

Apply for Permit to Dig/Excavate



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1.1 Purpose

This guide is intended for Curtin University's Contractors, Vendors, University Staff and Permit Managers, providing information into the role and process of applying for a Dig/Excavate Permit. The system is designed to prevent the occurrence of incidents or injury to contractors, staff and students; and prevent damage to the University Estate.

1.2 Inclusion Group

This guide is intended for any organisation engaged by Curtin University and nominated to the Contractor as the representative of the University.

2 Definitions

Term	Definition
Buried / In-Ground Services	Electricity, gas, fuel, water, drainage, fire and telecommunications infrastructure that has been installed beneath the ground on the Curtin University Estate.
Contractor	The Company engaged by Curtin University to perform work on the Estate.
Dig / Excavate Permit	A Permit acknowledged by a Curtin University representative that is provided following submission of an Application for Permit to Dig / Excavate.
Excavation	<p>Any activity that requires the existing ground to be disturbed to a depth of 150mm or greater by manual or mechanical means (shovel or machine digging), & includes boring or driving any object into the ground.</p> <p>The following is not considered to be Excavation for the purposes of this procedure:</p> <ul style="list-style-type: none"> • Vacuum extraction for the purpose of service location
Excavation Location Plan	A scaled plan that shows the location of the proposed Excavation on the site in relation to nearby roads, building and other infrastructure.
Excavation Sections Plan	A scaled plan clearly identifying the proposed Excavation depth below existing ground level.
High Risk Activity (HRA)	<p>Includes High Risk Work described in schedule 6.3 of the <i>Occupational Safety and Health Regulations 1996</i> and additional Activities that will have an impact on Curtin University's infrastructure, services, operations, staff or students, including:</p> <ul style="list-style-type: none"> • Excavation
Inspection	A process of checking the workplace physical conditions are at an acceptable standard and that people are undertaking activities consistent with expectations.
OSH Works Planning Meeting	A meeting, prior to works commencing, facilitated by the contractor, attended by the Permit Manager, and if required an OSH representative, to discuss OSH risks and appropriate risk management as identified by the contractor associated with the works.
Permit	Written authorisation to undertake HRA which must be received before proceeding with any HRA.
Permit Applicant	A Contractor representative who submits an Application For Permit to Dig / Excavate Form, along with specified supporting documentation.
Permit Manager	The person authorised by the University to manage the Permit process, including receiving and endorsing applications for further action.
Risk	The chance of something happening that will have an impact upon objectives of Curtin University. It is measured in terms of Consequences and likelihood.

Risk Assessment	A systematic use of available information to determine how often specified events may occur and the magnitude of their consequences. Eg: A buried power line service strike whilst excavating around B-408 could possibly impact the power supply to building 408 including adjacent Cafes and ATMs. This outage will impact on essential services and will render the building inaccessible to staff and students. Contractor to have adequate trades on site to attend to this risk occurrence to ensure business continuity.
Risk Management	The systematic application of management policies, procedures and practices to the tasks of establishing the context, identifying, assessing, treating and monitoring risk.
Risk Treatment	Selection and implementation of appropriate options for dealing with risk.
Safe Work Method Statement (SWMS)	A statement submitted and reviewed by a Contractor that describes the methods that will be applied to work safely.
Services	Any existing buried service on or adjacent to the Contractors site.
Services Location Plan	A Plan to be attached to the Application For Permit To Dig / Excavate which comprises a Service Location Plan for the Excavation Area and with any other services that are identified, marked on the Plan (its location, its diameter, the invert level in the Excavation Area), clearly identifying any difference between the Plan location of identified services and the outcome of on-site service location activities.
Services Protection Officer	A person arranged & controlled by the Contractor, who fulfils the functions of the Services Protection Officer during Excavations.
Specified Supporting Documentation	Supporting documents required to be provided by the Contractor, when submitting the Application For Permit To Dig / Excavate for the High Risk Activity.
Stakeholders	A group who has a stake in the permit procedure and who may be impacted by its outcome.
Work Area	An area where activities are being undertaken by Employees and/or Contracted Personnel.
Work Methodology	A statement submitted by the Contractor that describes the tasks that will be completed as part of the Dig / Excavate Permit.

3 Pre commencement worksite inspection pre requisites:

The company wishing to undertake Dig/Excavate must undertake the following activities as a minimum. (The information gathered from completing these activities is required to complete the Permit to Dig/Excavate application)

1. Data collection for existing Services

This task involves a Dial Before You Dig (DBYD) enquiry to establish the known Services in the area where Excavation is planned.

DBYD enquiries can be lodged in one of three ways:

- Lodging online at www.1100.com.au, or by
- Using the iPhone App, or by
- Ringing the national call centre on 1100 during business hours.

As there are a significant number of activities occurring on the estate. In addition to DBYD enquiry, the Contractor must contact the relevant Curtin University Stakeholders as identified by the Permit Manager to verify whether other works recently completed or in progress have installed additional Services to those shown on the DBYD data within or adjacent to the proposed Excavation site.

2. Accurate location of Services on the site

Services disturbed during Excavation fit into three main categories:

- Known Services accurately located.
- Known Services inaccurately located.
- Unknown Services.

The techniques used to identify buried Services need to consider each of these categories to effectively reduce the risk of disturbing buried Services.

There are a number of companies who offer sub surface Service location services, with techniques offered that detect most buried Services with varying degrees of accuracy. Not all types of Services can be accurately identified in all cases (optic fiber is particularly difficult to detect for all current sub surface detection technologies).

It is important that companies wishing to engage a Service Location Contractor discuss the types of Service identified on the DBYD data with the Service Location Contractor so that the level of accuracy available can be correctly factored into the risk assessment process.

Typical techniques involve the use of various types of detection equipment including:

- Ground penetrating radar (GPR).
- Radio detectors.
- Metal detectors.
- Acoustic detection.

Each of these devices can be used to identify the alignment and/or the depth of various types of buried Services. Hydro vacuum extraction is then used to accurately identify the alignment and depth of the detected Services in the areas where Excavation is planned.

The recommended approach for Service detection is as follows:

Step 1 – Service Data Identification

Discuss the DBYD data with a Service Location Contractor and develop a plan to ensure that the most appropriate detection devices are used to best identify the Services known to be on the site.

Step 2 – Excavation Site Identification

The extent and location of the Excavation is to be accurately marked on the site using the information provided on the Excavation Location Plan (scale 1:100, A3 size, Colored Print) required to adequately complete the Permit to Dig/Excavate application.

Step 3 – Service Location and Marking Requirements

Each Service shown on the DBYD data and any additional Services information as provided by Curtin University's Representative(s) is to be marked on the site using a system of identification that can be maintained for the duration of the work. High risk Services require an increased number of markers to be installed and greater control on marker integrity and location accuracy.

The Service Location Contractor is to verify that each Service shown on the DBYD data and additional Services information as provided by Curtin University's Stakeholder(s) has been marked on the site and that the markers for each are able to be clearly distinguished from one and other.

Service Crossing Excavation

Where Excavation crosses a Service the markers are to extend sufficiently beyond each end of the Excavation to ensure that at least two markers remain on each side of the Excavation so that the alignment across the Excavation can be re-established at any time during Excavation.

Service Parallel to Excavation

Where Services run parallel to the Excavation, markers should be installed at regular intervals along the entire length of the Excavation and extending at least two markers beyond the extent of the Excavation

Step 4 – Excavation Perimeter Scan

As the data on Services can contain inaccuracies in content and alignment it is also necessary for the perimeter of the Excavation to be scanned using an appropriate technique to identify if any unknown Service enters the Excavation zone.

Where an Excavation perimeter has a dimension greater than 10 meters in length additional scanning is required within the Excavation area to ensure that unknown Services contained within the Excavation are likely to be detected.

The risk assessment process will define any additional scanning considered appropriate.

Step 5 – Marker Currency

As activities on sites can disturb markers it is necessary to validate the accuracy of markers which are older than 30 days. Further where all Excavation activity on site is delayed for longer than five days the Service Location Contractor is to re-confirm the accuracy of markers relevant to the remaining sites of Excavation before Excavation recommences.

3. Excavation Risk Assessment

The Excavation Permit Procedure and the Permit to Dig/Excavate application are designed to guide parties wishing to excavate through a structured risk assessment process.

Additional systems for risk assessment and analysis may also be necessary to effectively mitigate risk, particularly where higher risk Services are involved.

The hierarchy of risk control can be applied to Excavation planning to ensure that all options to reduce likelihood, consequence or both of Excavation causing damage to existing Services are properly considered before work commences.

Control	Test
Elimination	Can the Excavation be avoided completely, the installation delivered above ground?
Substitution	Can the location be altered to avoid Services, or can the depth be adjusted to reduce conflict? Can different Excavation techniques be used to reduce consequences of Service disruption?
Engineering	What barriers can be installed to isolate the Excavation from existing Services? Can the Service be isolated to reduce consequence of disturbance?
Administrative	You must have the required approved Permits. You must have developed suitable SWMS during Excavation planning.
Personal Protective Equipment	What equipment is required for the workers to Ensure they are not injured during Excavation?

In addition to the Excavation activity itself the type, size location and age of the various Services are important considerations when planning Excavation. It is important to recognise that each site and each set of circumstances represent a different risk exposure and as such each Excavation needs to be properly risk assessed and the relevant controls defined.

Different controls are possible for both likelihood and consequence and the Excavation plan should seek first to reduce:

- The likelihood of damaging Services by ensuring the best data possible is obtained and verified, it is understood and marked accurately on the site.
- The consequence of damaging Services, including isolation or de-energisation of Services, use of less destructive Excavation methods and the development of effective contingency plans should damage occur.

The type of Service to be installed, the depth and type of material in which Excavation is being undertaken, including the likely level of groundwater are all items to be considered in the Excavation risk assessment. The combination of these factors will assist to define the skills required on site during Excavation to ensure that Services are not damaged and workers remain safe.

3.1 Context

Curtin University grounds encompass a significant amount of underground services. It is imperative that these services be identified prior to commencement of any works which will disturb the ground. This process may take up to 10 days to complete

3.2 Emergency Management

At all campuses in the event of a life threatening emergency dial 000, and give your exact location, if possible also call Curtin Safer Communities Team on 9266 4444.

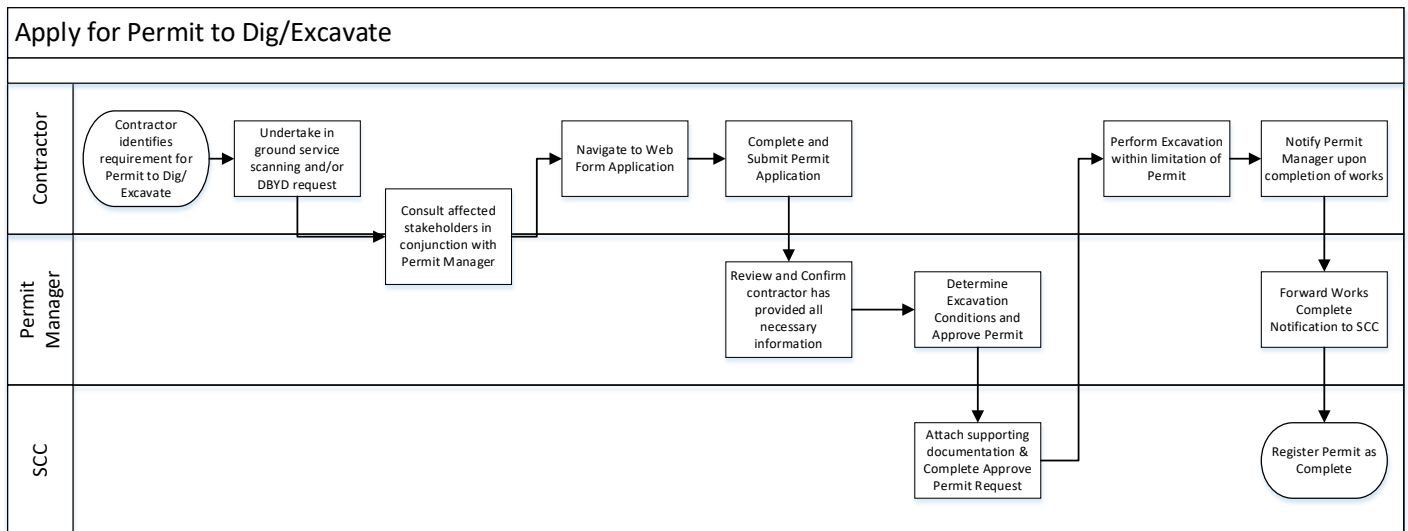
Prior to the commencement of work, Contractors are responsible for determining where emergency exits are, and determining the appropriate muster point location.

Contractors must familiarize themselves with the nearest available fire extinguisher prior to commencing work; or if carrying out hot works, provide their own.

4 Process for Applying for Permit to Dig/Excavate

4.1 Workflow Diagram

The below flow chart demonstrates the process for applying for a Permit to Dig/Excavate. This process is described in more detail in [Section 4.2](#).



4.2 Procedure

Contractor Identifies Requirement for Dig/Excavate Permit

Accountability: Contractor

During the course of the Contractor work under the contract, contractors may encounter a situation where A dig/excavation permit is required. When this occurs, the procedure in the above flow chart and within this Process is to be followed.

Investigate Potential Impact(s) of Dig/Excavate

Accountability: Contractor

The Contractor is responsible for carrying out all necessary investigations, as outlined below. If required, The Permit Manager is to assist the Contractor with these investigations, including:

- Identification and consultation with relevant/affected stakeholders;
- DBYD and Underground Service Scanning;
- Risk Management Plan;
- Location Plan; and
- 'Methodology of Works', outlining step by step how the works will be performed including, access to site, works being performed and departure from site.

Navigate to Web Form Application

Accountability: Contractor

The Contractor wishing to undertake the Excavation must complete the Application for Permit to Dig / excavate from the Properties Website:

<http://properties.curtin.edu.au/onlinepermits/>

Complete & Submit Web Form Application

Accountability: Contractor

The Contractor is required to complete all sections of the “Apply for Permit(s) to Work” application form. The Contractor must attach all Specified Supporting Documentation and submit the application form

Upon submitting the completed online web permit application, the Contractor shall receive an automated notification confirming Curtin University’s receipt of the permit application

Review & Confirm Contractor has Provided All Necessary Information

Accountability: Permit Manager

Determine Excavation Conditions & Approve Permit

Accountability: Permit Manager

Attach Supporting Documentation & Complete Approve Service Request

Accountability: SCC

Perform Excavation within Limitation of Permit

Accountability: Contractor

Upon receipt of the email notification containing the approved Dig / Excavate Permit, the Contractor must ensure that excavation is only undertaken within the limitations as authorised on the Permit

Notify Permit Manager on Completion of Works

Accountability: Contractor

The Contractor must quote the corresponding Service Request ID in the email when notifying the Permit Manager that all works associated with the Permit have been completed

Forward Works Complete Notification

Accountability: Permit Manager

Register Permit as Completed

Accountability: SCC

5 Dig/Excavate Procedure Roles and Responsibilities Matrix

Legend:

Legend	Key	Explanation
R1	Primary Responsibility	Responsible for directly actioning.
R2	Secondary Responsibility	Responsible for monitoring tasks performed by others.

RESPONSIBILITIES	Contractor	Services Protection Officer (arranged & controlled by the Contractor)
Understands what each of the Service markers located on the site relates to.	R2	R1
Has a full copy of the Permit, drawings(s) and SWMS in their possession at all times when Excavation is occurring.	R2	R1
Ensuring presence at the Excavation site 100% of the time when Excavation is occurring.	R2	R1
Directly observing the Excavation (not working in close proximity).	R2	R1
Ensuring the Excavation is suspended if the SPO needs to leave the site even for a short period of time.	R2	R1
Intervening if any activities are likely to cause damage to Services (or) Injury / Death.	R2	R1
Confirming with each other trade involved in the work that they have checked that the actions they plan to undertake will not damage any Service on the site rather than assuming the tradespeople fully understand.	R2	R1
Ensuring prior to backfilling, a Surveyor is contacted to complete a survey of any installed Services and the 'as-constructed' drawings set provided to the RO.	R1	R2
Inspecting and maintaining a contact log of inspections carried out of the works just prior to commencement of the Excavation works and regularly throughout the Excavation – at least once in every 24hrs. The updated contact log is to be provided regularly to the Permit Manager regularly throughout the Excavation.	R2	R1

6 Dig/Excavate Procedure Glossary of Terms

Document Types

Activity Register	A formal list of all Activities.
Form	Logically structured document with a fixed arrangement of captioned spaces, designed for entering, extracting, or communicating the required information.
Plan	Written account of intended future course of action (scheme) aimed at achieving specific goal(s) or objective(s) within a specific timeframe.
Plant & Equipment Register	A formal list of all Plant & Equipment.
Procedure	A fixed, step-by-step sequence of activities or course of action (with definite start and end points) that must be followed in the same order to correctly perform a task.
Process	Sequence of interdependent and linked procedures which, at every stage, consume one or more resources (employee time, energy, machines, money) to convert inputs (data, material, parts, etc.) into outputs.
Process Map	A visual representation of a procedure defining information flows and connections to documents and other procedures.
Program	A plan of action aimed at accomplishing a clear business objective, with details on what work is to be done, by whom, when, and what means or resources will be used.
Report	A document containing information organized in a narrative, graphic, or tabular form, prepared on ad hoc, periodic, recurring, regular, or as required basis.
Review	Orderly recall of past information in summary form for its re-examination.
Risk Register	A formal list of all risks.
Spot Check	Unscheduled inspection at random intervals.
Template	A file that serves as a starting point for a new document.

7 Reference Material

6.1 Related Tools

- Application For Permit To Dig / Excavate
- Safe Work Method Statement
- Risk Assessment / Risk Register
- WHS Management Plan
- Excavation Contact Log
- Archibus

6.2 Related Knowledge

6.3

- Pre-commencement Worksite Inspection Prerequisites

6.4 Associated Processes

- Curtin University's Dial Before Yo