

# Implement Projects & Processes

Julie's Bicycle  
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# Typical Energy Efficiency Measures

Many energy audits will find the following opportunities to increase energy efficiency and improve emissions:

- Install a Building Management System (BMS) to programme heating, cooling and lighting systems
- Improve building insulation
- Improve pipework insulation
- Upgrade to double glazed window panes
- Source 100% renewable energy
- Switch to LED lightbulbs
- Install air source heat pumps

# Switch Off Campaign – Behaviour Change

Steps to a successful switch-off campaign:

1. Identify all equipment left on unnecessarily (e.g., computers, lights, etc.)
2. Look at your data to measure energy use before the campaign
3. Create messaging and communications to teams you want to help activate change
4. Run a campaign to champion and encourage the switch off
5. Look at data after a week or month to see if the campaign has been successful

# Building Management System

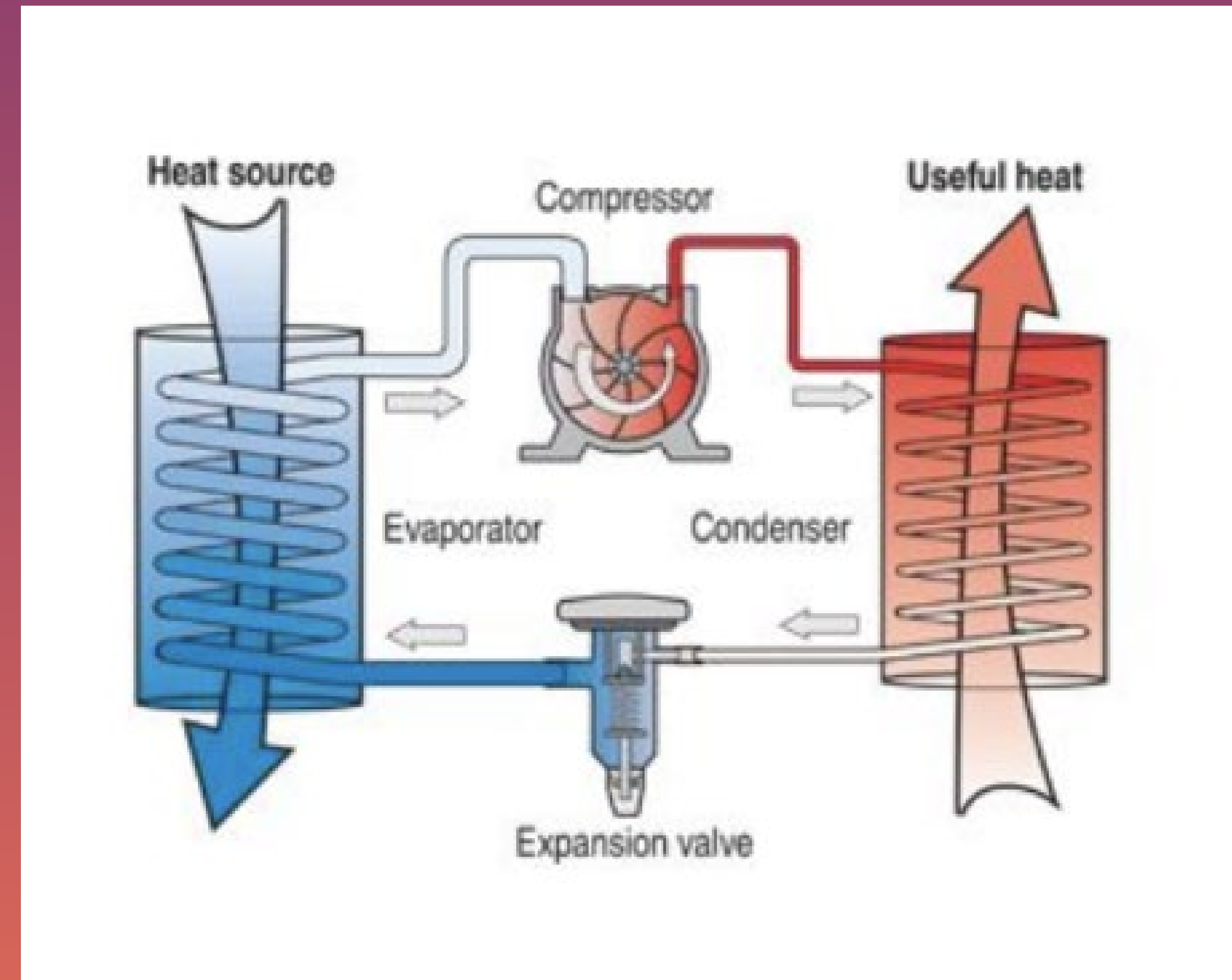
A Building Management System (BMS) is a control system which can allow you to monitor and effectively manage your power, heating, air-conditioning, and lighting systems.

You may already have a BMS system installed which you will be able to check, or you might need to install one.

If you have a BMS system installed check the control settings are not resulting in cooling and heating happening simultaneously. When this happens it is typically before the 'dead-bands' between when heating and cooling comes on are too tight.

# Heat Pumps

- Heat pumps are a form of electric heating which are 2-7 times more efficient than direct electrical heating.
- Heat pumps redistribute heat from a source and transfer the heat into your space.
- There are 3 types of heat pumps – ground source, water source, and air source.



# Air Source Heat Pumps

Air source heat pumps are typically recommended as they are:

- Cheap to install
- Cheaper to run
- The most popular option



# Solar Energy

If the geography of your building allows, installing PV solar panels reduces fossil fuel use and saves money.

Solar panels cost £100 per m<sup>2</sup> and generate 120 kWh per m<sup>2</sup> per year.

