

**Western Avenue,
London**

**Utility Mapping Survey
Site Report
Project No. 1670**

Prepared by:
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Utility Surveyor: Piotr Wegiel

Topographical Surveyor: Michael Mason

Date of Survey: January 2019

Drawings Number Issued to the Client: 1670_P_Western Avenue.dwg

Type of Survey: Underground Utility Location & Mapping Survey.

Survey Grid: ORDNANCE SURVEY - Related to OS Active Network using GPS.

Survey Datum: ORDNANCE SURVEY - Levels related to OS Active Network using GPS.

Accuracies: Depth by Electromagnetic Detection: +/- 10% of Depth.

Plan position by Electromagnetic Detection: +/- 10% of Depth.

Depth by GPR: +/- 10% of depth (in Normal Ground Conditions)

Plan position by GPR: +/- 10% of Depth.

Specification Notes:

All survey works carried out in the area defined by Arcadis Consulting Ltd

1. All drawings must be read in conjunction with record information.
2. 40Seven provided all available statutory authority information, but cannot be guaranteed to be the latest information available.
3. All services have been surveyed robustly using a combination of Electromagnetic Detection & Ground Penetrating Radar (GPR). All utility positions were surveyed in using an Electronic Total Station.

Existing Service Records Provided to Field Surveyor

Service	Provider	Remarks
Telecom	BT	Map Ref: TQ2138080880
Drainage	Thames Water	Map Ref: 2018_3920445
Water	Thames Water	Map Ref: 2018_3920445
Electric	Scottish and Southern	Map Ref: TQ21418087
Gas	Cadent	Map Ref: TQ2180
NOTE: Other existing statutory undertakers records were not available at the time of the survey or during the course of post processing.		

Field Equipment

Type	Make	Model	Company I.D No.	Operator(s) Initials
Electrolocation Instrument	RD	8100	PDL 017 TXT 017	PW
Ground Radar	Mala	HDR Pro	N/A	PW
Electronic Total Station	Trimble	S6	Rob 43	MM

Utility Location & Mapping Survey Results

Service	Comment Number	Successes / Problems Differences between survey & "Stats"
Electric	1	Electric routes located on site.
	2	Statutory information available at the time of survey. Incomplete routes have been transferred from record information.
Telecom	1	Statutory information available at the time of survey. Incomplete routes have been transferred from record information.
Water	1	Water routes located on site. Some routes are incomplete due to loss of signal.
	2	Polyethylene water pipe has been assumed.
	3	Statutory information available at the time of survey. Incomplete routes have been transferred from record information.



Service	Comment Number	Successes / Problems Differences between survey & "Stats"
GPR Scans	1	The radar reflects changes in the electrical properties of materials in the sub-surface. The data prevents definition of unknown targets.
	2	A PAS128 M4P GPR survey has been carried out across the site where possible.
	3	Several unknown targets detected within the survey extents although only partially in some areas due to losses of reflection. Unable to associate any fittings or features in the vicinity to help establish utility types.
	4	GPR images shown within this report are not necessarily indicative of actual routes / anomalies detected.

Site Notes:

1. Survey was undertaken in the areas defined by Alison Pugh.
2. No access to any buildings in survey extents.
3. No access to any substations in survey extents.
4. Various utilities on site that could not be proven or completed have the appropriate comments added to the drawing.
5. Services plotted outside survey extents should not be considered to be exhaustive.
6. Through non-intrusive surveying 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.

Site Photos:

Photo 1



Description: General view of survey extents.

Photo 2



Description: General view of survey extents.

Photo 3



Description: General view of survey extents.

Photo 4



Description: General view of survey extents.

CAD Operators Comments:

1. Survey work corresponds to Utility Surveyor's fieldwork.
2. All record information added where necessary.
3. Services shown outside the survey extents should not be considered to be exhaustive.

QA Managers Comments:

1. All procedures have been followed.
2. Checked that all topographical features have utilities connected, or if not are appropriately notated.
3. Checked all guided information has been transferred correctly where appropriate.
4. Services shown outside the survey extents should not be considered to be exhaustive.

Project Managers Comments:

1. All statutory authority records should be checked prior to commencing any work.
2. A full electromagnetic and GPR survey carried out across the site.
3. GPR works by emitting electromagnetic signals into the ground and analysing signal returns. The use of GPR is strongly dependent upon local soil properties. Depth of penetration is limited by the presence of clays or other highly conductive materials. There must be a significant electrical contrast between the target and the host materials.
4. Numerous unknown routes were detected by GPR, although it was not possible to decipher function. Future intrusive works (eg: trial pits) are recommended to gather further information.
5. It is recommended that statutory authority records are acquired and read in conjunction with this information, as no guarantee can be made for the completeness of this drawing.
6. Radar depth achieved to a maximum of 1.10 metres in the tarmac areas and 1.00 metre in the grassed areas. Care should be taken, as non-metallic services may be present at greater depths.