

Wicklow Hospice

Magheramore. Ireland

2021

Outdoor units: 6 x Aquarea T-Cap 16kW units

Indoor units: 1500L buffer tank

Control: Panasonic Cascade Controller to provide underfloor heating to 2022m² of floor space to the new building.

J V Tierney & Co Consultants, Mechanical Contractors Quinn Downs Ltd and Installers Base Engineering Ltd

Panasonic Aquarea Heat Pumps are providing energy efficient heating and DHW to Wicklow Hospice. Consultants, J V Tierney & Co and main mechanical contractors Quinn Downes Ltd, created a design for a low carbon heating system to service the facilities of this new hospice. The solution, featured six Panasonic Aquarea H Series T-Cap 16kW units along with a Panasonic Cascade Controller to deliver a low environmental impact, minimal maintenance, is highly energy efficient and cost-effective.

Challenge

This new €10m modern facility, in Magheramore, Ireland, has 15 in-patient rooms with ensuite facilities for those with life limiting conditions, as well as several treatment rooms for out-patient clinics and multidisciplinary specialist services. The new facility offers palliative and respite care for the local community. The funding for was raised over a 10-year period by local support groups, with the work completed and the premises officially opened in January 2020.

Solutions & Tech Applied

Although the original specification was for a ground source set up, local heat pump specialists, Base Engineering, instead recommended the Panasonic Aquarea air source heat pumps, along with the Panasonic Cascade Controller as more suitable for the project. J V Tierney & Co worked with Quinn Downes and Base Engineering to incorporate the air-to-water heat pumps into the existing design for the building, using the individual heat pumps' controls, in addition to the Panasonic Cascade Controller to help provide equal run hours across all six heat pump units. This sophisticated control strategy offers a great deal of modulation and weather compensation to supply a more efficient and flexible solution to deliver a longer lifespan with minimal maintenance. The use of air-to-water heat pumps in the system, complements the installation of 24 solar PV panels on the roof of the building. The Panasonic heat pump system is able to use the free energy created by the solar panels to further boost the output by up to 400% in the creation of heat and DHW to further increase the energy efficiency of Wicklow Hospice. This new €10m modern facility, in Magheramore in Ireland, has 15 in-patient rooms with ensuite facilities for those with life limiting conditions, as well as several treatment rooms for out-patient clinics and multidisciplinary specialist services. The new facility offers palliative and respite care for the local community. The funding for was raised over a 10-year period by local support groups, with the work completed and the premises officially opened in January 2020 by Minister for Health, Simon Harris TD. The building is heated by 2022m² of underfloor heating made up of 13,000m of pipework, controlled by 68 thermostats throughout the facility. The 15 bedrooms

are all 28m² including ensuite facilities. Each of the six Panasonic Aquarea heat pumps links to a 1500L buffer tank which then provides hot water to the underfloor heating system across the entire facility. Garrett Kennedy of Base Engineering Ltd added, "Over the years, we have installed hundreds of Panasonic Aquarea air-to-water heat pumps. From our experience, we have always found the units to be very reliable, have an equal - if not better - COP than ground source heat pumps, and the units only require minimum maintenance that will help reduce long term costs for the Hospice.

Furthermore, the six Panasonic Aquarea H bi-bloc units each has an inverter driven heat pump that can self-modulate to meet demand and step in at varying stages via the Panasonic Cascade Controller to further save on energy use." The new Panasonic Cascade Controller can operate up to 10 Aquarea air-to-water heat pumps (160kW) simultaneously or in cascade mode, helping to meet the heating or cooling demand of commercial buildings more efficiently. Eamonn Kent, Air to Water Key Account Manager, Panasonic Ireland, further commented, "For large projects such as Wicklow Hospice, efficiency is the key to creating a more sustainable building and reducing heating costs. Cascade control is increasingly being utilised, making use of parallel-connected heat pumps, and switching on the most efficient number of these as demand is increased or decreased. In addition, the controller includes an intuitive touch screen display with information about each of the connected heat pumps - ideal for quick servicing and remote maintenance tasks." This scale of the Panasonic Cascade Controller presents a more efficient solution for commercial buildings. It helps to maximise the lifespan of the Panasonic Aquarea heat pump units, which can be intelligently managed to balance the load, and offers a contingency solution if maintenance is required, minimising downtime. For more information on the Panasonic Aquarea Air to Water range, please visit

https://www.aircon.panasonic.eu/IE_en/.

Key Tech Features

The Cascade Controller can operate up to 10 Aquarea heat pumps simultaneously or in cascade mode.