Residential Heating

ecodan
Renewable Heating Technology

MITSUBISHI ELECTRIC

A unique Heat Pump System, Introducing the Ecodan CO_2 QUHZ

Presented by | Sunny Vashisht & Rhys Jacob

This Webinar will cover

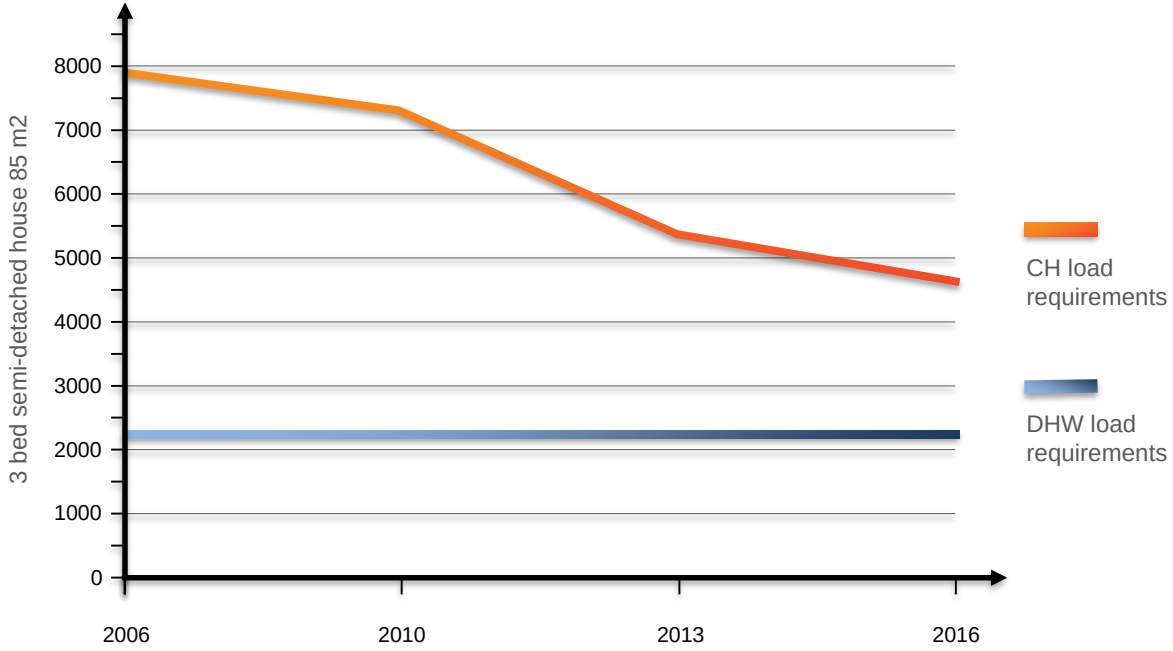
- Changing homes & the need for new technology
- Ecodan QUHZ & how it works
- Installation & applications considerations
- Commissioning benefits & desktop analysis
- How ME Can support you
- Q&A

Poll Question 1

- What is your job role?
    - End-User/Purchaser
    - Installer/Contractor
    - Architect/Specifier/Developer
    - Facilities Manager/Service Engineer
    - Other

Changing homes & the need for new technology

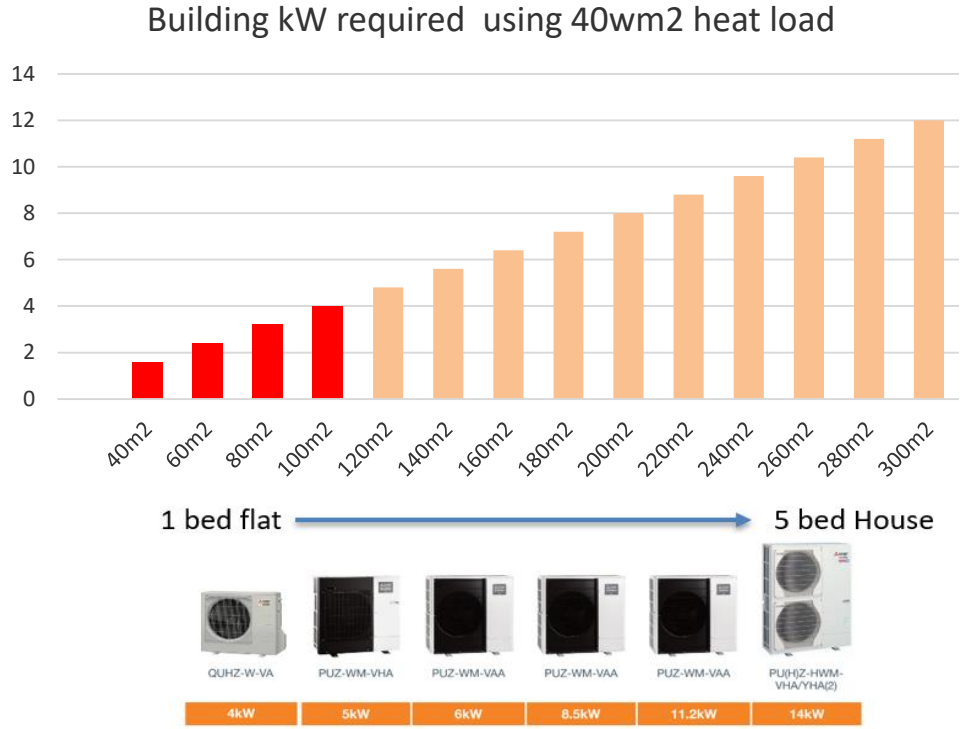
New Build – The impact of Improving U-values



Changing Homes & the next generation of ASHP

Smaller heat loads - New efficient technology

- Maintaining Domestic Hot water is key
- QUHZ suitable for **70%** of new homes built in the UK
- Freedom to develop anywhere
- Responsible Futureproof Low Carbon, Mass Market Solution



Core Heat Pump Range

Residential Air Source Heat Pump Monobloc Range (4kW to 84kW*)

5.0kW	8.5kW	11.2kW	14.0kW
			
PUHZ-W50VAA R32 Compact	PUHZ-W85VAA R410a Ultra Quiet	PUHZ-W112VAA R410a Ultra Quiet	PUHZ-HW140VHA R410a Zubadan

* Achieved by cascading 6 outdoor units

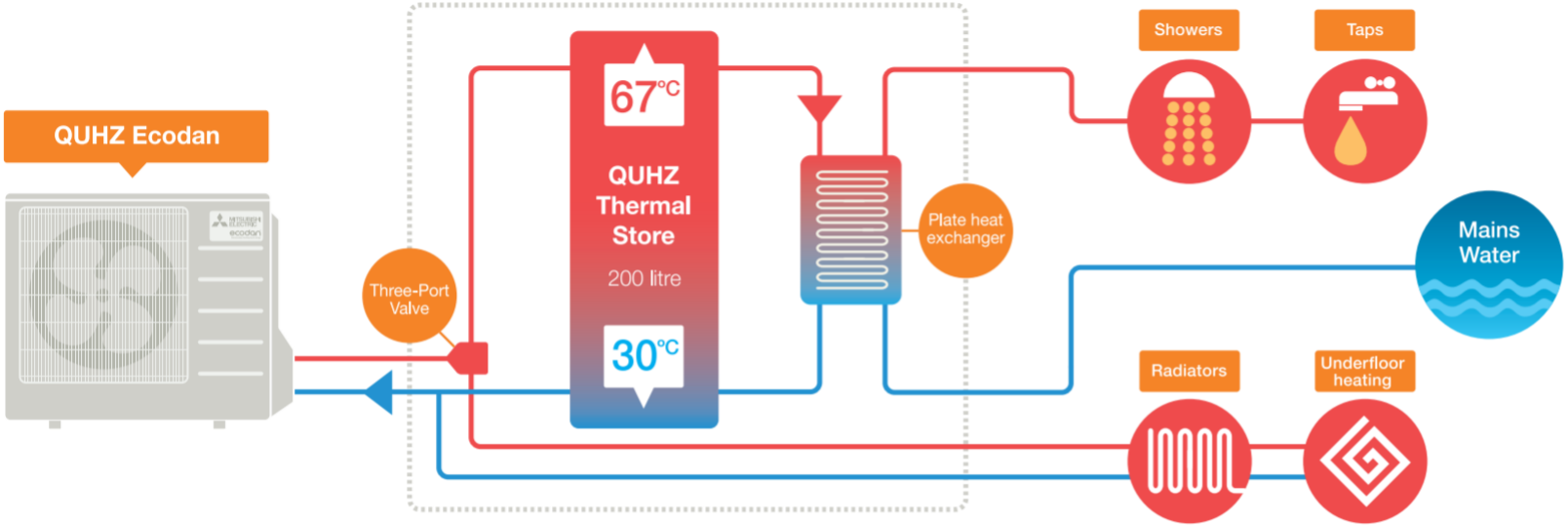
Compatible Indoor Cylinder Range

Residential Packaged (Cased) & Pre-Plumbed Slimline, Standard & Solar Cylinders (150 to 300 litres)

Packaged	Slimline	Standard	Solar
			
PUHZ only 200L 1 model	PUHZ only 150 & 170L 2 models	PUHZ only 150L to 300L 5 models	PUHZ only 210L to 300L 3 models

How does the Ecodan QUHZ Work

Ecodan QUHZ with Packaged Thermal Store
(Space Heating & Hot Water schematic)



Underfloor heating

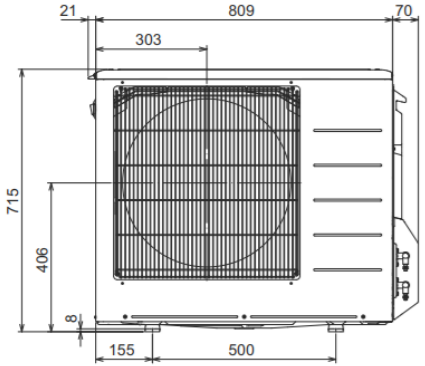
Optimum performance requires optimum design

- **Flow range must be between 3-8 l/m**
- **7 l/m & 40°C /30°C flow and return – MWT 35°C optimum**
- **Higher °C flow Temp reduce the flow rate**
- **3rd party rooms stats weather compensation mode required**
- **Additional Pumps not required - Internal self modulating pump already provided**

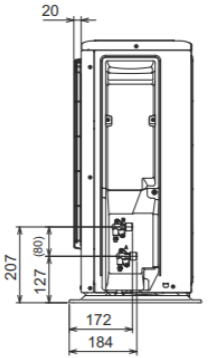
Ecodan - QUHZ-W40VA – 4kw (Outdoor)

Compact design

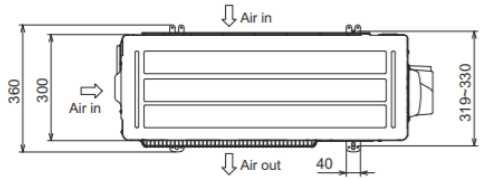
Front View



Side View



Upper View



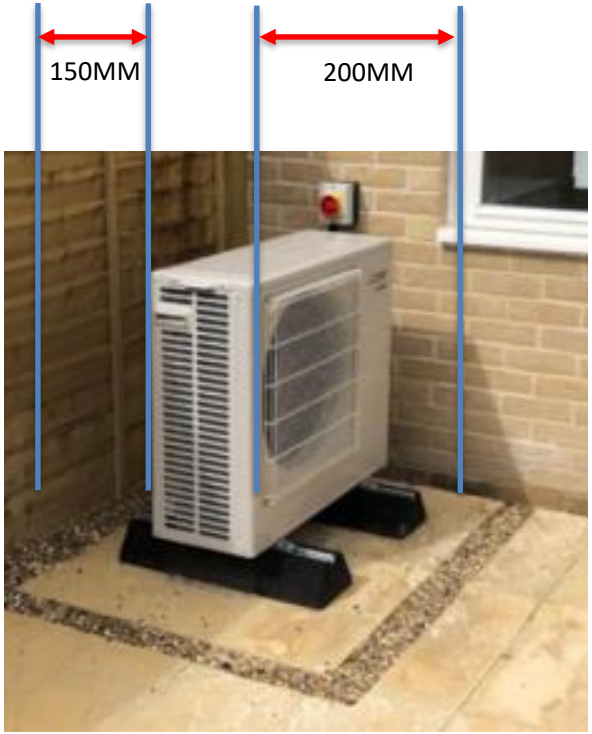
Ecodan - QUHZ-W40VA – 4kw (Outdoor)

Very simple to install!

- Single phase power supply from the indoor unit
- Easy Access power connections
- Easy Access 15mm plumbing connections

Key considerations when installing the Ecodan QUHZ

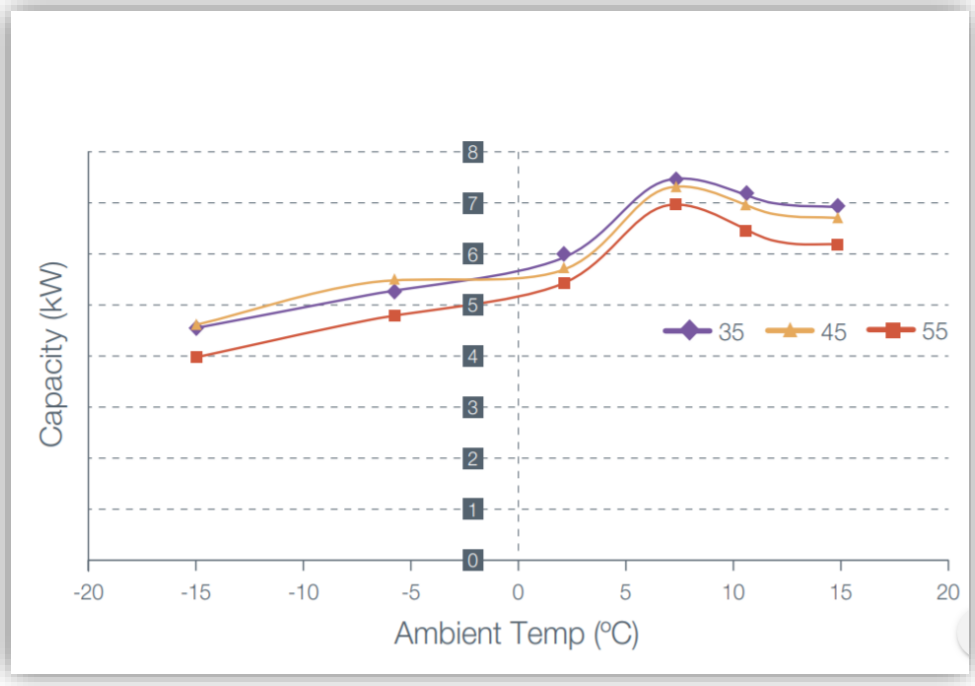
- Outside –airflow required
- Correct distance from rear and front obstructions
- Condensate removal
- Single Phase Electric Supplied from indoor unit
- Insulated pipework
- Isolator – Electricity & Pipework
- Vibration Pads



Ecodan QUHZ Capacity

Heating when you need it

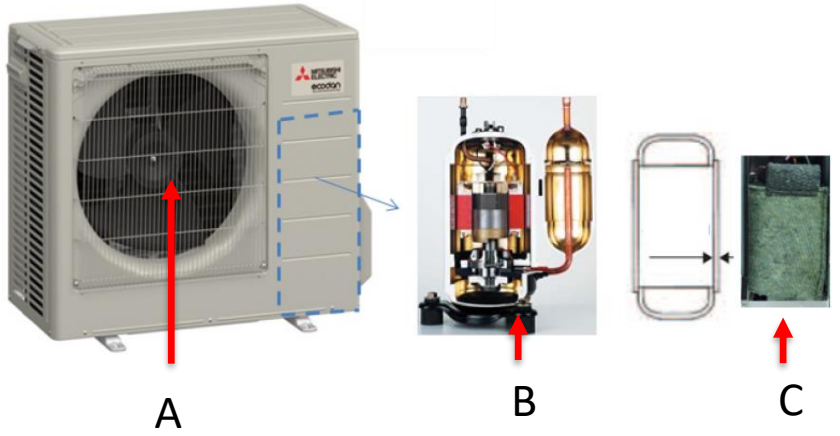
- Can deliver efficient heating flow temperatures up to 55ºC
- Offers variable capacity output
- Can operate down to temperatures -15ºC ambient



Market leading Ultra Quiet operation

How is 43 dBA @ 1m Sound Pressure Level possible?!

- Japan DHW – operation at night – Ultra Quiet
- A. Low air flow and air Noise
- B. Thick Compressor Shell
- C. Sound Insulated Compressor

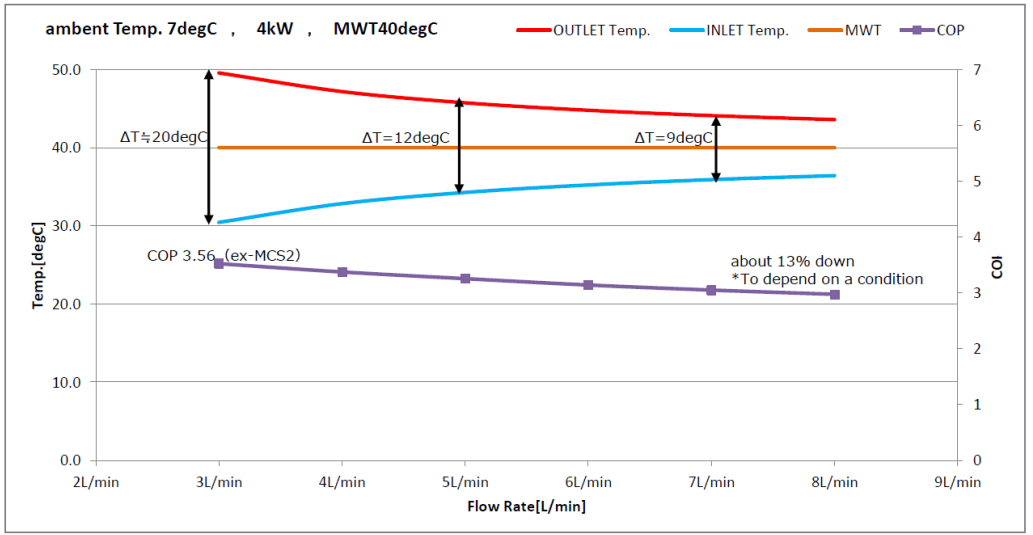


CO_2 (R744) Refrigerant – GWP 1

Worlds most eco friendly refrigerant

- Lowest GWP of any refrigerant (GWP 1)
- Non-Flammable refrigerant no leak detection required
- Lower Mean Temp = Higher SCOP
- Low flow rates between 3 l/m & 8 l/m
- Up to 20K ∆T means smaller pipework
- Hot gas Defrost

. To get big ΔT with reducing flow rate in condition where mean water temp. is fixed.



To keep mean water temp. lower.

Flow rate	Outlet	Inlet	MWT	COP
5L/min	50.7	39.3	45.0	(1)
5L/min	47.7	36.3	42.0	(1) +19%
5L/min	45.7	34.3	40.0	(1) +27%

Poll Question 2

- How important is the Global Warming Potential of the refrigerant in your chosen ASHP – 1-5 (1 being very & 5 being not at all)?
    - **1**
    - **2**
    - **3**
    - **4**
    - **5**

Thermal Store – EHPT20Q-VM2EA

- Versatile white goods finish – kitchen or utility room
- Ultra Efficient DHW generation
- 600mm kitchen unit dimensions
- Blends discretely amongst household appliances
- Guaranteed flow rate for effective domestic water use

  2 ~ 18 litres a min

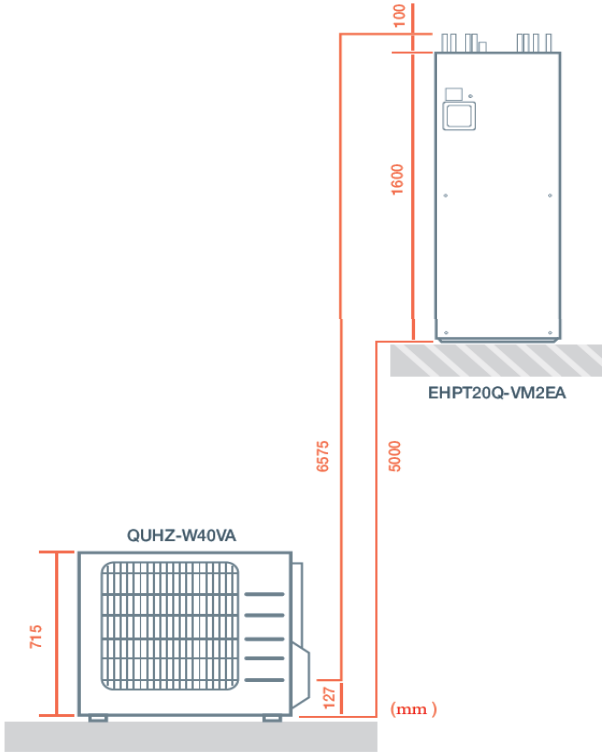
Thermal Store – EHPT20Q-VM2EA

- Single Power supply to indoor which also powers the outdoor QUHZ Ecodan
- Advanced pump speed control logic to deliver high efficiency in hot water mode & heating mode
- Pre-plumbed & pre-wired for quick installation
- Rear built-in carry handles
- All components packaged within housing

Position of the Thermal Store

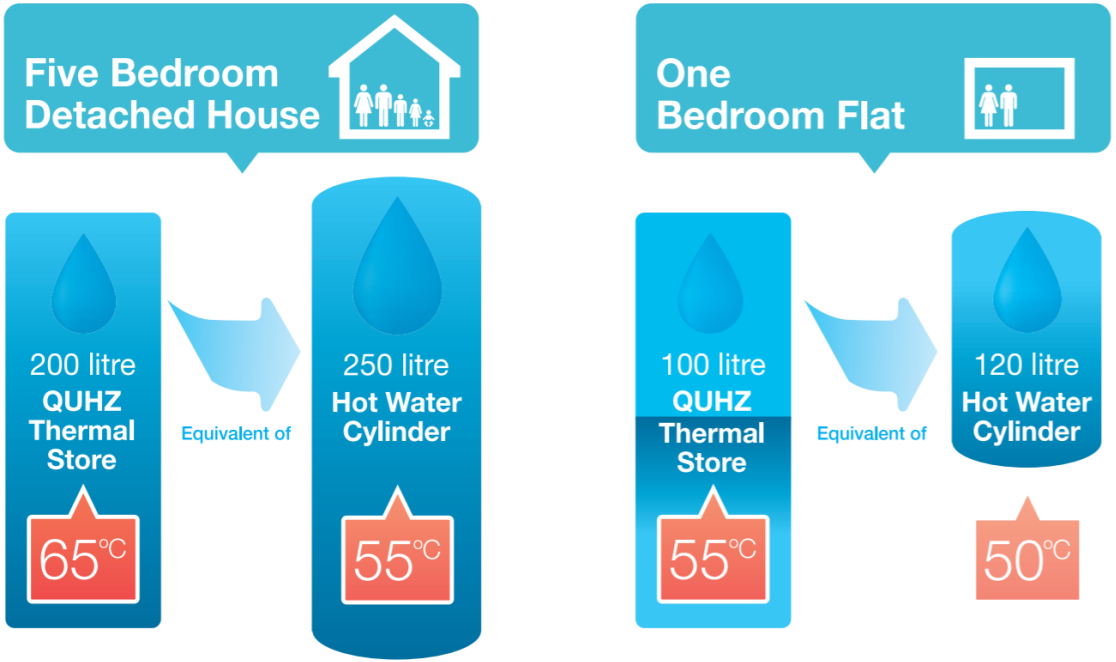
Easy – Flexible - Versatile

- **Maximum height difference of 5 meters between QUHZ base & base of the thermal Store.**
- **Maximum 15 M pipe run.**
- **15mm primaries recommended**
- **Only one expansion vessel required for DHW – Supplied**
- **No additional pumps required or should be added**



Thermal Store – EHPT20Q-VM2EA

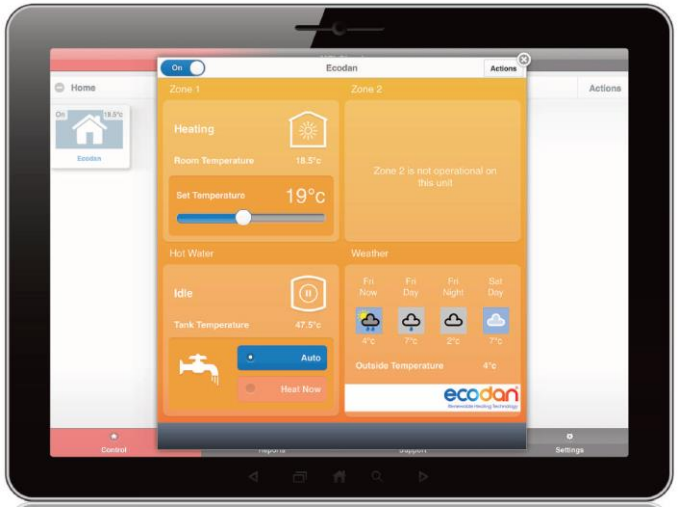
Continued versatility



Poll Question 3

- Is sound a key consideration when specifying ASHPs : 1-5 (1 being very & 5 being not at all)?
  - 1
  - 2
  - 3
  - 4
  - 5

Commissioning benefits & desktop analysis



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Heating Control

Intelligent range of controls to suit all applications

Integrated	Wireless	MELCloud
		
Flow Temp. Controller (standard)	Zone Temp. Controller (option)	Cloud System Controller (standard)

Controls – continued improvement

Improving Heating system performance

- **Auto Adaptive Mode – Modulates to delivery optimum performance**
- **In-built energy monitoring as standard**
- **Control hierarchy Commissioning settings locked out for homeowners**

Simple Controls

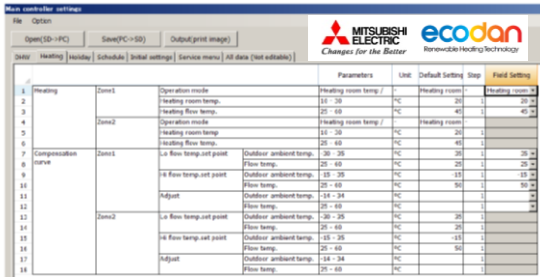
Easy to use Room stat and hot water Stat

Not suitable for use when multiple zones are designed using a wiring center and manifold

SD Card – Commissioning

Start with the end in Mind - Prepare for consistency

Heating Installer



MELCloud & MELConsole – Smart Control

- Access to remote maintenance and technical support
- View & Control your heating and hot water anywhere in the world
- Reports on energy use, temperature history and more
- Share access and control of Ecodan system
- Compatible with Alexa
- All supplied Free of charge with no subscription costs

MELCloud™

Featuring the award-winning

MELConsole
Remote Maintenance & Technical Support

amazon alexa

Poll Question 4

How much of an added benefit is remote access to support and control the ASHP to you or your client? 1-5 (1 being very & 5 being not at all)

- 1
- 2
- 3
- 4
- 5

MELCloud™

Featuring the award-winning

MELConsole

Remote Maintenance & Technical Support

Mitsubishi Electric, here to support you

The Mitsubishi Customer Services Team

- 24/7 365 days a year
- Assist with Ecodan issues
- Site Services – engineers
- Warranty & Spares

Design Service Here to help

Heating | Design Specification Request

ecodan®
Renewable Heating Technology

- Full Design Service to all End user clients
- 15 working day turn around
- Specification aligned with your requirements
- Full room by room heat loads
- Radiator sizing and equipment schedule to be supplied by Mitsubishi Electric
- DESKTOP ANALYSIS – *Please contact your local RESIDENTIAL SPECIFCATION AM*

Project management Team

- Installer Onboarding
- Site Activities
- Engagement Activities
- Handover
- Wash Up

Our Training facilities around the UK

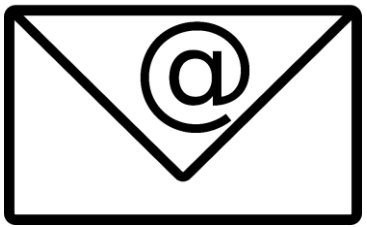
- Learn how to install, service & maintain Ecodan heat pumps
- Practical hands on training from industry experts

les.mitsubishielectric.co.uk/installers/installer-training

Poll Question 5

Would you like a follow up call / email to discuss your application or house types in more detail?

- **Yes please email me.**
- **No thank you**



Residential Heating

Q&A Session

Ecodan.Technical@meuk.mee.com
T: 01707 278 666
W: Ecodan.co.uk

Presented by | Sunny Vashisht, Rhys Jacob, Stuart Bell & Max Haliwell

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Coming next time….

Netzero, the challenges facing the social housing sector.

Presented by | Sunny Vashisht & Rhys Jacob

Thank You

T: 01707 278 666
E: Heating@meuk.mee.com
W: les.mitsubishielectric.co.uk

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https://www.youtube.com/watch?v=7-v8b1ko2m4

Ecodan for New Build Applications

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Ultra Quiet operation

How is 43 dBA 1m Sound Pressure Level possible?

What is the Ecodan QUHZ system?

Key Installation & Application considerations

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Appendix

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