

## Target Sustainability House Builders Project

## Stonewood Homes

### About the Project

**Company:** Stonewood Homes

**Project:** Applefield Court, Styx Mill Estate, Christchurch

**House size (floor area):** 180 m<sup>2</sup>

**Building type:** Brick cladding, timber frame

**Waste contractor:** Budget Bins

**Sorting site:** Reworks



### Introduction to the Project

Stonewood 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.

Stonewood 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 3 bedroom, brick clad, single storey house.

### Waste Reduction Initiatives

The majority of waste was sorted off-site due to limited space on-site for waste sorting. Stonewood 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:

- Provided a separate wheelie bin for non-recyclable waste to avoid contamination of potentially reusable or recyclable waste.

- Stockpiled and reused or on-sold excess or damaged stock.
- Used a carpet supplier who cut off-site. This avoided carpet off-cuts going into the skip.
- Kept timber off-cuts in separate piles for reuse on-site.



Separate wheelie bin for non-recyclable waste © Copyright



Timber off-cuts in separate piles for reuse © 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. Budget Bins provided skips and a separate wheelie bin for non-recyclable waste to avoid contamination of potentially reusable or recyclable waste. Budget Bins collected the skips and took them to Reworks for materials sorting. Three 9 cubic metre skips were removed for sorting during the house construction.

Reworks recorded the waste composition in the skips by doing a visual estimate when they were emptied. They sent this information to Stonewood Homes using a simple data collection sheet. The composition and destination of the waste in the skips is shown below (right).

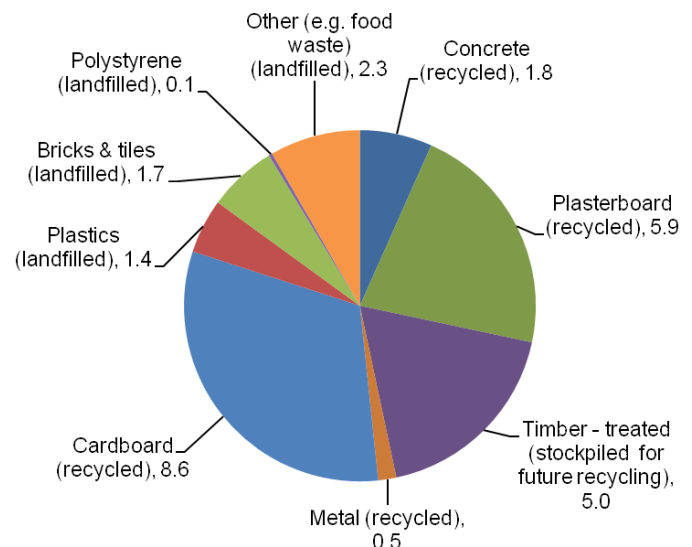
Once at the sorting site, all of the material from mixed skips is put over a large vibration screen and sorting line where the materials, e.g. cardboard and metals, are separated. Reworks provided information on the materials that were recovered for reuse and recycling.

## Waste Summary and KPIs

<b>Total waste weight</b>	3.74 tonnes
<b>Kilograms per 100 m<sup>2</sup> floor area</b>	2,078 kg/100m <sup>2</sup>
<b>Total volume of waste</b>	27.0 m <sup>3</sup>
<b>M<sup>3</sup> recycled/reused per 100m<sup>2</sup> floor area</b>	12.0 m <sup>3</sup> /100m <sup>2</sup>
<b>M<sup>3</sup> landfilled per 100m<sup>2</sup> floor area</b>	3.0 m <sup>3</sup> /100m <sup>2</sup>
<b>Percentage recycled/reused/stockpiled for recycling</b>	80%
<b>Percentage to landfill</b>	20%

The Key Performance Indicators for the house build project are shown below (left). 80% of the waste material in the skips was reused or recycled. The main materials that were landfilled were plastics and other general waste (including food/green waste). The treated timber was stockpiled for trialling as a fuel in a consented, high-temperature furnace.

## Waste Composition and Destination (m<sup>3</sup>)



## Difficulties

- Through the Target Sustainability House Building Project, a letter was sought from the local council building inspectors allowing Pink Batt off-cuts to be left in the ceiling. Unfortunately, the letter was not received until this house was complete. The Pink Batts were disposed of in the skip. **Tip: Use off-cuts of insulation in the internal walls or leave them in the ceiling (check this with your local council first).**
- The wheelie bin provided for food waste was not properly utilised. **Tip: Ensure all staff know what this bin is for by using signs, notices and letters to all contractors and sub-contractors.**
- One of the skips included boxes that were not flattened. **Tip: Put signs up asking the sub-contractors to flatten boxes before they go in the skip. Flattened boxes save room in the skip and ensure materials are easier to recover at the sorting site.**
- Unauthorised dumping in the skip was a problem as the house building site was in a developed residential area. **Tip: Put up a fence around the site and put up signs warning the public against putting their waste in the skip. Move the skip away from the fence to prevent waste being thrown over. Consider asking your waste contractor to provide a lockable lid.**
- Close inspection of skip contents revealed disposal of new electrical components and unnecessary wastage. **Tip: Involve sub-contractors in discussions on how to minimise waste.**

## Future Plans - Stonewood Homes

- Stonewood Homes are looking into permanent signage for skips to ensure cardboard is flattened and to keep food out of the skip.
- Stonewood Homes plan to undertake further skip audits and to use the information they have obtained through this project to involve sub-contractors in reducing waste and improving their practices.

Want more information? Visit the Target Sustainability website at [www.target sustainability.co.nz](http://www.target sustainability.co.nz)

The REBRI guides are available at [www.rebri.org.nz](http://www.rebri.org.nz)