

Target Sustainability House Builders Project

G.J. Gardner Homes

About the Project

Company: G.J. Gardner Homes

Project: 10 Queenswood Drive, Christchurch

House size (floor area): 300 m²

Building type: Brick cladding, timber frame

Waste contractor: Quickskips

Sorting site: Becon Canterbury



G.J. Gardner Homes © Copyright

Introduction to the Project

G.J Gardner Homes signed a Memorandum of Understanding with the Christchurch City Council to participate in the Target Sustainability House Builders Project. The objective of the project was to reduce solid waste going to landfill and cleanfill from new house construction. The project also aimed to test the REBRI (Resource Efficiency in the Building and Related Industries) guidelines and to develop measure-to-manage tools and key performance indicators for new house construction.

G.J Gardner Homes chose one construction project on which to identify opportunities to reduce waste to landfill and cleanfill and apply the REBRI Guidelines and measure-to-manage tools. The house was a 5 bedroom, brick and timber house.

Waste Reduction Initiatives

The majority of waste was sorted off-site due to limited space on-site for waste sorting. G.J. Gardner Homes did the following on-site to try to minimise the amount of waste going into the skip and to maximise the amount of waste that could be recovered off-site:

- Asked Quickskips to provide a lockable lid on the skip. The lid was locked with a padlock. Only the project manager and sub-contractors had the key. This reduced the amount of unauthorised dumping (fly tipping) in the skips.
- Approximately 2 m³ of soil scraped up during site preparation was stockpiled for reuse back on-site during landscaping.
- Used 'speedblock' for the foundation. This type of concrete foundation block requires no boxing waste.
- Asked sub-contractors to take lunch waste off-site to avoid contaminating the dry materials in the skip.
- Put treated timber off-cuts aside instead of in the skip to encourage reuse. Treated timber off-cuts were reused on-site for example in roof over hangs.
- Brick pallets were returned to suppliers for reuse instead of disposing of them in the skip.

- The sub-contractors were asked to flatten boxes before they went in the skip. Flattened boxes save room in the skip and ensures materials are easier to recover at a sorting site.
- Painters were asked to let paint dry in the containers before putting the containers in the skip. This ensured the dry materials weren't contaminated by paint.



Skip with lockable lid to prevent unauthorised dumping in the skip © Copyright

Waste Sorting

Space on house building sites is often limited. Therefore, the use of skips and off-site waste sorting was considered to be the best option. Quickskips collected the skips and took them to Becon for materials sorting. Two and a half 7.5 cubic metre skips were removed for sorting during the house construction.

Quickskips recorded the waste composition in the skips by doing a visual assessment when they were emptied at the sorting site. They sent this information to G.J. Gardner Homes using a simple data collection sheet. The composition and destination of the waste in the skips is shown below (right).

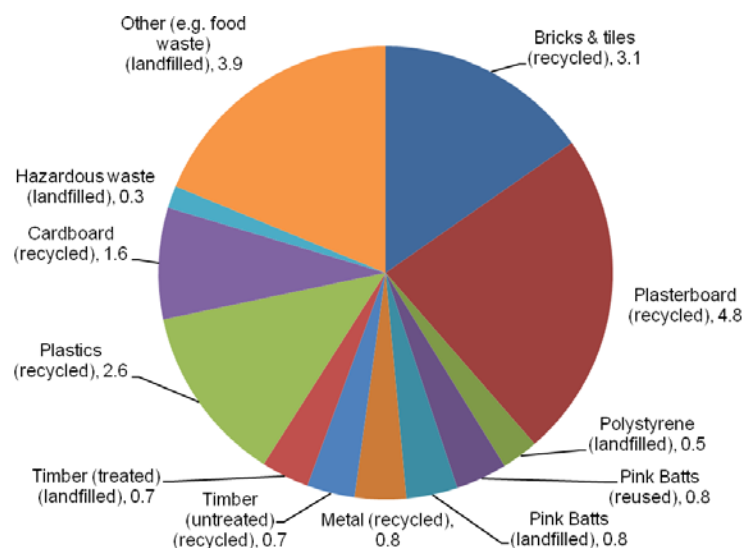
Once at the sorting site, the material from mixed skips is put over a large Materials Recovery Facility (MRF) sorting line where the materials e.g. cardboard, plasterboard, metals and plastic, are separated. Becon provided information on the materials that were recovered for reuse and recycling.

The Key Performance Indicators for the house build project are shown below (left). 70% of the waste material in the skips was reused or recycled by Becon. The main materials that were landfilled were polystyrene, carpet (included in "Other" category), treated timber and approximately 50% of the pink batts.

Waste Summary and KPIs

Total waste weight	5.02 tonnes
Kilograms per 100 m² floor area	1,673 kg/100m ²
Total volume of waste	20.5 m ³
M³ recycled/reused per 100m² floor area	4.8 m ³ /100m ²
M³ landfilled per 100m² floor area	2.1 m ³ /100m ²
Percentage recycled/reused/stockpiled for recycling	70%
Percentage to landfill	30%

Waste Composition and Destination (m³)



Difficulties

- Despite the lockable lid, one weekend the lid was left off the skip and a load of red bricks were fly tipped in the skip.
Tip: Remind sub-contractors to lock the lid when they leave the site each evening. Consider including this as a clause in their contracts.
- The Pink Batts off-cuts were left aside for potential reuse. However, the installers did not have time to install the off-cuts in the internal walls. The owners of the house were approached and given the option to install them in the walls. However, the owners declined and the off-cuts were disposed of in the skip. Approximately 50% of the off-cuts were recovered by Becon for reuse.
Tip: Use off-cuts of insulation in the internal walls or leave them in the ceiling (check this with your local council first).
- Clients expect a clean finish and so off-cuts e.g. of plasterboard cannot always be used. **TIP: Discuss this with your client to see if they are happy for off-cuts to be used. Talk to your sub-contractors about minimising off-cuts.**
- The carpet layer and supplier did not offer take back for carpet off-cuts. The carpet was disposed of in the skip. **TIP: Talk to your supplier about whether they take back carpet off-cuts for recycling or reuse.**

Future Plans – G.J. Gardner Homes

- G.J. Gardner Homes are aiming to reduce building waste to one skip per house build.
- G.J. Gardner Homes are looking into using branded drums for wet and food waste.
- G.J. Gardner Homes are considering requiring their sub-contractors to take their own waste off-site.
- G.J. Gardner Homes are also looking into using a paint company who take back their 10 litre buckets for reuse

Want more information? Visit the Target Sustainability website at www.target sustainability.co.nz

The REBRI guides are available at www.rebri.org.nz