



Smart made simple.



→ RESIDENTIAL

- Large private homes 5 beds or more
- Gas, HP (Heat Pump) and Biomass

→ COMMERCIAL

- Hotels
- Student Accommodation and PRS
- Education
- Offices
- Care Homes

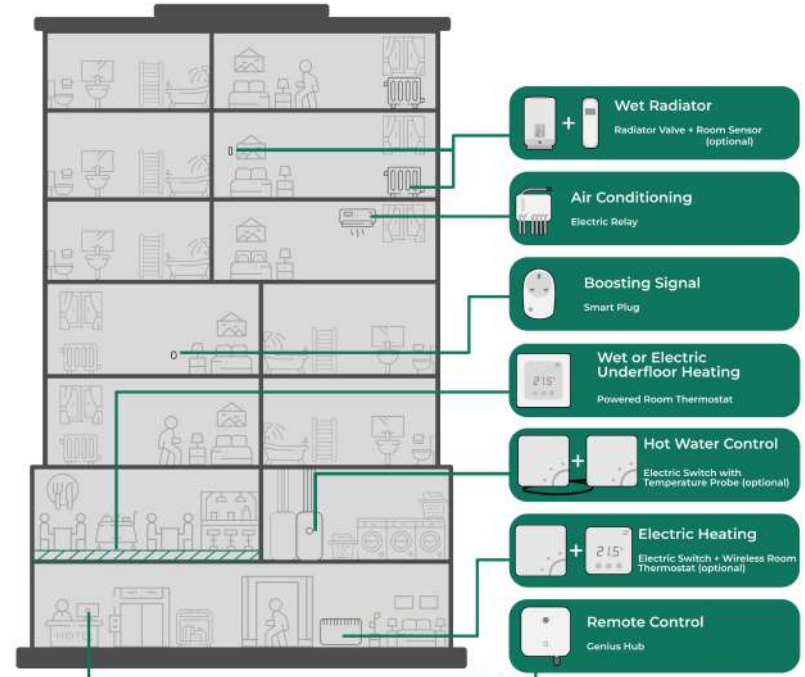
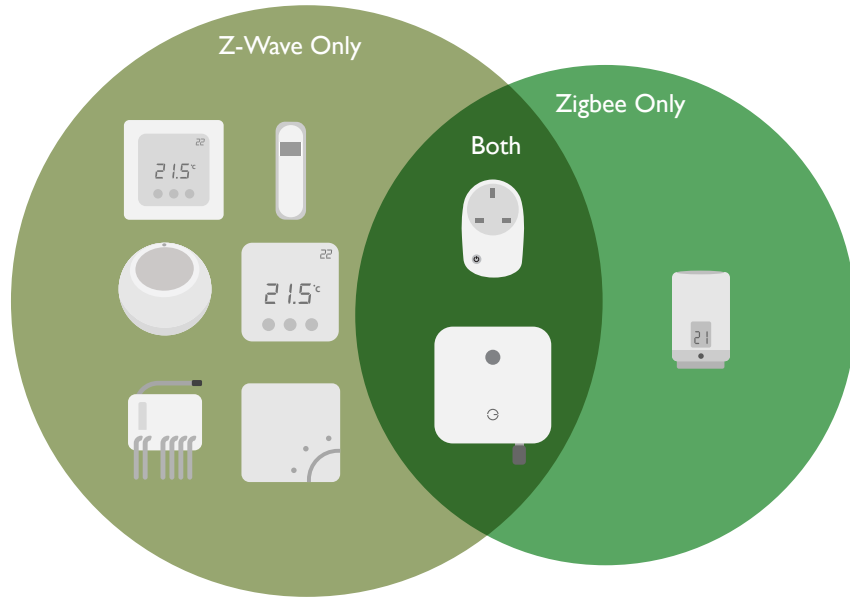


No one can reproduce the system Patent Protection

- We were granted a patent in October 2015 for the UK and Europe
- This patent protects how rooms interact with each other, which is vital for any zoned system

THE PLATFORM

Components with Z-wave & Zigbee connectivity + BEMS + Open API
HUB + Servers(Cloud) + App + Industrial Controller



COMPONENTS AND FEATURES

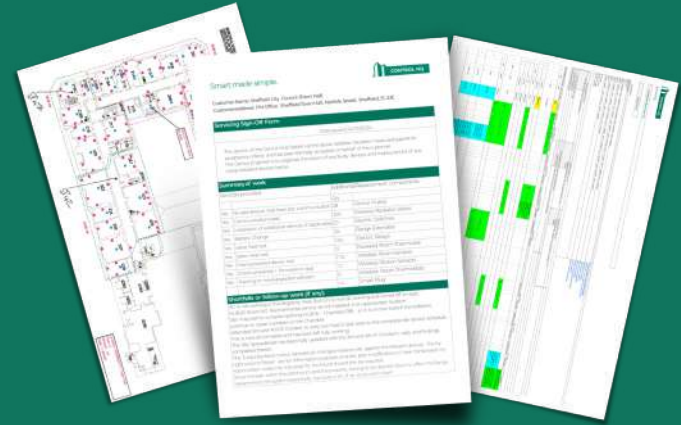
- Room empty – heating off or reduced
- Room occupied – heating on to pre-set temperature
- Window opens – radiators shut off
- Need extra heat – manual boost up to 24 hours
- No call for heat – pump stops circulating

- Hot water time and temperature control
- Wireless Valves for room by room zoning
- Zone by zone learning using occupancy detection
- FCU, AC & MVHR integration



SYSTEM INTEGRATION

- BEMS Integration - volt free interface with existing BEMS
- BEMS Control - HTTPS/ RESTful APIs over local LAN

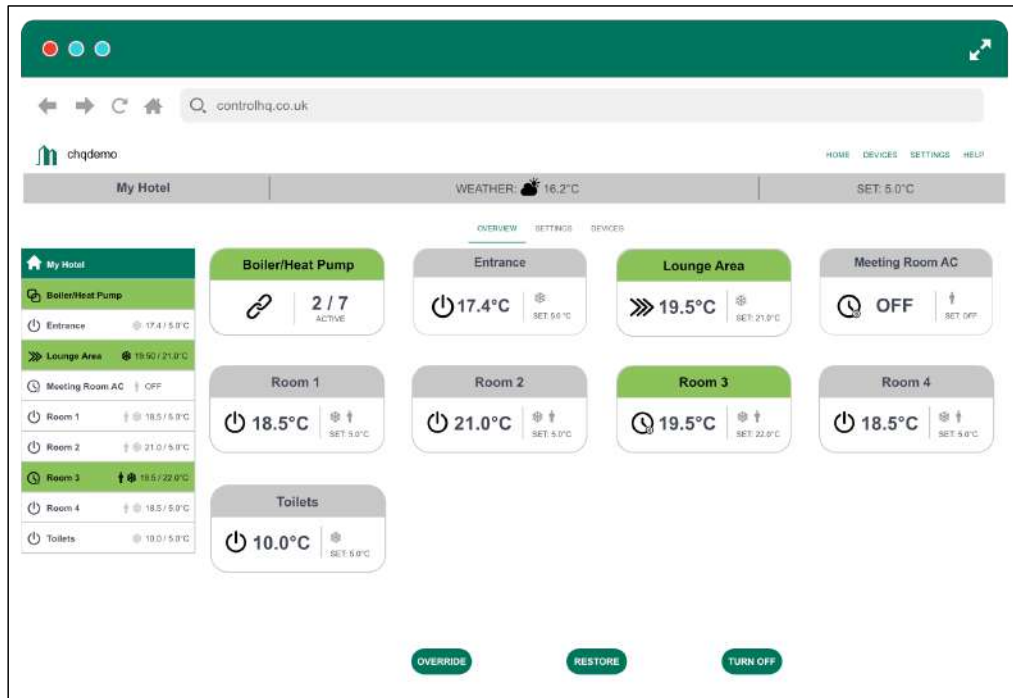


- BEMS Replacement - switched live connection into:
 - Pumps
 - Boilers
 - Heat Pumps
 - Hot Water



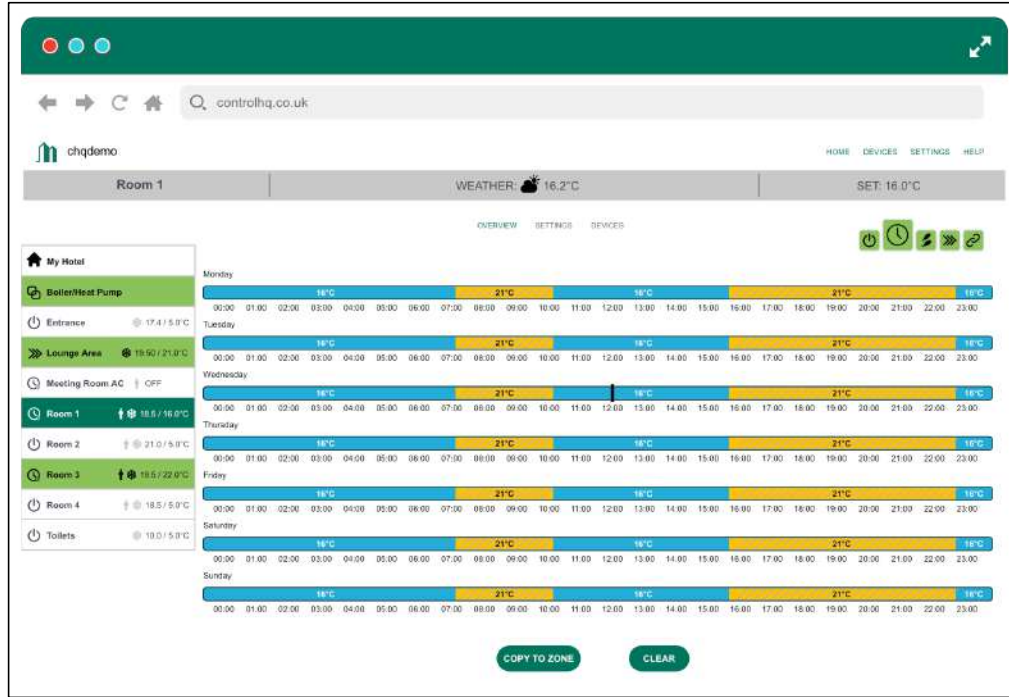
CONTROL HQ APP - HUB VIEW

For easy view of all zones on a single HUB



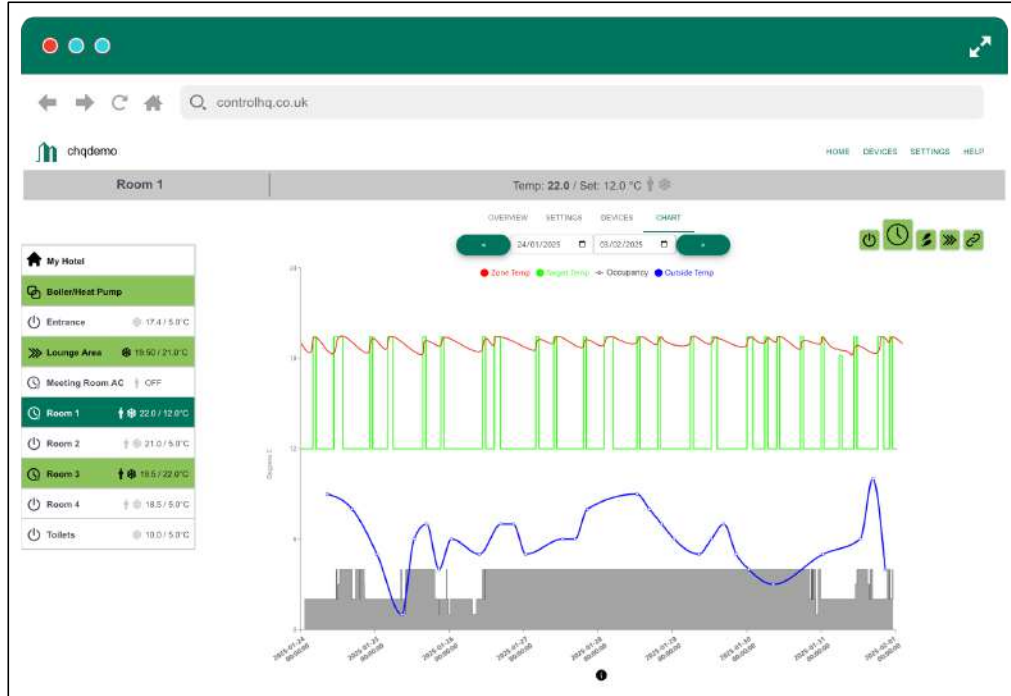
CONTROL HQ APP - SCHEDULE VIEW

Easy to make changes to any of the schedules on one or many of the HUBs



CONTROL HQ APP - CHARTS VIEW

Powerful charts for analysis of multiple zones at the same time



THE BELFRY HOTEL - CASE STUDY



Intelligent, occupancy-based room sensors plus smart TRVs (thermostatic radiator valves) have been added to each bedroom.

Smart occupancy sensors allow pre-heating of the rooms before they are occupied and then keeps them at a pre-set temperature while being used. As soon as a room becomes unoccupied, they automatically revert to a set-back temperature.

This building is of modern construction with wet radiators in each room and frequently runs at high occupancy often above 95%.

Surrounded by over 500 acres of rolling countryside, the award winning 4* Belfry Hotel & Resort is the Headquarters of the PGA as well as hosting the National Training Academy and three 18-hole golf courses.

Saved 64% on energy with a 2 year payback

WESTERN ISLES HOTEL (ALL ELECTRIC) - CASE STUDY



Primary goal to reduce cost of electricity, improve control of heating to reduce waste in this busy hotel on the Isle of Mull. Secondary goal of reducing maintenance costs and improve guest comfort levels.

This property operates 24x7x365, Individual electric heaters with only local control where left on all of the time wasting valuable energy. There was no central control of the heating and guests would leave heating on or turn it off, causing the next guest to walk into a room that was either too hot or too cold.

Payback in under 3 years

JOHN STREET HOSTEL - CASE STUDY



Primary goal to reduce wasted energy and costs, reduce maintenance and improve guest experience.
Result: M&V = 50% energy saving proven.

All primary goals met and improved control of individual rooms/zones to meet occupancy requirements through "Footprint" mode.

A hostel for homeless transition with a basic BEMS system with negligible zoning throughout the site. Includes; 21 en-suite bedrooms and 1 apartment with two bathrooms, a shared kitchen, recreation room, laundry, reception office, access lobbies and interview room.

Payback in under 2.2 years

THE BELFRY HOTEL - CONTROL OF EXISTING RADIATORS



Integrated into BEMS to control
local circulation pumps and
monitor hot water



Control HQ Hubs hidden
in voids between rooms



Monitoring room
occupancy with discretely
positioned motion sensors

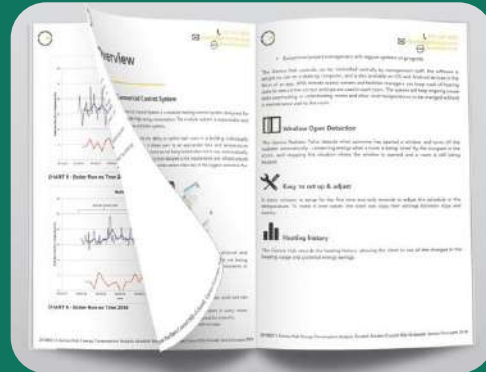
MONITORING AND VERIFICATION (IPMVP process)

- Using half-hourly heat data from site
- Using degree day data to normalise data
- 10 consecutive weeks heating being supplied to 48 rooms
- Saving of 64% at The Belfry Hotel when comparing the original heating schedule with an occupancy based schedule



M&V Reports

- Scottish Borders Council HQ
 - Saving 42%
- Carlisle Homeless Hostel
 - Saving 50%





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