

# DEMOLITION

## SAFELY CONTROLLING WORK

### CRITICAL RISK CONTROL DOCUMENT



We are always licenced and competent when operating plant



We always isolate all energy sources before working on equipment and systems



We come to work free from impairment, alcohol and drugs



We ensure plant and equipment is safe to use



We work safely at height



We store, handle and control hazardous substances safely



We always observe walkways, safe zones and exclusion zones


















We always make sure loads are secure and within safe working load limits before moving them



We always follow the Permit process when a Permit is required



Our temporary works are appropriately designed, engineered and installed

| DOCUMENT CONTROL |                    |   |   |
|------------------|--------------------|---|---|
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| DOCUMENT REVIEW |          |                       |                     |
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## Demolition

Demolition is the process of breaking, cutting, wrecking, pulling or knocking down a building or structure within a site.

Some activities on our construction sites that involve demolition include:

- Isolate services from work site (e.g. power, gas, water, etc..)
- Use of plant and machinery
- Use of hand and power tools
- Install temporary fencing
- Removing building/structure/tree
- Temporary lighting installation
- Asbestos/Contamination management
- Use of generators
- Underground and overhead services
- Waste disposal

Related safely controlling work documents:

- [Mobile Plant](#)
- [Scaffold and Mobile Scaffold](#)
- [Excavations](#)
- [Work at Height, dropped objects and temporary work platforms](#)
- [Electricity](#)
- [Underground and Overhead Services](#)

### Risks - What could go wrong?

- Structure collapse (e.g. unplanned loss of structure integrity, surrounding structure collapse) on worker or public causing fatality/s or a potentially major injury such as dislocation, crushing, strains/sprains, bruising/lacerations, fractures or serious head injuries
- Explosion/fire causing fatality/s or a potentially major injury such as dislocation, burns, crushing, strains/sprains, bruising/lacerations, fractures or organ damage
- Striking people/public/mobile plant causing damage, a fatality or a major injury such as crushing, dislocation, fractures or serious injuries (see 'Mobile Plant' if your work poses a risk of work around mobile plant)
- Exposure to dust, asbestos, chemical, hazardous material or contaminated soil causing asbestosis, or fatality or serious illness through infection or hazardous substance
- Fall from height (e.g. plant cab, truck bed etc..) or dropped objects on worker/public during demolition causing a fatality or major injury (see 'Work at Height, dropped object and temporary work platforms')
- Contact with underground/overhead services during demolition causing a fatality or a major injury (see 'Underground and Overhead Services' if your work poses a risk of contact)
- Electrocution/Electric shock causing fatality/s or a potentially major injury such as burns, muscle spasm, cardiac arrhythmia, respiratory distress, seizure, damage to the nervous system or delayed organ damage
- Cuts from hand and power tool use (e.g. chainsaw) causing damage or a major injury such as laceration, crushing, dislocation, fractures
- Manual Handling causing musculoskeletal issues (See 'Manual Handling Sheet')

- Violence from public who refuse to leave the premises causing occupational health injuries such as lacerations, dislocation, fractures and potentially be fatal
- Fumes, vibration or noise causing a potential health injury (e.g. kidney damage, carcinogens, Noise Induced Hearing Loss, etc..)
- Operator fatigue/stress, illness, impairment or complacency causing, operator error or medical event
- Tree felling (e.g. unplanned loss of control of direction of tree falling) on worker or public causing fatality/s or a potentially major injury such as dislocation, crushing, strains/sprains, bruising/lacerations, fractures or serious head injuries

**Controls – How do I keep safe?**


The identification of risks associated with demolition and appropriate control measures are to be fully detailed in a Safe Work Method Statement (SWMS) or similar risk-assessment document prior to commencing any work involving demolition. The SWMS will be reviewed by the Work Manager (e.g. Foreman or Site Manager) with support of the Health and Safety team member.


**Can I eliminate the risk?**

Wherever work can be completed without the need to demolish, this should be the first consideration in eliminating risk.

The SWMS must be reviewed by an appropriate Ryman representative prior to any work commencing and following any changes to the task or environment

**Demolition controls include but are not limited to:**

|              | Control Type        | Control Measure   | Control Level   |
|--------------|---------------------|---|---|
|              | <b>Elimination</b>  | Remove risk by not demolishing a structure (e.g. design build with an alternative method to demolition such as deconstruction or dismantling)   | Most Effective Control<br> |
|              | <b>Substitution</b> | Substitute demolition method for other methods that present less risk (where applicable) – e.g. using high reach demolition excavator, remote controlled plant, or non-explosive demolition agent instead of explosives   |   |
| Minimization | <b>Isolation</b>    | Isolate the working area to control unauthorized personnel or plant access and collision with other plant. Isolate with fencing where practicable, or cones, barriers, tapes, bunting etc<br><br>Lock Out Tag Out of damaged equipment and building services to prevent operation or adjacent underground services before starting to dig<br><br>Isolate (or demarcate) excavation ‘zone of influence’ a minimum of 1m from excavation to help prevent mobile plant or material/spoil comprising the excavation |   |

| Control Type  | Control Measure  | Control Level  |
|---|--|--|
| <b>↑ WORK ABOVE THE LINE WHERE POSSIBLE TO CONTROL RISK ↑</b>   |  | <br>Least Effective Control |
| <b>Engineering</b>  | Mobile plant with reversing cameras, Operator protective structures and warning devices  |  |
| <b>Administrative</b>   | Communication and planning such as pre-start meetings, demolition meeting, demolition work plan, identify services, asbestos management, LOTO, TMP and delivery schedules<br><br>Inspection and maintenance of all plant and machinery<br><br>Obtain approval from the Project Manager before demolition<br><br>Scheduling work to minimize demolition impact on other works or public |  |
| <b>PPE</b>  | This includes the use of mandatory PPE including hard hat when exiting the mobile plant that complies with (AS/NZS 1801:1997), high visibility vest (to include day/night glow strips) (AS/NZS 4602.1) and safety footwear (AS/NZS 2210.3:2002)  |  |
| <b>NOTE:</b> Where the risk cannot be eliminated, a combination of control measures may be appropriate. |  |  |

**Planning Demolition Works**

**Minimum Control Requirements for planning demolition works**

- Provide complete information of the structure or building to be demolished including but not limited to survey, drawings, plans (e.g. Construction Management Plan), meetings, reports, records, historical use, service drawings, surrounding structures and/or information on hazardous substances
- Building consent for demolition if applicable (e.g. 3-storey or higher buildings in Auckland require building consent for demolition)
- Provide information about work extent, traffic management, environmental plan, site access, site security, work methodology, demolition plan, decontamination plan, remediation plan, structural inspection and hazards expected (e.g. fire, dust, noise, heights, public, site security, access, open penetrations, hazardous chemicals, asbestos etc..), waste management (e.g. for consent) with controls in place
- Building inspection to be completed and defects identified prior to demolition
- Physically check services (e.g. power supply, etc..) are isolated prior to demolition
- Use Cat and Genny wand to locate services
- All explosive operations must be consulted with Subject Matter Experts
- Check building for unauthorized dwellers/squatters prior to demolition works
- Informing surrounding properties about demolition intent

- Plan for disposing and handling demolished material
- All demolition plant to comply with Ryman Mobile Plant SCW document
- Establish exclusion zone and complete necessary isolations
- Ensure adequate warning signs are in place
- Ensure water suppression in place to control dust
- Check site is left safe at the end of every day (no potential for movement or falling objects). Account for weather conditions so no objects move due to rain/wind
- Demolition contractor to have adequate training and supervision
- Emergency plan in place
- Ensure checks, inspection or tests verify that the demolition methodology/plan is safe at all times. The Demolition Contractor must alter the plan if any new hazards and risks are identified during checks, inspections or tests.

### **Structural Integrity**

The integrity of the structure, building, surrounding properties/structures must not be compromised at any stage during the demolition process. Risks associated with ground condition changes, plant movement, vibration and flooding must be addressed with adequate supports and/or shoring to ensure the structural integrity is not compromised.

### **Minimum Control Requirements for Structural Integrity**

- Report containing information/design about the building structure and material. This report must be provided to the Contractor that demolishes the building/house/structure/underground structure
- Complete survey (e.g. dilapidation survey)/record of surrounding properties/structures ensuring structural integrity not compromised during demolition or due to vibration
- Identify support and/or shoring requirements taking into consideration the effects of changes in soil conditions as a result of the demolition operations
- Ensure services are isolated so as to not cause flooding to demolition area or surrounding properties

### **Hazardous Substances**

Hazardous substances may be present during demolition operations. This includes but is not limited to asbestos, lead, heavy metal (e.g. Chromium, Nickel etc.), hydrocarbons, dust, PFAS, and/or flammable materials.

### **Minimum Control Requirements for Hazardous Substances**

- Identify all hazardous substances and ensure adequate controls are in place prior to commencing demolition works
- All hazardous substances must have a Safety Data Sheet (SDS) and placed in the inventory and hazardous substance register
- Waste disposal process in place that complies with regional requirements. This may include the requirement of double bagging, wrapping trucks and/or disposing waste in specialized waste facilities
- Exposure monitoring where applicable to ensure hazardous substance does not exceed the Workplace Exposure Standards (WES) value

- Health monitoring and surveillance in place to ensure workers are not affected by the hazardous substance exposure

### **Asbestos Management**

The Demolition Survey must be available and contain asbestos presence prior to commencing demolition operations.

### **Minimum Control Requirements for Asbestos Management**

- An Asbestos Removal Control Plan must be prepared by an approved Contractor prior to disturbing asbestos. The plan must contain the method, independent clearance certificate, tools, air monitoring requirement, equipment and PPE required to remove asbestos. The plan must be followed and also include the asbestos type and location as per the [WorkSafe Quick Guide](#)
- Asbestos Management in place and complying to the Asbestos Removal Control Plan
- Place adequate warning signs in place confirming presence of asbestos
- Dust suppression in place to suppress asbestos dust exposure
- Use drainage covers to prevent contamination of storm water when it rains
- Use a certified asbestos removal company (with Class A or Class B Licence)
- Isolate the asbestos contaminated area from other work areas and do not allow unauthorized access
- Schedule work at a time to ensure minimal personnel are exposed to asbestos when the asbestos is disturbed by a competent asbestos removal company
- Additional PPE (overalls, respirator, gloves, overboots and safety goggles) must be used and decontaminated as per the [WorkSafe PPE Guidelines when working with asbestos](#)
- Identify all hazardous substances and ensure adequate controls are in place prior to commencing demolition works
- All hazardous substances must have a Safety Data Sheet (SDS) and placed in the inventory and hazardous substance register
- Exposure monitoring where applicable to ensure hazardous substance does not exceed the Workplace Exposure Standards (WES) value
- Health surveillance in place to ensure workers are not affected by the hazardous substance exposure

### **Public Protection**

#### **Minimum Control Requirements for Public Protection**

- Place perimeter fencing/hoarding around the worksite to restrict access to site and have adequate signage
- Traffic Management Plan in place to ensure public protection as required.
- Keep pedestrian access clear and paths free from construction obstacles
- Isolate/barricade public areas where there is a potential for dropped objects
- Removal of unauthorized public/personnel and ensure no unauthorized access is possible

### Training and Competency

All demolition workers shall be trained and competent to the requirements set out by Approved Codes of Practice, best practice guidelines issued by WorkSafe NZ and any additional requirements specified by Ryman Healthcare.

Copies of training records must be held on site. Contractors must supply a current competency matrix or training register and update where changes are made to personnel and their records. Contractors must comply with applicable training and competency requirements in related safely controlling work documents (mobile plant, work at height, scaffold and cranes, hoists and other lifting activities).

| Activity  | Training and Competency   |
|---|---|
| Workers that may be in contact or exposed to lead from lead-based paint   | Recommended:<br>Unit Standard 27413 – Demonstrate knowledge of removing lead-based paint and lead-based contaminated materials        |
| Workers that may be in contact or exposed to asbestos                     | Recommended:<br>Unit Standard 30596 – Demonstrate knowledge of asbestos and safety measures for asbestos-related work                 |
| Workers that remove non-friable asbestos                                  | Unit Standard 29765 – Remove non-friable asbestos   |
| Workers that remove friable asbestos                                      | Unit Standard 29766 – Remove friable asbestos   |
| Workers that supervise the removal of Asbestos Containing Material (ACM)  | Unit Standard 29767 – Supervise asbestos removal<br>Pre-requisite: Unit Standard 29765 and/or 29766                                   |
| Workers that will specify the outcome required to remove friable asbestos | Unit Standard 29768 – Conduct asbestos assessment associated with removal<br>Pre-requisite: Unit Standard 29767                       |
| Workers that use a chainsaw   | Recommended:<br>Unit Standard 6917 – Demonstrate basic chainsaw operations<br>Unit Standard 6919 – Instruct people in use of chainsaw |
| Workers that use an electrical power tool                                 | Recommended:<br>Unit Standard 23281 – Use and care for hand-held power tools used in civil construction                               |
| Workers that use a concrete saw   | Recommended:<br>Unit Standard 32688 – Saw concrete using hand-held power tools  |

### Supervision

A trainee, even where all equipment subcategory requirements have been met, would continue under supervision until deemed competent by the demolition Contractor. Persons training, or supervising inexperienced workers, must have be competent and be deemed able to train and supervise others by their company.



When assessing the level of supervision required by a trainee, the supervisor or trainer must assess several factors, including but not limited to

- The worker's experience and competency
- The nature of the work
- The nature of the risks associated with the work including the worksite
- The control measures in place while the worker being supervised is carrying out the work

Inexperienced workers require 'close supervision', this means there must be direct and constant one-on-one management in place.

Approval must be sought from the Project Manager or delegate authority prior to any inexperienced workers commencing demolition operations

### **Notifiable Work:**

Notifications must be made by Ryman and the contractor. Ryman is not required to make a new notification for each stage of the project, if an all-encompassing hazardous work notification is in place for the particular hazardous work. Any work that meets this criteria must be notified to WorkSafe via the online form: <https://forms.worksafe.govt.nz/hazardous-work-notification>.

- Work involving the use of explosives, or storage of explosives for use at the worksite
- Logging or tree felling undertaken for commercial purposes
- Excavation works. Details can be found in the Excavation Safely Controlling Work document
- Notify WorkSafe where height work is 5 metres or more. Details can be found in the Working at Height, Dropped Objects and Temporary Work Platform Safely Controlling Work document

### **References and Resources:**

- [Management and removal of asbestos ACOP \(2016\)](#)
- [Best Practice Guidelines for Demolition in New Zealand](#)
- [WorkSafe PPE Guidelines when working with asbestos](#)
- [WorkSafe Quick Guide](#)
- [Working with or near Asbestos – for builders](#)
- [Workplace Exposure Standards \(WES\)](#)
- AS/NZS 3012 Electrical installations- Construction and demolition sites