

Connecting a buffer vessel to a Shoebox heat pump

The below schematic shows how a buffer vessel can be incorporated into the [Shoebox](#) installation without the need of a second water pump.

The buffer vessel allows all radiators or underfloor zones to be fully controlled and prevents the [Shoebox](#) from short cycling, hence removing the need for 'open' zones.

If there are no water pumps on the underfloor manifolds to improve efficiency, the buffer vessel can be connected to a bypass valve which is set at 0.4 bar. As the heating zones throttle down due to the heating requirement being satisfied, the pressure in the heating circuit increases. Once this pressure increases above 0.4 bar, the bypass valve opens, diverting the flow through the buffer vessel maintaining a load on the heat pump and avoiding it from short cycling.

