

**Arcadis TFL Sites (Cable Street)
Shadwell**

**Utility Mapping Survey
Site Report**

Project No. 1178

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Utility Surveyor: Tom Grimley, James Ephgrave

Topographical Surveyor: Daniel Smith

Date of Survey: July 2017

Drawings Number Issued to the Client: 1178 _P.dwg

Type of Survey: Underground Utility Location & Mapping Survey.

Survey Grid: ORDNANCE SURVEY - Related to the OS Active Network via GPS observations.

Survey Datum: ORDNANCE SURVEY - Related to the OS Active Network via GPS observations.

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 areas defined by Arcadis.
2. All drawings must be read in conjunction with record information.
3. Field distortions from any above ground metallic objects i.e. temporary heras fences, temporary safety barriers or parked vehicles can limit the locatable signal due to interference from above ground fields.
4. Statutory information available at the time of survey, provided by 40Seven.
5. 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.

Existing Service Records Provided to Field Surveyor

Service	Provider	Remarks
BT	Openreach	Map Reference : TQ3459080935
Water	Thames Water	No Map Reference Available
Electric	UKPN	Map Reference : TQ3480NW
CATV	Virgin Media	No Map Reference Available
Comms	Zayo	No Map Reference Available
		NOTE: No other existing statutory undertaker's records were 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	PDL011 TXT011	TG
Ground Radar	Mala	HDR Pro	ELP07	TG
Robotic Total Station	Trimble	S3	Rob 23	DS
GPS Receivers	Trimble	R8	Rover 20	DS

Utility Location & Mapping Survey Results

Service	Comment Number	Successes / Problems Differences between survey & "Stats"
Drainage	1	Surface water interceptor located in the far West end of the survey extents. This interceptor consists of three chambers located inside three Gattic manhole covers. Unable to locate the incoming 300mm pipe due to a blockage preventing location by sonde. Unable to locate the outgoing 300mm pipe as it is metallic and cannot be located using a sonde.
	2	Surface water interceptor located in the far East end of the survey extents near the site entrance. The outgoing route is a 225mm pipe which has been located using a sonde but only partially due to a blockage preventing further location.
	3	Several 150mm surface water drainage routes located throughout the survey extents. These routes have been located by sonde and by sound testing connectivity between manhole covers. The outgoing route exits site and enters a manhole cover in the carriageway of Cable Street.
	4	Surface water drainage gully located in the far East end of the survey extents near the site entrance. This route has been located using a sonde but only partially due to a blockage preventing further location.
	5	No foul sewer drainage routes located within the survey extents.
	6	No statutory information available at the time of survey.
Electric	1	No electric routes located within the survey extents.
	2	A full passive power sweep has been carried out across the survey area using electromagnetic location instrument.
	3	Statutory information available at the time of survey, provided by the client.
Gas	1	No gas routes located within the survey extents.
	2	No statutory information available at the time of survey.
Water	1	No water routes located within the survey extents.
	2	Statutory information available at the time of survey, provided by the client.
Telecom	1	No telecom routes located within the survey extents.
	2	Statutory information available at the time of survey, provided by the client.
CATV	1	No CATV routes located within the survey extents.
	2	Statutory information available at the time of survey, provided by the client.
Comms	1	No comms routes located within the survey extents.
	2	Statutory information available at the time of survey, provided by the client.



Service	Comment Number	Successes / Problems Differences between survey & "Stats"
GPR	1	The radar reflects changes in the electrical properties of materials in the sub-surface. The data prevents definition of unknown targets.
	2	A full GPR survey has been carried out across the site where possible.
	3	GPR scan positions (as shown on the survey drawing) relate to the GPR images shown within this report, and are not necessarily indicative of actual routes / anomalies detected.

Photos:

Photo 1



Description: General view of site.

Photo 2



Description: View of Interceptor manhole covers.

Photo 3



Description: General view of site.

Photo 4



Description: General view of site.

Photo 5



Description: General view of site.

Photo 6



Description: General view of site.

Photo 7



Description: General view of site.

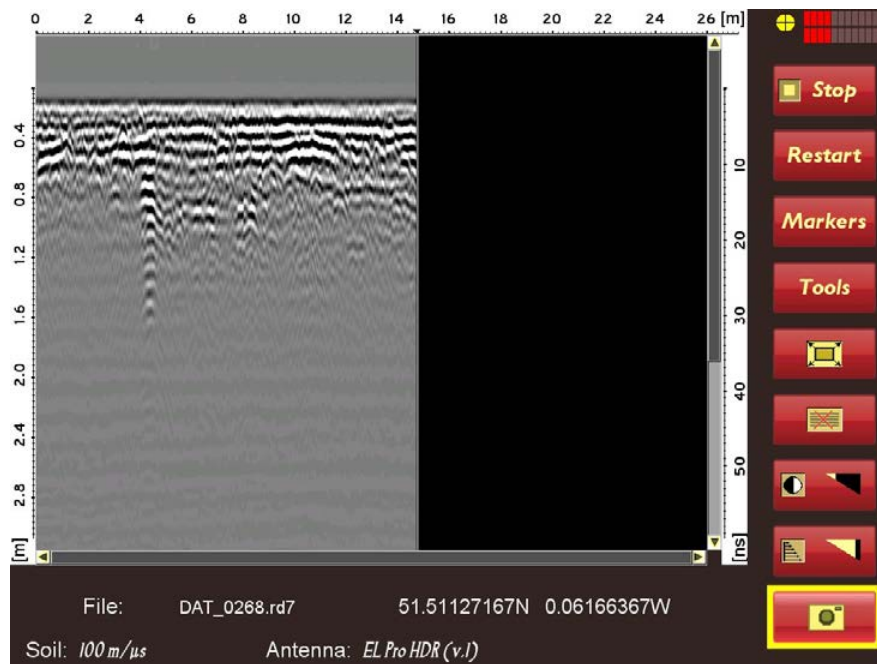
Photo 8



Description: View of Interceptor manhole covers.

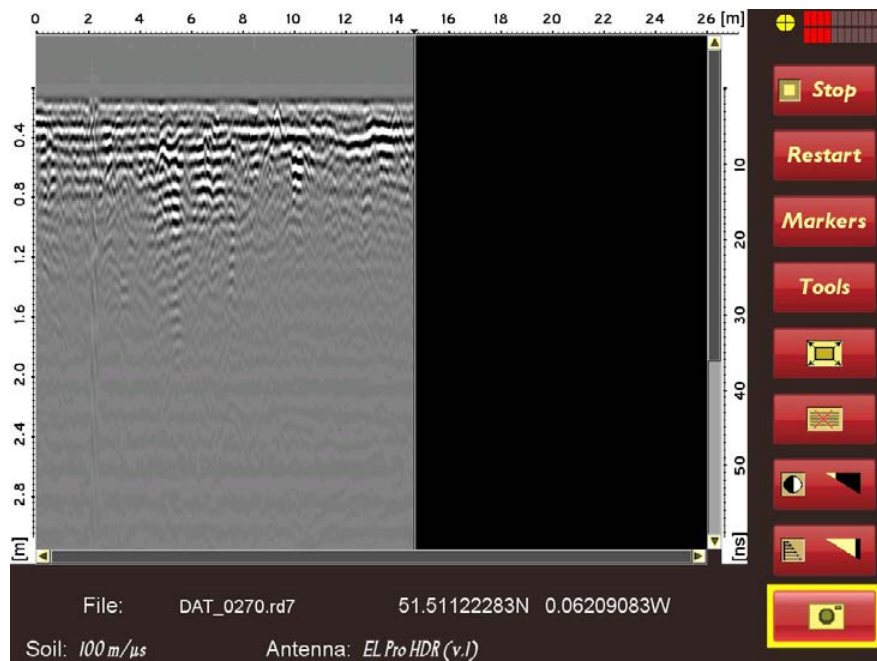
GPR Scans:

GPR 1



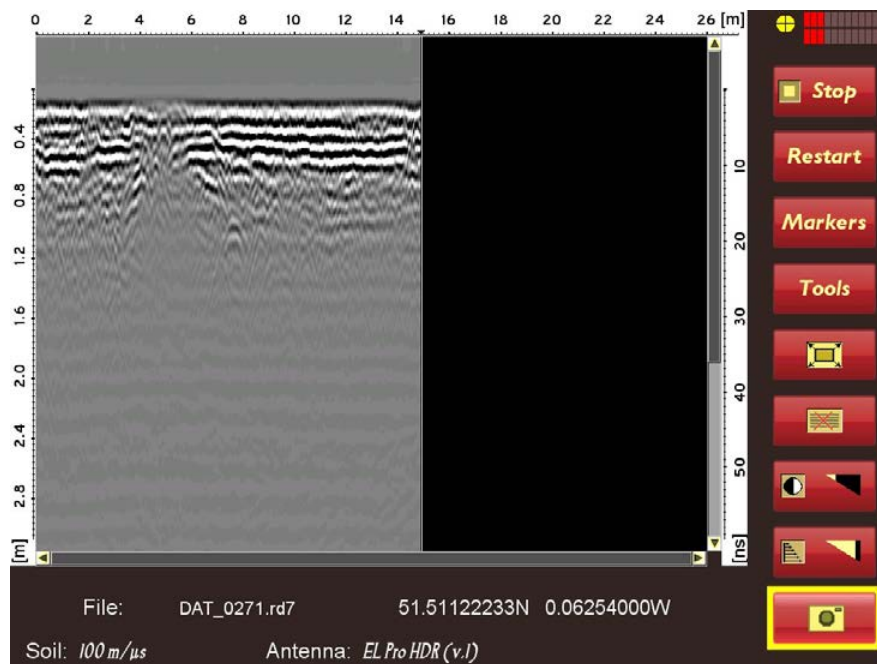
Description: Ground Penetrating Radar Scan 1.

GPR 2



Description: Ground Penetrating Radar Scan 2.

GPR 3



Description: Ground Penetrating Radar Scan 3.

Site Notes:

1. Survey was undertaken in the areas defined by Arcadis 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 providers records should be checked prior to any works being carried out.
5. Existing service provider's records were available during the site survey.

CAD Operators Comments:

1. Survey work corresponds to Utility Surveyor's fieldwork.
2. 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. Services shown outside the survey extents should not be considered to be exhaustive.

Project Managers Comments:

1. A full electromagnetic and GPR survey carried out across the site.
2. 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.
3. If the survey interacts with any above ground metallic features this may hinder the survey therefore caution should be taken within those areas while excavating.
4. 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.