COMPOST AND CATCH

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- Food waste and the emissions it generates are a global issue
- Consumers are being more thoughtful in what they buy
- Home composting is common in our urban environments

Home composting provides a safe and prosperous environment for urban predators to nest and reproduce

COMPOST AND CATCH

Composting systems are easily exploited by rats and other urban predators, they will get into almost anything.

And while posting baited traps outside can work, the rats will bypass these in favour of getting into the compost bins.

So lets invite them in - but not let them leave

Types of common composting bins

$350

Vertical

$150

$50

Rotary

Types of common composting bins

$350

Rotary

$150

Vertical bins are very prevalent in NZ and the cheaper ones are the most susceptible to being exploited by urban predators

$50

The Concept

There are thousands of existing compost bins in our urban environments all of them attracting and supporting rat and other pest populations.

Rather than replace these systems the aim of this product will be to retrofit the very common vertical compost bin in a way that allows rats and other urban predators to enter the bins and kills them as they try to exit.

DESIGN CONSIDERATIONS

- Retrofittable to the widest range of bins
- Simple for anyone to fit and use
- Doesn’t impeded or interfere with the existing composting process
- Compatible with existing rat traps
- Minimal parts and material
- Durable both environmentally and from abuse by predators

The Concept

We also need to understand the anatomy of a compost bin

The Concept

But where should the trap be located?

The middle part of the bin has an OK food source but is harder for predators to access so prototypes in this area have had very little comparative success.

The Concept

But where should the trap be located?

The lower part of the compost bin makes a good place for rats to nest. Some early prototypes had success by having vented tunnels ending in a trap

The Concept

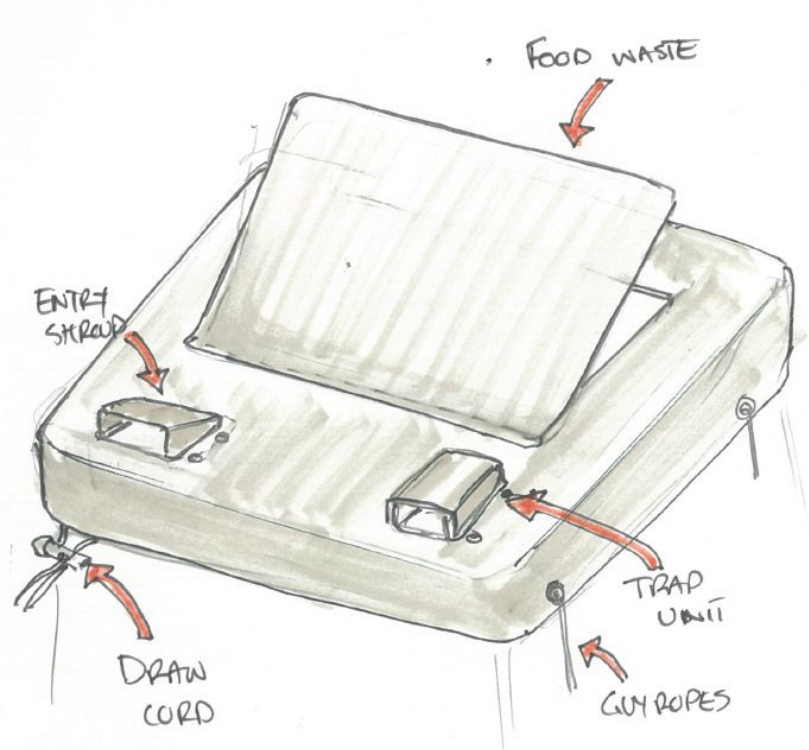
But where should the trap be located?

The top of the bin has the freshest, most abundant and most accessible food source.

This is where rats and other predators want to be so this is where the product will be focused.

The Product

Based on the design considerations outlined and understandings of compost bins and prototypes the product will be a replacement for the lid of a vertical composting system.



The product will consist of a flexible and tough main body that uses a draw cord and guy ropes to secure to the compost bin.

Food waste will enter the bin through a sewn flap that can be easily and securely shut back to the main body (heavy duty velcro / toggle or hook and eye fixture)

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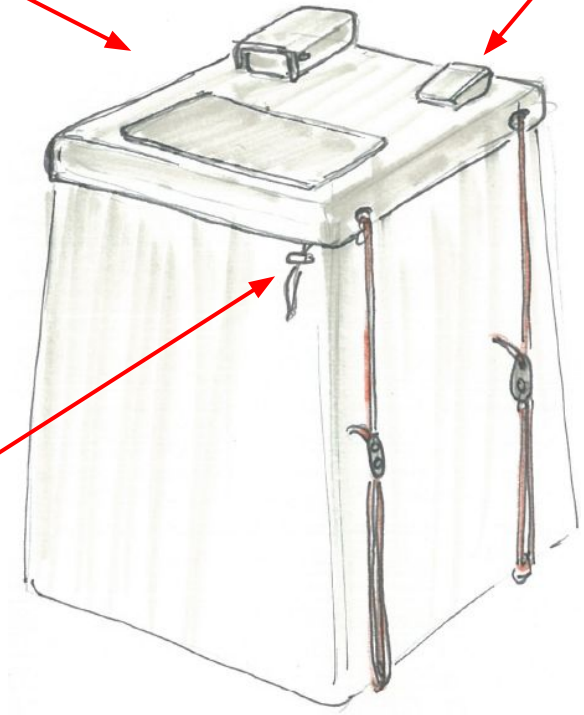
There will be an easy access point for the rat to enter into the compost bin.

The easiest and most obvious exit point will be up a ramp that ends in a trap.

The Product

The main body and flap of the lid must be tough and waterproof. A source for recycled billboards has be contacted and prototypes will be made with this material.

A shroud will cover the entry hole so that rain does not enter the bin



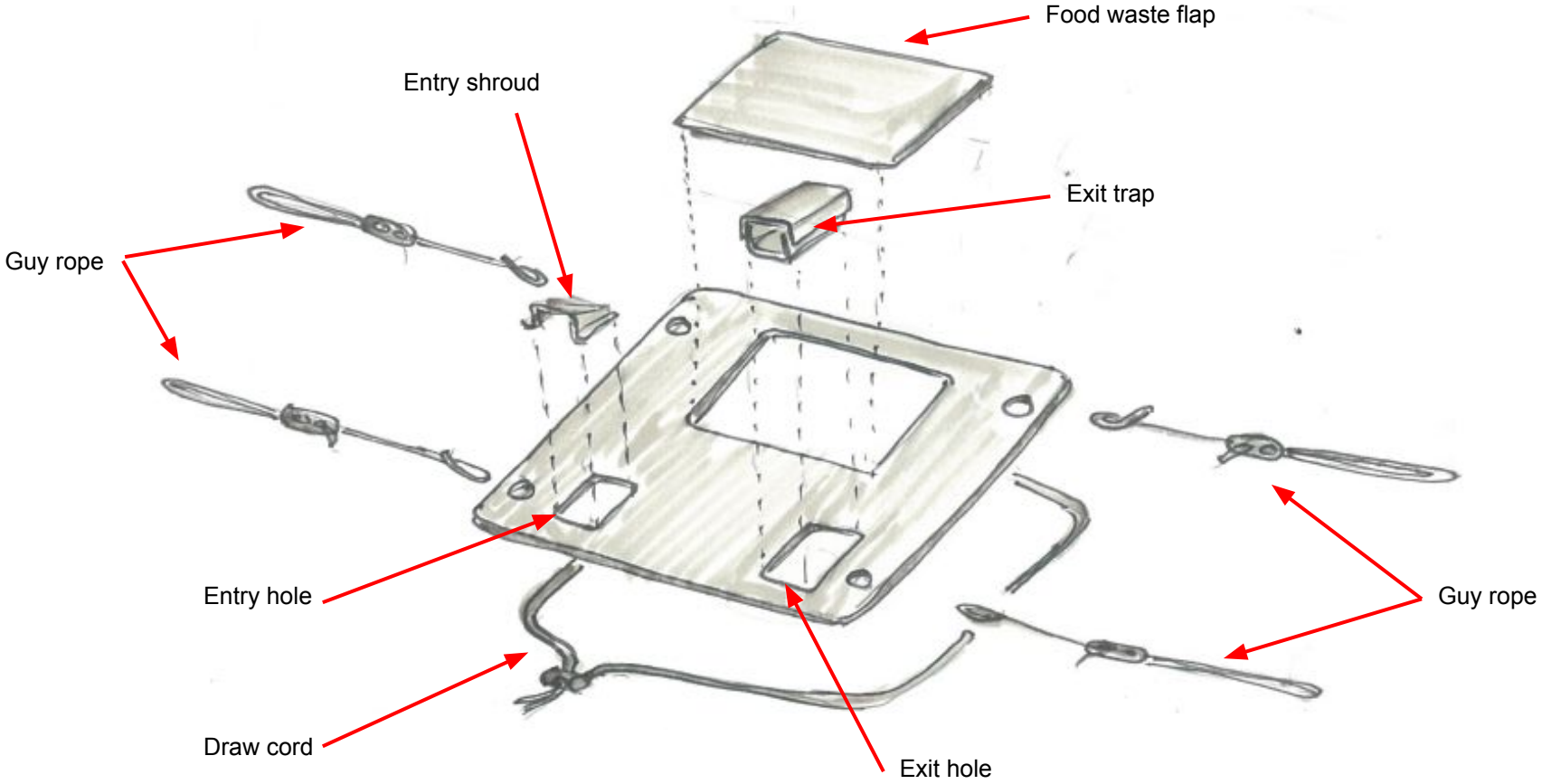
The lid will be secured down to the bin by a series of tensioned cords similar to tent guy ropes

The product will come in different sizes to ensure it fits a wide range of vertical compost bins

A heavy duty elastic draw cord will tighten the lid around the perimeter of the bin.

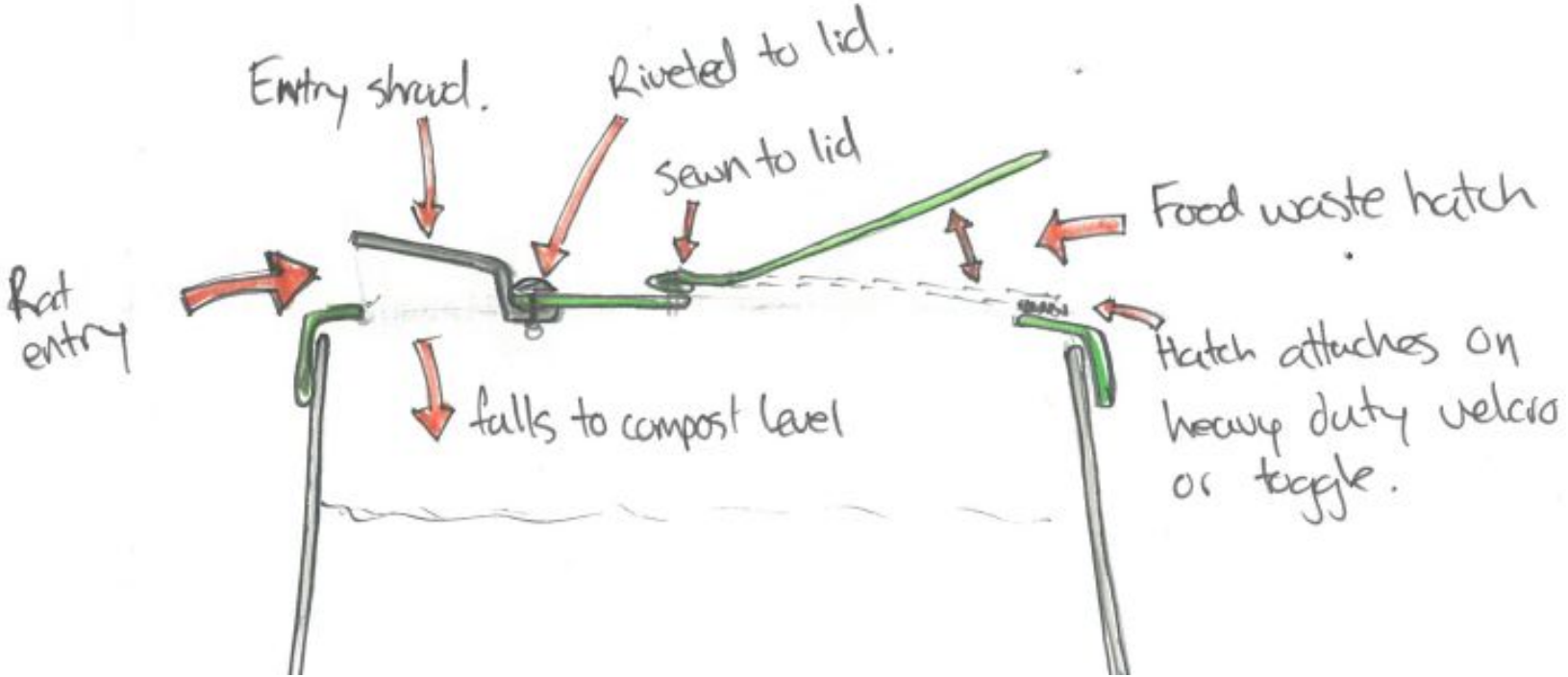
To keep the product affordable the base model will be equipped with a simple pressure pad trap

An alternative model will be designed to accommodate an automatic trap that drops the rat into the compost bin and self resets


Food waste flap
Entry shroud
Exit trap
Guy rope
Entry hole
Guy rope
Draw cord
Exit hole

The Product

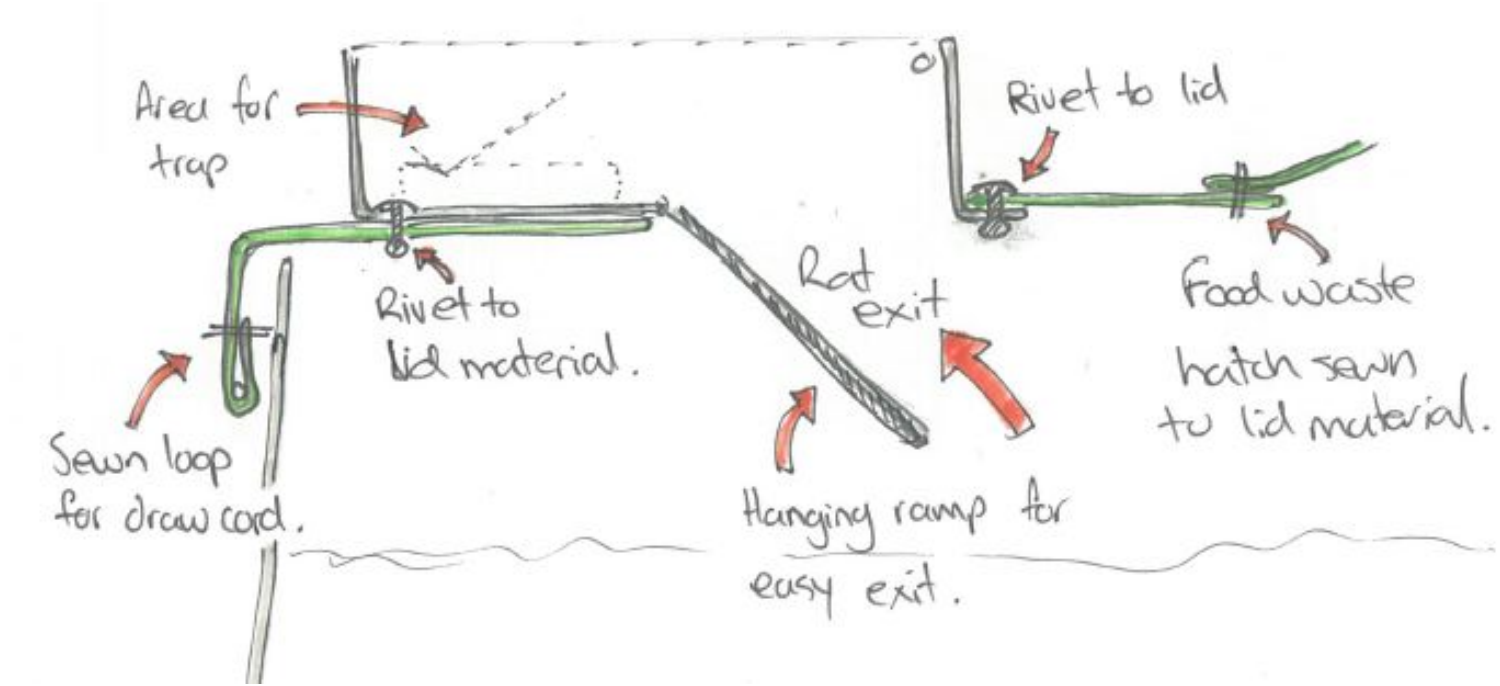
Entry cross section



A issue with a flexible lid is that water can pool in the centre. To create a dome shape that sheds water the guy rope could also tension a thin flexible pole that forces the centre of the lid up.

The Product

Trap cross section



The exit design is designed to use either a simple pressure pad trap or automatic resetting trap. Other things to consider would be to have a seesaw or steep ramp that deposits the rat back into the compost bin when killed by the automatic trap or released from the simple trap.