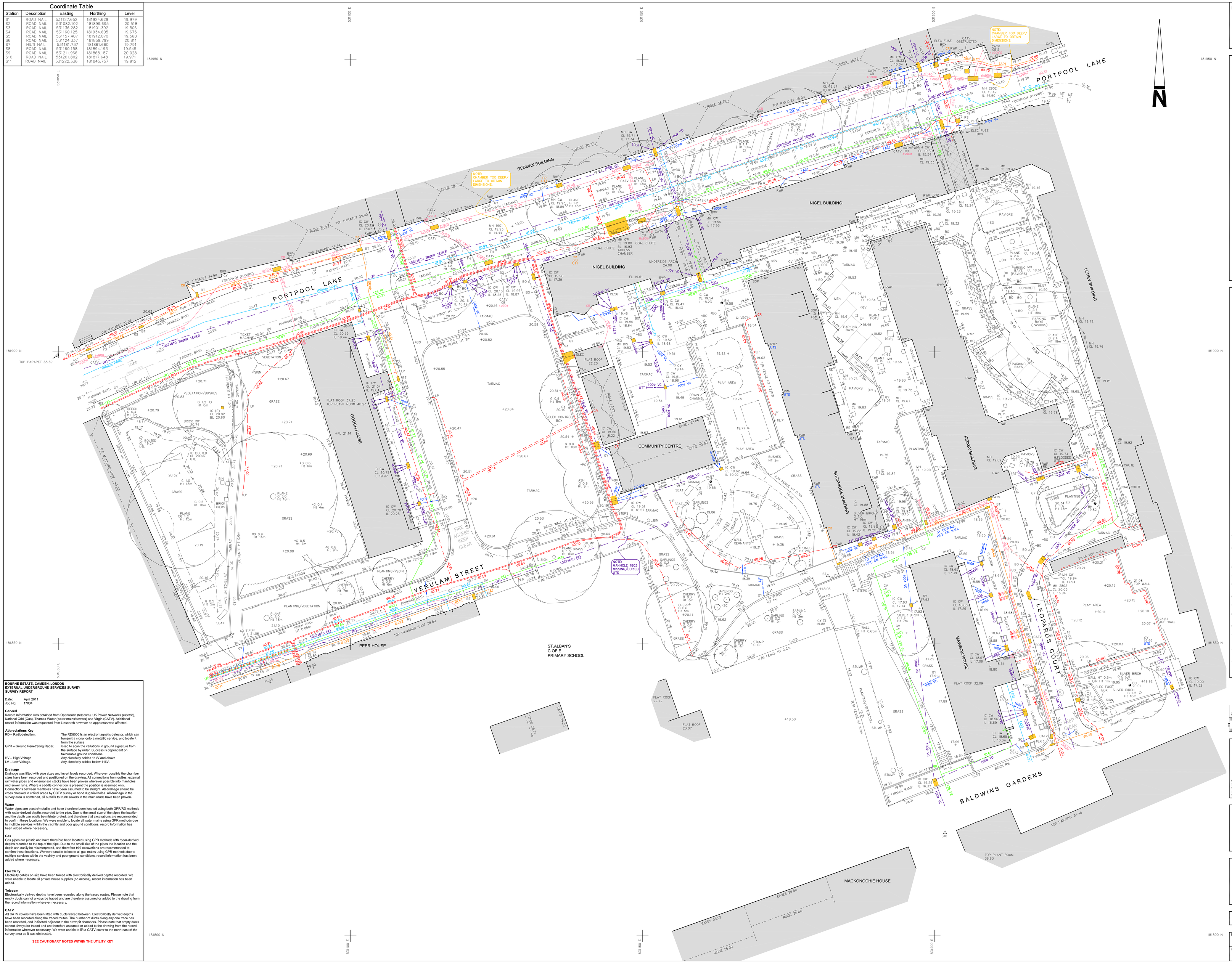
Coordinate Table

Station	Description	Easting	Northing	Level
S1	ROAD NAIL	531127.652	181924.629	19.979
S2	ROAD NAIL	531082.102	181899.695	20.518
S3	ROAD NAIL	531136.282	181901.392	19.506
S4	ROAD NAIL	531160.125	181934.605	19.675
S5	ROAD NAIL	531157.407	181912.070	19.568
S6	ROAD NAIL	531124.337	181859.799	20.811
S7	HILTI NAIL	531181.737	181861.660	19.791
S8	ROAD NAIL	531160.158	181894.193	19.545
S9	ROAD NAIL	531211.966	181868.187	20.028
S10	ROAD NAIL	531201.802	181817.648	19.971
S11	ROAD NAIL	531222.336	181845.757	19.912



BOURNE ESTATE, CAMDEN, LONDON
EXTERNAL UNDERGROUND SERVICES SURVEY
SURVEY REPORT

Date: April 2011
Job No: 17034

General
Record information was obtained from Openreach (telecom), UK Power Networks (electric), National Grid (Gas), Thames Water (water mains/sewers) and Virgin (CATV). Additional record information was requested from Linsearch however no apparatus was affected.

Abbreviations Key

RD – Radiodetection.	The RD8000 is an electromagnetic detector, which can transmit a signal onto a metallic service, and locate it from the surface.
GPR – Ground Penetrating Radar.	Used to scan the variations in ground signature from the surface by radar. Success is dependant on favourable ground conditions.
HV – High Voltage.	Any electricity cables 11kV and above.
LV – Low Voltage.	Any electricity cables below 11kV.

Drainage
Drainage was lifted with pipe sizes and invert levels recorded. Wherever possible the chamber sizes have been recorded and positioned on the drawing. All connections from gullies, external rainwater pipes and external soil stacks have been proven wherever possible into manholes and sewer runs. Where a saddle connection is present the position is assumed only. Connections between manholes have been assumed to be straight. All drainage should be cross checked in critical areas by CCTV survey or hand dug trial holes. All drainage in the survey area is combined, all outfalls to trunk sewers in the main roads have been proven.

Water
Water pipes are plastic/metallic and have therefore been located using both GPR/RD methods with radar-derived depths recorded to the pipe. Due to the small size of the pipes the location and the depth can easily be misinterpreted, and therefore trial excavations are recommended to confirm these locations. We were unable to locate all water mains using GPR methods due to multiple services within the vacinity and poor ground conditions, record information has been added where necessary.

Gas
Gas pipes are plastic and have therefore been located using GPR methods with radar-derived depths recorded to the top of the pipe. Due to the small size of the pipes the location and the depth can easily be misinterpreted, and therefore trial excavations are recommended to confirm these locations. We were unable to locate all gas mains using GPR methods due to multiple services within the vacinity and poor ground conditions, record information has been added where necessary.

Electricity
Electricity cables on site have been traced with electronically derived depths recorded. We were unable to locate all private house supplies (no access), record information has been added.

Telecom
Electronically derived depths have been recorded along the traced routes. Please note that empty ducts cannot always be traced and are therefore assumed or added to the drawing from the record information wherever necessary.

CATV
All CATV covers have been lifted with ducts traced between. Electronically derived depths have been recorded along the traced routes. The number of ducts along any one trace has been recorded, and indicated adjacent to the draw pit chambers. Please note that empty ducts cannot always be traced and are therefore assumed or added to the drawing from the record information wherever necessary. We were unable to lift a CATV cover to the north-east of the survey area as it was obstructed.

SEE CAUTIONARY NOTES WITHIN THE UTILITY KEY

Notes :

1. GRID AND LEVELS BASED ON OSGB36 NATIONAL DATUM DERIVED FROM THE NATIONAL GPS NETWORK, LSF REMOVED FROM ALL CALCULATIONS.
2. TREE AND HEDGE SPECIES HAVE BEEN IDENTIFIED AS ACCURATELY AS POSSIBLE BUT SHOULD BE CROSS CHECKED IN CRITICAL AREAS.
3. SEE SHEETS 2 & 3 FOR BLOCK OUTLINE ELEVATIONS AS INDICATED BY RED ARROWS.

KEY

SURVEY STATION — 5
BANKING — TOP / BOTTOM
HEDGE SPREADS
W/OODLAND CANOPY
MARSH / / WATERLOGGED
TREES — SPREAD & GIRTH SHOWN TO SCALE
GATE
KERB CHANNEL
ROAD UNKERBED
FOOTPATH
CHANGE IN SURFACE
FENCE
WALL
OVERHEAD ELECTRIC
OVERHEAD TELECOM
FOUL SEWER
SURFACE SEWER
BUILDING
OPEN SIDED BUILDING
GLASSHOUSE
CONTOUR — 25.50
SPOT LEVEL — + 127.13
BORE HOLE — BH
TRIAL HOLE — TH

GENERAL ABBREVIATIONS

AIR VALVE	AV
ANGLE DROP	AD
BRICK	BK
BOLLARD	BO
BUS STOP	BS
BT INSPECTION COVER	BT
CABLE TV SDVER	CATV
CONTROL BOX	CB
COVER LEVEL	CL
CATCH PIT	CPIT
DROP KERB	DK
ELECTRICITY CONTROL BOX	EB
ELECTRICITY POLE	EP
ELEVATION	EL
FIRE HYDRANT	FH
FLOOR LEVEL	FL
FOOTPATH	FP
FOUL WATER SEWER	FWS
GAS VALVE	GV
GATE POST	GP
GULLY	GY
INSPECTION COVER	IC
INVERT LEVEL	IL
KERB OUTLET	KO
LAMP POST	LP
LITTER BIN	LB
LITTER BIN	BIN
MANHOLE	MH
MARKER POST	MK
METER	MT
ORDNANCE SURVEY BENCH MARK	OSBM
RODDING EYE	RE
RISER	R
RAIN WATER PIPE	RWP
RETAINING WALL	RW
STOP COCK	SC
STREET NAME PLATE	SNP
STAY CABLES	ST
SURFACE WATER SEWER	SWS
SIGN POST	SP
SOIL VENT PIPE	SVP
TELEPHONE CALL BOX	TCB
TRAFFIC LIGHT	TL
TELECOM POLE	TP
UNABLE TO LIFT	UTL
VENT PIPE	VP
WATER LEVEL	WL
WATER METER	WM
WASH OUT	WO

FENCE ABBREVIATIONS

BARBED WIRE FENCE	B/W
CLOSE BOARDED FENCE	C/B
CONCRETE PANEL FENCE	C/PL
CORRUGATED IRON FENCE	C/I
CHAIN LINK FENCE	CL
CHESTNUT PALING	C/NP
IRON RAILINGS	I/R
POST AND RAIL FENCE	P/R
POST AND WIRE FENCE	P/W
WIRE MESH FENCE	W/M

UTILITY KEY

ABBREVIATIONS

(AC)	ASSUMED CONNECTION	LD	LOOP DETECTOR
AVG	ABOVE GROUND	LH	LAMP HOLE
(AR)	ASSUMED ROUTE	LP	LAMP POST
ASB	ASBESTOS CEMENT	LV	LOW VOLTAGE
AV	AIR VENT	MK	MARKER
BB	BELISHA BEACON	MH	MANHOLE
BD	BACK DROP	MT	METER
BL	BASE LEVEL	M/WELL	MONITORING WELL
BO	BOLLARD	NDI	NO DEPTH INFORMATION
BOL	BOLLARD LIGHT	NFI	NO FURTHER INFORMATION
BT	BRITISH TELECOM	NPV	NO PIPES VISIBLE
CATV	CABLE TELEVISION	O/H	OVERHEAD
CB	CONTROL BOX	Pd	PASSIVE DEPTH
CI	CAST IRON	PE	POLYETHYLENE
CL	COVER LEVEL	POW	PIPE ON WALL
CGW	CABLE ON WALL	PTG	PIPE TO GROUND
CR	CABLE RISER	PVC	POLYVINYL CHLORIDE
CWS	COMBINED WATER SEWER	(R)	RECORD INFORMATION
d	DEPTH OF SERVICE	RE	RODDING EYE
DCH	DRAINAGE CHANNEL	RED	REDUNDANT SERVICE
DI	DUCTILE IRON	RWP	RAIN WATER PIPE
DIS	DISUSED	SC	STOP COCK
EOT	END OF TRACE	SI	SPUN IRON
EP	ELECTRIC POLE	SOF	SOFFIT
ER	EARTH ROD	SVP	SOIL VENT PIPE
(E)	EMPTY	SWR	SURFACE WATER SEWER
FFP	FUEL TANK FILL POINT	SV	STOP VALVE
FH	FIRE HYDRANT	TL	TRAFFIC LIGHT
FWS	FOUL WATER SEWER	TLC	TRAFFIC LIGHT COVER
GPR	GROUND PENETRATING RADAR	TP	TELECOM POLE
GR	GAS RISER	UTL	UNABLE TO LIFT
GV	GAS VALVE	UTS	UNABLE TO SURVEY
GY	GULLY	UTT	UNABLE TO TRACE
HV	HIGH VOLTAGE	VC	VITRIFIED CLAY
IC	INSPECTION COVER	(VI)	VERBAL INFORMATION
Id	INVERT DEPTH	VP	VENT PIPE
IL	INVERT LEVEL	WL	WATER LEVEL
INT	INTERCEPTOR	WO	WASH OUT
KV	KILO VOLT	WR	WATER RISER

LINESTYLE

INTERNAL METER — IM
POT ENDED SERVICE
INTERNAL VALVE
MISSING VALVE (R)
UNDERGROUND CHAMBERS
REDUNDANT SERVICE
UTILITY INTAKE
UTILITY CROSSOVER
BACK DROP
PEA TRAP
SURVEY BOUNDARY

LEGEND

CATV — CHEMICAL SEWER
ELECTRICITY (HV) — COMBINED SEWER
ELECTRICITY (LV) — FOUL SEWER
FUEL — SURFACE SEWER
GAS — TELECOM
OVERHEAD ELECTRIC — UNKNOWN SERVICE
OVERHEAD TELECOM — WATER

CAUTIONARY NOTES

1. Electromagnetic techniques have been used in the location of underground services, the results are not infallible and trial excavations must be carried out in order to confirm identification, position and in particular depth of the service, where these are critical.
2. Ground Penetrating Radar (GPR) techniques have been used in the location of non metallic services (including fibre optic) wherever record information or surface scanning indicates the existence of a particular service. The interpretation of these results is not infallible and success will depend on a number of factors including soil type, ground water levels and surface conditions, hence trial excavations must be carried out in order to confirm identification, position and in particular depth of the service, where these are critical.
3. Depths derived via electromagnetic detection are usually taken to the centre of the conductor (cable, metallic pipe) and those derived via Ground Penetrating Radar are usually to the top of the service.
4. Where cable routes cannot be individually selected for tracing, any one trace could be a single cable or a cluster of cables.
5. The locations of 'pot-ended' cables are often difficult to detect and although we will make all reasonable efforts to locate or transpose this information from records, we cannot guarantee that 'pot-ended' cables do not exist on this site.
6. Drainage information has been obtained without man entry into the chamber and MK Surveys presume that sewers are straight between chambers.
7. Pipe / Duct sizes are shown from visual inspection or taken from record information. Pipe sizes are recorded in millimetres and depths in metres.
8. Water and Gas services to individual properties are often of a size that cannot be detected using Electromagnetic or GPR investigation, whenever possible the route will be added from surface evidence (pipe risers, valves, etc), but this should be viewed as a guide only.
9. MK Surveys cannot confirm when services are redundant and unless there is surface evidence of a redundant service, cannot guarantee being able to locate all redundant services.
10. Wherever possible the results of our investigations will be cross referenced with record information and where there is further information available and this cannot be detected on site, the information will be added to the drawing and indicated as such (R). However it should be noted that the completeness and accuracy of the records cannot be guaranteed.
11. The utility information has been compiled from non-intrusive survey techniques; it always remains possible that there are additional services within the survey boundary that we have not been able to detect. We recommend that care is taken on site and that all service records are used in conjunction with this survey.
12. The responsibility for avoiding damage to assets and services on site shall be that of the persons proposing to excavate within the surveyed area, who shall be liable to the asset owner and any third party who may be affected in any way for any loss or damage.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING.

Revision	Description	Date
1	Area Around kirkby Building Surveyed	May 2012

0 2 4 6 8 10 12 14 16 18 20 22

40 years old in 2012
mksurveys
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Tel 01908 565561
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Campbell Reith LLP

Bourne Estate
Camden
London

Topographical and Utility Survey

Scale	Sheet Size:	Sheet Number:	Date:
1:200	A0	1	April 2012
Project Number:	**Rev:**	**Surveyed By:**	**Approved By:**
17034	1	NC/MR	DG/DJR