Winery Engineers Presentation

Ian Lilley – General Manager

Who are Barry Bros?

- Founded by Peter Barry in 1958, operating for nearly 50 years
- Innovation is a cornerstone of the business – 1st to introduce combination CCTV and jetting trucks into Australia
- One of the largest fleets of the most powerful vacuum trucks in Australia
- Water recovery and re-use a focal part of the business for over 4 years
- Covering a broad spread of local government, utility and process industry customers
- Part of the Programmed Maintenance Services group of companies

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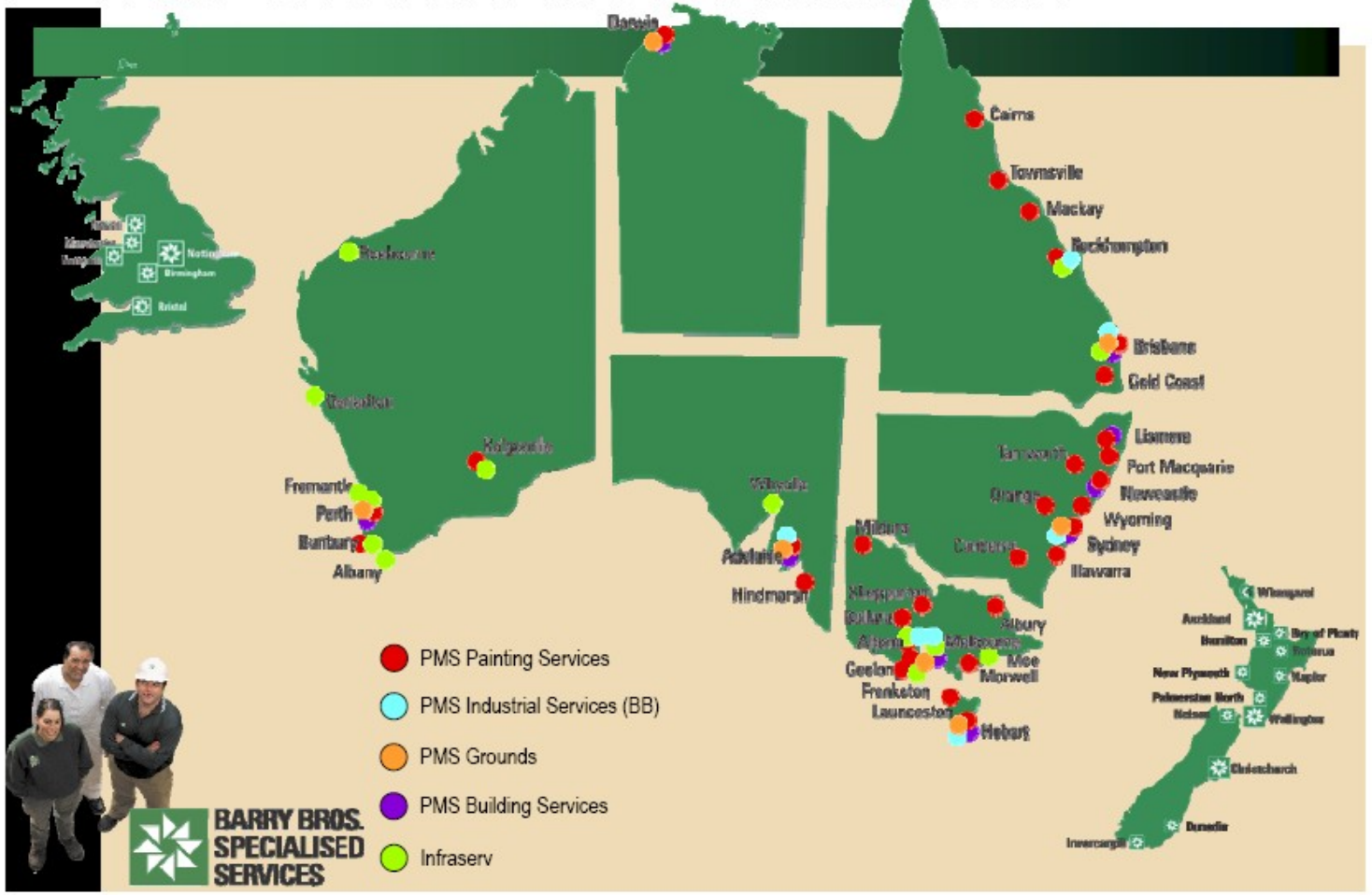
Division of Programmed Maintenance Services

PMS GEOGRAPHIC EXPANSION . . .



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Applications

- Vacuum Loading
- CCTV, jetting, root-cutting & foaming
- Non Destructive Digging – asset location
- Hydro-demolition – automated & semi-automated
- Sewer & drain maintenance
- Water recovery & re-use

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Applications – Vacuum Loading

- **Equipment Resources -** All of our vacuum loaders are EPA licensed
- Debris tanks range in size from 2,000 litres to 24,000 litres
- Vacuum capacity ranges up to 6,000 cfm at 27” of mercury
- These products can be vacuumed and transported if required:
  - Liquids and slurries
  - Woodchips
  - Oils and carbon based materials
  - Dry and wet sand, soils and clays
  - Cement
- Typical areas where vacuum loading is suitable:
  - Tank and vessel cleaning
  - Pit and culvert cleaning
  - Clean-up of environmental spills
  - General housekeeping

Vacuum Loading

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CCTV, root cutting, jetting & foaming

- CCTV used to check asset condition
- Can now include laser profiling to establish
  - Out of roundness
  - Ovality
  - Amount of debris build up
- One truck capable of root-cutting, jetting & foaming for root growth inhibition

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CCTV – the early days

Bill Bridson, Darwin - 1986

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CCTV – present day

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What's up your pipe?

Roots or Roaches?

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Non Destructive Digging

- Uses air or air/water as a means of excavation
- Useful in locating underground assets
- Non-injurious to sensitive assets like fibre-optic
- Air-only can enable you to backfill with material removed
- Effective down to 2 metres

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Non Destructive Digging

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Hydro-demolition

- Can be semi or completely automated
- Effective use of water at high pressure to
  - Remove concrete
  - Re-texture concrete and/or tarmacadam
  - Surface clean and condition
- Non-injurious to reinforcement

Hydro-demolition

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Sewer & drain maintenance

- Cleaning of domestic sewers, stormwater drains
- Removal of silt, debris & fats
- Blockage clearance – 24 / 7 service
- Transportation & disposal of wastes
- Spill containment & remediation
- Use of impact nozzles to remove accretations
- Wide range of customers

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Drain cleaning

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Sewer & drain maintenance

Combination Unit

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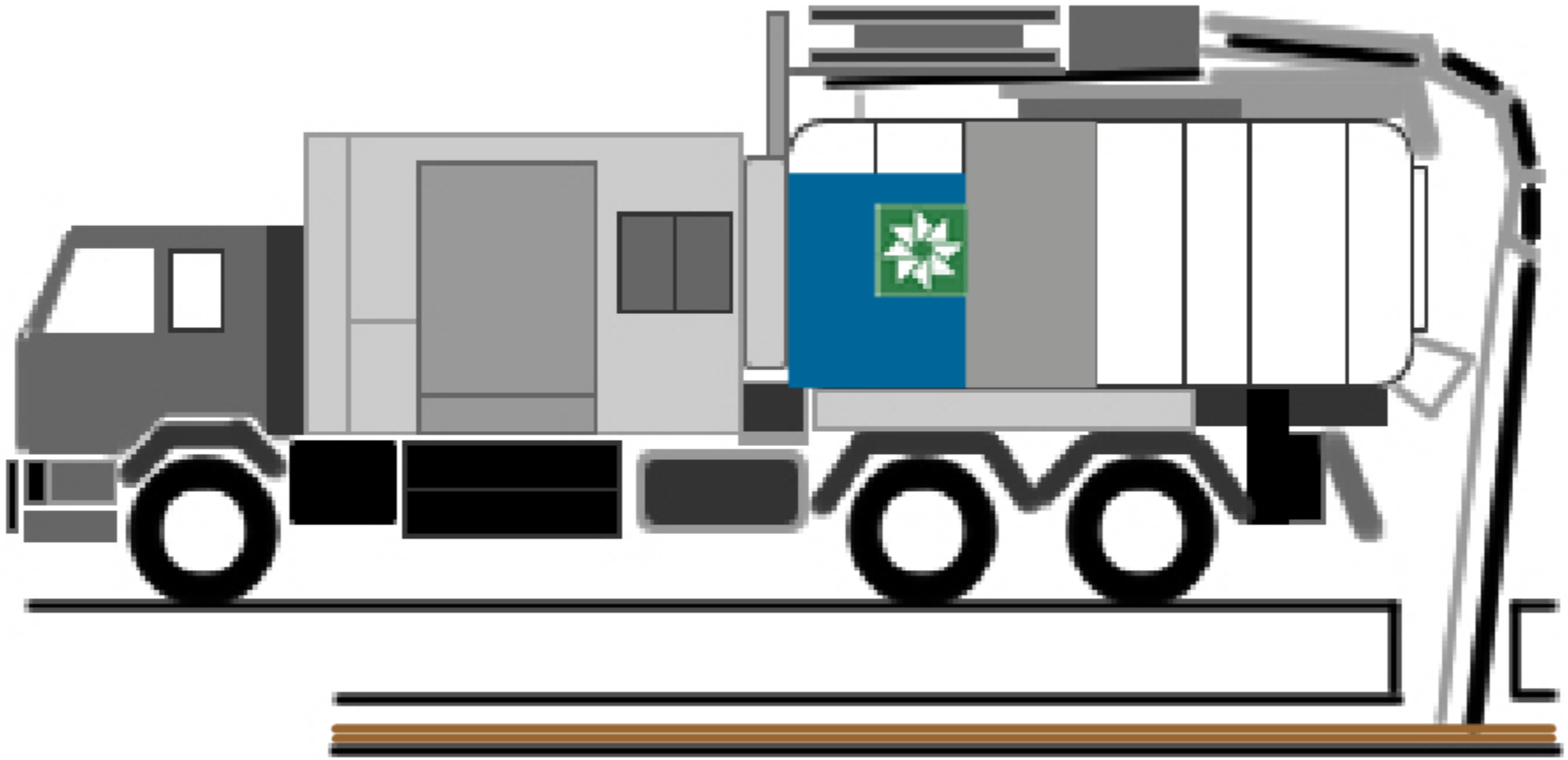

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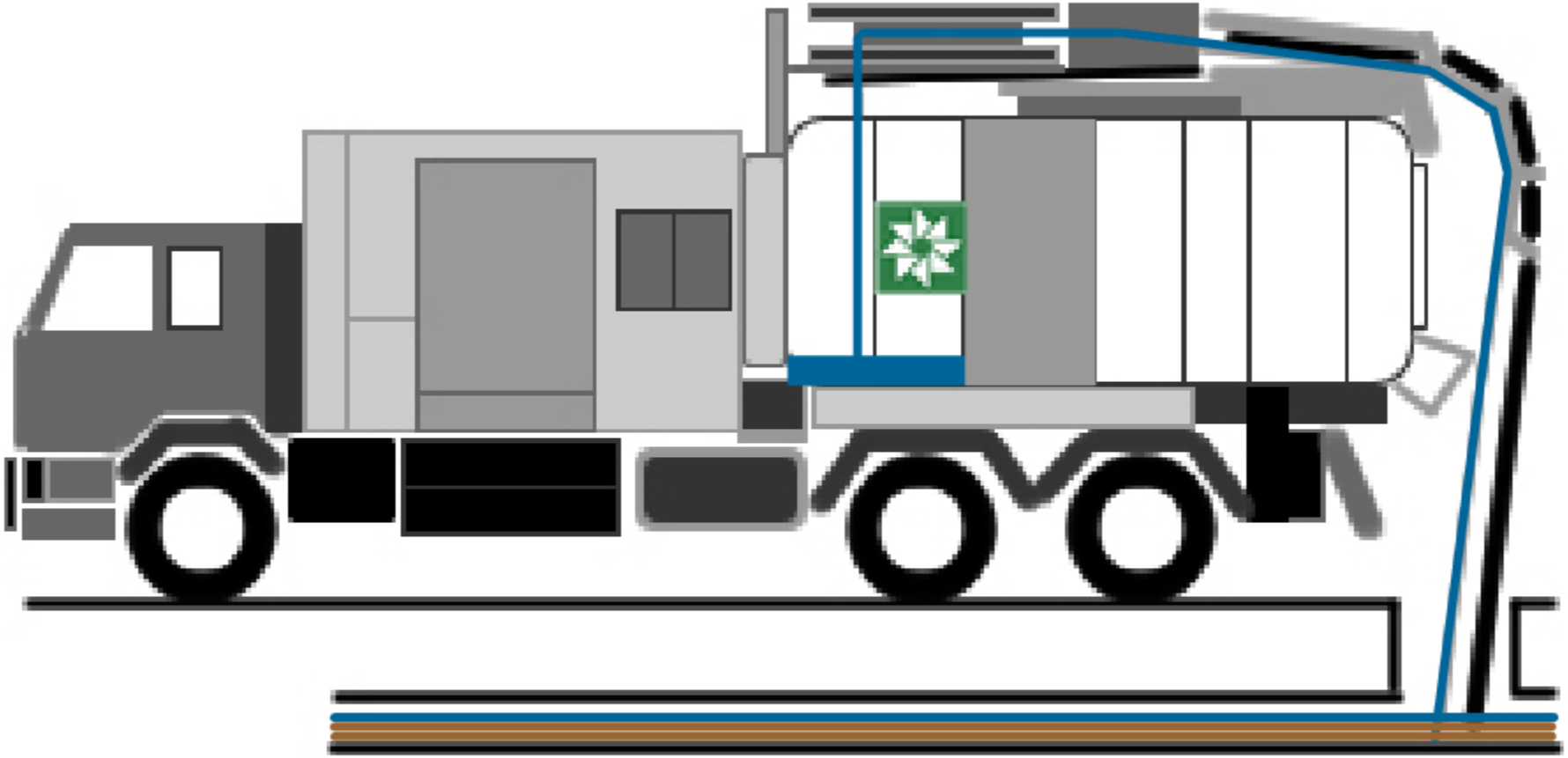

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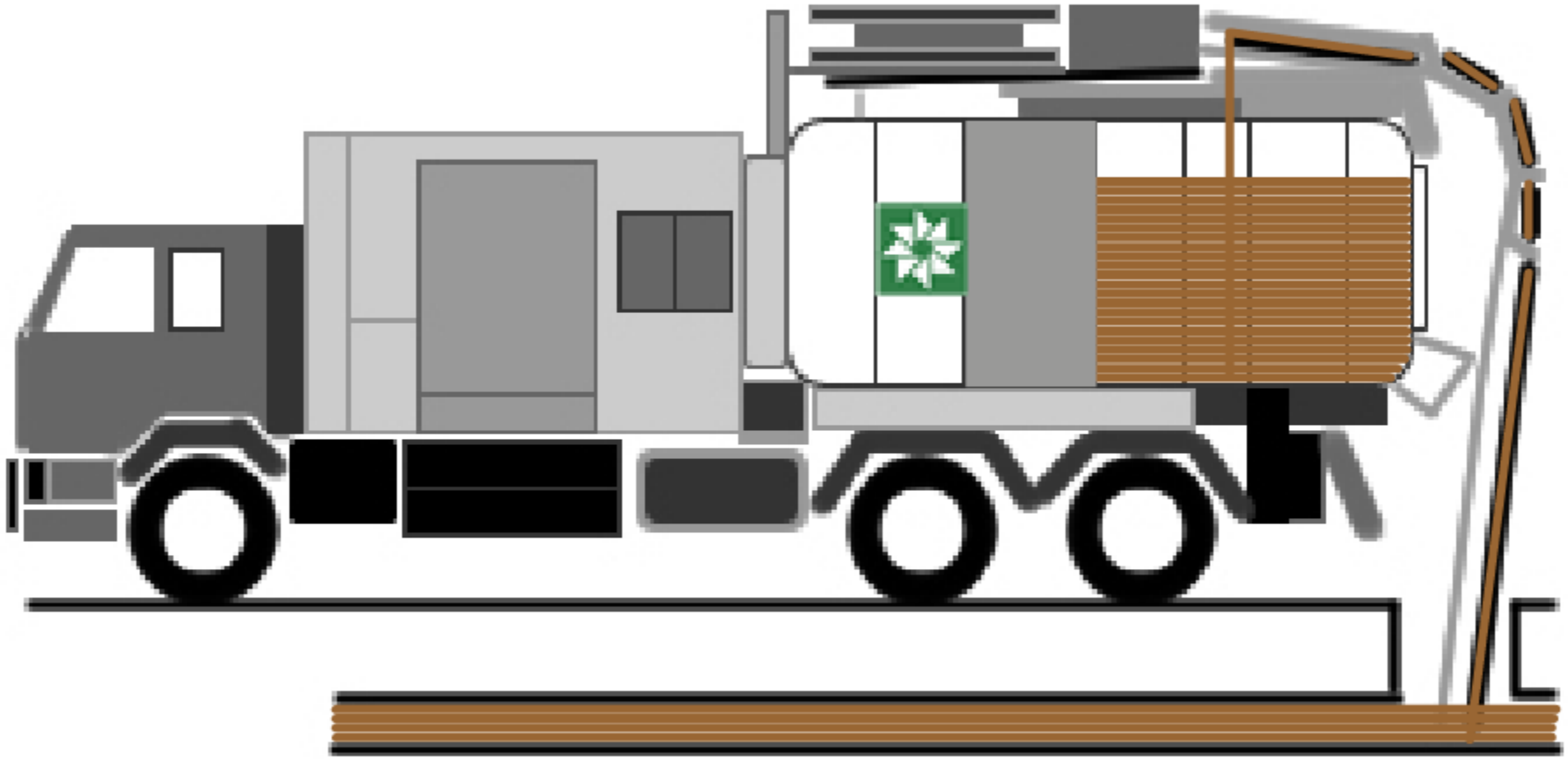

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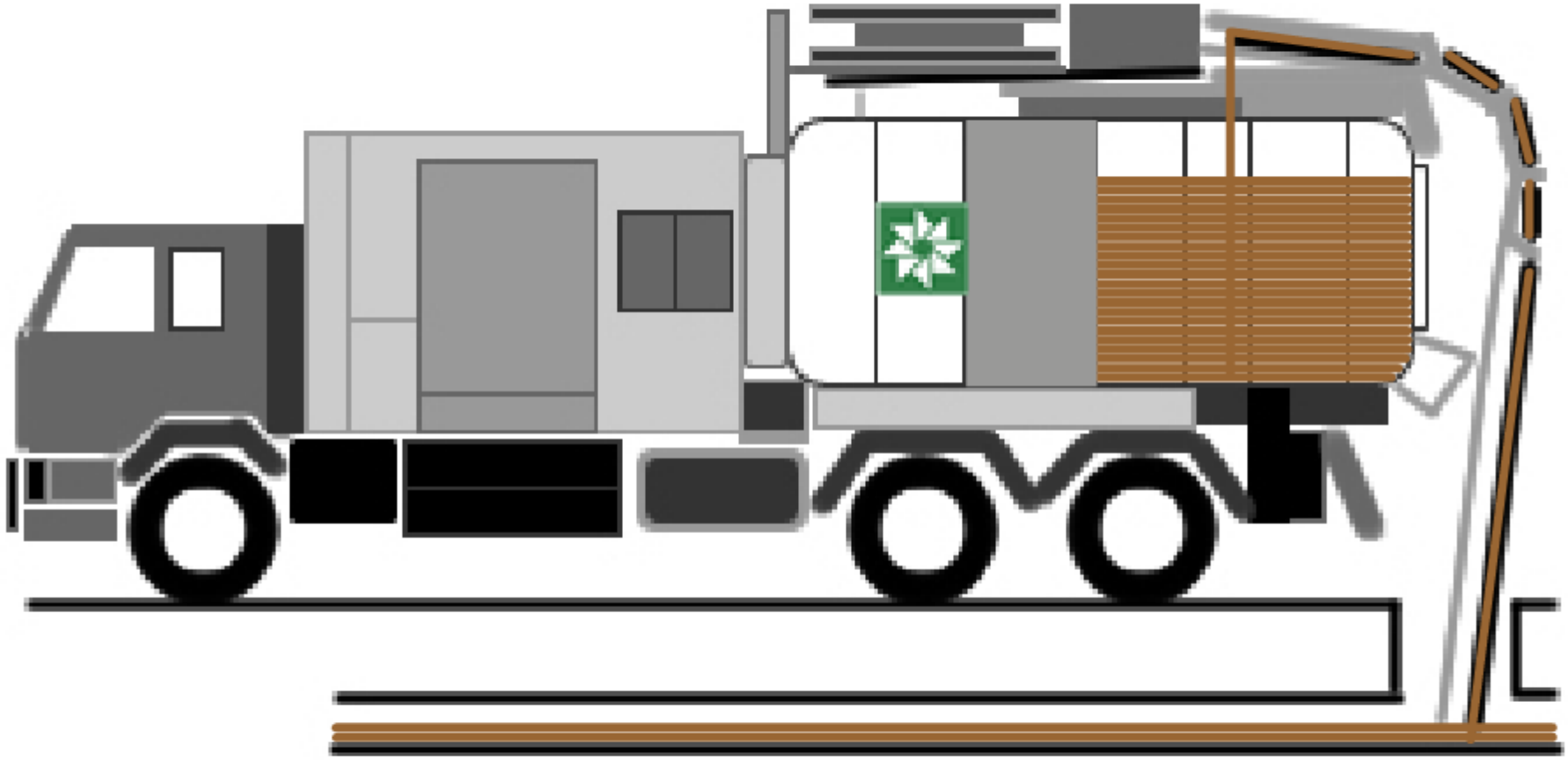

Water Recovery & Extraction (WRX)

How can you convert a water disposal problem into a resource recovery opportunity?

... just ask

Barry Bros. Specialised Services

RECOVERING WATER FOR RE-USE

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Water recovery & re-use

- Much of Barry Bros work relates to the use or removal of water or watery wastes
- Disposal costs to sewer are increasing
- Much of the water removed from pits is relatively clean
- We recognise that water is a precious & scarce resource
- Barry Bros invests in recognised technologies to recover water for beneficial re-use
- Recovery and re-use can offset disposal costs & safeguard profits without increasing rates

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Water Recovery & Extraction

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Water Recovery & Extraction (WRX)

Port Melbourne – JL Murphy Reserve

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Water Recovery & Re-use

- Recovery & treatment of water extracted from pits is opportunistic and declining because of drought
- Real opportunities exist extracting & treating water content from waste streams – including sewage
- Barry Bros identify & invest in treatment systems & technologies
- Barry Bros offer Build Own Operate (BOO) partnerships

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Examples of water treatment & recovery

- Stormwater – Pentridge Village – use of GPT + innovative below-ground storage system (Rainstore)

- Sewer Mining – Recovery and treatment of some of the 97 – 98% water content in sewage to fit-for-purpose quality
- NOTE – Classifications A, B, C, D only relate to water recovered from sewage

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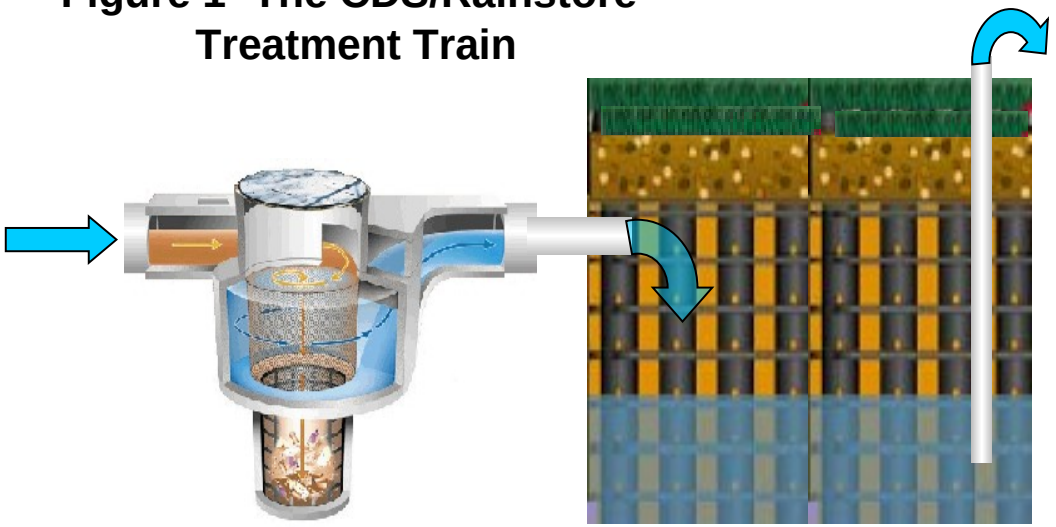
Stormwater Treatment & Harvesting – Pentridge Village, Coburg

Figure 1- The CDS/Rainstore³ Treatment Train



CDS GPT

Invisible Structures Rainstore³

Using a GPT with proven removal capabilities & buried modular, high strength storage system

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Example of sewer mining technology

TSS	REDUCED BY 98.8%
BOD5	REDUCED BY 95.8%
E.COLI	REDUCED BY 99.99%
TURBIDITY	REDUCED BY 99.5%
NH4 - N	REDUCED BY 49.3%

CDS P/L – Smart water trials – 2004 – YVW & SEWL, VIC

Producing Class A Recycled Water

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Quotations

- Benjamin Franklin once said – when the well's dry we recognise the worth of water
- Someone else (probably from SA) said – the best way to recycle water is strain it through a grape

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Thank you for your kind attention

are there any questions?

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