

New lower carbon energy for Eastfields homes

Changes to the way your homes will be heated

When we last consulted you about phase one, we were planning to introduce a district energy network. This is where all the new homes on Eastfields would be connected via underground pipes to a single energy centre. A large centralised boilers would provide the energy needed to heat and power the homes. At the time, this was felt to be the most energy efficient, and lowest carbon way of heating homes on large estates like Eastfields.

However, since then technology has moved on, and carbon reduction targets have become more stringent. This means we will no longer be introducing one large energy centre on Eastfields. Instead, we will be introducing a communal low-carbon energy system. This will involve using Air Source Heat Pumps (ASHP). These will be mounted on the roof of the flat blocks, with smaller individual heat pumps for houses and maisonettes.

Lower carbon

The new homes will be highly insulated. They will have underfloor heating, meaning there is no need for radiators. Air Source Heat Pumps will replace gas boilers. The result will be comfortable, energy efficient new homes that produce much less carbon than the homes they replace.

What is an Air Source Heat Pump?

Most home heating systems either burn fuel, or convert electricity into heat. Heat pumps are different, as they do not burn any fossil fuels. Instead, they draw in the air outside your home, extract the heat that is in that air, and use it to give you heat and hot water. Air source heat pump systems are more efficient than a traditional heating system, as they deliver more heat energy than the electrical energy required to run them. So a heat-pump system typically costs less to run than a traditional heating system.



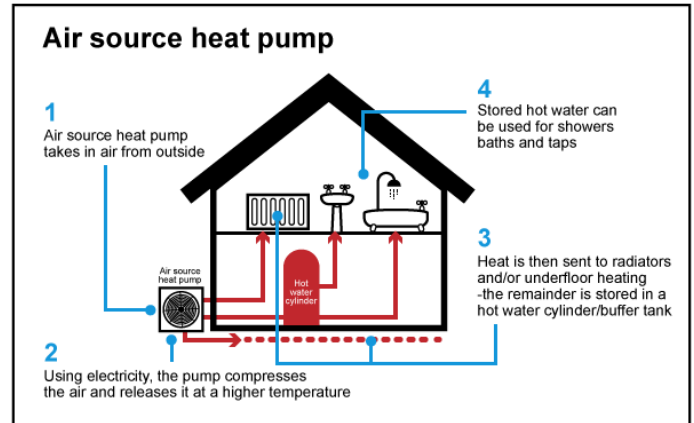
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How does an Air Source Heat Pump work?

An air source heat pump works much like a fridge operating in reverse. Outside air is blown over a network of tubes filled with a refrigerant. This warms up the refrigerant, and it turns from a liquid into a gas.

This gas then passes through a compressor, which increases the pressure. Compression also adds more heat – similar to how the air hose warms up when you top up the air pressure in your tyres.

These compressed, hot gases now pass into a heat exchanger, surrounded by cool air or water. The refrigerant transfers its heat to this cool air or water, making it warm. This is circulated around your home to provide heating. Meanwhile, the refrigerant condenses back into a cool liquid and starts the cycle all over again.



Air source heat pumps and underfloor heating

Heat pumps work best when there's less of a difference between the inside and outside temperatures, in much the same way that your fridge has to work harder in hot weather.

This makes them a good match for underfloor heating systems and well insulated homes. Floors cover a much bigger area than radiators, so they don't need to get as hot to provide the same amount of heat. Instead, they provide an even, comfortable temperature throughout the home.