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Aquanova Systems

Regudis W-HTE

Fresh Hot or Warm Water → Maximum Hygiene

Quick Tap Time → Water Efficient

Instantaneous → Energy-Efficient

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Kingfisher Grove Retirement Village

Kingfisher Grove Retirement Village

Regudis W-HTE Installation (Jordan Springs NSW)

Developer: Lendlease/Keyton Retirement Living Builder: Richard Crooks Construction

Overview:

- The project has 142 domestic hot/warm water (DHW/DWW) Regudis stations.
- It includes three six-story buildings with 139 apartments (1, 2, and 3 bedrooms).

Stage 1: Building A complete

- 36 apartments, communal areas, heated indoor pool, and support services.
- 36 DHW stations for apartments; 3 DWW stations for communal/support service areas.

Heating Systems:

- Building A provides primary heating for all site apartments, communal areas and services. Small main plant & local Regudis footprint = more lettable space for developer.
- 150 kW heat pump @ 65°C supplies 4,500L storage, meeting peak DHW demands (without oversized HP) with coefficient of performance (COP) of 3.2.
- The Oventrop Regudis system eliminated need to upgrade electrical substation & sitewide infrastructure, saving developer $500,000.
- Quick DHW/DWW tapping time for residents = reduce water usage & complaints for developer.
- Tap temperatures maintained at 60°C (DHW) for apartments and 43°C (DWW) for communal areas, continuously.

Kingfisher Grove

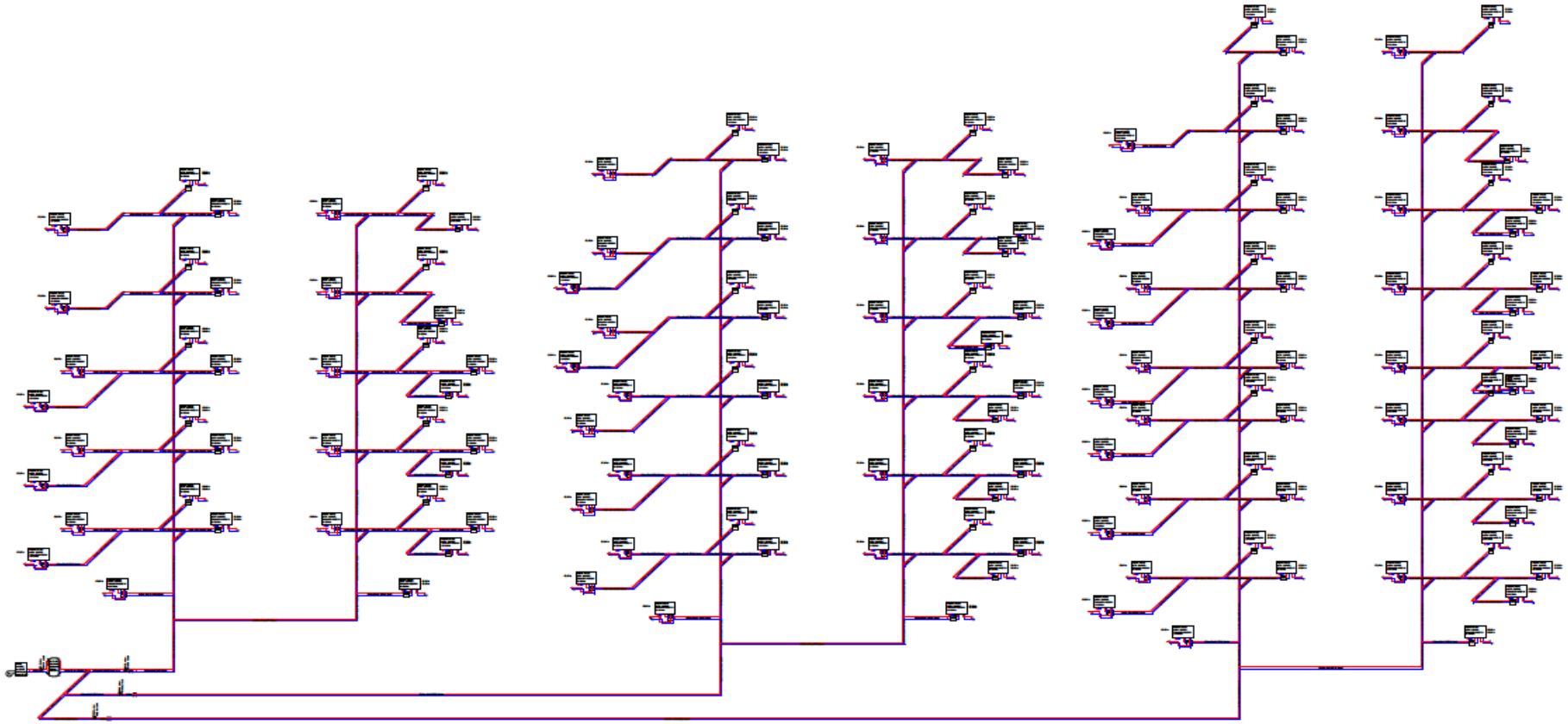
Regudis W-HTE Installation

Kingfisher Grove

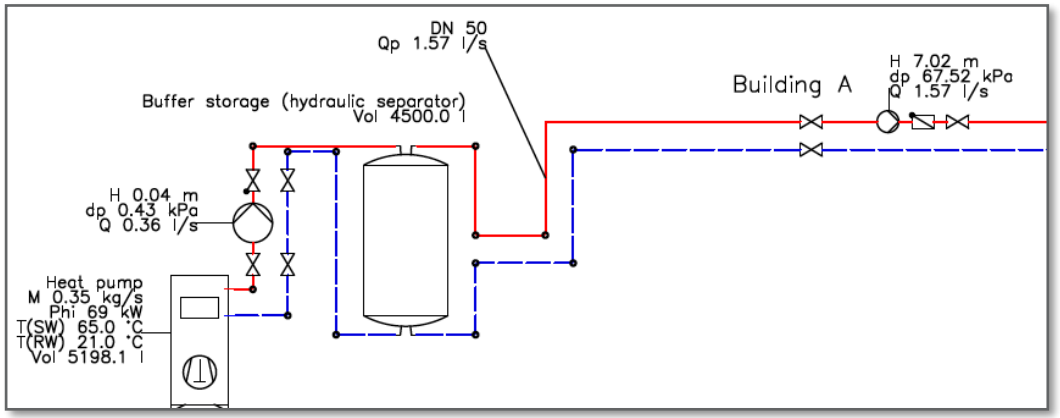
Primary Heating Plant – Heat Pump & Storage

Kingfisher Grove

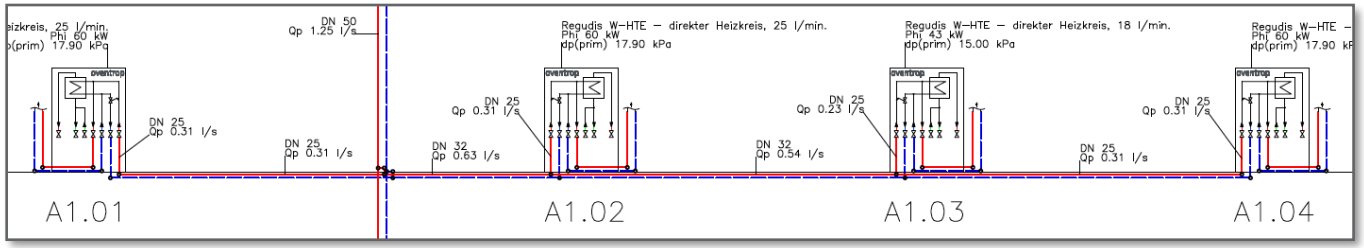
Primary HW Network



Note:
Building A has a 150-kW heat pump system that supplies water at 65°C. This system includes a 4500L buffer storage, strategically sized to meet future DHW demands for all buildings in Kingfisher Grove, including Buildings A, B, and C.

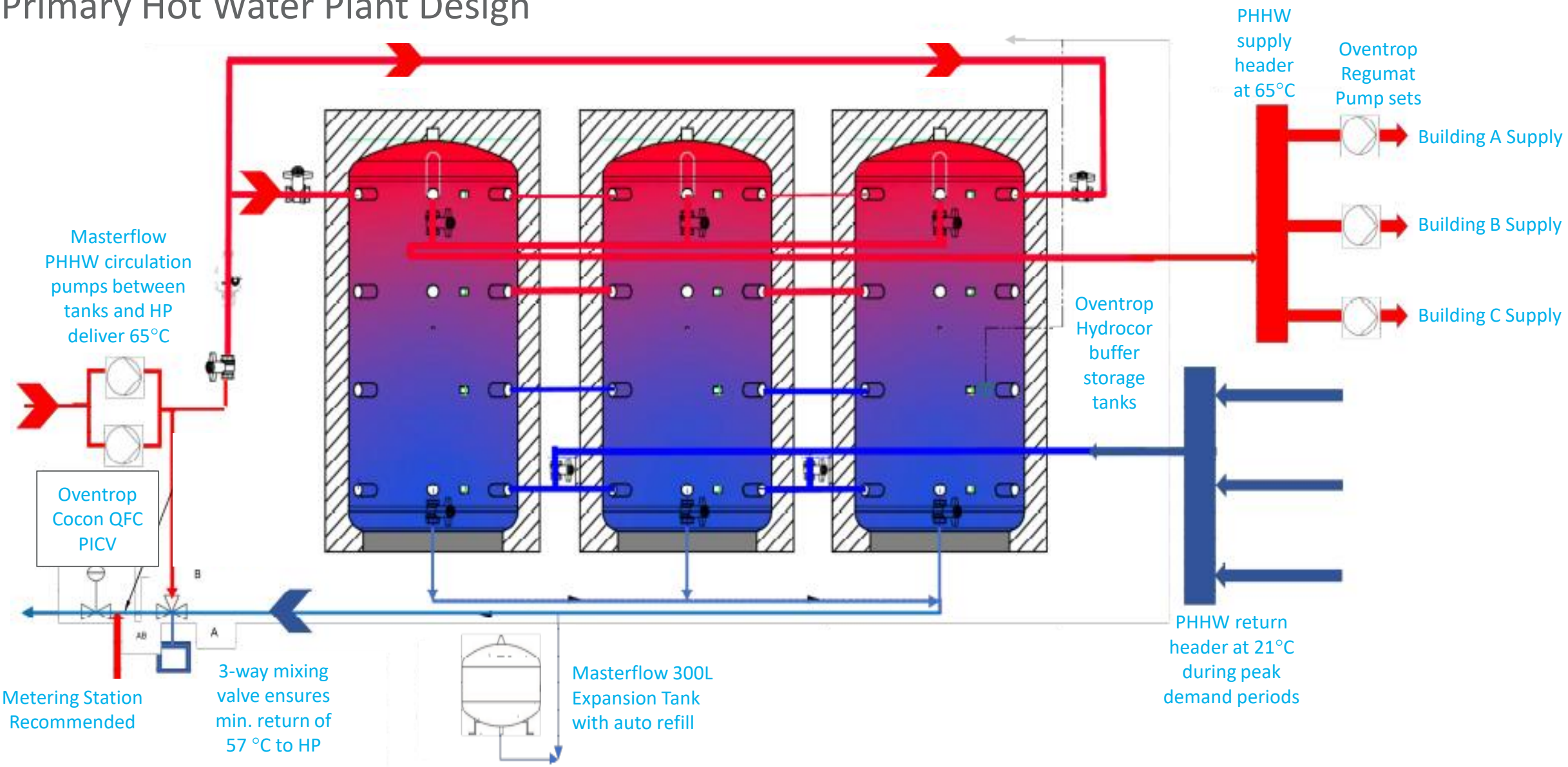


Typical floor Regudis W-HTE apartment connection & pipe size



Kingfisher Grove

Primary Hot Water Plant Design

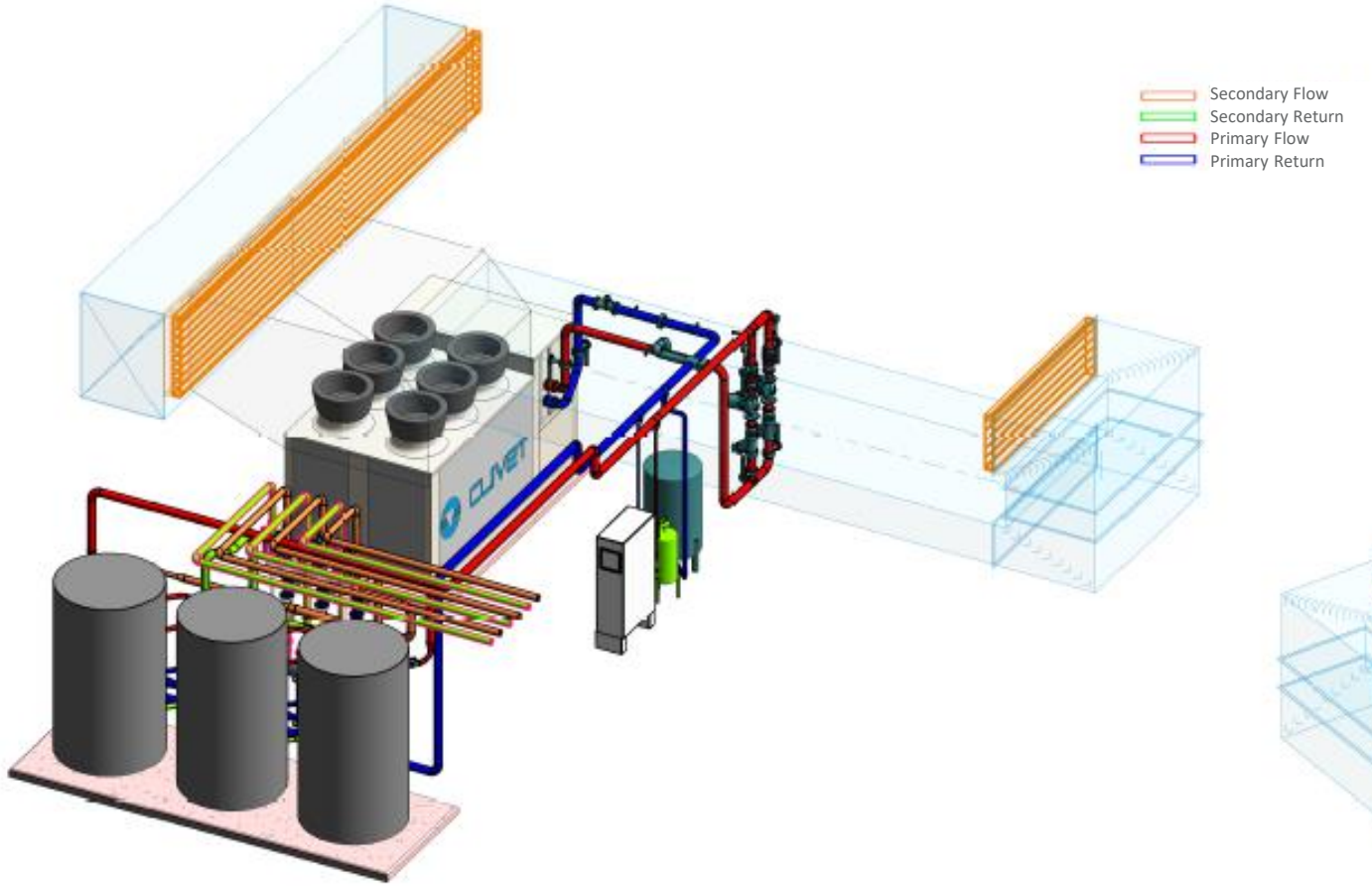


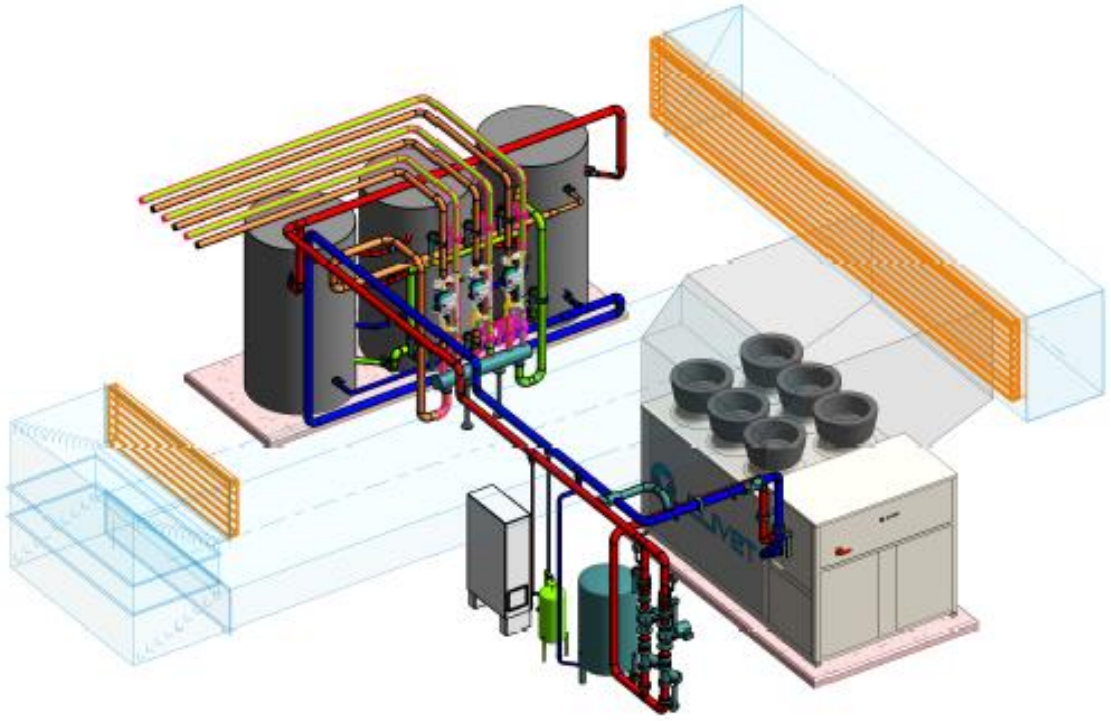
Kingfisher Grove

Primary Heating Water Plant BIM Design

Overview

- 150 kw at 65°c Clivet / Masterflow heat pump
- 4,500 litres of buffer storage
- Primary & secondary HHW pumps
- Provision to extend to buildings B & C
- 142x Regudis stations in total
- Associated expansion tanks, dosing pot and switchboard with Regtronic plantroom controls





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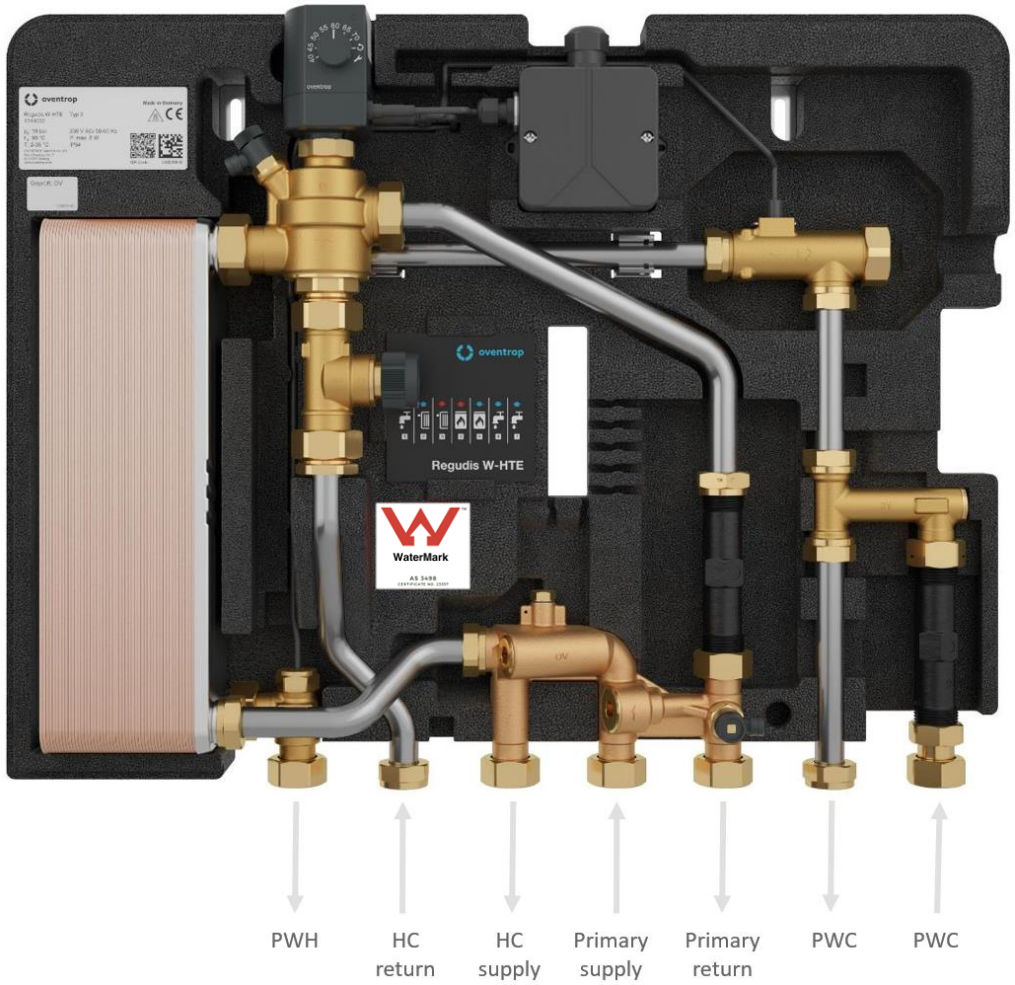
Regudis W-HTE at a Glance

Decentralised / Local

Hygienically Fresh Hot or Warm Water
& Space Heating Delivery

Regudis W-HTE

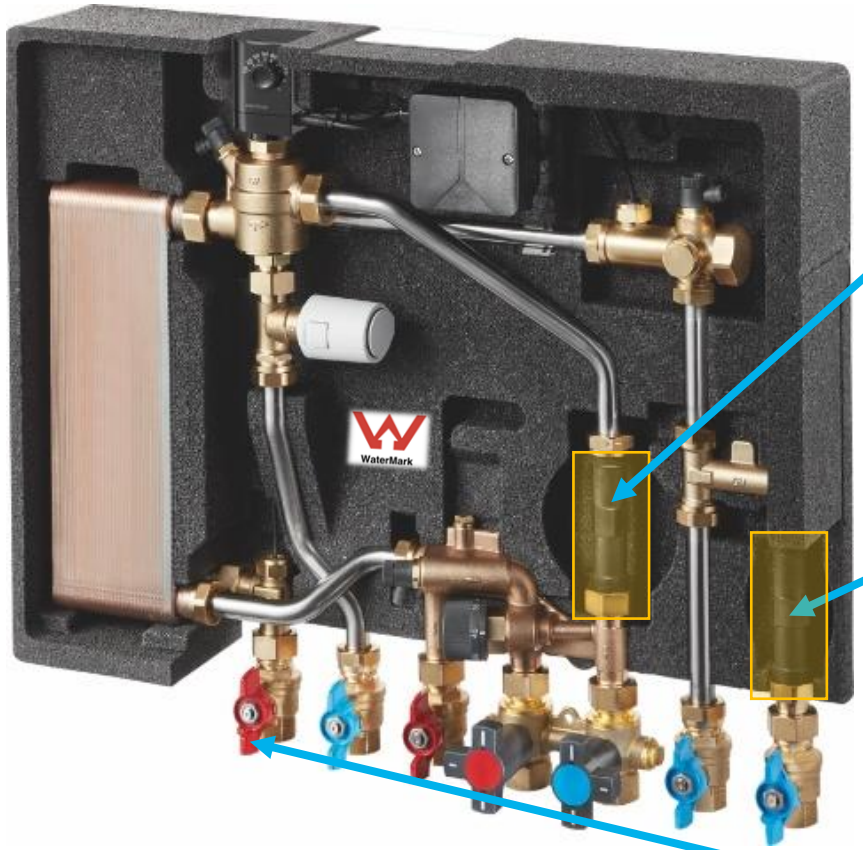
Application, Certification & Approvals



- Approved WaterMark standard AS3498:2020 for heated water supply with ABCB WaterMark license No. 23357.
- Potable warm water compliant with AS3500.4 Clause 1.9.3, approved appliance for less than 50°C systems.
- Approved by NSW Health for warm and hot potable water.
- Heat interface connecting fan coil units or underfloor heating or radiator primary heating water supply, one heating system.
- Direct-to-tap warm water appliance = no tempering valve or TMV required = annual TMV maintenance eliminated.
- As an appliance, complies with state warm water system requirements and installation standards under the Plumbing Code of Australia and the Australian Building Codes Board.
- Energy consumption for billing measured by heat/energy meter installed within Regudis station, or in primary supply.
- Water-usage billing also available for potable-hot-water-only systems with no space heating.

Regudis W-HTE

Metering and Billing Ready



Heat/Energy metering for DHW & heating systems

Town cold water supply metering

DHW only metering

Regudis W-HTE

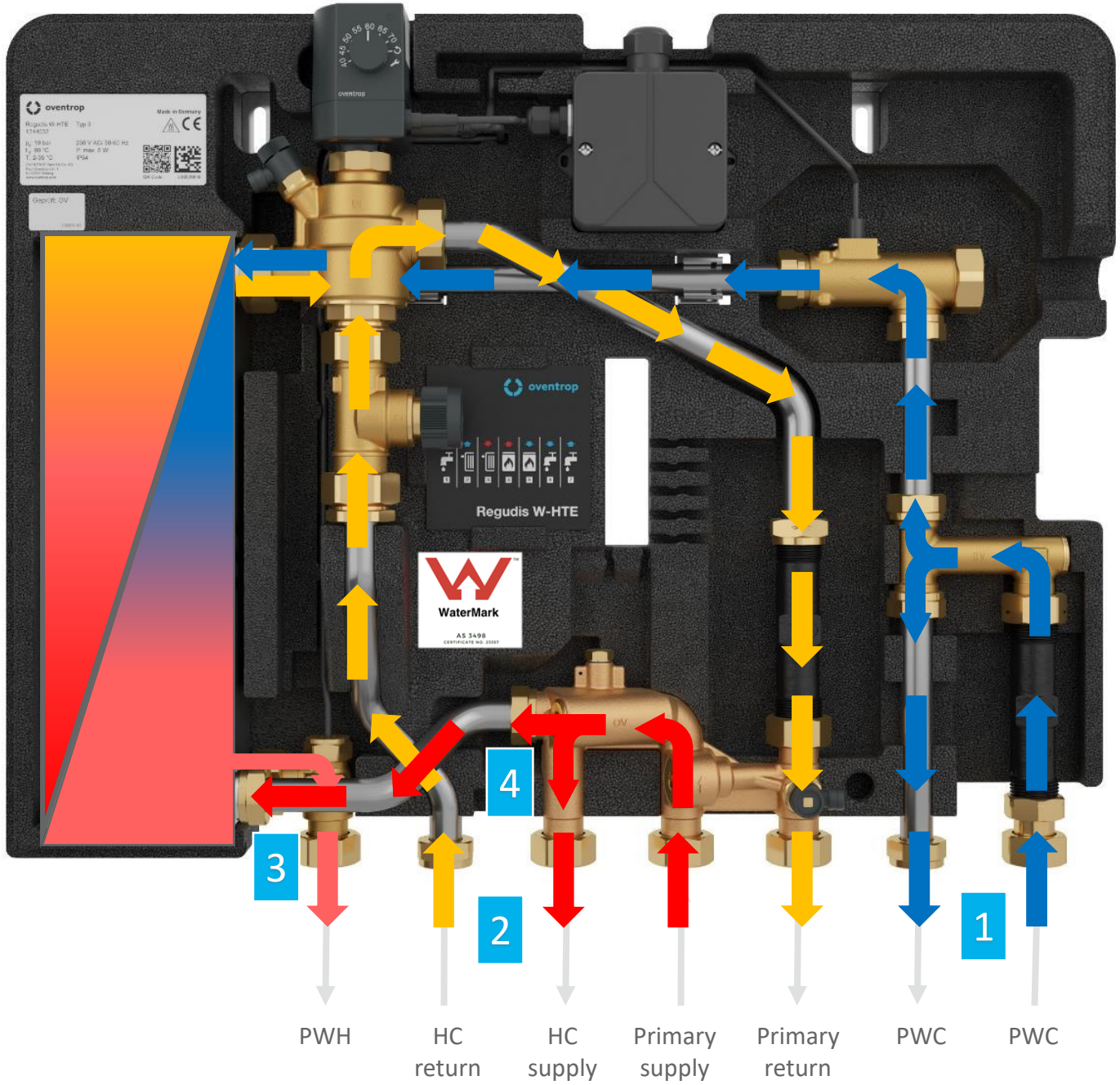
Heating Fan Coil Operation

Scenario → Action

1. Tenant opens cold water tap
    - ➢ Fresh potable cold water delivered to fixture
2. System calls for heating (e.g., tenant enables underfloor)
    - ➢ Heating water supplied to system
    - ➢ Heating circuit water cools and returns
3. Tenant opens hot water tap
    - ➢ Heating water passes through HEX and returns
    - ➢ Fresh potable cold water passes through HEX and heats instantaneously on its way to the fixture

Note: Heating water used simultaneously for space heating and DHW generation during times of low demand

4. Sudden high demand for potable hot water
    - ➢ Space heating flow redirects to HEX to meet demand
    - ➢ Once demand met, space heating resumes



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