

**Richmond London Borough Council
Elleray Community Association**

**PAS128 M3P Utility Mapping Survey
Site Report
Project No. 2111**

Prepared by:
James Ephgrave
40SEVEN Limited

Unit E
Great Hollenden Business Centre
Underriver
Sevenoaks
Kent
TN15 0SQ
Tel: 08450 179 300

Commissioned by:
Tomori Asafia

Richmond and Wandsworth
Project Management Office
Housing and Regeneration
Tel – 020 8734 3169

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<p>Utility Surveyors: James Ephgrave, Daniel Hutton</p> <p>Topographical Surveyor: Shaun Duggan</p>
<p>Date of Survey: November 2020</p>
<p>Drawings Number Issued to the Client: 2111 _P.dwg</p>
<p>Type of Survey: Underground Utility Location & Mapping Survey.</p> <p>Survey Grid: EXISTING - Related to the existing survey grid provided by the client.</p> <p>Survey Datum: EXISTING - Related to the existing datum provided by the client.</p>
<p>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.</p>
<p>Specification Notes:</p> <ol style="list-style-type: none"> 1. All survey works carried out in the areas defined by Richmond London Borough Council. 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 the client. 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.

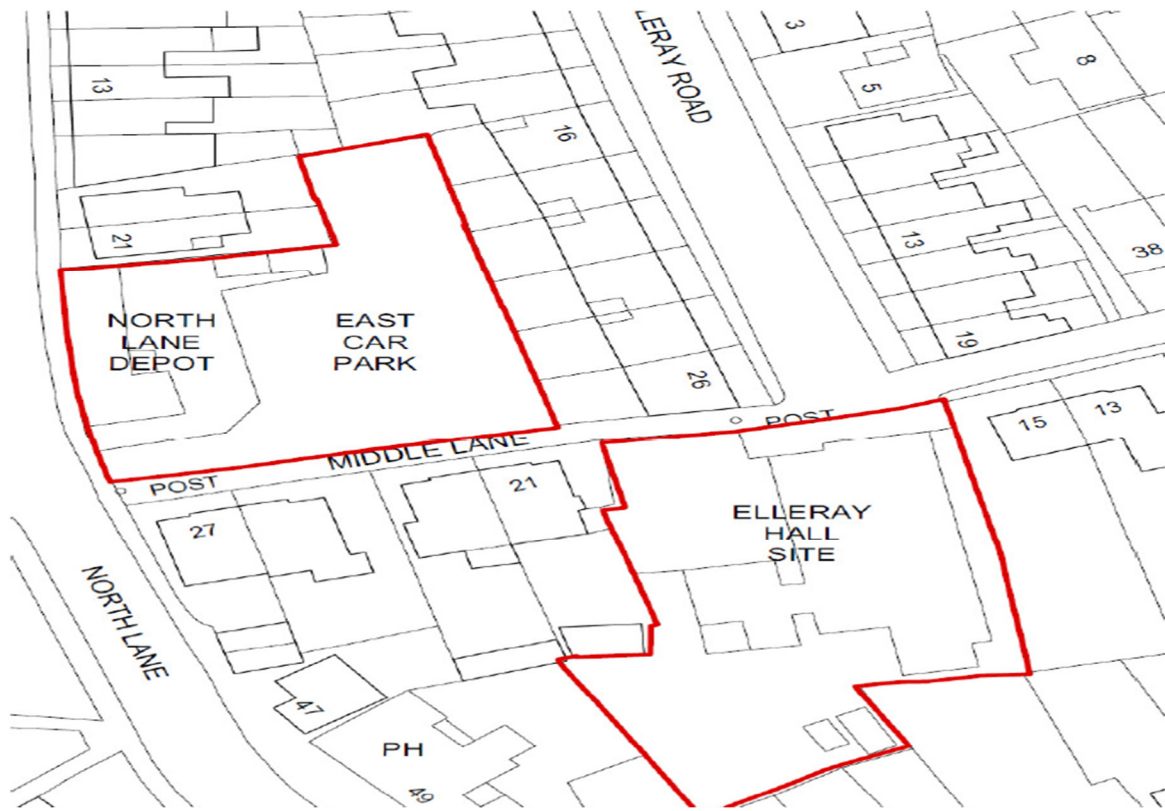
Existing Service Records Provided to Field Surveyor

Service	Provider	Remarks
Electric	UKPN	Ordinance Survey No. 100019626 Ordinance Survey No. 100019826 Ordinance Survey No. 100019450
Gas	Cadent	Map Reference: TQ1571
Telecom	BT Openreach	Map Reference: TQ1569070868
CATV	Virgin Media	Map Centre: 515696,170854
Water	Thames Water	Map Centre: 515693,170870
		NOTE: No other existing statutory undertaker's records were available at the time of the survey or during post processing.

Field Equipment

Type	Make	Model	Company I.D No.	Operator(s) Initials
Electrolocation Instrument	RD	8100	PDL011 TXT011	JE
GPR	Mala	HDR PRO	ELP007	DH
Robotic Total Station	Trimble	S3	Rob 42	SD
GPS	Trimble	R10	Base20	SD

Defined Survey Extents:



Utility Location & Mapping Survey Results

Service	Comment Number	Successes / Problems Differences between survey & "Stats"
Drainage	1	Surface water drainage located in the survey area. Routes have been traced by sonding and sounding.
	2	Foul sewer drainage located in the survey area. Routes have been traced by sonding and sounding.
	3	Combined sewer drainage located in the survey area. Routes have been traced by sonding and sounding.
	4	Unable to survey a several surface water drainage gullies due to blockages preventing sonding and/or no visible pipes.
	5	Unable to raise cover of Manhole JE13 due to the cover being Seized. Please see photo 12.
	6	No Statutory information available at the time of survey.
Electric	1	Routes located and traced by direct connection to multiple lampposts and electric boxes positioned throughout the survey extents.
	2	A full passive power sweep has been carried out across the survey area using electromagnetic location instrument.
	3	Routes that could not be completed / proven have been transferred from records where necessary.
	4	Statutory information available at the time of survey, provided by 40Seven.
Gas	1	Suspected Gas cabinet located within the survey extents of the North Lane Depot. Route has been located and traced by direct connection to the pipes inside.
	2	A full passive power sweep has been carried out across the survey area using electromagnetic location instrument.
	3	Routes that could not be completed / proven have been transferred from records where necessary.
	4	Statutory information available at the time of survey, provided by 40Seven.
Water	1	Water meter and stop valve located at the front of Elleray Hall. Unable to generate radio frequency response due to the non-metallic pipe inside.
	2	A full passive power sweep has been carried out across the survey area using electromagnetic location instrument.
	3	Routes that could not be completed / proven have been transferred from records where necessary.
	4	Statutory information available at the time of survey, provided by 40Seven.



Service	Comment Number	Successes / Problems Differences between survey & "Stats"
Telecom	1	BT inspection cover located within the survey extents. This route has been located and traced by direct connection to the cables within chamber.
	2	A full passive power sweep has been carried out across the survey area using electromagnetic location instrument.
	3	Routes that could not be completed / proven have been transferred from records where necessary.
	4	Statutory record information available at time of survey provided by 40Seven.
CATV	1	CATV inspection cover located within the survey extents. Routes have been located and traced by direct connection to the cables within chamber.
	2	A full passive power sweep has been carried out across the survey area using electromagnetic location instrument.
	3	Routes that could not be completed / proven have been transferred from records where necessary.
	4	Statutory record information available at time of survey provided by 40Seven.
Others	1	Unknown routes were located within the survey extents. These were located using active induction techniques. Unable to associate any fittings or features in the vicinity to help establish utility types.
	2	Some visible scarring located in the survey extents. These scars have been surveyed as a topographical feature.
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 PAS128 M3P survey has been carried out across the site where possible.
	3	GPR images shown within this report are not necessarily indicative of actual routes / anomalies detected.
	4	Some of the area within the North Lane Depot survey extents was reinforced concrete, this may have affected the GPR data.
	5	The majority of the survey area within the North Lane Depot was overgrown with foliage. There were also other obstacles such as refuse which restricted our GPR survey. The East car park was also a live working car park. The cars within this area also restricted our GPR survey.

Site Photos:

Photo 1



Description: Ellery Hall Site.

Photo 2



Description: Ellery Hall Site.

Photo 3



Description: Elleray Hall Site.

Photo 4



Description: Elleray Hall Site.

Photo 5



Description: Elleray Hall Site.

Photo 6



Description: Elleray Hall Site.

Photo 7



Description: East Car Park Site.

Photo 8



Description: East Car Park Site.



Photo 9



Description: North Lane Depot Site.

Photo 10



Description: North Lane Depot Site.

Photo 11

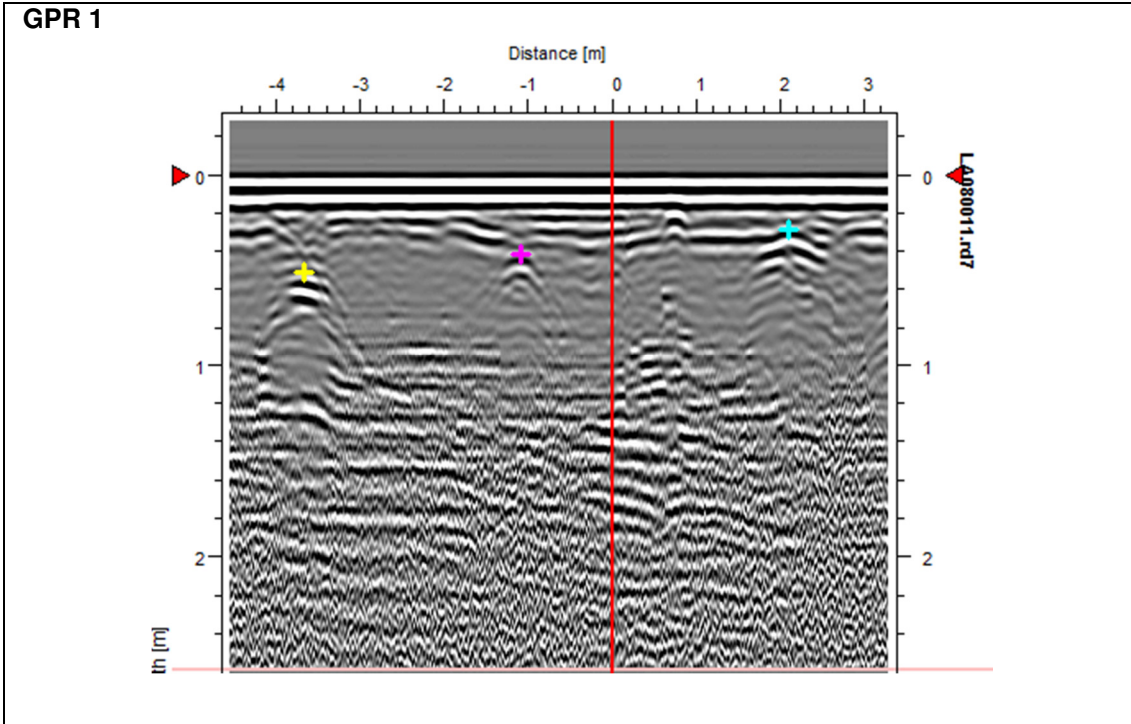


Description: North Lane Depot Site.

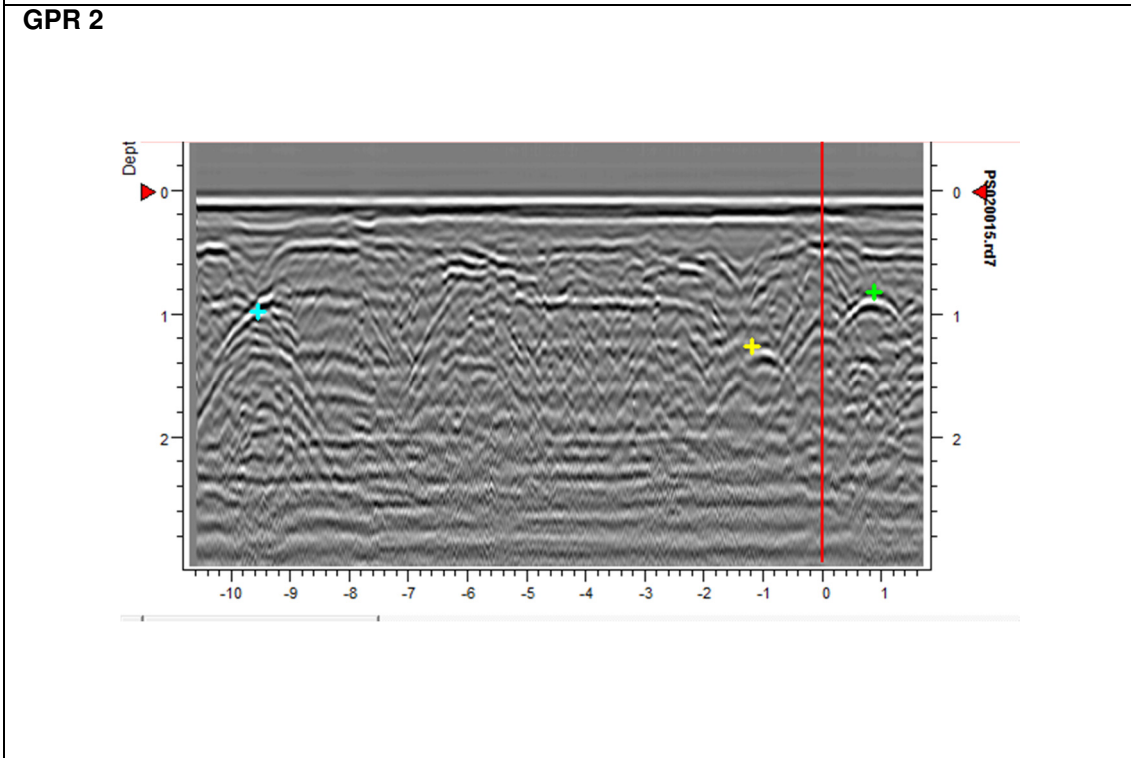
Photo 12



Description: Manhole JE13 UTR Seized.



Description: Examples of GPR Images.



Description: Examples of GPR Images.

Site Notes:

1. Survey was undertaken in the areas defined by Richmond London Borough Council.
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 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 available during the site survey provided by the client.

CAD Operators Comments:

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