATSON. 6/11/02
APPROVED: G.S.
DATE: 12/2/2002
SCALE: 1:1250

SEEBOARD POWERLINK PROVIDING THE POWER FOR UNDERGROUND
Distribution Network Engineering
Generating Station Cottage
10 Hoskins Street
London SE10 9PB
Tel: 020 - 8293 5548
Fax: 020 - 7918 8611

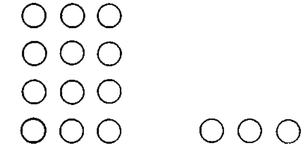
DRAWING No: R 2533/3 REV. 2

R2533/3A.

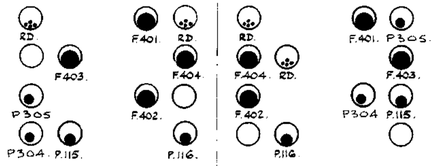
MANHOLE Nº 11.



MANHOLE Nº 11A.



MANHOLE Nº 12.



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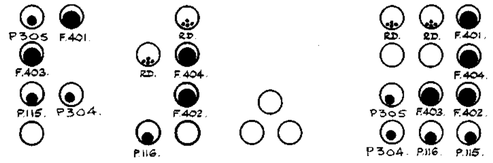

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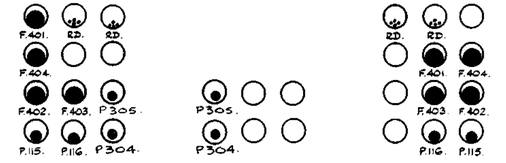
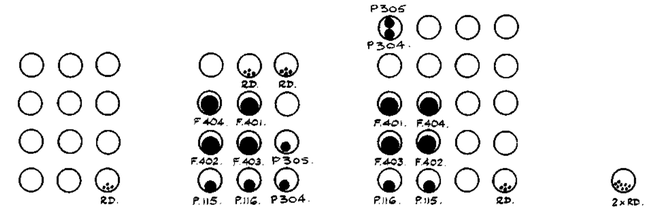


MANHOLE Nº 15.



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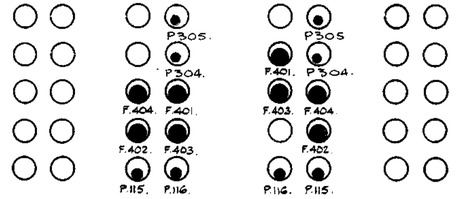

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2	12/2/2002	System Audit. Nov. 2001 Update. Title amended to include 'Euston Sub Station'. New title block.

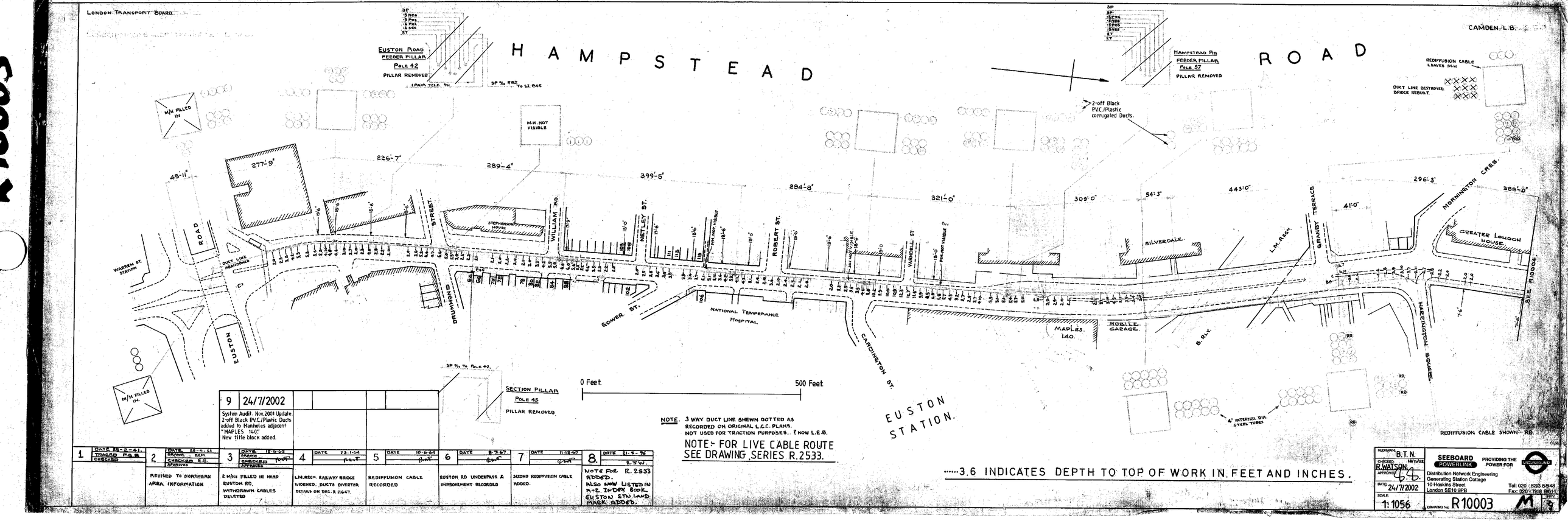
Euston Sub Station/Cobourg St. Switch House.—
Camden Town Sub Station.
Road Duct Route. Manhole Layouts.

REDRAWN: B.T.N.
CHECKED: R.WATSON 6/11/02
APPROVED:
DATE: 12/2/2002
SCALE: N.T.S.

SEEBOARD POWERLINK
PROVIDING THE POWER FOR UNDERGROUND
Distribution Network Engineering
Generating Station Cottage
10 Hoskins Street
London SE10 9PB
Tel: 020 - 8293 5548
Fax: 020 - 7918 8611

DRAWING No: R2533/3A. REV. 2

LONDON TRANSPORT BOARD.



NOTE. 3 WAY DUCT LINE SHEWN DOTTED AS RECORDED ON ORIGINAL L.C.C. PLANS. NOT USED FOR TRACTION PURPOSES. NOW L.E.B.

NOTE:- FOR LIVE CABLE ROUTE SEE DRAWING SERIES R.2533.

.....3.6 INDICATES DEPTH TO TOP OF WORK IN FEET AND INCHES.

1	DATE 28-2-41. TRACED P.S.B. CHECKED	2	DATE 28-4-53 DRAWN B&M CHECKED E.G. APPROVED	3	DATE 15-6-68 DRAWN CHECKED APPROVED	4	DATE 23-1-64	5	DATE 10-6-64	6	DATE 8-7-67	7	DATE 11-12-67	8	DATE 21-5-96 R.S.W.
	REVISED TO NORTHERN AREA INFORMATION		2 M/Hs FILLED IN NEAR EUSTON RD. WITHDRAWN CABLES DELETED		L.M.R.SCH. RAILWAY BRIDGE WIDENED. DUCTS DIVERTED. DETAILS ON DRG. R 11647.		REDIFFUSION CABLE RECORDED		EUSTON RD UNDERPASS & IMPROVEMENT RECORDED		SECOND REDIFFUSION CABLE ADDED.				NOTE FOR R.2533 ADDED. ALSO MAN LISTED IN A-Z INDEX BOOK. EUSTON STN LAND MARK ADDED.
9	24/7/2002														
	System Audit. Nov. 2001 Update. 2-off Black PVC./Plastic Ducts added to Manholes adjacent "MAPLES 140". New title block added.														

TRACEDWN	B.T.N. 18/11/02
CHECKED	R.WATSON.
APPROVED	
DATE	24/7/2002
SCALE	1:1056

SEEBOARD POWERLINK PROVIDING THE POWER FOR UNDERGROUND

Distribution Network Engineering
Generating Station Cottage
10 Hoskins Street
London SE10 9PB

Tel: 020 8293 5548
Fax: 020 7318 8611

DRAWING No. R10003 REV. M

philip@lmbgeosolutions.com

From: philip@lmbgeosolutions.com
Sent: 12 December 2019 17:18
To: 'Alex.Birgauan@thameswater.co.uk'
Subject: FW: RE: Basement Development, land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Attachments: LID Thames Water Search.pdf; Location plan.pdf

Importance: High

Dear Alex
I'm informed by Ana that see no longer works with the asset team and that I should direct this email to you. Please see below.
Best regards,
Philip

From: philip@lmbgeosolutions.com <philip@lmbgeosolutions.com>
Sent: 12 December 2019 11:58
To: 'ana.pereira@thameswater.co.uk' <ana.pereira@thameswater.co.uk>; 'robert.ashiley@thameswater.co.uk' <robert.ashiley@thameswater.co.uk>
Subject: RE: Basement Development, land to the rear of 75-76 Oakley Square, Lidlington Place, London NW1 1NH
Importance: High

Dear Ana & Robert
I trust this email finds you well?

We are currently working with a client that wishes to develop a vacant site to include a single storey basement. Location plan attached.

The client has undertaken a Thames Water utility search and in accordance with LBC guidance a Basement Impact Assessment an associated Ground Movement Assessment (GMA) will be completed. We have identified Thames Water Assets (main water & sewer) within the street (see attached search). We believe these assets will be outside the zone of influence of ground movements but if required the GMA will appraise potential ground movement associated with the basement excavation in the vicinity of these assets.

By issue of this email we are informing you of the proposed basement development for your records. If you require any additional information then please feel free to contact me at your convenience.

Best regards,

Philip Lewis
Bsc (Hons), Msc, FGS, CGeol
Director
LMB Geosolutions Ltd
Tel. +44 7739735097

Home - LMB Geosolutions Ltd
Connect with me on
LinkedIn

APPENDICES

APPENDIX D DRAINAGE SEARCH

Personal Drainage and Water Search

Connection Summary

Mains Water Entries under question 2(b)	CONNECTED
Foul Water Entries under question 1(b)	CONNECTED
Surface Water Entries under question 1(c)	CONNECTED

Asset Location Summary

Drainage Assets within Boundary Entries under question 1(e)	NO
Water Assets within Boundary Entries under question 2(c)	SEE ANSWER
Public Sewer within 100ft Entries under question 1(f)	YES

Search Details

Property Address
Lot 3 Car Park Site, Lidlington Place rear
75-76 Oakley Square
Mornington Crescent
LONDON
Camden
NW1 2JU

Catchment Area
Thames Water Utilities Ltd
Clearwater Court
Vastern Road
Reading
RG1 8DB

Report Reference
11092967

Customer Reference
141308.005/CF1/Quach

Search Date
15 October 2018

Requested By
Cavendish Legal Partnership

Search Conducted by

Wayne Mason

Customer Service

If you have any additional enquiries or require further information to assist with this transaction, please contact our Helpdesk on

0870 787 7625

or by emailing
helpdesk@searchflow.co.uk

Understanding This Report

Data Sources

The information in this report has been obtained by diligent comparison of location plans supplied by Ordnance Survey and an inspection of the Water Company's own publicly available water and sewer asset plans.

To clarify the source of information for each section of this report, we use the following icons:

Personal Search
Sections with this logo contain data inspected from Water Company sources by a Personal Search Agent.

SearchFlow
Sections with this logo are powered by SearchFlow systems.

Smart Colour Coding

To assist you with quickly reading and interpreting this report, we use the following colour coding:

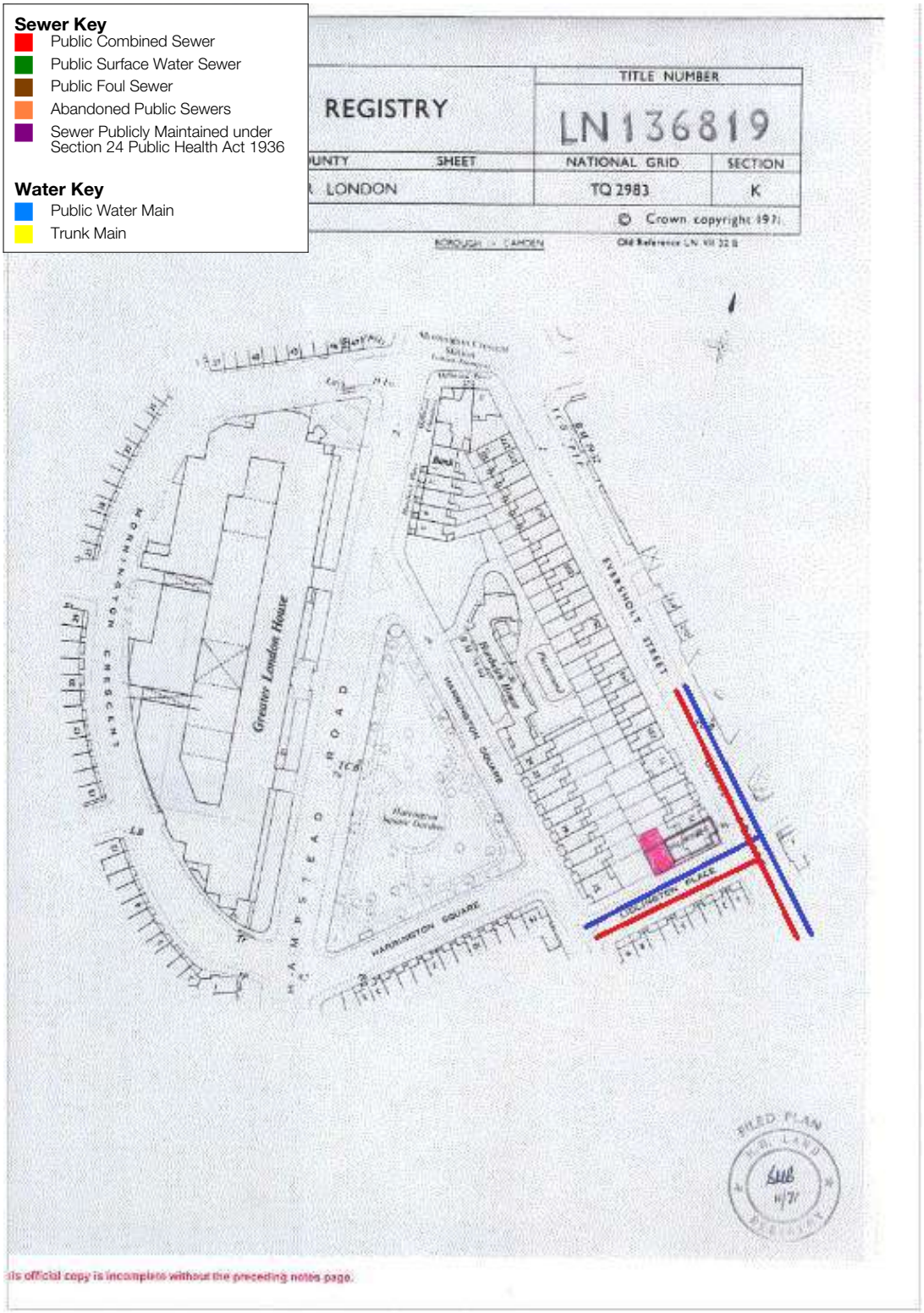
No Entries	This section has been searched but no information was returned	NO
Attention	One or more entries in this section reveal potential risk and require attention	YES
Risk Not Screened / Requires Attention	Entries revealed in this section have not been risk scored and may require attention	YES
Low Risk	Information has been returned in this section and is perceived to be low risk	YES

Drainage and Water Asset Plan

This search has been compiled based on the search area outlined below.

Sewer Key
- Public Combined Sewer
- Public Surface Water Sewer
- Public Foul Sewer
- Abandoned Public Sewers
- Sewer Publicly Maintained under Section 24 Public Health Act 1936

Water Key
- Public Water Main
- Trunk Main



Drainage Enquiries and Replies

This section contains information relating to the drainage of foul water and sewerage from the property and the run off of surface water to the public sewer network. We answer these questions based on information we obtain by visually inspecting the drainage assets of the relevant supplier for this coverage area.

1 Sewerage Undertaker
The supplier for this area is:-

Thames Water Utilities Ltd
Clearwater Court
Vastern Road
Reading
RG1 8DB

T: 0845 9200 888
W: www.thameswater.co.uk

1 (a) Is a plan showing the nearest public sewers provided? YES

A plan showing the nearest sewers is included in this report.

1 (b) Does foul drainage from the property drain to a public sewer? YES

The water company's records indicate that foul water from the property does drain to the public sewerage system.

i Connection status is inferred by visually inspecting the location of assets in the vicinity of the property. We recommend confirming this with the vendor.

1 (c) Does surface water from the property drain to a public sewer? YES

The water company's records indicate that the surface water from the property does drain to the public sewerage system.

i Connection status is inferred by visually inspecting the location of assets in the vicinity of the property. We recommend confirming this with the vendor.

1 (d) Is any sewer serving or which is proposed to serve the property subject of a current statutory adoption agreement or an application for such an agreement? NO

The water company's records indicate that the sewers serving the development of which this property forms part are not the subject of an application for adoption under Section 104 of the Water Industry Act 1991. Where the property is part of an established development it would not normally be subject to an adoption agreement under Section 104 of the Water Industry Act 1991.

i
1. If the property is a new or recent development, the developer may be able to provide additional information.
2. Private sewers and lateral drains subject to adoption agreements were in the main transferred to public ownership on 1st October 2011. As a result, additional public sewers other than those indicated on the public asset plan may now exist but not yet be shown if the water company has not yet updated their records.

1 (e)	Does the public sewer map show any public sewer within the boundary of the property?	NO

We are not aware of any public sewers within the boundary of the property. It has not been a requirement for all public sewers to be recorded on the public sewer map. It is therefore possible for unidentified public sewers to exist within the boundary of the property.

i

1. Statutory undertakers have a legal right to access properties to carry out work on assets located within the boundary of private properties. The employees or contractors of an undertaker may require access, subject to notice.
2. Historically, public sewers, disposal mains or lateral drains were not always recorded on public asset maps. It is possible for unidentified sewers, disposal mains or lateral drains to exist within the boundaries of the property. A site inspection is highly recommended prior to any development work commencing.
3. Private sewers and lateral drains subject to adoption agreements were in the main transferred to public ownership on 1st October 2011. As a result, additional public sewers other than those indicated on the public asset plan may now exist but not yet be shown if the water company has not yet updated their records. Public assets running within the boundary of the property may restrict development. If there are plans to develop the property, the sewerage undertaker should be contacted and further enquiries made.

1 (f)	Does the public sewer map show any public sewer within 100 feet (approximately 30 metres) of the property?	YES

The public sewer map indicates that there is a public sewer running within 30 metres (100 feet) of the property.

i There may be additional lateral drains and/or public sewers in the vicinity which are not recorded on the public sewer map if they were transferred to public ownership on 1st October 2011.

1 (g)	Is there a current statutory agreement or consent to erect a building or extension on the property over or in the vicinity of a public sewer or disposal main?	NO

The water company's records indicate that there is not a statutory agreement or consent in respect of the building over a public sewer at this property. For historical reasons the water company may not be aware of some agreements or consents which have been entered into by the local authority.

i

1. If an asset is shown within the boundary of the property, you may wish to make further enquiries with the relevant company.
2. If a building, extension or conservatory is erected over a sewer without appropriate permission, it may have to be removed or altered.
3. Private sewers and lateral drains subject to adoption agreements were in the main transferred to public ownership on 1st October 2011. As a result, additional public sewers other than those indicated on the public asset plan may now exist but not yet be shown if the water company has not yet updated their records.

Water Enquiries and Replies

This section contains information relating to the supply of clean water to the property, which may be provided by a different company to the drainage services. We answer these questions based on information we obtain by visually inspecting the water assets of the relevant supplier for this coverage area.

2 Water Undertaker
The supplier for this area is:-

Thames Water Utilities Ltd
Clearwater Court
Vastern Road
Reading
RG1 8DB

T: 0845 9200 888
W: www.thameswater.co.uk

2 (a) Is a plan showing the nearest water assets provided? YES

A plan showing any relevant water assets in the vicinity is included in this report.

2 (b) Is the property connected to the mains water supply? YES

The water company's records indicate that the property is connected to the mains water supply.

2 (c) Does the map of waterworks show any vested water mains or assets within the boundary of the property? SEE ANSWER

We are not aware of any vested water mains within the boundary of the property.

1. If an asset is shown within the boundary of the property, you may wish to make further enquiries with the relevant company.
2. If a building, extension or conservatory is erected over a water asset without appropriate permission, it may have to be removed or altered.

Billing Information

A drainage and water search would usually establish if a property is being billed for the provision of services, and if so, whether or not the property has a water meter installed. The Water Companies of England & Wales do not make this information available for public inspection, and as such it cannot usually be answered in the scope of a personal search report. The informative below suggests how the status of billing at the property can be confirmed prior to completion.

3 Charging Basis
What is the basis for charging for water supply and sewerage at this property? SEE NOTE

Please refer to vendor or pre-contract documents such as a recent water bill to confirm the billing status of the property.

Setting a New Standard in Personal Searching

This search was produced by SearchFlow Limited, which is registered with the Property Codes Compliance Board.

In a marketplace driven by a need for speed and cost efficiency, Personal Drainage and Water Searches have long provided a fast and effective alternative to the traditional CON29DW report.

In 2004, Richards Gray became one of the first personal search companies to provide a 'Private' drainage and water search. The appetite for the product was quickly proven, growing from a zero start to £2M revenue in its first year. Personal searches continue to grow year on year, and as a regulated product have been firmly established in credibility, with lender acceptance at an all-time high.

Richards Gray became part of SearchFlow in 2008, and has since been manned by our PSA network, which has over thirty years' experience in delivering quality personal search solutions.

In 2016, we adopted the SearchFlow brand as part of the redevelopment of our drainage and water product. SearchFlow have set a new standard in data-driven reporting, adding intelligent risk highlighting and ease of use features that aid compliance while making the report more user friendly.

How This Search Was Compiled

This report highlights sections powered by datasets held within our group of companies. Those elements that were personal searched at the water company are indicated with the PSA icon, and the records were inspected and quality assured by **Wayne Mason**.

Customer Care

If you have any queries arising from the content of this report, please contact our dedicated Helpdesk using the contact details on the Useful Contacts page.

Useful Contacts

Please see below the contact details for those authorities, agencies, organisations or data providers referred to within this report.

For all other queries please contact:

SearchFlow Ltd
42 Kings Hill Avenue
Kings Hill
West Malling
Kent
ME19 4AJ

If you require assistance please contact our dedicated Helpdesk team on:

0870 787 7625

or by emailing

helpdesk@searchflow.co.uk

Contact	Name	Address	Contact Details
1	**Thames Water Utilities Ltd**	Clearwater Court Vastern Road Reading RG1 8DB	**T:** 0845 9200 888 **E:** **W:** www.thameswater.co.uk
2	**Thames Water Utilities Ltd**	Clearwater Court Vastern Road Reading RG1 8DB	**T:** 0845 9200 888 **E:** **W:** www.thameswater.co.uk

Complaints Procedure

If you want to make a complaint, we will:

- Acknowledge it within 5 working days of receipt
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt
- Keep you informed by letter, telephone or email, as you prefer, if we need more time
- Provide a final response, in writing, at the latest, within 40 working days of receipt
- Liaise, at your request, with anyone acting formally or on your behalf.

Complaints should be sent to:

SearchFlow Ltd, 42 Kings Hill Avenue, Kings Hill, West Malling, Kent, ME19 4AJ.
Tel: 0870 870 8889
Email: helpdesk@searchflow.co.uk

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman Scheme (TPOs) as detailed on the next page. We will co-operate fully with the Ombudsman during an investigation and comply with his final decision.

Important Consumer Protection Information

This search has been produced by PSA which is a trading name of:

SearchFlow Ltd
42 Kings Hill Avenue
Kings Hill
West Malling
Kent
ME19 4AJ

Tel: 0870 870 8889
Email: info@searchflow.co.uk

SearchFlow is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- Provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- Sets out minimum standards which firms compiling and selling search reports have to meet.
- Promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- Enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's Core Principles

Firms which subscribe to the Search Code will:

- Display the Search Code logo prominently on their search reports
- Act with integrity and carry out work with due skill, care and diligence
- At all times maintain adequate and appropriate insurance to protect consumers
- Conduct business in an honest, fair and professional manner
- Handle complaints speedily and fairly
- Ensure that products and services comply with industry registration rules and standards and relevant laws
- Monitor their compliance with the Code.

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award compensation of up to £5,000 to you if he finds that you have suffered actual loss as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details

The Property Ombudsman Scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire
SP1 2BP

Tel: 01722 333306
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk.
PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

Form No SRIP DW
v1.3
SEARCH REPORT INSURANCE POLICY
Policy Issuer: SearchFlow Limited
Policy Number: SRIP(E&W)60-085-000000

1. Definitions
In this policy unless the context otherwise requires:
1.1 "Actual Loss" means:
1.1.1 the difference between
1.1.1.1 the lesser of the price the Insured actually paid for the Land and the Market Value of the Land at the Policy Date without an Adverse Entry; and
1.1.1.2 the Market Value of the Land at the Policy Date as reduced by the effect of an Adverse Entry.
1.1.2 in respect of a Lender: the difference between the amount of loan outstanding at the time the Lender becomes aware of an Adverse Entry and the amount recovered by the Lender on sale of the Land.
provided that First Title's liability under this policy will, under no circumstances, exceed £2,000,000.

1.2 "Adverse Entry" means any matter which could have been disclosed as more particularly described in this definition in form CON29DW which is in existence on or before the Policy Date but which matter was not disclosed by the Appropriate Body to the Policy Issuer carrying out the Search Report due to:
1.2.1 in relation to the Appropriate Body:
1.2.1.1 the failure to provide answers to the following questions raised in the Search Report because of its failure to make the relevant registers available to the Policy Issuer:
1.2.1.1.1 Question 10 – Where relevant, please include a copy of an extract from the map of waterworks.
1.2.1.1.2 Question 11 – Is any water main or service pipe serving, or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?
1.2.1.1.3 Question 14 – Are there any water mains, resource mains or discharge pipes within the boundaries of the property?
1.2.1.2 in relation to any of the Search Report questions, a failure to supply relevant information because of its negligence or an error on its part; or
1.2.2 an incorrect reply being given to the Policy Issuer by the Appropriate Body either because of its negligence or an error on its part; or
1.2.3 an entry is not disclosed in the Search Report to the Insured or anyone acting on behalf of the Insured due to an error or omission on the part of the Policy Issuer; or
1.2.4 an entry is not disclosed in the Search Report relating to the following questions because of the Policy Issuer's failure to search a relevant register:
1.2.4.1 Question 16 – Will the basis for charging for sewerage and water services at the property change as a consequence of a change of occupation?
1.2.4.2 Question 21 – Is the dwelling-house which is or forms part of the property at risk of internal flooding due to overloaded public sewers?
1.2.4.3 Question 22 – Is the property at risk of receiving low water pressure or flow?
1.2.4.4 Question 23 – Please include details of a water quality analysis made by the Water Undertaker for the water supply zone in respect of the most recent calendar year.
1.2.4.5 Question 24 – Please include details of any departures, authorised by the Secretary of State under Part 6 of the 2000 Regulations, from the provisions of Part 3 of those Regulations; or authorised by the Welsh Ministers under Part 6 of the 2001 Regulations, from the provisions of Part 3 of those Regulations.
1.2.4.6 Question 25 – Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.

1.3 "Appropriate Body" means a water authority or other public body providing information in response to an application made under Form CON29DW (Law Society Copyright, as amended).
1.4 "Authorised Expenses" means any costs, legal fees and expenses that First Title is obliged to pay under this policy and has approved in writing.
1.5 "Bordereau" means the form supplied by First Title to the Policy Issuer recording insurance given in respect of individual residential properties insured under the terms of this policy.
1.6 "Conveyancer" means a solicitor or licensed conveyancer acting for an Insured in relation to the purchase or sale of the Land or to a loan made to the Buyer for the purpose of purchasing the Land.
1.7 "First Title" means First Title Insurance plc.
1.8 "Insured" means the insured named in the policy schedule and their Lender.
1.9 "Know, Known, Knowledge or Knowing" means having actual knowledge and not constructive knowledge or notice which may be imparted by matters appearing in public records established by local government or other relevant public bodies.
1.10 "Land" means the interest in an existing individual residential property as developed at the Policy Date and specified in the Bordereau, that has been used in its current form for a minimum of 12 months.
1.11 "Lender" means a person or body making a loan to the Insured secured over the Land.
1.12 "Market Value" means the average of valuations carried out by independent and suitably qualified valuers appointed respectively by the Insured making a claim and by First Title.
1.13 "Policy Date" means the date on which the Search Report was prepared.
1.14 "Policy Issuer" means Searchflow Limited.
1.15 "Search Report" means a report providing the information contained in Form CON29DW obtained from the Policy Issuer and not directly from an Appropriate Body.

2. Coverage Statement
Subject to the terms and conditions of this policy and as the circumstances may require First Title will do either or all of the following:
2.1 indemnify each Insured against Actual Loss incurred by that Insured by reason of an Adverse Entry which existed at the Policy Date in the records of the Appropriate Body, but was not fully disclosed to that Insured in the Search Report; and/or
2.2 at First Title's option, defend the Insured(s) for the risks insured by this policy. First Title will also pay any Authorised Expenses that it incurs in that defence. First Title can end this duty to defend by exercising any of the options listed in paragraph 9 of this policy.
2.3 First Title will also indemnify each Insured where a Conveyancer notifies First Title that that Insured has brought a claim against the Conveyancer in respect of a matter covered by paragraph 2.1 of this policy on the basis that such loss arose solely because the Conveyancer relied on the Search Report, provided that:
2.3.1 the Conveyancer does not agree any payment to an Insured or a third party without the prior written approval of First Title and
2.3.2 the Conveyancer complies with the Insured's obligations under this policy.

3. Exclusions
First Title will not indemnify an Insured against Actual Loss, will not have a duty to defend and will not be obliged to pay Authorised Expenses resulting from any of the following matters:
3.1 in respect of any matter of which the Insured or his legal representative had Knowledge as at the Policy Date; or
3.2 in respect of any Adverse Entry which is actually revealed by the Search Report relating to questions referred to therein; or
3.3 any Adverse Entry which arises after the Policy Date; or
3.4 any matter which would not have been revealed by a Search Report or in any answers to the questions raised in a CON29DW.
3.5 any matter that cannot revealed by the Appropriate Body in relation to the Search Report.
3.6 Where the cover is in respect of a remortgage the cover provided by this policy will apply to the lender only.

4. Continuation of indemnity
The coverage of any insurance given under this policy does not continue to protect any purchaser from a Buyer or Lender.

5. Notification of a claim
5.1 An Insured must advise First Title in writing as soon as possible after that Insured becomes aware of any claim or circumstance which might entitle that Insured to make a claim under this policy. The Insured must inform First Title Insurance plc in any one of the following formats also quoting the reference being the policy number and SRIP 60–059.

5.1.1 by post to Legal and Claims, First Title Insurance plc, ECA Court, 24-26 South Park, Sevenoaks, Kent, TN13 1DU;
5.1.2 by e-mail to legal&claims@firsttitle.eu.
5.2 First Title's obligation to an Insured under this policy may be reduced in part or in whole if that Insured refuses to co-operate with First Title and any action or omission of that Insured in these respects adversely affects First Title's ability to dispute or defend any challenge or claim or to commence any action against other persons.

6. Defence and prosecution of actions and an Insured's duty to co-operate
6.1 First Title may at its own expense and without unreasonable delay defend the Insured in litigation concerning any adverse matter referred to in paragraph 2.1.
6.2 First Title will be entitled to select the

lawyer to act and First Title will not be liable for and will not pay the fees of any other lawyer.
6.3 First Title may pursue any litigation (including appeals) to final determination by a court and reserves the right in its sole discretion to appeal any judgment or order.
6.4 First Title will consult with the Insured on all matters arising under a claim.

7. Proof of loss and deadline for advising of loss
7.1 An Insured must give First Title a written statement detailing the amount of that Insured's loss and the method that that Insured used to compute that amount.
7.2 The statement must be given to First Title not later than 90 days after that Insured knows of the facts which will let the Insured establish the amount of the Insured's loss.

8. Settling claims and termination of liability
If an Insured makes a claim under this policy for which First Title is liable or in any other way First Title learns of a matter or circumstance for which First Title is or may be liable First Title can do one or more of the following:
8.1 pay that Insured the amount of indemnity cover in accordance with the definition of Actual Loss in paragraph 1.1 together with any Authorised Expenses; or
8.2 purchase the debt secured by a mortgage for the amount owed under it together with any interest and Authorised Expenses. In those circumstances the Lender must transfer or assign the mortgage together with any collateral securities and credit enhancements to First Title on receipt of payment and give all necessary notices of that transfer or assignment; or
8.3 pay or otherwise settle any claim with other parties for or in the Insured's name together with any Authorised Expenses; or
8.4 pay or otherwise settle with the Insured the Actual Loss provided for under this policy together with any Authorised Expenses.

9. Determination and extent of liability
The insurance given under this policy is a contract of indemnity against actual monetary loss. Subject to paragraphs 11 and 12 of this policy First Title's total liability under this policy (excluding Authorised Expenses) will not exceed the amounts defined as Actual Loss contained in paragraph 1.1.

10. Limitation of First Title's liability
First Title will not be liable to indemnify an Insured:
10.1 if First Title removes any matter giving rise to that Insured's claim under this policy in a reasonably diligent manner by any method including litigation; or
10.2 if First Title makes a settlement with a third party;
10.3 until litigation, including appeals, in relation to a claim conducted by First Title (or by an Insured with First Title's authorisation) has been finally determined by a court;
10.4 for liability voluntarily assumed by an Insured in negotiating or settling any claim or litigation without First Title's prior written consent.

11. Reduction of indemnity and reduction or termination of First Title's liability
The amount of indemnity cover payable by First Title under this policy will be reduced or terminated (as the case may be) by any or all of the following:
11.1 all payments under this policy except for Authorised Expenses;
11.2 the payment by any person of all or part of the debt or any other obligation secured by a mortgage or other charge over the Land or any voluntary, partial or full satisfaction or release of such mortgage or charge to the extent of the satisfaction or release; and/or
11.3 the amount by which an Insured's acts or omissions have increased First Title's liability or reduced First Title's ability to recover amounts from third parties;
provided always that the interest of any Insured will not be prejudiced by any act or default of another Insured (not being such Insured) which might otherwise invalidate or reduce the indemnity provided by the Policy.

12. Payment of loss
When the extent of an Insured's loss and First Title's liability under this policy have been finally determined, First Title will pay that amount to that Insured within 30 days of its determination.

13. Subrogation
If First Title agrees to indemnify or defend an Insured under this policy in respect of any claim then regardless of whether or not actual payment has been made First Title will immediately be subrogated to any rights, contractual or otherwise, which that Insured may have in connection with that claim, the mortgage or the Land. If First Title asks, the Insured must transfer to First Title all of the Insured's rights and remedies against any person or property that, in First Title's opinion, might be necessary to perfect this right of subrogation.

14. Liability limited to this policy
This policy and any endorsements to it given in writing by First Title will be the entire contract between each Insured and First Title.

15. Severability
In the event that any provision of this policy is held to be invalid or unenforceable under any law, that provision may be severed from and will not be taken to have affected the remaining provisions.

16. Governing law and jurisdiction
This policy will be governed by the law of England and Wales and the courts of England and Wales.

17. Cancellation rights
No Insured will be entitled to cancel the insurance given to it so as to affect the rights of any other Insured and no refund of premium will be payable.

18. Notices
All notices required to be served on or given to First Title Insurance plc under this policy must include a reference SRIP 60–059 and the address of the Land and be delivered to the Claims Department, First Title Insurance plc, ECA Court, 24-26 South Park, Sevenoaks, Kent, TN13 1DU.

keyfacts®

POLICY SUMMARY FOR SEARCH REPORT INSURANCE POLICY

1. This summary.

This document provides a summary of the key features of the Search Report Insurance Policy under which insurance will be given to individual Insureds and Lenders. This document does not contain the full terms and conditions of the Search Report Indemnity Insurance Policy. These can be found in the specimen policy document provided with this document. This summary is not part of the policy and it does not commit us to provide insurance on these or any other terms. It is important that you read the policy itself. The policy is a legally binding contract between each Insured and First Title Insurance plc.

2. The Insurer.

First Title Insurance plc is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. First Title Insurance plc provides general insurance products.

3. Type of insurance.

The insurance given under the Search Report Insurance Policy protects against actual loss suffered because of any adverse circumstance which existed in the records of an Appropriate Body and affected the Land at the time a Search Report was compiled but was not fully disclosed in the Search Report. See the Coverage Statement in paragraph 2 of the policy.

4. What does the policy not cover?

All of the matters which are excluded from cover are detailed in paragraph 3 of the Search Report Insurance Policy. Please read this part of the policy carefully.

5. Limitations of the Policy.

The insurance given under the Search Report Insurance Policy is a contract of indemnity against actual monetary loss and any payment under it will not exceed the amounts detailed in paragraph 1.1 of the policy, which should be referred to.

6. Cancellation Terms.

Because the interests of a number of persons may all be protected at the same time by insurance given under the Search Report Insurance Policy in relation to each individual property, no person insured under the policy will have the right to cancel the insurance without the written agreement of all other persons who might benefit from the insurance. No refund of premium will be payable. See paragraph 17 of the policy.

7. Term of the policy.

Cover under insurance given under the Search Report Insurance Policy protects only the persons specified in the policy as an "Insured" and does not continue to protect any purchaser from an insured. Each person who is insured should check periodically to ensure that the policy still meets their needs. Please refer to paragraph 2 of the policy.

8. Claims.

Anyone wishing to claim under the insurance given under the Search Report Insurance Policy must advise First Title in writing as soon as possible after becoming aware of any claim or circumstance which might entitle them to make a claim. Please see paragraph 5 of the policy.

9. Queries and/or Complaints

For further information or if the Insured wishes to complain about any aspect of the service the Insured has received, please contact First Title Insurance plc at ECA Court, 24-26 South Park, Sevenoaks, Kent, TN13 1DU. If the Insured's complaint is not dealt with to the Insured's satisfaction the Insured can complain to the Financial Ombudsman Service, Exchange Tower, London, E14 9SR. Telephone: 0800 023 4567 or 0300 123 9123. There are some instances where the Financial Ombudsman Service cannot consider the Insured's complaint. Making a complaint will not prejudice the Insured's right to take legal proceedings.

10. Compensation

Should First Title Insurance plc become unable at any time to meet claims against it, the Insured's interests will be protected by the Financial Services Compensation Scheme. There are maximum levels of compensation the Insured can receive under the Scheme. The Insured will normally be covered for at least 90% of the payment due under the Insured's policy. For further information the Insured can contact the Scheme helpline on 0800 678 1100 or 020 7741 4100 or visit their website at www.fscs.org.uk.

First Title Insurance plc is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. Financial complaints which we cannot settle may be referred to the Financial Ombudsman Service.

Searchflow Limited
42 Kings Hill Avenue
Kings Hill
West Malling
Kent
ME19 4AJ

1 The Financial Conduct Authority (FCA) The FCA is responsible for the conduct of firms in relation to the customers in the UK. They focus mainly on protecting consumers and ensuring areas such as Treating Customers Fairly (TCF) is embedded within all firms.
The FCA regulations require us to give you this document. Use this information to decide if our services are right for you.

2 Whose products do we offer? We only offer a product from First Title Insurance plc for Search Report Insurance.

3 Which service will we provide you with? You will not receive advice or a recommendation from us for Search Report Insurance.

4 What will you have to pay us for our services? There is no fee payable to us for organising the Search Report Insurance.

5 Who regulates us? SearchFlow Limited trading as PSA. Searchflow Limited's FCA Registration number is 563702. You can check this on the

Financial Services Register by visiting the following website www.fsa.gov.uk/register or by contacting the FCA on 0800 111 6768.

Search Report Insurance Policy
Demands & Needs Statement and Suitability

In connection with the Personal Drainage Search carried out in relation to the property, the transaction benefits from the inclusion of a Search Report Insurance Policy. This policy will cover you, the Insured, against Actual Loss incurred by you by reason of an Adverse Entry which existed at the Policy Date but was not fully disclosed to you in the Search Report.

Under the Financial Conduct Authority regulations we are required to advise details of the contract of insurance recommended.

We only deal with First Title Insurance plc for Search Report Insurance. Our recommendation is based upon First Title Insurance plc being an insurance company authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority and is a subsidiary of The First American Financial Corporation, a leading global provider of title insurance for residential and commercial real estate transactions.

Please also refer to the attached policy summary and retain the document, along with this letter, for future reference.

First Title Insurance plc is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. Financial service complaints we cannot settle may be referred to the Financial Ombudsman Service.

APPENDICES

APPENDIX E EXPLORATORY HOLE LOGS

Percussion Drilling Log

Project Name: Lidlington Place	Client: Minh Quach	Date: 18/12/2019
Location: London NW1	Contractor: Smiths Drilling	
Project No. : LMB_Lidlington	Crew Name:	Drilling Equipment:

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
BH01	WLS		PIL	1:50	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.20			Concrete.
					0.60			MADE GROUND: brown gravelly slightly sandy clay. Gravel sub-angular fine to medium brick and occasional flint.
		0.90		HVP=75	0.85			MADE GROUND: brown clay with occasional brick and flint gravel and rare carbonaceous material. Occasional rootlets.
		1.00	SPT	N=9 (1,1/2,2,3,2)				Firm brown with rare blue grey veining CLAY with rare very weak mudstone inclusions and dead root traces. (LONDON CLAY FORMATION).
		1.60		HVP=65				*1.1m rare rootlets.*
								occasional calcarenite nodules.
		2.00	SPT	N=19 (2,3/3,4,5,7)	2.10			
		2.60		HVP=80				Firm becoming stiff brown with occasional blue/grey veining CLAY. Closely fissured. (LONDON CLAY FORMATION).
		3.00	SPT	N=11 (2,2/3,2,3,3)				*2.90m occasional silty fine sand partings.*
								occasional orange brown silty fine sand partings.
		3.50		HVP=90				*3.50m becomes very closely fissured.*
		4.00	SPT	N=21 (4,3/4,5,6,6)				
		4.60		HVP=102				*occasional selenite crystals.*
	▼	5.00	SPT	N=20 (3,4/4,4,6,6)				
		5.60		HVP=109				
		6.00	SPT	N=22 (5,5/5,5,5,7)				*6.0m becomes dark grey brown and extremely closely fissured.*
		6.60		HVP=115				*6.50m occasional selenite crystals.*
		7.00	SPT	N=21 (5,4/4,5,6,6)				
		7.60		HVP=125				
		8.00	SPT	N=21 (3,3/4,5,6,6)	8.00			Very stiff dark grey CLAY. Extremely closely fissured. (LONDON CLAY FORMATION).
		8.60		HVP=127				
		9.00	SPT	N=37 (4,4/6,9,9,13)				
		9.50	SPT	N=45 (8,9/9,9,13,14)				
					10.00			End of Borehole at 10.000m

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

Percussion Drilling Log

Project Name: Lidlington Place	Client: Minh Quach	Date: 18/12/2019
Location: London NW1	Contractor: Smiths Drilling	
Project No. : LMB_Lidlington	Crew Name:	Drilling Equipment:

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
BH02	WLS		PIL	1:50	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.18			Concrete.
		0.50	ES		0.30			MADE GROUND: brown clayey gravelly sand. Gravel sub-angular fine to coarse brick and occasional glass and flint.
					0.80			MADE GROUND: brown to dark brown slightly gravelly clay with occasional carbonaceous inclusions. Gravel sub-angular fine to coarse brick and concrete.
					0.80			Concrete
								End of Borehole at 0.800m

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

Refused on concrete.

Percussion Drilling Log

Project Name: Lidlington Place	Client: Minh Quach	Date: 18/12/2019
Location: London NW1	Contractor: Smiths Drilling	
Project No. : LMB_Lidlington	Crew Name:	Drilling Equipment:

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
BH02A	WLS		PIL	1:50	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.18			Concrete.
					0.25			MADE GROUND: brown clayey gravelly sand. Gravel sub-angular fine to coarse brick and occasional glass and flint.
					0.80			MADE GROUND: brown to dark brown slightly gravelly clay with occasional carbonaceous inclusions. Gravel sub-angular fine to coarse brick and concrete.
					0.80			Concrete.
								End of Borehole at 0.800m

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

Refused on concrete.

APPENDICES

APPENDIX F GEOTECHNICAL LABORATORY RESULTS

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

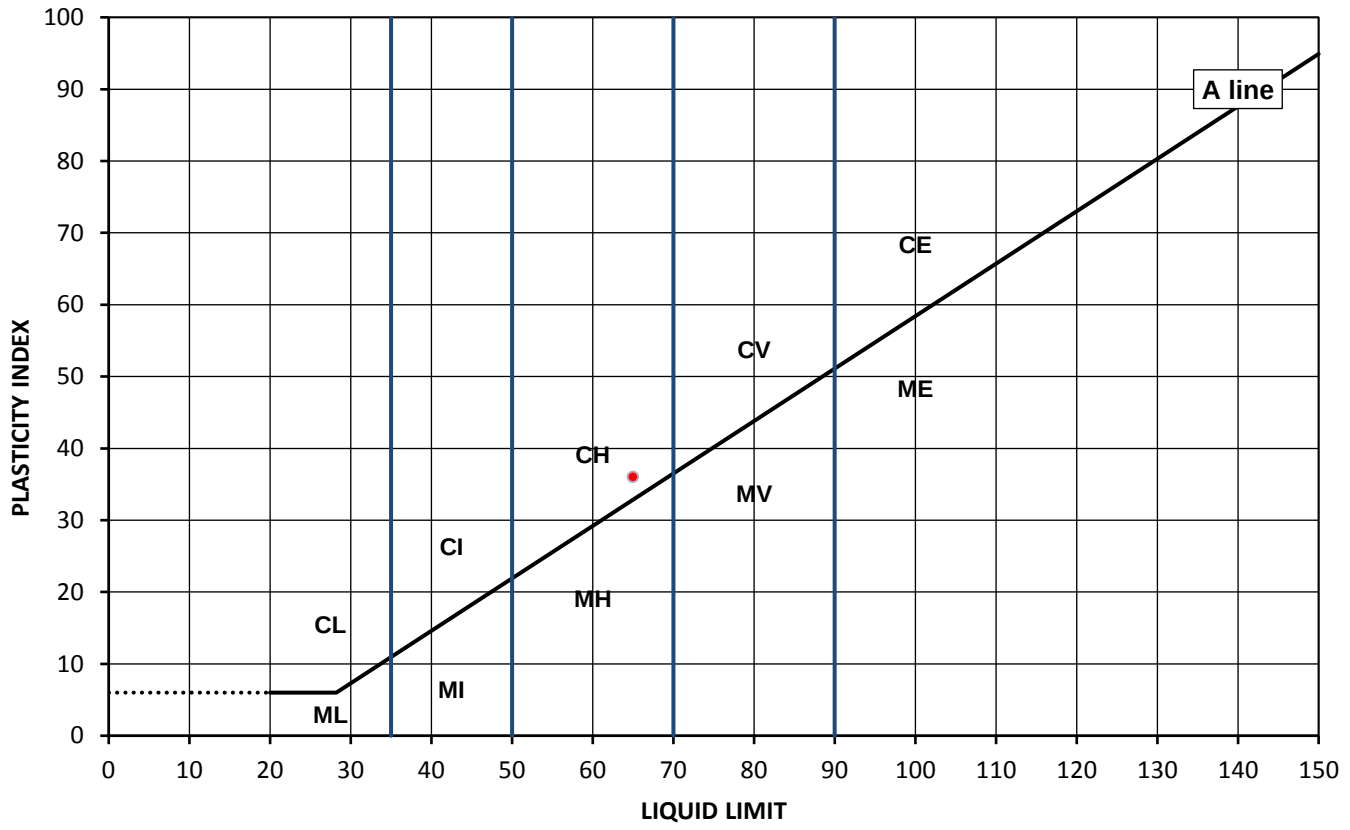
Client:	LMB Geosolutions Ltd	Client Reference:	LMB-LIDLINGTON
Client Address:	28 Dresden Road, London, N19 3BD	Job Number:	19-78873
		Date Sampled:	18/12/2019
		Date Received:	19/12/2019
Contact:	Philip Lewis	Date Tested:	03/01/2020
Site Name:	Lidlington Place, Lidlington	Sampled By:	PIL
Site Address:	Not Given		

Test Results:

Laboratory Reference:	1400430	Depth Top [m]:	3.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
29	65	29	36	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 08/01/2020

Signed: Darren Berrill
Geotechnical General Manager
for and on behalf of i2 Analytical Ltd **GF 232.5**

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

4041

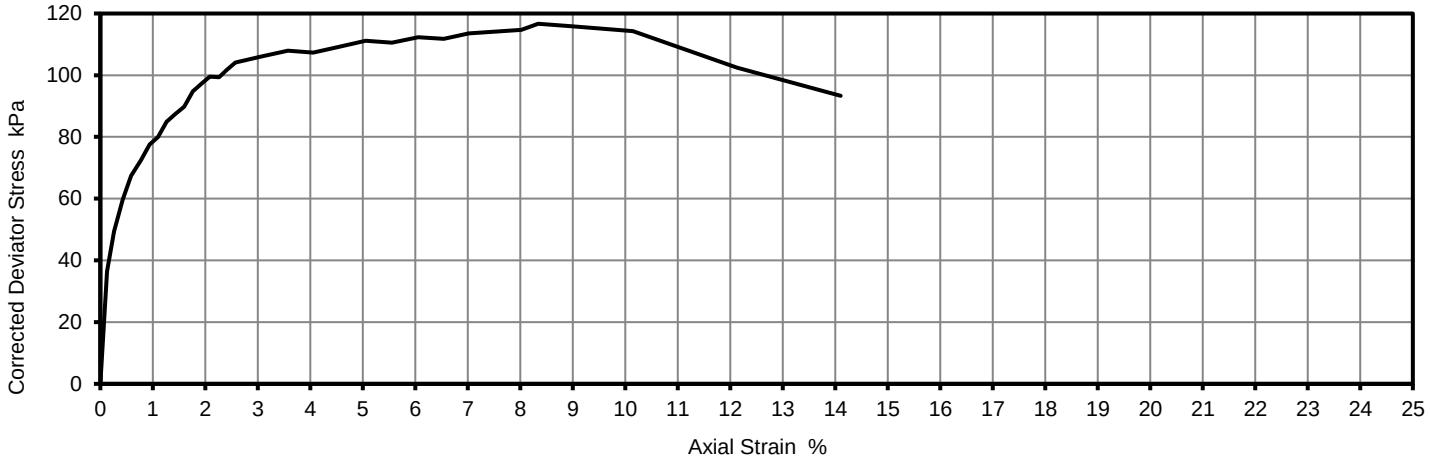
Client:	LMB Geosolutions Ltd	Client Reference:	LMB-LIDLINGTON
Client Address:	28 Dresden Road, London, N19 3BD	Job Number:	19-78873
		Date Sampled:	18/12/2019
		Date Received:	19/12/2019
Contact:	Philip Lewis	Date Tested:	06/01/2020
Site Name:	Lidlington Place, Lidlington	Sampled By:	PIL
Site Address:	Not Given		

Test Results:

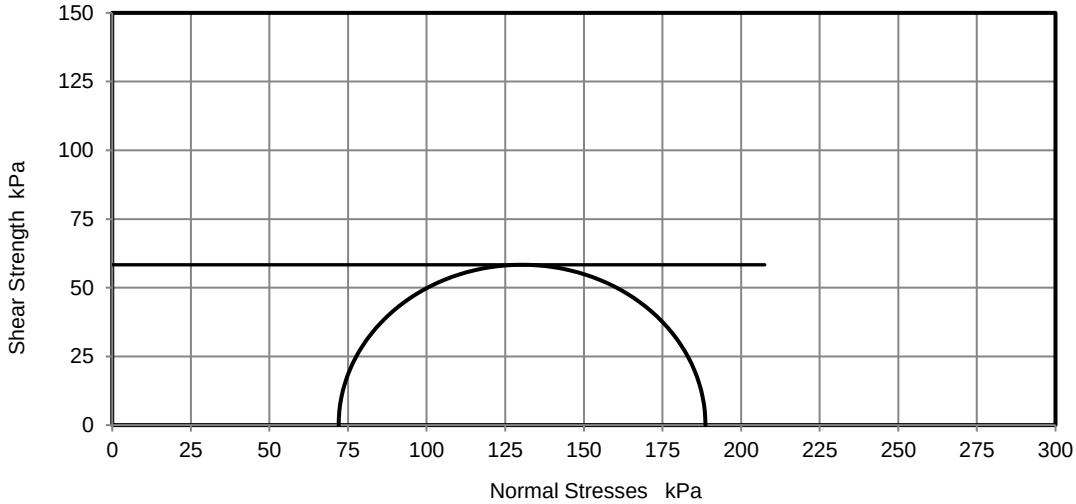
Laboratory Reference:	1400431	Depth Top [m]:	3.60
Hole No.:	BH01	Depth Base [m]:	4.00
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Reddish brown CLAY		

Test Number	1		Rate of Strain	2.00	%/min	
Length	136.09	mm	Cell Pressure	72	kPa	
Diameter	69.83	mm	Axial Strain at failure	8.3	%	
Bulk Density	1.96	Mg/m3	Deviator Stress, (σ1 - σ3)f	117	kPa	
Moisture Content	29	%	Undrained Shear Strength, cu	58	kPa	½(σ1 - σ3)f
Dry Density	1.52	Mg/m3	Mode of Failure	Compound		
Membrane Correction	0.59	kPa	Membrane thickness	0.21	mm	

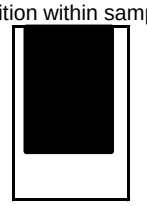
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 08/01/2020

Signed: Darren Berrill
Geotechnical General Manager
for and on behalf of i2 Analytical Ltd **GF 184.7**

APPENDICES

APPENDIX G CHEMICAL LABORATORY RESULTS

Philip Lewis
LMB Geosolutions Ltd
28 Dresden Road
London
N19 3BD

e: philip@lmbgeosolutions.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 19-78722

Project / Site name:	Lidlington Place	**Samples received on:**	
Your job number:	LMB-LIDLINGTON	**Samples instructed on:**	19/12/2019
Your order number:		**Analysis completed by:**	06/01/2020
Report Issue Number:	1	**Report issued on:**	06/01/2020
Samples Analysed:	3 soil samples		

Signed:

Zina Abdul Razzak
Senior Quality Specialist

For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 19-78722

Project / Site name: Lidlington Place

Lab Sample Number				1399311	1399312	1402026		
Sample Reference				BH01	BH02	BH01		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.40	0.50	3.00		
Date Sampled				18/12/2019	18/12/2019	18/12/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	9.4	14	20		
Total mass of sample received	kg	0.001	NONE	0.54	0.60	0.45		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-		
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.6	-	8.0		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.10	0.026	0.29		
Organic Matter	%	0.1	MCERTS	1.6	-	-		
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Phenanthrene	mg/kg	0.05	MCERTS	0.34	-	-		
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Fluoranthene	mg/kg	0.05	MCERTS	0.40	-	-		
Pyrene	mg/kg	0.05	MCERTS	0.37	-	-		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-		
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	1.11	-	-		
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	-	-		
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	-	-		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	-		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	-	-		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	48	-	-		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	680	-	-		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.7	-	-		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	-	-		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	-		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	95	-	-		
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	< 10	-	-		

Analytical Report Number : 19-78722

Project / Site name: Lidlington Place

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1399311	BH01	None Supplied	0.40	Brown clay and sand with gravel and brick.
1399312	BH02	None Supplied	0.50	Brown clay and sand with gravel.
1402026	BH01	None Supplied	3.00	Brown clay.

Analytical Report Number : 19-78722

Project / Site name: Lidlington Place

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In-house method based on BS1377 Part 2, 1990, Classification tests	L019-UK/PL	W	NONE
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Philip Lewis
LMB Geosolutions Ltd
28 Dresden Road
London
N19 3BD

e: philip@lmbgeosolutions.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 19-78726

Project / Site name:	Lidlington Place	**Samples received on:**	19/12/2019
Your job number:	LMB-LIDLINGTON	**Samples instructed on:**	19/12/2019
Your order number:		**Analysis completed by:**	08/01/2020
Report Issue Number:	1	**Report issued on:**	08/01/2020
Samples Analysed:	10:1 WAC sample		

Signed: Karolina Marek

Karolina Marek
Technical Reviewer (Reporting Team)

For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

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Waste Acceptance Criteria Analytical Results

Report No:	**19-78726**							
					Client:	**LMBGEOSOL**		
Location	**Lidlington Place**							
Lab Reference (Sample Number)	1399323 / 1399324				**Landfill Waste Acceptance Criteria Limits**			
Sampling Date	18/12/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH02						
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	2.2				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	-				6000	--	--
Sum of PCBs (mg/kg) **	-				1	--	--
Mineral Oil (mg/kg)	-				500	--	--
Total PAH (WAC-17) (mg/kg)	-				100	--	--
pH (units)**	7.7				--	>6	--
Acid Neutralisation Capacity (mol / kg)	4.3				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0065			0.0551	0.5	2	25
Barium *	0.0123			0.103	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0017			0.014	0.5	10	70
Copper *	0.014			0.12	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0085			0.0716	0.5	10	30
Nickel *	0.0021			0.017	0.4	10	40
Lead *	0.025			0.21	0.5	10	50
Antimony *	0.0099			0.084	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0083			0.070	4	50	200
Chloride *	1.2			10	800	4000	25000
Fluoride	1.6			13	10	150	500
Sulphate *	4.9			41	1000	20000	50000
TDS*	66			560	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	13.1			111	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.60						
Dry Matter (%)	86						
Moisture (%)	14						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.
*= UKAS accredited (liquid eluate analysis only)
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation
** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Analytical Report Number : 19-78726

Project / Site name: Lidlington Place

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1399323	BH02	None Supplied	0.50	Brown clay and sand with gravel.

Analytical Report Number : 19-78726

Project / Site name: Lidlington Place

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In-house method based on BS1377 Part 2, 1990, Classification tests	L019-UK/PL	W	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

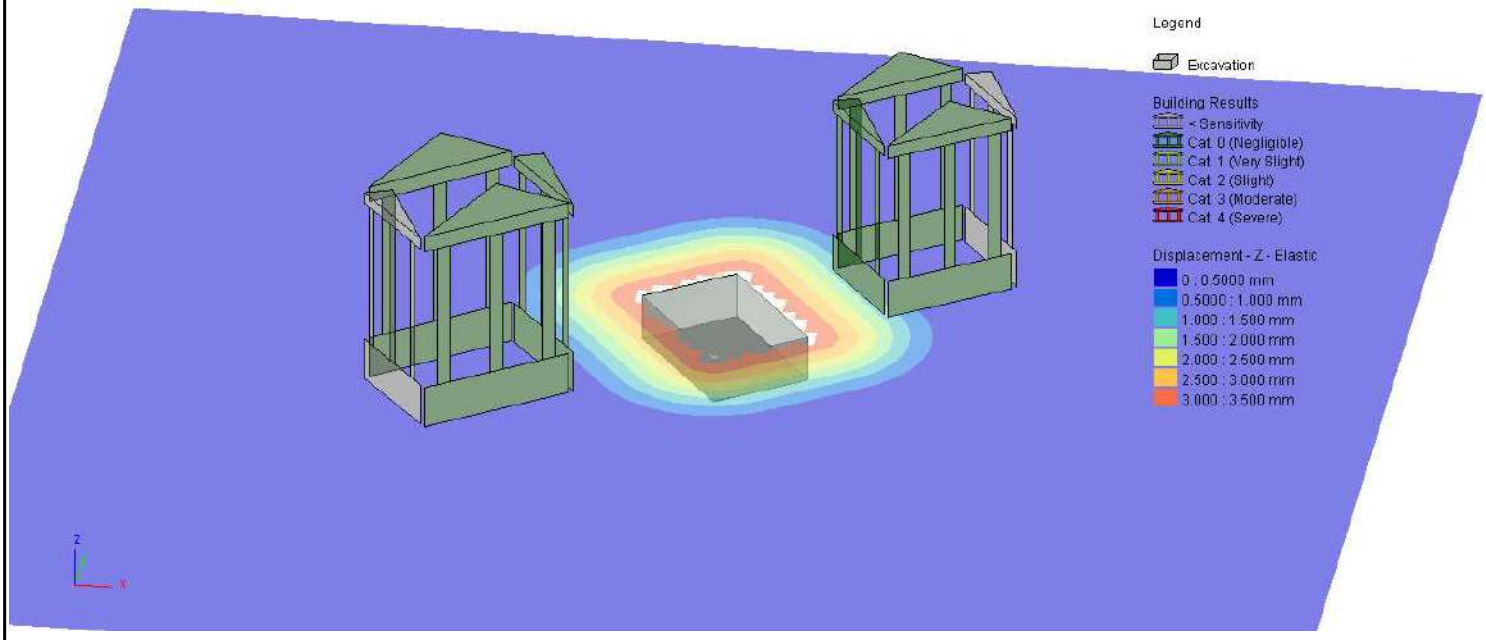
For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

APPENDICES

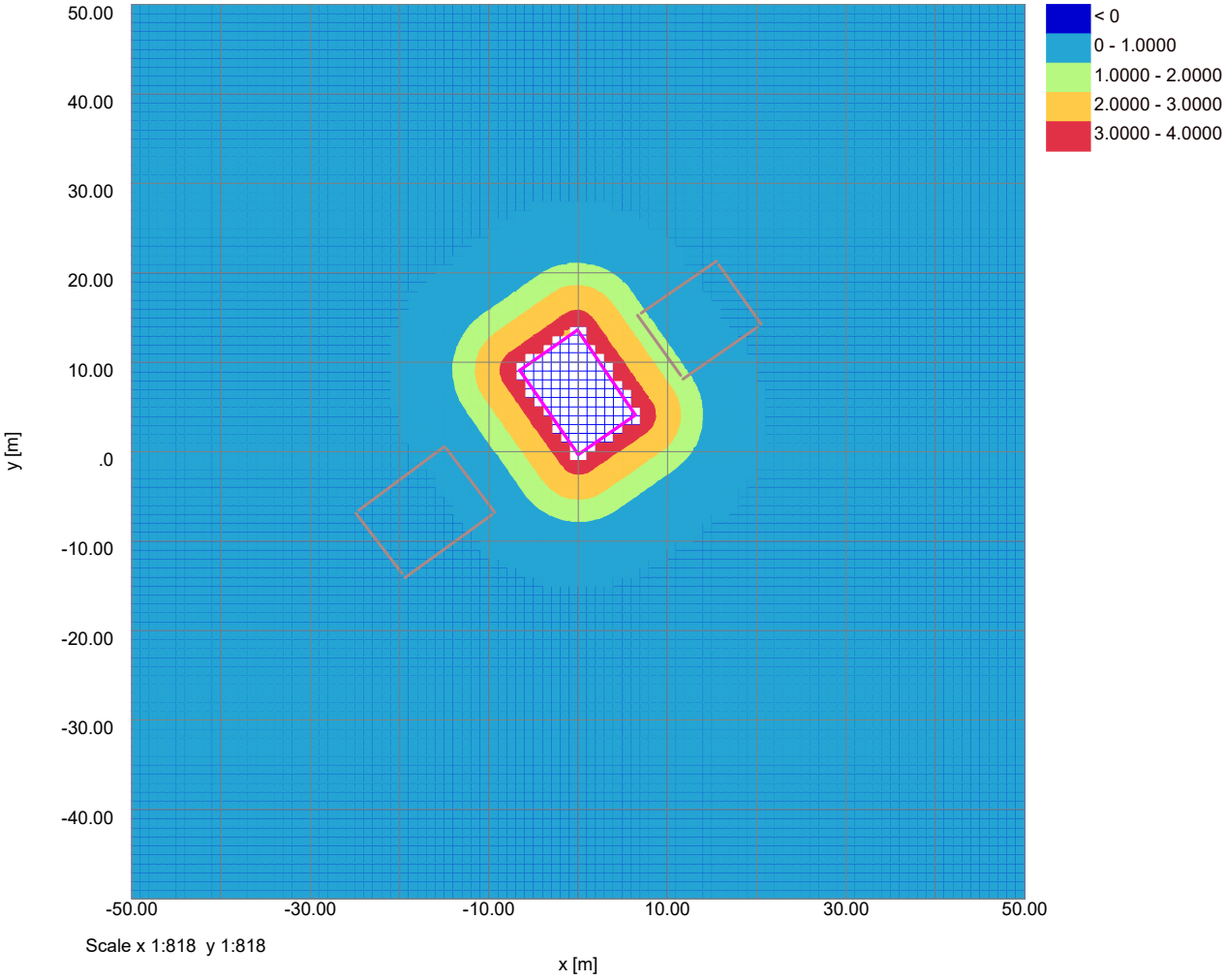
APPENDIX H GMA CALCULATION TABULAR & GRAPHICAL OUTPUTS

Specific Building Damage Results - Critical Segments within Each Building

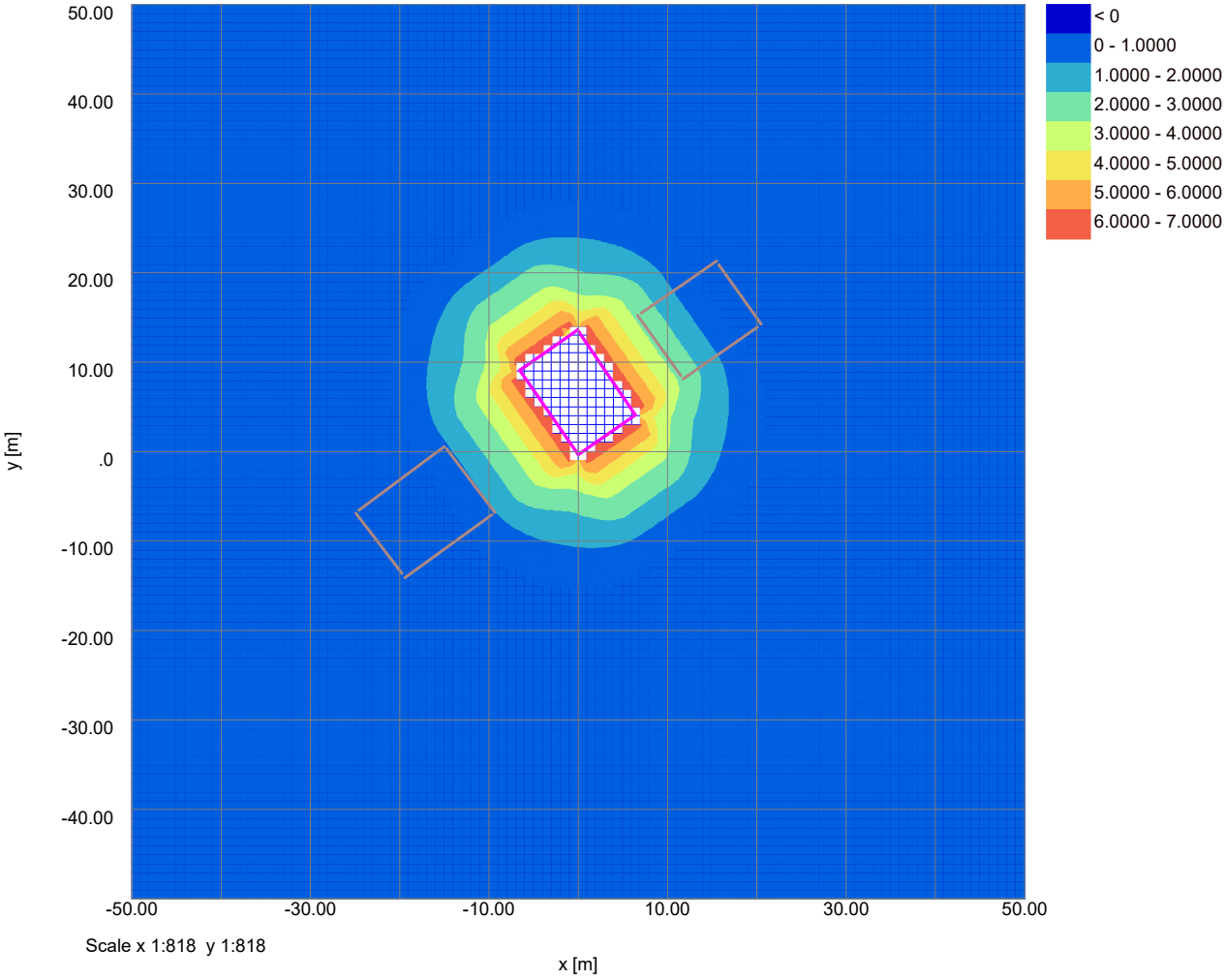
Stage: Ref.	Stage: Name	Specific Building: Ref.	Specific Building: Name	Parameter	Critical Sub-Building	Critical Segment	Start [m]	End [m]	Curvature	Max Slope	Max Settlement [mm]	Max Tensile Strain [%]	Min Radius of Curvature (Hogging) [m]	Min Radius of Curvature (Sagging) [m]	Damage Category
0	Base Model	0	15Hsq_1	Max Slope		1	12.000	12.000	Sagging	**50.191E-6**	0.10960	0.0	-	170470.	0 (Negligible)
				Max Settlement		1	12.000	12.000	Sagging	50.191E-6	**0.10960**	0.0	-	170470.	0 (Negligible)
				Max Tensile Strain		1	12.000	12.000	Sagging	50.191E-6	0.10960	**0.0**	-	170470.	0 (Negligible)
				Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
				Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
		0	15Hsq_2	Max Slope		1	0.0	9.0000	Sagging	**2.3620E-6**	0.12893	44.167E-6	-	17.448E+6	0 (Negligible)
				Max Settlement		1	0.0	9.0000	Sagging	2.3620E-6	**0.12893**	44.167E-6	-	17.448E+6	0 (Negligible)
				Max Tensile Strain		1	0.0	9.0000	Sagging	2.3620E-6	0.12893	**44.167E-6**	-	17.448E+6	0 (Negligible)
				Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
				Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
		0	15Hsq_3	Max Slope		1	0.0	0.0	Sagging	**43.153E-6**	0.10888	0.0	-	97408.	0 (Negligible)
				Max Settlement		1	0.0	0.0	Sagging	43.153E-6	**0.10888**	0.0	-	97408.	0 (Negligible)
				Max Tensile Strain		1	0.0	0.0	Sagging	43.153E-6	0.10888	**0.0**	-	97408.	0 (Negligible)
				Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
				Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
		0	15Hsq_4	All vertical displacements are less than the limit sensitivity.											
				All vertical displacements are less than the limit sensitivity.											
				All vertical displacements are less than the limit sensitivity.											
				All vertical displacements are less than the limit sensitivity.											
				All vertical displacements are less than the limit sensitivity.											
		0	76Osq_1	Max Slope		1	0.0	4.2717	Sagging	**381.33E-6**	1.3324	0.039257	-	13095.	0 (Negligible)
				Max Settlement		1	0.0	4.2717	Sagging	381.33E-6	**1.3324**	0.039257	-	13095.	0 (Negligible)
				Max Tensile Strain		1	0.0	4.2717	Sagging	381.33E-6	1.3324	**0.039257**	-	13095.	0 (Negligible)
				Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
				Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
		0	76Osq_2	All vertical displacements are less than the limit sensitivity.											
				All vertical displacements are less than the limit sensitivity.											
				All vertical displacements are less than the limit sensitivity.											
				All vertical displacements are less than the limit sensitivity.											
				All vertical displacements are less than the limit sensitivity.											
		0	76Osq_3	Max Slope		1	5.3397	10.200	Sagging	**384.72E-6**	1.1790	0.039798	-	12827.	0 (Negligible)
				Max Settlement		1	5.3397	10.200	Sagging	384.72E-6	**1.1790**	0.039798	-	12827.	0 (Negligible)
				Max Tensile Strain		1	5.3397	10.200	Sagging	384.72E-6	1.1790	**0.039798**	-	12827.	0 (Negligible)
				Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
				Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
		0	76Osq_4	Max Slope		1	0.0	8.2000	Sagging	**3.5917E-6**	1.3636	3.1114E-6	-	337.61E+6	0 (Negligible)
				Max Settlement		1	0.0	8.2000	Sagging	3.5917E-6	**1.3636**	3.1114E-6	-	337.61E+6	0 (Negligible)
				Max Tensile Strain		1	0.0	8.2000	Sagging	3.5917E-6	1.3636	**3.1114E-6**	-	337.61E+6	0 (Negligible)
				Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
				Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-


Legend
Excavation
Building Results
< Sensitivity
Cat 0 (Negligible)
Cat 1 (Very Slight)
Cat 2 (Slight)
Cat 3 (Moderate)
Cat 4 (Severe)
Displacement - Z - Elastic
0 : 0.5000 mm
0.5000 : 1.000 mm
1.000 : 1.500 mm
1.500 : 2.000 mm
2.000 : 2.500 mm
2.500 : 3.000 mm
3.000 : 3.500 mm
Z
X

Vertical Settlement Contours: Grid 1 (level 100.000m) (Interval 1mm)

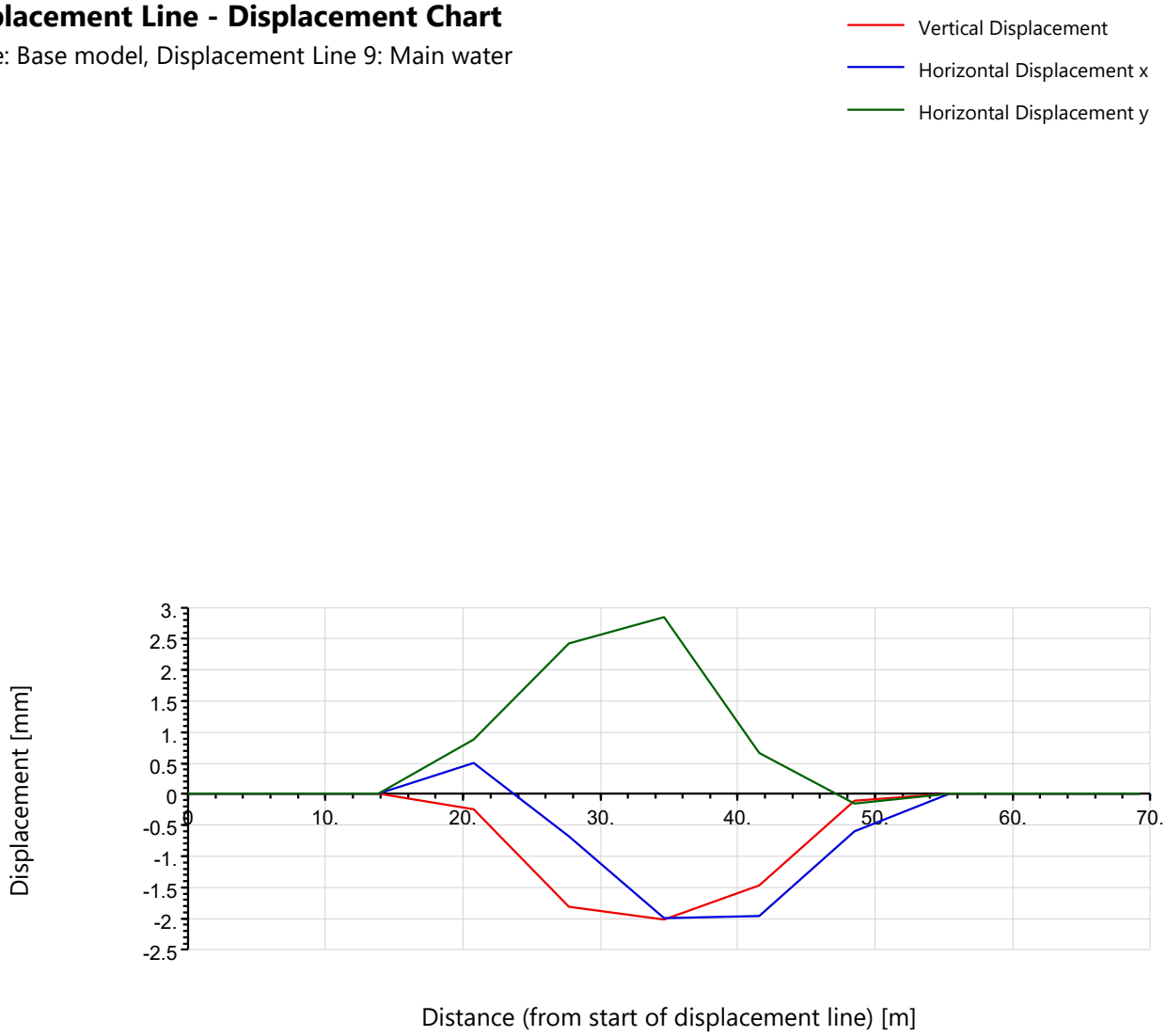


Horizontal Displacement Contours: Grid 1 (level 100.000m) Interval 1mm



Displacement Line - Displacement Chart

Stage: Base model, Displacement Line 9: Main water



Titles

Job No.:
Job Title: GMA Lidlington Place
Sub-title:
Calculation Heading:
Initials: GF
Checker:
Date Saved: 10-Jan-2020
Date Checked:
Notes:
File Name: Lidlington Place_high stiffness _Rev01.xdd
File Path: C:\Users\gkite\Lidlington Place_GF\High stiffness wall

History

Date	Time	By	Notes
10-Jan-2020	08:48	gkite	New
10-Jan-2020	08:57	gkite	
10-Jan-2020	09:20	gkite	
10-Jan-2020	09:34	gkite	
10-Jan-2020	10:02	gkite	
10-Jan-2020	10:10	gkite	
10-Jan-2020	10:15	gkite	
10-Jan-2020	13:03	gkite	
10-Jan-2020	13:07	gkite	
10-Jan-2020	13:27	gkite	Open

Displacement Lines

Ref.	Name	x1 [m]	y1 [m]	z1 [m]	x2 [m]	y2 [m]	z2 [m]	Intervals [No.]	Surface type for tunnels	Interpolate imported displacements	Calculate
1	15Hsq_a	-19.45680	-14.08260	100.00000	-9.39640	-6.85940	100.00000	10	Surface	Yes	Yes
2	15Hsq_b	-9.39640	-6.85940	100.00000	-14.99570	0.61190	100.00000	10	Surface	Yes	Yes
3	15Hsq_c	-14.99570	0.61190	100.00000	-24.90320	-6.88300	100.00000	10	Surface	Yes	Yes
4	15Hsq_d	-24.90320	-6.88300	100.00000	-19.45680	-14.08260	100.00000	10	Surface	Yes	Yes
5	76Osq_a	11.74820	8.16290	100.00000	20.52370	14.24890	100.00000	10	Surface	Yes	Yes
6	76Osq_b	20.52370	14.24890	100.00000	15.47250	21.33160	100.00000	10	Surface	Yes	Yes
7	76Osq_c	15.47250	21.33160	100.00000	6.69690	15.24560	100.00000	10	Surface	Yes	Yes
8	76Osq_d	6.69690	15.24560	100.00000	11.74820	8.16290	100.00000	10	Surface	Yes	Yes
9	Main water	-21.48790	-21.65520	100.00000	35.11410	18.27330	100.00000	10	Surface	Yes	Yes
10	Combined sewer	-17.48620	-24.41740	100.00000	34.94660	9.90250	100.00000	10	Surface	Yes	Yes

Displacement Grids

Ref.	Name	Extrusion: Direction	Base line start: X [m]	Base line start: Y [m]	Base line start: Z(level) [m]	Base line end: X [m]	Base line end: Y [m]	Base line end: Z(level) [m]	Base line: Intervals [No.]	Extrusion: Distance [m]	Extrusion: Intervals [No.]	Surface type for tunnels	Calculate
1	1	Global X	-50.00000	-50.00000	100.00000	-	50.00000	100.00000	100	100.00000	100	Surface	Yes

Polygonal Excavations

Ref. 1
Excavation Name: Excavation
Surface level [m]: 100.00
Contribution: Positive

Corner	x [m]	y [m]	Base Level [m]	Arc Enabled	Stiffened	Prev. Side: d [m]	Prev. Side: p1 [%]	Prev. Side: p2* [%]	Next Side: d [m]	Next Side: p1 [%]	Next Side: p2* [%]
1	0.056600	-0.33870	96.500	Yes	No	-	-	-	-	-	-
2	6.4562	4.1448	96.500	Yes	No	-	-	-	-	-	-
3	-0.15530	13.592	96.500	Yes	No	-	-	-	-	-	-
4	-6.5570	9.1113	96.500	Yes	No	-	-	-	-	-	-

Side	x1 [m]	y1 [m]	x2 [m]	y2 [m]	G.M. Curve: Vertical	G.M. Curve: Horizontal
1	0.056600	-0.33870	6.4562	4.1448	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b))	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a))
2	6.4562	4.1448	-0.15530	13.592	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b))	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a))
3	-0.15530	13.592	-6.5570	9.1113	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b))	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a))
4	-6.5570	9.1113	0.056600	-0.33870	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b))	Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a))

Ref. 2
Excavation Name: Installation
Surface level [m]: 100.00
Contribution: Positive

Corner	x [m]	y [m]	Base Level [m]	Arc Enabled	Stiffened	Prev. Side: d [m]	Prev. Side: p1 [%]	Prev. Side: p2* [%]	Next Side: d [m]	Next Side: p1 [%]	Next Side: p2* [%]
1	0.056600	-0.33870	96.500	Yes	No	-	-	-	-	-	-
2	6.4562	4.1448	96.500	Yes	No	-	-	-	-	-	-
3	-0.15330	13.592	96.500	Yes	No	-	-	-	-	-	-
4	-6.5570	9.1113	96.500	Yes	No	-	-	-	-	-	-

Side	x1 [m]	y1 [m]	x2 [m]	y2 [m]	G.M. Curve: Vertical	G.M. Curve: Horizontal
1	0.056600	-0.33870	6.4562	4.1448	Inst. of planar diaphragm wall in stiff clay (CIRIA C760 Fig. 6.9(b))	Inst. of planar diaphragm wall in stiff clay (CIRIA C760 Fig. 6.9(a))
2	6.4562	4.1448	-0.15330	13.592	Inst. of planar diaphragm wall in stiff clay (CIRIA C580 Fig. 2.9(b))	Inst. of planar diaphragm wall in stiff clay (CIRIA C580 Fig. 2.9(a))
3	-0.15330	13.592	-6.5570	9.1113	Inst. of planar diaphragm wall in stiff clay (CIRIA C580 Fig.	Inst. of planar diaphragm wall in stiff clay (CIRIA C580 Fig.

Side	x1 [m]	y1 [m]	x2 [m]	y2 [m]	G.M. Curve: Vertical	G.M. Curve: Horizontal
4	-6.5570	9.1113	0.056600	-0.33870	2.9(b)) Inst. of planar diaphragm wall in stiff clay (CIRIA C580 Fig. 2.9(b))	2.9(a)) Inst. of planar diaphragm wall in stiff clay (CIRIA C580 Fig. 2.9(a))

Circular Excavations

Vertical Ground Movement Curves

Curve Name: **Inst. of planar diaphragm wall in stiff clay (CIRIA C580 Fig. 2.9(b))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]

[0.000, 0.000, 0.050][0.050, 0.000, 0.047][0.100, 0.000, 0.043][0.150, 0.000, 0.040]
[0.200, 0.000, 0.037][0.250, 0.000, 0.034][0.300, 0.000, 0.031][0.350, 0.000, 0.028]
[0.400, 0.000, 0.025][0.450, 0.000, 0.022][0.500, 0.000, 0.020][0.550, 0.000, 0.018]
[0.600, 0.000, 0.015][0.650, 0.000, 0.013][0.700, 0.000, 0.012][0.750, 0.000, 0.010]
[0.800, 0.000, 0.008][0.850, 0.000, 0.007][0.900, 0.000, 0.006][0.950, 0.000, 0.005]
[1.000, 0.000, 0.004][1.050, 0.000, 0.003][1.100, 0.000, 0.003][1.150, 0.000, 0.002]
[1.200, 0.000, 0.002][1.250, 0.000, 0.001][1.300, 0.000, 0.001][1.350, 0.000, 0.001]
[1.400, 0.000, 0.001][1.450, 0.000, 0.000][1.500, 0.000, 0.000]

Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = $-1.2355E\text{-}2x^4 + 3.4814E\text{-}2x^3 - 2.8885E\text{-}3x^2 - 6.5618E\text{-}2x + 4.9987E\text{-}2$
Coeff. of Determination: 1.0000

Curve Name: **Inst. of planar diaphragm wall in stiff clay (CIRIA C760 Fig. 6.9(b))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]

[0.000, 0.000, 0.050][0.050, 0.000, 0.047][0.100, 0.000, 0.043][0.150, 0.000, 0.040]
[0.200, 0.000, 0.037][0.250, 0.000, 0.034][0.300, 0.000, 0.031][0.350, 0.000, 0.028]
[0.400, 0.000, 0.025][0.450, 0.000, 0.022][0.500, 0.000, 0.020][0.550, 0.000, 0.018]
[0.600, 0.000, 0.015][0.650, 0.000, 0.013][0.700, 0.000, 0.012][0.750, 0.000, 0.010]
[0.800, 0.000, 0.008][0.850, 0.000, 0.007][0.900, 0.000, 0.006][0.950, 0.000, 0.005]
[1.000, 0.000, 0.004][1.050, 0.000, 0.003][1.100, 0.000, 0.003][1.150, 0.000, 0.002]
[1.200, 0.000, 0.002][1.250, 0.000, 0.001][1.300, 0.000, 0.001][1.350, 0.000, 0.001]
[1.400, 0.000, 0.001][1.450, 0.000, 0.000][1.500, 0.000, 0.000]

Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = $-1.2355E\text{-}2x^4 + 3.4814E\text{-}2x^3 - 2.8885E\text{-}3x^2 - 6.5618E\text{-}2x + 4.9987E\text{-}2$
Coeff. of Determination: 1.0000

Curve Name: **Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(b))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]

[0.000, 0.000, 0.039][0.100, 0.000, 0.049][0.200, 0.000, 0.056][0.300, 0.000, 0.062]
[0.400, 0.000, 0.067][0.500, 0.000, 0.070][0.600, 0.000, 0.072][0.700, 0.000, 0.073]
[0.800, 0.000, 0.073][0.900, 0.000, 0.072][1.000, 0.000, 0.070][1.100, 0.000, 0.068]
[1.200, 0.000, 0.065][1.300, 0.000, 0.061][1.400, 0.000, 0.058][1.500, 0.000, 0.054]
[1.600, 0.000, 0.050][1.700, 0.000, 0.046][1.800, 0.000, 0.042][1.900, 0.000, 0.038]
[2.000, 0.000, 0.034][2.100, 0.000, 0.030][2.200, 0.000, 0.027][2.300, 0.000, 0.023]
[2.400, 0.000, 0.020][2.500, 0.000, 0.017][2.600, 0.000, 0.014][2.700, 0.000, 0.012]
[2.800, 0.000, 0.010][2.900, 0.000, 0.008][3.000, 0.000, 0.007][3.100, 0.000, 0.005]
[3.200, 0.000, 0.004][3.300, 0.000, 0.004][3.400, 0.000, 0.003][3.500, 0.000, 0.002]
[3.600, 0.000, 0.002][3.700, 0.000, 0.002][3.800, 0.000, 0.001][3.900, 0.000, 0.001]
[4.000, 0.000, 0.000]

Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = $-2.6455E\text{-}3x^4 + 2.8495E\text{-}2x^3 - 1.0051E\text{-}1x^2 + 1.0569E\text{-}1x + 3.8990E\text{-}2$
Coeff. of Determination: 9.9991E-1

Horizontal Ground Movement Curves

Curve Name: **Inst. of planar diaphragm wall in stiff clay (CIRIA C580 Fig. 2.9(a))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000, 0.000, 0.050][1.500, 0.000, 0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = $-3.33E\text{-}2x + 5.00E\text{-}2$
Coeff. of Determination: 1.00

Curve Name: **Inst. of planar diaphragm wall in stiff clay (CIRIA C760 Fig. 6.9(a))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000, 0.000, 0.050][1.500, 0.000, 0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = $-3.33E\text{-}2x + 5.00E\text{-}2$
Coeff. of Determination: 1.00

Curve Name: **Exc. in front of high stiffness wall in stiff clay (CIRIA C760 Fig. 6.15(a))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000, 0.000, 0.150][4.000, 0.000, 0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = $-3.75E\text{-}2x + 1.50E\text{-}1$
Coeff. of Determination: 1.00

Damage Category Strains

Ref.	Name	0 (Negligible) to 1 (Very Slight)	1 (Very Slight) to 2 (Slight)	2 (Slight) to 3 (Moderate)	3 (Moderate) to 4 (Severe)
1	Burland Strain Limits	0.0	500.00E-6	750.00E-6	0.0015000

Specific Buildings - Geometry

Ref.	Building Name	Sub-Building Name	Displacement Line	Distance Along Line: Start	Distance Along Line: End	Vertical Offsets from Line for Vertical Movement	Vertical Displacement Limit Sensitivity	Damage Category Strains	Poisson's Ratio	E/G

			Calculations					
			[m]	[m]	[m]	[mm]		
1	15Hsq_1	15Hsq_a	0.00000	12.00000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
2	15Hsq_2	15Hsq_b	0.00000	9.00000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
3	15Hsq_3	15Hsq_c	0.00000	12.00000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
4	15Hsq_4	15Hsq_d	0.00000	8.50000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
5	76Osq_1	76Osq_a	0.00000	10.20000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
6	76Osq_2	76Osq_b	0.00000	8.20000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
7	76Osq_3	76Osq_c	0.00000	10.20000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000
8	76Osq_4	76Osq_d	0.00000	8.20000	0.0	0.10000	Burland Strain Limits	0.20000 2.6000

Specific Buildings - Bending Parameters

Ref.	Building Name	Sub-Building Name	Height	Default	Hogging: 2nd Mom of Area (per unit width)	Hogging: Dist. of Bending Strain from N.A.	Hogging: Dist. of N.A. from Edge of Beam in Tension	Sagging: 2nd Mom of Area (per unit width)	Sagging: Dist. of Bending Strain from N.A.	Sagging: Dist. of N.A. from Edge of Beam in Tension
			[m]		[m²]	[m]	[m]	[m²]	[m]	[m]
1	15Hsq_1		16.000	Yes	1365.3	16.000	16.000	341.33	8.0000	8.0000
2	15Hsq_2		16.000	Yes	1365.3	16.000	16.000	341.33	8.0000	8.0000
3	15Hsq_3		16.000	Yes	1365.3	16.000	16.000	341.33	8.0000	8.0000
4	15Hsq_4		16.000	Yes	1365.3	16.000	16.000	341.33	8.0000	8.0000
5	76Osq_1		14.500	Yes	1016.2	14.500	14.500	254.05	7.2500	7.2500
6	76Osq_2		14.500	Yes	1016.2	14.500	14.500	254.05	7.2500	7.2500
7	76Osq_3		14.500	Yes	1016.2	14.500	14.500	254.05	7.2500	7.2500
8	76Osq_4		14.500	Yes	1016.2	14.500	14.500	254.05	7.2500	7.2500

Slope stability analysis

Input data

Project

Date : 28/03/2019

Settings

United Kingdom - EN 1997

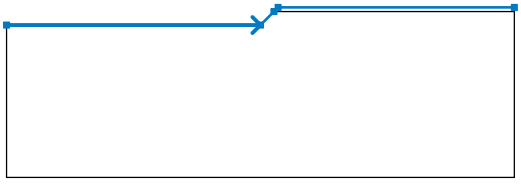
Stability analysis

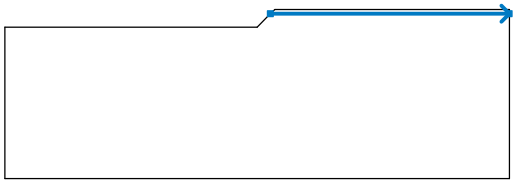
Earthquake analysis : Standard
Verification methodology : according to EN 1997
Design approach : 1 - reduction of actions and soil parameters

Partial factors on actions (A)								
Permanent design situation								
		Combination 1				Combination 2			
		Unfavourable		Favourable		Unfavourable		Favourable	
Permanent actions :	γ_G =	1.35	[–]	1.00	[–]	1.00	[–]	1.00	[–]
Variable actions :	γ_Q =	1.50	[–]	0.00	[–]	1.30	[–]	0.00	[–]
Water load :	γ_w =	1.35	[–]			1.00	[–]		

Partial factors for soil parameters (M)					
Permanent design situation					
		Combination 1		Combination 2	
Partial factor on internal friction :	γ_ϕ =	1.00	[–]	1.25	[–]
Partial factor on effective cohesion :	γ_c =	1.00	[–]	1.25	[–]
Partial factor on undrained shear strength :	γ_{cu} =	1.00	[–]	1.40	[–]

Interface

No.	Interface location	Coordinates of interface points [m]					
		x	z	x	z	x	z
1		-50.00	0.00	0.00	0.00	2.66	2.67
		3.50	3.50	50.00	3.50		

No.	Interface location	Coordinates of interface points [m]					
		x	z	x	z	x	z
2		2.66	2.67	50.00	2.67		

Soil parameters - effective stress state

No.	Name	Pattern	φ_{ef} [°]	c_{ef} [kPa]	γ [kN/m^3]
1	MG		28.00	0.00	18.00

Soil parameters - uplift

No.	Name	Pattern	γ_{sat} [kN/m^3]	γ_s [kN/m^3]	n [–]
1	MG		18.00		

Soil parameters - total stress state

No.	Name	Pattern	c_u [kPa]	γ [kN/m^3]
1	LONDON CLAY		70.00	20.00

Soil parameters

MG

Unit weight : γ = 18.00 kN/m^3
Stress-state : effective
Angle of internal friction : φ_{ef} = 28.00 °
Cohesion of soil : c_{ef} = 0.00 kPa
Saturated unit weight : γ_{sat} = 18.00 kN/m^3

LONDON CLAY

Unit weight : γ = 20.00 kN/m^3

Stress-state : total

Cohesion of soil : c_u = 70.00 kPa

Surcharge

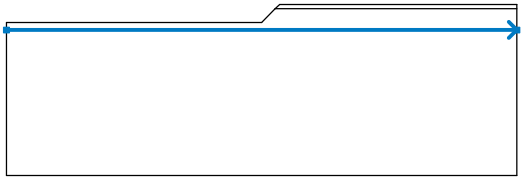
No.	Type	Type of action	Location z [m]	Origin x [m]	Length l [m]	Width b [m]	Slope α [°]	Magnitude q, q_1, f, F	Magnitude q_2	Magnitude unit
1	strip	permanent	on terrain	x = 3.50	l = 5.00		0.00	10.00		kN/m^2
2	strip	permanent	on terrain	x = 8.50	l = 41.50		0.00	40.00		kN/m^2

Surcharges

No.	Name
1	Construction Plant
2	Construction Plant

Water

Water type : GWT

No.	GWT location	Coordinates of GWT points [m] x	z	x	z	x	z
1		-50.00	-1.50	50.00	-1.50		

Settings of the stage of construction

Design situation : permanent

Results (Stage of construction 1)

Analysis 2

Circular slip surface

Slip surface parameters							
Center :	x =	1.06	[m]	Angles :	α_1 =	-49.16	[°]
	z =	12.68	[m]		α_2 =	61.74	[°]

Slip surface parameters				
Radius :	R =	19.39	[m]	
The slip surface after optimization.				

Segments restricting slip surface

No.	First point		Second point	
	x [m]	z [m]	x [m]	z [m]
1	-14.67	-0.25	-7.01	-7.68
2	9.00	-5.36	21.53	3.11

The restrictions of points of circular slip surface

Keep the left end point of the slip surface
Keep the right end point of the slip surface
Slope stability verification (Morgenstern-Price)
Combination 1
Utilization : 42.1 %

Slope stability ACCEPTABLE
Combination 2
Utilization : 38.1 %

Slope stability ACCEPTABLE
Optimized slip surface for : Combination 1

Name : Lidlington Place	Stage - analysis : 1 - 2