



+44 (0) 161 834 1938



www.edgece.com



3rd Floor, Conavon Court, 12 Blackfriars Street
Manchester M3 5BQ, United Kingdom

Document name: 231022-EDGE-XX-XX-RP-S-0001_BASEMENT STRUCTURAL IMPACT ASSESSMENT[P01]

BASEMENT STRUCTURAL IMPACT ASSESSMENT REPORT FOR 231022 – HIGH STREET, UXBRIDGE

Prepared for:

James Edwards
Caddick Group
DNA (UXBRIDGE) LIMITED
85-87 Holtspur
Wooburn Green
HP10 0AU

Revision	Date	Description	Status	Prepared by	Checked by	Approved by
P01	02.05.24	Basement Impact Report	Preliminary	JA	AR	JJ

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1 INTRODUCTION

EDGE have been instructed by DNA Uxbridge Ltd to prepare a Basement Impact Assessment (BIA) to support a planning application which seeks permission for the demolition of the existing buildings and comprehensive redevelopment of the site to provide a mixed-use development comprising hotel (Class C2), co-Living (Class Sui Generis) and replacement commercial floorspace (Class E) alongside open space, landscaping and public realm improvements, basement parking and refuse storage.

The site is located within the town centre of Uxbridge in the borough of Hillingdon, West London. To the west of the site is the High Street encompassing shopping plaza with associated retail outlets. To the north is Belmont Road and the East the site is bounded by Bakers Road. The southern limit of the site abuts an existing public footpath "Cocks Yard" beyond which are further retail outlets.

The site area extends to roughly 0.35Ha, is roughly square in shape and is classified as brownfield land being 100% impermeable hardstanding. The existing building comprises retail units at ground floor and office space on the upper floors. There is an existing basement level parking area.

The site and surrounding boundary conditions are shown on the Aerial Image in Figure 2.1.

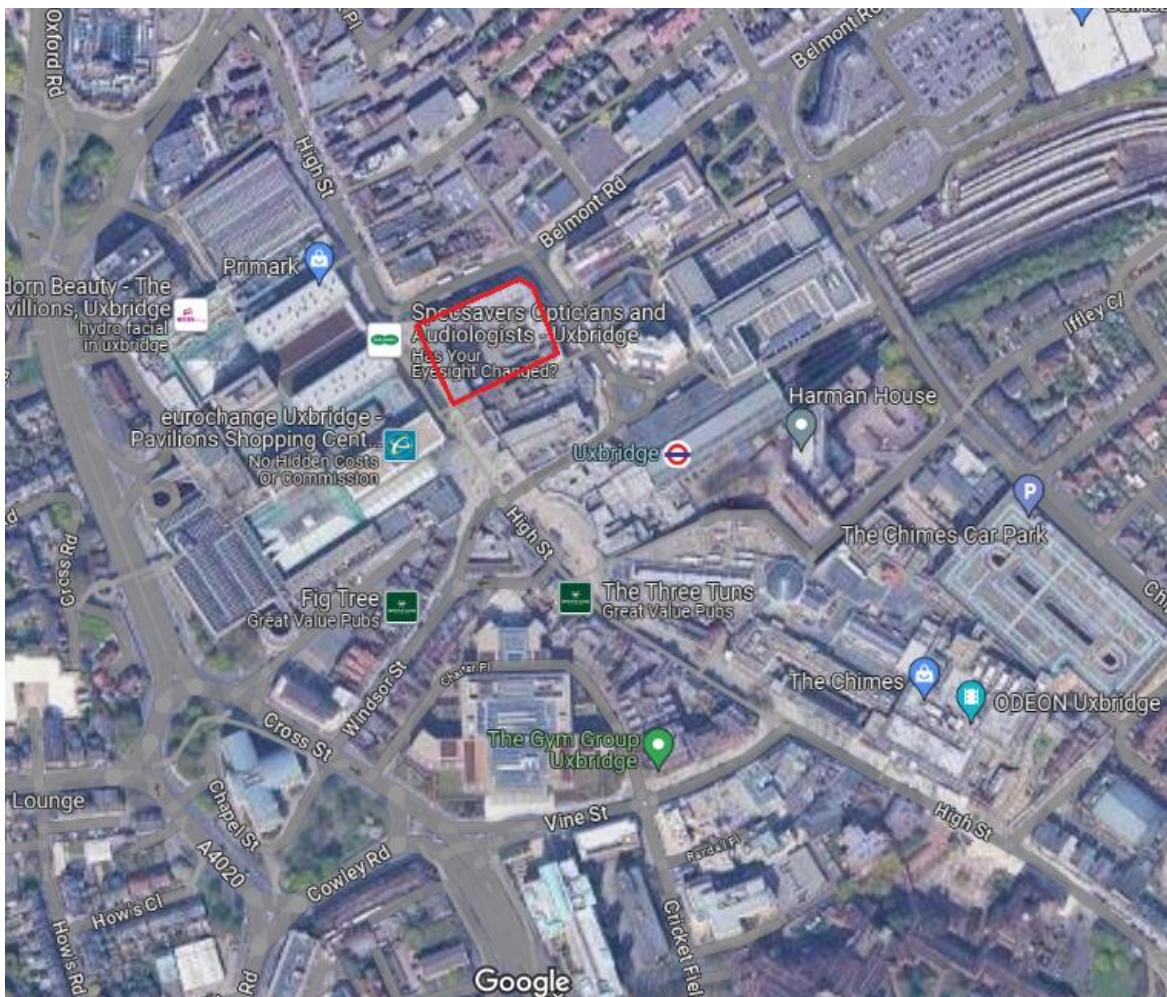


Figure 1 – Site Location

2 SCOPE OF WORKS

Description of Development

The demolition of the existing buildings and comprehensive redevelopment of the site to provide a mixed-use development comprising hotel (Class C2), co-Living (Class Sui Generis) and replacement commercial floorspace (Class E) alongside open space, landscaping and public realm improvements, basement parking and refuse storage.

Proposed Works

As part of the new residential development, it is proposed to construct a new basement ramp access at South-East corner of the site, adjacent to the neighbouring property. The site is bounded to the West by Hight Stret, to the West by Bakers Road, to the North by Belmont Road and to the South by Cocks Yard.



Figure 2 – Site Layout

The existing basement retaining walls construction to be confirmed. As part of new proposal most of the existing basement walls are to be replaced with new contiguous piled wall retaining walls. The basement extent and level is relatively unchanged (apart form a minor increase in the south towards neighbouring properties).

Limitations of this Report

This report has been prepared for the sole use of our Client as part of a planning approval submission to the London Borough of Hillingdon planning department. The drawings and sequencing detailed within this report are for planning purposes only and should not be used for any other purpose such as Construction or Party Wall award submissions.

British Geological Survey (BGS) Data

The British Geological Survey (BGS) maps show the underlying strata to be London Clay Formation – Clay, silt and sand. Sedimentary bedrock formed between 56 and 47.8 million years ago during the Palaeogene period.

Historical Borehole logs of the adjacent site included in Appendix B confirm the above statement. BH location is shown in Figure 4 below.

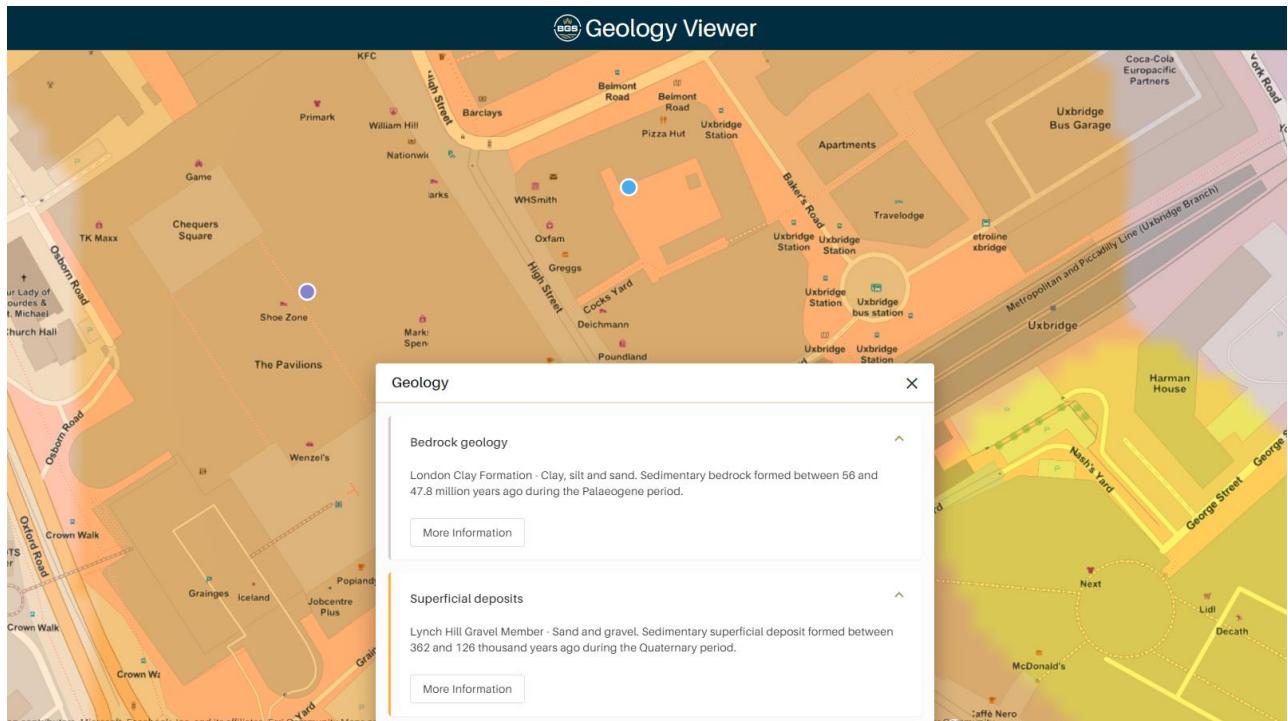


Figure 3 – BGS info

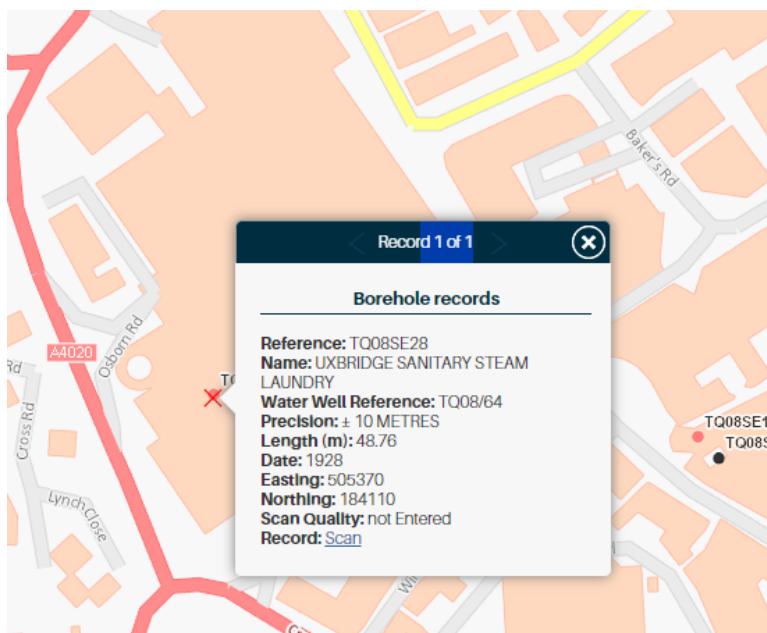


Figure 4 – Location of Record BH

Site Investigation Data

Site investigation to be instructed and carried out. EDGE will review the results and update this report to capture the latest data.

Ground Water

Ground Water Level to be confirmed during site investigation. Standing water was encountered 20feet (6m) below surface level in the historic borehole in Appendix B.

4 CONSTRUCTION SEQUENCE OF THE BASEMENT

Drawings

Refer to drawing 231022-EDGE-ZZ-B1-S-SK-9001, located within Appendix A for details of proposed section and sequencing.

Construction Sequence

1. Demolish existing buildings.
2. Carry out further site investigation works within footprint of existing building including trial pits to the adjacent property.
3. Final basement wall and slab design to be based on the Site Investigation results.
4. Perimeter retaining walls to be contig pile construction (TBC) following the construction sequence below and on 231022-EDGE-ZZ-B1-S-SK-9001.
5. Construct guide trench to improve accuracy of pile location and pile verticality.
6. Install contiguous piles to depth designed by specialist piling contractor. Install internal piles required to carry building loads if required.
7. Construct RC Capping Beam and allow 7 days curing time.
8. Install lateral props to capping beam.
9. Begin excavating in layers and installing lateral wailers and props as deemed necessary by the design.
10. Break down internal piles if required.
11. Cast basement level slab, de-watering as necessary.
12. Remove low level props and cast reinforced concrete internal lining wall.
13. Construct RC columns and walls at basement level.
14. Cast RC Ground floor slab.
15. Remove capping beam props.

5 FLOOD RISK

The site is located within Flood Zone. Flood Zone 1 indicates that there is a low risk of flooding from fluvial or tidal sources and current EA guidance indicates that all proposed developments in zone 1, larger than 1 hectare, should be accompanied by a flood risk assessment.

The flood risk assessment should contain:

- Information about the surface water disposal measures already in place and their state of maintenance.
- An assessment of the volume of surface water run-off likely to be generated from the proposed development.
- Information on how that surface water run-off will be disposed of (from the new development).
- Estimates of how climate change could affect the probability and intensity of flooding events in the future.

Refer to Flood Risk Assessment : “ (EDGE Consulting Engineers, 2024)” for more information.

Design Assumptions

The basement extent and level is relatively unchanged (apart from a minor increase in the south towards neighbouring properties) as such impact of flooding will be negligible, refer to EDGE Flood Risk Assessment : (EDGE Consulting Engineers, 2024).

Existing Basement walls will be mostly replaced with new contiguous piled wall (TBC further to receipt of the SI). Basement layout will be revised to accommodate new entrance ramp leading to the basement car park. The piles will be embedded into the London Clay formation. Retaining wall piling will be designed by a specialist piling sub-contractor following the further Site Investigations, to withstand the lateral earth pressures and loads imposed either by the new structure/highways or existing buildings.

6 POTENTIAL IMPACT OF BASEMENT CONSTRUCTION ON ADJOINING PROPERTIES

- a. Potential ground movement is minimised by the proposed method of construction. The capping beam and piles will be propped during excavation of the basement. The contiguous piles wall will be designed to limit the lateral deflections.
- b. The proposed works, if executed correctly in accordance with the construction details and sequencing shown on the drawings in Appendix A, will not affect the structural integrity of the property or any surrounding properties/structures.

7 POTENTIAL IMPACT OF BASEMENT CONSTRUCTION ON PUBLIC DRAINAGE SYSTEMS

Thames Water sewer maps can be found in Appendix D of the FRA (EDGE Consulting Engineers, 2024), and show the public drainage infrastructure around the site. The nearby public sewers in High Street, Bakers Road and Belmont Road are separate surface water and foul water varying in size from 150mm diameter to 525mm diameter. Some invert level information is provided in the Thames water mapping however these should be confirmed ahead of detailed design works commencing to confirm the drainage proposals are viable, particularly where connections via gravity are proposed.

It is not anticipated that any public sewer systems will be adversely affected by the proposed basement construction. Lateral deflection of the piling will be limited by the construction sequencing and propping. Any pumps utilized will be fitted with non-return valves.

8 POTENTIAL CONSTRAINTS TO CONSTRUCTION OF BASEMENT.

There are no known tunnels or infrastructure below or in close proximity to the property which would restrict the construction of the new basement.

9 REFERENCES

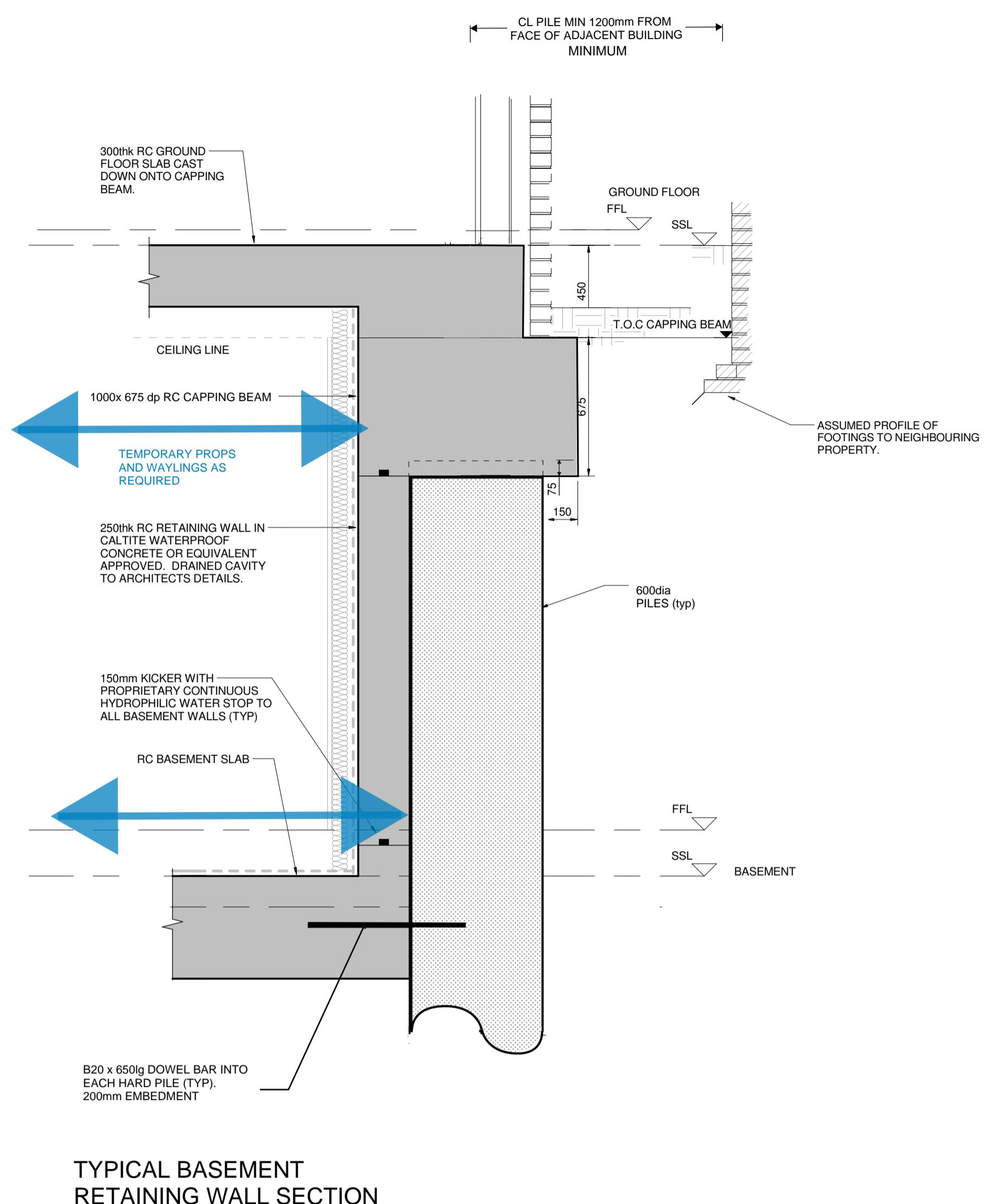
EDGE Consulting Engineers. (2024). *231022-EDGE-XX-XX-RP-C-0001_FLOOD RISK ASSESSMENT[P02]*.

APPENDICES

Appendix A – Proposed Sequencing Drawing

PILED WALL CONSTRUCTION SEQUENCE

1. INSTALL REINFORCED CONCRETE GUIDE WALL.
2. INSTALL REINFORCED CONTIG PILES.
3. CAST REINFORCED CONCRETE CAPPING BEAM.
4. START EXCAVATING IN LAYERS.
5. INSTALL PROPS AS REQUIRED BY DESIGN TO LIMIT DEFLECTIONS.
6. CAST REINFORCED CONCRETE BASEMENT SLAB.
7. REMOVE LOWER PROPS.
8. CAST REINFORCED CONCRETE LINER WALL.
9. CONSTRUCT BASEMENT RC WALLS AND COLUMNS.
10. CAST REINFORCED CONCRETE GROUND FLOOR SLAB.
11. REMOVE UPPER PROPS.



P01	01.05.24	PRELIMINARY MARK-UP	AR	JJ
Rev	Date	Description	By	Chk
EDGE CONSULTING ENGINEERS www.edgece.com Manchester, UK 3rd Floor, Conavon Court, 12 Blackfriars Street, Manchester, M3 5BQ, United Kingdom T: +44 (0) 161 834 1938 E: manchester@edgece.com				
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DO NOT SCALE DRAWINGS. IF IN DOUBT, ASK!				
Project Name				
Uxbridge High Street LONDON BOROUGH OF HILLINGDON				
Client				
DNA (UXBRIDGE) LIMITED				
Designed	Drawn	Checked	Scale @ A3	
AR	AR	JJ	NTS	
Drawing Title				
STRUCTURAL SKETCH PROPOSED BASEMENT CONSTRUCTION				
Discipline				
S Status PRELIMINARY SKETCH				
Project No.	Drawing No.	Revision		
231022	EDGE-ZZ-B1-S-SK-9001	P01		

Appendix B – Historic Bore Hole Record

TQ/08 SE/28

0532 8411

THE PERMUTIT COMPANY LIMITED

Head Office and Laboratories:
PERMUTIT HOUSE, GUNNERSBURY AVENUE, LONDON W4

ANALYSIS OF SAMPLE OF WATER

Received from

Date

Uxbridge Cemetery building
Uxbridge

Source Well

Lab No.

File No. 5665

Use

Date of Sampling 12.2.25

Appearance very slight sediment Tinted

pts. per million

Appearance after Filtration clear

Size: None

pH Value

Colour None

Electrical Conductivity

Suspended Matter

ANALYSIS.

CONVENTIONAL COMBINATIONS.

	PARTS PER 100,000	
Lime (as CaO)	12.94	Silica
Magnesia (as MgO)	1.56	Oxide of Iron
Iron (as Fe) Total		Calcium Carbonate 21.93
" " In Solution		Calcium Sulphate 1.51
Silica (as SiO ₂)		Calcium Chloride
Chloride (as Cl ₂)	2.79	Magnesium Carbonate
Sulphate (as SO ₄)	3.21	Magnesium Sulphate 4.68
Nitrate (as N ₂ O ₅)	2.96	Magnesium Chloride
Phosphate (as PO ₄)		Magnesium Nitrate
Free Carbon Dioxide (as CO ₂)	0.88	Sodium Sulphate 2.12
Total Solids at 100°C.		Sodium Chloride 4.60
Bicarbonate Alkalinity (CaCO ₃)	12.32	Sodium Nitrate 7.65
Carbonate		Sodium Carbonate
Caustic		Sodium

Grains per Gallon = parts per 100,000 x 0.7

Temporary Hardness (15°C Degrees English grains CaCO₃ per gallon)

Permanent Hardness 2.94 " " "

Total Hardness 15.29 " " "

(LB/AL3/009/6/47)

Form No. 1.

BOREHOLE SECTION SHEET.

LE GRAND, SUTCLIFF & GELL, LTD. Date 6th Feb. 1929.

CONTRACT NAME UXBRIDGE. ORDER NO. 2899.

Bored for The Uxbridge Sanitary Steam Laundry.

Address Uxbridge.

Address of Site Laundry Road YARD.

District or Town Uxbridge.

County Middlesex.

Standing Water Level 20 Feet Below Surface Pumping W.L. Feet Below Surface

Dia. of Borehole 6" Inches. Yield of Water 700 - 1000 G.P.H.

O.D. of Site plus 114 Water Struck (1) Ft. B.S. (2) Ft. B.S. (3) Ft. B.S.

Depth from surface to bottom of Dug Well 12ft.

Special Remarks Bored Jan. to Feb. 1928.

TQ 08/64

TQ 0543 8410

FULL DETAILED DESCRIPTION OF STRATA

 THICKNESS
Feet Inches

 DEPTH BELOW
SURFACE
Feet Inches

No. Boring

<i>Drift</i> <i>* L.C.</i> <i>36 1/2 ft</i> <i>LONDON CLAY</i> <i>? Old well in</i> <i>Gravel</i> <i>R.B.</i> <i>53 1/2 ft</i> <i>READING</i> <i>BEDS</i> <i>Reading Beds</i> <i>CK 70 ft</i> <i>W.C. 60 ft</i>	MADE GROUND &	Existing well.....	12	0	12	0
	DRIFT	Dirty Gravel & Bricks.....	5	6	17	6
	&	Clay and gravel.....	6	0	23	6
	<i>36 1/2 ft</i>	Yellow Clay, Gravel & Bricks.....	7	6	31	0
	<i>LONDON CLAY</i>	Sand and Gravel.....	5	6	36	6
	<i>? Old well in</i>	Mottled clay and stones.....	25	6	62	0
	<i>Gravel</i>	Sand.....	3	62	3	
	<i>R.B.</i>	Clay and bricks.....	5	0	67	3
	<i>53 1/2 ft</i>	Sandy Clay.....	9	9	77	0
	<i>READING</i>	Blue clay.....	6	77	6	
	<i>BEDS</i>	Sandy Blue Clay and stones.....	10	6	88	0
	<i>Reading Beds</i>	Black Shale Clay and stone.....	1	0	89	0
	<i>CK 70 ft</i>	Green flints.....	1	0	90	0
	<i>W.C. 60 ft</i>	Chalk and flints.....	70	0	160	0

 S.W.H.
1929

[R.H.]

13/2/29

Data

Back

For LeGrand, Sutcliff & Gell, Ltd.

Roseblade

A.R.M.

M. of H 2 in. well up in cellar 10 ft. below ground - last
notified 1/3/29. 2 in. yield 800 gph. Total 17.10" chalk
2.5" surface) 122 ft. Hardness { Impor. 16.50" ..
Remain. 0.60" ..

Sited. 6" - Middle. 14 N.E./W.

L.S.M. 19. vi. A1

P.T.O.

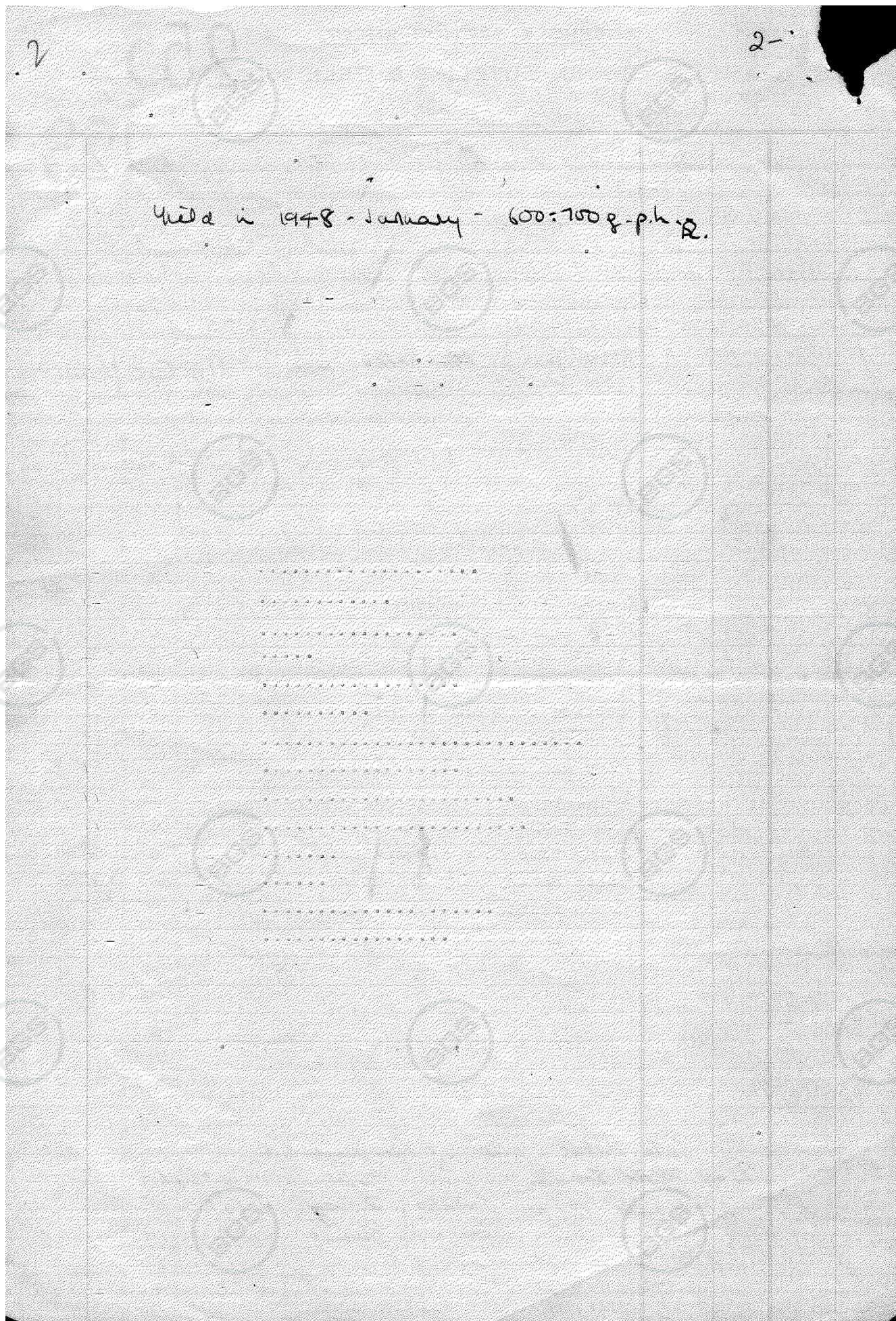
TOTAL

160

0

160

0



3. THE PERMUTIT COMPANY LIMITED

Head Office and Laboratories :
PERMUTIT HOUSE, GUNNERSBURY AVENUE, LONDON, W.4.

ANALYSIS OF SAMPLE OF WATER

Date.....

Received from.....

Uxbridge Sanitary laundry
Uxbridge

Source.....

Well - (7 fathoms
well)

Lab. No.

File No. 5665

Use.....

Date of Sampling 12.2.25

CONDITION AT TIME OF ANALYSIS.

Appearance very slight sediment Turbidity pts. per million
Appearance after Filtration clear Smell none
pH Value Colour none
Electrical Conductivity Suspended Matter

ANALYSIS.

CONVENTIONAL COMBINATIONS.

PARTS PER 100,000

Lime (as CaO)	12.94	Silica
Magnesia (as MgO)	1.56	Oxide of Iron
Iron (as Fe) Total		Calcium Carbonate 21.93
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Total Solids at 180°C		Sodium Chloride 4.60
Bicarbonate Alkalinity (CaCO ₃)	12.32	Sodium Nitrate 4.65
Carbonate " "		Sodium Carbonate
Caustic " "		Sodium

Grains per Gallon = parts per 100,000 x 0.7

Temporary Hardness 15.40 (Degrees English grains CaCO₃ per gallon)

Permanent Hardness 3.49 " " "

Total Hardness 18.89 " " "

Data

Bank

Parts per 100,000

Lime

Magnesia

Palmitate

Acidity

Alkalinity

Iron

Iron in Solution

Silica

Chlorides

Sulphates

Nitrates

F.M.A.

P.P.
m.o.

Suspended Solids

Turbidity

Manganese

Dissolved Oxygen