



Communal Energy-Efficient Heating

Royal Borough of Kingston, Four Oaks Hostel

Highlights

Axis' Mechanical and Electrical (M&E) Design Team – working in partnership with consulting engineers Butler and Young Associates – designed a new energy-efficient heating system on behalf of Axis' long-term client The Royal Borough of Kingston Upon Thames (RBK).

The new Mitsubishi energy-efficient heating system uses Air Source Heat Pumps (instead of existing gas boilers) to produce space heating in the communal areas, rooms/accommodation, bathrooms and kitchens – and hot water – for the entire property: Four Oaks Hostel in Chessington.

It will replace the existing heating system where each unit has its own gas-fired condensing combination boilers providing heating and hot water.

The internal distribution system will be a wet system and, whilst sizes of emitters increase, they still resemble traditional radiators.

We also installed new front and back entrance doors and replaced the old wooden windows with UPVC windows after an air tightness test identified the old windows were expelling heat from the property.





Care of Four Oaks Residents during the Works

Residents of Four Oaks include families in a range of situations and living circumstances including those who are homeless.

Residents remained in the property throughout, and we kept them informed through our dedicated Resident Liaison Officer, meetings, consultations, regular written communications and clear site signage.

We installed a temporary boiler house to ensure that residents had hot water and heating throughout the works.

Our team made every effort to keep disruption to a minimum for the residents of Four Oaks and their neighbours.

Benefits

- Increased energy efficiencies (the building is heated effectively with reduced output),
- demand-led system with multi-stage power control for better regulation/consumption and CO₂ reduction
- Residents can easily operate the new system from a wall-mounted controller
- Solar panels will further increase the thermal efficiency of the building reducing bills
- New doors and windows improve air-tightness

Specifications

Removal of:

- Existing gas fire boilers and gas supply/ meters

Installation of:

- Mitsubishi Air Source Heat Pumps (external to the buildings)
- Water Source Heat Pump (WSHP) units, buffer vessel, pumps, and a control panel in the current boiler room
- Photovoltaic (PV) panels
- Low Surface Temperature (LST) radiators – flow controlled thermostatic sensors
- Metered Heat Interface Units (HIUs)
- New Heating Distribution pipework system
- New electrical power supply to serve the new installation
- New integrated Building Management System (BMS) controls with cloud-based connectivity for remote monitoring
- All associated building works

10 months duration



More about Four Oaks

Four Oaks Hostel comprises three fully-occupied buildings: a two-storey building (1950s-built) with 18 bedrooms, communal kitchens, communal bathroom/shower rooms, a lounge area, and a laundry room; two newer (c2012) blocks containing two 3-bedroom and four 2-bedroom self-contained units.

There is also a scheme manager's flat and office at the hostel.

Four Oaks is located in a residential area in a cul de sac.

This project for Royal Borough of Kingston is delivered in partnership between Axis, Butler and Young Associates and TDK Mechanical Services.



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