Queenstown Airport Corporation Ltd

Authority to Work Permit Procedure

Queenstown Airport Corporation Ltd

2/9/2021

Contents

DOCUMENT REVIEW

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1. DEFINITIONS AND ABBREVIATIONS

Authority to Work:

Written authority from QAC to undertake controlled activities

Authority to Work Register:

This is a Register of the work currently being carried out. This is to allow for the management of conflicting work and resources.

AES:

Airport Emergency Services

ATWP:

Authority to Work Permit

Confined Space:

An enclosed or partially-enclosed space that is at atmospheric pressure during occupancy and is not intended or designed primarily as a place of work

Controlled Activity:

Work or tasks performed on Queenstown Airport Property such as installation or maintenance activities that could result in harm, damage or injury to people, property, environment or interrupt business operations in Queenstown Airport Property

Harm:

Injury or damage – could occur to people, products, environment or assets.

Job Safety Analysis:

This is a documented process showing the steps that need to be taken, or task analysis), the hazards that will come out of the work, hazards that the person/s will be exposed to while doing the work and the agreed controls

JSA:

Job Safety Analysis

Lift Plan:

Documented plan for conducting lifting or elevated operations

PPE:

Personal Protective Equipment

Notifiable Work:

a. Any restricted work, as that term is defined in Regulation 2 of Health & Safety in Employment Asbestos Regulations 1998.

b. Any commercial logging operation or tree felling operation.

c. Any construction work of one or more of the following kinds:

- Work in which a risk arises that any person may fall 3 metres or more, other than:
- Work in connection with a residential building up to and including 2 full storeys.
- Work on overhead telecommunications lines and overhead electric power lines.
- Work carried out from a ladder only.
- Maintenance and repair work of a minor or routine nature.

d. The erection or dismantling of scaffolding from which any person may fall 5 metres or more.

e. Work using a lifting appliance where the appliance has to lift a mass of 500 kilograms or more a vertical distance of 5 metres or more, other than work using an excavator, a forklift, or a self-propelled mobile crane.

f. Work in a pit, shaft, trench or other excavation in which any person is required to work in a space more than 1.5 metres deep with a depth greater than the horizontal width at the top.

g. Excavations where the excavation face is steeper than 1 horizontal to 2 vertical.

h. Any construction work where explosives are used or stored.

i. Work in which any person breathes air or any other gas that has been compressed or is under pressure.

j. Any construction work in connection with asbestos fibres.

SOP:

Standard Operating Procedure

QAC:

Queenstown Airport Corporation

OLS:

Obstacle Limitation Surfaces

2. OVERVIEW

The Authority to Work procedures are designed to ensure all works on a Queenstown Airport Property is authorised and carried out in a safe and efficient manner.

Prior to commencing any physical work (maintenance or construction activity) a risk assessment must be undertaken and a risk of harm to persons, property, or the environment. Where there is no approved Standard Operating Procedure, and an unacceptable risk exists then an authority to Work Permit is required to be in place prior to commencing the task.

Depending on the nature of the task there may be a requirement to have additional permits in place such as Hot Work Permit, Ground Penetration Permit or Confined Entry Permit.

3. OBJECTIVES

The objective of this document is protecting the following from any adverse effects:

- People (staff, contractors, tenants, and passengers).
- Assets
- Environment
- Business continuity (including retail).

The objective of the Authority to Work process is to identify hazards and ensure robust controls are in place before any work is started, and that this is done in a controlled, structured and consistent manner.

4. PURPOSE

The purpose of the Authority to Work process is to:

- Control Zero Harm risks associated with work to be performed on Queenstown Airport property.
- Provide visibility over all of the contractor activity at Queenstown Airport.
- Manage conflicting work.

5. REQUIREMENT FOR AUTHORITY TO WORK PERMITS

An Authority to Work Permit (ATWP) is a documented agreement that:

- Gives permission for the contractor to work on site.
- Identifies the hazards and the controls for the work being done.
- Where required, documents the planned method of executing the work.

- Verifies all requisite licences and certificates are valid and in place.
- Identifies the individuals performing the work or task
- Identifies a Works Manager or Supervisor

As a minimum requirement, an ATWP is required for any external contractor before they undertake do any work at Queenstown Airport, except for routine tasks where a Standard Operating Procedure has been agreed and the task contains no high-risk activities.

There are typically two pathways that require an authority to work:

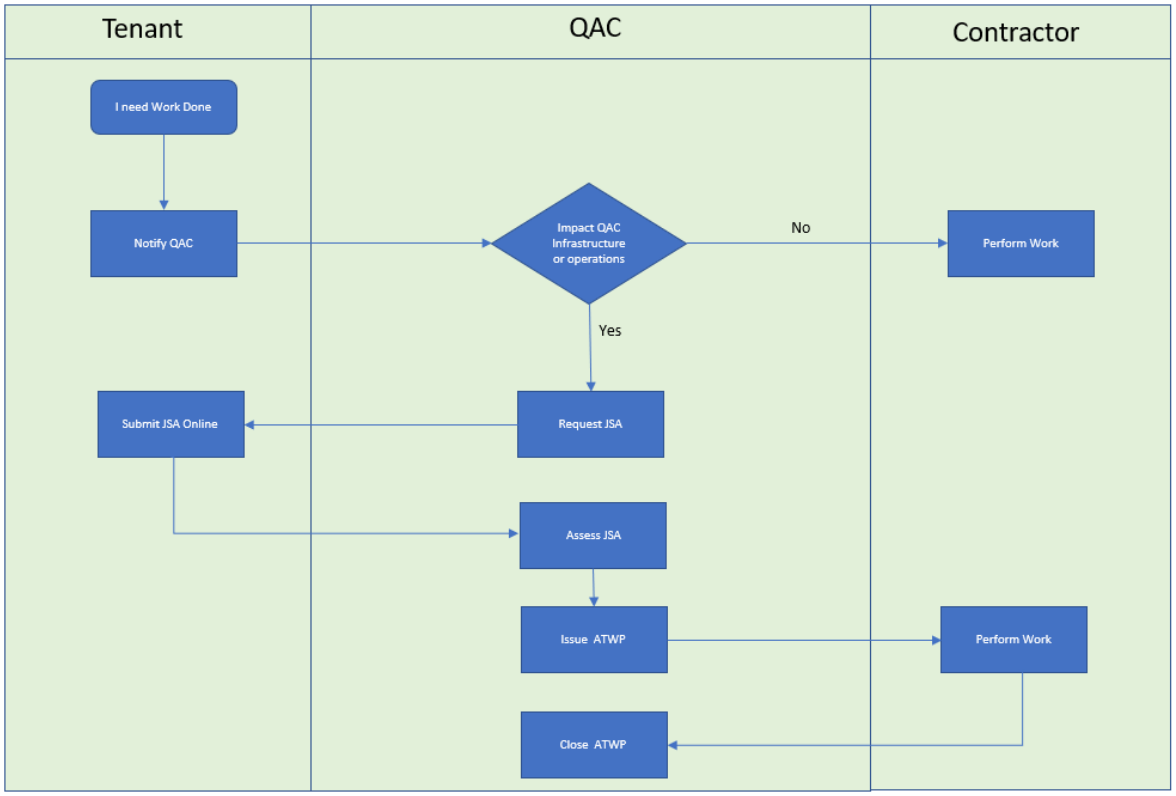
- Projects
- Maintenance work

To meet our insurance obligations all material building work needs to be advised to QAC's insurer of the project start date, value, and expected completion.

Where tenants are planning work, QAC should be notified with details including the location, Scope of Work and provides drawings and documentation for the project. This allows QAC to understand the Scope of Work and review an impact the works may have on staff, facility and neighbouring tenants. QAC should advise any changes necessary to the design as well as control necessary for the safe and efficient execution.

Figure 1 details the process to follow to issue, manage and close an Authority to Work Permit.

Figure 1 – The process for preparing an Authority to Work Permit


Tenant
QAC
Contractor
I need Work Done
Notify QAC
Impact QAC Infrastructure or operations
No
Perform Work
Yes
Submit JSA Online
Request JSA
Assess JSA
Issue ATWP
Perform Work
Close ATWP

5.1 ROUTINE AND NON-ROUTINE WORKS

Routine work are tasks that Queenstown Airport staff or fixed-term/approved maintenance contractors have been trained to do and have been assessed as competent. These tasks are performed more frequently than once per month (and do not trigger high-risk activity, such as confined space or hot work activity). Routine tasks with an approved Standard Operating Procedure may be permitted without an Authority to Work as long as there are no tasks requiring additional permits.

Non-routine work are tasks that take place less frequently than once per month or work that is to be carried out outside a person's normal place of work (e.g., contractors).

5.2 HIGH RISK OR LOW RISK WORKS

High-risk work is considered any work that scores a Risk Rating greater than 10 on the Likelihood - Consequence Relationship for Task Assessment Matrix (Table 1) or requires any sort of additional Certificate, and includes hazardous activities and low-risk activities performed in a dangerous environment.

Examples are:

- Any confined space entry
- Any work with the potential to fall 2.0 metres or more
- Any hot work with a naked flame or within 11 metres of any flammable material or substance
- Any demolition
- Any work that requires more than single-point isolation
- Ground penetration
- Wall penetration

Low-risk work is a 'simple' task scores a Risk Rating less than 10 on the Likelihood - Consequence Relationship for Task Assessment Matrix (Table 1), typically performed in a static, safe environment where there is minimal variation or change in the environment or the task.

5.3 Safe Work Procedures

Standard Operating Procedures (SOP) are standardised documented procedure used where routine repetitive tasks need to be performed by different to simplify the training, execution and management of these tasks.

This is contrasted with trade related activity as one of the principles that applies when engaging contractors is they are specialist in their field of endeavour and have undertaken a period of training and have become qualified to perform the tasks they do. They bring knowledge, expertise and experience with them when working on a Queenstown Airport property.

The issue that arises is this SOP's are often not documented and does not necessary take into account the environmental factors that can affect the safe and efficient execution of the task.

Passenger safety, experience and the efficient operation of the airport are paramount. This is why it is important to check there is a well-defined Safe Method of Works.

Contractors may submit their Standard Operating Procedures for low risk routine tasks for approval by QAC. Approved SOP's may be utilised for the execution of routine tasks except with the risk rating exceeds 10 or additional permits are required.

5.4 Performing a Preliminary Risk Assessment

The detail and degree of elaboration will depend on the Scope of Works and risk that are presented in performing the works. A key element is performing a risk assessment to determining how the task should be managed. The flow chart in Diagram 2 has been establish to test if a proposed task can proceed under n Authority to Work Alone or an additional Job Safety Analysis or other permits are required. Where the risk rating exceeds 10, the task should be discussed with the Technology and Asset Manager or Asset and Facilities Coordinator.

Figure 2 – Preliminary Task Risk Assessment

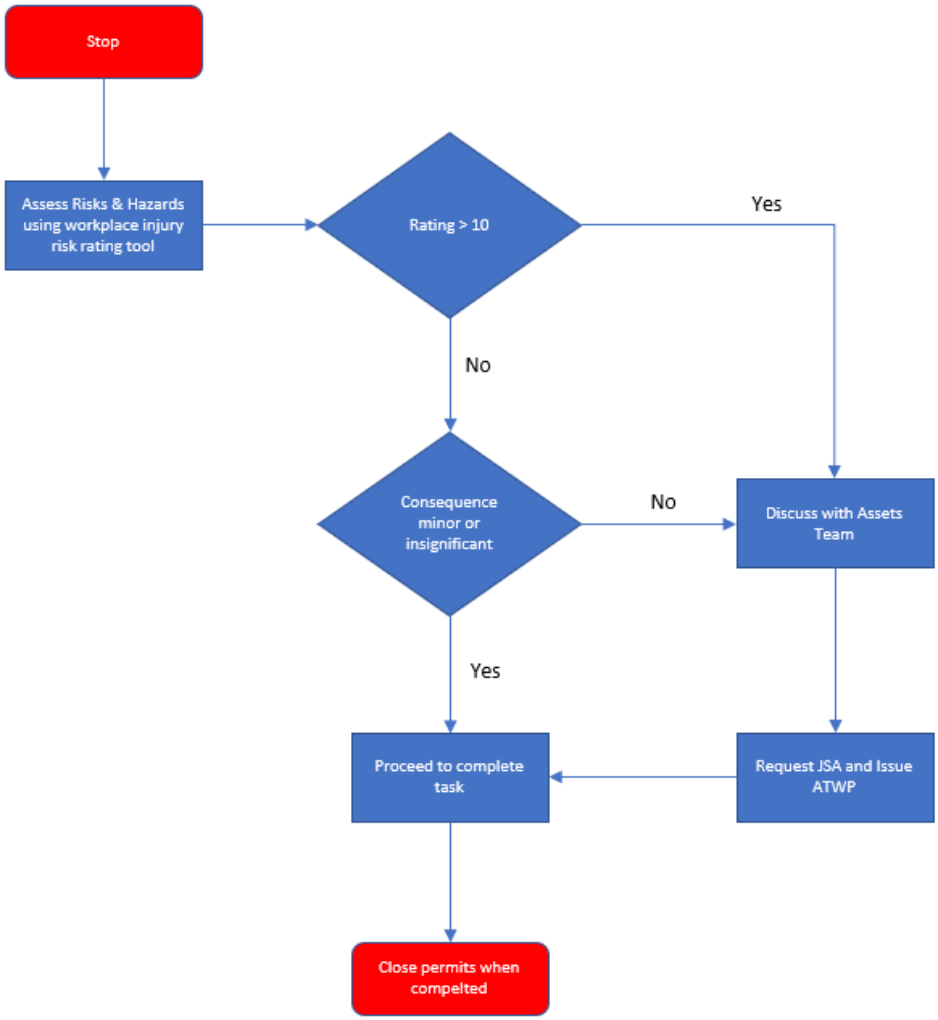


Table 1 – Likelihood – Consequence Relationship for Task Assessment

Workplace Injury and/or Occupational Illness			LIKELIHOOD				
			Almost Certain	Likely	Possible	Unlikely	Rare
			Is expected to occur in most circumstances	**Will** probably occur in most circumstances	**Might** occur in most circumstances	**Could** occur in some circumstances	**May** occur in exceptional circumstances
CONSEQUENCE (Realistic Potential)	Catastrophic Death or Serious Injury/ Illness to one or more people causing permanent disability including irreversible health damage	Significant Hazard	Very High (25)	Very High (24)	Very High (22)	Very High (20)	Very High (19)
	Major Injury/Illness. Causing permanent partial or temporary severe disability including irreversible health damage and/or needing hospitisaltion		Very High (23)	Very High (21)	Very High (18)	High (14)	High (12)
	Moderate Injury/Illness. Causing temporary disability including reversible health damage and/or needing hospitisaltion		High (17)	High (16)	High (13)	Medium (9)	Medium (6)
	Minor Superficial injury. Illness that may need First Aid and/or medical treatment	Potential Significant	High (15)	High (11)	Medium (8)	Low (5)	Low (3)
	Insignificant Slight Pain and/or Discomfort		Medium (10)	Medium (7)	Low (4)	Low (2)	Low (1)

5.3 AUTHORITY TO WORK PERMIT OR STANDARD OPERATING PROCEDURES

Standard Operating Procedures (SOP) can be used for low risk (work that doesn't require any Certificates), without the need for an Authority to Work. A Standard Operating Procedure (SOP) may replace the need for an Authority to Work for many routine operational tasks, provided the Standard Operating Procedure (SOP)/Job Safety Analysis (JSA) clearly identifies the associated hazards of the task and surrounding environment and also details the necessary controls required.

Where applicable, copies of QAC's written Standard Operating Procedures ("SOP") should be given to the contractor.

Particular attention must be paid to any defined lockout or tag-out procedures.

The SOP must be approved for that area/department and all persons operating under such SOP must be fully-trained and assessed as competent against the requirements of the SOP.

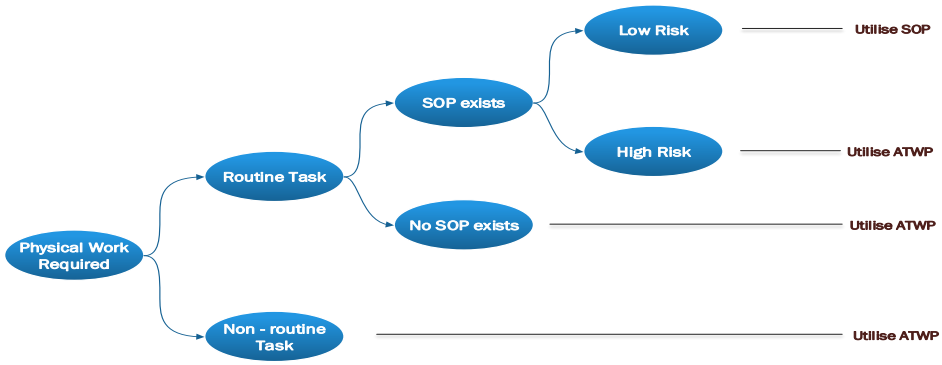
Certain tasks cannot be covered solely by an SOP - these are any activity that requires an associated Certificate and include:

- Any confined space entry

- Any work with the potential to fall 3 metres or more
- Any hot work with a naked flame or within 11 metres of any flammable material or substance
- Any work that requires more than single-point isolation
- Ground penetration
- Wall penetration

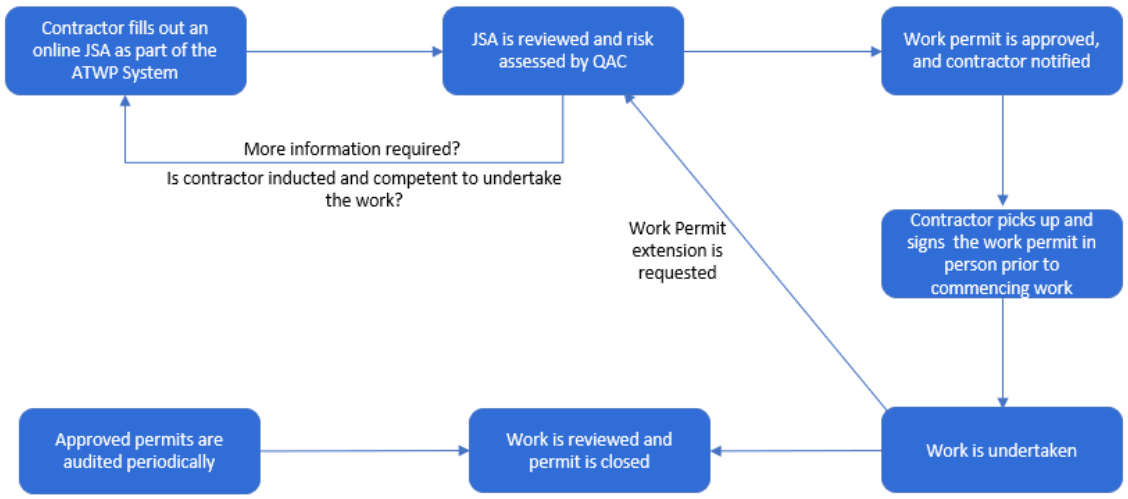
In these situations, the Standards Operating procedure (SOP)/Job Safety Analysis (JSA) will be attached to the Authority to Work Permit. All documents must be reviewed by the person performing the task to ensure they understand the requirements and controls before work starts as well as to identify any new hazards. Additional hazards and their controls will be added to the Authority to Work.

Figure 3 – Authority to Work Permit Decision Tree



6 THE AUTHORITY TO WORK PERMIT PROCESS

Figure 4 – Authority to Work Permit Process



6.1 REQUIREMENTS WHEN APPLYING FOR A AUTHORITY TO WORK

For all permittable activities a documented Job Safety Analysis ("JSA") is required when any external contractor is engaged to do any work on a Queenstown Airport Corporation property. This will be included in the Authority to Work and hard copy available at the work-place.

Authority to Work Permit (ATWP) should be requested at least 24hrs before the work is to be carried out whenever possible.

Job Safety Analysis (JSA) should include all workers that are working under the Job Safety Analysis (JSA).

Authority to Work Permits and These will be logged on the Authority to Work Permit (ATWP) register.

All contractors performing work on a Queenstown Airport property should have a Contractor Induction. Where this is not possible (eg emergency works) the contractor must be escorted by a person who has completed the Contractor Induction.

6.3 AUTHORISED ATWP APPROVERS

The issuing of an Authority to Work Permit (ATWP) is subject to the approval of the permit by an authorised QAC officer or their delegate as listed below:

Technology and Asset Manager
Asset and Facilities Coordinator
Manager Wanaka Airport

6.4 AFTER HOURS AND EMERGENCY PERMIT ISSUING

The issuing of an emergency ATWP can be actioned by the Operations Duty Manager or duty AES Crew Chief based on their assessment of the risks, urgency and hazards presented by the event.

Afterhours authorisation to allow a contractor to commence work can be verbally granted by the following authorised officers based on the risk assessment and urgency of the request:

Operations Duty Manager
AES Crew Chief

7 SPECIAL WORKS REQUIREMENTS

7.1 TEMPORARY OBSTACLES

Equipment such as cranes, concrete pumps, drilling rigs can pose a hazard to aircraft and therefore must be managed carefully therefore a Temporary Obstacle Application (QAC1-4130) as well as a Lift Plan should be prepared for all operations involving this type of equipment.

7.1.1 REQUIREMENTS FOR APPLICANT

Anyone wishing to operate a crane, concrete pump or similar must apply to QAC using form QAC1-4130 – Temporary Obstacle Application.

Obstacles less than 6m in height and outside the 300m strip for Runway 05/23 require notification prior to commencement while obstacles greater than 6m or any obstacle within the 300m strip require 5 working days for the application to process.

Applicants should apply up to one month prior to the intended works date to ensure application is processed in time and any changes required by QAC are actioned.

A Lift Plan should be prepared that details the following:

- Roles and responsibilities
- Description of Load to be lifted
- Crane or lifting equipment selection
- Ground and surround conditions
- Crane siting and lifting study
- Rigging plan
- Method statement
- Weather conditions

7.1.2 REQUIREMENTS FOR ISSUER

The person assessing the obstacle must carry out the following steps on receipt of a Temporary Obstacle Application:

- Conduct an assessment of the proposed obstacle on the OLS at Queenstown Aerodrome. Once the effects of the proposal have been determined, a determination will be made as to whether the proposed obstacle can be erected, and if so, what conditions apply to the activity.
- The obstacle should be assessed obstacles against the Queenstown Airport OLS maps. Assessment should also be carried out using distance from Centreline calculations as a cross check.
- If the obstacle appears to be on the boundary of the OLS or close to it, the application should be forwarded to the QAC Surveyor for cross checking.
- If deemed necessary, issue a NOTAM with Airways New Zealand
- Any obstacles in relation to Runway 05/23 must be assessed also be assessed by GE Naverus prior to commencement.

If the obstacle is deemed to be a Hazard to aircraft then the applicant is to be advised that a Part 77 application is to be made with the QAC by the applicant. This process can take up to 90 days to process.

If works are to be carried out during the hours of darkness and no NOTAM is to be issued, the issuer must advise the duty night rescue pilot at Heliworks Ltd.

7.2 HOT WORKS

Hot work is often a misunderstood and an under-rated activity. Not only does the task need to be assessed, but also the environment that you will be working in.

7.2.1 PURPOSE

The purpose of the hot work process is to:

- Define Hot Work and the necessary controls to ensure safe working conditions.
- Prevent the possibility of fire or explosion which may result in harm to persons or property.

7.2.2 SCOPE

This procedure will be used for all hot work on any Queenstown Airport property.

7.2.3 DEFINITION OF HOT WORKS

Hot Work is any work that involves a source or potential source of ignition. The term “hot work” includes, but is not limited to:

- Gas cutting and welding.

- Soldering.
- Rotary disc cutting and grinding.
- Paint stripping (hot air and flame gun).
- Roof repair (bitumen boilers).
- Any other operation that uses naked flames or produces sparks.

7.2.4 REFERENCES

- Health & Safety at Work Act 2015.
- NZS 4781 – 1973 – Code of Practice for Safety in Welding and Cutting.
- Department of Business & Innovation, Code of Practice – Hot Work on Drums and Tanks – 1988.
- Insurance requirements from insurance Company.

7.2.5 GENERAL HOT WORK RULES

7.2.5.1 Preliminary Requirements & Certificates

Ask yourself if the hot work can be avoided – or can it be moved to a safer area?

The only hot work that can be completed without a Hot Work Certificate is if it is carried out in a designated hot work area that has been assessed and approved as a hot work area. Examples of such areas can be an engineer's workshop or within a project zone.

There must be documented evidence that this assessment has been carried out before it can become a designated hot work area.

A copy of the Hot Work Certificate must be visible at the work area.

Queenstown Airport trained issuers are the only staff that can authorise any Hot Work Certificates.

In most circumstances, hot work should not take place while the fire suppression for that area (sprinkler installations, etc.) is non-operational. In situations where hot work must take place while they are non-operational, additional controls shall be put in place.

A fire system impairment certificate of the appropriate type will also be needed.

7.2.5.2 Fire Extinguishers, Hose Reels & Callpoints

Portable hand-held fire extinguishers of the appropriate type are required for carrying out hot work, and must be available at the working site. Minimum requirements are two 2kg extinguishers of the correct type for inside work and two 4.5kg extinguishers for external work. These extinguishers should

be in addition to those provided for the normal protection of the building. Do not leave a partially discharged extinguisher in the workplace.

The location of hose reels and manual fire call points within the immediate area should be identified.

7.2.5.3 Fire Blankets

Areas of flammable materials that cannot be cleared must be covered with a fire-resistant blanket within an 11 metre radius to prevent spread of sparks.

All sparks must be contained by use of fire blankets or other means to prevent transfer into unprotected areas.

7.2.5.4 Escape Routes

Ensure all escape routes are clear.

7.2.5.5 Housekeeping

Keep the area of operations clean, free of combustible materials and, where possible, damped down. If the standard of housekeeping drops the issuer can increase the risk score and the controls that may be triggered by that (e.g., the introduction of safety watch, etc.).

7.2.5.6 Screens & Barriers

Ensure the appropriate controls (screens, etc.) are put in place to safeguard others from exposure to arc flash where applicable.

Ensure barriers are in place to prohibit other personnel coming within the work area.

7.2.5.7 Ventilation

Ensure proper ventilation of the hot work area to remove all toxic fumes, if required.

7.2.5.8 Construction Features

Check construction of building in the immediate area of work (if using screens – within that area – if no screens or prevention of spread of sparks, a radius of 11 metres must be checked); look for cavities, polystyrene sandwich panels (Polypanel), cable runs, electrical distribution boards and pipe work.

A Fire Watch must be continued once the work has ceased, with routine checks should be made of the area to ensure that there has been no ignition.

7.2.5.9 Work Platform & Scaffolding

Ensure a safe and stable working platform.

Note: Working from a ladder is not considered good practice.

Ensure scaffolding boards (if in use) are not in contact with a heat source.

7.2.5.10 Lighting

Ensure adequate lighting is available in work area.

Note: Using grinding machines under fluorescent lighting may require additional precautions to prevent the strobe effect.

7.2.5.11 Flammable Liquids, Gases, Compounds

Ensure pipe work and vessels that have contained flammable liquids or gases have been made inert and have been certified 'gas-free'.

Ensure that environmental testing for flammable compounds has been conducted immediately prior to work starting in high-risk areas and confined spaces (consider the 11-metre radius rule).

7.2.5.12 Chemicals

Ensure correct controls are identified and followed when using any chemicals (e.g., pickling paste).

Refer to Material Safety Data Sheet (MSDS) for all storage and handling requirements, including the safe disposal as well as how to treat spills or personal contact before starting tasks.

Correct PPE must be worn while handling Hazardous materials.

7.2.5.13 Sensitive Equipment

Sensitive electronic equipment should be isolated from welding current or conducted heat.

7.2.5.14 Cutting and Grinding Discs

Ensure all rotary cutting and grinding discs are in good condition and suitable for the grinder and work to be conducted.

7.2.5.14 Gas Cutting Equipment

All gas cutting equipment should have:

- Hoses kept in good condition.
- Anti-flash devices fitted to valve set.
- Valve keys attached to valve sets and readily available.
- Gas cylinders secured in the upright position, both in use and storage.
- All the equipment in accordance with the relevant New Zealand Standards.

7.2.5.15 Fire Precautions on Airfield Movement Areas

The fire precaution area is the area within 15 metres of an aircraft and/or fuelling equipment. Smoking or naked flames will not be permitted within 15 metres of an aircraft, the fuel system or fuelling equipment.

Welding, cutting or grinding will not be permitted within 50 metres of an aircraft while refuelling or within 15 metres of aircraft wingtips at all other times.

Airfield Officers must consider fire precautions for the following tasks:

- Hotmix work or pavement reflector maintenance using heating equipment with naked flame on the movement area.
- Welding work on or adjacent to the movement area.

This type of work requires a Hot Work Certificate issued by the trained QAC staff members.

7.2.6 FILLING OUT HOT WORK CERTIFICATES

Any contractor or employee required to carry out Hot Work as defined above at Queenstown Airport needs to fill out the Hot Work Certificate. This includes filling out the “Required Precautions Checklist” and the job details section. The back of the bottom copy shall also be filled with information as required.

A designated Fire Watch shall be provided and identified on the worksite and shall be someone who is trained in the use of firefighting equipment, who is familiar with the site and knows the methodology of raising alarm.

Any urgent Hot Work Certificate after hours shall be issued by the Operations Duty Manager or AES crew Chief

The Certificate Issuer shall keep the top copy of the Hot Work Certificate for their records and file a copy on the QAC Authority to Work file.

7.2.7 PROCEDURE UPON COMPLETION

When the hot work is completed, remove all equipment and debris from the area.

Once the area has been cleaned ready to hand back, the designated Firewatcher shall return the Hot Work Certificate for closing.

7.3 CONFINED SPACES

Confined space entry, has for a long time been a workplace hazard which claims several lives each year, mainly because of a lack of understanding and education of the dangers.

Codes of practice have been written, which are designed to manage the inherent risks of entry and working in a confined space. WorkSafe accepts AS2865 1995 Safe Work in a Confined Space as the current state of knowledge for managing work in confined spaces.

7.3.1 PURPOSE

The purpose of the Confined Space Process is to:

- Define confined space and the necessary controls to ensure safe working conditions.
- Prevent the possibility of exposure which may result in harm.

7.3.2 SCOPE

This procedure will be used for all confined space on Queenstown Airport property.

7.3.3 DEFINITION

A confined space is defined in the "Australian/New Zealand Standard – Working in a Confined Space" as:

- An enclosed or partially-enclosed space that is at atmospheric pressure during occupancy and is not intended or designed primarily as a place of work, and
- Is liable at any time to –
    - have an atmosphere which contains potentially harmful levels of contaminant;
    - have an oxygen deficiency or excess; or
    - cause engulfment; and
- Could have restricted means for entry or exit.

It should be noted that the definition does not apply to underground mining, tunnelling operations or work in atmospheres which are not at atmospheric pressure. These are subject to separate and specific regulations and standards.

Confined spaces may include but are not limited to:

- Storage tanks, process vessels, boilers, pressure vessels, silos, vats and other tank like compartments usually having only a manhole for entry;
- Open-topped spaces at more than 1.5m in depth such as pump wells, pits or degreasers; which are not subject to good natural ventilation;
- Pipes, sewers, tunnels, shafts, ducts and similar structures.

7.3.4 CATEGORIES OF CONFINED SPACE

7.3.4.1 PREREQUISITES

Before working in a confined space, the person(s) entering must determine what category of confined space is to be entered, and subsequently what level of action should be followed. This information should be located in the Confined Spaces Register, and should have already been determined by the risk assessment contained within the Restricted or Confined Space Designation Form (SMS 12).

7.3.4.2 CATEGORY 1 CONFINED SPACES

Category 1 is the highest level of risk. This is when there is a high potential risk from a variety of known or unknown contaminants, which are not easily identifiable or controllable. These confined spaces can be immediately hazardous to life and require special precautions prior to and during working in the space.

These include medium risk areas which may be hazardous because of a build-up of contaminant, or where there may be additional hazards such as noise, temperature, and manual handling.

For Category 1 confined spaces, attempts should be made to find another method to do the task. If the job needs to be done, the controls need to be documented on the Certificate. The Certificate needs to identify hazards that already exist as well as hazards that will be introduced by the work that will be done.

Atmospheric monitoring must be ongoing during work in these areas to ensure a safe working environment.

For Category 1 confined spaces, a safety observer is required outside the entrance to the confined space. Communication must be maintained at all times between the person performing work in the confined space and the safety observer. It may be necessary in some cases, for two-way radio to be used to maintain communication between workers.

7.3.4.3 CATEGORY 2 – RESTRICTED ACCESS

These are spaces that have good ventilation and are accessed regularly (e.g., a ceiling space where the environment never changes, etc.).

Any spaces on airport, including those already regarded as confined spaces, can be assessed and determined as falling within the lesser category 2 “Restricted Area”. This assessment must use the steps in the Restricted or Confined Space Designation Form (SMS 12). Completed forms should be retained in the Register.

Where a designated Restricted Space subsequently changes conditions / activities that give rise to additional hazards after the initial assessment, it MUST be re-assessed to determine if it now meets the Category 1 Confined Space criteria.

The initial assessment as a Restricted Space is for entry only, and does not take account of any work activity which may need to be done within the space. For that, a separate Job Safety Analysis is required.

7.3.4.3 REGULATORY REQUIREMENTS

The control of confined spaces health risks in the workplace is enshrined in several pieces of legislation and codes of practice.

All confined space entry and procedures associated with Queenstown Airport-owned or leased property shall be performed in accordance with all relevant Acts, Regulations, Advisory Standards, Codes of Practice and Industry Standards, including, but not limited to the following:

- Queenstown Airport Authority to Work procedure (this document).
- Health & Safety at Work Act 2015.
- Australian /New Zealand Standard AS/NZS 2865:2001 – Safe Working in a Confined Space
- WorkSafe Guide – Safe Working in a Confined Space

AS/NZS 2865:2001 is particularly important because it sets out the particular requirements and procedures for designers, manufacturers, suppliers, employers and employees to ensure the health and safety of any persons required to enter or work in a confined space.

7.3.4.4 CONFINED SPACES REGISTER

A Confined Spaces Register to identify all confined spaces on site shall be maintained. The Register shall include:

- Building or facility name.
- Equipment number.
- Location/pit number.
- Confined space risk category (i.e., confined space or restricted area – see paragraph above).

All confined spaces identified and recorded on the Confined Space Register shall be defined by the above category system (i.e., either a confined space or a restricted area).

Each confined space on the register will have a related Confined Space Entry SOP that identifies isolations, rescue plan, personal protective equipment, etc. A copy of the relevant SOP will be attached to the Authority to Work, along with the Confined Space Certificate.

At the location, the space shall be identified as being a confined space through the type of signage/tag identified in section 7.3.4.6 Signposting below.

For spaces which are not on the register, but fit the description of a confined space, a risk assessment must be performed to determine what types of hazards may be present in the space, and what category of work should be followed.

7.3.4.5 CONFINED SPACE CERTIFICATES & SOPS OVERVIEW

The Confined Space Certificate serves several essential functions. It requires restricted entry to only authorized personnel, it ensures that communication occurs, hazards are controlled and importantly it serves as an official written record of existing conditions in particular confined spaces.

This Certificate should be dated and carry an expiration date, with work ceasing on this date. If conditions change, work must stop and a new Certificate must be issued once additional safeguards are in place.

The Authority to Work should have the SOP attached that relates to the specific Confined Space which will explain a procedure that will in the first instance seek to eliminate the risk of confined space entry and where entry is unavoidable, will minimise the risk to workers. This procedure will include:

- Methods for reporting Confined Spaces hazards and risks.
- The initial risk assessment.
- The magnitude of the risk, i.e. the category of Confined Space.
- The Confined Space Certificate.
- Responsibilities of all staff associated with confined spaces.
- Emergency and evacuation procedures.

The use of Standard Operating Procedures (SOP) will also speed up the time taken to issue a Certificate for a confined space. The Standard Operating Procedures (SOP) does not take away the need for a Certificate, but can simply be attached to the Authority to Work. The physical checks will still need to be carried out to ensure that there are no changes to the environment.

A Job Safety Analysis (JSA) must be added to the Standard Operating Procedures (SOP) if there is any variation of task that is not covered in the Standard Operating Procedures (SOP).

7.3.4.6 SIGNPOSTING

All entrances to any confined space shall be signposted. The signs shall be erected in the immediate vicinity of the space and must:

- Identify the space.
- Notify employees that they must not enter the space unless they have an entry Certificate.
- Remain clear and prominently positioned.

Signs shall warn against entry by persons other than those who are listed on the entry Certificate. They may be temporary and only erected during work. However, where unauthorized or unintentional entry is likely to occur, permanent signage should be prepared.

An appropriate sign is shown at right.

7.3.4.7 IDENTIFYING THE HAZARDS

Where working in a confined space cannot be avoided, we must take all steps to identify and control the hazards. There are two stages to this:

- Identify the hazards that exist in the area that the work is to be carried out.
- Identify the hazards that are going to result from the work that will be carried out.

Adequate controls must be in place to control hazards which will be created by the work to be done, for example:

- Work that may use up oxygen.
- Work that might give off a gas.
- Work that may ignite existing vapours.
- Conflicting work in the same area.
- Chemicals used for cleaning (e.g., pickling paste).

In some instances, it may be safer to remove a part from a confined space to carry out further repairs in a safe environment than to repair within the confined space.

7.3.5 AVOIDING WORK IN CONFINED SPACES

All effort should be taken to reduce the need to work in a confined space. Some options could include:

- Opening up of the confined space.

- Using extended equipment to access the area.
- Changing the time of the work to a time where some of the hazards can be removed (i.e. between flight times).
- Moving of some equipment so it can be accessed externally from the confined space.
- Noting future planning / redesign possibilities to eliminate the need for confined space entry.

However it is realised that in some instances, working in a confined space cannot be avoided.

7.3.6 STAFF & CONTRACTORS' RESPONSIBILITIES

Any person entering a Confined Space has a responsibility to provide a job safety analysis which is in accordance with the principles outlined in this Manual. They are responsible for their own health and safety, and should not endanger the health and safety of themselves or others.

They should complete the entry Certificate prior to entering a confined space and submit the entry Certificate to a Certificate Issuer for approval.

7.3.7 SAFETY OBSERVER RESPONSIBILITIES

A Safety Observer is a competent person assigned to remain on the outside of, and in close proximity to, the confined space and capable of being in continuous communication with and to observe those inside, if practicable. In addition, where necessary, initiate rescue procedures and operate and monitor equipment used to ensure safety during entry and work in the confined space.

Under no circumstances shall the safety observer enter the confined space.

The Safety Observer shall not have other duties that interfere with their role as a safety Observer and shall never leave their post whilst an entry is in progress.

Appropriate communication systems must be arranged between the Safety Observer and those working inside the confined space (e.g., face-to-face, 2-way radio, etc.).

The Safety Observer is to record the names of all people who enter the confined space plus time in / time out.

The following responsibilities also apply:

- To maintain contact with entrants for confined spaces.
- To promptly react to confined space entry incidents.
- Having control of the entry and exit of a confined space.
- Carrying out field calibrations of atmospheric test equipment, in particular prior to the start of work.
- Authorising and controlling those entering and leaving the confined space.

- Ensuring, without after entering the space that no personnel remain in the confined space at the conclusion of the day's work.
- Regularly verifying the status of those working in the confined space.
- Recognising and responding to abnormal conditions inside and outside the confined space and raising the alarm if required.
- Evacuating the confined space if the emergency alarm sounds (except for planned routine test).
- Barring the entry point during breaks and at the end of the work period.
- Displaying the Authority to Work and Confined Space Entry Certificate at the point of entry.
- Countersigning the Confined Space Entry Certificate and agreeing to ensure that all those inside the space understand and abide by its requirements.
- Stopping work and evacuating personnel from confined space, if atmospheric test results are outside the prescribed limits.
- Re-testing the atmosphere after breaks.
- Monitoring the atmosphere conditions for oxygen and flammables using approved calibrated atmospheric test equipment continuously, and recording the results at intervals of 30 minutes.
- Understanding what the rescue plan is and assisting in its execution.

7.3.8 ENTRY PREPARATION

Prior to any confined space entry the following must be considered:

- Can the work be done without entering the confined space?
- Have all hazardous liquids and residues been removed from the confined space?
- Have all physical hazards in the confined space been identified and controlled?
- Have isolations, depressurising and opening of confined spaces been completed accordance with recognised procedures?
- Have all spaces been isolated from process pipe work in such a manner as to allow for natural ventilation and the free draining of all liquids?
- Are all internal and external access able to be kept clear at all times?

- Are all spaces able to be purged either by natural or forced ventilation until they are confirmed as having a safe atmosphere? Acceptable methods of forced ventilation are a venturi or air-driven fans placed as far as practical from the entry.

7.3.9 ENTRY PROCEDURE

The Confined Spaces register shall contain a detailed risk assessment for all confined spaces which forms the basis of the entry procedure to the confined space.

A job safety analysis MUST be performed by a qualified person prior to starting work in any category of confined space.

Prior to entry, ensure:

- Atmospheric testing is performed (see para below).
- The Confined Space Certificate has been checked and signed by supervisor.
- Any other precautions are in place, as required by the job safety analysis, such as:
    - On-going monitoring (category 1).
    - 2-way radios/ other communication techniques.
    - Have read and understood the rescue plan.
    - Have any needed equipment on standby (e.g., tripod, winch, Fire Service).

All Category 1 confined space entries will have a competent Safety Observer present at the entry point while personnel are inside the confined space.

7.3.10 ATMOSPHERIC TESTING

Prior to entry, the atmosphere must be checked, and then monitored continuously while personnel are inside the confined space.

An atmosphere is considered safe for entry (head and shoulders) when concentrations are:

- Oxygen - a minimum oxygen content in air of 19.5% by volume, and a maximum oxygen content in air of 23.5% by volume, under normal atmospheric pressure.
- Flammables - <5% lower explosive limit (LEL).
- Toxics - < 50% workplace exposure standard (WES) or the company standard, whichever is lower.
- WES = 25ppm CO, 10ppm H2S, 25ppm ammonia.

If the atmosphere is outside the limits above, no entry is to take place and any persons in the confined space are to be removed from the Confined Space.

An Exposure Standard is an airborne concentration of a particular substance in the person's breathing zone, exposure to which, according to current knowledge, should not cause adverse health effects nor cause undue discomfort to nearly all persons. The exposure standard when calculating levels of atmospheric contaminants can be of three forms:

- Time-weighted average (TWA) – The average airborne concentration of a particular substance when calculated over a normal 8-hour workday, for a 5-day work week.
- Short-term exposure limit (STEL) - A 15-minute TWA exposure which should not be exceeded at any time during a work day if the eight-hour TWA average is within the TWA exposure standard. Exposure at the Short-term exposure limit (STEL) should not be longer than 15 minutes and should not be repeated more than 4 times a day. There should be at least 60 minutes between successive exposures at the Short-term exposure limit (STEL).
- Peak exposure limit - Peak is a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time, which does not exceed 15 minutes.

Flammable range is the range of flammable gas or vapour (percentage by volume) in air in which an explosion in air can occur upon ignition. Expressed by lower explosive limit (i.e., the concentration of contaminant in air below which the propagation of a flame does not occur on contact with an ignition source, and upper explosive limit (i.e., the concentration of contaminant above which the propagation of a flame does not occur on contact with an ignition source.

No hot work is to take place in a confined space if the Lower Explosive Limit (LEL) is greater than 1%.

7.3.11 PROCEDURES DURING WORK IN THE SPACE

After initial entry and while work is in progress, ensure:

- Work continues in the confined space for ONLY the allocated time frame.
- On-going monitoring is performed as specified.

7.3.12 RESCUE PLAN

A rescue plan must be developed for each confined space entry. The rescue plan should take into account all possible circumstances that would require a rescue and then outline the methods of getting people out of the confined space. Situations considered must include:

- Emergency situations not related to the confined space that may arise during work in confined spaces (e.g., building evacuations, etc.).
- Employees are uninjured and evacuate themselves from the confined space.

- Employees are injured but still capable of self-evacuation.
- Entry is required to provide treatment.
- Employees are assisted to evacuate by persons remaining outside the confined space.
- Emergency entry is required in order to evacuate employees.

The plan shall include how emergency services will be notified and clear statements on what they will be told and how to get to the site of work.

The rescue plan should be clearly communicated both to those entering the confined space and other stakeholders.

All employees who may be involved with rescues from a confined space should be made aware that the rescue procedures MUST be followed at all times.

7.3.13 TRAINING

The aim of training in confined spaces is to remove or minimise risks in the workplace associated with confined spaces. It is also important that all people involved with confined space entry understand the risks / hazards that they could be exposed to and the relevant controls.

Training will be provided for every staff member, including stand-by persons before the employee is assigned to duties in a confined space.

Queenstown Airport Corporation's expectation for contractors is that they are qualified to the same standards and have been assessed as competent. Evidence of the training must be produced before the contractor is able to receive a Certificate.

7.4 WORK AT HEIGHTS

7.4.1 PURPOSE

The purpose of this working at heights procedure is to ensure both legal and safety requirements are met to prevent harm in tasks involving working at height.

7.4.2 LEGAL REQUIREMENTS

Section 21 of the Health and Safety Regulations states that:

"All practicable steps must be taken to ensure that where any person may fall:

- Means are provided to prevent the person from falling; and
- Any means so provided are suitable for the purpose for which they are to be used."

7.4.3 REFERENCES

- Health & Safety at Work Act 2015.
- Approved Code of Practice for the Safe Erection and Use of Scaffolding.

- Ministry for Business, Innovation & Employment, Best Practice Guidelines for Working at Height in New Zealand

7.4.4 GENERAL RULES

Where there is a risk of a fall and injury, a Job Safety Analysis (JSA) or Standard Operating Procedure (SOP) is required.

Where any person may fall more than 1.8 metres (as per legal requirements):

- A Authority to Work is required and a working at heights certificate must be attached, and;
- Means must be provided to prevent the person from falling.

All persons working at height above 5 metres are required to have notified the local WorkSafe office before obtaining an Authority to Work.

Any equipment being used must be checked and functioning properly. Any tools or equipment liable to fall should be suitably constrained or restrained.

Live aerials should be confirmed dead before work on them commences.

Barriers and signs should be erected to prevent the passage of other persons into the area.

7.4.5 SAFETY HARNESSES

Fall protection systems and their related safety harness, lines, etc., are designed to catch and hold a person if they fall. They are not designed to hold a person in a working position.

They should only be used when there is no other form of fall restraint available. Fall arrest systems only provide protection for the person using the safety harness once they have already fallen – they do not prevent falls.

Use of safety harnesses, fall arrest systems and related rigging of static lines, anchorages, etc., is an extremely skilled and specialised area and should only be carried out by a fully-trained and competent person.

Anchor points must be certified by an engineer.

Persons expected to use a safety harness and fall arrest system shall be able to demonstrate to the Permit Issuer that they have completed training provided by an approved training provider.

The safety harness must have been certified as safe to use and inspected before use and certified annually.

There must always be a Safety Observer present when a person is using a safety harness. Safety Observers must be able to communicate with the person(s) using the harness.

A rescue plan should be documented in the Authority to Work Permit and be carried out by competent personnel.

7.4.6 CHERRY PICKERS

Power-operated elevated work platforms, which include cherry pickers, scissor hoists, etc., are specialised pieces of equipment. It is essential that the correct type of machine is used for the job, and that it is set up and used by a competent person.

The Operator must be competent to use the cherry picker, and the cherry picker must have valid certification.

There must be a person present, acting as a Safety Observer, when a cherry picker is in operation. Safety Observers must be able to communicate with the person(s) using the platform.

Scissor lifts do not require the use of safety harnesses under the code of practice, as long as personnel remain inside the handrails.

7.4.7 FORKLIFTS/SAFETY CAGES

Work platforms/safety cages should only be used on forklifts when designed specifically for the purpose.

Where possible, the tilt lever on the forklift must be locked out. However, many models do not contain a tilt lever. In these cases, an alternative method of ensuring that the safety cage cannot be tilted must be used (e.g., turning the forklift motor off, etc.).

The safety cage must have current certification, and the person in the safety cage is to wear a safety harness attached to the safety cage.

The safety cage is to be attached to the forklift, and the forklift driver shall remain seated in the forklift at ALL times.

7.4.8 SCAFFOLDING

Scaffolding needs to be designed and erected to suit the type of work to be carried out, the site conditions and the anticipated workload.

A person erecting scaffolding to a height of 3 metres or more must be a registered and competent scaffolder. Where the scaffolding exceeds five metres in height, WorkSafe must be notified. The scaffolding needs to be “tagged” or certified as being safe.

If working around live process equipment, all equipment must be protected from falling objects or suitable safeguarded to prevent damage. No loose items should be left unsecured.

Ground stability should be checked before erecting a scaffold.

Persons erecting the scaffold, and not within the confines of the scaffold, should be wearing safety harnesses.

All scaffolds must have kick boards.

7.4.9 LADDERS

Before use, always consider whether using a ladder is the best and safest means of doing the job.

Note:

- Ladders are not designed as working platforms
- Ladders should only be used for access or to carry out minor or routine work.
- Only one person should use a ladder at any one time.
- Check that the ladder is in a safe condition to use.
- Industrial ladders only shall be used.
- Ladders should be set up at an angle of 1 horizontal to 4 vertical, about 14 degrees to the vertical. For more details, see Guidelines for the Prevention of Falls.
- Secure the ladder against movement or sliding at top and bottom.
- It may be necessary for one person to hold the ladder until another can climb up to secure the top.
- Allow at least one metre extension above the step off point unless another form of adequate handhold is provided.

7.4.10 WORKS THAT REQUIRE SPECIFIC TRAINING/LICENSES

All works at Queenstown Airport properties are to be carried out by an appropriately trained person, or under the direct supervision of an appropriately trained person.

Where the works are required to be completed by a registered tradesperson proof of qualification is to be provided as part of the Authority to Work application.

This also includes works that involve operating specialist machinery and licensing.

7.5 IMPAIRMENT NOTICES AND SYSTEMS ISOLATION

7.5.1 GENERAL RULES

Whenever any fire system operation is impaired, a fire systems impairment certificate of some type shall be completed.

Where practicable, only one fire system (e.g., sprinkler or automatic fire detection system) is to be disabled in relation to a plant or in any area at any one time.

If the audible alarm is to be temporarily disconnected, consider providing a suitable alternative alarm device that is able to alarm effectively above normal ambient noise levels (e.g., an air horn).

7.5.2 PROCEDURE

After authorisation, the Asset team will e-forward a copy of the fire systems impairment certificate to Queenstown Airports' insurance company.

Prior to commencing work, the Permit Receiver will obtain an Authority to Work from the Permit Issuer.

Upon completion of the work, the Permit Issuer will sign off the certificate as complete and advise the insurance company that the fire system is operational.

7.6 GROUND PENETRATION AND EXCAVATING

7.6.1 PURPOSE

The purpose of this ground penetration procedure is to identify concealed hazards and necessary controls to allow safe excavation/penetration, and to protect Queenstown Airport Corporation's underground services and utility equipment.

A Ground Penetration Certificate is required when breaking ground of a depth greater than 300mm. Certificate Issuers may also at their discretion require the Ground Penetration Certificate process to be used for excavations less than 300mm.

Any excavation greater than 1.5 metres depth, requiring entry by personnel, is also classified as a Confined Space entry which must be covered by a Confined Space Certificate, in addition to the Ground Penetration Certificate. This is also classed as Notifiable Work.

7.6.2 DEFINITIONS

Drives: small tunnels cut into the sides of trenches or shafts

Excavations: (Greater than 300mm deep)

Open excavations: are wider than trenches and include foundations, building sites etc.

Shafts: are vertical excavations of variable depth and section.

Trench: A long narrow excavation where the horizontal width at ground level is less than the vertical depth of the deeper side.

7.6.3 REFERENCES

- Health & Safety at Work Act 2015.
- Code of Practice – Excavation and Shafts for Foundations ISBN 0477-03578-7.
- Code of Practice – Demolition ISBN 0477-03558-2.

7.6.4 APPLYING FOR A GROUND PENETRATION CERTIFICATE

Applications must be made a minimum of seven working days before work is due to commence, so that drawings and detection equipment can be used to check the area required to be excavated, and the certificate developed showing the methods of control.

7.6.5 CERTIFICATE ISSUER RESPONSIBILITIES

The Certificate Issuer is responsible for:

- Checking that the relevant plans/drawings are attached to the certificate and are marked up with underground services/objects identified. Quality of plans provided to the contractor is critical. The Ground Penetration Certificate should only be issued if the Certificate Issuer and contractor are satisfied with the quality of plans and drawings.
- Where poor records exist, that non-destructive methods such as Electromagnetic Utility Location or acoustic pipe location are used to search for existing services and verify identified services are marked on the ground.
- To consider if Hydro or Vacuum Excavation are suitable methods of exposing services.
- Ensuring that the controls specified on the certificate are appropriate.

7.6.6 CERTIFICATE RECEIVER RESPONSIBILITIES

The Certificate Receiver is responsible for:

- Ensuring that WorkSafe have been notified, if necessary.
- Ensuring Permits to Work and any related documentation are visible at the work site during work.
- Ensuring work place and plant conditions will enable excavation to take place.
- Ensuring, if roadways blocked, that they have alternative emergency access.
- Ensuring any necessary notifications for Fire Service and Insurance have been made.
- Ensuring a Safety Observer is appointed.
- Ensuring that barricades, warning tapes required are erected to prevent others from injury.
- Ensuring all necessary site drawings are assembled and marked.
- Identifying the services affected, clearly marking them out and maintaining the markings.
- Ensuring all relevant drawings are attached to the certificate.

7.6.7 ISSUING THE CERTIFICATE

The Certificate Issuer completes the Ground Penetration Certificate in conjunction with the Certificate Receiver.

Prior to excavation, every site should be scanned for services as part of the service marking process – in particular, identification of services that may not be on plans or incorrectly drawn on plans.

While the service marking process can occur in the weeks prior to the excavation work taking place, the actual issue of the Certificate should take place within the 24 hours prior to the work commencing.

The Certificate should only be issued once the site has been inspected and the issuer is satisfied;

- With the job safety analysis.
- With the quality of service plans.
- That the method/s of identifying unmarked services is adequate
- That the surface markings are in good condition and clear.
- That the contractor will be using competent and suitably-trained staff.

Key details to consider and decide if controls are needed (dependant on the nature of the task):

- Method of shoring (support for exposed face of excavation) to ensure excavation remains safe, e.g., shoring of vertical sides or batter to prevent slippage.
- Excavation method whether mechanical or by hand, including details of field identification method.
- Notification to WorkSafe if required (7.6.9 Notifiable Work below).
- A process must be in place to maintain any ground marking throughout the excavation (i.e.: when the surface has been removed some process needs to be in place to maintain location of any services).

7.6.8 GROUND PENETRATION CERTIFICATE DURATION & EXPIRY

All Ground Penetration Certificates must have an agreed finish date and an absolute expiry date that requires the Certificate to have an on-site revalidation by the Certificate Issuer.

No Certificate should have an expiry date longer than 7 days.

7.6.9 NOTIFIABLE WORK

Notification of “Notifiable Work” covered by:

- Health & Safety at Work Act 2015 and/or
- Code of Practice, Excavation and Shafts for Foundations must be made to WorkSafe at least 24 hours prior to commencement. This includes, but is not limited to:
- Any trenching shaft or pit more than 1.5 metres deep and which has a depth greater than the horizontal width at the top.

- Any excavation in which workers are required to work with a ground cover overhead.
- Any excavation in which any face has a vertical height of more than 5 metres and an average slope steeper than a ratio of 1 horizontal to 2 vertical.

7.6.10 RULES DURING EXCAVATION WORK

Copies of the Ground Penetration Permit, Authority to Work Permit (ATWP) and service plans/drawing must always be held at the actual sight of the excavation work.

The contractor must maintain all ground markings throughout the excavation (i.e., when the surface has been removed, some process needs to be in place to maintain location of any services).

If unidentified services are located, work must cease until the issuer approval is given for re-commencement.

Excavation within 1 m, in any direction, of known underground services, indicatively or positively located (visual or locator) must be carried out by hand.

A spotter must be used when using mechanical digger in the vicinity of known services.

A flat bucket (not a tooth bucket) must be used around known services

All excavations left unattended must be barricaded. Portable flashing warning lights may be erected during hours of darkness for areas not illuminated.

Access and egress to excavation must be via secure ladders, steps or scaffolding.

7.7 WALL PENETRATION

7.7.1 PURPOSE

The purpose of this wall penetration procedure is to identify concealed hazards and necessary controls to allow cutting, drilling and attachment into walls that may contain services, and to protect Queenstown Airport property fire rating.

A Wall Penetration Certificate is required when breaking into existing walls and partitions, as well as the attachment of items that require fixings to penetrate a wall or partition.

7.7.2 REFERENCES

- Health & Safety at Work Act 2015.
- Code of Practice – Demolition ISBN 0477-03558-2.

7.7.3 APPLYING FOR A WALL PENETRATION CERTIFICATE

Applications must be made a minimum of seven working days before work is due to commence, so that drawings and detection equipment can be used to check the area required to be penetrated, and the certificate developed showing the methods of control.

7.7.4 CERTIFICATE ISSUER RESPONSIBILITIES

The Certificate Issuer is responsible for:

- Checking that the relevant plans / drawings are attached to the certificate and a check for services has been conducted.
- Where poor records exist, that non-destructive methods are used to search for existing services and verify identified services are marked.
- Ensuring that the controls specified on the Certificate are appropriate.

7.7.5 CERTIFICATE RECEIVER RESPONSIBILITIES

The Certificate Receiver is responsible for:

- Ensuring Permits to Work and any related documentation are visible at the work site during work.
- Ensuring all necessary site drawings are assembled and marked.
- Identifying the services affected, clearly marking them out and maintaining the markings.
- Ensuring all relevant drawings are attached to the certificate.

7.7.6 ISSUING THE CERTIFICATE

The Certificate Issuer completes the Wall Penetration Certificate in conjunction with the Certificate Receiver.

Prior to the wall, every site should be scanned for services – in particular, identification of services that may not be on plans or incorrectly drawn on plans.