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
BANKING
HEDGE SPREADS
WOODLAND CANOPY
MARSH / WATERLOGGED
TREES
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
SPOT LEVEL
BORE HOLE
TRIAL HOLE

GENERAL ABBREVIATIONS

AV	AIR VALVE	LD	LOOP DETECTOR
AVG	ABOVE GROUND	LH	LAMP HOLE
BK	BRICK	LP	LAMP POST
BO	BOLLARD	LV	LOW VOLTAGE
BS	BUS STOP	MK	MARKER
BT	BT INSPECTION COVER	MH	MANHOLE
CATV	CABLE TV COVER	MT	METER
CB	CONTROL BOX	MW/ELL	MONITORING WELL
CL	COVER LEVEL	NDI	NO DEPTH INFORMATION
CPRT	CATCH PIT	NFI	NO FURTHER INFORMATION
DK	DROP KERB	NPV	NO PIPES VISIBLE
EB	ELECTRICITY CONTROL BOX	OH	OVERHEAD
EP	ELECTRICITY POLE	Pd	PASSIVE DEPTH
ER	EARTH ROD	PE	POLYETHYLENE
FH	FIRE HYDRANT	POW	PIPE ON WALL
FL	FLOOR LEVEL	PTG	PIPE TO GROUND
FP	FOOTPATH	PVC	POLYVINYL CHLORIDE
FWS	FOUL WATER SEWER	(R)	RECORD INFORMATION
GV	GAS VALVE	RE	RODDING EYE
GY	GULLY	RED	REDUNDANT SERVICE
IC	INSPECTION COVER	RWP	RAIN WATER PIPE
IL	INVERT LEVEL	SC	STOP COCK
INT	INTERCEPTOR	SI	SPUN IRON
KV	KILO VOLT	SOP	SOFFIT
LBIN	LITTER BIN	SVP	SOIL VENT PIPE
LP	LAMP POST	SWS	SURFACE WATER SEWER
		TP	STOP VALVE
		TL	TRAFFIC LIGHT
		TLC	TRAFFIC LIGHT COVER
		TP	TELECOM POLE
		UTL	UNABLE TO LIFT
		UTS	UNABLE TO SURVEY
		UTT	UNABLE TO TRACE
		VC	VITRIFIED CLAY
		(VI)	VERBAL INFORMATION
		VP	VENT PIPE
		WL	WATER LEVEL
		WO	WASH OUT
		WR	WATER RISER

FENCE ABBREVIATIONS

BWF	BARBED WIRE FENCE	CHF	CHESTNUT PALING
CBF	CLOSE BOARDED FENCE	IR	IRON RAILINGS
CPF	CONCRETE PANEL FENCE	PR	POST AND RAIL FENCE
CIS	CORRUGATED IRON FENCE	PWF	POST AND WIRE FENCE
GA	GATE	WM	WIRE MESH FENCE

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	MW/ELL	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	OH	OVERHEAD
CB	CONTROL BOX	Pd	PASSIVE DEPTH
CI	CAST IRON	PE	POLYETHYLENE
CL	COVER LEVEL	POW	PIPE ON WALL
COW	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	SOP	SOFFIT
ER	EARTH ROD	SVP	SOIL VENT PIPE
(E)	EMPTY	SWS	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 — UTILITY INTAKE
POT ENDED SERVICE — UTILITY CROSSOVER
INTERNAL VALVE — BACK DROP
MISSING VALVE (R) — PEA TRAP
UNDERGROUND CHAMBERS — SURVEY BOUNDARY
REDUNDANT SERVICE

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 scaring 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 'pobended' 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 'pobended' 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, wherever 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
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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