DATASHEET

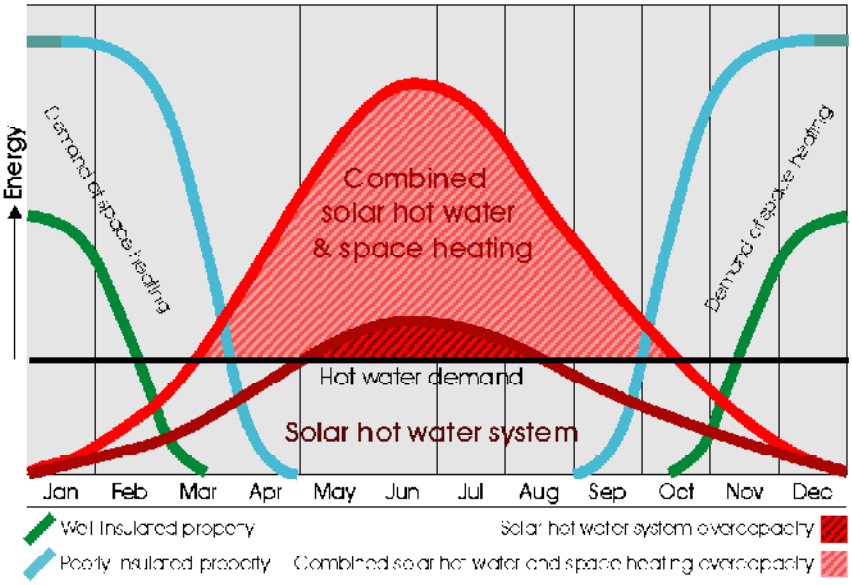
Combined Solar Hot Water & Space Heating

A system combining solar water and space heating is designed to be larger than a standard domestic solar water heating system, to ensure provision of the extra energy demand of the space heating.

Solar energy can be used to meet some space heating demand in the spring & autumn, as shown in the graph. There is no demand for spaceheating in the summer, so the extra energy generated by the combined system is supplied to the hot water system.

Most suitable for connection to low temperature heating systems, such as underfloor heating.

The payback of the combined solar & space heating system is not as good as a standard hot water system, as some collected solar energy cannot be used due to over capacity in the summer



Graph showing combined solar & space heating capacity in the UK

Solar performance

On average a combined solar water & space heating will meet 60-80% of the annual hot water demand and around 10% of heating demand in a new house. These figures are highly dependent on the energy losses of the property and the heat emitting system being used.

Design Rules of Thumb

Minimum collector area: at least 4 times the size as needed for hot water only.
Typical area: 10-15m2

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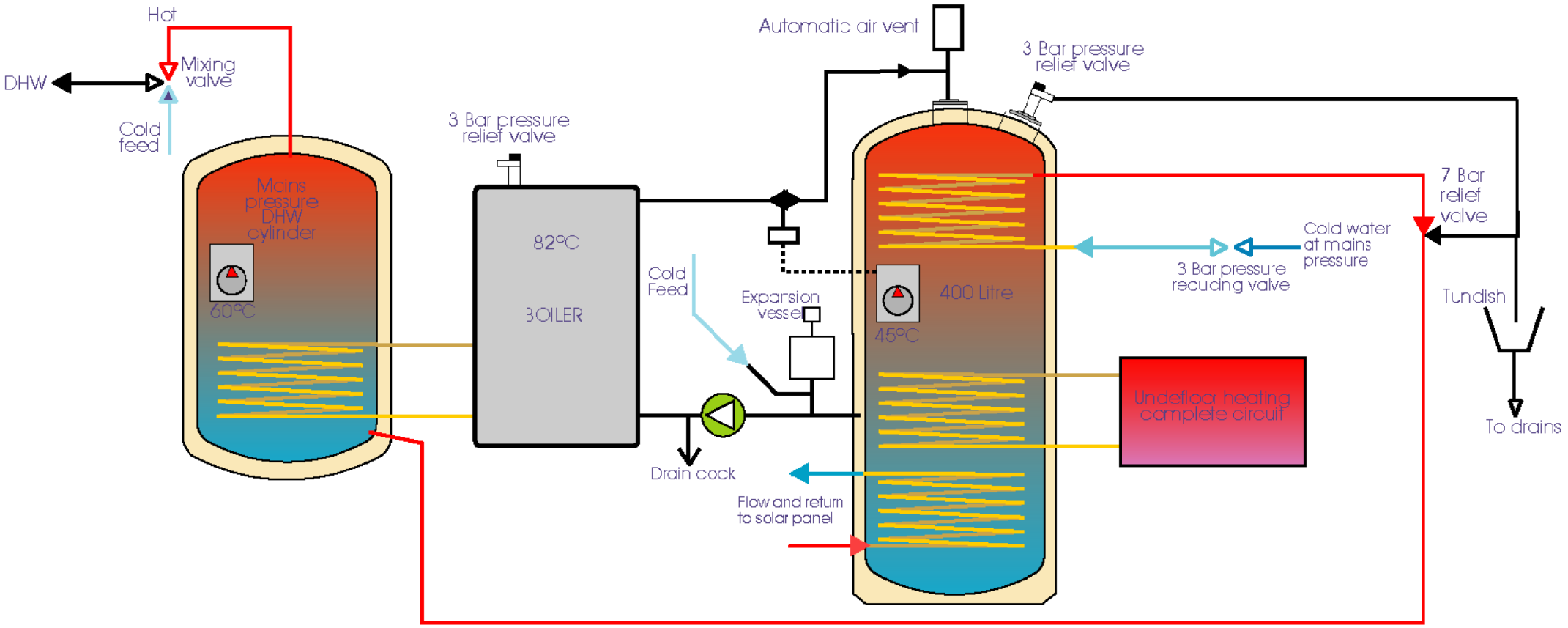

Case Study. Alfred Place, Bristol.

Under Floor Heating System using mains pressure & thermal store, heated to a maximum of 45^{0}C by the boiler.

The boiler and mains pressure cylinder could be substituted by a solar compatiable combi boiler.