

# Specification for the design supply, install & commission of Air to Water Heat Pump

## Background

Carlow County Council require for the design, supply, install & commissioning of an air to water heat pump to building at St Enda's, Sleaty Street, Graiguecullen, Carlow Town

## Detail for Design & Installation

The Company shall describe in detail the main elements of the renewable heating system:-  
(If any of the design details are not supplied the Tender may be considered incomplete)

### System

- A. Seasonal Performance Factor (SPF) shall be specified and shall be above 400% in accordance with EN14511. The heat pump should be sized whereby the SPC will be optimised delivering the highest possible efficiency.
- B. Any mountings suitable to support the system or controls.
- C. Demonstrate that the heat pump and associated heat emitters shall fit in the available space inside and outside the building
- D. Demonstrate that the heat pump and controls proposed can maintain an air temperature of 15°C to 16°C – given the tenderers knowledge of the building size, orientation and fabric obtained from the site plans and specifications.
- E. Demonstrate that the heat pump can deliver higher air temperature (21°C to 22°C) suited to human occupation engaged in a low rate sedentary activity at short notice when required.
- F. Heat pump complete with all pumps and controls to deliver heat to the building.
- G. Demonstrate certification of third party testing process based on the guidelines of the European Heat Pump Association (EHPA) and executed according to the test requirements of the European Norms EN 14511 parts 1 to 4 (unit performance for heating),
- H. Demonstrate compliance with EN 16147 (sanitary hot water) and EN 1202 (sound).
- I. Demonstrate compliance with the EHPA Quality Label for Heat Pumps (EHPA-Q)
- J. Demonstrate that the heat pump should be assumed fit for purpose (Building Regulations TGD Part L 2011)
- K. Demonstrate heat pump is on the SEAI's Triple E database or satisfy the published SEAI energy efficiency criteria for the equipment
- L. Demonstrate heat pumps have a minimum seven year warranty
- M. All pipe insulation to be detailed and to be fitted in accordance with Building Regulations TGD Part L 2011
- N. Demonstrate domestic hot water supply included in energy consumption calculations, also show how Legionnaires risk will be avoided (show how hot water will be kept above 60°C for the required time, without running heat pump at a high temperature and lowering its COP)

### Installation

- A. Show design verification by manufacturer of heat pump
- B. Demonstrate manufacturer specific training of proposed installers of heat pump

### Commissioning

- A. Demonstrate manufacturer's commissioning process & tests to be followed and verified by manufacturer's engineers for full system performance

### Operation

- A. Demonstrate detailed control strategy that will be simple and robust to use (controlled from within the building by non-technical users).
- B. Show how control system will ensure effective regulation of temperature and time (space & DHW) during occupied and un-occupied hours, during summer & winter.
- C. Demonstrate how controls will enable non-technical users to re-programme or change the schedule when required for example for an unscheduled event.

### Note

All proposed designs for piping runs and layout of underfloor heating will have to be approved by a Carlow County Council engineer or appointed engineer prior to awarding tender. To insure it is in accordance with best practice guidelines.