Title: RMIT – Design with Waste Outreach Platform

Intro: Designing recycled products for a sustainable future.

Why?

Recent Sustainability Victoria statistics show Victorians' annual kerbside rubbish and recycling collection would occupy three quarters of the MCG. Combine this with changed market conditions for sending recyclables overseas and it is clear we need to reuse as much waste material as possible.

RMIT University wanted to explore strategies to increase the use of waste materials in designs for new consumer and industrial products. Academics from the university partnered with Metropolitan Waste Resource Recovery Group (MWRRG) on "Design with Waste Outreach Platform", a landmark project geared towards finding and testing waste recovery applications for product, service and enterprise development.

The project led to the emergence of RMIT's "Recycling Incubator", which brings together students and industry partners to support the development of new design-led recycled products and enterprises.

How?

RMIT established two industrial design studios, with each engaging 20 students in real world design and enterprise projects focused on waste recovery. Studio one looked reusing materials commonly recovered through kerbside recycling, and the second studio focused on business waste. The second studio saw RMIT establish new partnerships with Taxibox (exploring end of life options for PVC tarpaulin) and clothing retailers Patagonia, Macpac and Obus (exploring designs featuring single-use packaging).

Engaging students and industry partners in repurposing waste was complex because industry often used highly specific materials. Students had to shift from designing for product types to a process involving significant experimentation. It also took a while for students to grasp the technical, economic, environmental, regulatory and social systems underpinning recycling.

These barriers were, however, overcome, and students produced high quality product designs and reuse/recycling solutions. These included recycling soft plastic materials for use in backpacks, 100 per cent recycled plastic frames for eyeglasses, and replacing surf boards' foam cores with recycled cardboard.

A website was built to profile the project's designs and educational activities, and to house a directory of local and international organisations using strategies to reduce or redirect landfill waste. Two showcase events and a workshop series were also held as part of Melbourne Knowledge Week, engaging academics, students and the public with the project.

The Design with Waste Outreach Platform project engaged numerous academics, students and industry partners in a range of discussions, activities and events. This new network facilitated the development of what is now called RMIT's "Recycling Incubator".

What was the result?
Leading to the development of the Recycling Incubator, the project built on RMIT's research track-record in sustainability and linked to the Melbourne Innovation District initiative. This resulted in an innovative waste recovery-to-production model combining design consultancy, research and design education projects. The model uses a unique rapid triage process, co-design activities, and an accelerated matching tool that helps identify key parameters for research into any new design.

The project provided tangible industry engagement and development, with new partnerships formed with Taxibox, Patagonia, Obus and Macpac; new research contracts under development; and young, recycling focused designers supported to convert design ideas into real world enterprises.

The project's educational dimension – and the academic exercises undertaken – helped create a learning and teaching framework that will be instrumental for future projects, and will introduce into RMIT's design education a range of sustainability principles based on waste recovery.

The Recycling Incubator now provides design expertise for organisations seeking to make recovered waste a key material in new product designs. Now open for future collaborations and partnerships, the sky – or perhaps the bottom of the bin – is the limit for the sustainable solutions that can be achieved.