

Damage to underground utilities can cause serious accidents such as explosion or fire. In the past, fatal accidents and serious injuries have occurred when excavations were too close to underground electricity cables or gas pipes. In addition, damage may also cause a supply interruption that could potentially affect thousands of homes and businesses. In order to prevent losses from these accidents, employers, contractors and construction workers should pay attention to the following safety measures:

As Employers and Contractors:

- Approach utility companies for information and record plans of buried services before any works begin.
- Devise a safe system of work to protect those working in the vicinity of underground utilities.
- Conduct assessments of risks associated with live electricity cables and gas pipes.
- Formulate relevant safety measures based on the risk assessment.
- Appoint a competent person in accordance with the relevant code of practice to carry out the following work which shall normally include :
 - Use calibrated utility locating devices;
 - Conduct passive detection work;
 - Propose trial pit locations and supervise digging of trial pits;
 - Conduct active detection work;
 - Mark the alignment, depth and particulars of utilities at the location;
 - Take photos to record detection work;
 - Complete the “Competent Person Written Report”; and
 - Brief the working party.
- Adopt the trial pit excavation method by appropriate hand tools (e.g. spades, shovels, picks, forks, etc.) to confirm the exact utilities location.
- Consult utility companies if the underground cables / pipes are embedded in hard materials (e.g. concrete).
- Properly protect and support vulnerable facilities before work.
- Closely monitor excavation works to ensure the adequate minimum safety clearance is maintained when construction workers are using hand-held power tools / mechanical tools.
- Provide temporary shoring support for the excavation to ensure the stability of the excavation during works.
- Ensure every part of the excavation should be regularly examined and certified by a competent person.
- Take necessary safety precautions to avoid damage by heat, sparks or naked flames to the protective coatings and sheaths of the utilities. If the welding or hot works are in the close proximity to the exposed utilities, consult the utility companies on any special protective measures required.
- Maintain close liaison among utility companies, developers and other contractors. Consult the utility companies when in doubt. If utilities / utilities coating suffers damage, the utility companies shall be informed immediately.



Disclaimer

Whilst reasonable efforts have been made to ensure the accuracy of the information contained in this publication, the CIC nevertheless would encourage readers to seek appropriate independent advice from their professional advisers where possible and readers should not treat or rely on this publication as a substitute for such professional advice for taking any relevant actions.

As Employers and Contractors (Cont'd):

- Separate new utilities from all existing utilities by the distances agreed with the utility companies.
- Formulate comprehensive precautions (including permit-to-work system) to prevent workers being endangered from entering into and working in confined spaces.
- Exercise effective supervision to ensure the implementation of the system of work and safety measures.

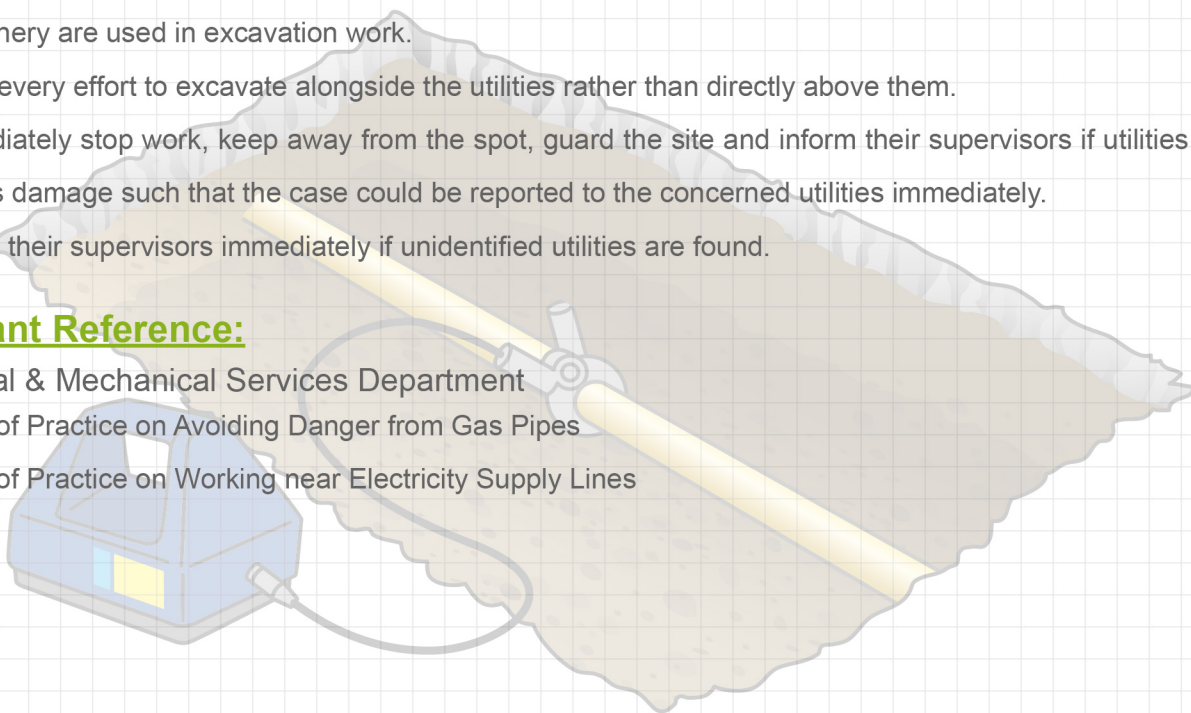
As Construction Workers:

- Attend briefings by the competent person on the content of the utilities alignment record, with particular reference to the locations of the proposed trial pit openings and the number of target utilities to be exposed before commencement of work.
- Maintain adequate minimum safety clearance when hand-held power tools / mechanical tools / heavy machinery are used in excavation work.
- Make every effort to excavate alongside the utilities rather than directly above them.
- Immediately stop work, keep away from the spot, guard the site and inform their supervisors if utilities coating suffers damage such that the case could be reported to the concerned utilities immediately.
- Inform their supervisors immediately if unidentified utilities are found.

Relevant Reference:

Electrical & Mechanical Services Department

- Code of Practice on Avoiding Danger from Gas Pipes
- Code of Practice on Working near Electricity Supply Lines



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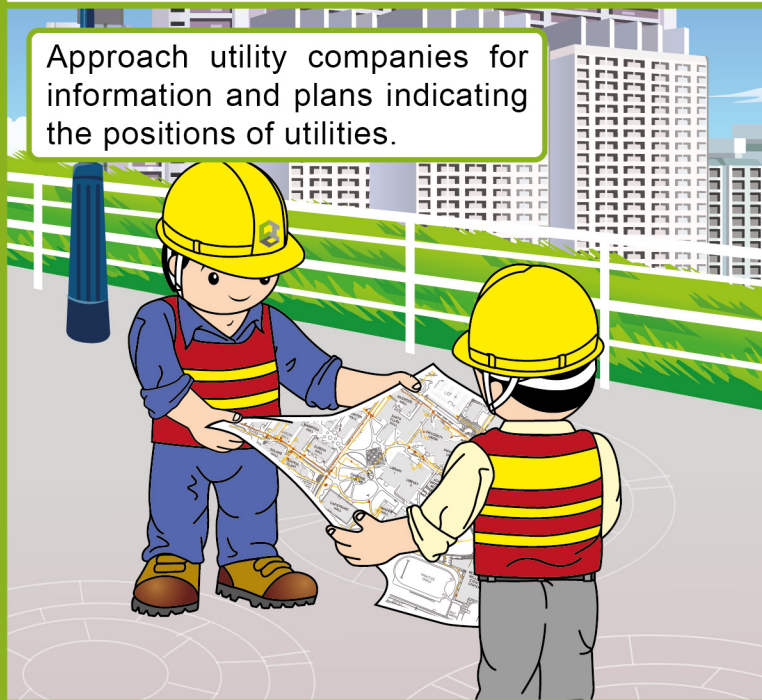
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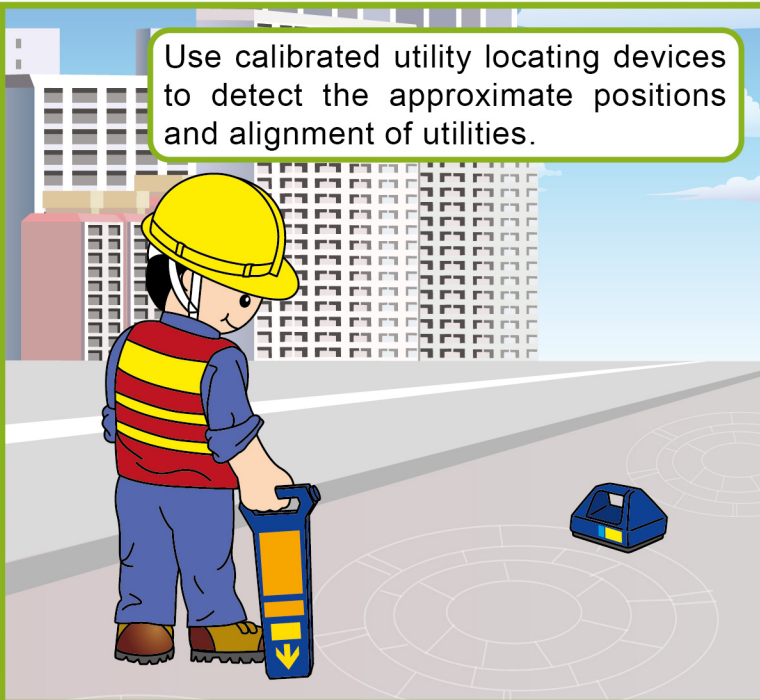


Safe Digging Practice

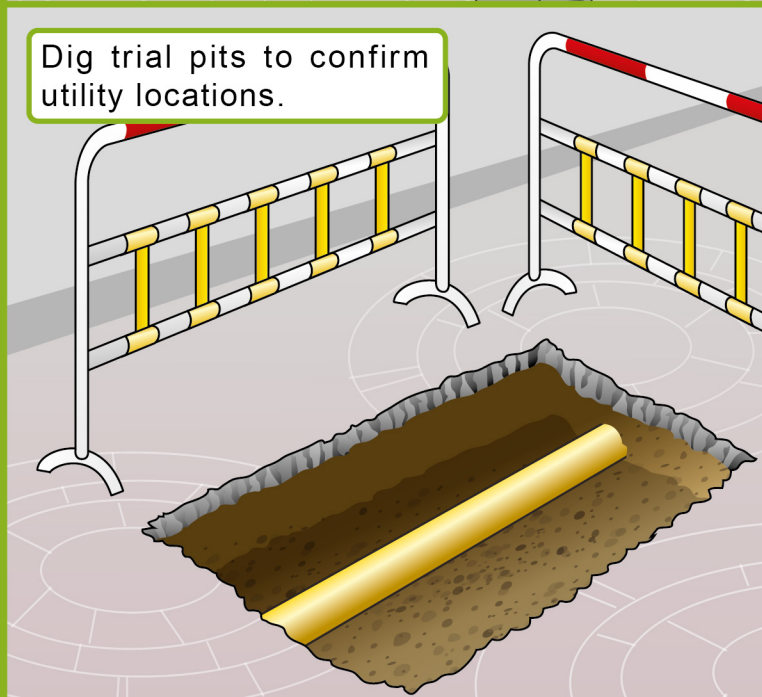
Approach utility companies for information and plans indicating the positions of utilities.



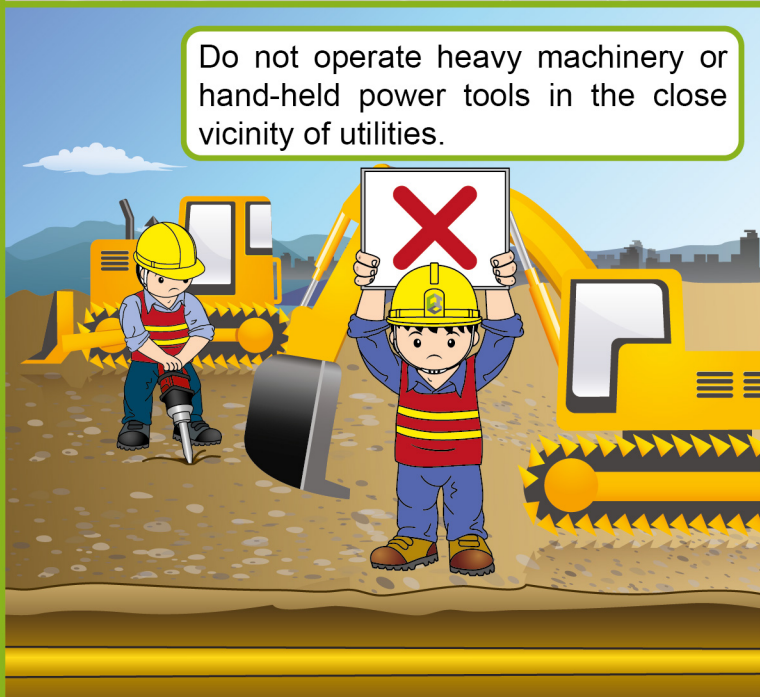
Use calibrated utility locating devices to detect the approximate positions and alignment of utilities.



Dig trial pits to confirm utility locations.



Do not operate heavy machinery or hand-held power tools in the close vicinity of utilities.



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