

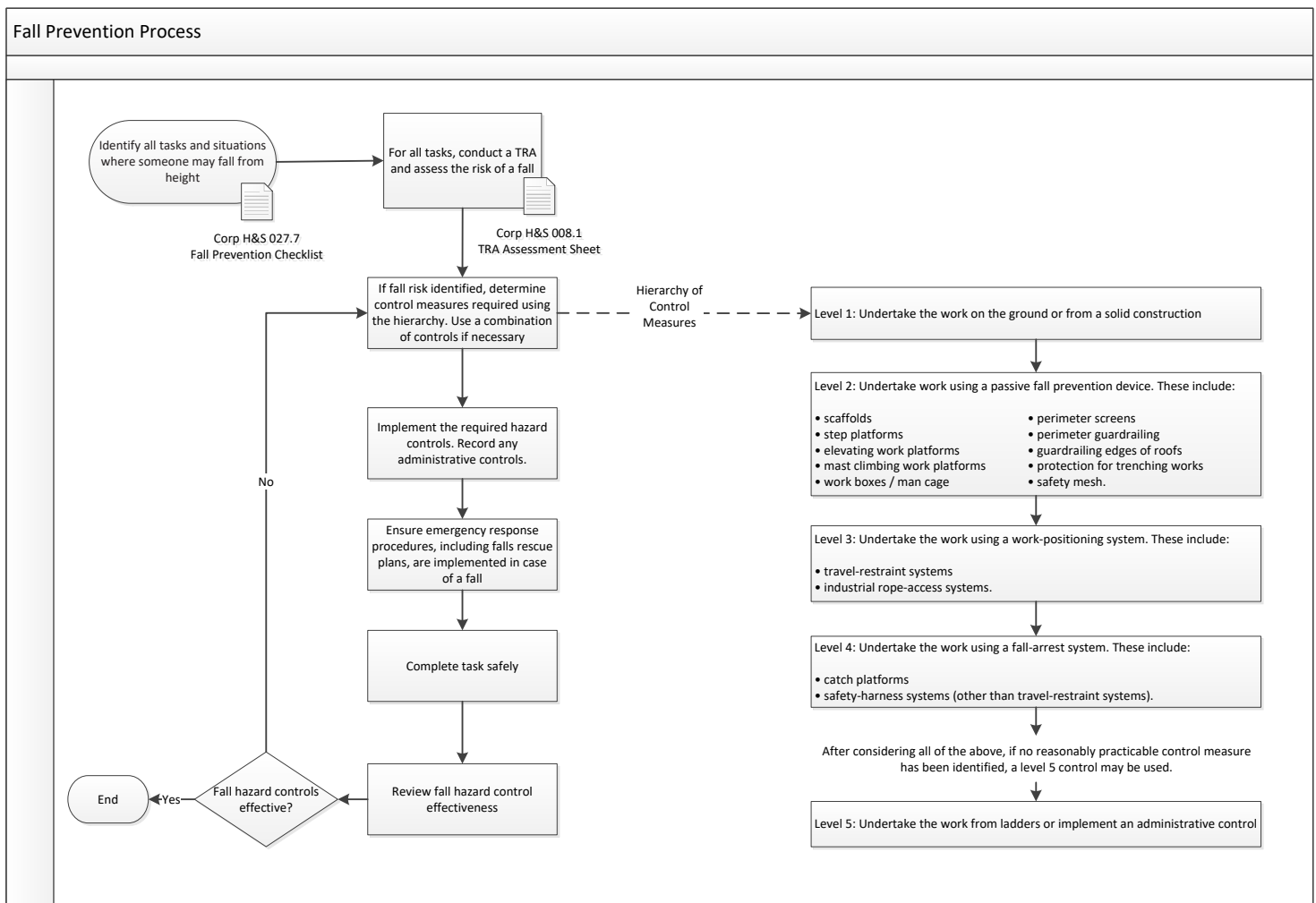
Purpose

To describe the process for the identification, risk assessment and management of fall related hazards. Melbourne Water expects that if there is a potential for a person to sustain an injury from a fall from any height, that the fall hazard is appropriately controlled. This includes working on slopes or at ground level alongside pits, shafts and trenches.

Scope

This procedure applies to all assets and premises owned, leased or occupied by Melbourne Water employees and contractors. It covers all types of work where there is a potential for a person(s) to fall or to be struck by a falling object resulting from work overhead.

Flow Diagram



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Procedure

1. Identify Fall Hazards

Before work commences, all locations and tasks that may involve the risk of a fall need to be identified.

When designing, modifying and installing new assets, CORP H&S 027.7 – Fall Prevention HAZID Checklist is to be used to help identify fall hazards. As part of job planning or when performing a task, CORP H&S 008 Task Risk Assessment, or equivalent risk assessment tool, must be completed to help identify fall hazards.

Some Tasks that need particular attention are those carried out:

- on any structure or plant being constructed or installed, demolished or dismantled, inspected, tested, maintained, repaired or cleaned
- on a fragile surface (eg cement sheeting roofs, rusty metal roofs, fiberglass sheeting roofs and skylights)
- on a potentially unstable surface (eg areas where there is potential for ground collapse including poorly backfilled or compacted ground, or unstable areas such as on top of stacks of building materials, timber pallets or bricks)
- using equipment to work at an elevated level (eg when using scaffolds, elevating work platforms or portable ladders)
- on a sloping or slippery surface where it is difficult for people to maintain their balance (eg on glazed tiles)
- working less than 2m from an unprotected open edge (eg near perimeters without guardrails or incomplete stairwells)
- near a hole, shaft or pit into which a person could fall (eg trenches, pile holes or service pits).

2. Assess the Risk of a Fall

If a task involving a fall hazard has been identified, the risk of a fall needs to be assessed using CORP H&S 008.1 – TRA Assessment Sheet, or equivalent risk assessment tool.

A Risk assessment shall be undertaken to identify the level of risk associated with the task and if there is the potential for a person to fall and sustain an injury, or drop an item from height and cause an injury. Using the risk matrix, a risk rating can be determined and effective control identified for implementation.

3. Control the Fall Hazards

For identified fall hazards, appropriate control measures must be implemented to prevent the fall occurring, or reduce the likelihood of a fall so far as is reasonably practicable. The reasons for choosing a particular control measure needs to be documented in the appropriate TRA or equivalent risk assessment. The following hierarchy of control measures must be followed:

3.1. Undertake the Work on the Ground or from a Solid Construction

Eliminating the need to work at height is the most effective way of protecting the safety of workers.

‘Solid construction’ means an area that has:

- a surface that can be verified as structurally capable of supporting people and material and any other loads applied to it
- barriers around its perimeter and around all open penetrations from, or through, which workers could fall
- an even and readily negotiable surface and gradient
- a safe means of access and egress.

3.2. Undertake the Work Using a Passive Fall Prevention Device

Passive fall prevention devices include roof safety mesh, guard railing, perimeter screens and temporary work platforms. A temporary work platform provides a working area for the duration of the job and is designed to prevent a person from falling. It encompasses a wide variety of plant and equipment, including scaffolds, elevating work platforms and work boxes.

3.2.1. Perimeter Guardrails

Perimeter guardrails shall be used to provide effective fall prevention at:

- the edges of roofs and roof framing
- the edges of scaffolds
- the edges of work platforms, suspended slabs, formwork and falsework,
- walkways, stairways, ramps and landings
- the perimeters of buildings and other structures
- the perimeters of skylights and other fragile roof material
- openings in floor and roof structures
- the edges of shafts, pits and other excavations.

3.2.2. Scaffolds

If scaffolds are to be used, they must:

- be installed by a licensed scaffolder
- have a Scafftag that records the date of completion and the responsible person that installed the Scaffold
- comply with AS/NZS 4576 Guidelines for scaffolding

3.2.3. Elevating Work Platforms

Elevating work platforms (EWP) include scissor lifts, cherry pickers, boom lifts and travel towers. EWP's must:

- register the design of the EWP with WorkSafe or with another state or territory workplace safety authority
- only be used on a solid, level surface
- only be used on other surfaces (when designed as 'rough terrain' units) in accordance with the manufacturer's directions
- be clearly marked with the safe working load limit
- be operated by a competent person (A person who has acquired through training, qualification, experience or a combination of these, the knowledge and skill enabling that person to correctly perform the required task), or a person who holds the appropriate license for high risk work or Elevated Work Platform Association Yellow Card.
- be operated by a person wearing a safety harness arrest system (excluding work in scissor lifts unless advised by the manufacturer or indicated in the risk assessment e.g. where operator's body is positioned outside the perimeter of the cage).
- Further guidance on elevated work platforms is provided in AS/NZ 2550.10 Cranes, hoists and winches—Safe use, Part 10: Mobile elevating work platforms

Those operating an EWP must have a documented Emergency Rescue Plan and must be able to demonstrate its effectiveness (refer section 5 for more detail).

3.2.4. Work Boxes / Man Cages

Work boxes/Man Cages are personnel-carrying devices designed to be suspended from a crane or a forklift for the purpose of providing an elevated working area. Work boxes/Man Cages shall be used as a last resort once all other safe and practical means of access and egress have been explored. Specific examples where work boxes/man cages may be considered as an access option include sewer access, working over aerated water channels or for roof access where EWPs, scaffold or stairways are not available. Additionally, Work Boxes/Man Cages may be used by

Cranes on standby for emergency rescue or retrieval purposes when performing maintenance or breakdown works to essential services.

If used, Work Boxes/Man Cages must:

- register the design of the work box with WorkSafe or with another state or territory workplace safety authority
- be designed in accordance with AS 1418.17 Cranes – Design and construction of workboxes
- be used in accordance with AS/NZ 2550.10 Cranes, hoists and winches – Safe use – General requirements.
- Only be used after completing a risk assessment that has considered the hierarchy of hazard controls
- Only be used after obtaining written approval from the Team Leader, or appropriate Melbourne Water manager.

3.3. Undertake the Work Using a Work-Positioning System

A work positioning system is equipment that enables a person to be positioned and safely supported at a work location for the duration of the task being undertaken at height. Work positioning systems require a higher level of operator competency and supervision than control measures that are higher up in the control hierarchy. Accordingly they should only be used where it is not reasonably practicable to use higher order controls.

3.3.1. Industrial Rope Access Systems

Industrial rope access systems (IRAS) are used for gaining access to and working on elevated/sloping work areas, usually by means of vertically suspended ropes. Although fall arrest components are used in the industrial rope access system, the main purpose of the system is to gain access to a work area rather than to provide backup fall protection.

IRAS can only be used in situations where the users and supervisors have undertaken a competency-based course of training such as those approved by the Australian Rope Access Association (ARAA).

For more information Rope Access Systems within Melbourne Water refer to Waterways and Land Delivery sites [Working with Ropes Standard Operating Procedure](#) that describes the process for using Rope Access techniques.

3.3.2. Travel Restraint Systems

A travel restraint system prevents the user from approaching an unprotected edge on a building or structure. Generally, the system consists of a full body harness that is connected by a lanyard to a suitable anchorage point or static line. The system must be set up to prevent the wearer from reaching the edge.

Travel restraint systems need to conform to the AS/NZS 1891 Industrial fall-arrest systems and devices series.

3.4. Undertake the Work Using a Fall-Arrest System.

A fall-arrest system means equipment and/or material that is designed to arrest the fall of a person. Examples of fall-arrest systems include industrial safety nets, catch platforms and safety harness systems (other than a travel-restraint system).

Fall-arrest systems should only be used if it is not reasonably practicable to use higher level control measures or if these higher level controls might not be fully effective in preventing a fall on their own.

Prior to attaching fall arrest systems to an anchor point, an assessment shall be conducted to ensure the anchor point has been tested and is suitable for use. Refer to [Strategic Asset Management Plan - Fixed Safety Assets](#) for more guidance.

Those wearing a Fall Arrest System must have a documented Emergency Rescue Plan and must be able to demonstrate its effectiveness (refer section 5 for more detail)

3.5. Undertake the Work from Ladders or use Administrative Controls

3.5.1. Ladders

Ladders can be used when it is not reasonably practicable to use a higher order control measure. Melbourne Water's preferred option when ladders need to be used is a commercially available step platform with a guardrail.

All other work from ladders requires a risk assessment to be completed with controls that comply with the following requirements:

- Ladders need to be used primarily as a means of access to or egress from a work area
- The person on a single or extension ladder shall not stand on a rung closer than 900mm from the top
- The person on a stepladder shall not stand higher than the second tread below the top plate. The base of single and extension ladders are secured or held in position by a second person
- The top of single and extension ladders are secured or tied off

In addition to the above requirements, people using ladders shall **NOT**:

- handle or use ladders where it is possible for the worker or the ladder to make contact with powerlines
- use metal or metal-reinforced ladders when working on live electrical installations
- set up the ladder in places, such as driveways and doorways, where a person or vehicle could hit it (if necessary, erect a barrier or lock the door shut)
- use a ladder near the edge of an open floor, penetration or on scaffolding to gain extra height
- over-reach (the worker's belt buckle needs to be within the ladder stiles throughout the work)
- use any power (air, hydraulic, electric or battery) equipment or tool specifically designed to be operated with two hands, such as concrete cutting saws and circular saws
- use tools that require a high degree of leverage type force (such as 'Stillsons' or pinch bars) which, if released, may cause the user to overbalance or fall from the ladder
- carry out work such as arc welding or oxy cutting
- work over other people
- allow anyone else to be on the ladder at the same time.

Ladders must be correctly selected for the task to be undertaken, for example, metal ladders or metal-reinforced ladders should not be used for live electrical work.

If required to work on ladders above 2 meters, refer to "Level 5 Controls – Ladders" of [WorkSafe Victoria's Compliance Code - Prevention of falls in general construction](#).

3.5.2. Administrative Controls

Administrative controls are systems of work or work procedures that help to reduce the exposure of employees to fall hazards where it is not reasonably practicable to use higher-level controls and may include 'no-go' areas, permit systems, the sequencing of work and safe operating procedures.

4. Falling Objects

4.1. Preventing Objects from Falling

Working from height introduced the risk of falling objects. To reduce the likelihood of objects falling from height the following control measures shall be considered:

- keeping large equipment at ground level
- stacking items so they cannot slide, fall or collapse when they are stored above ground level
- good housekeeping, for example keeping the work area tidy and ensuring materials, debris, tools and equipment that are not being used are out of the way
- tethering or otherwise securing tools and materials to prevent them falling on people below
- keeping tools or other materials away from edges and off of railings or sills

In instances where falling objects expose a worker to immediate risk to health and safety, WorkSafe must be notified (refer Event Management Procedure)

4.2. Exclusion zones

'No-go' areas can be an effective method of making sure people are not exposed to falling objects. They require adequate signage to warn against access to the hazardous area. They can be used to highlight the risks of entry to an area where work is being undertaken overhead and there is a risk of falling material.

5. Documented Emergency Rescue Plans

An activity conducted at height must identify the need for an emergency rescue plan which considers the different types of emergency scenarios e.g. suspension trauma, confined space retrieval etc. The rescue plan should not rely on the emergency services to implement the plan. The rescue plan shall be developed and implemented by Melbourne Water and / or the contracted company performing the work. Areas for consideration within a documented rescue plan at a minimum must contain the following;

Location of the work area	<ul style="list-style-type: none"> • Ease of access? • Remote or isolated? • Accessibility for emergency services? • Closest medical facility?
Communications	<ul style="list-style-type: none"> • Is there effective means of communication i.e. remote location? • Does the person working at height have the means to communicate while at height?
Rescue equipment	<ul style="list-style-type: none"> • Is the rescue equipment appropriate for the identified emergency situation?
Capabilities of rescuers	<ul style="list-style-type: none"> • Are rescuers appropriately trained for the identified emergency situation? • Will rescuers be able to respond to the incident in a reasonable amount of time giving consideration to identified hazards e.g. gas levels in confined spaces or suspension trauma? • Has the validity and effectiveness of emergency plans been tested?
First Aid	<ul style="list-style-type: none"> • Are appropriate first aid resources available? • Are First Aiders trained to the appropriate level and competent to undertake identified tasks?
Local Emergencies	<ul style="list-style-type: none"> • Will local emergencies services be required in the event of an incident and how will they be notified?

Emergency rescue plans must be developed in consultation with those undertaking the task. Rescue Plans must be

- reviewed by all team members prior to starting a task
- understood by all team members
- able to be executed by the rescue team

All details shall be recorded on the [Confined Space Entry and Fall Prevention Rescue Plan](#) or equivalent plan that meets the minimum requirements outlined in section 5.

6. Assurance Activities

At least every 2 years, Team Leaders and Managers shall verify the effectiveness of the implementation of this procedure using the prevention of falls checklist in IRIS.

Training

Role	Training Requirements
Managers and supervisors who are not required to work at height , but who are responsible for employees & contractors working at heights*	Fall Prevention Awareness External Training Provider Every 3 years
Melbourne Water Employees and contractors who are required to work at height or supervise people working at height*	Safe Working at Heights External Training Provider Every 3 years
Industrial Rope Access Technician capable of performing a limited range of rope access tasks under the supervision of an Industrial Rope Access IRATA Level 3 Rope Access Technician.	ARAA/IRATA – Industrial Rope Access Level 1 External Provider
Industrial Rope Access Technician capable of rigging work ropes, undertaking rescues and performing rope access tasks (under the supervision of an IRATA Level 3 Industrial Rope Access Technician).	ARAA/IRATA – Industrial Rope Access Level 2 External Provider
Industrial Rope Access Technician capable of site supervision for rope access work projects	ARAA/IRATA – Industrial Rope Access Level 3 External Provider
People using Boom-type Elevated Work Platform Operation (boom length > 11 meters)	Licence to perform High Risk Work – Class Code “WP”

* refer section 1 for guidance on examples of tasks that require work at height

* Mandatory training where people:

- performing work may be exposed to fall hazards of greater than 2m.
- perform work that requires implementation of a fall hazard control as listed in section 3.2.2, 3.2.4, 3.3, and 3.4

Responsibilities

Role	Responsibility
Individual/Team Members	<p>Successfully complete the required training</p> <p>Maintain a safe work environment</p> <p>Apply the hierarchy of control in the mitigation of all hazards</p> <p>Perform a TRA, review and revise risk control measures each time the task is performed</p> <p>Inspect equipment prior to working at height if qualified to do so.</p> <p>Ensure emergency rescue plans and resources are documented and reviewed prior to undertaking the activity</p> <p>Ensure the appropriate equipment, as detailed on the emergency plan is readily available on site</p> <p>Ensure the Most effective control measures are implemented</p>
Managers/Team Leaders	<p>Successfully complete the required training</p> <p>Apply the hierarchy of control in the mitigation of all hazards</p> <p>Ensure the team has the physical and financial resourcing available to mitigate the risk to an acceptable level prior to undertaking the activity. train</p> <p>Ensure emergency rescue plans and resources are efficient and effective</p> <p>Ensure Hazard assessment reviews are completed using the appropriate MW checklist(s) when required</p>

Definitions

Reference	Definition
Exclusion/Drop Zone	an area directly under work activity, an area that works are being undertaken, that entry has be restricted due to the danger to others.
Fall	'A fall is a person's involuntary fall of more than 2 meters.
Fall arrest harness	are designed to contain the body of a falling worker and to distribute forces resulting from an arrested fall to minimise the likelihood of injury. They consist of a full body harness together with associated components such as lanyard and personal energy absorber.
Fall Arrest System	- equipment that is designed to prevent or reduce the severity of an injury to a person if a fall does occur, for example, catch platforms, industrial safety nets and safety harnesses.
Fall Hazard	<p>an area, or in the vicinity of, where a person has the potential to fall or drop an object from;</p> <ul style="list-style-type: none"> • a structure used to obtain access to an elevated level • plant or structure which is at an elevated height • an un protected edge • an opening • slippery, fragile, sloping or unstable surface
Fall Protection	previously known as Fall Restriction – requirements for materials and hardware for industrial rope access systems including fall protection AS/NZS 4488 Industrial rope access systems
Hazard Control	is the process of implementing measures to eliminate or reduce the risk associated with a hazard. The control process must follow the heirachy of control and attempt to eliminate all hazards where practicably reasonable.
Industrial Rope Access System (IRAS)	is a form of work positioning which applies practical rope work to allow workers to access difficult-to-reach locations without the use of scaffolding, cradles or an aerial work platform.
Lanyard	a line usually used as part of a fall arrest assembly to secure a person to an anchorage point or static line.
Passive fall prevention device	is any equipment that is designed to prevent a fall and which, after installation, does not require ongoing adjustment, alteration or operation by a person to the means by which it is designed to prevent a fall. These include installing edge protection, using temporary work platforms or guard railing that have been built in compliance with Australian Standard AS 1657 Fixed platforms, walkways, stairways and ladders,
Risk Assessment	is the process of determining the likelihood of an injury, illness or damage to plant or property.

Safety in Design	a process of, integration of hazard identification and risk assessment methods early in the design process to eliminate or minimise the risks of injury throughout the life of a structure being designed.
Scaffold	a temporary structure for holding workers and materials during the erection, repair, or decoration of a building
Stand-by	A trained person in fall prevention in the immediate vicinity (sight & sound) who has the responsibility to monitor the activities and initiate emergency response
Work Positioning System	enables a person or thing to be positioned and safely supported at a location for the duration of the work being carried out, for example, travel restraint systems and industrial rope access systems.
Working at Height	a situation where a person is exposed to a fall hazard that has the potential to cause an injury. * refer section 1 for guidance on examples of tasks that require work at height

References

Reference	Definition
Act	Occupational Health & Safety Act 2004
Regs	Occupational Health & Safety Regulations 2017 Building Regulations 2006
Compliance Code	Prevention of falls in general construction
MWC	CORP H&S 027 – HAZID CORP H&S 008 – Task Risk Assessment Confined Space Entry and Fall Prevention Rescue Plan WLD SOP 033 Working with Ropes Strategic Asset Management Plan - Fixed Safety Assets WLD CHE – Working with Ropes Compliance Checklist
AS/NZS	AS/NZS 1891 - Industrial fall-arrest systems and devices series AS 1418.17 Cranes – Design and construction of workboxes AS/NZS 2550.10 Cranes, hoists and winches – Safe use Part 1: Mobile elevated work platforms AS/NZS 4576 Guidelines for Scaffolding

Document History

Date	Reviewed/ Actioned By	Version	Action
Feb 2017	Damien Neal	2	Updated template Complete review of content Inclusion of rescue plan template and reference to WLD Working with Ropes SOP
Jul 2011	Martin Bowles	1	System and associated procedures in line with WHS Act, Regulation & Code of Practice