Even the humble grease trap needs to keep up with the times.

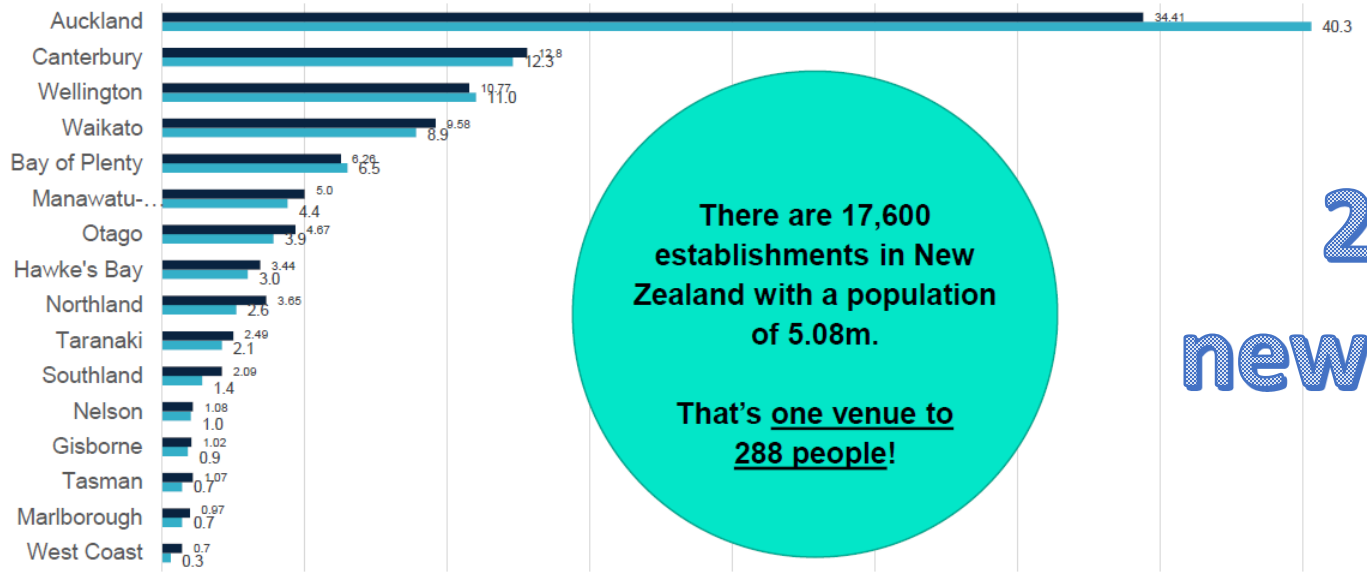
MACTRAP

Change and innovation are intertwined

- Context of change
- Examples of responses to those changes

The context of change

- Intensification strategies by city planners
- Growing population : +500,000
- More people are eating out or buying prepared meals
- New food venues are displacing retail outlets

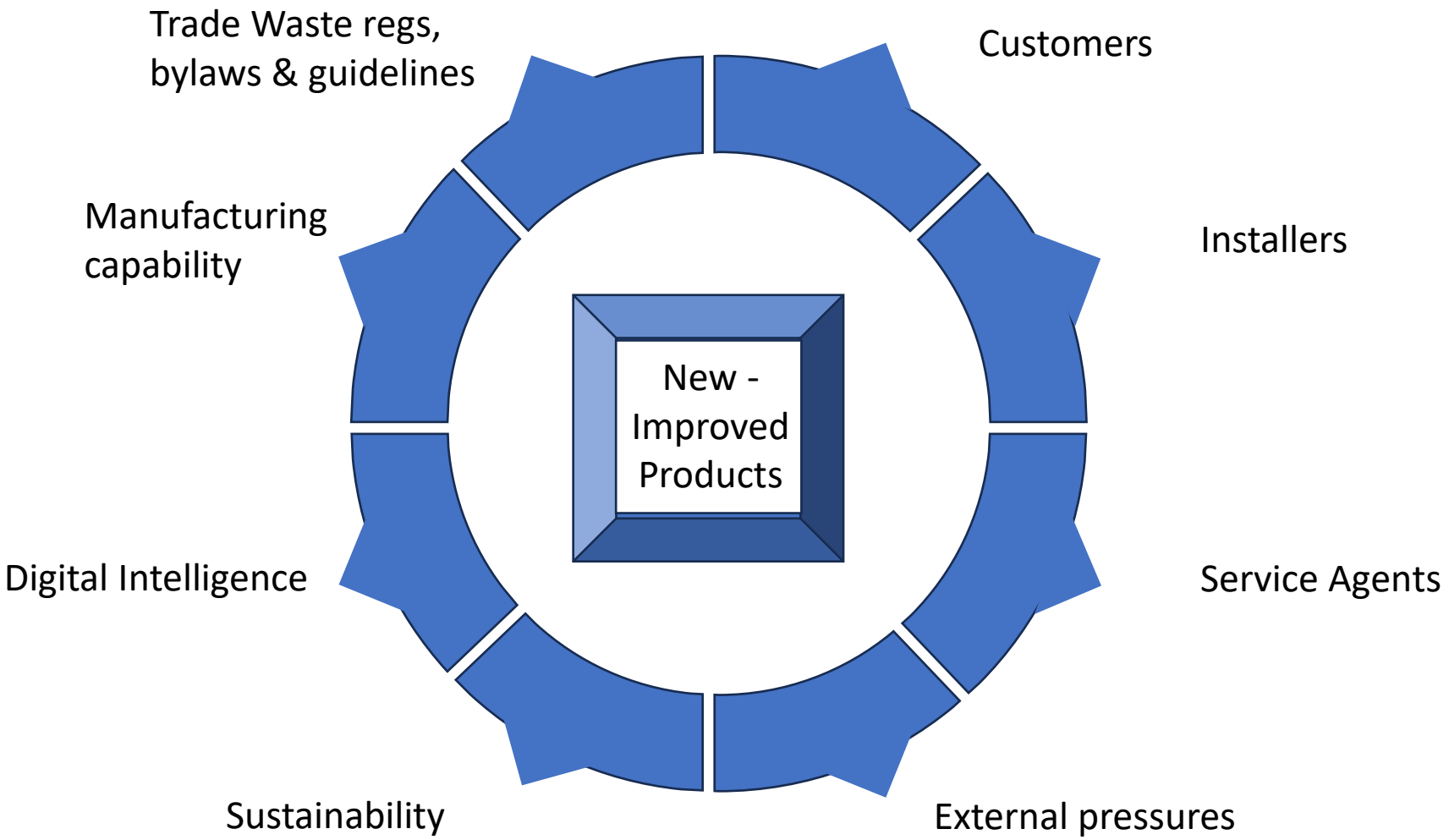


There are 17,600 establishments in New Zealand with a population of 5.08m.

That's <u>one venue to 288 people</u>!

2,000 new venues

The source of innovation & improvement



New solutions

1. Dunkin Donuts
2. Kawarau Bungy Centre Café
3. Service Station
4. Manawa Bay
5. Flame Bar and Grill
6. AgResearch
7. Magnus Lennie
8. Global Defense Systems
9. Laundromats

- Grease Trap – treat then pump
- Grease Trap – drainage constrained
- Grease Trap – forecourt constraints
- Large complex solutions
- Multiple constraints
- Custom filtration specific to lab
- Stormwater Diversion for wash pad
- Custom design and size
- Lint trap design and sizing discussion

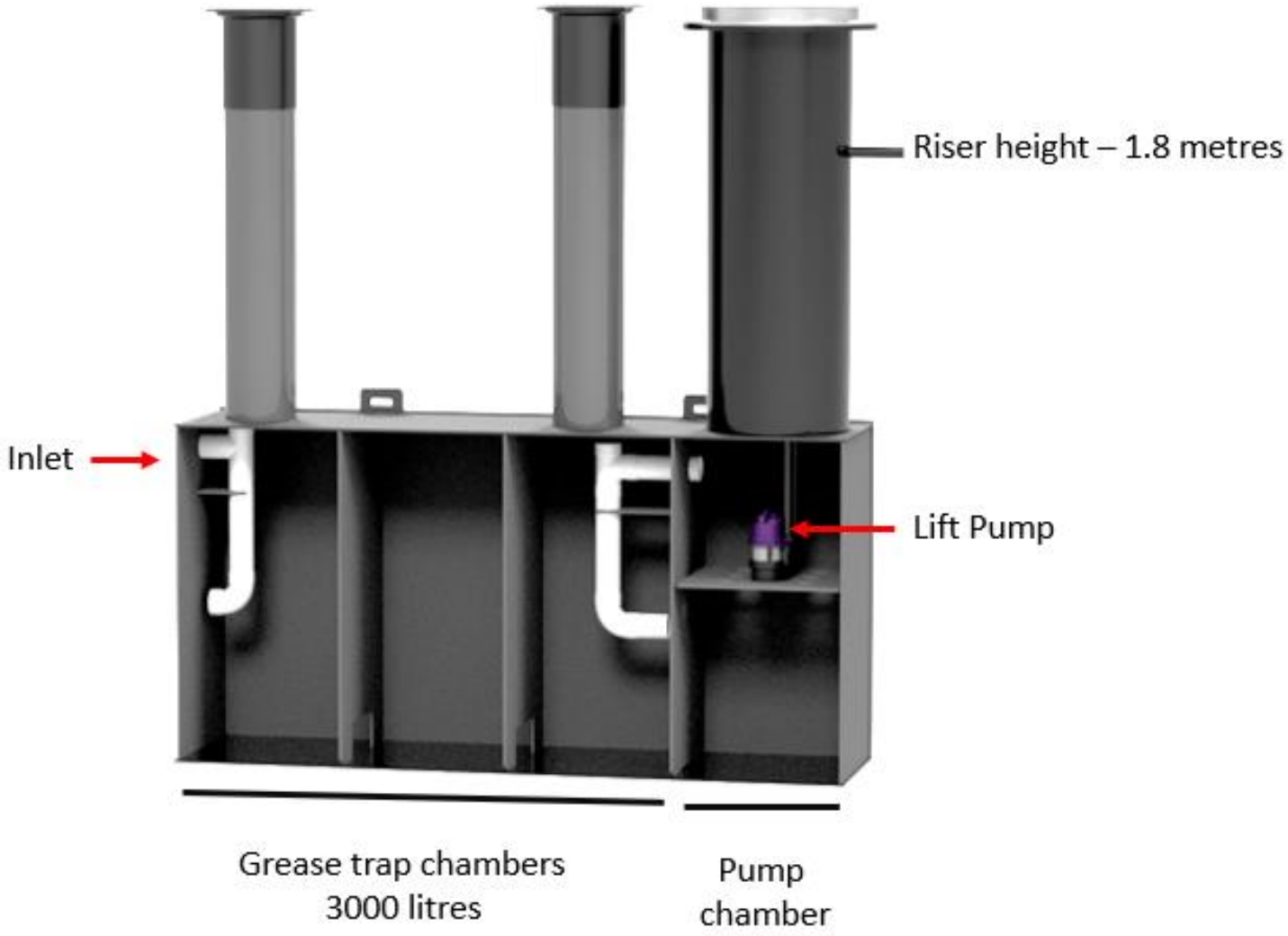
Dunkin Donut

- 40,000 donuts
- Very large bakery floor area
- Multiple in-floor wash downs
- Resulting in drainage too low for gravity flow to wastewater

Options

- Pump to the grease trap then gravity flow to wastewater
- Install grease trap deeper and lift treated water to wastewater

Dunkin Donut



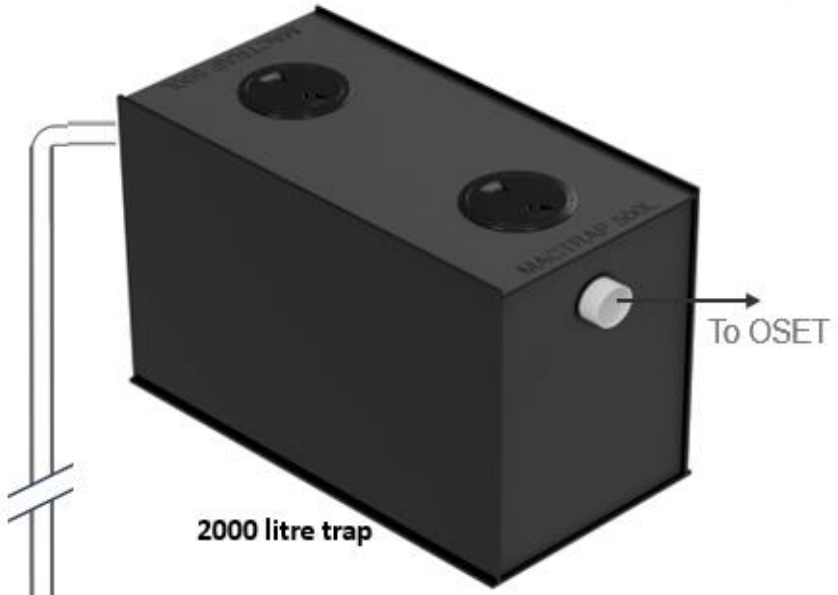
Kawarau Bungy Cafe

Kawarau Bungy Cafe

- Environmentally sensitive area
- Existing Grease Converter had failed to trap and prevent FOG reaching OSET
- Costs of OSET remediation very high

Solution

- Under bench pump chamber
- Dual pumps
- Cleaning jets
- Custom 2000 litre passive trap



2000 litre trap

Under-bench pump chamber

Caltex Service Station

MTPT750Lift during manufacture

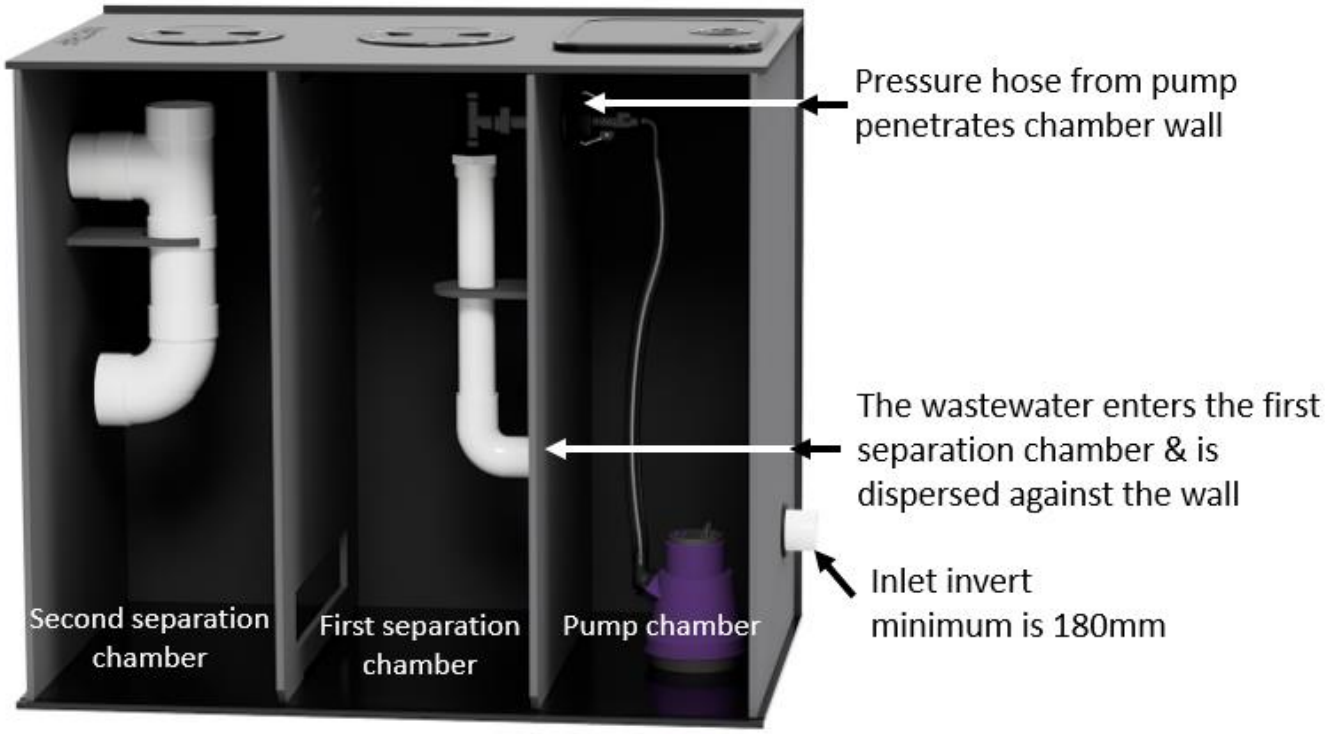
Pump chamber remains clean after 3 months of operation

Caltex Service Station

- Congested site
- Under bench trap rejected

What's left?

- First chamber - pump chamber
- Grease separation chambers sized to meet venue requirement
- Specific pump selection
- Dual or single pump
- Cleaning jets



Above ground passive trap with a low inlet. Based on a 1:40 fall the sink can be up to 17m away.

Unique and Complex challenges

Chamber for cooling and pumping

Control Panel

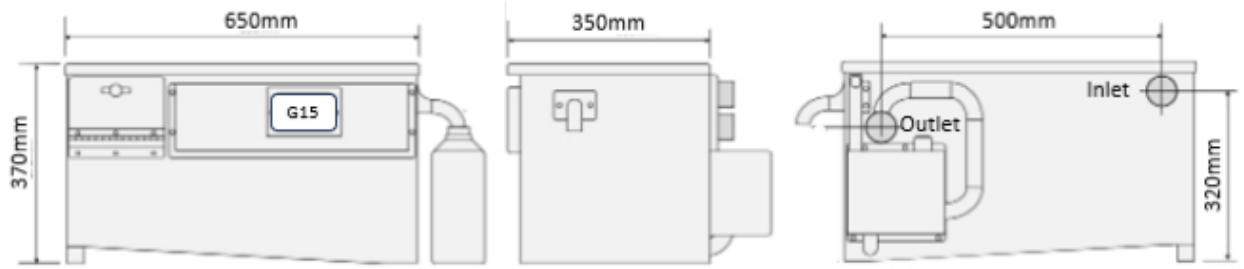
iVario Cooker

Heat resistant pumps – duty cycle

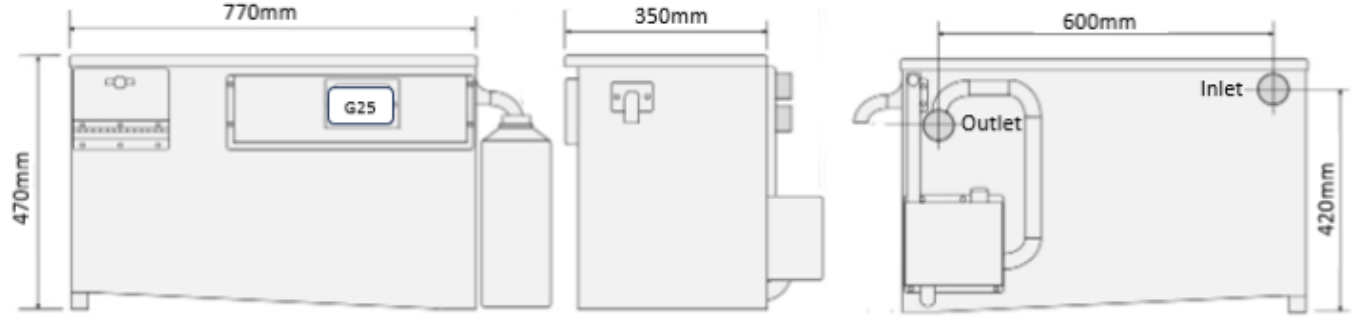
Grease Removal Unit – G35 – 4.0 l/s

New Model in Grease Boss range

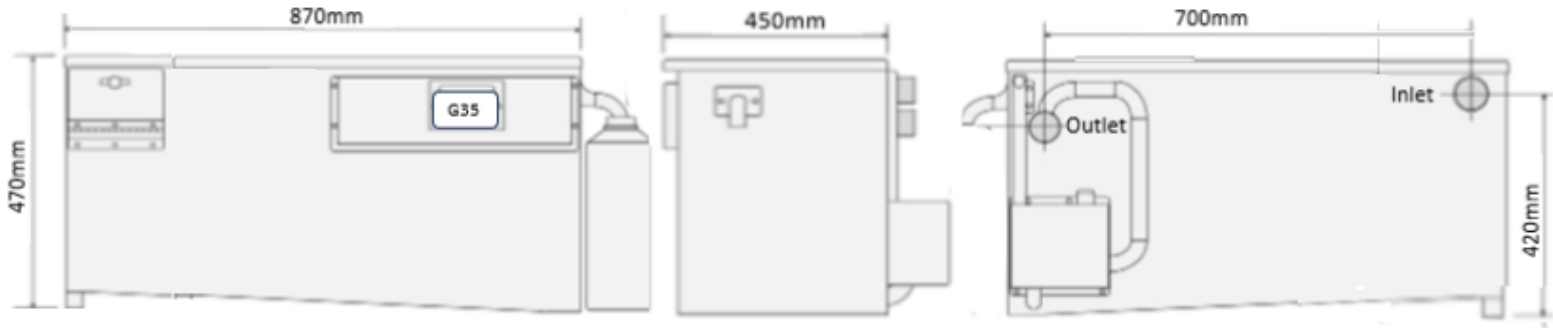
Grease Boss G15



Grease Boss G25



Grease Boss G35



Manawa Bay

- Largest shopping outlet in NZ opening in September
- Food Court with over 40 kitchens
- Manage greasy water to strict criteria

Manawa Bay

- Sized for hydraulic load – EN1825
- Sensor alarms when it grease occupancy reached
- No sucker truck within 50 metes
- No odours
- Automatic disposal sequence
- Tap and pipes rinsed after suck out
- Trap partially refilled

AgResearch – iterative design and protyping

Manufacturing process supports iterative design and build for this unique product.

"When the prototype was provided to me to test, my changes were quickly incorporated into the final product" – Sarah – Lab Manager

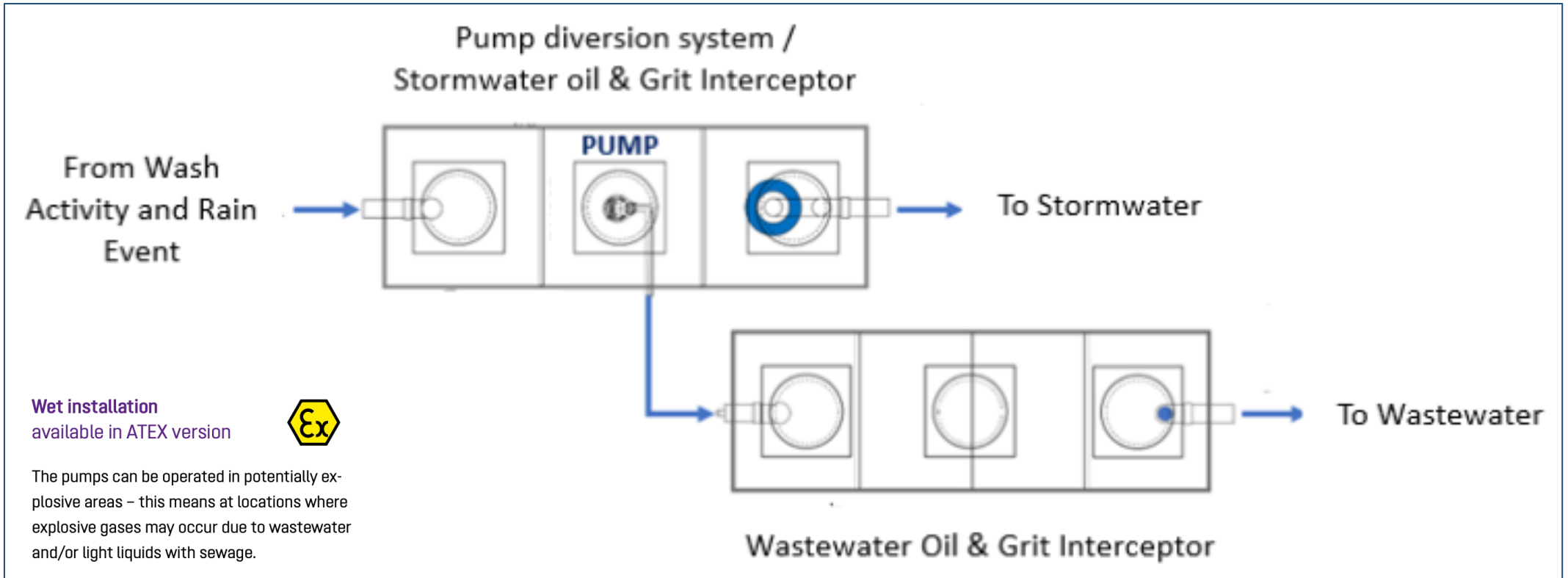
Final design included:-

- 3 stages of filtration with the final astage being 3 x 100 micon filter cannisters
- Site visibility of sediment level
- Quick release plumbing connection fo easy access and cleaning
- Dual handles on filter baskets for easy lifting

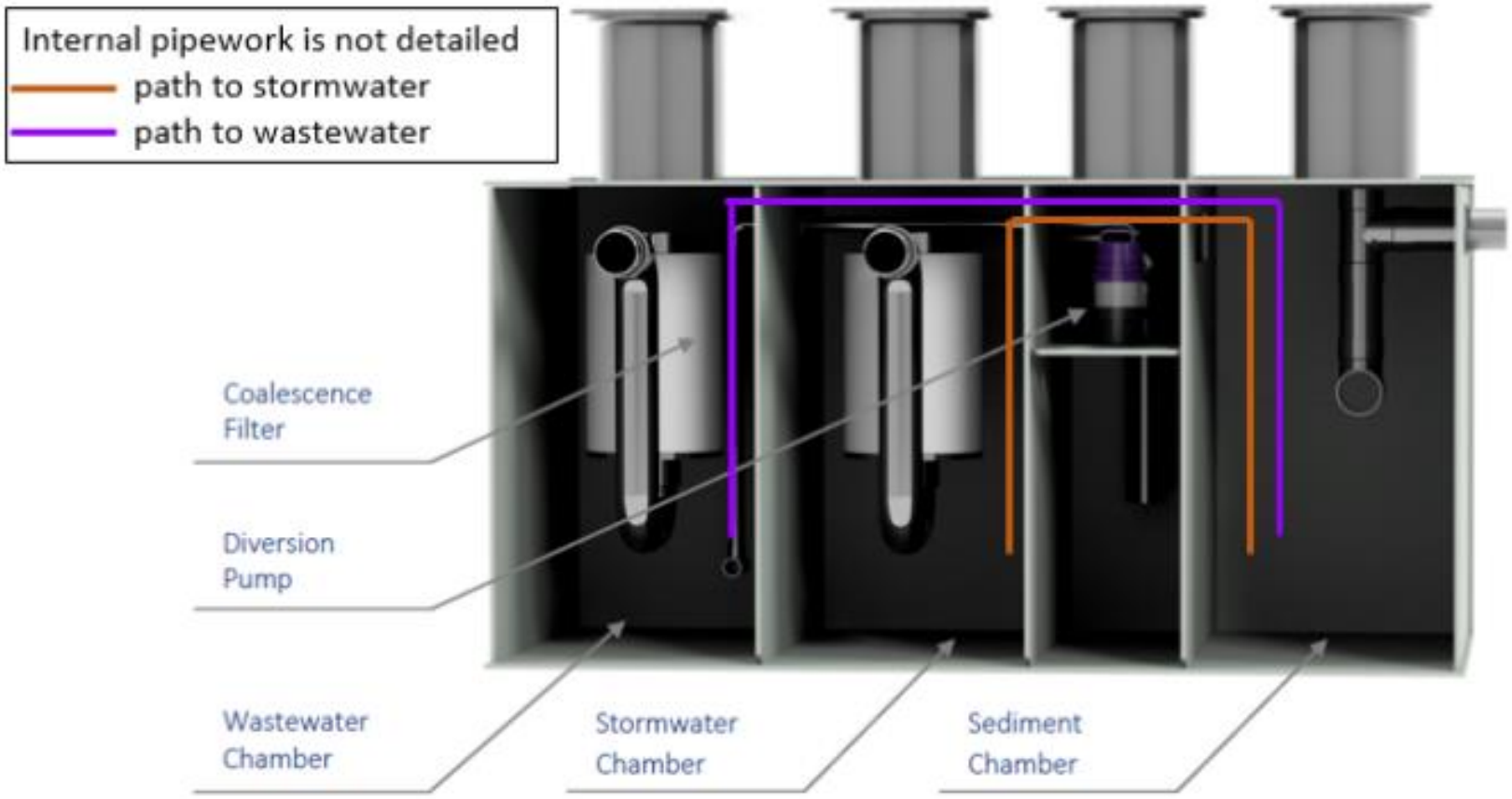
Magnes Lennie Opotiki – Uncovered Pad

The District and Regional Councils wanted to ensure

- that contaminates such as oil, grease, lubricants, grit and small metal or plastic parts didn't enter the stormwater network or the wastewater network
- That rainwater did not enter the stormwater network



New design for uncovered wash pad



1 x 3000 litre with
1 x grit interceptor chamber
1 x stormwater oil & grit interceptor chamber
1 x wastewater oil & grit interceptor chamber

Optional protection
- Self – activated closure lock
- Coalescing filter

Wet installation
available in ATEX version

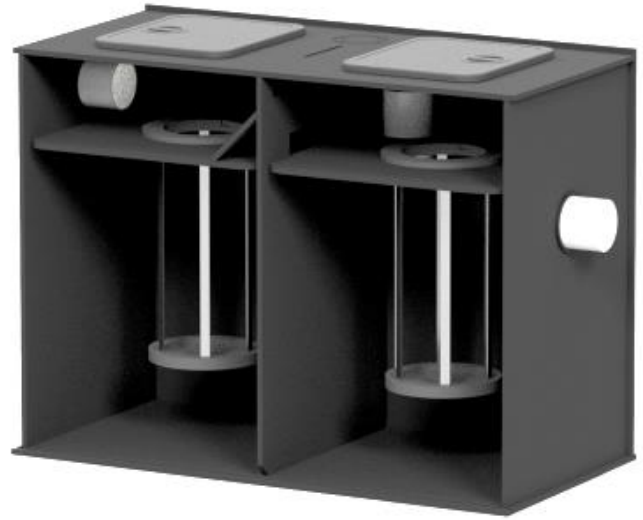
The pumps can be operated in potentially explosive areas – this means at locations where explosive gases may occur due to wastewater and/or light liquids with sewage.

Laundromats

- Research and prototype solutions
- Typical Laundromat size in NZ
  - Small 4/5 machines
  - Medium 9 machines
  - Large 12 machines
- Typical Machine size
  - 18kg & 27 kgs
- Around 50 litres is discharged during each cycle
- Gravity drain – not pumped
- Water temperature approximately 25deg C

Lint trap sizing

Maximum Number of Machines	Mactrap Model	Pipework (DWV)	Length (mm)	Width (mm)	Height (mm)
3	MTFT3M[1]	75 or 100	800	450	500
6	MTFT6M	100mm	1200	520	628
10	MTFT10M	150mm	1200	645	880
15	MTFT15M	150mm	1200	806	1050
20	MTFT20M	150mm	1600	806	1050



Custom build - NZ Defence to Pizza Hutt

- Very different customers – same capability to develop solutions
- Global Defence Force – Australian & NZ Army mobile kitchens
  - Custom tanks with precise requirements for dimensions and fittings delivered as part of their wastewater interceptor systems
- Pizza Hutt – Courtney Place
  - Trade Waste required an internal 250 passive litre trap
  - Deep sink – low inlet

Questions?

Supporting and Coaching

The Grease Boss Tips for Success

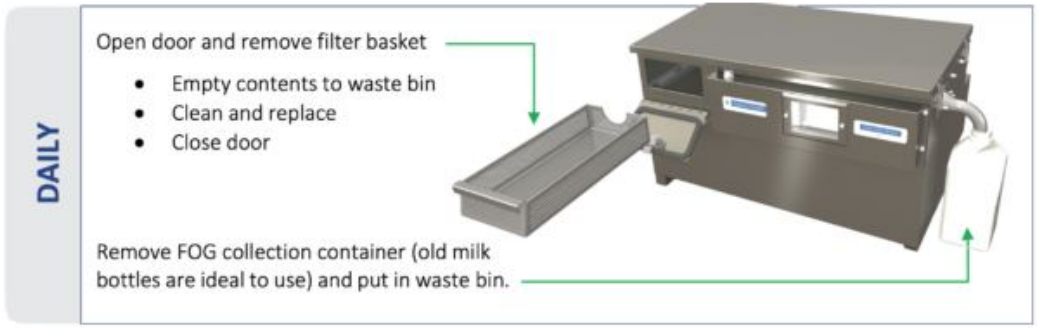
At Mactrap we want to support you with the operation of your Grease Boss. The first step is to understand how it works and what common mistakes can be made by operators.

Staff move on and you may want to forward this information to your new manager. Please click here and download the Grease Boss Operations Manual.

Your Mactrap Grease Boss is extremely effective at removing the fats and grease that drain from your sinks. Click below to see how it works.

TOP TIP : It's a grease trap not a food trap!

Food scraps are the enemy of all grease trap. They settle on the bottom of the trap and form a horrid "sludge" that will block the system overtime. This will result in a blockage either inside the trap or in the pipes leading away from the trap.
Install a filter in the sink and ensure the filter basket in the trap is cleared.



Mactrap is the manufacturer of the Grease Boss. Call us for a training session if you would like information or support with operating your Grease Boss. Your nearest Service Agent is listed on the back page of the Operations Manual.

"Fantastic after sales service from the team. We had a video call to patiently diagnose an issue that arose after we refurbished Que Bar and had the issue resolved quickly." Tim B - Que Bar French Bistro and Wine Bar, Cambridge

For training & support call Kay on 027 248 6052
or email on kay.shaw@mactrap.co.nz

Emailed Q2 2022

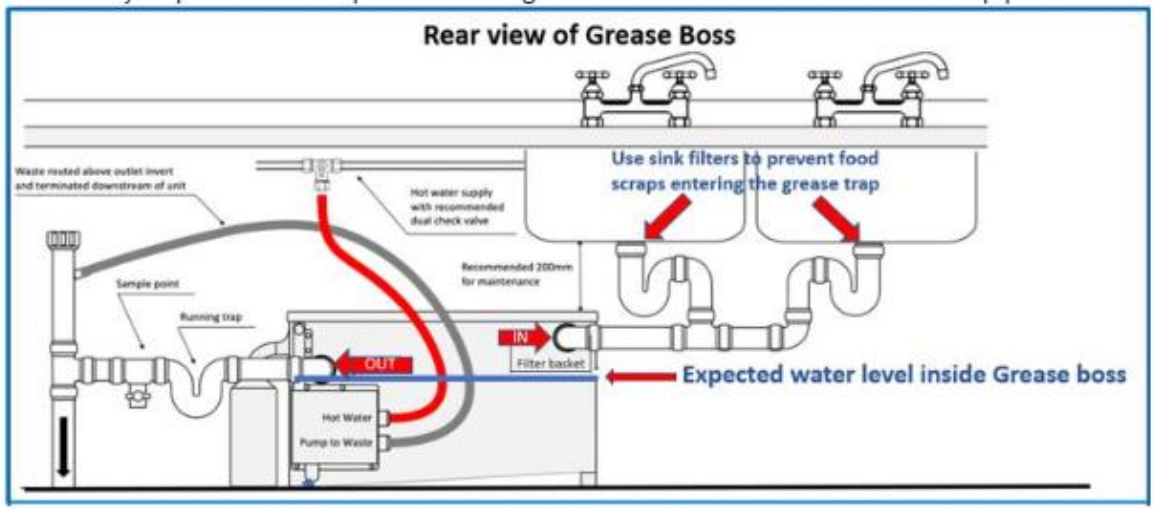
Supporting and Coaching

What is gravity flow and why does it matter?

No matter what Grease Boss model you have the common principle of gravity flow is involved.

The outlet is lower than the inlet **AND** the outlet is larger (50mm) than the inlet (32mm). This means that the water inside the Grease Boss will be able to exit the trap as least as fast as it enters. **The water level should not rise above the outlet.**

If you notice that the "high water level" in the Grease Boss is higher than expected the most likely explanation is a partial blockage in the riser chamber or the outlet pipes.



Video coaching and trouble-shooting

We offer free video sessions to coach your staff on maintaining your Grease Boss and for trouble-shooting any concerns.

"Fantastic video session with the team. We had a video call to patiently diagnose an issue that arose after we refurbished Que Bar and had the issue resolved quickly." Tim B - Que Bar French Bistro and Wine Bar, Cambridge

Call Kay for advise on maintaining your Grease Boss :-
027 248 6052 or email me on kay.shaw@mactrap.co.nz
Request a video sessions for coaching staff on maintenance or troubleshooting concerns

Emailed Q4 2022

Supporting and coaching

The Grease Boss - Tips for Success

Recently I visited a store that sells chicken & chips and found that the fat and grease in the Grease Boss was yellowy-brown in colour and its consistency was thick and bumpy.

The Grease Boss roller was successfully picking up the fat and grease but the thick bumpy consistency meant its movement over the wiper blade and out to the external collection container was slow and unsatisfactory.

Beside the sink was a box of Persil laundry powder.

TOP TIP: Caustic cleaners are bad news for under-bench grease traps

Products like laundry powder, drain cleaner, oven cleaner, degreasers and solvents are useful cleaners and frequently used in commercial kitchen. But the very fact that they are so caustic (pH 11-14) has a negative impact on your grease trap.

What do I do now?

CHECK

Check the colour and consistency of fat in the Grease Boss. If it is yellowy brown and thick or lumpy then review what cleaners staff are using.

REDUCE

Discuss ways to reduce the amount of caustic cleaners that enter the sink and Grease Boss.

FLOOR CLEANERS

Do not empty the floor cleaning bucket into the sink(s) that drain to the Grease Boss.

WHAT CLEANERS ARE OK?

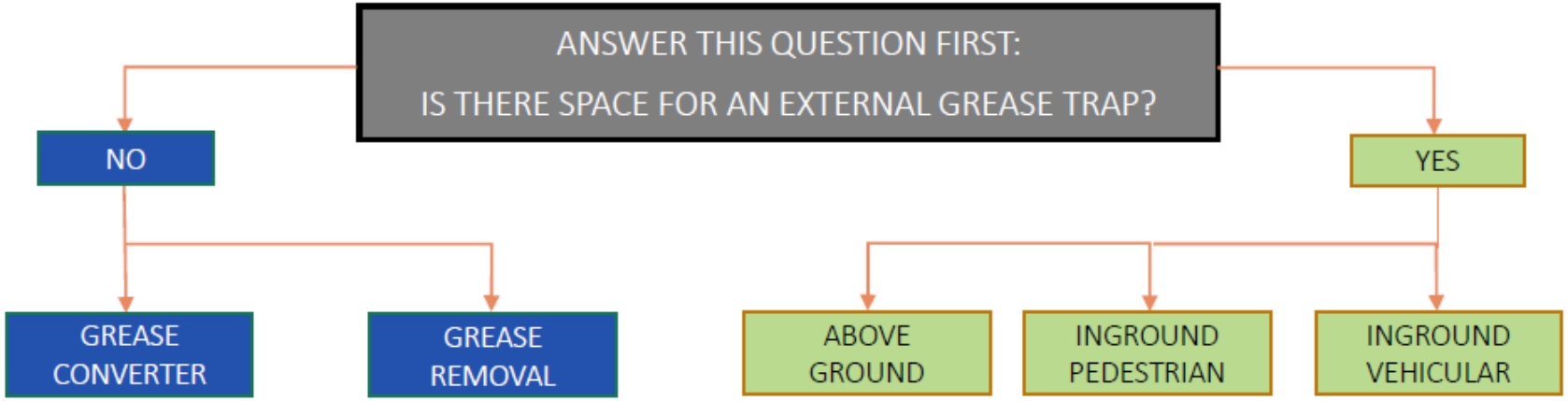
Use dishwashing detergent or similar product with a pH of 10 or less. When using more caustic cleaners do not dispose of them in the sink. If you use these products on trays etc, wipe them off with paper towels.

DOWNLOAD THE OPERATIONS MANUAL FOR MORE INFORMATION ABOUT THE GREASE BOSS.

Call Mactrap for support - 027 248 6052
or email kay.shaw@mactrap.co.nz

Emailed Q1 2023

Guide for Selecting Grease Traps – select the type, then calculate the size required



Grease Converter or Grease Removal?

All councils in New Zealand will approve the Mactrap Grease Removal unit (Grease Boss). Many councils are reluctant to approve the installation of any brand of grease converter

What size do I need?

As a guide for light to medium greasy food outlet.

- Grease Boss G15 or Grease Converter GC250 for 1 or 2 sinks of medium size.
- Grease Boss G25 and Grease Converter GC350 for 3 sinks of medium size
- Larger kitchens will require two or more units.
- Do NOT connect dishwashers into any under bench trap

Plastic or Concrete?

Choose HDPE (high density polyethylene). Grease traps are acidic and can cause concrete to fail in 10 years. HDPE is unaffected by acid and Mactrap HDPE traps have a 30-year warranty for inground installations.

What size do I need?

Most councils require a minimum of 500 litres.

As a guide for light to medium greasy food outlet.

- 500L – 1 or 2 sinks of medium size
- 750L – 3 sinks of medium size and fixtures
- 1000L – 4 sinks of medium size and fixtures
- Sizes up to 6000L available

MACTRAP

oil & grease separator specialists

For help with sizing all types of traps contact Mactrap on 0800 MACTRAP.
Email - sales@mactrap.co.nz. Visit our website - www.mactrap.co.nz

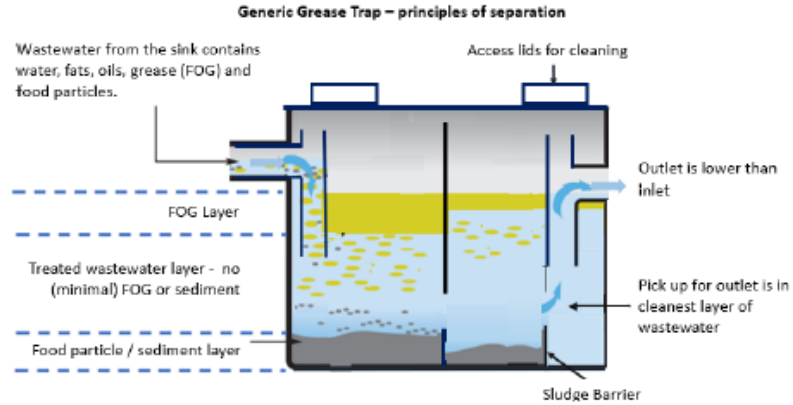
MACTRAP
oil & grease separator specialists

Principles of grease separation and description of options available

The principle of fat, oil and grease (FOG) separation

The flow of FOG-laden greasy water from the kitchen needs to be slowed to aid separation:

- Lighter-than-water FOG with rise within 30 minutes.
- Heavier than water food particles will sink to the bottom of the trap.
- The contaminants – FOG and food particles are "trapped" and not released to the ww network
- The middle section will be "clean" wastewater.
- The outlet is lower than the inlet and the flow of treated water is by gravity.
- The trapped contaminants are removed by extraction trucks every 4 – 6 months



There are three main types of grease traps:

Gravity grease traps/ hydromechanical grease traps

- Councils preferred this type of trap, and the minimum requirement is 500 litres
- Grease traps offer the lowest maintenance effort for kitchen staff.
- Requires extraction of entire contents very 4 - 6 months
- Typically, large capacity tanks : 500 litres – 6000 litres

MACTRAP hydromechanical traps are made in NZ from HDPE with a 30-year warranty for inground installations.

Grease removal units (GRU)

- Approved by all councils when there is no space for a large external trap.
- Grease removal units are made from 304 stainless steel and installed under bench near the sink.
- The FOG is continuously removed through a PLC controlled cycle of events.
- Kitchen staff must perform quick and simple maintenance tasks each day.

Mactrap Grease Boss is made in NZ.

Grease converter

- Many councils are reluctant to permit the use of grease converters.
- Grease converters are made from stainless steel or polymer and installed under bench near the sink.
- They have an automatic dosing pump which releases enzyme into the tank.
- The enzyme is an on-going cost and is critical to the success of the converter.

Mactrap Grease Converter are made in NZ.

For more information contact Mactrap on 0800 MACTRAP : Email sales@mactrap.co.nz

About MACTRAP

- No gaps in our product range – **UNBIASED ADVICE**
- Active consultancy for sizing and design – **WE'LL DO THE MATHS**
- Design and build – **IF YOU NEED IT, WE'LL BUILD IT**