



# TRADE “WASTE OF TIME”

CRAFT BREWERY WWTP SIMPLIFICATION AND IMPROVEMENT

# INTRODUCTION – MING HENG

University of Canterbury 2005 – 2008  
Chemical and Process Engineering  
MEIAust, CPEng



# BACKGROUND

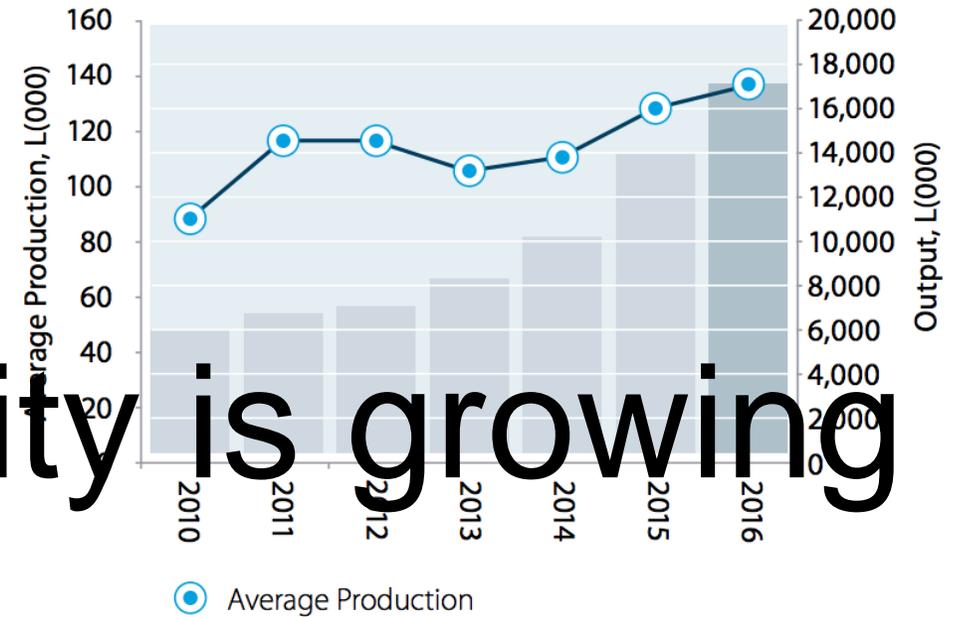
Increase in craft beer production = Increase in wastes produced from brewing process

**71** New small breweries in New Zealand between 2011 and 2016<sup>1</sup>

**150** Major concerns with brewery waste are BOD and TSS

New breweries and brewing companies in Australia between 2013 and 2016<sup>2</sup>

SMALL BREWERY PRODUCTION<sup>1</sup>



1. ANZ New Zealand. (2017). New Zealand Craft Beer Industry Insights  
 2. Terril, D – Craft Beer in Australia – Going to Strength to Strength

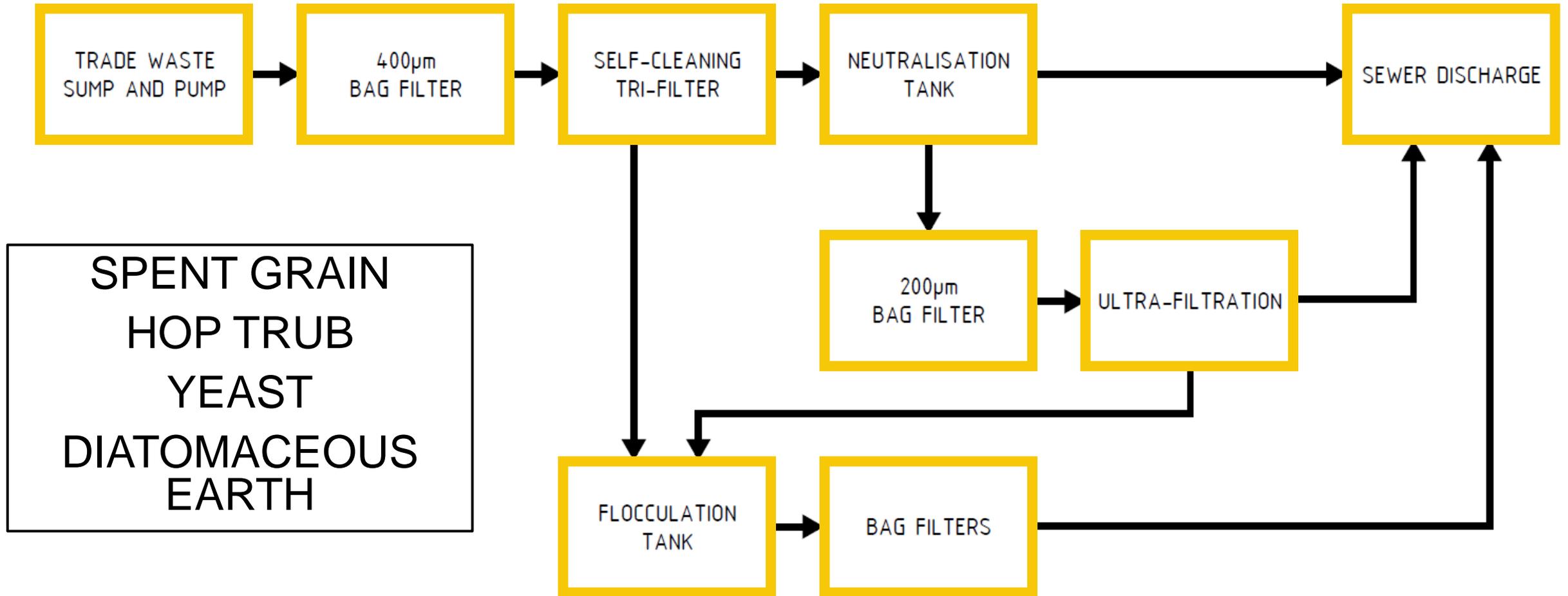
# BACKGROUND

- Located in Camperdown, Sydney
- Opened in 1988 by Chuck Hahn
- Lion Co. craft brewery
- Upgrade of WWTP in 2013
  - Over-complicated
  - Not performing as required
  - Safety/manual handling issues
- Project to address issues 2016

  
*James Squire*

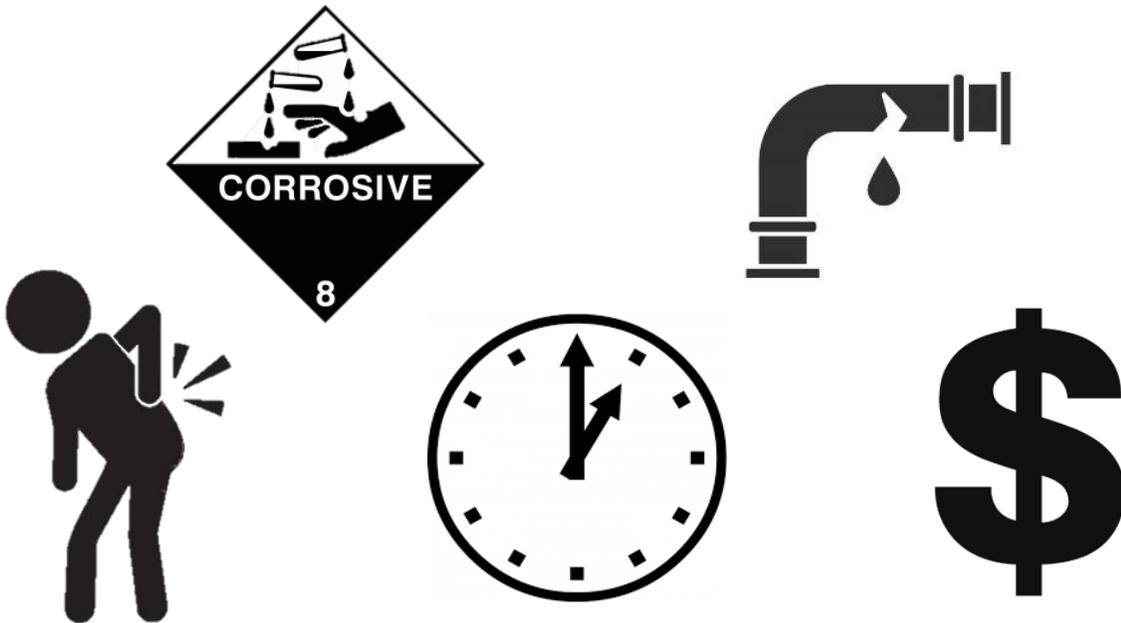


# MSB – COMPLICATED WWTP



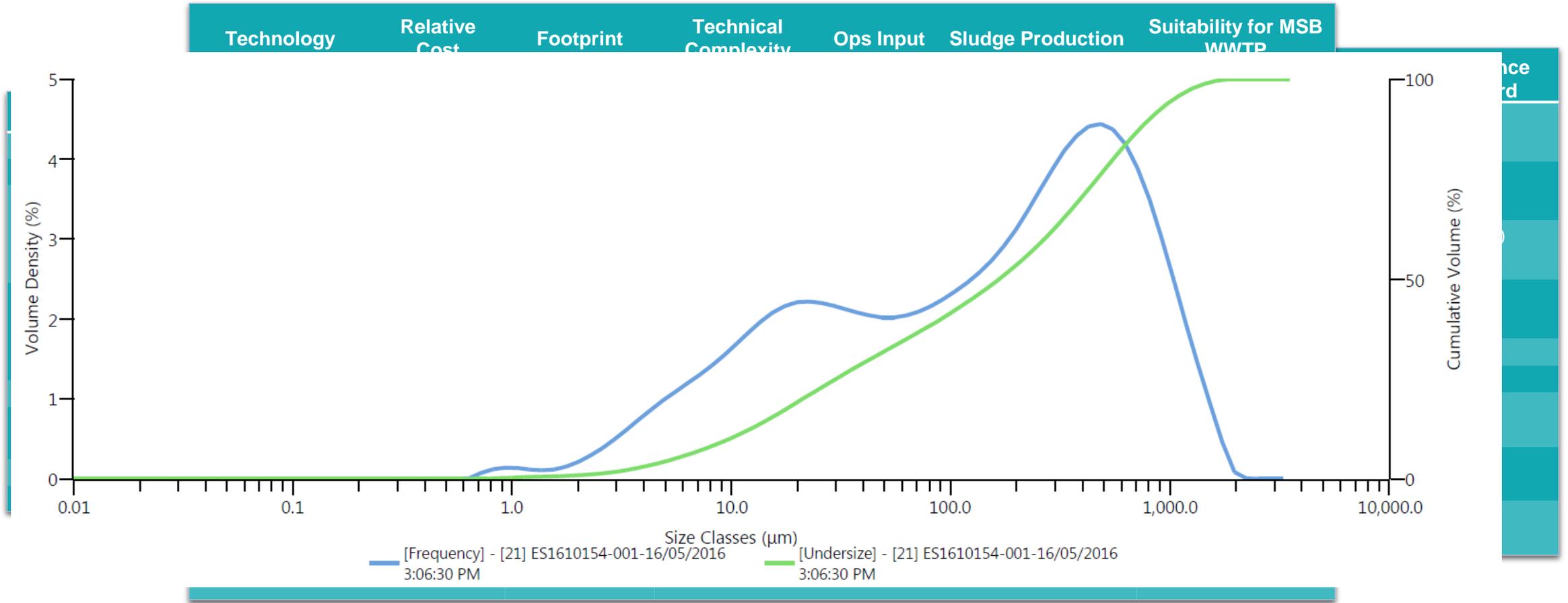
# MSB– Operating Drawbacks

## OPPORTUNITIES FOR IMPROVEMENT



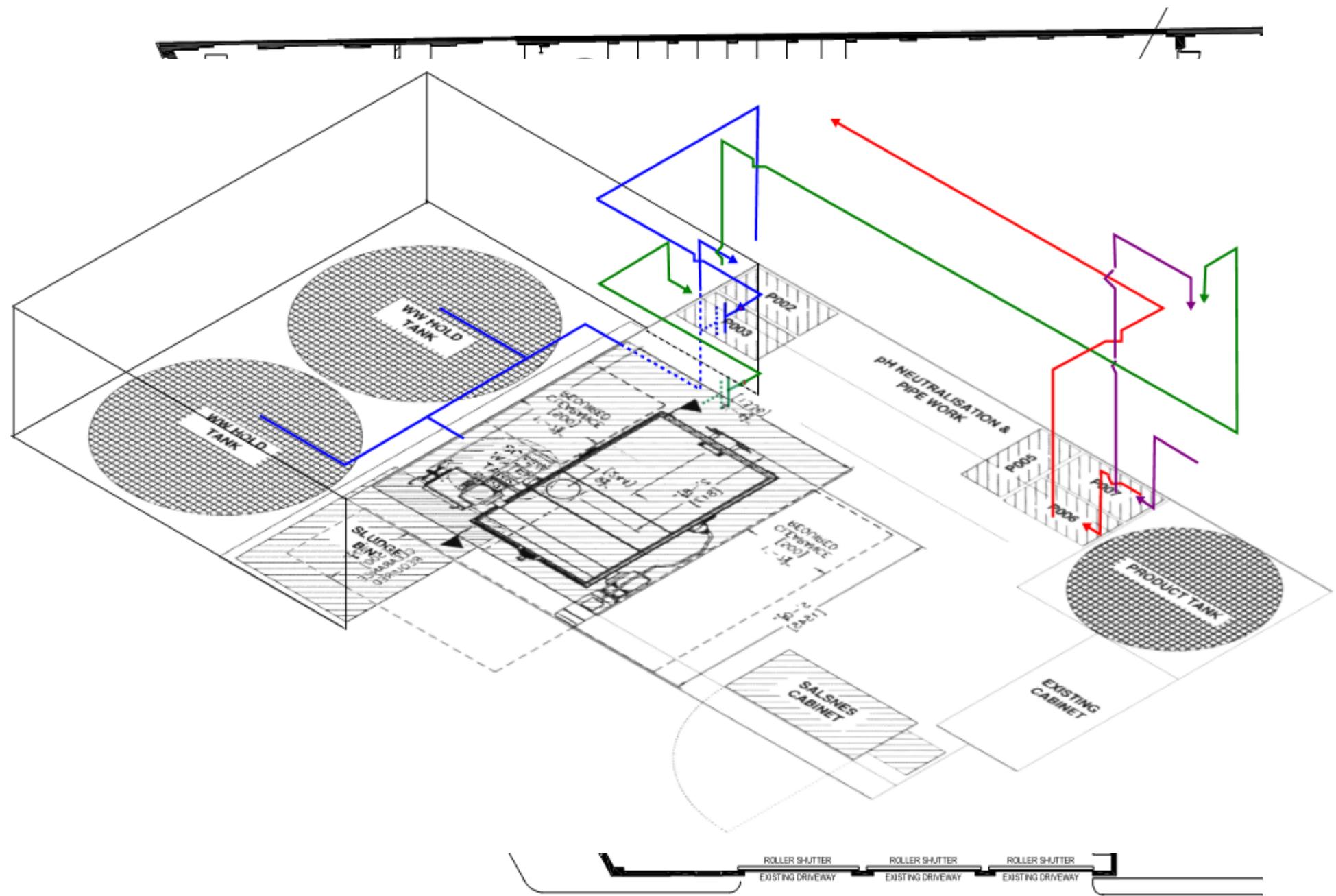
- ✘ Regular filling and blockage of the first bag filter
- ✘ Large amounts of caustic soda consumed
- ✘ Regular blockage of the UF unit
- ✘ Occasional failure of the PVC pipework
- ✘ Occasional breaches of sewer discharge limits

# MSB – NEW DESIGN DEVELOPMENT



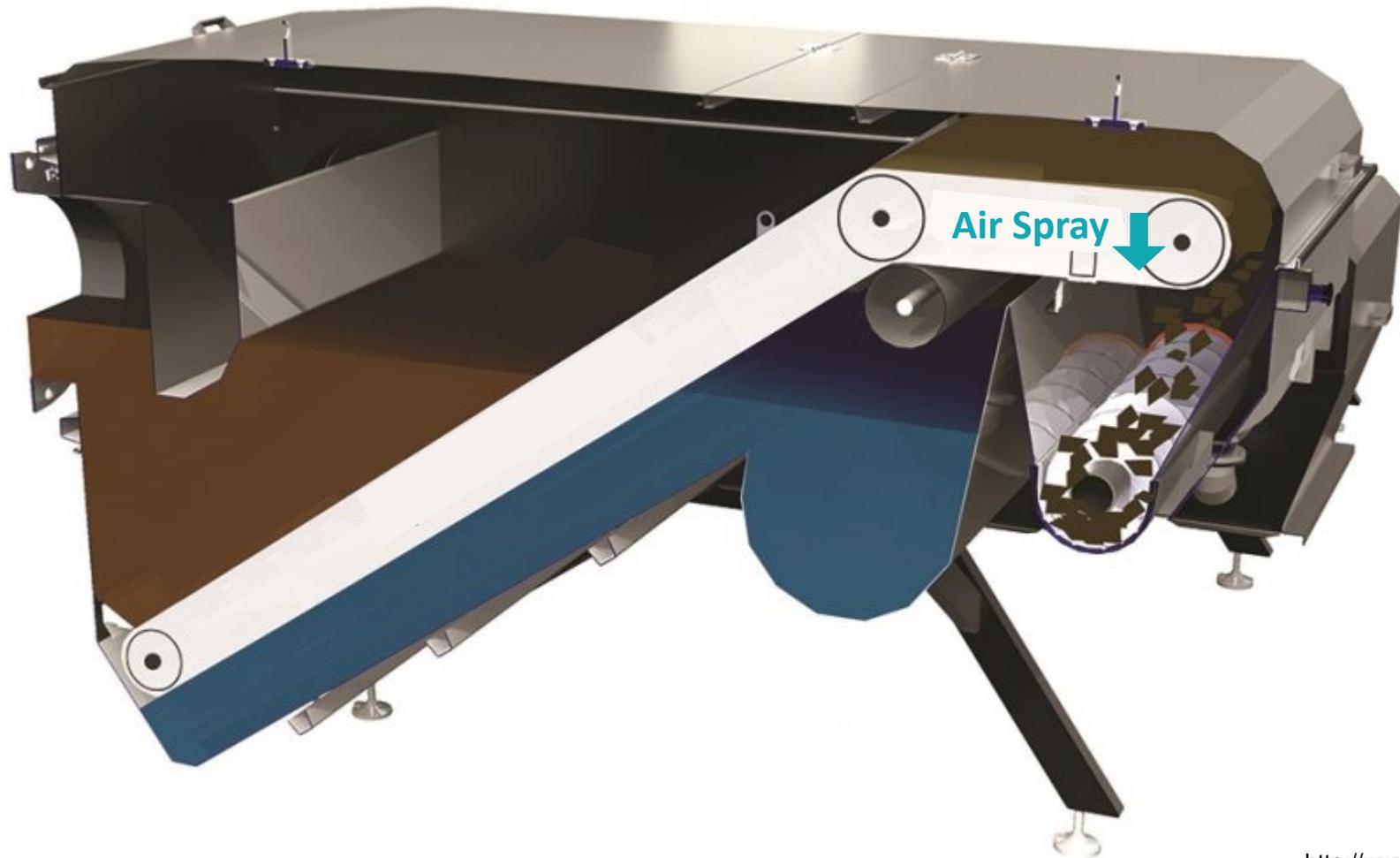
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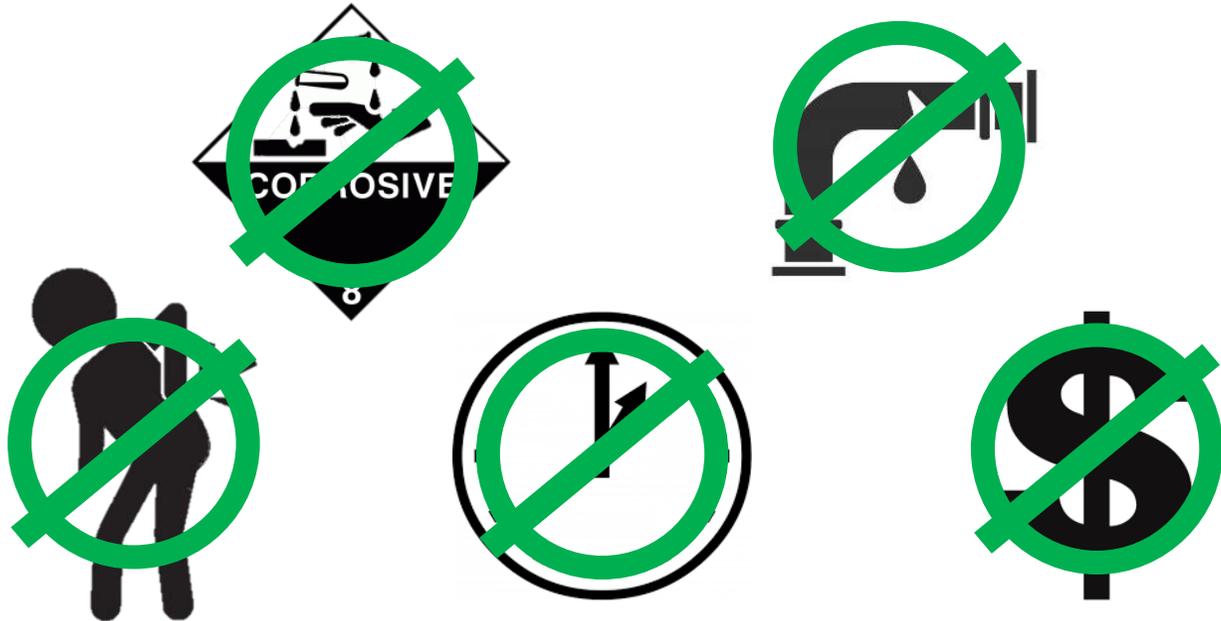


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# MSB - IMPROVEMENTS

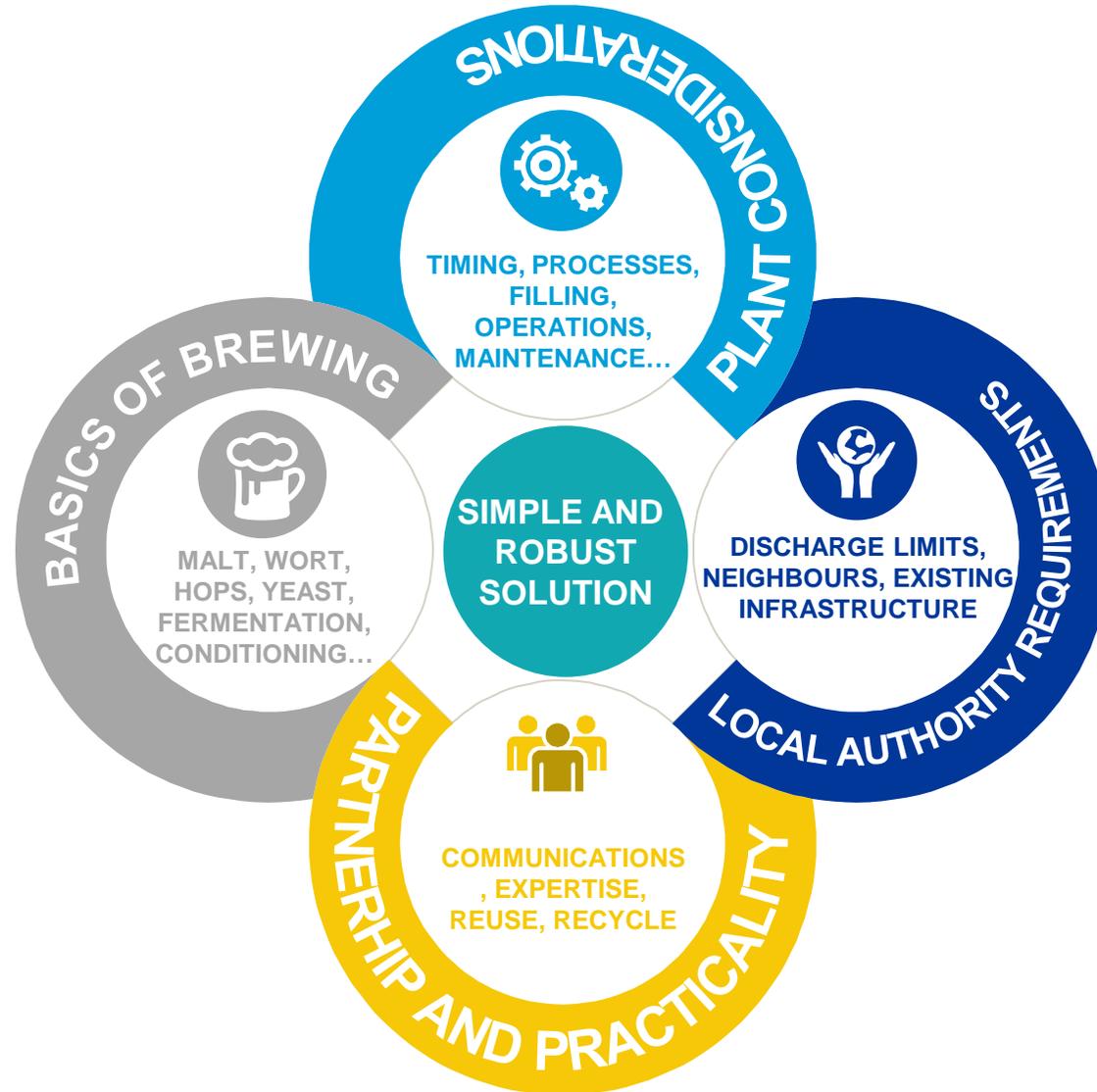
Reduced manual handling, improved aesthetics and odour, reduced chemical handling and usage, installed stainless steel lines, reduced operator intervention and required knowledge

## IMPROVEMENTS REALISED



- Reduced manual handling ✓
- Reduced chemical handling and usage ✓
- Installed stainless steel lines ✓
- Reduced operator intervention and required knowledge ✓
- Improved aesthetics and odour ✓

# MSB – PRACTICAL APPLICATIONS





THANK YOU

Beca

Lion Co. – Malt Shovel Brewery

Trojan UV / Salsnes Filter

MAK Water

Triple Nine Stainless

Enhance Cabling Systems

