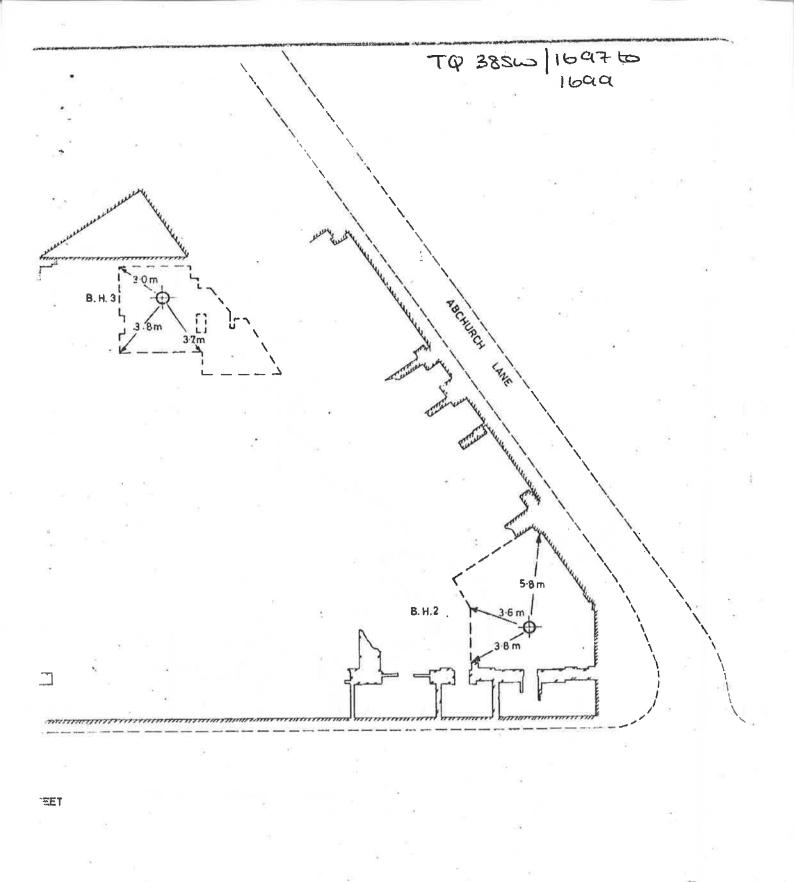
A14.5 – Redevelopment of 10 King William Street (Borehole Records) (Wimpey Laboratories Ltd)







Boring method		Shell	and Au	ger		Location TQ 328 809	Record of BOREHOLE	13280	٠٠٠
oring nameter (mm)		200 t	o 21.0	Om				3)	
C.W.DCI		200 t	0 8.65	in.		Orientation	Basement Flour		
sang Sang		2					(m.O.D.)	21.10.7	4
quioment	57	leon Wa	ytarer	10			commenced		T
Samples and in situ tests		Casing Depth (m)	Water Depth		Date and Depth	DESCRIPTION OF	STRATA	O.D. Level (m.O.D.)	Legend
Depth (m)	Type	(11)	(m)		(m) 21/10			(////	
			_		0.30			13,20	888
					1	FILL (brick and mortar :	rubble)		
					1.00	CONCRETE	~	12,50	***
4 50	de de			1					8
1,50	BD								**
.00-2.45	c(3) t	NIL			8	FILL (very soft damp da with brick fragments mo of shell)	rk brown soil rtar and pieces		***
2.75	BD								
.75-3.20	C(3)‡	2.75			3,00	Fill (very loose dark b	rown fine to	10.50	
3.50	BD.				3.50	coarse GRAVEL with occa	sional up to	10.00	***
.50-3.95	C(2) \$	3.50				2022 72 22 14 14 14 14 14 14 14 14 14 14 14 14 14		-	**
			3.50		4,00		-		
4.25 .25-4.70	BD	4.25	3.50		22/10				
4.40	D	1.25					1		
5.00	BD C(0)+	5.00				FILL (very loose black-			
	01071	3.55				silty SAND and GRAVEL brown silty clayey SAND	and GRAVEL		
					1	with up to cobble-size fragments)	brick and chalk		
5.75 6.75-6.20	C(3);	5.75						24	
6.00	D				1				
6.50 6.50	BD								
6.50 6.80	C(24) W	6.50			6.80		operation to the	6.70	800
7.00	ם		79			FILL (medium dense fine	to coarse		
7.25 7.25	C (35)	7.25				GRAVEL with pieces of b pottery)	orick and MGRD	- 11	88
7.65	D	7.85	7.50*		7.65	Firm fissured brown sil		5.85	XXX
7.85	υ	/.65			8.00	discontinuities infille	d with soft	5.50	1
8.35	D					Width of discontinuities			1
8.50 8.50	S(29)	8.50			N	with depth.			3
8.95	D					Firm fissured grey silt	y CLAY with		
9.25	D					pronounced framework of discontinuities at 45°			5
.50-9.90	u∳	8.60			l				5
10.00	م		NIL		10.00		L.C.	3.50	ž.
REMARKS	Borehol	o was a	dvance	d by Jack	hammer and	d Hand Excavation from base	ement floor leve	1 to 1.00	m (7
	Water w	as adde	d to f	acilitate	boring f	rom 3.00m to 7.65m.			
	12								
or explanation	of symbols	and abt	reviation	ns see Notes	, pages (i) a	nd (ii)			
AB Ref. No.			17	THE LITT	TAM CTD	ET LONDON E C /s		Fig.	
/ 10872			K.	ING WILL	IAM SIRE	ET - LONDON E.C. 4		1 1	•

						BOREHOLE 1			
					Prientation Besegget Floor Level				
			574 <u>-</u> 10-1		Grientation	(m.O.D.1			
-	2					Date		_	
Casing	Water			Date and	DECORPTION OF	STRATA	O.D. Leval	Legend	
Depth (m)	Depth (m)	- 1	1		DESCRIPTION OF	JIMIN	(m.Q.D.)	٤	
8.65	NIL			23/10				3	
								2	
	1			1				3	
8,65								差	
	1							E.	
8.65								至至	
ļ			. 1					돞	
1			1	1				33	
8.65								至	
8.65						a		111/1/11	
						4		Ž	
i								3	
8.69	5							1	
) 8.65	5				with pronounced framewowertical near horizontal	ork of near al, and at 45° nuities becom:	o Lng	PHENDAM	
					conscional borizontal	discontinu it i	es	E	
8.6	5				with mockets of fine q	rey SAND, sne.	11		
							1	宮	
8.6	5	1.540)			L. (21		HWH	
								3	
								1	
8.6	5			1	(AC			ES	
) B.6	15							HARRE	
-	NIL	-		18.00	100		1	1	
	NIL			24/1	1			T.	
8.€	55							T.	
) 8.6	55				21	(a)		I I I	
		i	353.		Claystone at 19.50m				
e.	65.1	1			1				
	Bepth (m) 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65	Depth (m) 8.65 NIL 8.65 8.65 8.65 8.65 8.65 9.65 9.65 9.65 NIL 8.65	Depth (m) 8.65 NIL 8.65 8.65 8.65 8.65 8.65 8.65 9.65 9.65 NIL NIL 8.65 1) 8.65	Depth (m) 8.65 NIL 8.65 8.65 8.65 8.65 8.65 8.65 9.865 9.865 9.865 9.865 9.865 9.865	Casing Depth Depth (m) Depth (m) Depth (m) Pepth (m) P	Caing Depth (m)	Casing Depth (m) Dete and Depth (m) Description of STRATA 8.65 NIL 23/16 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65	Casing (m) (m) Dete and Depth (m) DESCRIPTION OF STRATA (m.O.D.) 8.65 NIL 23/10 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65 8.65	

Bonng niethod							Location	Record of BOREHOLE	1	
Boring d-ameter (mm)								(sheet 3 of	3)	
ಾರ್ಡಕರ್ಗ (ww.)				-			Orientation	Basement Floo (m.O.D.)	or Level	-
Baring equipment			·	•				Date commenced		
Samples and in situ tests		Casing	Water	5.9.	PIEZ.	Date and		· · · · · · · · · · · · · · · · · · ·	O.D.	P
Depth (m)	Туре	Depth (m)	Depth (m)			Depth (m)	DESCRIPTION OF	STRATA	(m.O.D.)	Legend
20.50	S(47,	8.65	NIL			21.00	(See sheet 2)		-7.50	記念を記
				7.40	14.41	7/11	END OF BOR	EHOLF		
	*			7.42 7.43 7.43	13.45 12.80 12.60 12.41	14/11 21/11 20/11 5/12	9 8	4		
								20 2		-
							ar *		5	
e e										
54								T.		
	34			*						
				2				3		
8.2 A p	20m, sand Diezomet	d to 6. er was	.20m, n instal	atural led at	spoil 19,50	to 1.0 m below	50m to 18.50m, bentonite 10m and concreted stop coor basement floor level. sement floor level.	to 17.50m, ceme ck box to baseme	nt grout t	o evel
or explanation o	f symbols	and abbr	aviation:	88e No	tes, pace	: is (I) and	(0)			
AB Ref. No. 10872					-2=1 baße	- Liv wild	VII.		Fig. 1	



TQ 38360 /1698

oring ameter (mm) using Ameter (mm) loring quipment	250 to 3		200 t	o 52.3	Om	1		1	6)	
Using Janker (mm)	250 to							(sheet 1 of		
ovina		a a.com	: 200	co 34,	: 5m		Orientation	Basement Floor	Level	
₁₂₁ .pment								Date commenced	4,10.74	-
amples and situ tasts		Casing Depth	Water Depth			Date and Depth	DESCRIPTION OF	STHATA	Q.D. Layel (m.O.D.)	Legand
Depth (m)	Туре	(m)	(m)			(m)		· ·	(11.0.0.)	-
	,		NIL			5/10		Fig. 1 (ST T)	12.80	0.0
			1412			0.65	FILL (bricks and rubble,	362	12 45	***
0.65	D BD					0.90			12.20	OXX
				2			FILL (loose brick and g pieces of pottery)	ravel with	11.10_	
2.10-2.56	s(4)t	2.10				2.00			11.10_	0.0
		2 25	1.00			2,80	_			0.0
2.85	C(37) BD	2.85	1.20			7/10				0.0
									8	0.0
3.60 3.60	D C(114)	3.60								0.0
3.60	BD						Very loose black fine to rounded GRAVEL with bla			0.0
4.00							medium SAND becoming ve to coarse rounded subar	ry dense fine		0.0
4.35-4.73 4.35 4.70	C (70) BD D	4.35					with fine to coarse yel	llow SAND		0.00
5.10-5.48 5.10	C(70):	5.10					Nodules of very soft ye	SUPD		0.0
5.75 5.85 5.85	W BD C (54)	5.85					SILT down to 3.70m			0.0
6.40 6.60 6.60	D C(41) BD	6.60								0.0000
7.35	D					7.35		7 . 43	5.75(414	1
7.35 7.80 7.80	0 D S(21)	7.35	6-10 5.75			7.65 8/10		d gravel forming remoulded clay avel-size	7_5.45/+IA	
8.85	U	8.00					Firm fissured grey sil well developed framewo	rk of near		X.
9.30 9.30	p \$(25)	8.00					vertical near horizont discontinuities — some in discontinuities	al soft silty cla	У	MININ
10.00	D				10.45	10,00				K
REMARKS level	(7h).						rom basement floor level to from 0.30m to 7.35m below			.0 0 r
	-r		المستدرسيس		Marac	6000 ES	and (B)			
For explanation	of symbol	s and at	breviatio	ns see 1	NOTES, P	ages (i)	BNG (II)		Fig.	2

thod .	-							(sheet 2 of E	.)	
ring meter (min)							Orientation	Basement Floor	Level	
me(er (mm)								(m.O.O.)		
oring pripment					,			commenced		Γ
imples and gitu tests		Casing Depth	Water			Date and Depth	DESCRIPTION OF	STRATA	Q.D. Level (m.O.D.)	Legend
Depth (m)	Туре	(m)	(m)			(m)				長
10.35	ט	8.00								
10.80 10.80	D S(40)	8.00								養養
11.50	D						(a)			5
11.85	υ	8.00		25				Si .		5
12.30	D S(40)	8,00					*	9		2000
13.00	D		-							E
13.35	ט	8.0	0							
13.80 13.80	D 5 (43)	8,0	0						-	NAME OF
14.50	D	8.0	20				Firm to stiff grey a well developed frame vertical near horizo discontinuities. So	mtal rfaces		15, 75, 15,
14.85	ט	6.3				1	occasionally polishe	d and with prack		15.5
15.30 15.30	s (48) 8.	00				Moterring	•		NHAME
16.00	D					1				器
16.35	U	в.	00							5
16.80 16.80	D S(4:	8,	00							PHEME
17.50	D									r r
17.85	ט	8	.00							3
18.30 18.30	D s(4		.00							1
19.00							1		5	
19.35	,	j 8	.00							
19.80 19.80	s (\$,00	T.		20	.00			
REMARKS	l		1.863	d						
							61			
								¥).	h.	
For explanati	an of ev	mbols an	d abbrev	lations :	see Notes	, pages	(i) and (ii)		Fi	g. 2

Boring method						Location	Record of BOREHOLE	2	
Boring diameter (mm)							(sheet 3 of 6		
Casing diameter (mm)						Orientation	(m.O.D.)		
Anting .						· · · · · · · · · · · · · · · · · · ·	Date commenced		
equipment		1	[]				Commenced		T
Samples and in situ tests		Casing	Water Depth		Date and	DESCRIPTION OF	STRATA	O.D.	Legend
Depth (m)	Type	(m)	(m)		Depth (m)	9200111 71014 01 1	VIII	(m.O.D.)) ş
			NIL		9/10				35
20.50	D								桑
20.85	ט	8.00			1	η	2	= @0 g	
21.30	D								X
21.30	5(60)	8.00					v	s	8
22.00	D	22							
22.35	0	8.00							
22.80	ם				ì				
22.80	s(51)	8.00						2.5	
								- Q II	該
23.50	D				1				
23.85	ט	8.00		-	1	Stiff fisaured grey silt	tv CLAY with		器
24.30	D					very pronounced framework horizontal near vertical	rk of near		
24.30	5 (56)	8.00				discontinuities, surface with occasional black me	es polished		監
25,00	D					pockets of pyrites	occing and		
25.35	U	8.00		- 1		he	144		1
25.80	D					Frequent irregularly spa	and markings		
25.80	5 (64)	8.00			1	of fine grey silty SAND	below 25.80m.		5.
					3	Partings typically at 2) JOINI CAUCLES		5.
26.50	D					15			24
26.85	Ü	8.00							17
27.30	D								委
27.30	S (66)	8.00	- c					76.	5
28.00	D								3
28.35	υ	8.00	NIL		28.35 10/10				17.
28.80 28.80	D S(76)	8.00	NIL		10/10		*		X
%Q. OU	3(/6)	6.00							
30.55									塞
29.50	a 	D 00		1					
29,85	U	8.00							15.
TEMARKS									
							. · ·		
or explanation of	of symbols	and abb	reviation	s see Note	as, pages (i) ac	nd (ii)			
AB Ref. No.								Fig.	2
7 10872			KI	NG WIL	LIAM STRE	ET - LONDON E.C. 4		(Con	(מ'ד



Boring method						1	Location	BOREHOLE	2			
Buring diameter (mm)						100		(sheet 4 of 6				
Casing diameter (mm)							Orientation					
Scring equipment		·		,	,			Date commenced				
Samples and in situ tests		Casing Depth	Water Depth			Date	DESCRIPTION	LOF STRATA	Q.D. Level	Ligend		
Depth (m)	Туре	(m)	(m)			Depth (m)		\$45.	(m.O.D.)	Ţ		
30.30 30.30	s (69)	8.00					8	a		NAME OF THE PERSON NAME OF THE P		
31.00	D									Š.		
31.35	Ð	8.00					*			3		
31.80 31.80 32.00	n s (59) p	8,00										
32.50	D									1		
32.85	U	8.00								55		
33.30 33.30	E \$(63)	8,00						8	***			
34.00	D						83					
34.35	υ	8.00				İ	Stiff to very stiff	becoming hard				
34.80 34.80	D S(57)	34.15	NII. NIL			5,00 11/10	fissured grey silty partings of grey sil 25,80m at 5-30mm ger framework of near ho to horizontal discor	lty sand below ntres and with prizontal and 450		No.		
35.50	D						surfaces polished.			变		
					l			,				
36.35 36.80	ט	34.15								27		
36.80	s (69)	345										
37.50	D											
38.35	ט	34,15		1.9						营		
38.80	D S(71)	34.15								芸或		
39.50	D						,			10000000000000000000000000000000000000		
REMARKS	1		NIL		<u> </u>	40.00				庄宝		
								2				
		ε										
or explanation	of symbols	and abb	reviation	ns see No	ot es, p age:	s (i) an	d (ii)		Te:-			
AB Ref. No.			ΚI	NG WIL	LLIAM S	STREE	T - LONDON E.C. 4		Fig. 2			



Boring method						Lacation	Record of BOREHOLE	2	
Boring diameter (mm)							(aheet 5 of 6)		
Casing diameter (mm)						Orientation	Basement Floo:		
Boring equipment			······································				Date commenced		
Samples and In situ tests		Casing Depth	Water Depth		Date			O.D.	7
Depth (m)	Type	(m)	(m)		Depth (m)	DESCRIPTION OF	STRATA	Level (m.O.D.)	Legend
40.35	υ	34.15	NIL		12/10 40,35	(See sheet 4)		-27.25	
40.80 40.80	s (68)	34,15						e E	部部
41.50	D								
42.35	u	34.15							
42.80 42.80	C (71)	34.15							言なら
43.50	D							2	
44.35 44.35	U W	34.15	NIL		44.35	Hard fissured grey silt	y CLAY,		
44.80 44.80	D \$(75)	34.15				becoming very silty bel occasional partings of Framework of near verti horizontal discontinuit	grey fine sand.		
45,50	D					at 44.35m	9		经验
46.35	ט	34.15							多多
46.80 46.80	D S(61)	34.15							25.55
47.50	D								
49.35	υ	34.15							
49.80 48.80	S(64)	34.15				8			
49.50	D								
EMARKS			AIL		50.00	*****			1,37
EMARKS or explanation of	symbols a	nd abbra	vistings epoitsiv	in Notes much	von (3) and ((c))			***
B Ref. No.	.,			- restoat bac	jua (ij and ((ri)		Fig. 2	
10372			KING	WILLIAM	STREET	- LONDON E.C. 4		(CONT'	



aoring method				-			Location	Record of BOREHOLE	2	2	
annig anoter (mm)	9					14		(sheet 6 of	6)		
pind (mm)							Orientation	Basement Floor	r Level		
tusment								Date			
Samples and						Date			0.0	T =	
Pepth	Туре	Casing Depth (m)	Water Depth (m)	PIEZ.	PIEZ.	and Depth (m)	DESCRIPTION OF	STRATA	O.D. Level (m.O.D.)	Legend	
			NIL			15/10					
50.35	U	34.15	50.50*				(See sheet 5)			燅	
50.80-51.30	S(114);	34.15				50.80	Hard friable mottled gr	ey-green-brown	-37.70 -1241	藍	
51.50 °C	u	34.15		ia s			silty CLAY as a matrix cobble-size intact frag green-brown silty CLAY	ments of grey- with frequent	-		
51,95-52.33	s (109) ;	34 15					polished and striated s becoming stiff to hard blue silty CLAY with pr	mottled brown-		芸	
			44,50			52.30	framework of discontinu to horizontal, Surface	ities at 45°	-39.20	3	
							striated WR				
							END OF BOREHOL		. 0		
				26.75	34.72	7/11	pro or porterior				
				27.00	34.75	21/11 28/11					
				26.97	34.79	5/12					
		-							1 25-		
							U	v v	7.	ĺ	
									8		
8											
									8		
	388								1	1	
									21		
F Borehole	lezomet was bac to 35.	ers we kfille 50m, s	re ins d from and to	talled 52,30m 33.50m	at 50 n to 4	,35m an 9.00m w	of sampling rose to 44.50m id 34.70m below basement flath sand, bentonite to 48. to 33.00m, cement grout to	oor level. 50m, cement gro			
Or explanation o	f symbols	and abb	reviation	is see Nr	otes. nar	ies (i) =n	od (ii)		÷		
AB Ref. No.	. 01.110013				-ion haf	, (1) dl	er ful		Fig.	2	



5¢:ing		Shell1	and Auger			BOREHOLE	3	
10d		200 €0	19.75m				3)	_
1-1618f (mm)		200 50	9.50m		Onertarion	Basement Floor	13,50	
11-09 (mm)			Warfater 10			Date commenced	.2.10.74	_
duroment		1	T 1"	T				
tamples and		Casing Depth	Water Depth (m)	Date and Depto (m)	DESCRIPTION OF	STRATA	O.D. Level (m.Q.D.)	
Depth	Type	(m)	ļ	12/10	CONCRETE		13.20	1
(m)			=	0.30				⊗
			NIL.	0.50 14/10 0.80	FILL (brick and concret	e rubble)	12.70	8
1.00	BD	•						*
1.50	U	1.50• NIL			<pre>pill (soft brown CLAY w of lrick, pottery, plas gravel)</pre>	ith fragments ter, sand and		***
.02.45	C(6) ‡	•			graves,			8
2.10	C (6)	2.10						X
2.75	80	2.75						8
2.75 3.00	c (50) -	3.00		3.00			_10.50	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
3.50-3.80	C(84) 1	3.50	3.65	3.60 16/10	-			***
			3.00	10,10				8
4.25 4.25-4.48	BD C (65):	4.25			FILL (loose becoming ve sandy fine to coarse SA	ND and fine		8
5.00 5.00-5.23	BD C (67) \$	5.00			to coarse GRAVEL with o			888888
				1 1				8
5.50 5.75-5.13 5.75	₩ C(83)‡	5.75			MG	01	2	8
3.73					110	ערו		8
6.50 6.50	BD C (60)	6,50		6.50			7.00	8
			5.25	7.00	Very dense to medium d	ense brown		10
7.25 7.25	BD C(31)	7.25	5.50	17/10		PD		0
						1	3.70(+14)	1.
7.80 8.00	Ū D	8.00		7.80	Firm flasured brown si - Discontinuities infi	lled with soft	31.0(1.1	12.
8.50 8.65 9.65	p C(32) BD	0.50	8.50	8,40	yellow-red clay with i width of discontinuiti	ron staining.	5.10	THE REAL
9.25	D				Firm fissured grey sil frame work of near ver	tical near		Z
9.50	U	8.50			horizontal discontinui	riea		X.
10.00	D S(29)	8.50			Claystone at 8.60m	Le		HA

(5th). Borehole abandoned after encountering an obstruction at 3.00m. Rig moved 0.50m and rebored. Sorehole 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 7.80m.

Borehole was advanced by chiselling from 3.60m to 3.90m (1h); cutting through claystone at 8.60m (1h).

- avbiguation	of symbols and abban in						
LAB Rut No	of symbols and abbreviations	Sea	Notes,	pages	(i)	and	60

\$/ 10872 British Geological Survey

KING WILLIAM STREET - LONDON E.C. 4

Fig.

Record of Location guring -igthod **BOREHOLE** 3 acring sameter (mm) (sheet 2 of Orientation Basement Ficor Level patriater (mm) (m.C.D.) **Romog** Date commenced equipment Samples and Date in situ tests Casing Water Q.D. Legend and Level (m.Q.D.) DESCRIPTION OF STRATA Dapth (m) Depth (m) (m) Type 10.50 D 10.75 D 11.00 Ü 8.50 11.50 D 11.50 s(39) 8.50 12,00 D 12.25 D 12.50 U 8.50 13.00 13.00 \$ (30) 8.50 13.50 Firm to stiff fissured grey silty CLAY 13.75 D with framework of near vertical near 14.00 IJ 8.50 NIL 14.00 horizontal and at 45° to horizontal 18/10 NIL discontinuities. Some surfaces polished and striated at 17.00m. 14.50 Occasional black mottling on 14.50 s (36) 8.50 discontinuities 15.00 ט LC 15.25 D 15.50 U 8.50 16.00 D 8 (40) 8.50 15.00 16.50 D 16.75 D 17.00 U 8.50 17.50 D 17.50 \$ (45) 8.50 18.00 18.25 D 18.50 8.50 19.00 Ď 19,00 S(51) 8.50 19,50 D Claystone at 19.75m 19.75 NIL 19.75 \$ (70) 4 8.50 END OF BOREHOLE

REMARKS Cutting into claystone at 19.75m (1h).

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

LAS Ref. No.

s/10872

KING WILLIAM STREET - LONDON FLC. 4

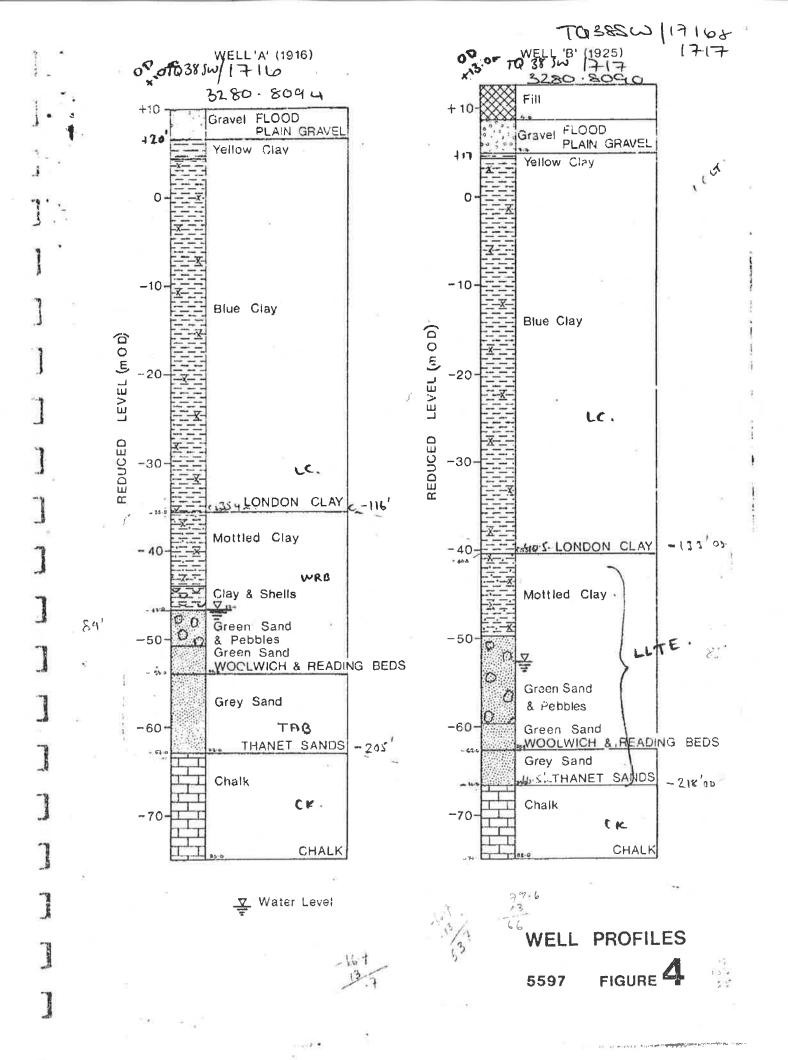
Fig. 3

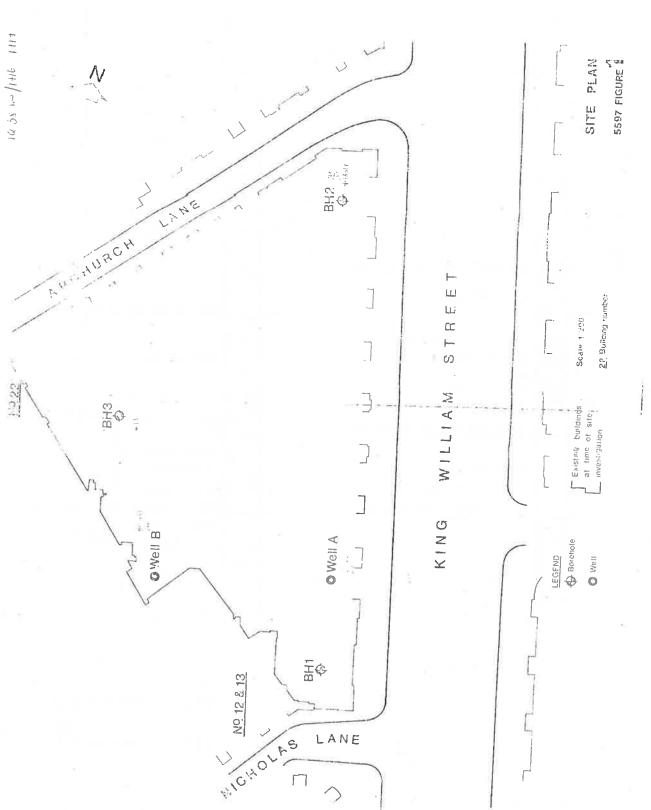


A piezometer was installed at 18.75m below basement floor level.

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.





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