



BRITON Detection - Services Guideline & Terms of Trade

The following document should serve as a guide to the services and also an agreement outlining the details of the service we are providing for you.

Briton Detection & Inspection provides a range of underground detection and locating services using a range of specialised equipment and techniques.

Capability:

We combine a range of traditional and specialised methods to locate underground services as well as providing ground investigations and infrastructure fault locating.

Some underground services we locate but are not limited to include:

Power cables, Communication cables, CCTV cables, Ducts Water pipes, Drainage/Sewer pipes, Gas lines, Septic tanks, Manholes, Soak Holes, Cable pits

Underground Investigations we undertake but are not limited to include:

Site Services Mark-outs & Maps, Pipe Tracing, Cavity Locating, Sink Holes, Pavement Structure Investigation, Underground Leak Detection

Equipment:

Briton Infrared has a 'no compromise to quality' approach with our range of specialised equipment. All of our equipment systems under go regular inspection and maintenance to make sure we can provide the best results possible.

Some of our equipment includes:

Ground Penetrating Radar (GPR), Electromagnetic Locators (EM), High Power Electromagnetic Induction (EMI). Tracer Wires, Tracing Rods, Fresh Water CCTV Push Cameras w/Locator, Drainage CCTV Push Cameras w/Locator, High Resolution Aerial Infrared, Metallic and Non-Metallic Probes, Acoustic Drop Testing.

With every job we approach, the process to locate and trace underground services are never the same. Methods vary with each job as many variables are to be considered if reliable results are to be obtained. It is critical to understand that equipment is not generally designed to detect unknown services but rather to assist in confirming the location of known services and general underground infrastructure. Different services require different equipment and methods to locate; sometimes an array of methods may be used on a singular service. There are a multitude of factors that can affect the capability to locate and accuracy of the location.

These can include:

- Above ground conditions – over ground cover such as gardens, kerbs, buildings, hazards, electrical interference, anything large and metallic (vehicles).
- Below Ground Conditions – Saturation of fill, material & metal content (mill slag, iron sand)
- Target size
- Target material
- Depth
- Underground service congestion
- Underground electrical interference/current leakage

Basic Scope of Works:

Generally our preferred approach to underground service investigations for pre works planning or any form of groundworks is to create a target list prior to commencing our investigation (unless you have just requested a specific services that you want us to locate), this is done in conjunction with any plans that we can obtain or have at time of planning. These plans may include - service provider plans, council plans, as-built plans if available or plans provided by www.beforeudig.co.nz.

When we undertake detection works on your site we will do so to the best of our abilities, however we cannot guarantee to ever locate all services due to the limitations of equipment and environmental conditions at that specific moment in time.

We use the following methodology as standard practice for our detection works:

Service To Be Located	Standard Method
<p>Electrical – HV & LV Power, Street Lights, Gates, Signs,</p>	<p>Electromagnetic Induction (EMI)- EM Survey, General EM sweep for detectable power services.</p> <p>Electromagnetic Induction (EMI) - Duct Tracing Rods.</p> <p>Electromagnetic Induction (EMI) – Overground Induction.</p> <p>Electromagnetic Induction (EMI) – Induction Clamp</p> <p>Electromagnetic induction (EMI) – Direct Connection (Disconnected/dead connections only)</p> <p>Ground penetrating Radar (GPR) – Radar Scanning from above ground, used for HV Cables or general as required.</p>
<p>Water Pipes – Potable & Non-Potable. Including Public and Private Water Supply, Firemains, Irrigation,</p>	<p>Electromagnetic Induction (EMI) – Pipe tracing rods to 200mm (involves removal or meter)</p> <p>Electromagnetic Induction (EMI)- Live Fire flexi trace to 500m (involves live insertion and deployment of flexible tracing wire)</p> <p>Electromagnetic Induction (EMI) – Tracing wire direct connection</p> <p>Ground Penetrating Rader (GPR) – Above ground scanning, mainly for council mains, pipes above 100mm.</p>
<p>Telecommunications</p>	<p>Electromagnetic Induction (EMI) - Duct Tracing Rods.</p> <p>Electromagnetic Induction (EMI) – Overground Induction.</p> <p>Electromagnetic Induction (EMI) – Induction Clamp</p> <p>Electromagnetic induction (EMI) – Direct Connection (Disconnected/dead connections only)</p>
<p>Gas Lines</p>	<p>Electromagnetic Induction (EMI) – Tracing wire direct connection</p> <p>Ground Penetrating Rader (GPR) - Larger Pipes</p>
<p>Stormwater & Sewer Pipes – Public & Private drainage systems, leachate Pipes, Subsoil Drainage,</p>	<p>Electromagnetic Induction (EMI) – Dedicated Sanitary Pipe Tracing rods</p> <p>EM/Sonde Location – Using EM Locators and Super Sonde Locators on rods for location of deeper pipes.</p> <p>Ground Penetrating Rader (GPR) – Above ground scanning ,mainly for pipework's above 100mm. dependant on ground conditions</p> <p>Visual – Lifting and opening of manhole lids and chambers to view direction of flow and estimated direction, as well as depth to top of pipe.</p>

Deliverables of Information/Located Services:

Once site investigations are complete any detectable services/utilities are spray-marked (water base) in colour code and are given the following grade to specific how the location of that service was determined.

Quality Level B of the Australian AS5488.1:2019 Classification of Subsurface Utility Information (SUI) AS 5488.1:2019 industry standard comprises of 4 quality levels A, B, C and D



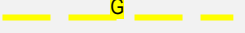




Level A; Visual confirmation is required of utilities and recorded within +/-50mm tolerance - This is the only method to guarantee positions of any underground targets.

Level B; Apply the above mentioned equipment to position targets with +/- 300mm horizontal position, and +/-500mm vertical position.

Level C; Acquire all relevant utility plans and records, and carry out an onsite surface visual inspection to confirm and record positions of existing pits, pillars, valves, hydrants and poles etc.

Level D; Acquire all relevant utility plans and records.

Level B; May not always be achievable because of lack of access or connection points, in which this quality level may require Level C

SERVICE	COLOUR	NETWORK - ANY	MARKING COLOUR/SYMBOL
ELECTRICAL, lighting, traffic signals, lines, cables and ducting	ORANGE	Electricity, Street lights and Traffic Signals	
TELECOMMUNICATIONS cables, fibre & ducting	PURPLE or PINK	Chorus, Vodafone, Vocus, Spark, other	
GAS	YELLOW	GAS	
PORTABLE WATER	BLUE	Water Authority	
WASTEWATER	RED	Wastewater Authority	
STORMWATER	GREEN	Stormwater Authority	
UNKNOWN	White	Design/Investigation/notes/UNKNOWN	

Reporting/Mapping:

Our standard deliverable for reporting is Aerial Overlay Mapping. This consists of taking drone imagery of the site, where as the located services are then scale based cad mapped. The deliverables being shape file, DWG, CAD or as a PDF map.

Depth:

The use of Sonde, EMI or GPR equipment to calculate depths can provide highly useful information when planning and undertaking underground works. However substantial variance depending on ground conditions, target size, composition interference and signal strengths which can occur. Sometimes depth estimation cannot be obtained for any number of reasons and Briton will provide depth readings where possible.

This service is provided to map the position of known services where possible to reduce the risk of a strike during your works; it is not to eliminate it. Briton Detection & Inspection take no responsibility for you or any person/s working on your site striking any services. No equipment can simply locate all services with absolute accuracy and we advise you excavate carefully at all times regardless of what is marked out.

Should you agree to us commencing works on you site, you are accepting the provided information/responsibilities and following Terms & Conditions. (Please refer to Pg 4)

BRITON Detection - Services Terms and Conditions

1. This agreement governs the provision of cable, pipe, structure, leak, cavity and any other underground locating services of any nature ("the services") by Briton Infrared Limited to the person or organisation named on the front of this form ("you") or should you except the services upon reviewing this document.
2. You warrant that the services are acquired by you for business purposes only.
3. You acknowledge that the services provided by Briton Infrared Limited are intended to assist in locating targets that are known to us only and/or on plans provided by Service Company's. The equipment used in underground locating and detection is not designed for locating unknown underground services.
4. Any plans provided by the service companies give no more than a general guide as to the location of cables or other underground services and may have not been updated.
5. The accuracy of any equipment and procedures used by Briton Infrared can vary. You may not assume that any indicated underground services lies in the position indicated and any depth is to be considered a guideline only therefore you must confirm the position and depth of all cables and other underground services by carefully digging with hand tools or using hydro excavation.
6. Briton Infrared Limited is in no circumstances liable for any damage to or disturbance of cables or services, or for any injury, loss or other consequences of such damage or disturbance, including (without limitation) for loss of use, data, production, profit, revenue, business, contract or anticipated saving, damage to goodwill, reputation or share price, loss of customer or customer losses, loss by reason of full or partial shutdown or non-operation, or for any delay, financing costs or increase in operating costs or any economic loss or for any special, indirect or consequential loss or damage which may be suffered by you, or by any other person or organisation including (without limitation) any operator, owner, customer, service company, or subscriber, You will at all times indemnify Briton Infrared Limited against any liability for any such injury, loss or damage, and for all consequences thereof.
7. Without prejudice to the above provision, if Briton Infrared Limited should in any circumstances have any liability to you in tort, contract or otherwise in connection with the services, its liability shall be confined to damages in a maximum sum not exceeding the moneys actually paid to Briton Infrared Limited by you for the services.
8. The above protections and indemnities also apply for the benefit of all employees, officers, agents and contractors of Underground Locators Limited.
9. You acknowledge that this document contains the entire agreement between you and Briton Infrared Limited, and that no representation, warranty or other stipulation inconsistent with this document is expressed or implied on the part of Briton Infrared Limited.
10. Payments are to be made by the invoice due date or at a date agreed by Briton Infrared Limited. Late payments will be subjected to a 25% penalty per 30 day period after due date. Debt collection on late accounts and any resulting fees will be your liability.

CLIENT NAME: _____ DATE: _____

SIGNATURE: _____

UNDERGROUND DETECTION SERVICES - CHECK LIST

Checklist to be completed before commencing work to identify targets advised by the client or known by us from “Before U Dig” or as researched by Briton. Located & un-located services are to be marked of checklist with relevant notes as required. A copy is to be provided to the customer either onsite, or if client is not present a copy will be forwarded to them to a later time. NOTE TO CLIENT: Until you have received this checklist the services detection works are not to be considered complete, should you be concerned with services not located/checked of it is your responsibility to request further works by us if possible, or locate the services using other methods.

CUSTOMER:		DATE:	
SITE:		TECH:	

UNDERGROUND SERVICE	LOCATED?	NOTES:
GAS - NETWORK (in road reserve)	Y / N	
GAS - PRIVATE (on private property)	Y / N	
ELECTRICAL NETWORK HV or LV (in road reserve)	Y / N	
ELECTRICAL PRIVATE (on private property)	Y / N	
WATER COUNCIL (in road reserve)	Y / N	
WATER PRIVATE (on private property)	Y / N	
COM - STD NETWORK (in road reserve)	Y / N	
COM - PRIVATE (on private property)	Y / N	
COM - FIBRE NETWORK (in road reserve)	Y / N	
COM - FIBRE (on private property)	Y / N	
SEWER SYSTEM PUBLIC (in road reserve or private)	Y / N	
SEWER SYSTEM PRIVATE (on private property)	Y / N	
STORMWATER SYSTEM PUBLIC (in road reserve or private)	Y / N	
STORMWATER SYSTEM PRIVATE (on private land)	Y / N	
UNKNOWN/OTHER	Y / N	

Client Representative Name: _____ **Signature:** _____