

Wapping TFL Sites London

Utility Mapping Survey Site Report Project No. 1558

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Utility Surveyor: Piotr Wegiel / Oliver Sole

Topographical Surveyor: Shaun Duggan

Date of Survey: September/October 2018

Drawings Number Issued to the Client: 1558_P.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.

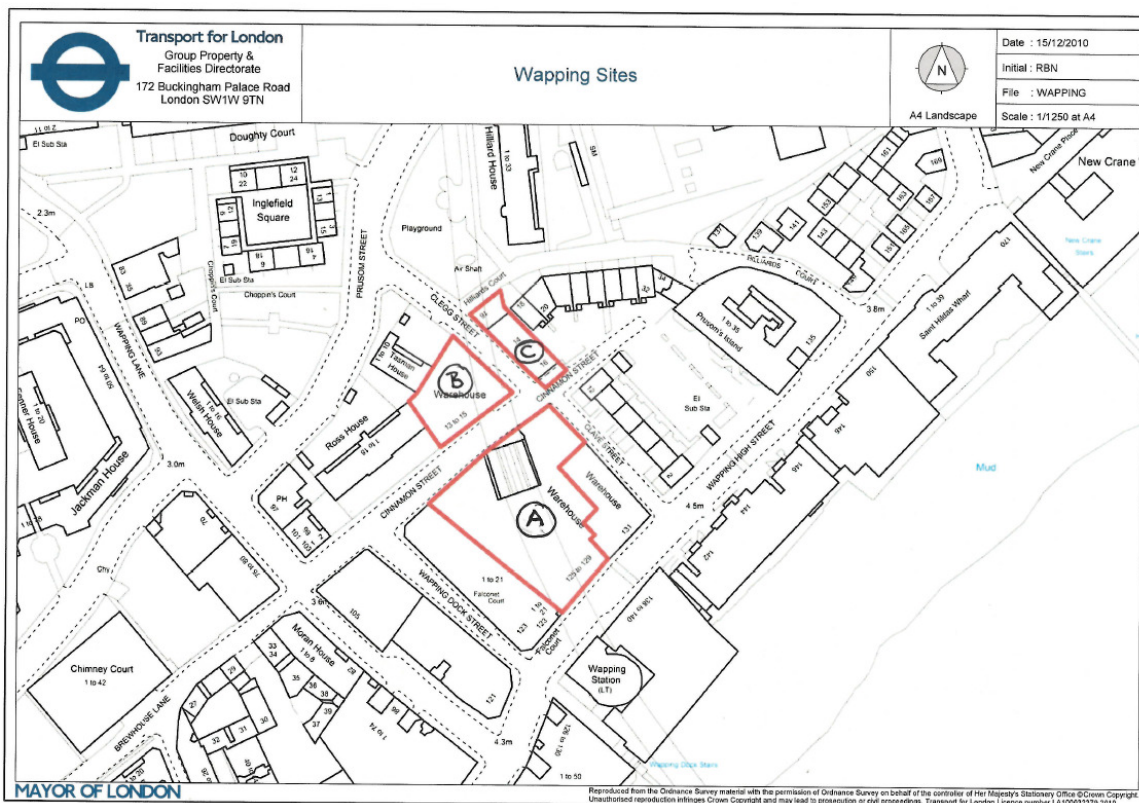
Depth by GPR: +/- 10% of depth (in Normal Ground Conditions)

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

Specification Notes:

1. All survey works carried out in the area defined by Arcadis Consulting Ltd.
2. All drawings must be read in conjunction with record information.
3. All services have been surveyed robustly using a combination of Electromagnetic Detection & Ground Penetrating Radar (GPR). All utility positions were surveyed in using a Robotic Total Station.

Defined Survey Extents:



Existing Service Records Provided to Field Surveyor

Service	Provider	Remarks
BT	Openreach	Map reference (centre): TQ3497780257 Map reference (centre): TQ3498780282 Map reference (centre): TQ3500680217
Gas	Cadent	Map reference: TQ3480
Electric	UK Power Networks	Grid Ref: TQ27748113 – HV & LV Map reference (centre): TQ3580SW Map reference (centre): TQ3480SE
Water	Thames Water	Map reference (centre): TQ3863580 Map reference (centre): TQ3867074
Drainage		Map reference (centre): TQ3863433 Map reference(centre): TQ3867074
		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	8000	PDL008 TXT008	PW
Electrolocation Instrument	RD	8100	PDL015 TXT015	OS
Ground Penetrating Radar	Mala	HDR Pro	ELP06	PW
Robotic Total Station	Trimble	S6	N/A	SD
GPS	Trimble	S3	N/A	SD

Utility Location & Mapping Survey Results

Service	Comment Number	Successes / Problems Differences between survey & "Stats"
Drainage	1	The surface water drainage was identified, and routes traced by various techniques including sonding and sounding.
	2	Unable to survey several surface water drainage gullies due to blockages preventing sonding and/or no visible pipes.
	3	Routes that could not be completed / proven have been transferred from records.
Electric	1	Routes located and traced by direct connection to several lampposts throughout the survey extents.
	2	Electric link box identified in footpath on Cinnamon street (PW1). Unable to survey.
	3	A full passive power sweep was performed utilizing radio frequency equipment.
	4	Routes that could not be completed / proven have been transferred from records.
Telecom	1	BT routes located and traced within the survey extents. Confirms statutory record information.
	2	The statutory record information available at time of survey.
Water	1	Two fire hydrants identified in the footpaths of Claves street and Clegg street. Unable to generate radio frequency response possibly due to non-metallic pipe.
	2	Routes have been transferred from records.
Gas	1	Gas box identified within survey extents on Hillards Court. Unable to trace due to non-metallic pipe.
	2	Routes have been transferred from records.
Other	1	Unknown inspection chamber identified within Area A. See photo 6. Unable to survey due to silted chamber.
GPR	1	Several unknown targets detected within the survey extents. Unable to associate any fittings or features in the vicinity to help establish utility types.
	2	GPR anomalies detected within the survey extents.
	3	The radar reflects changes in the electrical properties of materials in the sub-surface. The data prevents definition of unknown targets
	4	A GPR survey has been carried out across the site where possible. Unable to utilize the radar in one area on North East side of Clegg Street due to narrow footpath.

Site Photos:

Photo 1



Description: General view of survey extents on Cinnamon Street

Photo 2



Description: General view of survey extents on Clave Street.

Photo 3



Description: General view of survey extents on Clegg Street.

Photo 4



Description: General view of Area A.

Photo 5



Description: General view of Area A.

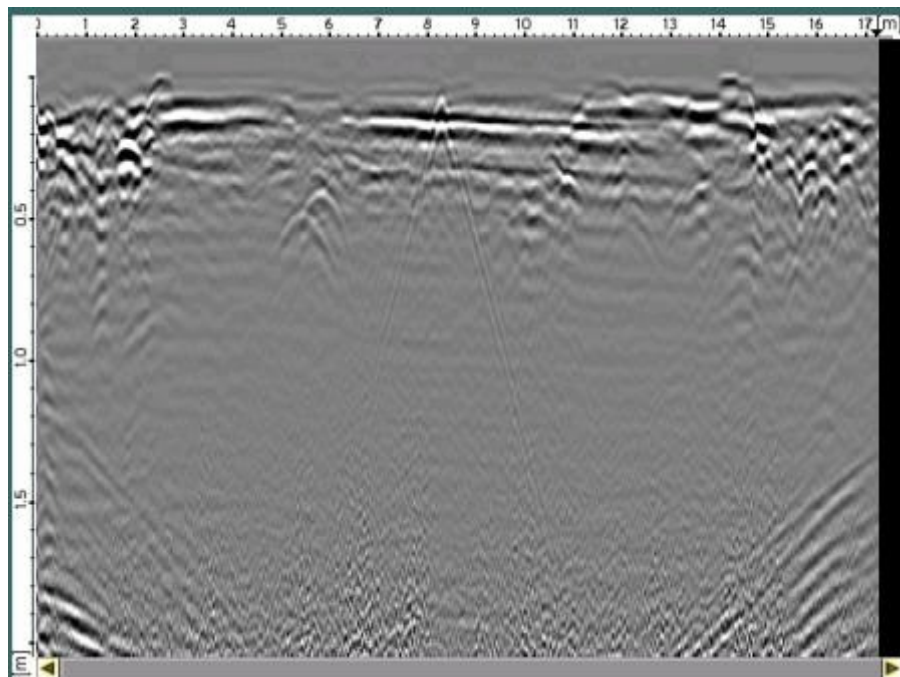
Photo 6



Description: Possible foul water manhole.

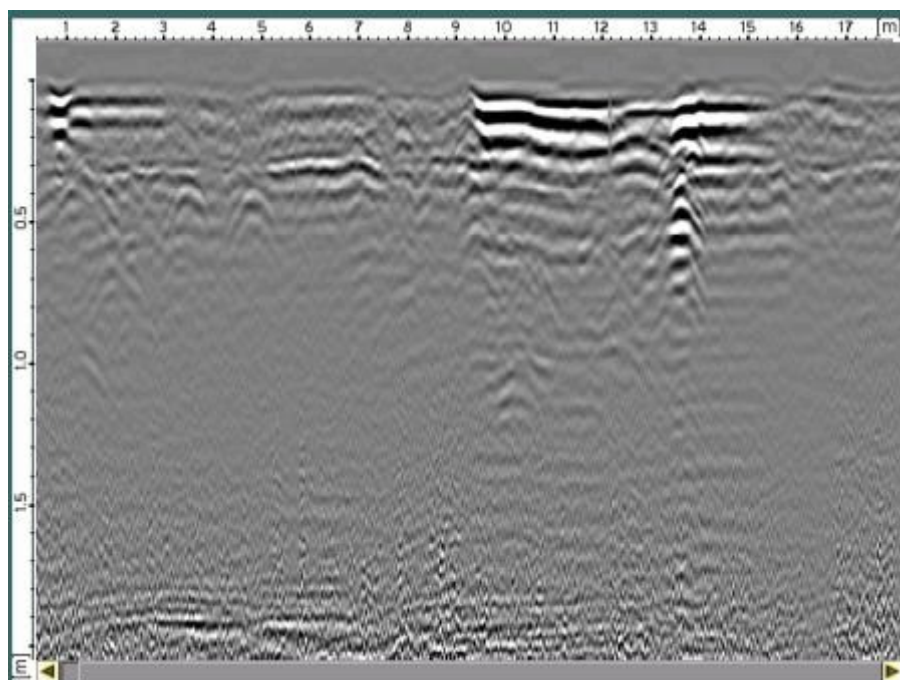
GPR Scans:

GPR 1



Description: Ground Penetrating Scan 1.

GPR 2



Description: Ground Penetrating Scan 2.

Site Notes:

1. **Survey was undertaken in the areas defined by Arcadis Consulting Ltd.**
2. **Various utilities on site could not be proven or completed and the appropriate comments have been added to the drawing.**
3. **Services plotted outside survey extents should not be considered to be exhaustive.**
4. **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.**

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.