

Details of Proposed Air Source Heat Pump

The new-build nature of the development, designed to meet or exceed current Welsh Building Regulations for insulation and energy efficiency, makes an air source heat pump an appropriate and highly efficient heating solution.

The proposed unit is sized to meet the heating and domestic hot water demands of a highly insulated dwelling. It utilises modern inverter-driven air-to-water technology and operates using a next-generation low Global Warming Potential (GWP) refrigerant (R290 – propane), offering significantly lower environmental impact than both the existing oil-fired system and earlier heat pump technologies.

The system is designed to achieve high seasonal efficiencies (SCOP typically in excess of 4.5), resulting in substantially reduced carbon emissions. It will be electrically powered and is fully compatible with the proposed on-site photovoltaic (PV) array and battery storage.

The proposed air source heat pump represents a highly efficient, low-carbon, and environmentally responsible heating solution. It is fully aligned with national and local planning policies that support sustainable development and the transition to low-emission technologies.

Manufacturer's Information

The proposed unit is the Mitsubishi Ecodan R290 Monobloc Air Source Heat Pump (8.5kW).

Technical details are provided in the supporting document:

NP263AA The Grove – MEUK R290 8.5kW, 10kW, 12kW Product Information Sheet.

Siting

The external unit will be located on the southern elevation of the replacement dwelling. Its position has been carefully considered to minimise visual impact. The unit is compact, contemporary in design, and finished in a neutral colour to integrate unobtrusively within the site.

Acoustic Performance

The selected heat pump is specifically designed for residential applications and incorporates advanced low-noise technology, including a variable-speed compressor and acoustic insulation. It is recognised as one of the quieter units available on the market, which was a key factor in its selection.

Typical sound pressure levels are low for this type of equipment, and the unit has been sited to avoid direct adjacency to neighbouring habitable rooms with opening windows, thereby minimising any potential impact on neighbouring amenity. In addition, the proposed location places the unit beneath the master bedroom of the property itself. As such, there is a strong inherent incentive to ensure the quietest possible operation, both in terms of equipment selection and installation approach.

Furthermore, as part 'making good' to Castle View, external wall insulation will be installed to the neighbour's party wall. While primarily for thermal performance, this will also provide additional acoustic attenuation, further reducing any potential noise transmission.