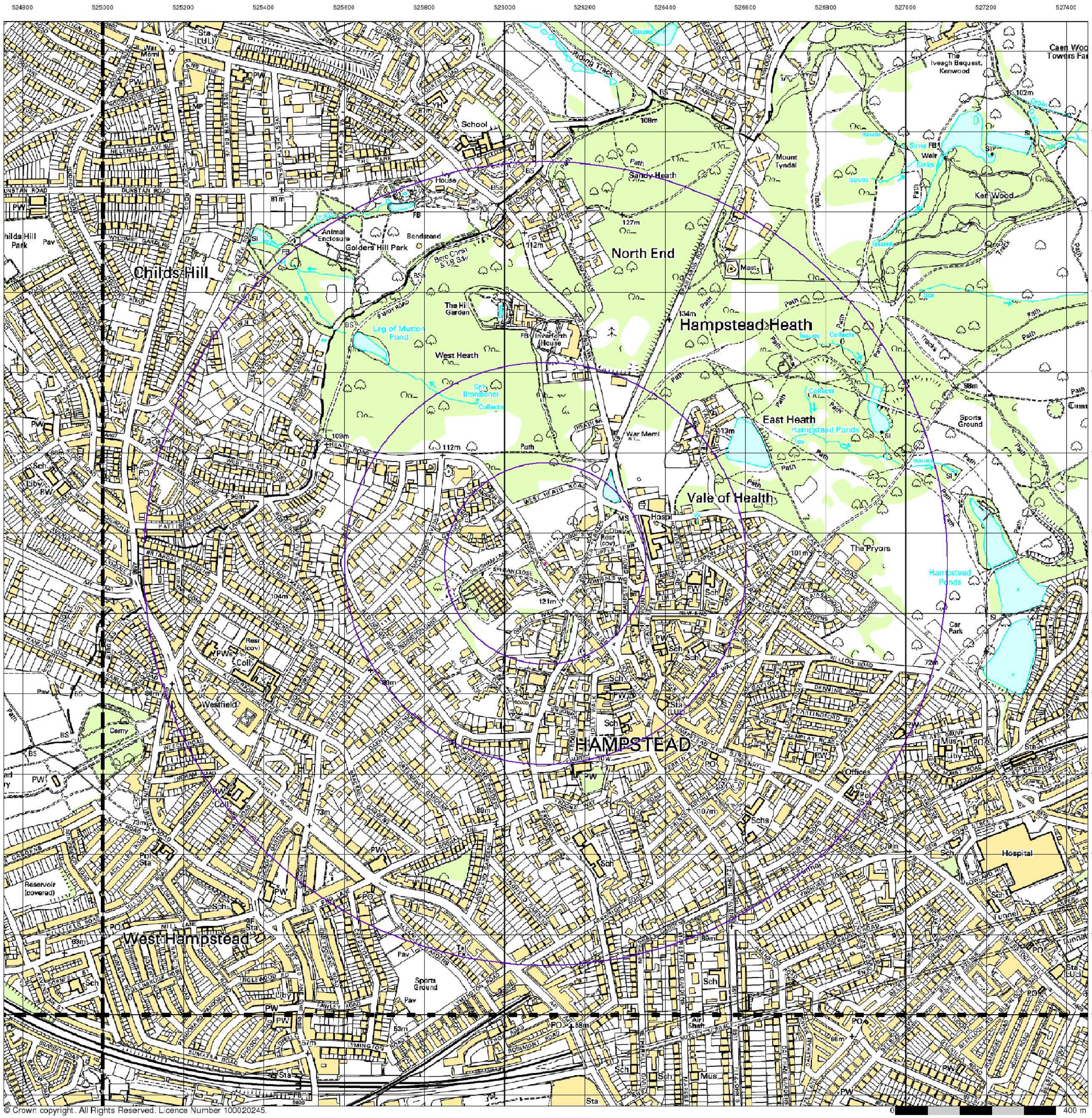


Geotechnical & Environmental Associates

10k Raster Mapping

Published 2006

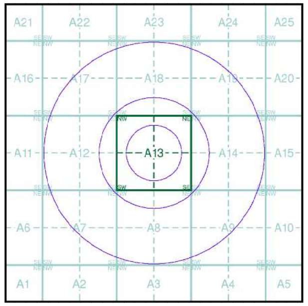
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

TQ28NW 2006 1:10,000	TQ28NE 2006 1:10,000
TQ28SW 2006 1:10,000	TQ28SE 2006 1:10,000

Historical Map - Slice A



Order Details

Order Number: 44025195_1_1
Customer Ref: J13022
National Grid Reference: 526100, 186120
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

7 Branch Hill, LONDON, NW3 7LT

GEA Geotechnical & Environmental Associates

10k Raster Mapping

Published 2012

Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

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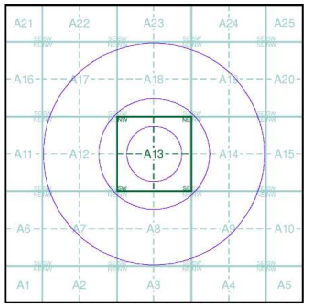
TQ28SW 2012 1:10,000	TQ28SE 2012 1:10,000

Historical Map - Slice A



Order Details

Order Number:	44025195_1_1
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National Grid Reference:	526100, 186120
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

7 Branch Hill, LONDON, NW3 7LT

Landmark Information Group

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

GEA Geotechnical & Environmental Associates

Tyttenhanger House
Coursers Road
St Albans
Herts AL4 0PG

Site Plan

Site	7 Branch Hill, London, NW3 7LT
Client	Mrs Cheryl Plaza
Engineer	Sinclair Johnston & Partners Ltd

Job Number J13022

Sheet 1 / 1

Approximate Scale in metres

0 5 10 15

Geotechnical & Environmental Associates (GEA) is an engineer-led and client-focused independent specialist providing a complete range of geotechnical and contaminated land investigation, analytical and consultancy services to the property and construction industries.

We have offices at

Widbury Barn
Widbury Hill
Ware
Hertfordshire
SG12 7QE
tel 01727 824666
mail@gea-ltd.co.uk

Church Farm
Gotham Road
Kingston on Soar
Notts
NG11 0DE
tel 01509 674888
midlands@gea-ltd.co.uk

Enquiries can also be made on-line at

www.gea-ltd.co.uk

where information can be found
on all of the services that we offer.

GEA

APPENDIX D - ADDITIONAL INFORMATION FROM INVESTIGATIONS

STRUCTURAL ENGINEER'S RESPONSE TO QUERIES RAISED BY CARD GEOTECHNICS LIMITED

Project: 7 Branch Hill, London NW3 7LT **Project No.** 7922

Date: 29 June 2016

Reponse By: Ravi Azad MEng CEng MICE MIStructE
(Technical Director, Sinclair Johnston & Partners)

GENERAL

The following report has been prepared in response to structural queries raised by Card Geotechnics Ltd, following their review of structural information submitted by Sinclair Johnston & Partners (SJ&P) to discharge planning conditions set by the London Borough of Camden (document ref. CG/08649a, dated 25th May 2016).

Specific responses to queries raised by Card Geotechnics Ltd (CGL) as part of their review have been outlined below for clarity.

RESPONSES

1. The interface between the existing rear wall of the existing building and sheet piled wall on site has been investigated by core drilling through the wall. Please find enclosed a report prepared by concrete investigation specialists, Sandberg Ltd, and SJ&P's interpretation of these investigation works. The investigation works confirmed that the reinforced concrete rear wall to the existing building had been cast up against the sheet steel piled wall.

   The proposed construction sequence remains unchanged, and is broadly as follows:

   - laterally prop the existing reinforced concrete wall as excavation progresses downwards;
   - underpin the existing rear wall to underside of basement level;
   - and build up independent new r.c. wall in front of existing rear wall, with the new wall designed to take full earth and surcharge loading).

   This is all as shown on SJ&P structural drawings.

2. Groundwater investigation and monitoring has been undertaken as part of the works that Sandberg Ltd undertook. No water was found, and this has been recorded in both the Sandberg Ltd report and SJ&P notes (enclosed). It is proposed that groundwater will continue to be monitored as works proceed on site.

3. We note that CGL accept that the GEA ground movement analysis report satisfactorily demonstrates that ground movements can be controlled to limit predicted damage, and that this query is now closed out.

4. The sectional properties of the existing sheet pile wall and thickness of concrete have been investigated by in-situ investigation. It is impractical to investigate the length / toe level of the wall at this stage, and this will be confirmed once demolition works commence. In any case, neither the permanent structure nor temporary supports rely on the existing wall being founded at any particular depth. The existing wall is to be propped laterally, underpinned, and then a new wall is to be cast in front of the existing, rendering the existing wall effectively redundant (it will 'lean' against the new internal retaining wall, which itself will be propped by floor slabs).

5. The interface between the concrete rear wall and the sheet pile wall has been investigated. Please refer to the Sandberg report which confirms that the concrete has been cast directly against the sheet piles, with no slip membrane between. In any case, there is no reliance for frictional resistance to be developed between the two surfaces, as the existing retaining wall will become effectively redundant as part of the proposed works.

6. No groundwater has been found from the in-situ investigation and monitoring, which is understandable as the site is near the top of a very steep hill. In any case, it is envisaged that any groundwater seepages encountered during excavation can be dealt with by local pumping with no adverse impact on the surrounding ground. These proposals will be included within the Contractor's construction methodology statement.

7. A Main Contractor has not been appointed yet, however it is agreed that it is imperative that they prepare a detailed construction methodology for the works. This must follow the basis of the design assumptions we have made, and will be reviewed by us prior to acceptance by the project team.

8. The Main Contractor, once appointed, will provide:

   a. Details of procedures for auditing and controlling site works during construction
   b. Details of temporary works checking regime
   c. Detailed contingency plans to reinstate and control ground movements should they occur
   d. Evidence of recent and successful experience in the construction of basements of this scale in London (track record)
   e. Details of accreditation or membership of accredited bodies (such as ASUC).
   f. Details of warranty/insurance cover
   g. Details of all subcontractors involved in the basement excavation, including track records, construction method statements, insurances

9. SJ&P will undertake an independent review of the Contractor's design and methodology prior to acceptance of the proposals.

   SJ&P have been appointed to undertake regular site inspections to see that the works are carried out in accordance with the approved design.

CONCLUSION

It is considered that the additional information enclosed and responses referred to above provide clarification to the queries raised by CGL as part of the BIA audit, and that out all items on the CGL Audit Query Tracker can now been closed out.

For Sinclair Johnston & Partners Ltd

Ravi Azad MEng CEng MICE MIStructE

SANDBERG

REPORT 50429/S/1

7 BRANCH HILL

INVESTIGATIONS OF RETAINING WALL

Sandberg LLP
5 Carpenters Place
Clapham High Street
London SW4 7TD

Tel: 020 7565 7000
Fax: 020 7565 7101
email: mail@sandberg.co.uk
web: www.sandberg.co.uk

SANDBERG
CONSULTING ENGINEERS
INVESTIGATION INSPECTION
MATERIALS TESTING

Sandberg LLP
5 Carpenters Place
London SW4 7TD

Tel: 020 7565 7000
Fax: 020 7565 7101
email: clapham@sandberg.co.uk
web: www.sandberg.co.uk

REPORT 50429/S/1

7 BRANCH HILL

INVESTIGATIONS OF RETAINING WALL

c/o Marek Wojciechowski Artchitects
28 Margaret Street
London
W1W 8RZ

This report comprises
2 pages of text
Figures 1 to 7

For the attention of Ms Cheryl Plaza

16 January 2014

SANDBERG
CONSULTING ENGINEERS
INVESTIGATION INSPECTION
MATERIALS TESTING

REPORT 50429/S/1

7 BRANCH HILL

INVESTIGATION OF RETAINING WALL

Instruction: Received from Mr Thomas Musson from Sinclair Johnston & Partners Limited on 6 January 2014.

1. INTRODUCTION

Sandberg was instructed to carry out intrusive investigations to the retaining walls at 7 Branch Hill, London, NW3.

The Schedule of Works was as detailed in the email sent 16 December 2013 and consisted of the following:

a) Confirm presence of ground water levels behind retaining wall.

b) Confirm thickness of concrete retaining wall.

c) Confirm presence of the sheet piled wall.

The works were performed on 7 January 2014.

2. TEST METHODS

2.1 Concrete Core Specimens

A Hilti Ferroscan (Sandberg equipment reference S711) was used to scan the concrete surfaces so as to avoid reinforcing steel when coring at the nominated locations. Concrete core specimens were extracted at required locations using 110v electric powered coring equipment. The cutter used was a nominally 75mm diameter diamond tipped core barrel. The cutting operation was lubricated and flushed using water from a lightly pressurised reservoir.

The purpose of the cores through the retaining wall was to determine the construction and presence of sheet piling and groundwater behind the wall.

3. **RESULTS**

The core locations are shown in Figure 1 and 2.Photographs of the locations are shown in Figures 3 and 4.

3No. cores were taken to confirm the thickness of the concrete retaining wall. The results are shown in Figures 5 to 7.

In all cases a 5mm thick sheet piled wall was found in the concrete retaining wall at a depth ranging from 470 to 550mm.

From the survey conducted no ground water was found behind the wall.

c/o Marek Wojciechowski Artchitects
28 Margaret Street
London
W1W 8RZ

for Sandberg LLP

For the attention of Ms Cheryl Plaza

Roger Lucas
Associate

LH/RL/sh/Inspection

16 January 2014

File: 50429s Report.wpd

FIGURES

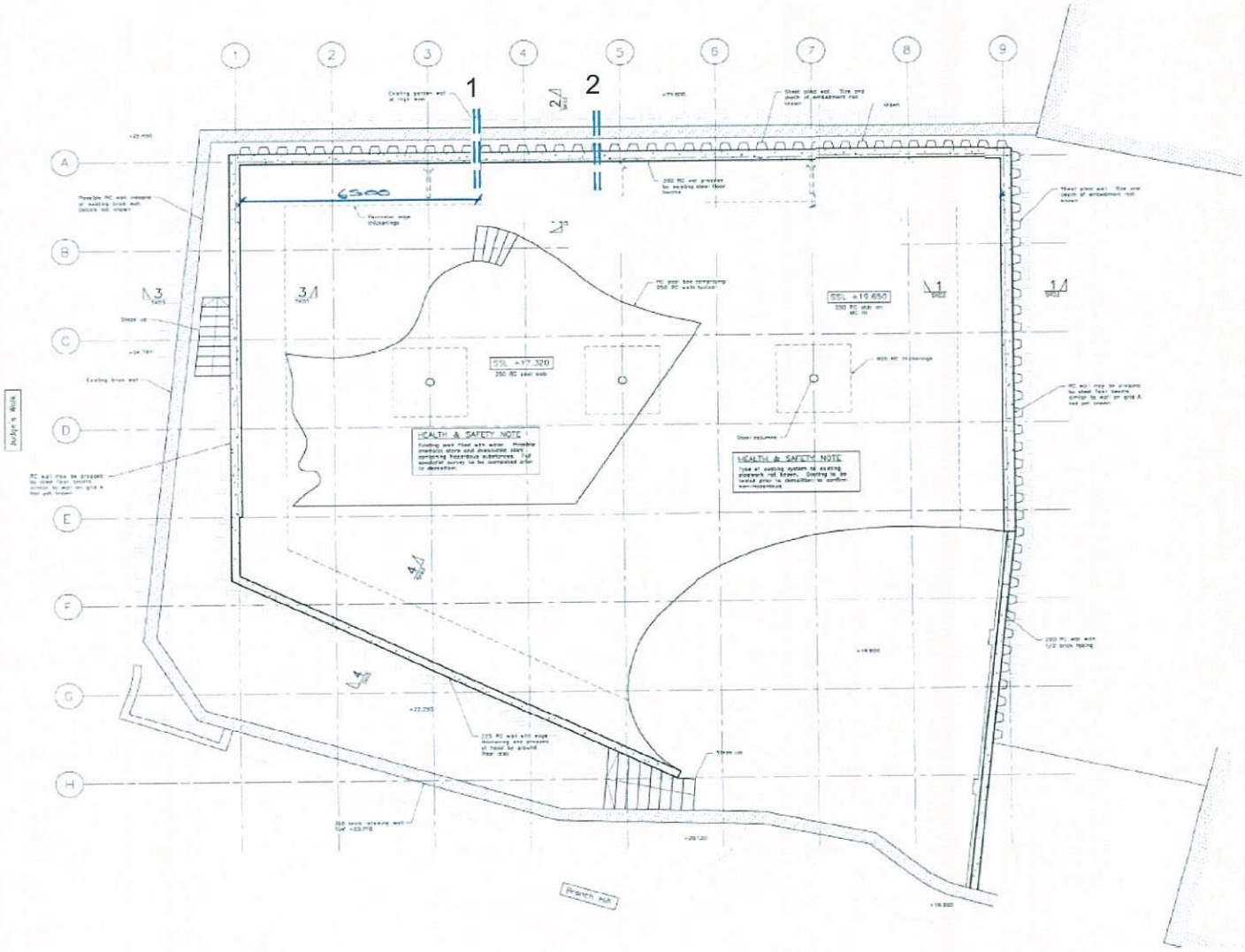

Figure 1: Core Locations - Judge Lodge 7 Branch Hill

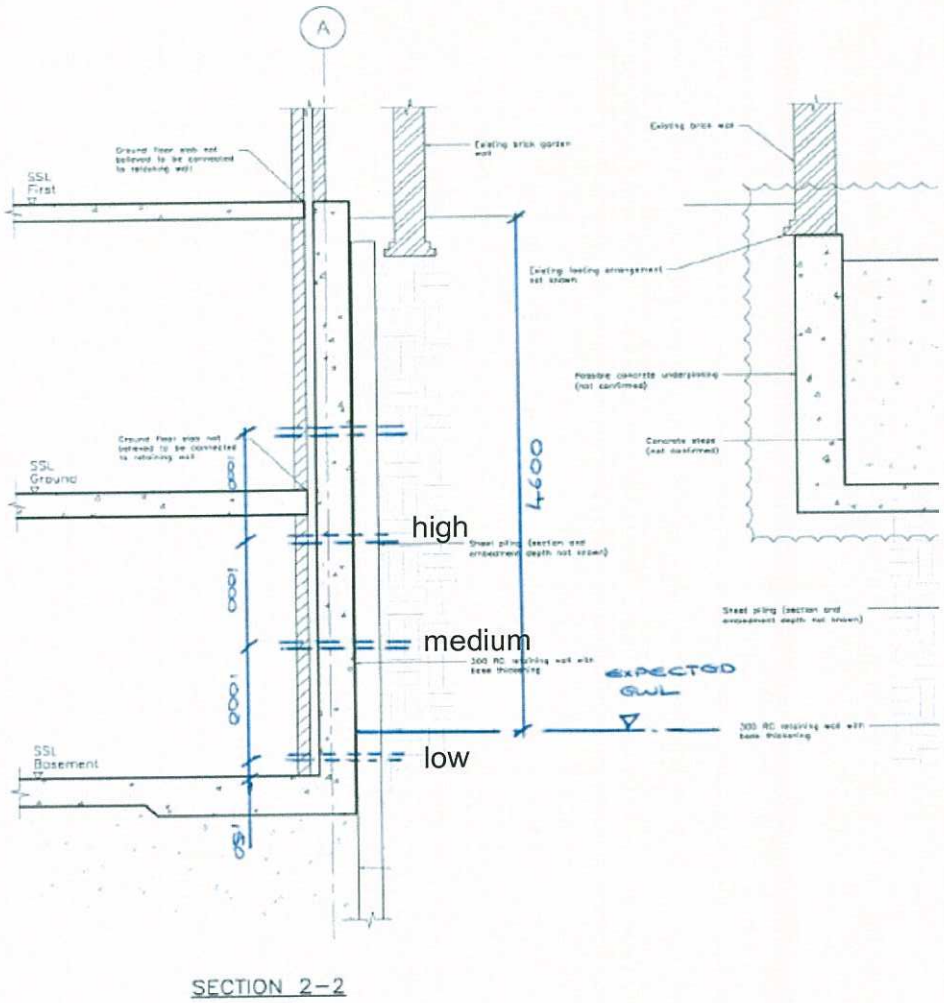

Figure 2: Core Locations - Judge Lodge 7 Branch Hill

Figure 3: Core Location Judge Lodge 7 Branch Hill

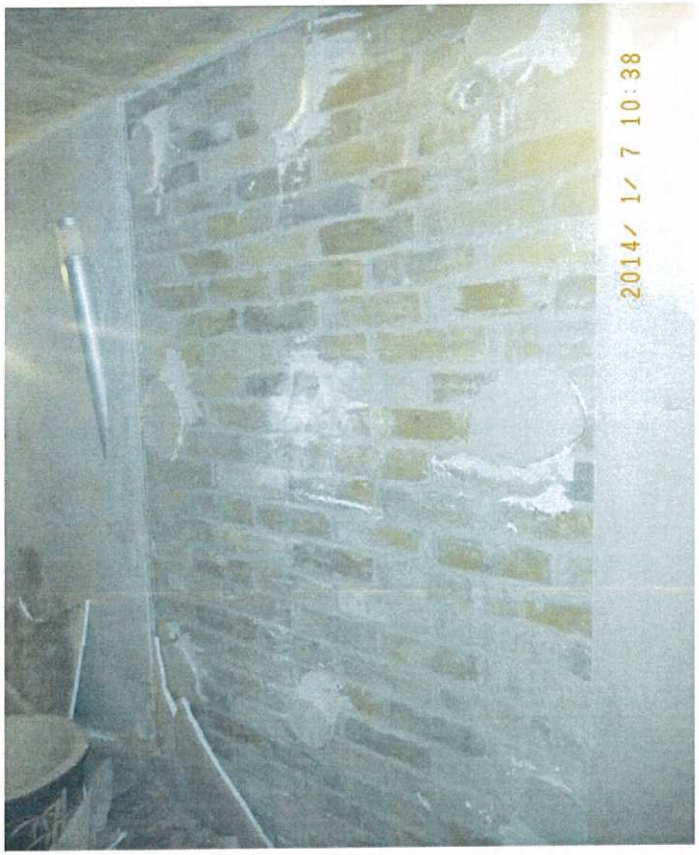

Figure 4: Core Location Judge Lodge 7 Branch Hill

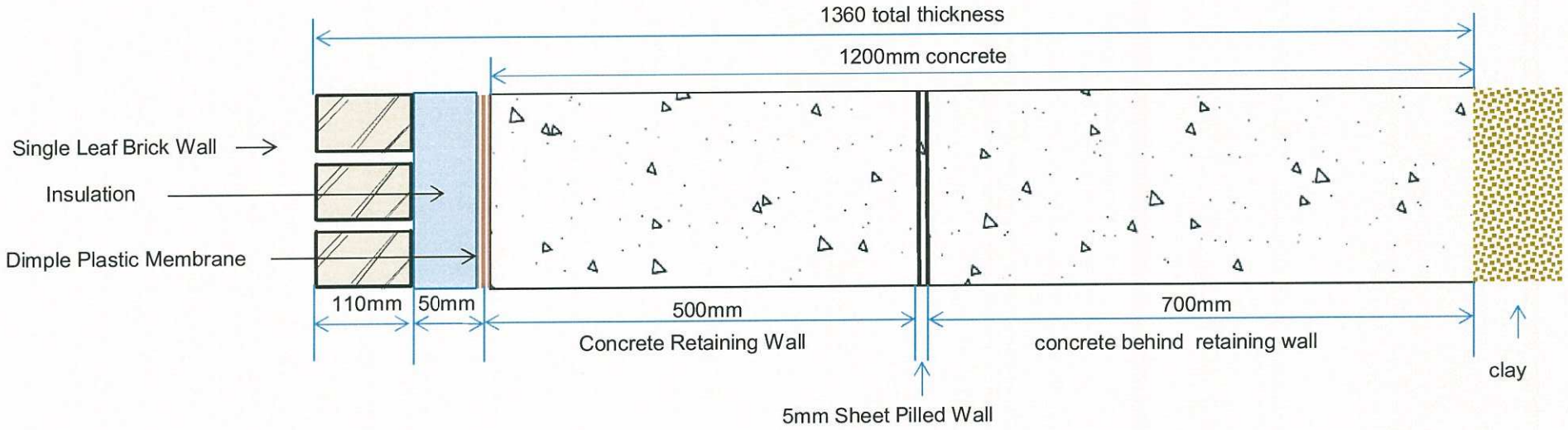

Figure 5: Core 1 - Location 1 Middle

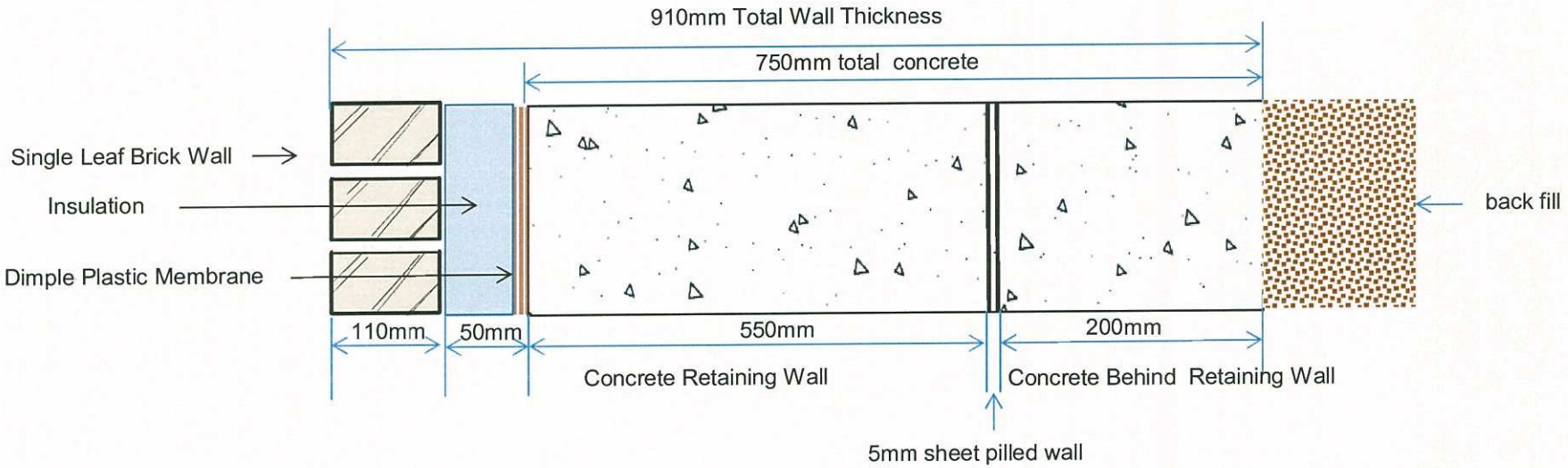

Figure 6: Core 2 - Location 2 Low