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1.0 Introduction

USC is committed to the health, safety and wellbeing of all staff, students, visitors, volunteers and contractors when at USC and / or engaged in USC activities.

For the purpose of this guideline and in accordance with Excavation work - Code of Practice 2013 (p. 5), excavation involves: 'the removal of soil or rock from a site to form an open space, hole or cavity (of any size), using tools, machinery or explosives'. This includes any trenching activities.

USC recognises that excavation activities involve a unique range of hazards and may constitute high risk work in accordance the Work Health and Safety Regulation 2011.

2.0 Purpose

The purpose of this guideline is to provide the requirements specified in the Work Health and Safety Regulations 2011 and the Excavation work - Code of Practice 2013. As such, the purpose is to provide necessary resources to enable the management of health and safety risks associated with undertaking excavation work or work in proximity to excavation work.

3.0 Scope

All workers, students, volunteers and contractors must comply with this guideline when performing work that entails excavation.

4.0 Responsibilities

4.1 Executive of USC

The USC Executive has an overarching responsibility for ensuring the health and safety of workers, students, and other persons in USC workplaces or those that may be affected as a result of the undertaking of USC business.

4.2 Cost Centre Managers

Cost Centre Managers have a responsibility to know their statutory obligations regarding work in their area that is impacted by excavation work.

Cost Centre Managers are to:

- ensure these guidelines are adhered to for works undertaken in their area, as far as is reasonably practicable
- monitor work practices in their area and maintain records.

4.3 Human Resources (HR)

- advise and inform USC, its workers and students on the development, implementation and delivery of these guidelines.

4.4 Asset Management Services (AMS)

As the department engaging the contractors to undertake work involving excavation:

- ensure that adequate resources (time, equipment, personnel) are allocated for the effective implementation of these guidelines
- provide supervision, information and training to manage risks involved with excavation work as it pertains to work under their control
- ensure the Excavation Work Guidelines are adhered to for all excavation work under their control
- consult, as far as is reasonably practicable, with workers undertaking excavation work and USC staff and students who are (or are likely to be) directly affected by excavation work (in accordance with Work Health and Safety Act 2011)

4.5 USC staff and contractors directly involved in excavation work

- understand and follow the requirements detailed in these guidelines as it pertains to their work

- in accordance with the Work Health and Safety Act 2011 s28: comply with any reasonable instruction given by USC to ensure ongoing health and safety with respect to excavation work

5.0 Risk assessments and safe work method statements for excavation work

All work involving excavation requires a risk assessment to be completed by the person undertaking the excavation. The risk assessment MUST be approved by a department head, cost centre manager or their representative and Asset Management Services (AMS) :

As part of the approval process, if the person undertaking the excavation work is a:

- USC staff member an online risk assessment must be completed.
- contractor, they must complete the risk assessment template under 'contractor management' on the USC website.

Any excavation that is considered 'high risk construction work', in accordance with the 'Excavation work - Code of Practice 2013 (eg. a shaft or trench with a depth greater than 1.5m, a tunnel) will require a Safe Work Method Statement to be submitted to and approved by AMS, prior to this work commencing.

Both risk assessment and safe work method statements involve the risk management process which entails:

- identifying hazards
- assessing risks
- controlling risks – in accordance with the hierarchy of controls
- monitor and review

5.1 Identifying hazards

Identifying hazards associated with excavation work is the first step in the risk management process and entails considering (WHS Regs 2011 s305):

- the nature of the excavation
- the nature of the excavation work, including the range of possible methods for carrying out the excavation
- the means of entry into and exit from the excavation (if applicable)

Refer Appendix 1 for examples of excavation specific hazards.

5.2 Assessing risks

This involves (Excavation work - Code of Practice 2013 p8):

- identifying which people are at risk
- determining what sources and processes are causing the risks
- identifying if and what kind of control measures should be implemented to mitigate the risks

Refer to Appendix 2 for things to consider when assessing risks associated with excavation work.

5.3 Controlling the risks.

In accordance with the hierarchy and control, risks should be controlled by eliminating them as far as is practicable. If the requirement to excavate cannot be eliminated a combination of controls; substitution, isolation and engineering should be used to control risks. These should be supplemented and supported by administrative controls (eg training and procedures) and personal protective equipment (PPE), as required.

The Hierarchy of Controls

5.3.1 Eliminate

Eliminate the need to undertake excavation work. If the hazard (and hence the risks) cannot be eliminated it must be reduced or minimised as far as is reasonably practicable by using a combination of the following controls.

5.3.2 Substitution

Substitute the hazard for something less hazardous (eg using an excavator rather than a manual method).

5.3.3 Isolation

This involves separating or isolating the worker (or others that may be affected) from the hazard (eg using barriers to prevent entry to excavation area. This also includes isolating all potentially hazardous services (eg electricity, gas, refrigerant, etc) prior to the commencement of excavation.

5.3.4 Engineering

This is usually implemented in the planning and design stage and includes methods such as benching, bettering or shoring the sides of the excavation to reduce the risks of ground collapse. Details can be found in Part 6. of Excavation work - Code of Practice 2013.

5.3.5 Administration

This refers to the implementation of policies, procedures, guidelines and training for people to follow. This also includes organising / managing work practices to reduce risks, eg:

- plan work to take place when there is minimum pedestrian traffic in area to reduce the risk of inadvertent entry to excavation area

5.3.6 Personal Protective Equipment (PPE)

Should only be used when the use of other controls have not sufficiently reduced the risk.

5.3.7 USC specific mandatory controls:

- for any excavation over 300ml – excavation cannot commence until:
 - underground essential services in and adjacent to the excavation area have been located and appropriate controls implemented to mitigate risks associated with the location of these services
 - electrical services have been isolated. If electrical services cannot be isolated a cable detector must be used to ensure that there are no underground services in the excavation area

Refer to Excavation work - Code of Practice 2013 for more detailed information on risk control for excavation work.

6.0 Emergency Procedures

In accordance with the Excavation work - Code of Practice 2013 (p. 14), the person/contractor undertaking the excavation must ensure that there is an emergency plan to deal with unexpected incidents, appropriate to the risks identified. Eg: ground slips, flooding, gas leaks and the rescue of workers from an excavation.

7.0 Monitor and Review of Process

It is paramount that all implemented controls are monitored and reviewed continuously to ensure:

- the risk assessment process has been effective in identifying all hazards
- that hazards are being effectively controlled
- that the implemented controls are not introducing more uncontrolled hazards
- that workers are working in accordance with the risk assessment

Appendix 1: Excavation work specific hazards

Examples of excavation specific hazards (from Excavation work: Code of Practice 2013 p.8) include:

- underground essential services – including gas, water, sewerage, telecommunications, electricity, chemicals and fuel or refrigerant in pipes or lines. Information about the location of these and other underground services, such as drainage pipes, soak wells and storage tanks, in and adjacent to the workplace, must be established before directing or allowing excavation work to commence
- the fall or dislodgement of earth or rock
- falls from one level to another
- falling objects
- inappropriate placement of excavated materials, plant or other loads
- the instability of any adjoining structure caused by the excavation
- any previous disturbance of the ground including previous excavation
- the presence of or possible inrush of water or other liquid
- hazardous manual tasks
- hazardous chemicals (eg these may be present in the soil where excavation work is carried out)
- hazardous atmosphere in an excavation
- vibration and hazardous noise
- overhead essential services (power lines) and ground mounted essential services (transformers, gas and water meters)

Appendix 2: Things to consider when assessing excavation work risks

(from Excavation work: Code of Practice 2013 p.9)

- local site conditions, including access, ground slope, adjacent buildings and structures, water courses (including underground) and trees
- depth of excavation
- soil properties, including variable soil types, stability, shear strength, cohesion, presence of ground water, effect of exposure to the elements
- fractures or fault in rocks, including joints, bedding planes, dip and strike directions and angles, clay seams
- any specialised plant or work methods required (eg ground support)
- the method/s of transport, haul routes and disposal
- what exposures might occur, such as noise, ultraviolet rays or hazardous chemicals

- the number and type of people involved
- the possibility of unauthorised access to the work area
- local weather conditions
- the length of time that the excavation will be open

USC specific considerations:

- impact on other USC activities (eg. teaching, learning, research activities, etc)
 - impact on USC traffic (including pedestrian traffic)
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