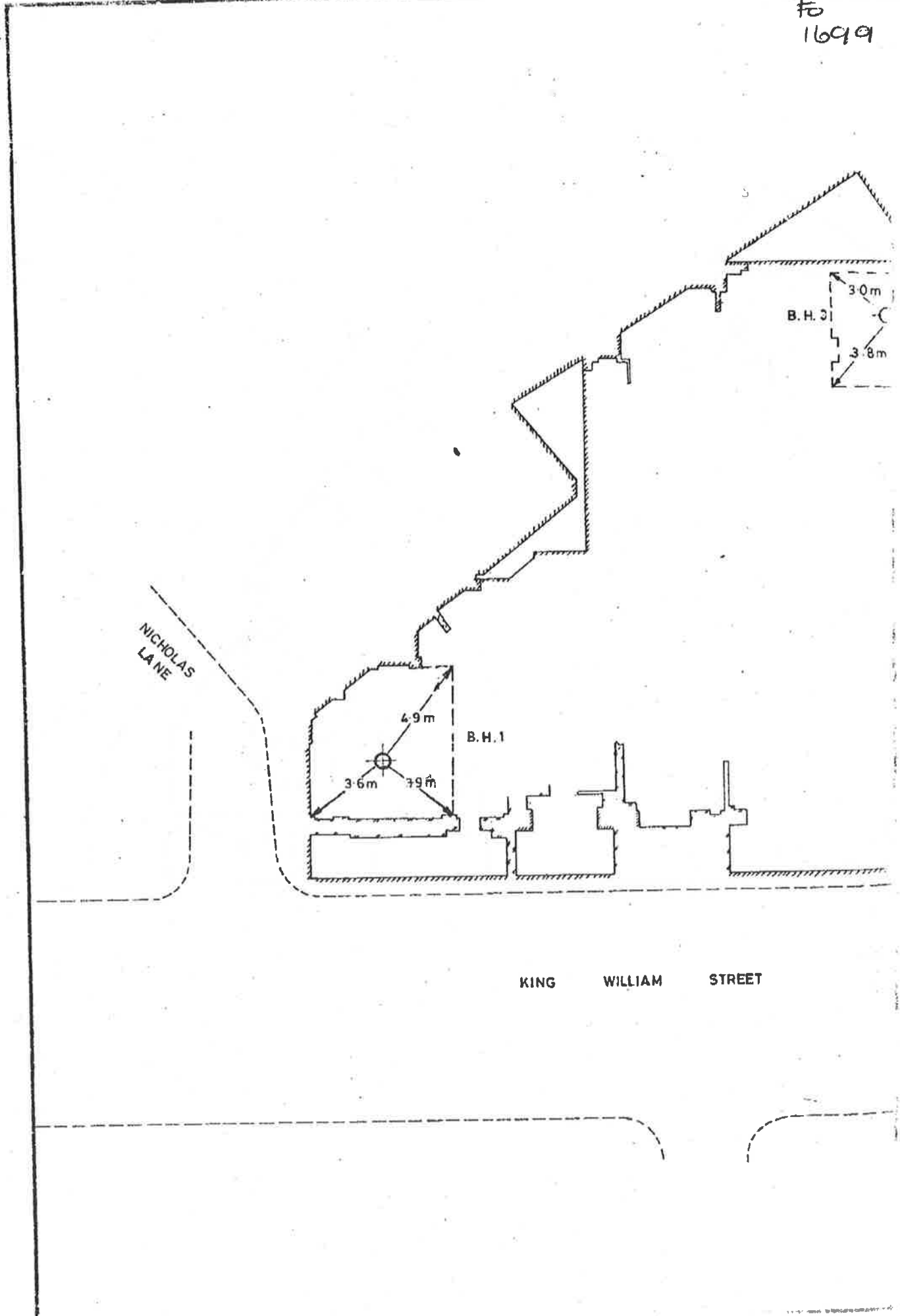
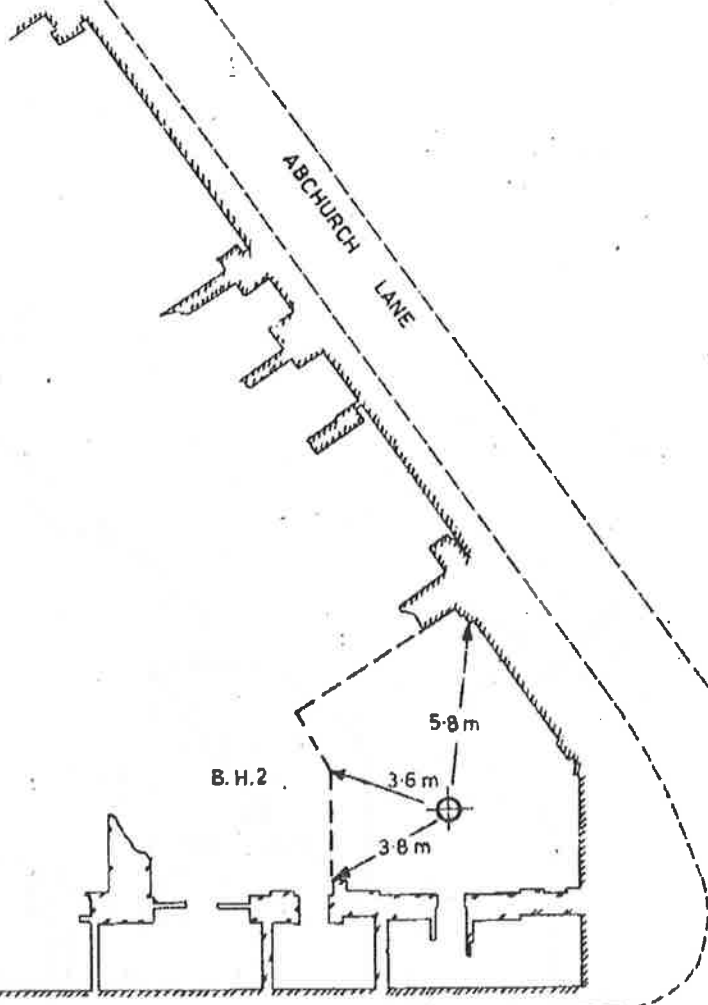
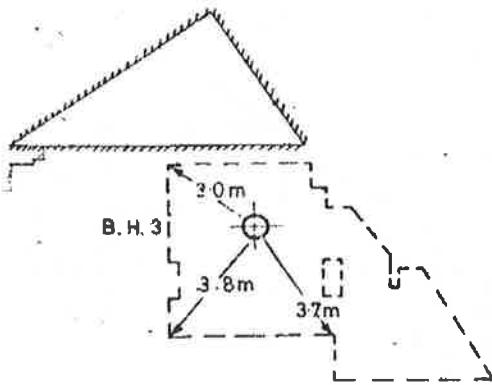


**A14.5 – Redevelopment of 10 King William Street
(Borehole Records) (Wimpey Laboratories Ltd)**



TQ 38SW | 1697 to
1699



EET

S



TQ38SW 11697
3280.8092

Boring method	Shell and Auger	Location	TQ 328 809	Record of BOREHOLE	3280.8092
Boring diameter (mm)	200 to 21.00m			(sheet 1 of 3)	
Casing diameter (mm)	200 to 8.65m	Orientation		Basement Floor Level (m.O.D.)	13.50
Boring equipment	Pileon Wayfazer 10			Date commenced	21.10.74

Samples and in situ tests		Casing Depth (m)	Water Depth (m)	Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type						
				21/10 0.30	CONCRETE	13.20	[Cross-hatched legend symbol]
					FILL (brick and mortar rubble)		
				1.00		12.50	
				1.20	CONCRETE	12.30	
1.50	BD						
2.00	BD						
2.00-2.45	C(3)†	NIL			FILL (very soft damp dark brown soil with brick fragments, mortar and pieces of shell)		
2.75	BD						
2.75-3.20	C(3)‡	2.75		3.00		10.50	
3.50	BD						
3.50-3.95	C(2)‡	3.50		3.50	FILL (very loose dark brown fine to coarse GRAVEL with occasional up to cobble-size brick fragments)	10.00	
4.25	BD		3.50	4.00			
4.25-4.70	C(0)+	4.25	3.50	22/10			
4.40	D						
5.00	BD						
5.00-5.45	C(0)+	5.00			FILL (very loose black-brown clayey silty SAND and GRAVEL becoming dark brown silty clayey SAND and GRAVEL with up to cobble-size brick and chalk fragments)		
5.75	BD						
5.75-6.20	C(3)‡	5.75					
6.00	D						
6.50	BD						
6.50	C(24)	6.50				6.70	
6.80	W			6.80			
7.00	D						
7.25	BD						
7.25	C(35)	7.25			FILL (medium dense fine to coarse GRAVEL with pieces of brick and pottery)		
7.65	D		7.50*	7.65	MGRD	5.85	
7.85	U	7.85					
				8.00	Firm fissured brown silty CLAY with discontinuities infilled with soft remoulded CLAY with ironstaining. Width of discontinuities decrease with depth.	5.50	
8.35	D						
8.50	S(29)	8.50					
8.50	D						
8.95	D						
9.25	D						
9.50-9.90	U‡	8.60			Firm fissured grey silty CLAY with pronounced framework of discontinuities at 45° to horizontal		
10.00	D	NIL		10.00		3.50	

REMARKS Borehole was advanced by Jackhammer and Hand Excavation from basement floor level to 1.00m (7m). Water was added to facilitate boring from 3.00m to 7.65m.

For explanation of symbols and abbreviations see Notes, pages (i) and (ii)

LAB Ref. No. S/ 10872	KING WILLIAM STREET - LONDON E.C. 4	Fig. 1
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WIMPEY LABORATORIES LIMITED

TQ 38 SW | 1697

Boring method				Location		Record of BOREHOLE 1	
Boring diameter (mm)				Orientation		(sheet 2 of 3)	
Casing diameter (mm)				Basement Floor Level (m.O.D.)		Date commenced	
Boring equipment							
Samples and in situ tests		Casing Depth (m)	Water Depth (m)	Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type						
10.00	S (28)	8.65	NIL	23/10	<p>Firm to stiff dark grey silty CLAY with pronounced framework of near vertical near horizontal, and at 45° to horizontal discontinuities becoming less well developed below 15.50m. Occasional horizontal discontinuities with pockets of fine grey SAND, shell fragments and pyrite nodules</p> <p style="text-align: center;">LC</p> <p>Claystone at 19.50m</p>		
10.50	D						
10.75	D						
11.00	U	8.65					
11.50	D						
11.50	S (35)	8.65					
12.00	D						
12.25	D						
12.50	U	8.65					
13.00	S (35)	8.65					
13.00	D						
13.50	D						
13.75	D						
14.00	U	8.65					
14.50	S (42)	8.65					
14.50	D						
15.25	D						
15.50	U	8.65					
16.00	S (39)	8.65					
16.00	D						
16.50	D						
16.75	D						
17.00	U	8.65					
17.50	D						
17.50	S (45)	8.65					
18.00	D		NIL	18.00			
18.25	D		NIL	24/10			
18.50	U	8.65					
19.00	D						
19.00	S (64)	8.65					
19.75	D						
20.00	U	8.65					
REMARKS							
For explanation of symbols and abbreviations see Notes, pages (i) and (ii)							
LAB Ref. No.						Fig. 1	

TQ 38SW 11697

Boring method		Location		Record of BOREHOLE 1					
Boring diameter (mm)				(sheet 3 of 3)					
Casing diameter (mm)		Orientation		Basement Floor Level (m.O.D.)					
Boring equipment				Date commenced					
Samples and in situ tests		Casing Depth (m)	Water Depth (m)	S.P.	PIEZ.	Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type								
20.50 20.50	S(47, D	8.65	NIL			21.00	(See sheet 2) LC	-7.50	
				7.40	14.41	7/11	END OF BOREHOLE		
				7.42	13.45	14/11			
				7.43	12.80	21/11			
				7.43	12.60	28/11			
				7.43	12.41	5/12			
REMARKS Borehole was backfilled with sand from 20.50m to 18.50m, bentonite to 17.50m, cement grout to 8.20m, sand to 6.20m, natural spoil to 1.00m and concreted stop cock box to basement floor level. A piezometer was installed at 19.50m below basement floor level. A standpipe was inserted to 8.20m below basement floor level.									
For explanation of symbols and abbreviations see Notes, pages (i) and (ii)									
LAB Ref. No. SI 10872		KING WILLIAM STREET - LONDON E.C. 4						Fig. 1	

TQ 38SW 11698
3279, 8094

Boring method				Location		Record of BOREHOLE	
Shell and Auger				TQ 328 809		2	
Boring diameter (mm)				Orientation		Basement Floor Level (m.O.D.)	
250 to 35.00m: 200 to 52.30m						13.10	
Boring equipment				Date commenced			
Pilcon Wayfarer 20				4.10.74			
Samples and in situ tests		Casing Depth (m)	Water Depth (m)	Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type						
			NIL	4/10		12.80	
			NIL	5/10	0.30 CONCRETE		
0.66	D			0.65	FILL (bricks and rubble)	12.45	
0.80	BD			0.90	Mosaic floor	12.20	
					FILL (loose brick and gravel with pieces of pottery)		
				2.00	MGRD	11.10	
2.10-2.56	S(4) t	2.10					
2.10	BD						
2.85	C(37)	2.85	1.00	2.80			
2.85	BD		1.20	7/10			
3.60	D						
3.60	C(114)	3.60					
3.60	BD						
4.00	D						
4.35-4.73	C(70)	4.35					
4.35	BD						
4.70	D						
5.10-5.48	C(70)	5.10					
5.10	W						
5.75	W						
5.85	BD						
5.85	C(54)	5.85					
6.40	D						
6.60	C(41)	6.60					
6.60	BD						
7.35	D			7.35		5.75(41)	
7.35	U	7.35					
7.80	D		6.10	7.65		5.45(18)	
7.80	S(21)	7.35	5.75	8/10	Firm fissured brown-red silty CLAY with occasional rounded gravel forming a matrix of completely remoulded clay with fine to coarse gravel-size fragments of light grey clay		
					LC		
8.85	U	8.00					
9.30	D						
9.30	S(25)	8.00			Firm fissured grey silty CLAY with well developed framework of near vertical near horizontal discontinuities - some soft silty clay in discontinuities		
					LC		
10.00	D			10.00		3.10	

REMARKS Borehole was advanced by Jackhammer from basement floor level to 0.30m below basement floor level (7h).
Water was added to facilitate boring from 0.30m to 7.35m below basement floor level.

For explanation of symbols and abbreviations see Notes, pages (i) and (ii)

LAB Ref. No. S/10872	KING WILLIAM STREET - LONDON E.C. 4	Fig. 2
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TQ 38 SW 11698

Boring method				Location		Record of BOREHOLE 2			
Boring diameter (mm)				Orientation		(sheet 2 of 6)			
Boring diameter (mm)						Basement Floor Level (m.O.D.)			
Boring equipment						Date commenced			
Samples and in situ tests		Casing Depth (m)	Water Depth (m)			Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type								
10.35	U	8.00					<p>Firm to stiff grey silty CLAY with a well developed framework of near vertical near horizontal discontinuities. Surfaces occasionally polished and with black mottling</p> <p>LC</p>		
10.80 10.80	D S(40)	8.00							
11.50	D								
11.85	U	8.00							
12.30 12.30	D S(40)	8.00							
13.00	D								
13.35	U	8.00							
13.80 13.80	D S(43)	8.00							
14.50	D								
14.85	U	8.00							
15.30 15.30	D S(48)	8.00							
16.00	D								
16.35	U	8.00							
16.80 16.80	D S(43)	8.00							
17.50	D								
17.85	U	8.00							
18.30 18.30	D S(48)	8.00							
19.00	D								
19.35	U	8.00							
19.80 19.80	D S(56)	8.00							
				NIL		20.00			
REMARKS									
For explanation of symbols and abbreviations see Notes, pages (i) and (ii)									
LAB Ref. No. S/ 10277		KING WILLIAM STREET - LONDON E.C. 4						Fig. 2 (CONT'D)	

TQ38SW/1698

Boring method				Location		Record of BOREHOLE 2		
Boring diameter (mm)						(sheet 3 of 6)		
Casing diameter (mm)				Orientation		Basement Floor Level (m.O.D.)		
Boring equipment						Date commenced		
Samples and in situ tests		Casing Depth (m)	Water Depth (m)		Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type							
20.50	D		NIL		9/10			
20.85	U	8.00						
21.30	D							
21.30	S(60)	8.00						
22.00	D							
22.35	U	8.00						
22.80	D							
22.80	S(51)	8.00						
23.50	D							
23.85	U	8.00						
24.30	D					Stiff fissured grey silty CLAY with very pronounced framework of near horizontal near vertical discontinuities, surfaces polished with occasional black mottling and pockets of pyrites		
24.30	S(56)	8.00						
25.00	D							
25.35	U	8.00						
25.80	D					Frequent irregularly spaced partings of fine grey silty SAND below 25.80m. Partings typically at 25-40mm centres		
25.80	S(64)	8.00						
26.50	D							
26.85	U	8.00						
27.30	D							
27.30	S(66)	8.00						
28.00	D							
28.35	U	8.00	NIL		28.35			
28.80	D		NIL		10/10			
28.80	S(76)	8.00						
29.50	D							
29.85	U	8.00						

REMARKS

For explanation of symbols and abbreviations see Notes, pages (i) and (ii)

LAB Ref. No.
S/ 10872

KING WILLIAM STREET - LONDON E.C. 4

Fig 2
(CONT'D)

Boring method		Location		Record of BOREHOLE 2			
Boring diameter (mm)				(sheet 4 of 6)			
Casing diameter (mm)		Orientation		Basement Floor Level (m.O.D.)			
Boring equipment				Date commenced			
Samples and in situ tests		Casing Depth (m)	Water Depth (m)	Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type						
30.30	D	8.00					
30.30	S(69)						
31.00	D	8.00					
31.35	U						
31.80	D	8.00					
31.80	S(59)						
32.00	D	8.00					
32.50	D						
32.85	U	8.00					
33.30	D						
33.30	S(63)	8.00					
34.00	D						
34.35	U	8.00					
34.80	D						
34.80	S(57)	34.15	NIL	35.00	Stiff to very stiff becoming hard fissured grey silty CLAY with frequent partings of grey silty sand below 25.80m at 5-30mm centres and with framework of near horizontal and 45° to horizontal discontinuities, surfaces polished.		
			NIL	11/10			
35.50	D	34.15			L.C.		
36.35	U						
36.80	D	34.15					
36.80	S(69)						
37.50	D	34.15					
38.35	U						
38.80	D	34.15					
38.80	S(71)						
39.50	D	34.15					
		NIL		40.00			
REMARKS							
For explanation of symbols and abbreviations see Notes, pages (i) and (ii)							
LAB Ref. No. S/10372		KING WILLIAM STREET - LONDON E.C. 4				Fig. 2 (CONT'D)	

TQ38SW 11098

Boring method				Location		Record of BOREHOLE 2	
Boring diameter (mm)						(sheet 5 of 5)	
Casing diameter (mm)				Orientation		Basement Floor Level (m.O.D.)	
Boring equipment						Date commenced	
Samples and in situ tests		Casing Depth (m)	Water Depth (m)	Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legends
Depth (m)	Type						
40.35	U	34.15	NIL	12/10 40.35	(See sheet 4)	-27.25	
40.80 40.80	D S(68)	34.15					
41.50	D						
42.35	U	34.15					
42.80 42.80	C(71) D	34.15					
43.50	D						
44.35 44.35	U W	34.15	NIL	44.35	Hard fissured grey silty CLAY, becoming very silty below 44.35m, with occasional partings of grey fine sand. Framework of near vertical near horizontal discontinuities in sample at 44.35m LC		
44.80 44.80	D S(75)	34.15					
45.50	D						
46.35	U	34.15					
46.80 46.80	D S(61)	34.15					
47.50	D						
48.35	U	34.15					
48.80 48.80	S(64) D	34.15					
49.50	D						
				NIL	50.00		
REMARKS							
For explanation of symbols and abbreviations see Notes, pages (i) and (ii)							
LAB Ref. No. S/ 10372		KING WILLIAM STREET - LONDON E.C. 4				Fig. 2 (CONT'D)	

WIMPEY LABORATORIES LIMITED

Boring method		Location		Record of BOREHOLE 2					
Boring diameter (mm)		Orientation		(sheet 6 of 6)					
Casing diameter (mm)		Basement Floor Level (m.O.D.)		Date commenced					
Boring equipment									
Samples and in situ tests		Casing Depth (m)	Water Depth (m)	PIEZ.	PIEZ.	Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type								
50.35	U	34.15	NIL			15/10	(See sheet 5) LC		
50.80-51.30	S(114)	34.15	50.50			50.80		-37.70	
51.50	U	34.15					Hard friable mottled grey-green-brown silty CLAY as a matrix with up to cobble-size intact fragments of grey-green-brown silty CLAY with frequent polished and striated surfaces, becoming stiff to hard mottled brown-blue silty CLAY with pronounced framework of discontinuities at 45° to horizontal. Surfaces polished and striated	-124'	
51.95-52.33	S(109)	34.15	44.50			52.30	WRB	-39.20	
END OF BOREHOLE									
				22.37	34.90	7/11			
				26.75	34.72	14/11			
				27.00	34.72	21/11			
				27.00	34.75	28/11			
				26.97	34.79	5/12			

REMARKS
 Ground-water observed after completion of sampling rose to 44.50m in 1h.
 Piezometers were installed at 50.35m and 34.70m below basement floor level.
 Borehole was backfilled from 52.30m to 49.00m with sand, bentonite to 48.50m, cement grout to 36.00m, bentonite to 35.50m, sand to 33.50m, bentonite to 33.00m, cement grout to 0.50m and concreted stop cock box to basement floor level.

For explanation of symbols and abbreviations see Notes, pages (i) and (ii)

LAB Ref. No.
S/10872

KING WILLIAM STREET - LONDON E.C. 4

Fig. 2
(CONT'D)

TQ38SW 11044
3278.8092

Boring Method		Location		Record of BOREHOLE			
Shell and Auger		TQ 328 809		3			
Boring Diameter (mm)		Operation		Basement Floor Level (m.O.D.)			
200 to 10.75m				13.50			
Boring Equipment		Date commenced					
Pilonc Wayfazer 10		2.10.74					
Samples and in situ tests		Casing Depth (m)	Water Depth (m)	Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type						
				12/10 0.30	CONCRETE	13.20	
				0.50 14/10 0.80	FILL (brick and concrete rubble)	12.70	
1.00	BD						
1.50	U	1.50			FILL (soft brown CLAY with fragments of brick, pottery, plaster, sand and gravel)		
2.00-2.45	C(6)†	NIL					
2.10	BD						
2.10	C(6)	2.10					
2.00	BD						
2.75	BD						
2.75	C(5)	2.75				10.50	
3.00	C(50)	3.00					
3.50-3.80	C(84)†	3.50	3.65 3.00	3.60 16/10			
4.25	BD						
4.25-4.48	C(65)†	4.25			FILL (loose becoming very dense yellow sandy fine to coarse SAND and fine to coarse GRAVEL with occasional brick fragments)		
5.00	BD						
5.00-5.23	C(67)†	5.00					
5.50	W						
5.75-5.13	C(83)†	5.75					
5.75	BD				MGRD		
6.50	BD			6.50		7.00	
6.50	C(60)	6.50					
7.25	BD		5.25	7.00	Very dense to medium dense brown sandy fine to coarse GRAVEL		
7.25	C(31)	7.25	5.50	17/10	SUPD		
7.80	D			7.80		3.70(44)	
8.00	U	8.00			Firm fissured brown silty sandy CLAY - Discontinuities infilled with soft yellow-red clay with iron staining. Width of discontinuities decrease with depth	5.10	
8.50	D		8.50*	8.40	LC		
8.65	C(32)	8.50					
8.65	BD				Firm fissured grey silty CLAY with a frame work of near vertical near horizontal discontinuities		
9.25	D						
9.50	U	8.50					
10.00	D						
10.00	S(29)	8.50			Claystone at 8.60m		

REMARKS Borehole was advanced by jackhammer and hand excavation from basement floor level to 1.00m (5h). Borehole abandoned after encountering an obstruction at 3.00m. Rig moved 0.50m and rebored. Borehole advanced by hand excavation and chiselling from basement floor level to 1.00m (6h).
 • Samples and tests carried out at original location of borehole.
 Water was added to facilitate boring from 2.35m to 7.90m.
 Borehole was advanced by chiselling from 3.60m to 3.90m (1h); cutting through claystone at 8.60m (1h).

For explanation of symbols and abbreviations see Notes, pages (i) and (ii)

LAB Ref. No. 5/ 10872

Fig. 3

KING WILLIAM STREET - LONDON E.C. 4



Boring method	Location	Record of BOREHOLE 3
Boring diameter (mm)		(sheet 2 of 3)
Casing diameter (mm)	Orientation	Basement Floor Level (m C.D.)
Boring equipment		Date commenced

Samples and in situ tests		Casing Depth (m)	Water Depth (m)	Date and Depth (m)	DESCRIPTION OF STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type						
10.50	D						
10.75	D						
11.00	U	8.50					
11.50	D						
11.50	S(30)	8.50					
12.00	D						
12.25	D						
12.50	U	8.50					
13.00	D						
13.00	S(30)	8.50					
13.50	D						
13.75	D						
14.00	U	8.50	NIL NIL	14.00 18/10	Firm to stiff fissured grey silty CLAY with framework of near vertical near horizontal and at 45° to horizontal discontinuities. Some surfaces polished and striated at 17.00m. Occasional black mottling on discontinuities		
14.50	D						
14.50	S(36)	8.50					
15.00	D						
15.25	D						
15.50	U	8.50					
16.00	D						
16.00	S(40)	8.50					
16.50	D						
16.75	D						
17.00	U	8.50					
17.50	D						
17.50	S(45)	8.50					
18.00	D						
18.25	D						
18.50	U	8.50					
19.00	D						
19.00	S(51)	8.50					
19.50	D						
19.75	S(70)+	8.50	NIL	19.75	Claystone at 19.75m	-6.25	
END OF BOREHOLE							

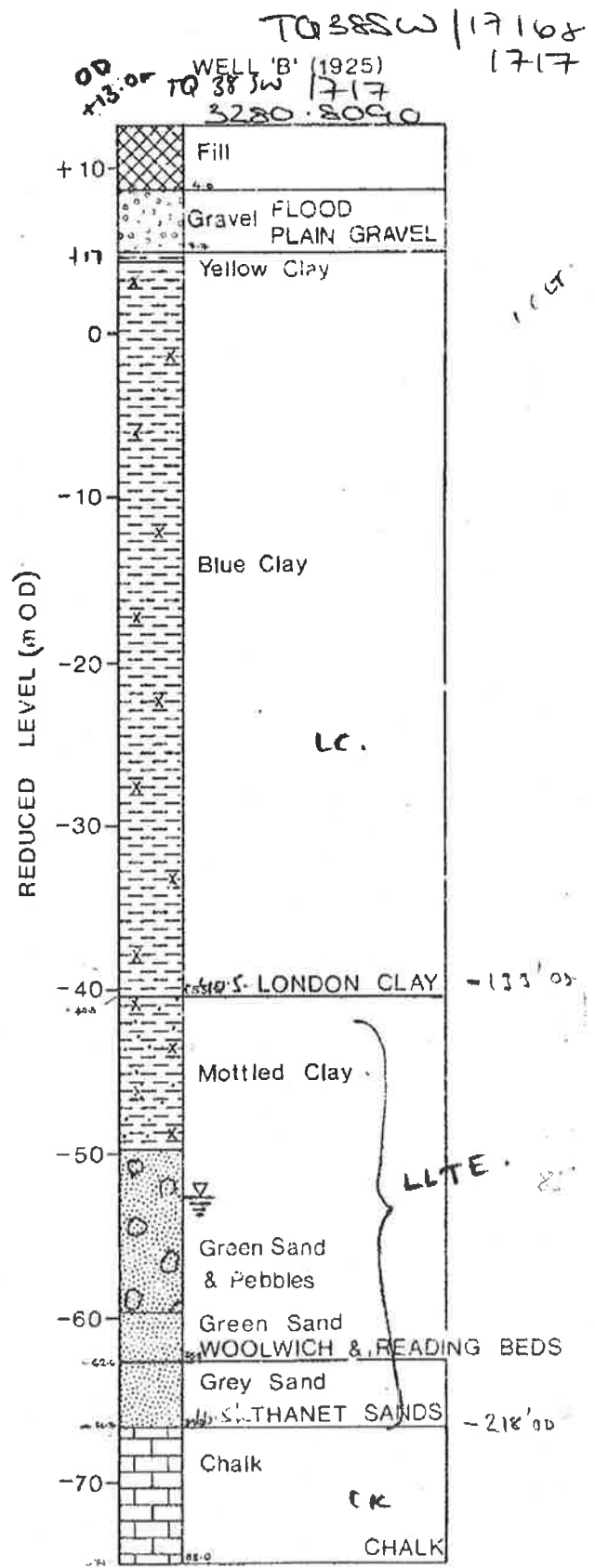
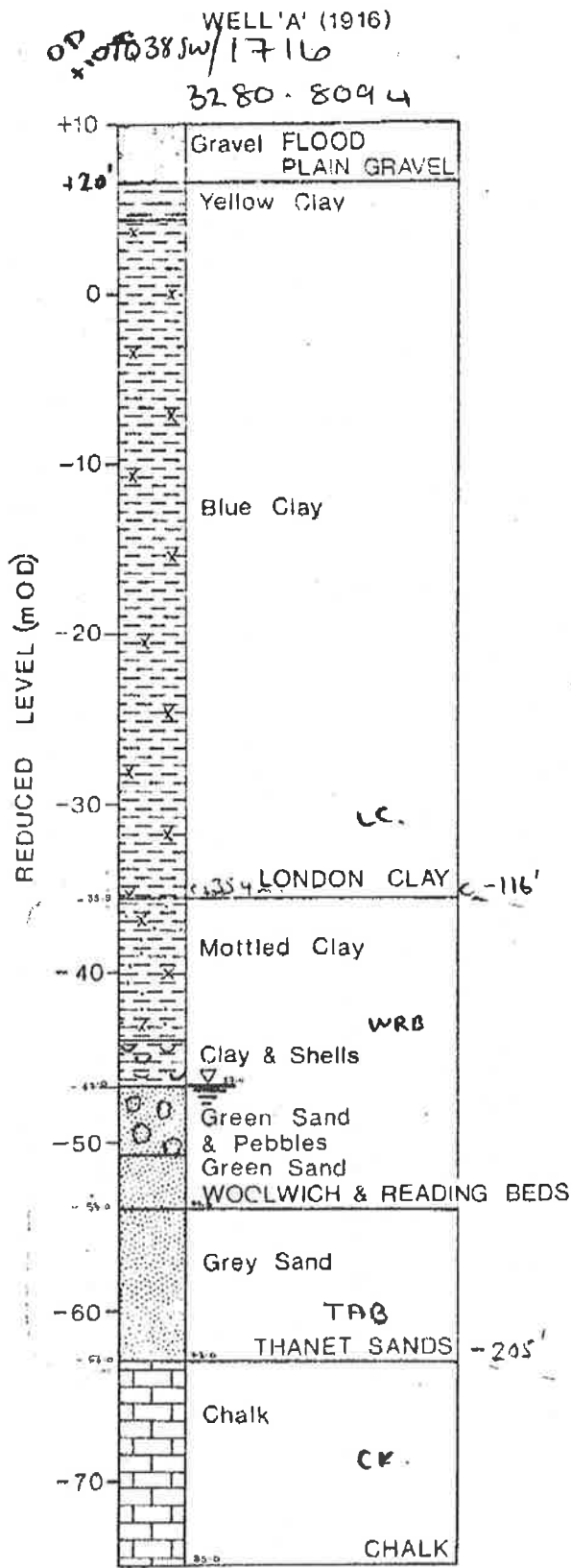
REMARKS Cutting into claystone at 19.75m (1h).
 A piezometer was installed at 18.75m below basement floor level.
 A standpipe was installed at 8.40m below basement floor level.
 Borehole was backfilled with sand from 19.75m to 17.80m, bentonite to 17.30m, cement grout to 9.00m, sand to 7.50m, natural spoil to 1.00m and concreted stop cock box to ground level.

For explanation of symbols and abbreviations see Notes, pages (i) and (ii)

LAB Ref. No.
S/10872

KING WILLIAM STREET - LONDON E.C. 4

Fig. 3

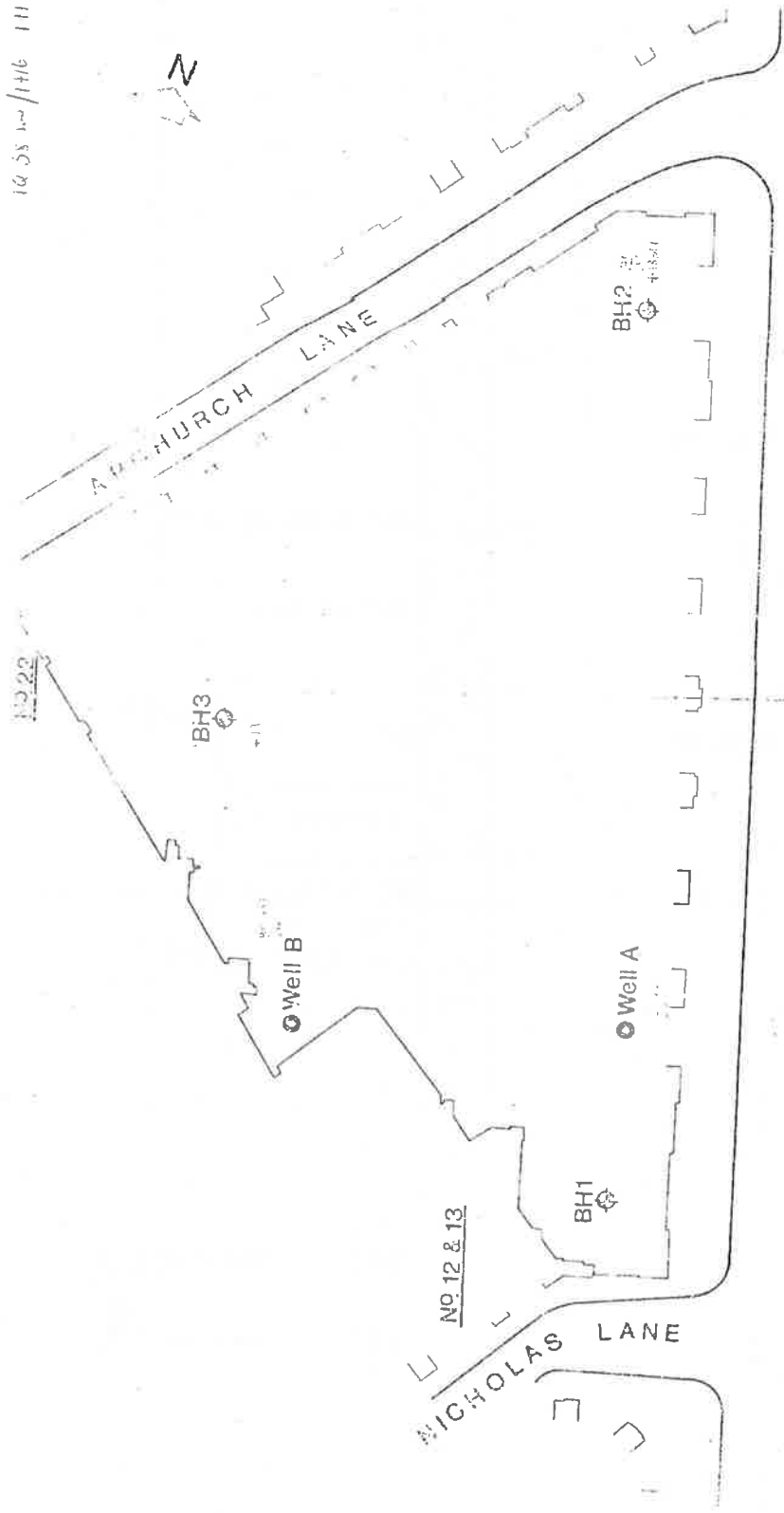


▽ Water Level

WELL PROFILES

5597 FIGURE 4

10 55 W / 1116 1117



KING WILLIAM STREET

NICHOLAS LANE
NO. 12 & 13

APPURH LANE

LEGEND

- Borehole
- Well

Existing buildings at time of site investigation

Scale 1:200
2.0. Building number

SITE PLAN
5597 FIGURE 4



British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

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[TQ38SW BJ 1716 .]