St. Thomas Halls, Belfast, Northern Ireland

New build apartment facility catering for the short-term city rental market. Domestic hot water provided by an air source sanitary hot water heat pump and space heating provided by electric instantaneous panel heaters. The build met the client’s requirements, i.e. complied with Building Regulations and provided a low cost hot water and space heating solution.

Key facts

**Building**
- Location: Belfast, N’Ireland
- Construction: 2017
- Heat distribution: in building
- Heated area: 85m² living x 17
- Level of insulation: UK new build 2017

**Heat pump and source**
- No. of heat pumps: 17 units
- Installed capacity: 1.5kW x 17
- Operation mode: monoenergetic
- Heat source: air source
- Brand and type: Edel by Dimplex
- Refrigerant: R290 / 0.15kg
- Sound level: 40dB

**Heating system**
- Heat demand: 4kW
- Heating temperature: 20°C

**Domestic hot water**
- Type of system: individual
- Max. Temperature: 60°C
- Circulation system: pressurised cylinder
- Legionella measures: daily or weekly
- Storage size: 200 and 270l litres
- No. of storage tanks: 17 units
- Storage losses: 1.61/1.77kWh/24hr
- Temperature control: electronic controls

**Other information**
- COP: 3.21 / 3.24
- Electric energy: 29050 kWh/yr DHW
- DHW consumption: 93250 kWh/yr DHW
- Investments costs: unknown

**Lessons learned**
- User feedback is positive, the solutions provides sufficient hot water and running costs are low.
- Sizing and installation of air ducting was new to the developer for hot water applications.

This new build apartment facility located in Belfast City, Northern Ireland. The building consists of 17 short term apartments aimed at tourism and business people. The developer was conscious of running costs, bill management and Building Regulation requirements. The complete electric solution provided by Glen Dimplex offered affordable running costs and a means of managing space heating and hot water costs within the context of a keypad electricity meter. The Edel hot water heat pump efficiency produced real benefits in UK building modelling and compliance models that resulted in the overall heating scheme producing an overall highly efficient solution.
Description of the technical concept

- Each new build apartment was fitted with a hot water heat pump to provide sufficient domestic hot water to 17 individual apartments.
- The Edel hot water heat pump is available with either a 200l or a 270l hot water storage cylinder.
- The heat pump output capacity is 1500W with a 1200W back up immersion heater.
- Air ducting connections were installed between the Edel within an airing cupboard and the external walls of the building.
- Building regulation compliance was achieved by combining the hot water heat pump with direct electric space heating.
- Modern thermal insulation levels resulted in a low space heating load which allowed direct electric space heating panels to comply with Building regulations when using the Edel hot water heat pump for domestic hot water production.
- For the property occupants the benefits were a guaranteed supply of hot water and for the building management team, low running costs were welcomed.