

Making buildings ‘heat-pump ready’

Amidst soaring energy costs and inflation, energy managers must also prepare their buildings and heating systems for the energy transition. Ryan Kirkwood, our Heat Pump Business Development Manager, outlines achievable steps to adapt older UK buildings and their heating systems to make them ‘heat-pump ready’

As we brace ourselves for the next round of energy price hikes, it falls to energy managers to mitigate the rising cost of energy and inflation while keeping their companies on track to hit sustainability targets.

Heating is one of the UK’s primary sources of emissions, accounting for over a third of the nation’s total greenhouse gas emissions. As such, it is a natural target to tackle today’s multiple energy challenges.

Heat pumps have been identified as having an important role to play in the energy transition, particularly in buildings designed from the ground up to use low temperature heating effectively. We see Air Source Heat Pumps like our Remeha [E-HP AW ASHP](#) range as the most popular and cost-effective choice.

However, it’s important to remember that heat pumps perform best in buildings designed from the ground up to use low temperature heating. In older, harder-to-heat buildings, poor insulation, space constraints, high system operating temperatures and available electricity supply are just some of the factors that will need addressing before installing heat pumps.

While tight budgets mean that it will not always be possible to carry out all the necessary steps straightaway, energy managers would be advised to plan ahead now to prepare their buildings for the future of heat.

Defining pathways

The issue, of course, is that, given that no two buildings are exactly the same, there is no one straightforward solution. So how to decide on the best approach?

One option is to seek specialist support from experienced manufacturers. The benefit of working with heat experts is that they can help define a pathway for your specific project that balances best performance for value with best practice for heat decarbonisation.

By asking the right questions at the outset and 'triaging' the system to identify the problems, they will be able to gain a clear understanding of the long-term goals. Working alongside you to propose an approach that builds in adaptability, flexibility and good design, they will help you set your building on the path to net zero.

Step one – fabric first

The first consideration when addressing existing buildings should always be energy usage and energy losses.

Passive measures for lowering energy usage such as improved insulation and draught proofing must always be considered and budgeted first.

Step two – energy-efficient system

Replacing any non-condensing heating plant with reliable, future-ready, low NOx condensing models which can reduce energy usage and emissions by up to 20% should be a given.

But to maximise efficiency gains it's important to understand the heating and hot water profile of the building.

Take a leisure centre, for example, which will typically have a high demand for hot water. If it is currently relying on central boiler plant and a calorifier for both space heating and hot water, it might be advisable to separate out the heating and hot water.

This has two major benefits. First, installing an accurately sized, dedicated water heater for point-of-use hot water will provide a more efficient and effective solution to meet the hot water demand. Second, the boilers serving the heating system can be operated at a lower flow temperature through direct weather compensation, enabling full condensing to occur.

As such, this will not only improve overall system efficiency but prepare it for the addition of heat pumps at a future date.

Step three – retrofitting heat pumps

As soon as the heat pump design philosophy is locked in, a number of considerations should be addressed.

Space – allocate external space for the heat pump, making sure that the specification is flexible enough to avoid being limited to one manufacturer.

Electrical connections – is there sufficient capacity? It's likely that additional power requirements will need to be brought to site, so understand what is possible.

Complementary products – consider adding additional renewable technologies such as solar panels, which may be able to produce all the energy you need to run your heat pump.

Multivalent heat pump solutions – where a standalone heat pump is not an option, a multivalent heat pump system can provide an effective means of overcoming retrofit challenges. Whether using multivalent heat pump solutions for space heating or domestic hot water generation, a well-designed system will reduce both greenhouse gas emissions and energy consumption, meeting heat demand more sustainably.

Preparing for the energy transition

As the summer heatwaves have drummed home, we need to act now to reduce human-related climate change.

Heat decarbonisation, acknowledged as the greatest challenge to achieving net zero, is unlikely to happen overnight in existing buildings. But, with the support of heat experts, energy managers can begin preparing their buildings now to make their heating system ‘heat-pump ready’.

Shifting to a more energy-efficient heating system will reduce building energy usage and associated emissions without compromising on performance, in preparation for the energy transition – which is surely the holy grail for heating.

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