

- Cautionary Notes**
- Utilities have been detected using non-invasive technologies only, the performance of which can be adversely affected by local ground, weather and site conditions outside of Safedigging's control therefore some utilities may be undetectable. While Safedigging uses every effort to detect all utilities it does not warrant that 100% detection will be achieved. This drawing may not provide an absolute representation of the sub-surface. We recommend that care is taken on site and that trial excavations are carried out in order to confirm identification, position and depth of services where these are critical.
  - Depths derived via electromagnetic detection are given to the center of the utility (metallic pipe, cable) those derived via Ground Penetration Radar (GPR) are given to the top of the utility (including Plastic, fibre optic). Technologies used in locating Non-metallic services and the interpretation of these results are not infallible and success will depend on a number of factors including soil type, ground water levels and surface conditions.
  - Drainage information has been obtained without entering the chamber. Sewer and manhole details have been obtained by observation and measurements from the surface and as such cannot be guaranteed, sewer and drain runs may have been detected using rodding/bores methods and depth indicated could be between the top and the bottom of the pipe.
  - The locations of 'pot ended' cables are often difficult to detect and although we will make every effort to locate or transpose this information from records, we cannot guarantee that 'pot ended' cables do not exist on this site.
  - Safedigging cannot confirm when services are redundant and unless there is surface evidence of a redundant service we cannot guarantee to locate all redundant services.
  - Water and Gas services to individual properties are often of a size that cannot be detected using Electromagnetic or Radar investigations, when ever possible the route will be added from surface evidence (pipe risers, valves etc.) but this should be viewed as a guide only.
  - Where logic or local knowledge indicates a utility exists but which cannot be positively confirmed with the technology, an assumed route is recorded.
  - Utilities may continue outside of the survey area. Any part marks outside of the area are for investigation purposes only and may not represent the full extent of the sub-surface utilities.
  - Biodegradable paints or chalk have been used during the survey to mark utilities and their life span cannot be guaranteed so this drawing should be used as the primary reference.
  - 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 anyway for any loss or damage. Irrespective of the information provided by a utility survey excavation work should be undertaken with extreme caution and in accordance with HSE Guidelines - 'HSG 47 Avoiding Danger from Underground Services'.
  - This Drawing should not be copied or reproduced in anyway as some colours may not display correctly copies can be obtained from Safedigging Ltd.
  - Please observe areas marked unable to survey as they will require a further visit once the area is accessible and deemed necessary.
  - An anomaly feature represents an area within the radar data that illustrates a difference from the data collected of the surrounding area using GPR. Such features could be an effect from voids, heavily saturated ground or other sub surface construction features.
  - This drawing should be read in conjunction with the survey report.
  - The base Topographical survey provided by Client.

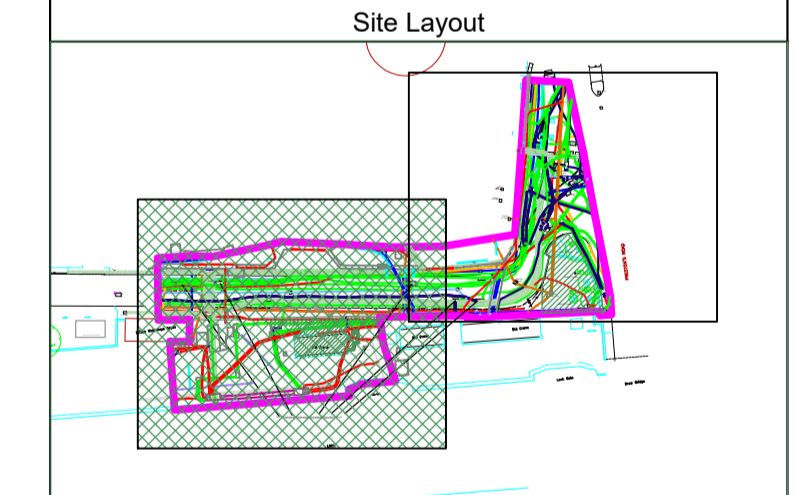
**Key**

Survey Extents	Surface Water Sewer
Overhead Electricity	Drainage Chamber
Overhead Telecons	Foul Water Sewer
Empty Duct	Empty Duct
Heating Pipe	Heating Pipe
Service Tunnel	Service Tunnel
Unknown Utility	Unknown Utility
Unable to Trace Further	Unable to Trace Further
Taken From Records	Taken From Records
Radar Locate	Radar Locate
Multiple Cable Route	Multiple Cable Route
Unable to Survey	Unable to Survey
Unable to Radar	Unable to Radar
UTTF	UTTF
GPR	GPR

**Survey Type B - Detection quality classification**

Survey Type	Quality Level	Post Processing	Location Accuracy
Establish with Client prior to survey	Fractionator to determine post survey	Yes/No	Horizontal/Vertical
B Detection	Assumed Route or taken from Stat plans	No	Undefined/Undefined
B Detection	Detected by one Geophysical Technique	No	+/- 500mm/Undefined
B Detection	Detected by one Geophysical Technique	Yes	+/- 500mm/No reliable depth measurement possible
B Detection	Detected by one Geophysical Technique	No	+/- 250mm or +/- 40% of detected depth whichever is greater
B Detection	Detected by one Geophysical Technique	Yes	+/- 40% of detected depth whichever is greater
B Detection	Detected by multiple Geophysical Techniques	No	+/- 150mm or +/- 15% of detected depth whichever is greater
B Detection	Detected by multiple Geophysical Techniques	Yes	+/- 15% of detected depth whichever is greater
A Verification	QL-A	-	+/- 50mm/+/- 25mm
C Site Reconnaissance	QL-C	-	Undefined/Undefined
D Desktop Utilities Record Search	QL-D	-	Undefined/Undefined

- Horizontal location is to the centreline of the utility.
- Vertical location is to the top of the utility.
- For detection, it is a requirement that a minimum of GPR and EML techniques are used.
- Electronic depth readings using EML equipment are not normally sufficient to achieve a QL - B2 or higher.
- Some utilities can only be detected by one of the existing detection techniques. As a consequence, such utilities cannot be classified as a QL - B1.



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THE SURVEY ASSOCIATION

**Client**  
**Safedigging**  
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Job Details		
EXAMPLE PAS128 TYPE B DRAWING	Survey Level	Survey Date
Utility Detection To PAS128 Level B - M4P		13/12/19
Revision History		
Revision	Date	Changes
01	26/11/19	MASTER EXAMPLE DRAWING
Scale: 1:100@ A1		
Sheet No: 1 of 2		
Surveyor: SAM		Drawn By: GTP
Checked: LJS		Approved: LJS
Job Number	Drawing Number	Revision
0000	0000 - EXAMPLE	01

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