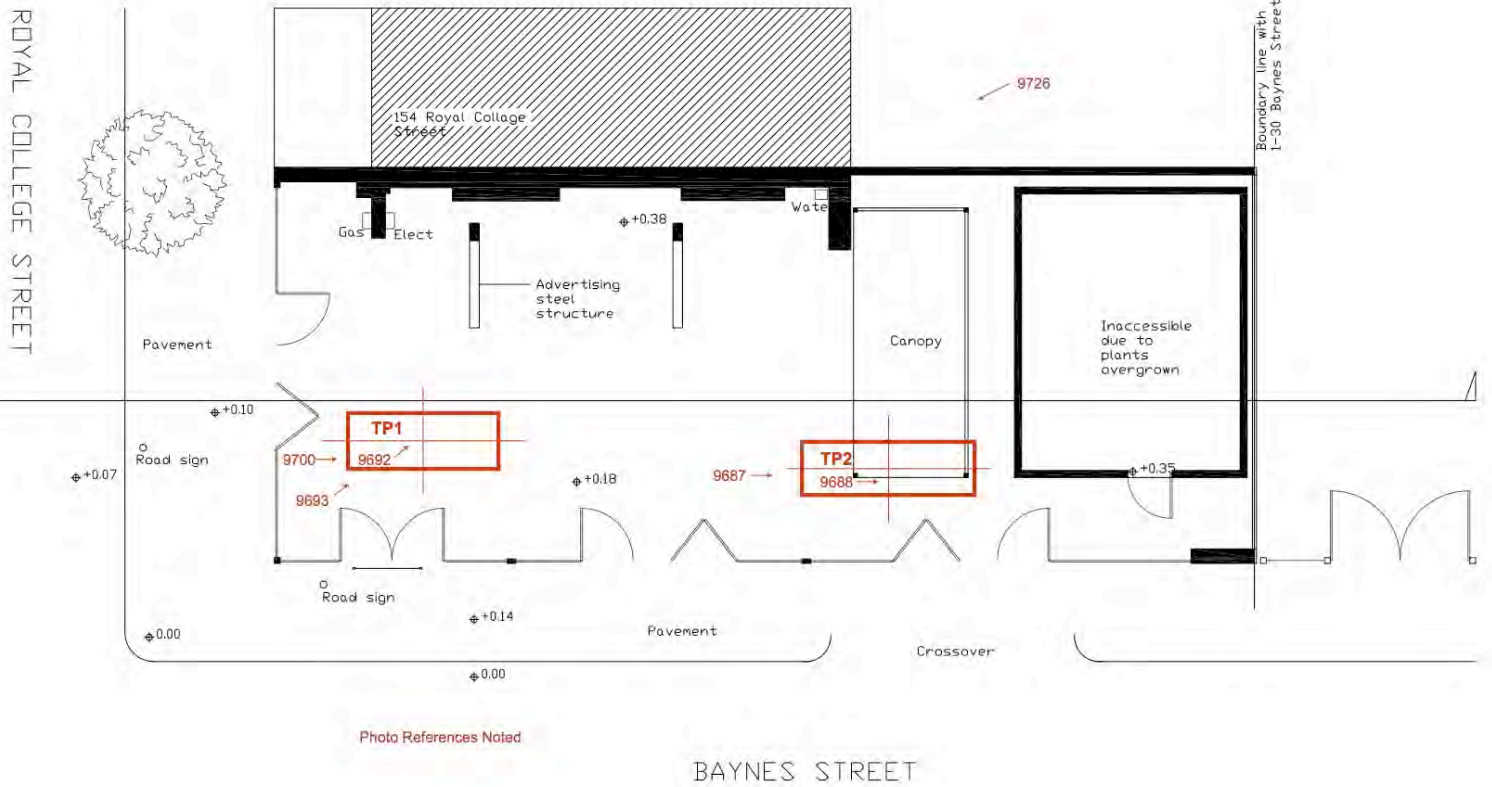


**Appendix C – Trial Pit Excavations from 19/5/15 – for information only**



**Trial Pit 1**

Top Slab - > 150mm  
 Mixed Fill containing bricks – 2.3m b.g.l  
 Virgin Clay - > 2.5m

**Trial Pit 2**

Top Slab - > 150mm  
 Mixed Fill containing bricks – 2.3m b.g.l  
 Virgin Clay - > 2.5m



Photo 9687



Photo 9688



Photo 9692



Photo 9693



Photo 9700



Photo 9726

Site Location:	<b>152 Royal College Street, London, NW1 0TA</b>	Ref:	<b>9819/KOG</b>
----------------	--	------	-----------------

### Results of Ground Gas/Groundwater Monitoring

Date:	09 Jul 15		
Time [24hr]:	8:20		
Barometric pressure:	1017		
a) Trend [24hrs]:	Rising		
b) At start [mB]:	1017		
c) At end [mB]:	1017		
Recorded by:	MR		
Surface ground conditions:	Dry		
Weather conditions:	Mild		
Ambient air temp [°C]:	12		

#### **Monitoring equipment**

Instrument: GA2000 Plus MC08/0126/00  
 Calibration check details: Within monitor tolerance  
 Next calibration date: 11/11/2015

#### Notes:

- 1] Barometric pressure trend and ambient air temperature is recorded from BBC weather website on the day of the monitoring visit
- 2] Calibration check is performed at start of monitoring against ambient air and also periodically with a 5% CH<sub>4</sub>, 5% CO<sub>2</sub> and 6% O<sub>2</sub> gas mixture
- 3] CH<sub>4</sub> = methane; CO<sub>2</sub> = carbon dioxide; CO = carbon monoxide; O<sub>2</sub> = oxygen; H<sub>2</sub>S = hydrogen sulphide

#### **Results**

Date	Time [24hr]	Borehole	GW Depth	Depth to Base	CH <sub>4</sub> [%]		CO <sub>2</sub> [%]		O <sub>2</sub> [%]		Highest [ppm]		Emission Rate	Relative Pressure	PID
			[m]	[m]	Max	Steady	Max	Steady	Min	Steady	CO	H <sub>2</sub> S	[l/hr]	[mb]	
09/07/2015	06:20	BH1	2.86	6.00	0	0	0	0	20.4	20.4	0	0	0.00	0.00	

**SUMMARY OF UNDRAINED SHEAR STRENGTH TEST RESULTS**

BH ID	Depth [m]	Moisture content [%]	Bulk density [Mg/m <sup>3</sup> ]	Dry density [Mg/m <sup>3</sup> ]	Cell pressure [kPa]	( $\sigma_1 - \sigma_3$ ) <sub>f</sub> [kPa]	Failure strain [%]	Failure mode	Undrained cohesion [kPa]	Remarks
BH1	3.50	29	1.94	1.50	100	132	7.00	I	66	
BH1	6.00	30	1.94	1.49	120	200	4.00	I	100	
BH1	9.00	30	1.94	1.49	180	252	4.50	I	126	
BH1	12.00	25	2.00	1.60	240	359	4.50	B	180	
BH1	14.50	27	1.98	1.56	290	274	4.50	B	137	

Testing in accordance with BS EN ISO 17892 UU = unconsolidated, undrained; MUU = multistage, unconsolidated, ur Date: 15 July 15

Unless stated otherwise: Rate of strain = 2mm/min, Standard latex membrane used with thickness = 0.5mm

Failure modes: B = brittle, I = intermediate, P = plastic

**SUMMARY OF CLASSIFICATION TEST RESULTS**

BH ID	Depth (m)	Type	w (%)	wL (%)	wP (%)	Pass 425 (%)	IP (%)	Mod IP (%)	IL (%)	LOI (%)	Description
BH1	2.30	D	33	73	23	>95	50		0.20		Brown fissured CLAY
BH1	4.00	D	28	74	25	>95	49		0.07		Brown fissured CLAY
BH1	9.55	D	30	67	27	>95	40		0.08		Brown fissured CLAY
BH1	13.25	D	26	67	25	>95	42		0.03		Dark grey fissured CLAY with occasional silt/fine sand partings

Testing in accordance with BS EN ISO 17892 unless specified otherwise

Date:

15 Jul 15

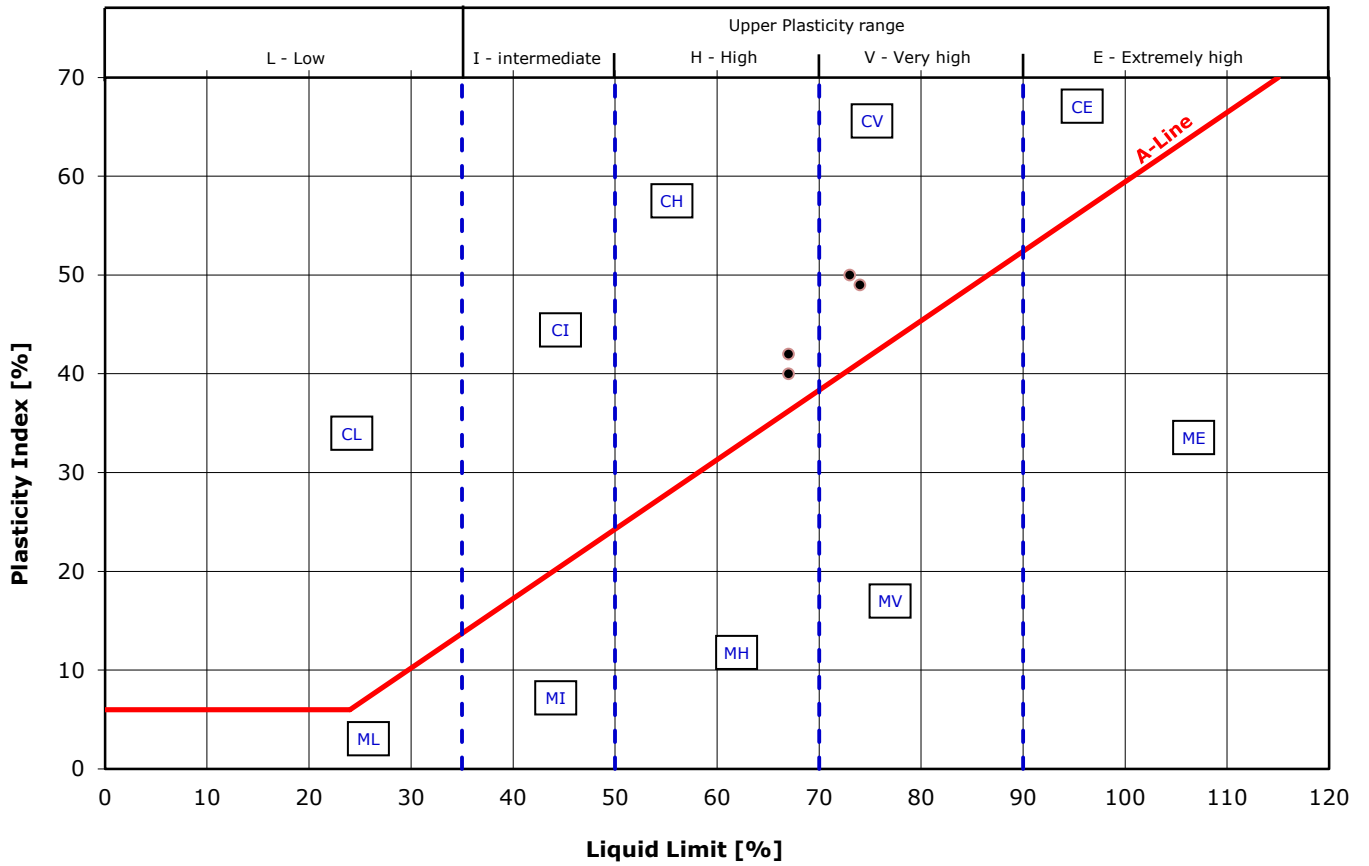
Modified Plasticity Index calculated in accordance with NHBC Standards Chapter 4.2 (reported if %passing 425mm &lt;95%)

Percent passing 425µm: by estimation, by hand\* or by sieving\*\*

(Classification Sheet 1 of 1)



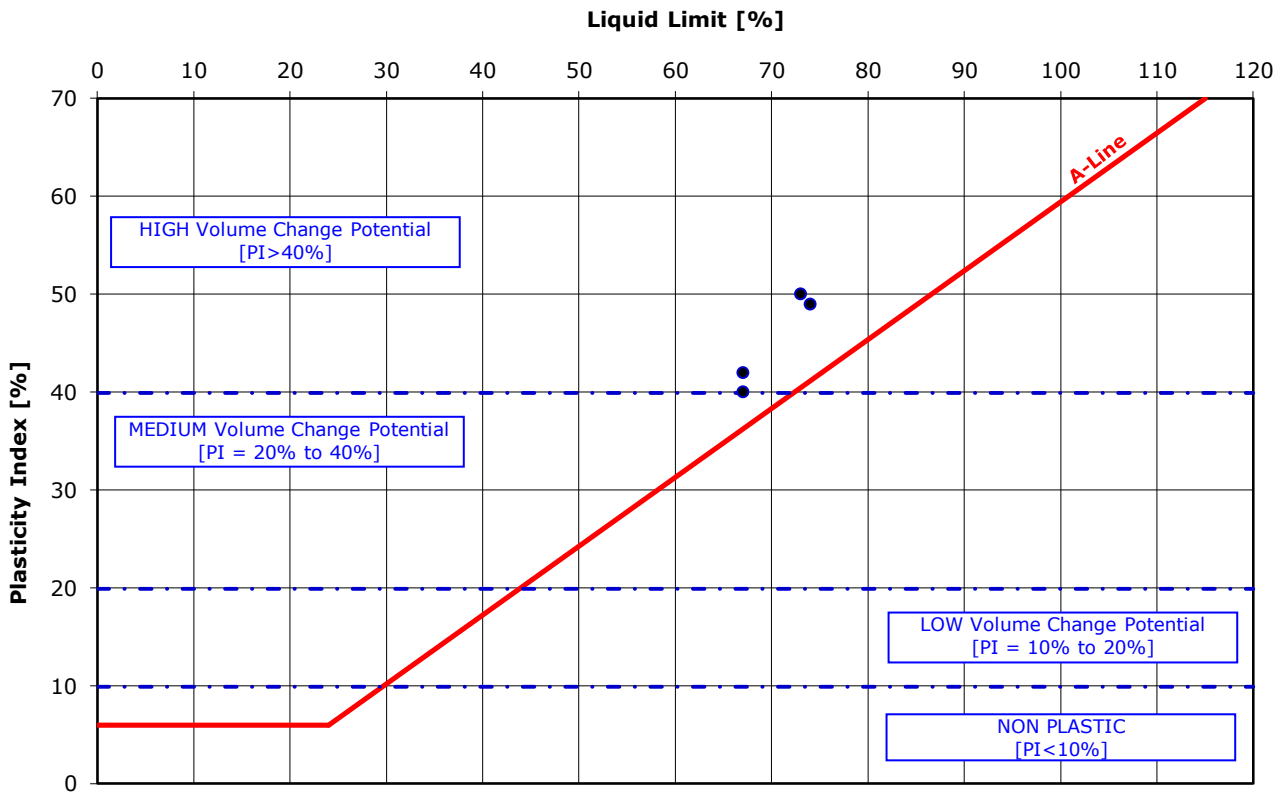
### Plasticity Chart



M - SILT [plots below the A-Line}  
C - CLAY [plots above the A-Line]

Classification in accordance with BS5930:1999+A2:2010 "Code of practice for site investigations"

### Plasticity Chart

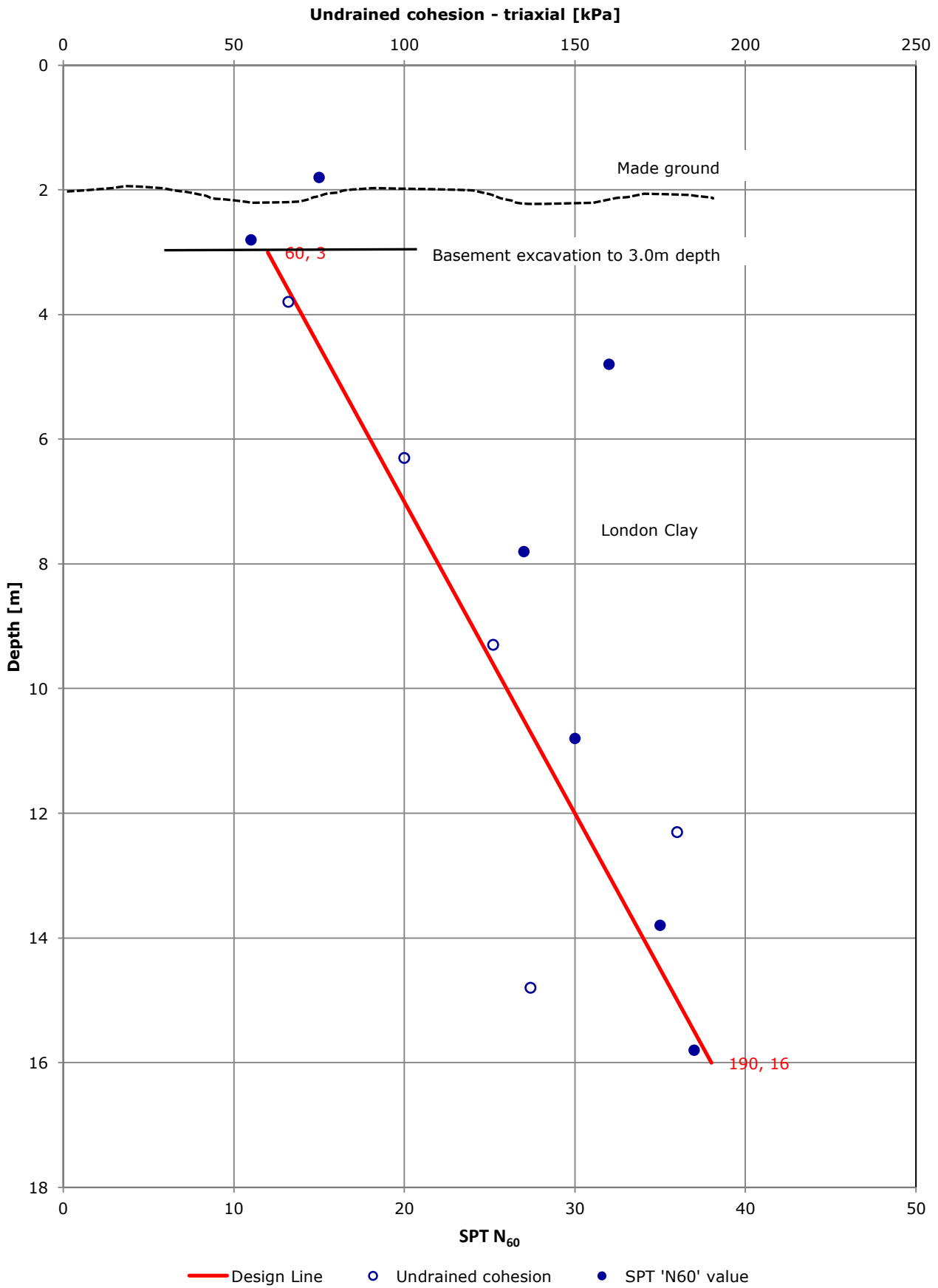


Modified Plasticity Index, I'p:

$$I'p = \frac{I_p \times (\% \text{ passing } 425\text{mm})}{100\%} \quad [\text{where } I_p = \text{Plasticity Index}]$$

Classification in accordance with NHBC Standards, Part 4 'Foundations', Chapter 4.2 'Building near trees'

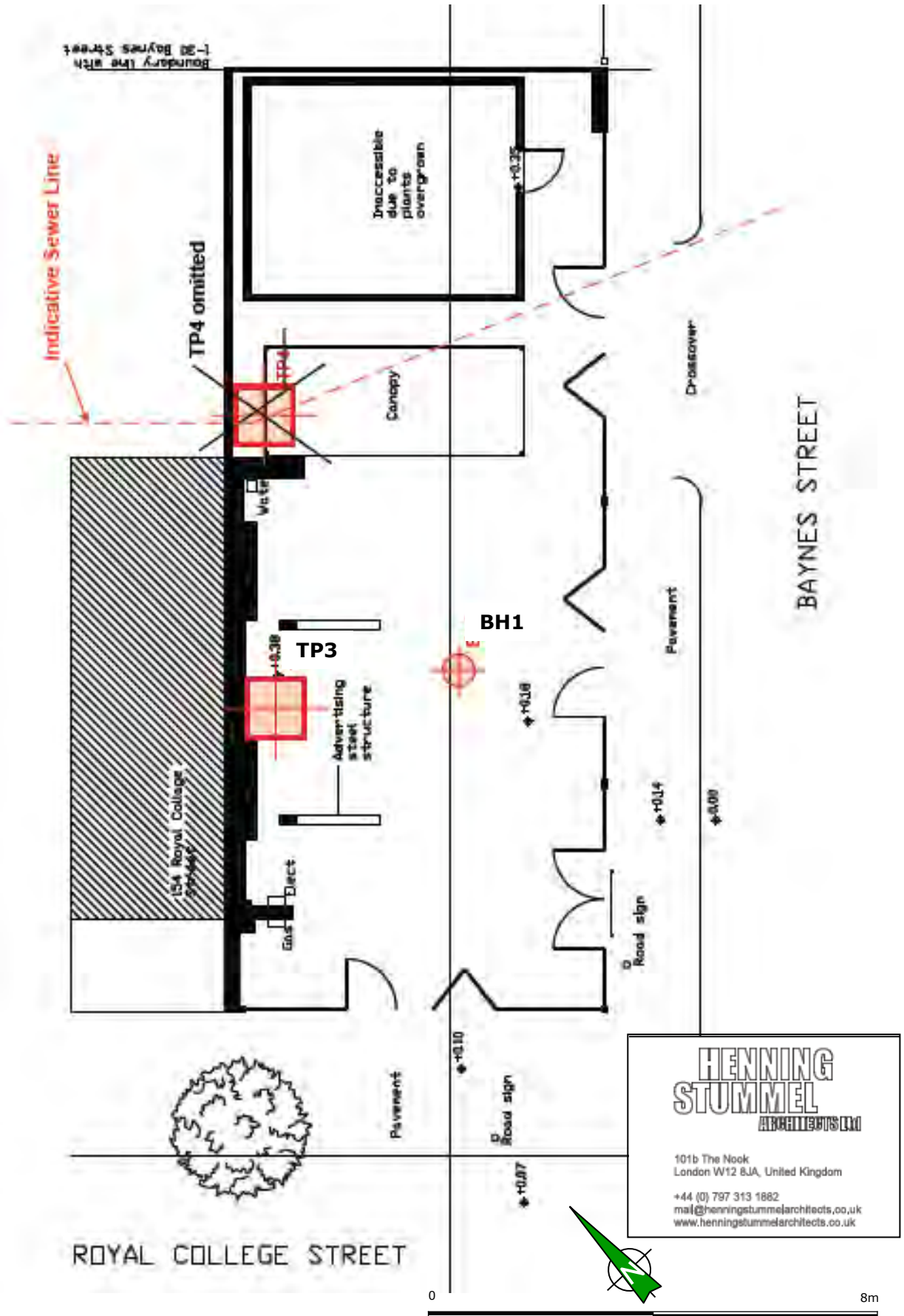
**Undrained cohesion and SPT [N60] vs depth**



**Design Line  $\Delta cu = 10kPa/m$**

Note: this plot may incorporate extrapolated results, generally where 'N' >50  
 - these are indicative only and should be used with caution

Site plan

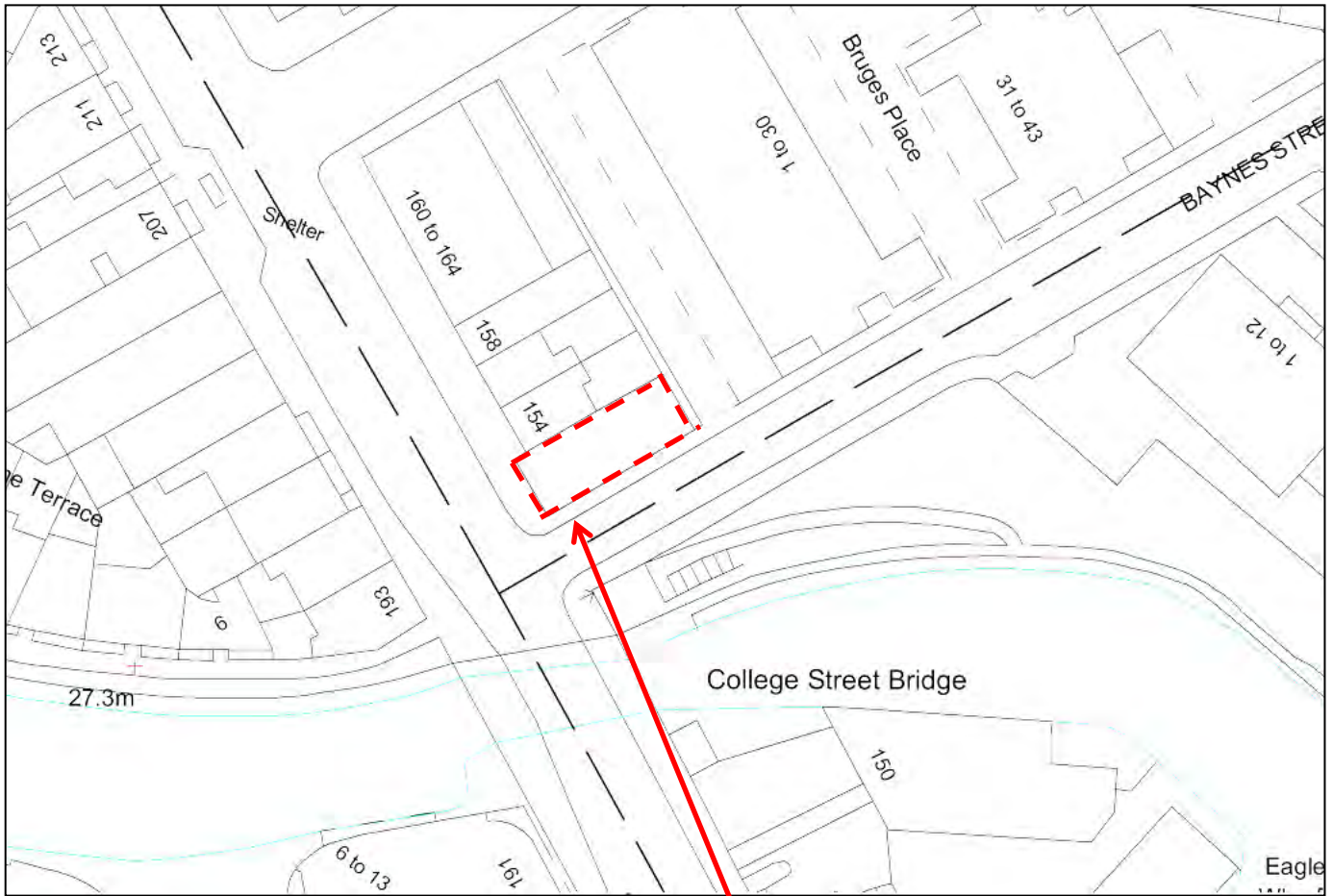


**HENNING STUMMEL**  
 ARCHITECTS LTD

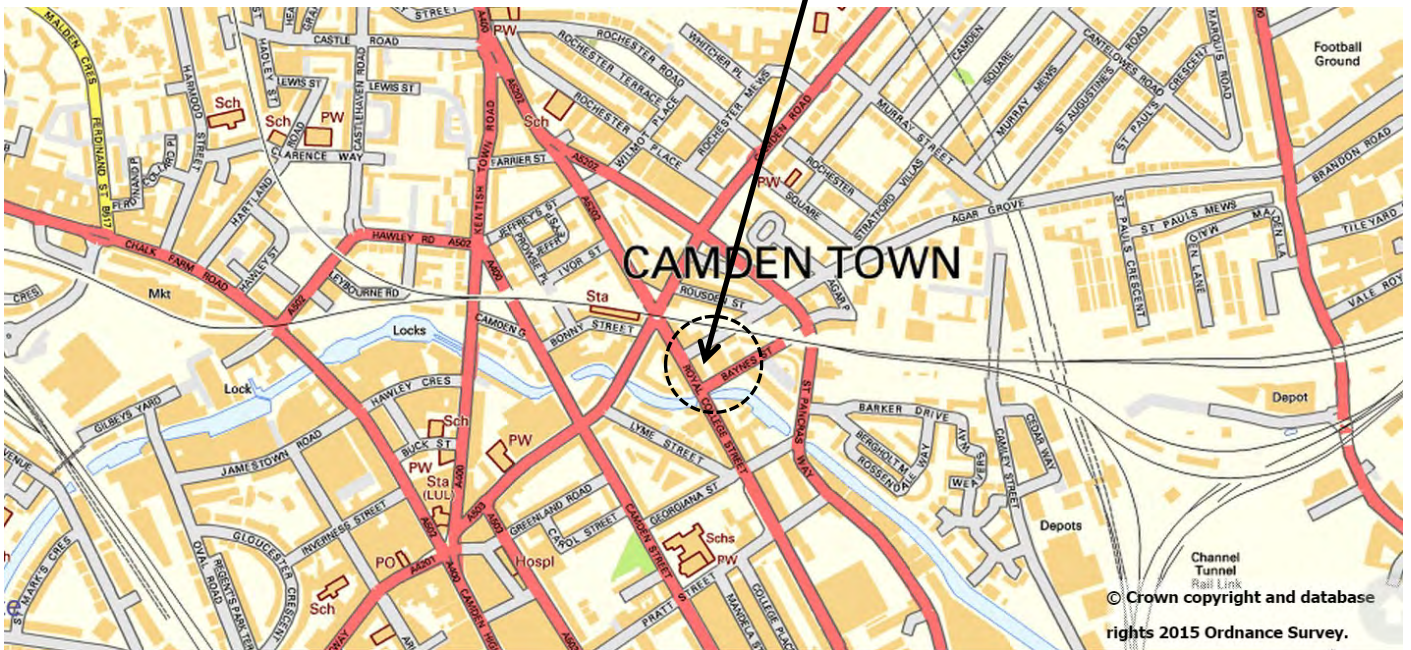
101b The Nook  
 London W12 8JA, United Kingdom  
 +44 (0) 797 313 1882  
 mail@henningstummelarchitects.co.uk  
 www.henningstummelarchitects.co.uk

Scale = 1:100@A4




Location plan



THE SITE



## **APPENDIX B**

-  GroundSure historical maps [Ref SCL-2184572]
-  GroundSure EnviroInsight Report [Ref SCL-2184570]
-  GroundSure GeoInsight Report [Ref SCL-2184571]

**Site Details:**

152, ROYAL COLLEGE STREET,  
LONDON, NW1 0TA

**Client Ref:** 9819  
**Report Ref:** SCL-2184572  
**Grid Ref:** 529265, 184100

**Map Name:** 1056 Scale Town Plan

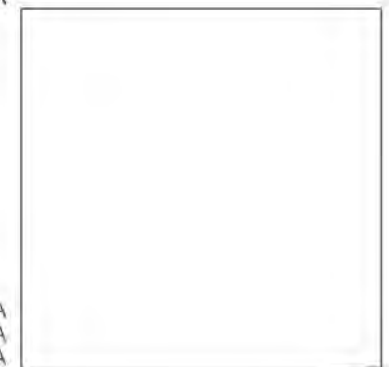
**Map date:** 1870-1873

**Scale:** 1:1,056

**Printed at:** 1:1,056



Surveyed 1870  
Revised N/A  
Edition 1873  
Copyright N/A  
Levelled N/A



Surveyed N/A  
Revised N/A  
Edition N/A  
Copyright N/A  
Levelled N/A



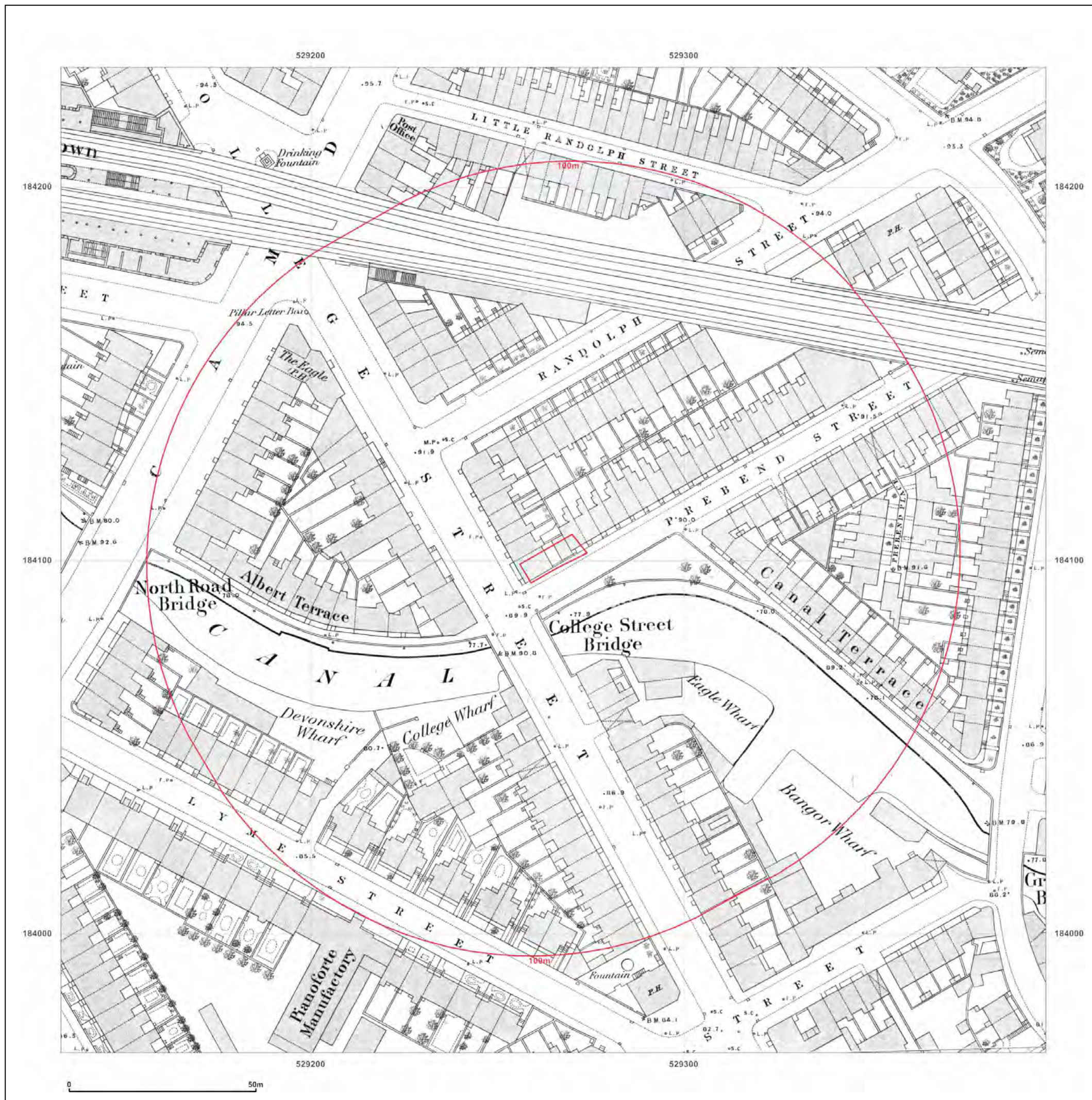
Produced by  
Groundsure Insights  
T: 08444 159000  
E: [info@groundsure.com](mailto:info@groundsure.com)  
W: [www.groundsure.com](http://www.groundsure.com)



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Production date: 17 June 2015

To view map legend click here [Legend](#)



**Site Details:**

152, ROYAL COLLEGE STREET,  
LONDON, NW1 0TA

**Client Ref:** 9819  
**Report Ref:** SCL-2184572  
**Grid Ref:** 529265, 184100

**Map Name:** National Grid

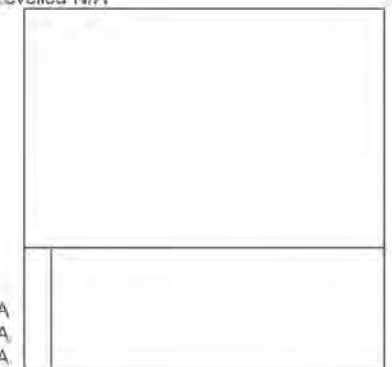
**Map date:** 1968-1971

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1969  
Revised 1969  
Edition N/A  
Copyright 1970  
Levelled N/A



Surveyed N/A  
Revised N/A  
Edition N/A  
Copyright N/A  
Levelled N/A



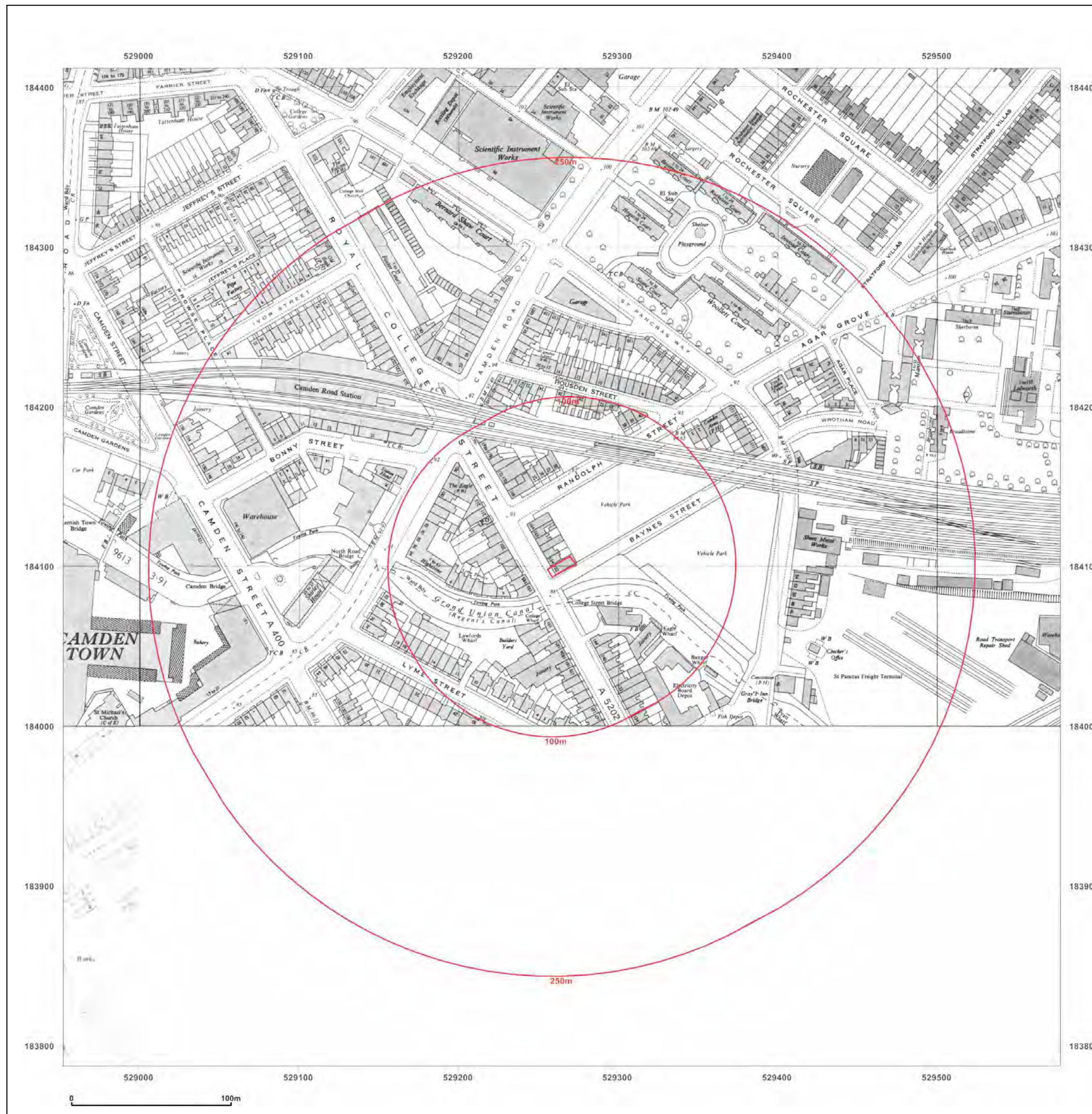
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Production date: 17 June 2015

To view map legend click here [Legend](#)





**Site Details:**

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LONDON, NW1 0TA

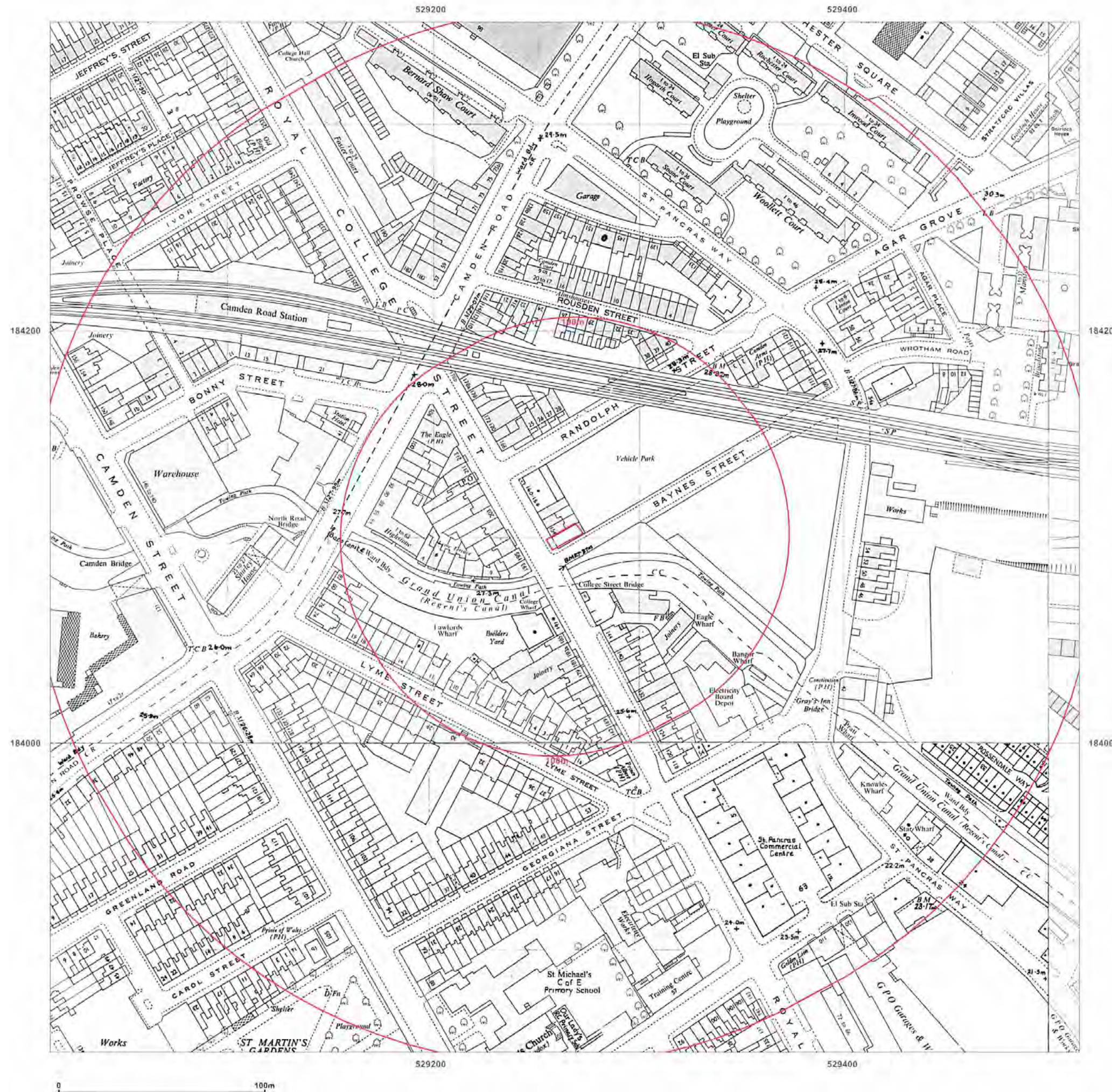
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**Report Ref:** SCL-2184572  
**Grid Ref:** 529265, 184100

**Map Name:** National Grid

**Map date:** 1982-1984

**Scale:** 1:1,250

**Printed at:** 1:2,000



Surveyed 1974 Revised 1982 Edition N/A Copyright 1982 Levelled 1974	Surveyed 1982 Revised 1982 Edition N/A Copyright N/A Levelled N/A
Surveyed 1975 Revised 1984 Edition N/A Copyright 1984 Levelled 1975	Surveyed 1975 Revised 1982 Edition N/A Copyright 1982 Levelled 1975



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Production date: 17 June 2015

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**Site Details:**

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LONDON, NW1 0TA

**Client Ref:** 9819  
**Report Ref:** SCL-2184572  
**Grid Ref:** 529265, 184100

**Map Name:** National Grid

**Map date:** 1984-1987

**Scale:** 1:1,250

**Printed at:** 1:2,000



Surveyed 1974 Revised 1986 Edition N/A Copyright 1986 Levelled 1974	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright 1987 Levelled 1975	Surveyed 1975 Revised 1984 Edition N/A Copyright 1984 Levelled 1975



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Production date: 17 June 2015

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# Groundsure Envirosight

Address: 152, ROYAL COLLEGE STREET, LONDON, NW1 0TA  
Date: 17 Jun 2015  
Reference: SCL-2184570  
Client: Soil Consultants Ltd

NW

N

NE

W

E



SW

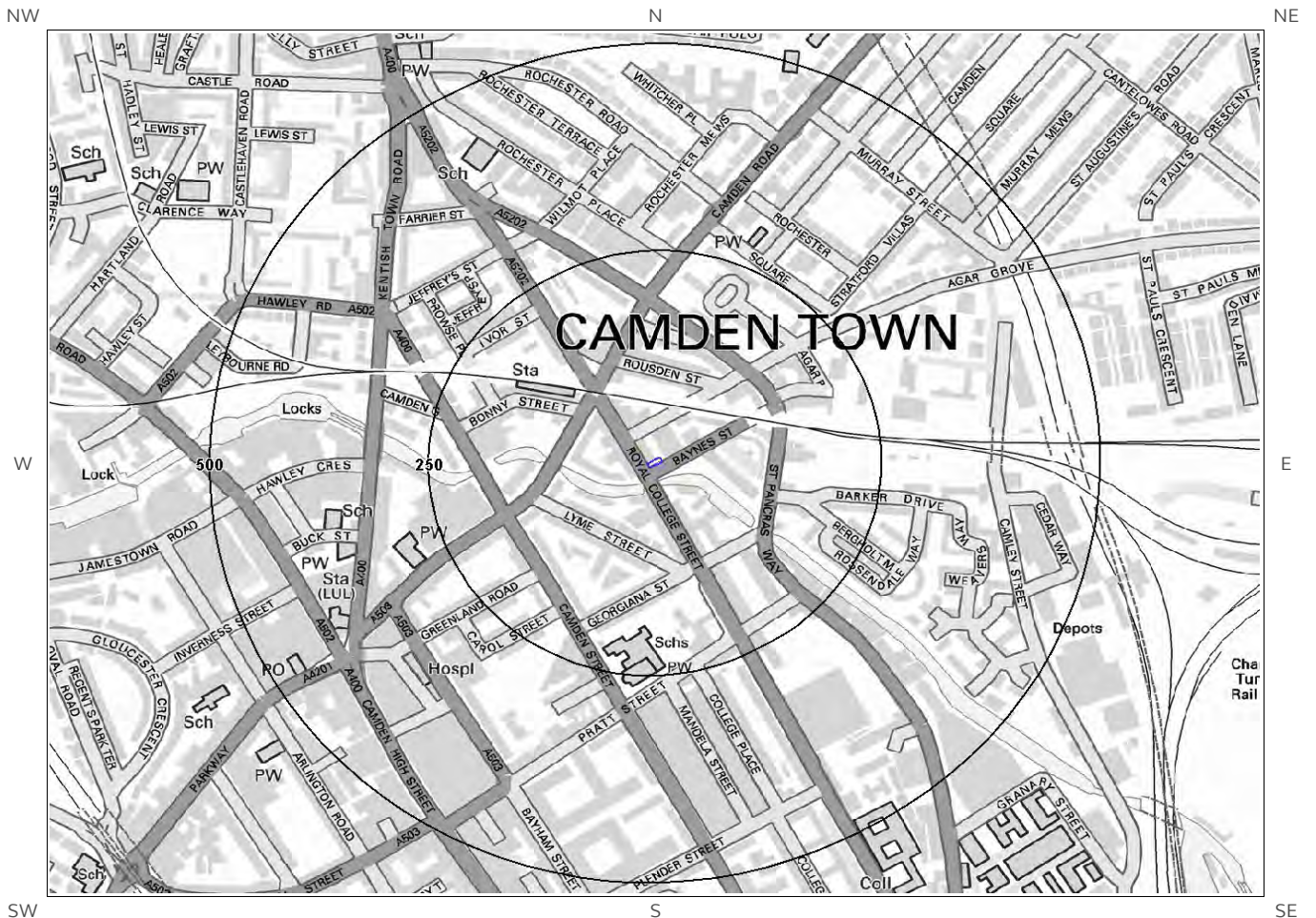
S

SE

Aerial Photograph Capture date: 20-Apr-2013  
Grid Reference: 529265,184100  
Site Size: 0.01ha

# 5. Hydrogeology and Hydrology

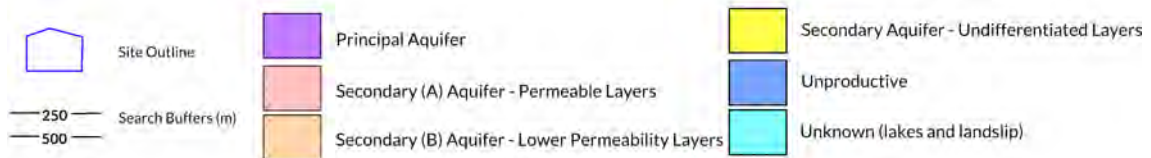
## 5a. Aquifer Within Superficial Geology



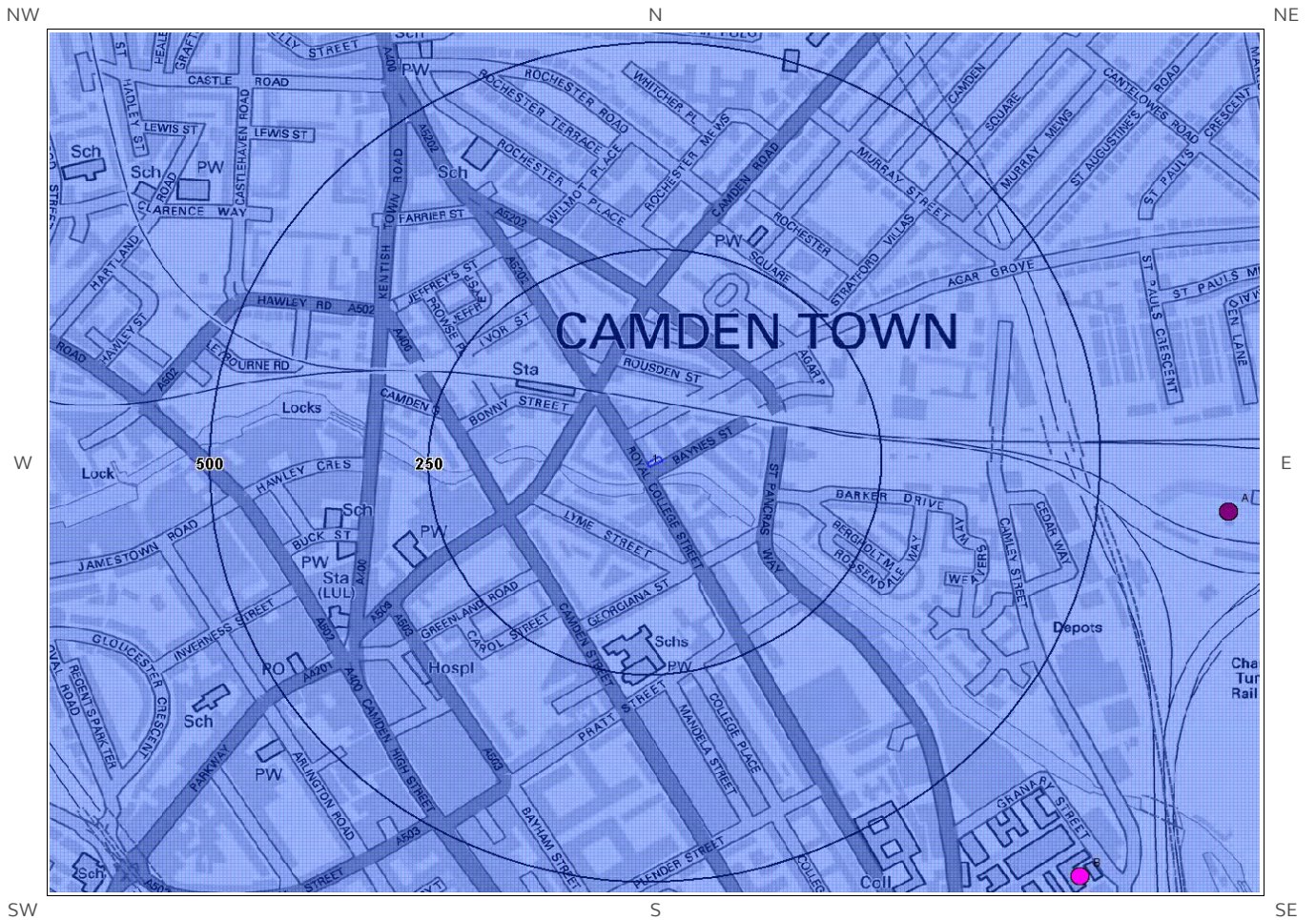
Aquifer Within Superficial Geology



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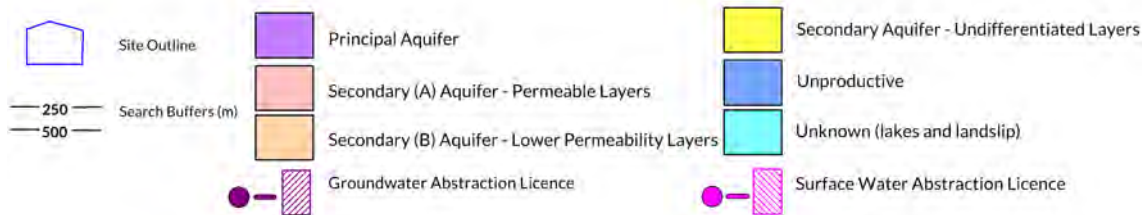
# 5b. Aquifer Within Bedrock Geology and Abstraction Licenses



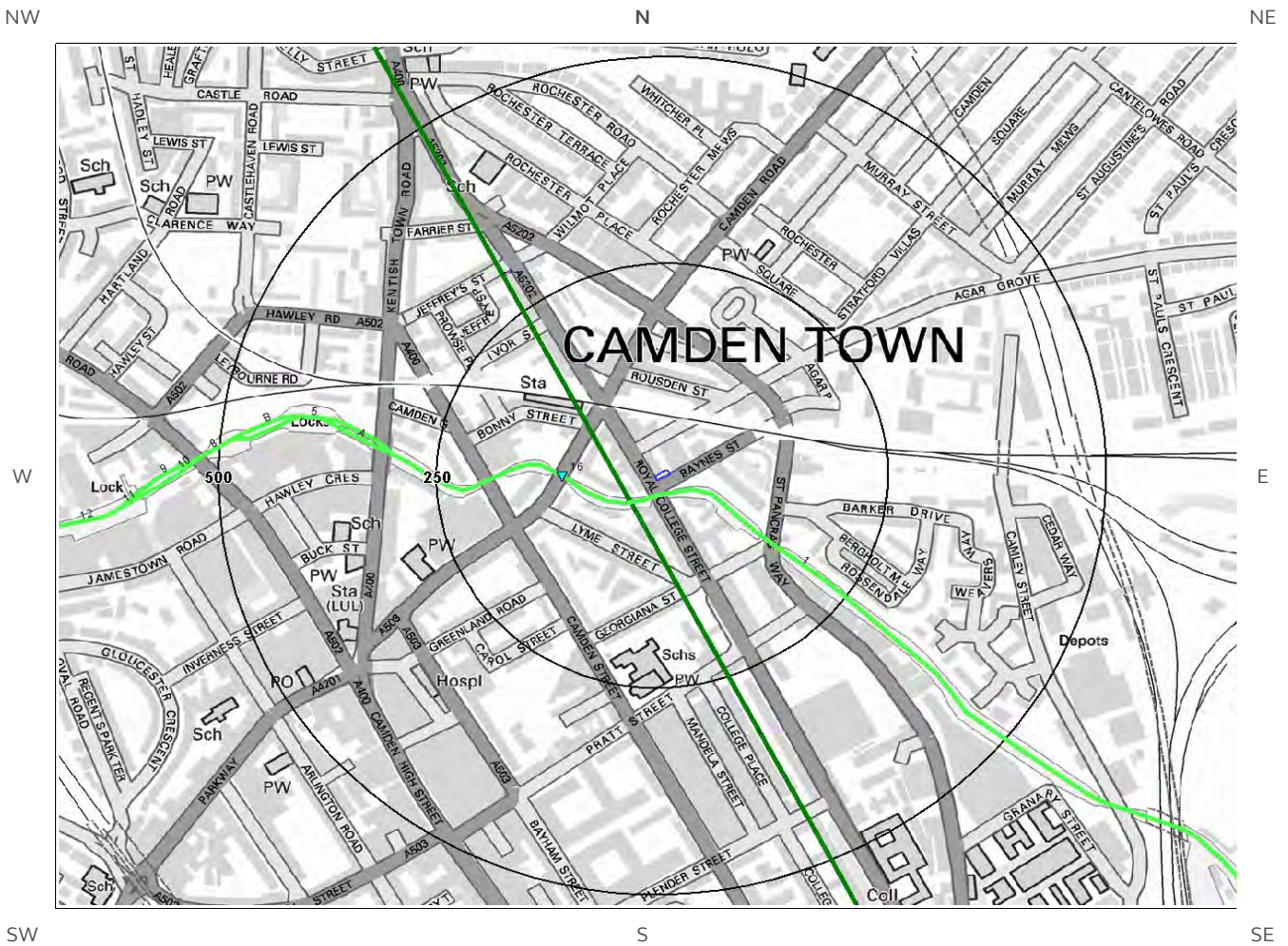
Aquifer Within Bedrock Geology and Abstraction Licenses



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# 5e. Hydrology – Detailed River Network and River Quality



Hydrology – Detailed River Network and River Quality

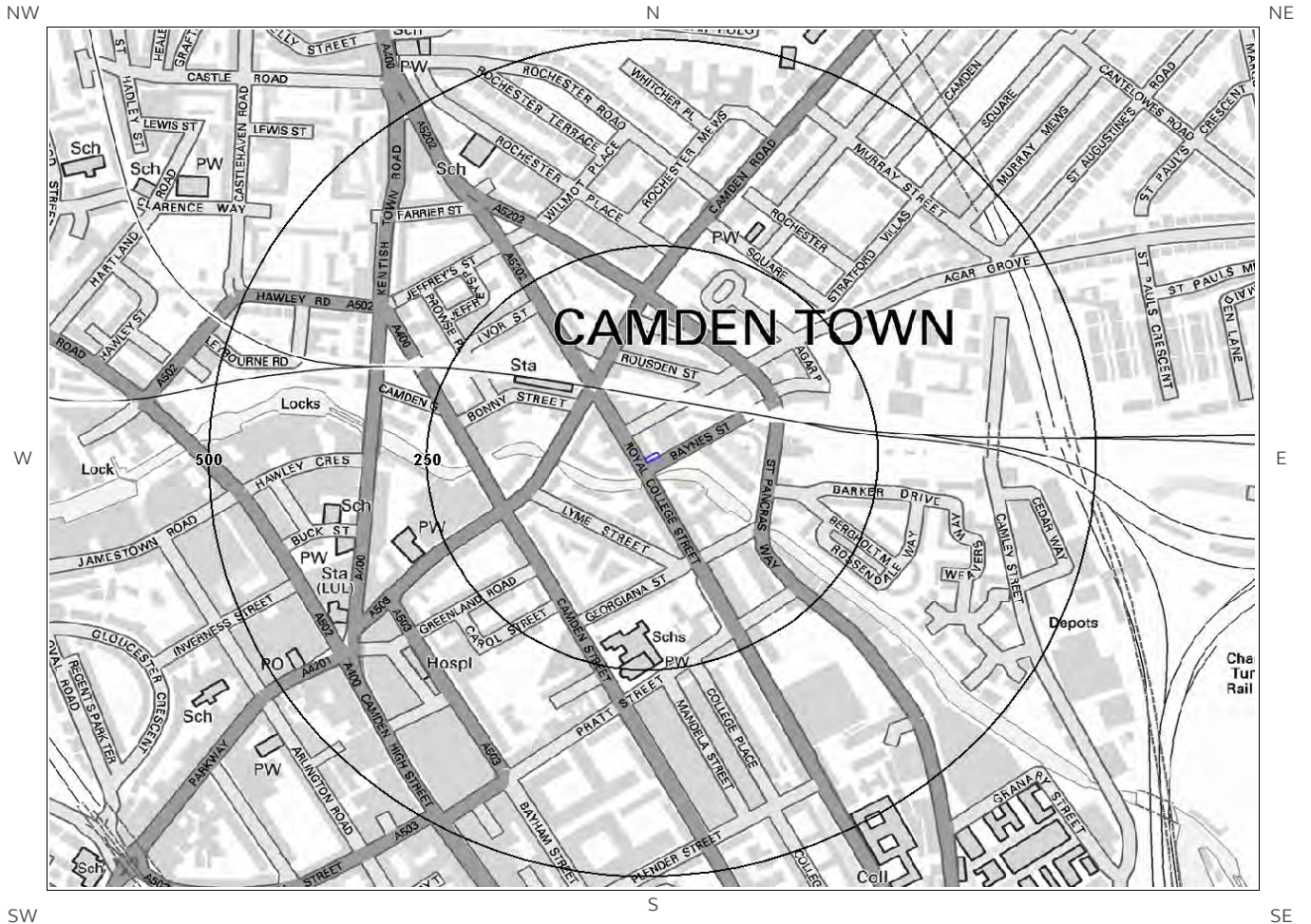
Mapping sourced from **Ordnance Survey**

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Site Outline  
Search Buffers (m)  
250  
500

- Primary River
- Secondary River
- Tertiary River
- Lake/Reservoir
- Underground River (inferred)
- General Quality Assessment: Biology
- General Quality Assessment: Chemistry
- Canal
- Canal Tunnel
- Culvert
- Multiple Channel Culvert
- Underground River (Potential Sewer)
- Underground River (local knowledge)



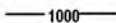
# 1.2 Superficial Deposits and Landslips Map



Superficial Deposits and Landslips Legend

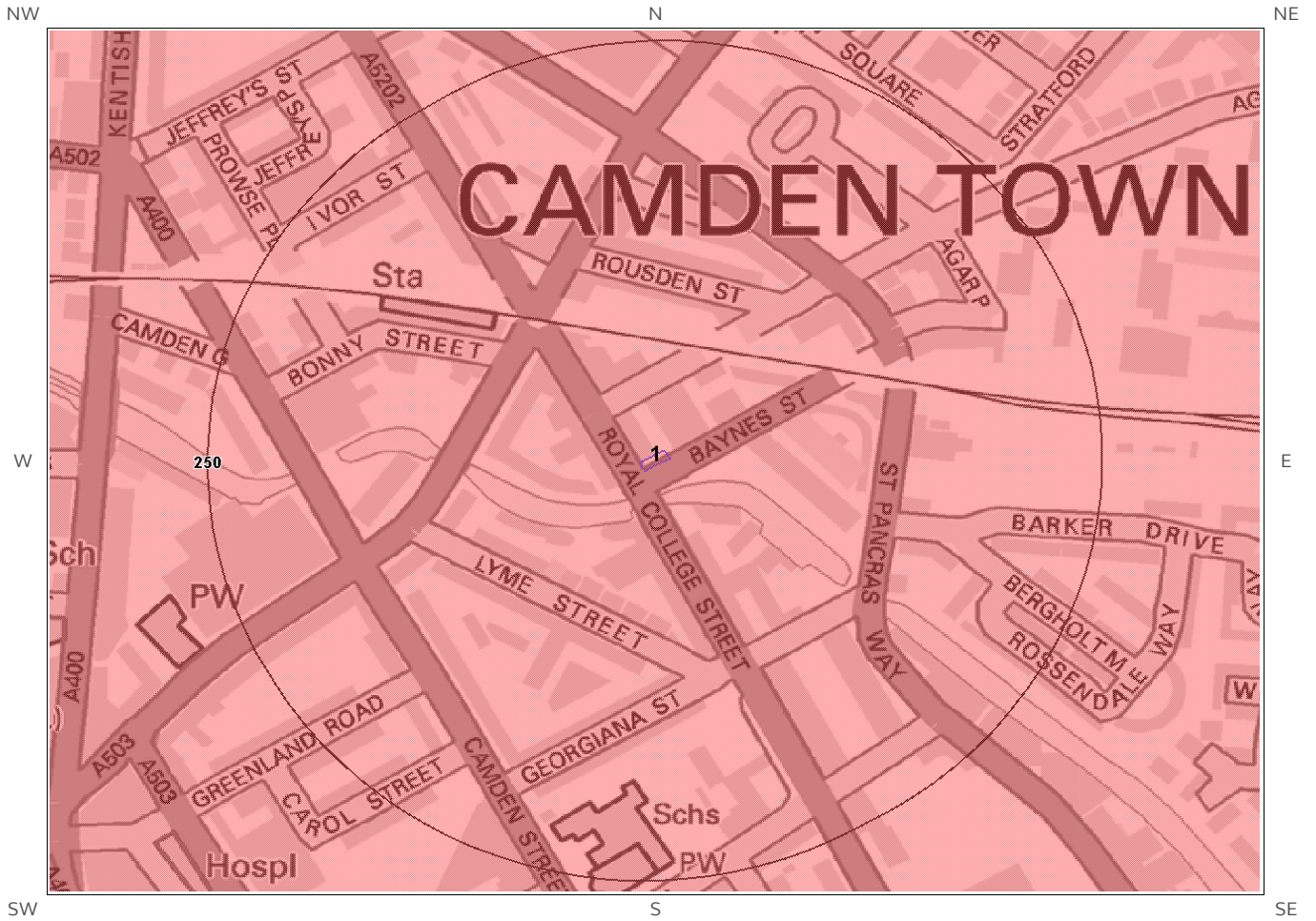


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-  Site Outline
  -  500
  -  1000
- Search Buffers (m)

# 4 Natural Ground Subsidence

## 4.1 Shrink-Swell Clay Map



Shrink Swell Clay Legend

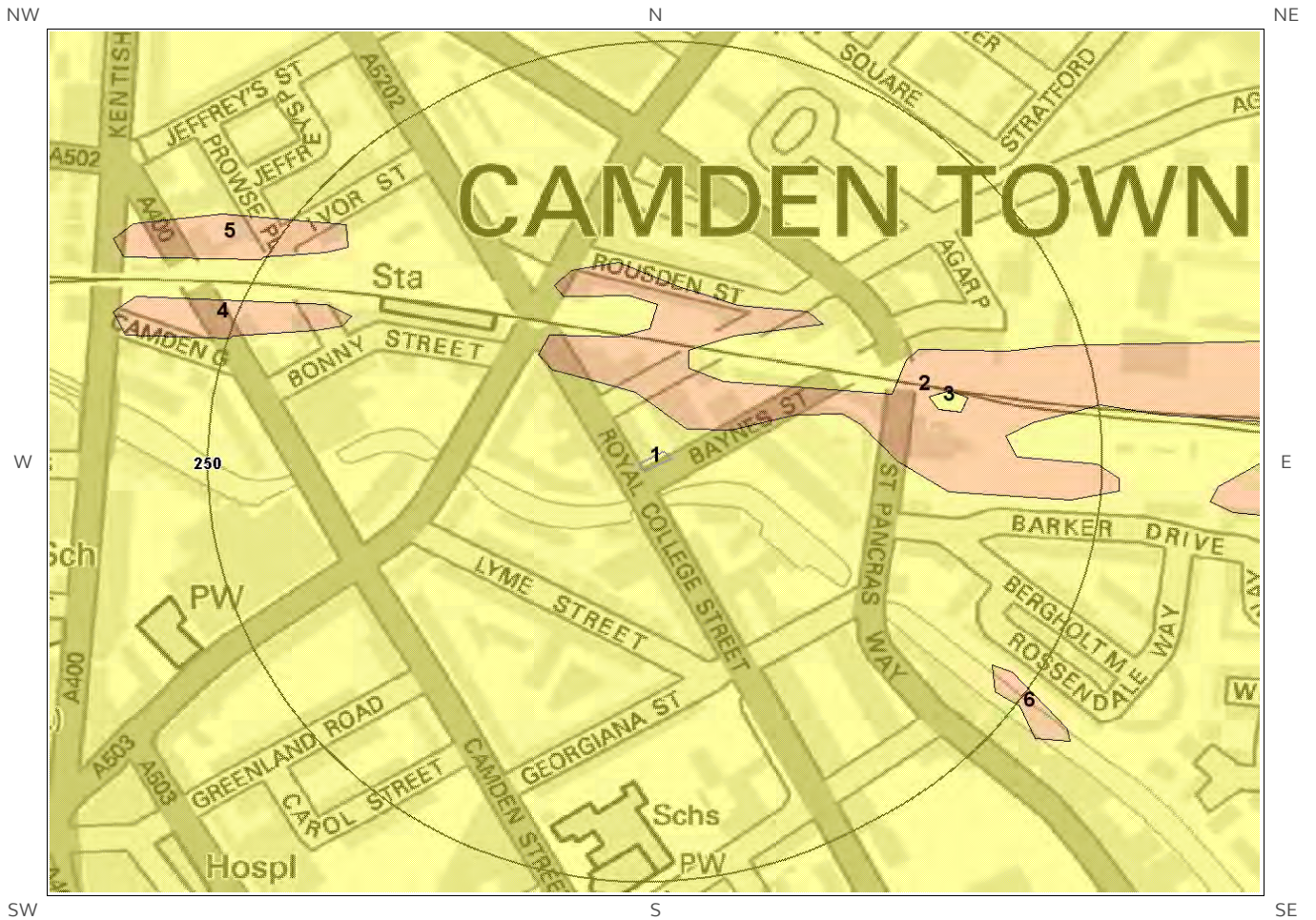


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# 4.2 Landslides Map



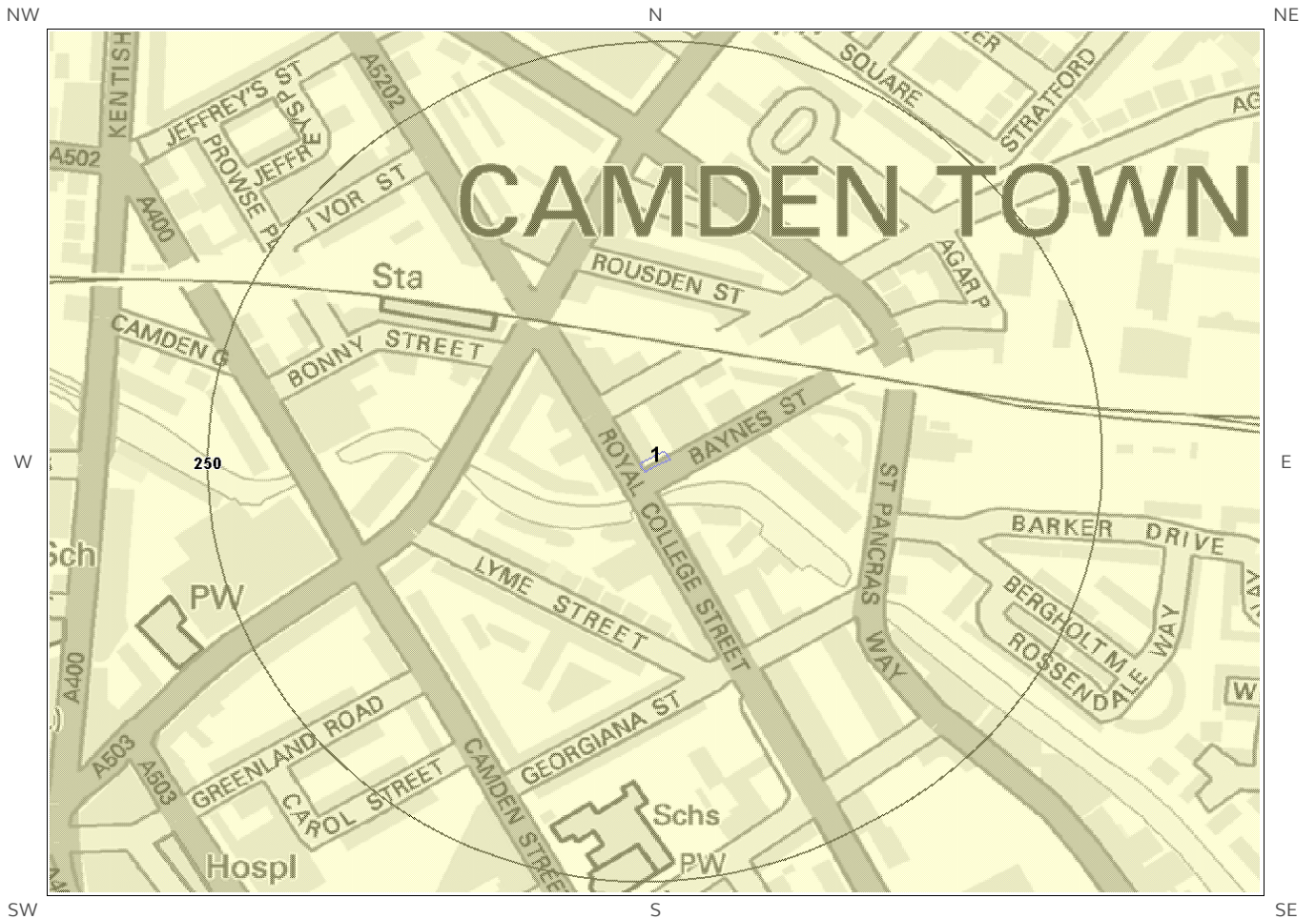
Landslides Legend



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	Site Outline		No Data / Null		Low
	Search Buffers (m)		Negligible		Moderate
			Very Low		High

# 4.3 Ground Dissolution Soluble Rocks Map



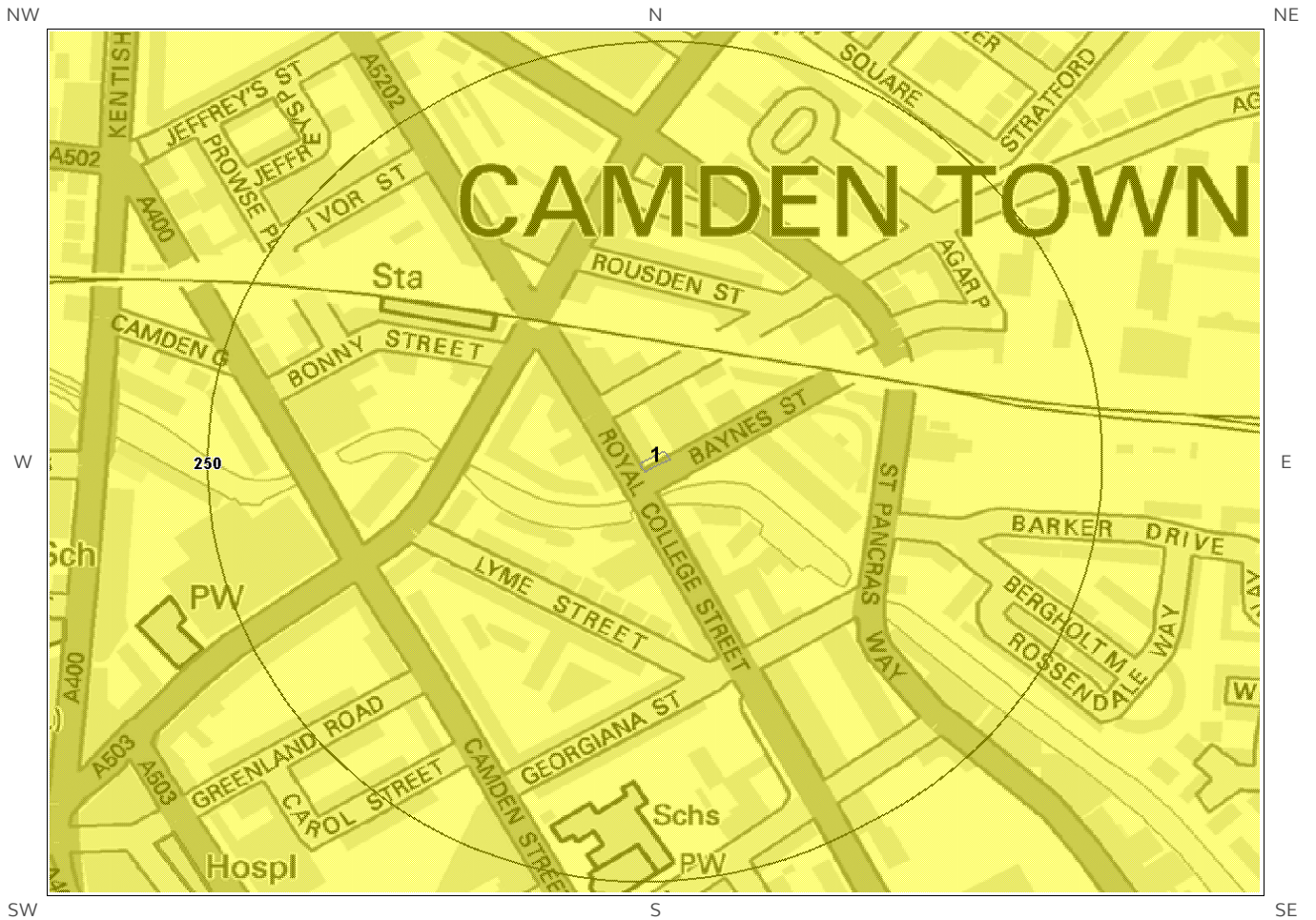
Ground Dissolution Soluble Rocks Legend



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# 4.5 Collapsible Deposits Map



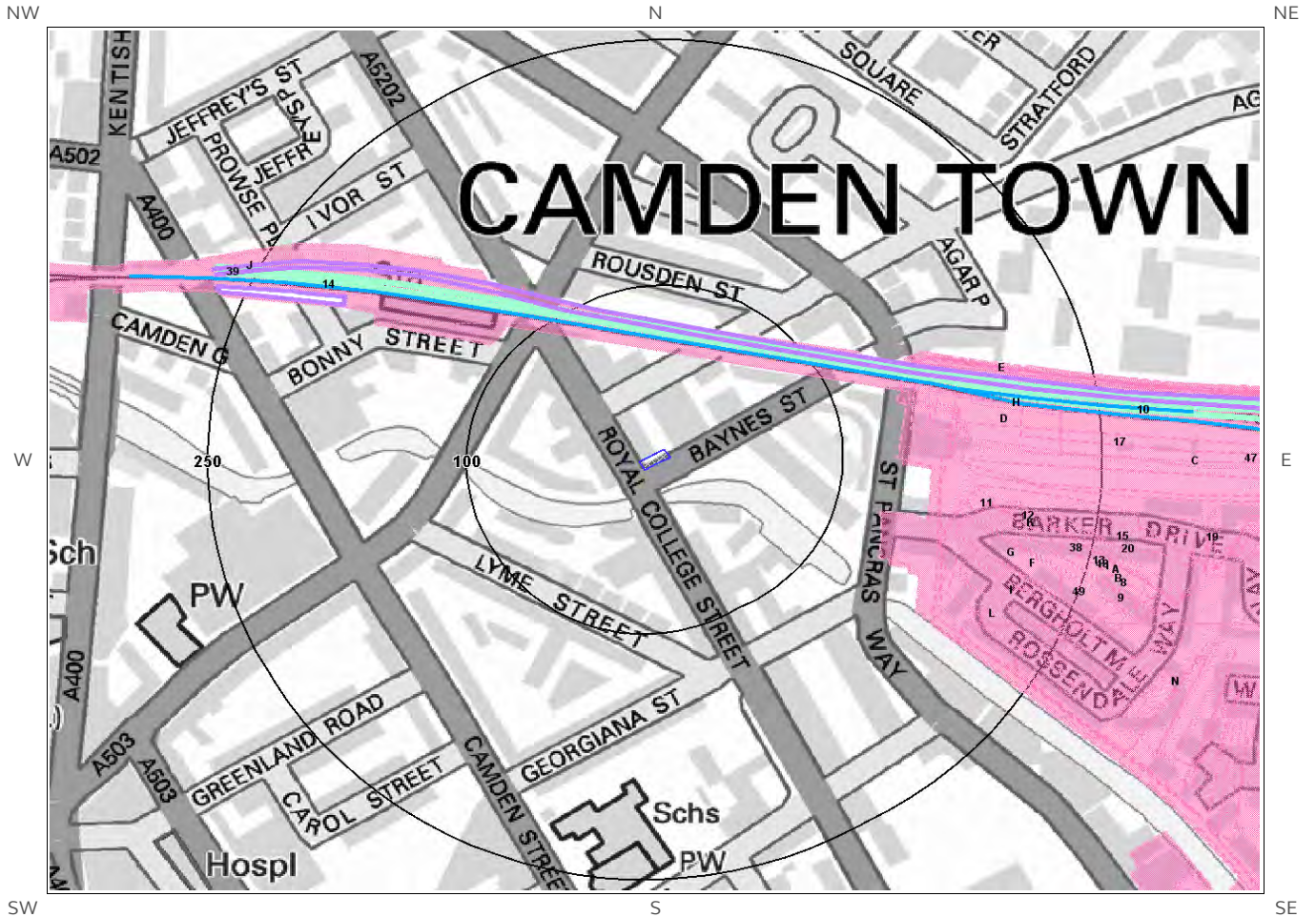
Collapsible Deposits Legend



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



# 7 Railways and Tunnels Map



Railways and Tunnels Legend



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-  Railway and/or Tunnel Feature from Historical Mapping
-  Underground or Partially Underground Railway / Subway System
-  Railway Track (OpenStreetMap)
-  Site Outline
-  Railway Tunnel (OS Mapping)
-  High Speed 2
-  Search Buffers (m)
-  Abandoned or Dismantled Railway (OpenStreetMap)
-  Crossrail 1
-  Railway Track (OS Mapping)