

# ACS410 Site clearance and demolition

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## ACS410.1 Scope

This section provides for site clearance and demolition works prior to construction works. It does **not** cover topsoil stripping and excavation which are covered by Auckland Council Stormwater Standard Specification *ACS510: Earthworks*.

## ACS410.1 Site clearance

### ACS410.1.1 Vegetation

The construction area shall be cleared of vegetation. Any trees or shrubs that require temporary relocation or trimming shall be with consent of the owner of the vegetation.

Vegetation that requires protection shall be fenced off beyond its dripline or as otherwise prescribed by the consenting authority prior to earthworks commencing in its vicinity.

Tree stumps shall be removed to minimum 300 mm below the ground level. Hollows formed by the removal shall be completely backfilled and compacted level with the surrounding area.

### ACS410.1.2 Street furniture

All street furniture (benches, bollards, signage, etc) shall be carefully removed and securely stored for the duration of the Works. On completion of the Works, street furniture shall be restored to its original position. Any damage caused to street furniture during removal, storage and reinstatement shall be rectified by the Contractor.

## ACS410.2 Demolition

Demolition includes the removal of structures or facilities as well as the safe abandonment of below ground structures and pipelines. Work shall be conducted efficiently and safe in a manner that prevents harm to people and damage to infrastructure and the environment.

Demolition shall be carried out under the supervision of a suitably experienced and trained demolition supervisor.

### ACS410.2.1 Pre-demolition condition survey

The Contractor shall inspect the structure to be demolished and any adjacent structures and features. The Contractor shall prepare an existing condition survey including photographs

and/or video footage documenting any defects and wear to adjacent structures, roads, landscaping, etc.

Where underground pipelines and structures are to be abandoned and filled, the inspection shall identify defects that may compromise the filling activity.

The Demolition Contractor shall check the site, building or structure, its contents and environment for likely hazards. These include:

- a) Asbestos-containing materials
- b) PCBs and other toxic substances (including lead, pesticides, timber treatment chemicals)
- c) Hazardous and flammable substances
- d) Electric power lines, cables, or transformers
- e) Gas supply lines
- f) Fire alarm and riser services, including water, telephone and electrical
- g) Fire extinguishers and other compressed gas containers
- h) Biological hazards, including sewage, rotten matter (food waste, for example), bird guano, fleas, rodent and animal faeces, hypodermic needles and other matter that may pose a risk to the health of employees and others
- i) Sewerage and storm water supply lines
- j) Underground tanks, pits, sumps, basements, or other voids
- k) Telecommunications
- l) Unsafe structural members, including floors, roofs etc.
- m) Concrete members with either pre- or post-tensioned reinforcement
- n) Unsafe access routes
- o) Traffic conditions.

## ACS410.2.2 Protection of people, property, and environment

In the event of damage to other structures, repairs shall be made by the Contractor to the original condition. Utility locations shall be identified before any demolition activity commences.

Explosives shall not be used for demolition works.

Adequate support and shielding shall be provided to protect the public and any other person, existing structures, and the environment.

Abandonment of structures and the infill material to render the abandoned structure safe shall, unless otherwise specified, consider the following requirements for acceptance by the Engineer:

- Short and long-term environmental effect, i.e. current service condition (damage, joint type), delayed deterioration of the host, etc.
- Location of the service, i.e. coastal marine, underground aquifers, fissures or underground drains, ground conditions, location to streams, service depth and structural loading
- End cap and filling point design as well as tie-off requirements at completion that is appropriate to the product being used
- Product shrinkage and the risk impact it will have on the structure in its location on either failure or leaching.

### ACS410.2.3 Removal of material

All vegetation, demolition material and other rubbish generated by the site clearance and demolition activities shall be removed to a tip site approved by the Engineer, only if the material is not considered ready for reuse and/or recycling.

## ACS410.3 Hazardous substances

Where any hazardous substances are discovered during site clearance and demolition that were not previously identified on the Drawings, Specifications or during the pre-demolition survey, works shall be halted, and the Engineer shall be notified immediately. A method of handling the substance agreed with the Engineer prior to restarting the works.

## ACS410.4 Waste Management Plan

This Waste Management Plan outlines Construction and Deconstruction Waste Minimisation Requirements which focuses on objectives to:

- 1) Enable the development and implementation of a Site-Specific Waste Avoidance and Resource Recovery Plan (SSWP) that outlines aims and methods to divert construction and deconstruction waste from landfill.
- 2) Direct Contractors to waste minimisation actions such as relocating structures, and deconstruction techniques.
- 3) Enable community-based organisations to appropriately access much needed deconstructed materials for reuse.

- 4) Ensure that deconstruction materials and construction waste are dealt with in accordance to the waste hierarchy (below).

#### ACS410.4.1 Waste hierarchy

Deconstruction materials and construction waste shall be dealt with in accordance to the waste hierarchy:

##### **ACS410.4.1.1 Reduction**

Lessening waste generation.

##### **ACS410.4.1.2 Reuse**

Further use of products in their existing form.

##### **ACS410.4.1.3 Recycling**

Reprocessing waste materials to produce new products.

##### **ACS410.4.1.4 Recovery**

Extraction of materials for energy from waste for further use or processing.

##### **ACS410.4.1.5 Treatment**

Subjecting waste to further treatment to change the volume or character.

##### **ACS410.4.1.6 Disposal**

Final deposit of waste on land fit for purpose.

#### ACS410.4.2 Site Specific Waste Avoidance & Resource Recovery Plan

The Contractor shall prepare and submit a Site-Specific Waste Avoidance & Resource Recovery Plan (SSWP) in partnership with the Deconstruction Contractor (if any), waste collectors/processors and any community resource recovery organisation(s). The plan should be submitted for approval before physical works begin.

The plan should be guided by the Resource Efficiency in the Building and Related Industries (REBRI) Waste Management Plan template and shall include the following elements:

#### **ACS410.4.2.1 Scope and analysis**

The Contractor shall indicate the nature of work and expected waste types and sources. Analysis of the proposed job site waste to be generated, including reusable, recyclable and waste materials (by weight).

#### **ACS410.4.2.2 Personnel and responsibility**

The Contractor shall provide on-site instruction of salvage, deconstruction, and material handling techniques to minimise waste. This includes ensuring all site management, staff, subcontractors, product suppliers and waste disposal companies are made aware of the SSWP, its goals, and their role in its implementation.

#### **ACS410.4.2.3 Waste Management Area**

The Contractor shall establish a single centralised area on site for separation and storage of waste prior to diversion or disposal to landfill. Receptacles shall be provided, or areas designated for separate waste streams as per the Waste Management Plan.

#### **ACS410.4.3 Waste avoidance**

The Contractor shall provide:

- Methods of deconstruction, reducing construction waste, waste separation and storage techniques. Description of bins/containers that will be used and the signage that will be used on the containers.
- Where applicable, signage should match the New Zealand Recycling Symbols (RONZ – see WasteMINZ)
- Identification of measures to be taken to prevent contamination of materials to be reused or recycled and to ensure materials are consistent with requirements for acceptance by designated facilities.

#### **ACS410.4.4 Destination of materials**

The Contractor shall provide a list of each material proposed to be salvaged, reused, or recycled during the course of the project and the destination. Where possible, the Contractor shall give consideration to giving community-based organizations access to salvage materials for reuse. Only waste collectors currently licensed with Auckland Council can be engaged.

#### ACS410.4.5 Record keeping

The Contractor will maintain a record of all waste material present on site at the beginning of the demolition, and all waste material leaving the site, volume/weight, cost, and destination. This shall be done in partnership with the deconstruction and salvage contractors (if any), and any community resource recovery organisation engaged in the project. Reporting should be guided by the REBRI C&D Waste Transfer forms or similar. The Contractor shall submit to the Engineer the REBRI Waste Management Plan, REBRI C&D Waste Transfer Forms or bills, invoices and other documentation confirming that all materials have been received at the required locations.

### ACS410.5 Treatment of waste materials

The following procedures shall be supervised by the Engineer/Contractor Lead. Any waste material found on site not present in the following shall be treated with an appropriate waste minimisation method decided by the Engineer/Contractor lead.

Unless otherwise specified below, materials shall not be sent to landfill/cleanfill:

#### ACS410.5.1 Contaminated or degraded material

Contaminated (asbestos, mold, etc.) or degraded (damaged or of an uneconomic size) material shall be directed to a landfill or a cleanfill. If unavailable, and only with the approval of the Engineer, the material may be recycled or used in recovery.

#### ACS410.5.2 Whole structures

Where a structure is sound and suitable for removal, the Contractor/Engineer shall consider removing it intact to a new site for reuse.

#### ACS410.5.3 Strip out items, fixtures, and fittings

Any deconstruction shall start with a comprehensive and careful strip out of usable fixtures and fittings that have a suitable destination. This includes kitchen and bathroom fittings and furniture. Care shall be taken to remove items and material to preserve their value. This material shall be directed for reuse. Community salvage organisations should be considered. Alternatively, this material may be recycled or used in recovery.

#### ACS410.5.4 Metal

Steel waste shall be separated and recycled. Metal fixtures and fittings shall be removed in a way to preserve maximum value for reuse. If reusing is not available, the metal shall be recycled. Alternatively, if neither option is viable to the Contractor/Engineer's judgement, the metal may be used for recovery.

#### ACS410.5.5 Native timbers

All native timber shall be removed in a way to preserve maximum value for reuse. Any uneconomic lengths of timber can be sent for recovery.

#### ACS410.5.6 Non-native timbers

Non-native timber shall be separated and stored for reuse, otherwise it may be sent for recovery.

#### ACS410.5.7 Plasterboard

All plasterboard and deconstructed plasterboard shall be sent for recovery.

#### ACS410.5.8 Concrete and asphalt

All concrete and asphalt shall be sent for crushing or reprocessing.

#### ACS410.5.9 Cardboard

All cardboard shall be sent for recycling or reuse. Cardboard shall not be placed in the comingled bins. Cardboard shall not be sent to a landfill/cleanfill.

#### ACS410.5.10 Plastic film

All plastic film is to be sent for recycling or reuse. Plastic film shall not be placed in comingled bins.



#### ACS410.5.11 Packaging containers

The Contractor/Engineer shall utilise product stewardship schemes where available in the waste management of packaging containers. Suppliers are discouraged from using polystyrene packaging. Packaging Containers are to be sent to reuse, recycling, or recovery.