Toolbox Talk

Buried Services

Buried services are all underground pipes, cables and equipment associated with electricity, gas, water (including piped sewage) and telecommunications. They also include other pipelines which transport a range of petrochemical and other fluids.

The likelihood of finding a buried service on a canal site is quite low, but the consequences can be fatal. The consequences of damage to an electric cable are obvious, but electricity can arc over small distances and crushing a cable can break its insulation. Damage to a gas main can cause fire, explosion and risk of asphyxiation if working in a trench. Small damage to a water pipe can cause harm from high pressure jets and projectiles and flooding can make the ground unstable.

If no injury is caused there can be heavy fines or repair bills from the service company.

3 Step Inspection Process:

1. **Desktop Study**—gain as much information as possible from the local society, land owner, local authority and utility company. However any drawings only show an indicative position of any buried service.
2. **Visual Inspection on Site**—spend as much time as you need on site looking for clues of buried services. Go further than the dig area, look for manhole covers, gully gratings, reinstated trenches/scars in the road, marker posts, telecom boxes and valve covers.
3. **Cable Detection**—use a Cable Avoidance Tool (CAT) scanner and signal generator before you dig.

Using a CAT Scanner:

There are 3 modes of use:

- **P 'power';** Finds a cable with current running through it.
- **R 'radio';** it sends out a radio signal which bounces back off anything metal, however it can identify other metal objects such as rebar, manhole covers and steel toe caps.
- **S 'signal';** Used with a signal generator clamped to or near a part of a services that you can see above ground, such as a street lighting column. The generator sends a signal along the service that is picked up by the CAT scanner.

NOTE; none of these modes will find a plastic or clay pipe or fibre optics.

Starting Work:

- Never use an excavator within 500mm of where you suspect a service.
- Use an insulated spade to carefully expose the buried service to confirm its position.
- For a deep excavation excavate up to 1m then CAT scan again
- If you believe there is a service from your desk study, but you have not located it, hand dig a trial trench to the depth of your planned excavation to confirm the position of any services.
- Proceed carefully, excavating in shallow 200mm layers with the driver and Banksman looking for evidence of disturbed ground, sand surround or marker tape. If any thing is uncovered **STOP** and contact the utility company. Always assume a service is **LIVE** until told otherwise by the service owner.