

# ENERGY EFFICIENCY CASE STUDY: DECARBONISING THE HEATING SYSTEM IN PLANTATION PARK

## The Challenge

- The terraced house in the Plantation Park area of campus has been convened for use as a multi-occupancy student residence.
- Its heating system comprised of a Liquefied Petroleum boiler with radiators throughout the property.
- Whilst the system was reasonably efficient, the University was keen to explore alternatives to fossil fuel heating systems that could demonstrate how it can decarbonise its housing portfolio.

## The solution

- Following a detailed options analysis undertaken internally by University Engineers, it was determined that an Air Source Heat Pump (ASHP) could be employed to provide the heating for the building.
- ASHPs work like refrigerators in reverse, with heat absorbed from the outside air, even in winter.
- They have significant advantages over other electric heating systems as for each unit of energy put into the system, as many as 4 units of heat energy are generated.
- To limit the carbon impact from the electricity required for the system a small solar PV array was installed alongside a domestic size battery to provide the majority of the power needed to run the heating system.

## The outcome

- 100% Grant funding from Salix Finance Limited was provided through the Public Sector Decarbonisation scheme to allow the University to appoint MEB Total to undertake the works.
- Completed in March 2021, the gas connection to the building has been disconnected, saving more than 2.4t of CO<sub>2</sub>e per year and lowering the energy costs of the building by 75% per year.
- The University is now using the lessons learnt from the installation to understand how it could be implemented elsewhere on campus to support its net-zero carbon by 2030 target.

## SOME FACTS

**Total project costs:**

**£27,480**

**Total annual energy savings:**

**10,600 kWh**

**Total Carbon savings per year:**

**2.4CO<sub>2</sub>e per year**

