

# Mt Smart Stadium - Auckland

## Demand Direct internal manifold system

### Change facility upgrade

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The Mt Smart Stadium upgrade was part of an initiative to develop a larger sports stadium with an aim to create a facility to accommodate community sport, athletics, rugby league, football, and NZ Police training as well as sports competitions.

The change facility upgrade included two changing rooms large enough for 35 players, expanded public toilets, first aid, and drug testing facilities.

*Quick and easy installation with pre-assembled systems and common flue.*

#### Solution summary

- 2 x Demand Direct HDi600 pre-assembled manifold systems
- Rinnai commercial natural draft common flue

#### Hot water requirement

Hot water on demand producing 72 litres per minute at 42 °C for male and female changing rooms.

Solution needed to be cost effective with minimal visual disturbance to the roof line.



#### Rinnai solution

Two pre-assembled systems, enabling easy installation, with three Rinnai INFINITY HDi200 internal units manifolded together. A common natural draft flue system, venting air through a common header was used to eliminate the need to flue each unit separately, and to reduce the number of penetrations through the roof.

#### Installation details

- Date of installation November 2015
- Installer W Mattson Plumbing Ltd
- Specifier Burr Mechanical Consulting Limited

# NZ Army marae - Waiouru

## Demand Direct external manifold system

### New hot water system

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NZ Army marae based in Waiouru. The complex comprises of a whareniui (meeting house), wharehoro (ablutions), and wharekai (dining hall). It will cater for more than one hundred people.

#### Solution summary

- 1 x Demand Direct HD600 pre-assembled manifold system

#### Hot water requirement

Hot water system for simultaneous use of the following:

- 6 x showers and sinks
- 2 x washing machines

Peak usage hours with high demand—low use in other periods.



*Pre-engineered, fully assembled and insulated, all ready to be plumbed in.*

#### Rinnai solution

Demand Direct HD600, comprised of three Rinnai INFINITY HD200 external units. The HD units are mounted and fully assembled to pre-engineered frames with foam insulated pipes. This system comes with manifold electronic control staging, so only the required number of water heaters start to match the demand for hot water. The sequence is rotated so there is even use of each water heater.

#### Installation details

- Date of installation      March 2015
- Installer                      New Zealand Defence Force
- Specifier                      Rinnai NZ Ltd

# Vector Wero Whitewater Park - Auckland

## Demand Direct internal condensing manifold system

### Lower operating cost hot water solution



Vector Wero Whitewater Park, located next to the Vodafone Events Centre in Manukau. The park is New Zealand's first purpose-built whitewater facility. It has two rivers to suit different skill levels, and offers rafting, stand-up paddleboarding, and kayaking activities.

#### Solution summary

- 1 x Demand Direct EFi630 internal condensing manifold system
- 1 x EF250 external

#### Hot water requirement

- Hot water for changing rooms
- Hot water for kitchen and hand wash station

As the site operated on LPG bottles there was a requirement for the units to be as efficient as possible, as well as having a small installation foot print.



*EFi250 condensing manifolded units operate more efficiently than standard HDi200 units, saving on operational and life cycle costs.*

#### Rinnai solution

As efficiency was the main driver EF250 models were used. These models, with condensing technology, have a thermal efficiency of 95% as compared to 83% for the standard HD models. The Demand Direct systems can also have a small foot print. Removing the base skid the system can be installed directly on a wall.

#### Installation details

- Date of installation May 2016
- Installer DH Wright Plumbing Ltd
- Specifier eCube Building Workshop Ltd

# Sports clubs

## Demand Direct 'on-demand' manifold systems

Only heating water as it is needed



Running out of hot water on busy days is a common problem for sports clubs. Hot water usage for most sports clubs center around game or training times, and for gyms, peak periods in the morning and evening.

### Recent Demand Direct installations:

- Sumner Surf Club - Christchurch
- Taieri Rugby Football Club - Mosgiel
- Seddon Domain Rugby changing room - Blenheim
- UOW High Performance Sports Center - Tauranga
- Invercargill Rugby Club
- Victoria Park Rugby Club - Palmerston North

*The manifold electronic control system will turn on each unit as required to meet demand, efficiently controlling energy use.*

### Solution summary

- Demand Direct pre-assembled manifold system

Rinnai has on-demand systems for sports facilities that provides hot water without the need to continually store and heat water in cylinders. The Demand Direct system uses the intelligence contained within the Rinnai INFINITY and the manifold (MECS) system to control energy input and hot water output. The MECS system will control up to five Rinnai INFINITY water heaters, and banks of up to five can be installed in parallel.



Once the Demand Direct system is installed clubs can look forward to an endless supply of hot water when they need it. The system's compact design makes it simple to install and operates only when needed, saving energy and ongoing running costs.

# Pitango Soup plant relocation - Auckland

## Demand Direct internal manifold system

### New hot water solution

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Pitango started 15 years ago selling fresh homemade soup from the back of a van. Using the freshest of ingredients and making all their stocks from scratch, it's hard to miss their colourful soups and meals in supermarket chillers.

#### Solution summary

- 1 x Demand Direct HD1000 pre-assembled manifold system
- 1 x Demand Direct HD400 pre-assembled manifold system

#### Hot water requirement

- 1000 litres every 15 minutes at 60 °C
- 40 litres per minute at 45 °C

As a new development the engineer had a requirement for a heavy duty efficient system to be installed in a roof space.



*Rinnai INFINITY HDi200 units can be installed almost anywhere. These units were installed in a roof space and flued through the roof.*

#### Rinnai solution

Two separate pre-assembled skid systems were designed to be easily installed into the roof space. One system was dedicated to provide hot water for food processing and the other for washing down equipment.

#### Installation details

- Date of installation      May 2015
- Installer                      Ariel Plumbing & Gasfitting
- Specifier                        TEG Pty Australia

# Plant & Food Research - Auckland

## Demand Direct internal condensing manifold system

### New hot water system

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Plant & Food Research decided to re-purpose two major buildings at their Mt Albert campus. The largest building is the seven storey Hamilton building, which is undergoing significant remediation work, and the Cunningham Building that converted office and storage space into new social and formal meeting areas.

#### Solution summary

- 1 x Demand Direct EF420 internal condensing manifold system
- 2 x Demand Direct EF620 internal condensing manifold system
- BMS error indication switch

#### Hot water requirement

Three hot water systems, two supplying domestic hot water for the Hamilton and Cunningham buildings, and one hot water system dedicated to the laboratory.



*Systems can be easily scaled to cater for different hot water demands.*

#### Rinnai solution

Pre-assembled system with a 315 L storage cylinder and Rinnai INFINITY EFi250 internal condensing units (DD420 - 2 x EFi250, DD620 - 3 x EFi250). The EF units were flued individually—terminating horizontally. The systems were also specified with a built-in BMS error indicator switch.

#### Installation details

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|------------------------|------------------------------|
| • Date of installation | March 2016                   |
| • Installer            | Hanlon Plumbing              |
| • Specifier            | eCubed Building Workshop Ltd |