

Recycling construction waste

Nine months into the BRANZ refurbishment and the target of recycling 90% of construction waste has been exceeded, with flow-on benefits for other sites in the region.

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For its current refurbishment, BRANZ specified a target of 90% recycling of construction waste. This was hardly surprising given BRANZ's expertise in sustainable built environments and REBRI systems and the consultants involved. However, it was up to Fletcher's as contractors to achieve the goal.

Attaining buy-in and understanding from subcontractors has been key, as well as committing to recycling for the life of the project. Nine months on, the target has been exceeded, with recycling currently running at nearly 95%.

Waste management planning is part of tendering

The planning for waste management begins at the tendering stage, although this is sometimes overlooked if a contractor decides to 'just win the job' and deal with the costs later. Location, access issues or even lack of set targets need to be considered. If no targets are specified, waste may all end up in one skip to be taken to landfill, or if the contractor has an environmental policy in place, the skip contents can be separated into the various recyclable products at the depot. This reduces the amount of space needed on site but can increase costs.

Given BRANZ's targets, the space available on site was looked at and waste companies reviewed. Transpacific Waste Management was chosen

to recycle the waste as their systems and monitoring were already proven on a number of previous Green Star and general construction site recycling projects. They were also the incumbent waste contractor at BRANZ.

Nearly anything can be recycled

Paper, cardboard, treated and untreated timber, glass, plastics (grade 1-7), concrete rubble, plasterboard and different metals can all be recycled thanks to advances in technology and innovative ways of using waste products.

Transpacific Waste Management committed to the project early on and investigated potential recycling opportunities, particularly in areas where the cost of recovery has previously been seen as prohibitive. For example, they currently recycle approximately 90 m³ (preprocessing) of treated and untreated timber per month.

Smaller lengths and off-cuts previously deemed not fit for other recycle processes are mulched with waste cardboard that is unsuitable for normal cardboard recycling. The mulched product is then chipped and remulched and used as a binding agent during the flocculating and neutralising of hazardous chemicals. Nasties such as acids, galvanisers, pharmaceutical bile, alkaline, caustics and paint are all subjected to a rigorous chemical process. This can be described as making a coffee in reverse.

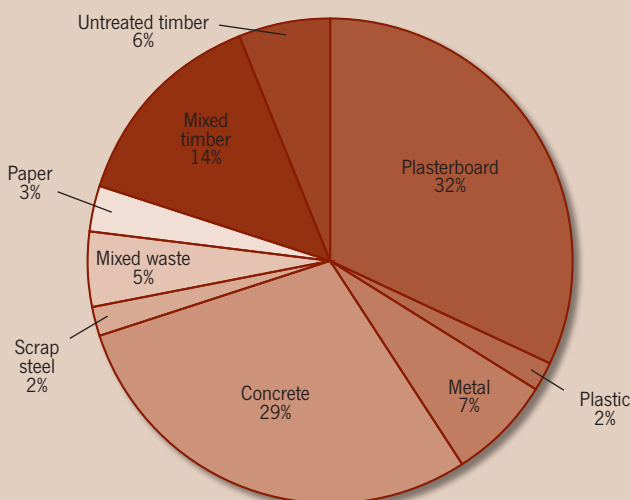


Figure 1: Products recycled during BRANZ refurbishment.



A couple of the recycling bins at BRANZ that are used to separate construction waste.

The milk and water are removed and the coffee and sugar are then chemically treated for safe disposal.

Although advances in technology mean more products can be recycled, the volume being produced per site is an important part of the equation.

Waste concrete reused for roading

Concrete waste – waste rubble from site and the concrete trucks' wash-out – makes up 29% of the recycled waste on site (see Figure 1). A skip is specially allocated, and this waste is taken away, crushed and reused as roading material.

All excavated material is reused either on or off site.

Monitoring to avoid cross-contamination

Skips have magnetic signs to identify what waste goes where. When new workers are inducted on site, they are told about the recycling policy and encouraged to use the correct skips to ensure there is no cross-contamination. Monitoring the waste is crucial to meeting end targets, hence the regular checks.

When a skip is ready to be emptied, a waste form is filled out and given to Transpacific Waste Management's driver. The waste is then weighed at the recycling station. A further check is made to see if any contamination has occurred. If it has, those items are split out. Otherwise, the load carries on through the recycling process.

The weight and percentage of recycled waste is then allocated to that particular skip and the contractor is advised on a regular basis, in this case, monthly.

New recycling solutions found

Additional solutions were found for a range of hard plastics (grades 3–7), items manufactured with mixed components and small lengths of timber. This has resulted in an across-the-board increase in recycling on Fletcher Construction sites in the Wellington region of 4–5% through Transpacific Waste Management.

Another option being looked at is chipping untreated timber (H1.2) off-cuts to fuel the new ETA HACK pellet/chip boiler unit that has been installed on site at BRANZ.

All options found for this project are long-term and sustainable. As a result, other sites will benefit and be able to attain increased recycle percentages. ◀