Excavations Campaign

July 2022

Excavations Campaign

Who is the campaign for and why?

Anyone who breaks ground, works within an excavation or does designs for temporary works creates a risk that in some cases with result in physical injury or lasting emotional distresses from the experience, and we want to do everything we can to reduce the potential of this.

We have developed this campaign to raise awareness of the growing concerns, signpost what information is available to you and help to create a discussion with your teams.

We ask that you take the time to discuss the slides with your teams, and have your commitment to using the tools we have developed for you to implement and assist in improving our standards.

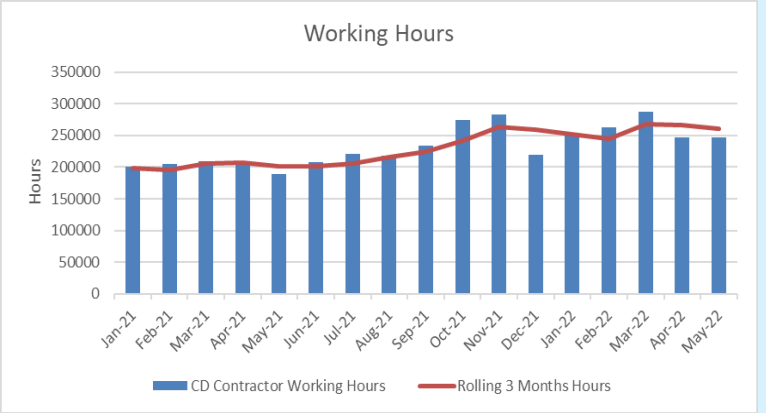
Zero incidents
Zero harm
Zero compromise

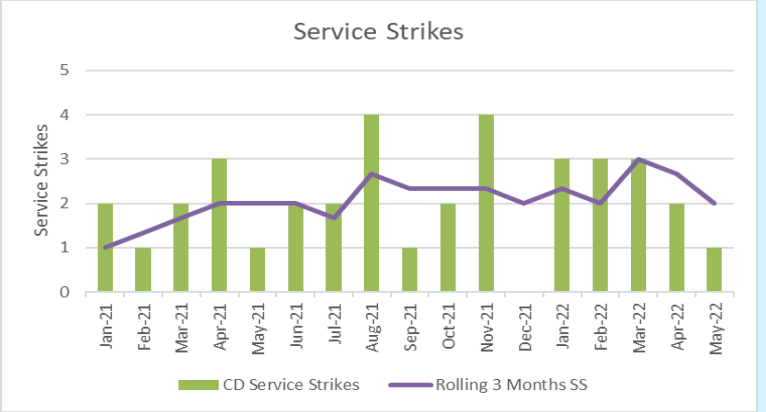
Keeping you **healthy** and **safe**, every day **at work**.

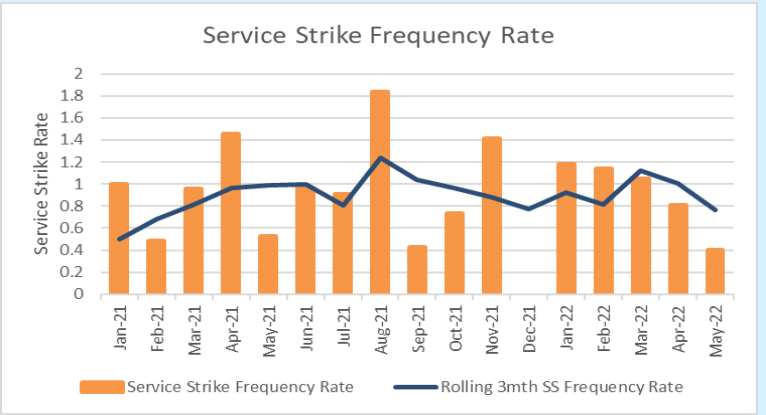
Excavations Campaign

So what is the real issue?

- Over the past 6 months, we are seeing a steady decline in services struct due to our commitment and focus on the Service Avoidance Campaign. With work loads increasing and further high risk excavations are being undertaken, the severity of an incident still remains but we now must focus on reducing the likelihood.
- Through investigation of previous incidents it has been found that most (if not all), could have been prevented if the basics had been implemented prior to any breaking ground commencing
  - The basic requirements can be found in the HSE guidance - HSG47 and the Thames Water Essential Standards 1 & 27
- To reduce the likelihood of another injury which could be significantly worse, we must improve the standards of the teams carrying out any activity that involves excavating and breaking ground
- Excavations generate big risks to our teams and members of the public







Tools

Material / Resources available for this campaign

Service Avoidance			
Contractor Name:		Auditor:	
On site contact:		Date:	
Project name / code:			
Location:			
Guidance Notes: Remember this audit is purely on Service Avoidance - There will be several other aspects of work involved in the activity. Where any excavation or breaking ground is occurring, service avoidance comes into play. It is essential that the dig team are trained, competent and using safe digging practices to avoid any known or unknown services. A Genny is a device that inducts a signal into underground services which then can be picked up via a CAT, a Genny is a small box and can either be connected to a pipe or can be placed on its side to induct a signal into the ground. A CAT is a hand scanning device and has 3 modes, all 3 modes must be used when scanning for services. Prior to any excavation or ground breaking, the team must have utility drawings which will show any known services in the area. Surveys such as Ground Penetration Radar (GPR) may also be present which will give the team an idea of what's below the ground. It is important to know that drawings are just a guide and not 100% accurate and the team must not solely rely on them, therefore trial holes may be dug to identify high hazard services to prove or disprove the utility drawings and GPR. Once all known services have been positively identified it is important for the team to mark them up, this is done via coloured spray paint and is a visual reminder for the dig team. Even if there is no known services in the area the dig team must rescan using the GEN & CAT at every 150mm dug, this is in accordance with Essential Standard 1 and HSG47 Safe Digging Practices. With regards to any machinery or equipment you will want to be looking for any defeats and ensuring that it is in good condition, this will includes any hand tools, rotatory equipment and any mobile plant. Although it will not prevent a service strike, the dig team must be in Flame and Arc resistance PPE and using fully insulated dig tools.g team must be in Flame and Arc resistance PPE and using fully insulated dig tools.			

	Questions	Compliant Y/N/NA?	Comments	Actions required
1	Are the dig team in possession of TWUL Passport?			
2	Are personnnel who are using the detection equipment trained to Level 2 Gen and Cat?			
3	Are utility drawings on site and do they identify all **known** services? Water, Gas, Low Voltage, High Voltage, Telecomms (Virgin, BT)?			
3a	Are the utility drawings readable and have they been accessed prior to work starting (documented on site or recorded on a tablet)			
4	Is the Gen and Cat calibrated and within date? (The onsite team should have a certificate to prove the calibration date), one for the Cat and one for the Genny			
4a	Does the CAT & Genny meet TW minimum standards, ie CAT 4			
4b	Is there evidence that all 3 modes have been used when scanning for services, either on site or on CAT manager			
4c	Does the contractor monitor the gangs use of CAT & Genny and highlight any improvements / good practice			
5	Have any trial holes been undertaken to identify high hazard services? (Trial holes are small excavatios to prove or disprove a services depth)			
5a	For a directional drill, has the depth of all services been adequatley recorded and is there written evidence for any assumptions made where a trial hole wasn't undertaken (ie multiple house services)			
6	Do the site team have access to Thames Waters Essential Standard 1 and Health and Safety Guidance 47 (Safe Digging Practices)?			
7	Is there a Permit to break ground/Permit to dig in place prior to work commencing? (Check the date of the permit was issued, the duration of the permit and that it has been signed by relevant persons)			
7a	Does the permit clearly identify hold points for issuing a permit to dig or drill ie CAT & Genny survey undertaken			
8	Have the dig team received a briefing on the works Method Statement and associated risks? (What are the control measures or mitigations in place for those hazards identified)			
9	Are known services **clearly** identified and marked up? (Different coloured Spray paint will be used to identify the direction of services). There must be a process for remarking as the paint fade or becomes unreadable			
10	Is there a non working supervisor overseeing the works/activity?			
11	If an excavator is being used to dig, has it had a daily inspection and can the associated paperwork be provided to confirm it has had it's plant checks?			
11a	If an excavator is being used, is their a trained and competent banksman in place			
Overall comments:				

Excavations Checklist

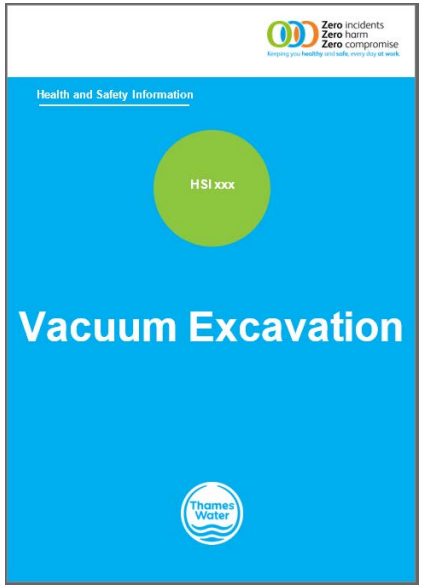
- Guidance Notes added
- Spheracloud Checklist

Directional Drilling Pre-Start check list

Site		Contractor	
Project		Date	

Permits & RAMS	Yes	No	N/A
1. Is there clear roles and responsibilities within the RAMS/Permits?			
2. Is there a Permit to Break Ground required?			
3. Is there a Permit to Drill required?			
4. Has the Permit been signed by the appropriate site manager?			
5. Are there any hold points required within the permit, if so, are they clearly identified and briefed to team?			
6. Has everyone involved in			

Drill	Yes	No	N/A
1. Have all services and anomalies along the route been visibly proven?			
2. Are there any changes to the drill plan? If yes, have they been recorded and approved by the design team?			
3. Has the drill activity been appropriately planned, and contingency/risk factors built into the plan?			
4. Has a pre-walk of the route been conducted to verify long section drawings?			
5. Do the launch and receiving pits have suitable and sufficient access and egress?			
6. Does the plan incorporate suitable access and egress of the drilling rig to the location?			
7. Does the plan identify how the excess drilling liquid/fluid is to be removed and is it suitable and sufficient?			
8. Are the launch and receiving pits suitable for the size of activity?			
a. Are they large enough to contain the drill fluids?			
b. Is there an emergency spill plan in place to prevent contamination?			
c. Is there a suitable spill kit on site?			
9. Is there a requirement for a watching brief?			
10. Does the rig have an earth grounding/isolation device installed as per manufactures instructions?			



Health and Safety Information Document

- Developed with Business Partners
- Pre-Start Checklist

Where can the information be found?

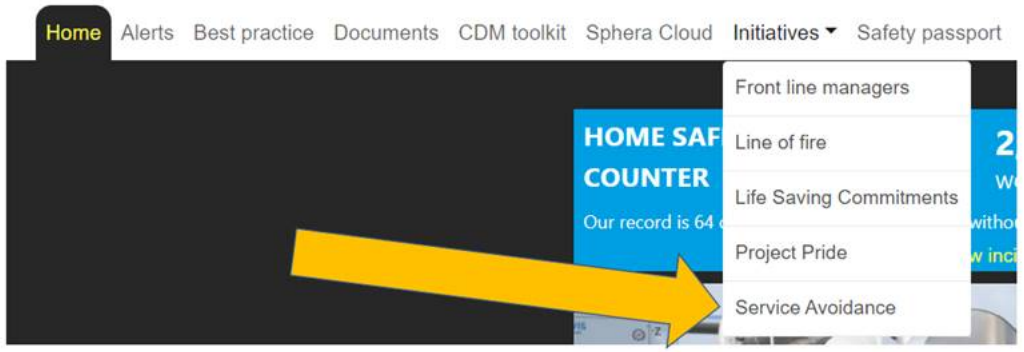
Other material / resources available for this campaign

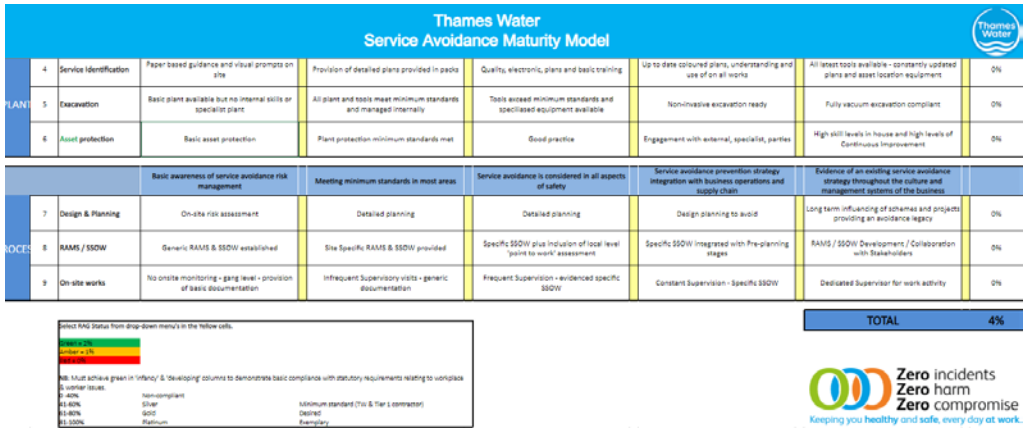
H&S Hub - [Health and Safety Hub]

New Initiative – Excavation Campaign

Guidance document on managing Vacuum Excavation activities

Excavations target audit checklist and guidance



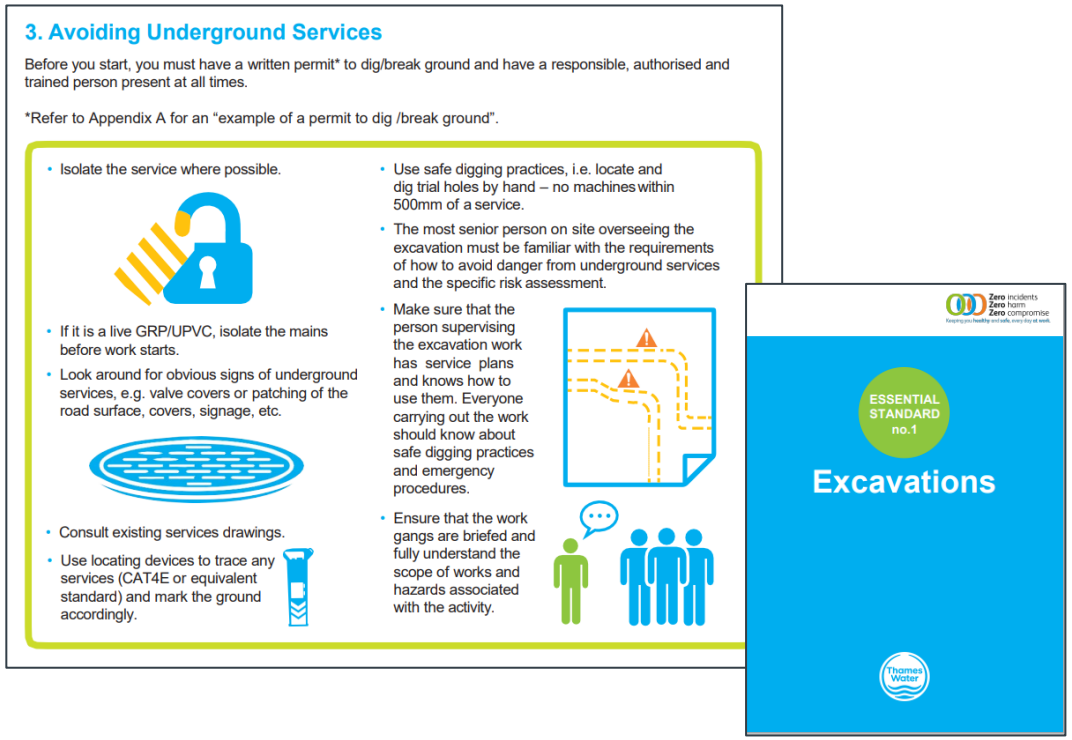


What else is available?

H&S Hub - Health and Safety Hub

Essential Standards 1 & 27.

- Thames Water_Issue _Excavation_9 dec.indd (windows.net)
- Thames Water_Issue _Utility Management_20 dec.indd (windows.net)



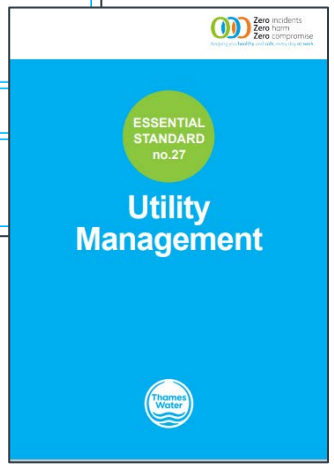
3. Avoiding Underground Services

Before you start, you must have a written permit* to dig/break ground and have a responsible, authorised and trained person present at all times.

*Refer to Appendix A for an "example of a permit to dig /break ground".

- Isolate the service where possible.
- If it is a live GRP/UPVC, isolate the mains before work starts.
- Look around for obvious signs of underground services, e.g. valve covers or patching of the road surface, covers, signage, etc.
- Consult existing services drawings.
- Use locating devices to trace any services (CAT4E or equivalent standard) and mark the ground accordingly.
- Use safe digging practices, i.e. locate and dig trial holes by hand – no machines within 500mm of a service.
- The most senior person on site overseeing the excavation must be familiar with the requirements of how to avoid danger from underground services and the specific risk assessment.
- Make sure that the person supervising the excavation work has service plans and knows how to use them. Everyone carrying out the work should know about safe digging practices and emergency procedures.
- Ensure that the work gangs are briefed and fully understand the scope of works and hazards associated with the activity.

HIERARCHY OF RISK CONTROL FOR AVOIDING DANGER FROM UNDERGROUND SERVICES	
Eliminate	• Redesign the planned route of the excavation to avoid the known services and identify risks. eg obstructions,stability, etc. • Isolate existing services during the planned activities – record isolation requests. • Use non-ground penetrating designs for columns, fencing, etc.
Reduce	• Use improved technology such as vacuum excavation and air lances/soil picks. • Use Directional Drilling/moling systems. • Physically protect exposed services from damage. • Use of hand excavation techniques.
Inform	• Safe System of Work including permit to break ground, trial holes. • Make sure that the responsible person supervising the excavation work has service plans and knows how to use them. • Ensure that all persons involved are briefed and fully understand the scope of works and hazards associated with the activity. Pre construction meetings must include Designers • Everyone carrying out the work should be familiar with safe digging practices and emergency procedures. • Look around for obvious signs of underground services, e.g. covers or patching of the road surface, signage, etc.
Control	• Employ Utility Mapping experts to identify services. • Use locating devices to trace any services with data logging capability (CAT that has immediate data capture to an online system). Mark the ground accordingly – if a shown service cannot be found, stop and escalate. • Continue to scan – every 150mm. • Maintain safe distances from existing services. • Use insulated tools BS8020 – forks/picks are prohibited.
PPE	• Wear flame/ARC retardant PPE.
Discipline	• Use locating devices to trace any services with data logging capability (CAT that has immediate data capture to an online system). Mark the ground accordingly – if a shown service cannot be found, stop and escalate.



What else is available?

H&S Hub - Health and Safety Hub

Life Saving Commitments

- Information documents on key controls and consideration
  - Public Protection
  - People Plant Interface
  - Plant Stability and Safety
  - High Hazard Services

- Making the commitment video Protecting the Public

- 2 Learning Bulletins from previous incidents

What's Next?

We need your commitment…

- Senior Managers to hold a Safety Stand-down(s) with your teams and brief them on the Excavations campaign
- Undertake the Excavations target audit to capture compliance and actions – Recorded onto Spheracloud
- Inform design teams and front line managers to use the Guidance document on managing Vacuum Excavation activities and embedded where required
- Review plan and feedback any improvements

The following slides have been designed for you to use as a template and allow you to tailor them to capture your own organisations strap line as well as to ensure we all have a consistent message.

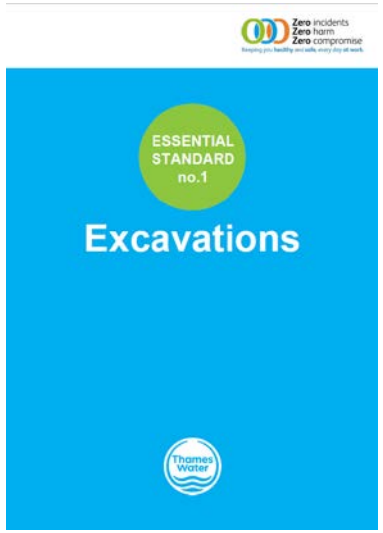
Excavations Campaign
Team stand down pack

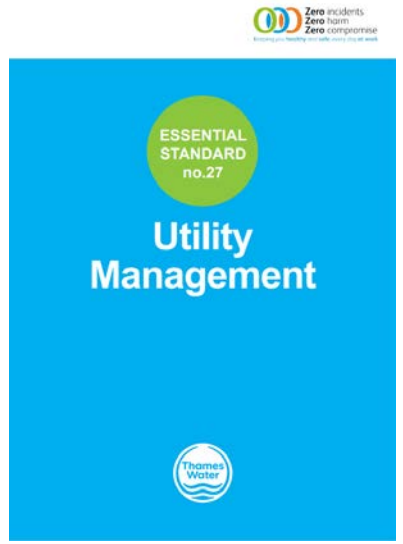
July 2022

Excavations Campaign

July 2022

- Excavations pose several risks to our teams and members of public, incidents can occur from falls from height, collapsing of trench, undermining structures and striking services if not managed appropriately
- Thames Water and it's partners undertaken between 6,000 – 10,000 excavations on average per month!
- Through investigation of incidents involving excavations, it has been found that most, if not all, could have been prevented if the basics had been implemented
- These standards and processes are there to keep you safe and if you can't apply what your safe system of work or method is asking, STOP work and speak to your supervisor
- ALWAYS assess the task thoroughly using your permit to break ground, prior to starting work and apply any hold points identified





Learning Bulletin – Non Thames Water – Member of Public Fatality 2017

What Happened?

In May 2017 a water utilities company was digging in a footpath in Luton to access a stop tap that needed replacing. During the weekend a member of public, whilst walking home, fell into the excavation and was found the next morning. The water company was fined £100,000 and ordered to pay costs of £50,238.

Why did it really happen?

The initial team couldn't find the stop tap by hand so it was left covered by plastic barriers until a dig team could turn up.
The Excavation was not backfilled nor was it identified that secure fencing was required to prevent a fall into the excavation as it was due to remain open for 5 days.
A risk assessment was not conducted to identify there was no easy alternative route for pedestrians or nearby residents.

What can I do differently?

- Always ensure all excavations are backfilled or the risk of falling into it has been eliminated.
- Use sufficient protection around the excavation and work area. Pedestrian barriers are not acceptable.
- If work is to stop, for whatever reason the task cannot be completed, a suitable risk assessment must be undertaken to deem the work area safe to leave unsupervised.
- Comply with the red book and ensure pedestrians have safe and easy access through any street works

Zero incidents
Zero harm
Zero compromise
Keeping you healthy and safe, every day at work.

Learning Bulletin – Non Thames Water – Member of Public Fatality

What Happened?

A dad of two fell head first into an excavation on site fatally wounding him.
The excavation site was dug up to carry out work on the water network.

Zero incidents
Zero harm
Zero compromise
Keeping you healthy and safe, every day at work.

Why did it really happen?

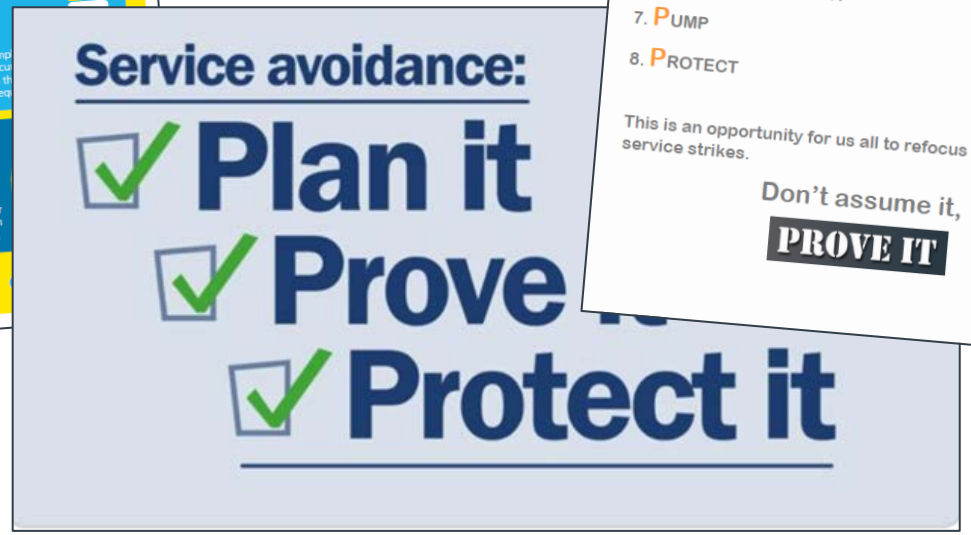
The IP was walking past the site and fell into the excavation headfirst. There was no protection of the opening and did not have any signing, lighting or guarding in the place at the time of the incident to warn passers-by of the dangers or to prevent them from accessing the work area.

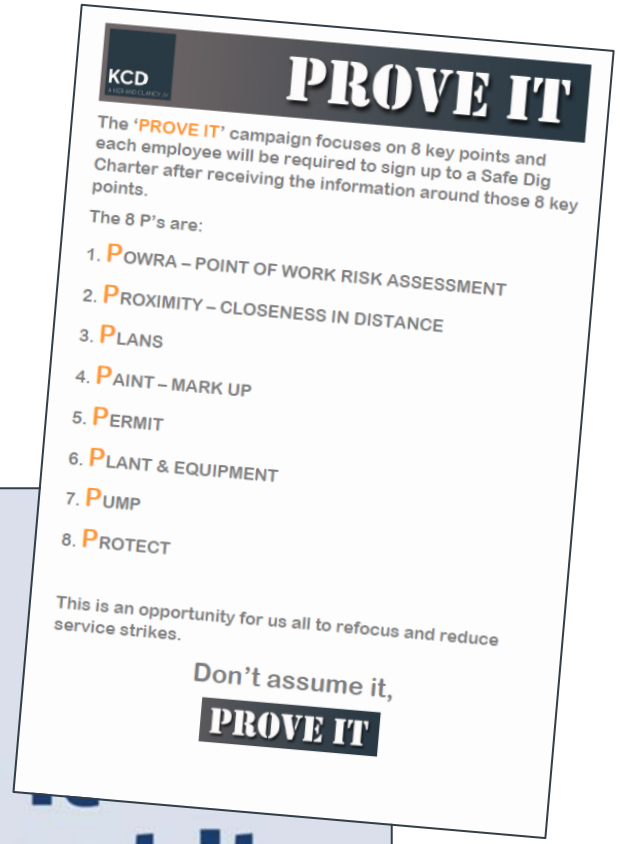
What can I do differently?

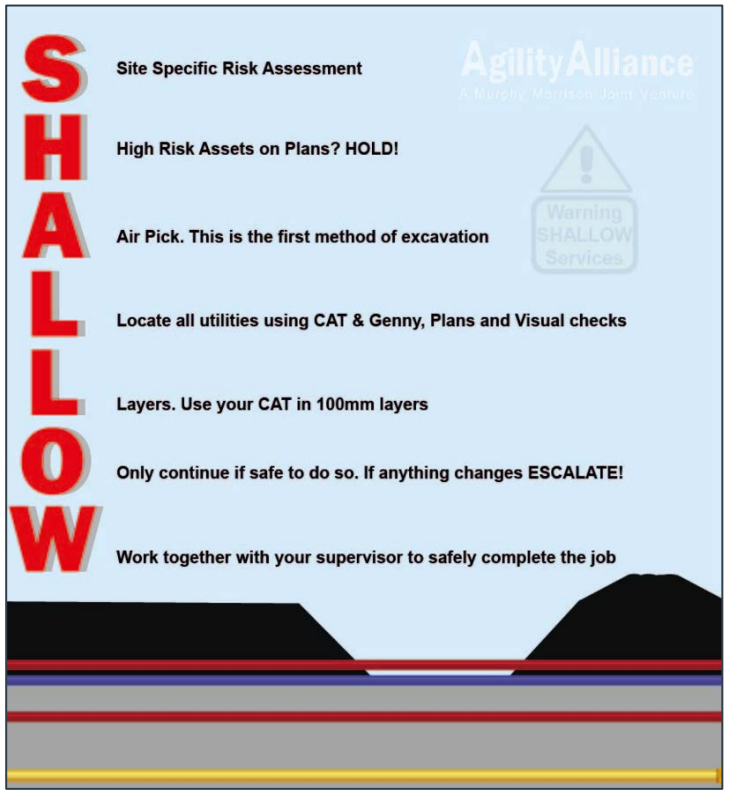
- Ensure all excavations are covered when unattended
- Always provide the required width and clear access on footways
- All Heras fencing and barriers must be left secure and in accordance with Temporary Works registers
- Road and pedestrian signage must be correct for the site set up and in place to clearly show road users and pedestrians what to do
- If necessary use temporary lighting around the site to enhance visibility
- Always take photographs before you leave site
- If you are every unsure, ALWAYS ask your supervisor before you leave site

Keeping you safe

Add your own straplines here and make it specific to your teams





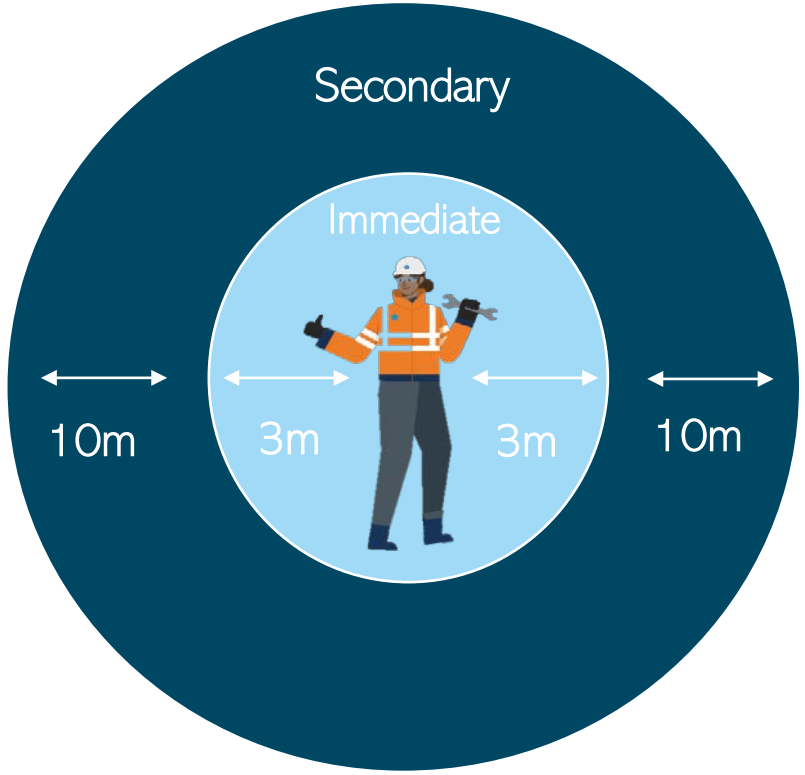


Situational Awareness

Remember to use your senses!

3m

- Identify best safe position to stop
- From inside the vehicle visually check the first 3m radius
- Look down firstly, if no hazards step out
- Complete a visual 3m radius check from ground to up and above head height.
- Complete a physical check only in the 3m radius



10m

- Only to be done once 3m checks are complete
- Visually check the 10m radius
- Once visual check is complete, do a physical check of 10m radius

What do we want from you?

Your commitment to:

Follow Safe Digging Practices

- ALWAYS refer to your service plans and ensure they are up to date
- Follow the Safe System of Work
- Clearly use mark ups, extended outside of the dig area
- NEVER dig directly on top of a mark up/ identified service
- Ensure you protect and support deep excavations

STOP work and ALWAYS speak to the supervisor

- You need to work outside of the agreed SSOW or permit to break ground
- You are unsure
- You are using a mechanical aid within 500mm of a service

ALWAYS follow your SSOW.

- Always follow your safe system of work
- Only use a tool/equipment that has been provided by your supervisor/storeman
- Never Modify your tools to make them easier to use
- Only break ground with fully insulated tools
- Always wear Flame & ARC PPE
- Ensure you fully understand the task and activity - Challenge if you feel the design is flawed or it's unsafe

Any Questions?

Thank You