

Cutting plastic construction waste

The tonnes of construction waste that go to landfill each year are a significant environmental hazard. A research centre at Unitec is working to change this with an innovative project to help construction companies reduce the amount of plastic waste they discard.

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WITH THE WORLD absorbed by the news from COP26 and the question of how to halt global temperature rise, timely new data and solutions have emerged from Unitec’s newest research centre, the Environmental Solutions Research Centre (ESRC), on the amount of waste created by housing construction.

Plastic waste from construction in Auckland

The ESRC estimates that, in Auckland:

- construction and demolition produce 25,000 tonnes of plastic waste annually
- new-build housing alone currently produces 1,800 tonnes of plastic waste every year
- due to the planned intensified building rules, housing could generate up to 4,000 tonnes of plastic waste each year.

Solution for plastic timber wrap

The ESRC is collaborating with students, Auckland Council and industry to develop solutions that are already slashing plastic waste across the country. It has also led to



the formation of a working group called the Sustainable Construction Avengers.

In collaboration with construction company Naylor Love, Unitec’s plastic research project identified on-site materials

that are hard to recycle and found plastic timber wrap to be one of the biggest sources of plastic pollution.

Timber is transported from suppliers to site covered in plastic wrap. Conversations



Plastic construction waste sorted at Naylor Love's yard.

the ESRC and Sustainable Construction Avengers had with suppliers revealed that plastic packaging was used for timber UV protection, untreated timber and branding.

The solution was to design a reusable tarpaulin, Timber Pack Cover, to fit the timber pack during transport and on site to cover and protect the timber pack. This eliminates the need for single-use plastic, preventing unnecessary damage and reducing timber waste.

Naylor Love is now introducing the Timber Pack Cover nationwide.

Contractors keen to reduce waste

Working with Mitre 10, Auckland Council and Naylor Love, the ESRC team found that many contractors would like to reduce waste but didn't have the option in the procurement process. This prompted Mitre 10 to add an option to its online

portal for customers to choose wrapped or unwrapped materials.

Significant numbers of customers opted out of wrapping - when they previously didn't have a choice. Over 12 months, 97% of online trade orders were supplied unwrapped, with only 3% wrapped.

Work with other companies includes PVC piping company Marley, which now takes back all unused piping (including off-cuts) from building sites and recycles it into new pipes.

In collaboration with the team, Astron Plastics is now able to secure building wrap from construction sites in good enough condition for recycling, significantly reducing the amount going back into landfill.

Cutting waste on a housing development

Currently, ESRC is working on an eight-unit project in Titirangi, Auckland, with

4.5 tonnes of waste per house. It is aiming to divert 90% from landfill.

Research is trialling a more holistic process for waste diversion. This would start at the beginning working with architects such as Dr Ferdinand Oswald at the University of Auckland, suppliers such as Mitre 10 and designers to reduce waste before it reaches site. Education and resources are then provided to the construction industry so any waste that does reach site can be separated for reuse and recycling.

Hoping other companies follow

With the methodology and results now proven, it remains for the waste-reduction programme to be fully implemented across the construction industry as other companies join the push to reduce plastic pollution. ◀

For more ▶ To find out how to participate, visit the Environmental Solutions Research Centre at www.unitec.ac.nz.