

# CONSTRUCTION STAGE

## Tendering/briefing documentation – standard clauses for better buildings

### Introduction:

By this stage all the vital decisions affecting the environmental performance of the building have been made. However care needs to be taken that the environmental impacts from the construction process are minimised and that decisions made at this stage are contributing to the overall goal of a more sustainable building.

The following are clauses for inclusion in the contract/tendering documentation for the construction of the building.

***Site Management must ensure that the impact on the surrounding environment is minimised. Safety of all construction staff and the public must be ensured at all times.***

- All statutory health and safety legislation is complied with, especially the implementation of and compliance with a site specific safety management plan.
- Hazardous wastes need to be disposed of responsibly. This includes some empty paint and glue containers, brush cleaners and tanalised timber off cuts.
- Hazardous products must be stored appropriately. They should under no circumstances be exposed to rain or ground water.
- The site must be kept tidy.
- Dust and noise needs to be minimised.
- All earthworks need to comply with Auckland Regional Council guidelines.
- No waste is to be burned on site.

**Reason:**

The construction process can have a substantial impact on the environment and on people's safety. It is therefore important that all possible steps are taken to reduce this impact.

The visual appearance of the building site and the management of it will reflect on Council's image. Council aims to set a good example for the construction industry to follow.

**Possible Solutions:**

The Auckland Regional Council (ARC) offers advice on responsible disposal of hazardous materials and has a list of contractors and landfills accepting such materials. They also publish a catalogue listing suppliers of materials with a recycled content and might be able to give information of companies accepting materials for recycling. The REBRI programme, run by the ARC, is in the process of producing a tip sheet on hazardous waste.

**Further Information:**

Erosion and Sediment Control Guidelines for Earthworks – Technical Publication No. 90, Auckland Regional Council, Private Bag 68 912, Newton, Auckland; 09-366 2000

Environmental Impacts of Accelerated Erosion and Sedimentation – Technical Publication No. 69, Auckland Regional Council, Private Bag 68 912, Newton, Auckland; 09-366 2000

The *Site Earthworks* chapter of the *Sustainable Home Guidelines*, Waitakere City Council, 1998, available in full at [www.waitakere.govt.nz](http://www.waitakere.govt.nz) or from Waitakere City Council, Private Bag 93109, Henderson, Waitakere City, 09-8390400

General advice about the safe disposal of hazardous wastes can be obtained from the Auckland Regional Council, 09-366 2000

***The main contractor is required to submit a waste management plan to Council for approval before any work commences. It is the main contractors responsibility to ensure that all subcontractors comply with this plan.***

**Reason:**

Up to 25% of the waste disposed in Auckland landfills comes from the construction industry. This does not include the large quantities of clean fill generated.

Landfill space is running out and it is vital that waste generation is reduced if serious environmental impact is to be avoided. Construction waste commonly contains hazardous wastes, which cause environmental damage if not disposed of properly. A large percentage of construction waste can be re-used or recycled.

**Possible Solutions:**

The plan should describe how waste is managed on site and what steps are taken to reduce waste generation. It should also assign clear responsibilities and timelines for each necessary task.

Typically good waste management on site will include:

- Separation of wastes that can be re-used on site or that can be picked up by a recycling contractor. For some materials, such as scrap metals, you might be paid. The waste management plan should list which materials are to be separated.
- Separation and correct storage of hazardous waste for separate pick up. Typically this will include empty paint and glue containers.
- Central cutting areas. This will make re-use of off-cuts easier and the site will be tidier.
- Good storage of materials to avoid damage during storage and accurate estimating to avoid over-ordering of materials.
- Encouraging suppliers to reduce packaging or to use reusable packaging, such as deposit crates or pallets.
- Re-using of temporary works, such as formwork.
- Good communication with all staff and sub-contractors.

However there are other things you can do depending on the job and your imagination.

REBRI (Resource Efficiency in the Building and Related Industries) is a programme co-ordinated by BRANZ and the Auckland Regional Council; they can be contacted for help in putting together a waste

management plan (see below).

**Cost Implications:**

No cost. Savings may be made through fewer materials wasted and some recyclables being sold.

**Further Information:**

REBRI programme, contact the Auckland Regional Council on 09-366 2000.

The *Avoiding Construction Waste* chapter of the *Sustainable Home Guidelines*, Waitakere City Council, 1998, available in full at [www.waitakere.govt.nz](http://www.waitakere.govt.nz) or from Waitakere City Council, Private Bag 93109, Henderson, Waitakere City, 09-8390400

***Insulation should be installed following the manufacturers instruction and good fit and fixing has to be ensured to avoid any gaps.***

**Reason:**

Incorrect or sloppy installation can seriously compromise the effectiveness of insulation. Small gaps around bats in walls for example will reduce the insulation's effectiveness by half.

**Possible Solutions:**

The insulation should be installed in accordance with BRANZ bulletin 357. Some of the key points in this bulletin are:

- Follow the materials health and safety recommendations
- Keep it dry and clean
- Keep insulation well clear of flues and recessed downlights
- Don't pack tightly around electrical wiring
- Keep insulation out of water storage tank's overflow trays (in ceilings)
- In skillion roofs have the top of the insulation at least 25 mm below the underside of the sarking/roofing
- Fit bats firmly between framing without gaps
- Don't compress the thickness of bats and don't have any tucks or folds
- Don't allow insulation to sag within wall cavities

The bulletin should be consulted for more information.

**Cost:**

This standard of work is expected from a quality contractor at no extra cost.

**Further Information:**

BRANZ bulletin 357, available from BRANZ, Private Bag 50908, Porirua, 04-235 7600, [www.branz.org.nz](http://www.branz.org.nz)

***Mechanical fixing should be used in preference over gluing wherever possible. Sealants and fillers should be avoided where possible through careful detailing. Where adhesives are needed water based products are preferable. For sealants and fillers the least toxic product available should be used.***

**Reason:**

Adhesives, sealants and fillers generally contain harmful substances and often they can be avoided. Using mechanical means of fixing and weatherproofing also makes repairs and re-use of the materials easier.

**Possible Solutions:**

Nails or screws can achieve mechanical fixing. Screws make deconstruction and repairs easier. Traditional methods of weather proofing such as flashings should be used. Careful detailing will also reduce the need for sealants.

For tile grouting silicon-based grout, ideally without fungicide, is preferable to other products.

**Cost Implications:**

Some time might be spent researching products and some low toxicity products may be more expensive.

**Further Information:**

For the more toxic products *Material Safety Data* sheets can be obtained from the manufacturers, these give information about the toxicity of a product.

Toxicity information can also be found on the packaging of sealants and glues.

***The least toxic paint or finishing product practical should be used. However performance must not be compromised***

**Reason:**

Paints and finishes are some of the more toxic products used in the construction industry. There are now many low toxicity products available.

**Possible Solutions:**

Paints with the Environmental Choice label can be used with confidence. For applications where no such paints are available water based paints are preferable. There are water-based enamels and water-based polyurethanes available, making water based paints suitable for most applications.

**Cost Implications:**

Environmental Choice paints are no more expensive than other similar quality paint.

**Further Information:**

The *Paint* chapter of the *Sustainable Home Guidelines*, Waitakere City Council, 1998, available in full at [www.waitakere.govt.nz](http://www.waitakere.govt.nz) or from Waitakere City Council, Private Bag 93109, Henderson, Waitakere City, 09-8390400