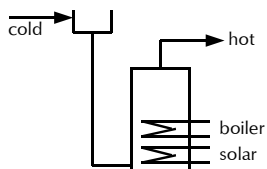
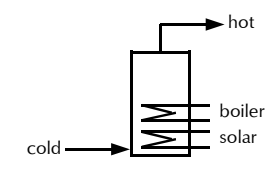
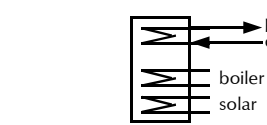


Storage of Solar Heat

Common methods of storage

Storage method	Description	Advantages	Limitations
<p>Vented cylinder</p> 	Gravity fed from a cold storage tank (e.g. in the loft), usually made of copper	Potentially lower hot water consumption compared pressurised supply unless "Power Shower" is used; no maintenance	Storage temperature limited to 60°C to avoid scalding; often not suitable for delivering hot water to thermal mixing valves or blending valves
<p>Un-vented cylinder</p> 	Pressurised storage vessel with over-temperature and over-pressure safety devices, usually constructed of stainless steel; wide range of products of varying quality available	Delivers hot water at mains pressure; can be used in conjunction with thermostatic mixing valves and blending valves	Storage temperature usually limited to around 75°C; requires good quality water supply (sufficient pressure and flow); requires annual inspection by a G3 licensed plumber
<p>Thermal store</p> 	Non-pressurised container of water that stores heat; domestic hot water is heated directly and instantaneously via a heat exchanger	Delivers hot water at mains pressure; no storage of large quantities of potable water, therefore very hygienic ; can be used in conjunction with thermostatic mixing valves and blending valves; no maintenance; storage temperature up to 95°C	Requires a water conditioner if fitted in a hard water area to guarantee trouble-free long-term operation

Design and construction

Solar cylinder

- Must comply with BS 1566-1:2000 (vented copper) or BS 7206 (unvented)
- Sizing: minimum dedicated solar volume V_s to be 25 litres per 1m² of collector area; total volume 50 to 60 litres per 1m² of flat plate collector or 120 to 130 litres per 1m² of evacuated tube collector
- For a list of accredited cylinder products visit www.lowcarbonbuildings.org.uk/info/installers

2 Sensor points

- One near the lower solar coil connection, and one at the top of the store
- Construction: either fixed sensor pockets with 6mm internal diameter and cable glands, or 1/2" female tappings for insertion of sensor pockets

Solar coil

- Must be below the boiler coil
- Minimum surface area 0.3m² per 1m² of collector area
- On good quality cylinders the bottom turn dips into the bottom of the store

