



# CLADE

LEADING THE TRANSFORMATION IN  
GREEN HEATING AND COOLING

**NO BUFFER DOMESTIC HOT WATER GENERATION**

July 2023//



## THE PROBLEM WITH BUFFERS //

Many existing buildings have quite limited space for DHW production. They were constructed around fossil gas boilers either as system boilers or stand alone hot water generators.

Heat pumps work in a different way to boilers and for a number of reasons require a buffer tank. They provide a larger volume of water to smooth the operation and maintain the DT. On a commercial systems even small buffers of 1000L can be difficult to fit in, many system require larger buffers and some manufacturers require more than one in the system.

The challenges of fitting a heat pump DHW system are;

- Space to fit a buffer or two and a DHW store
- A lot more pipe, fittings, pumps, valves, etc. and labour to install
- Complex controls

This makes for an expensive system which can be difficult for FM teams to manage effectively.

## Leading the transformation in heating and cooling

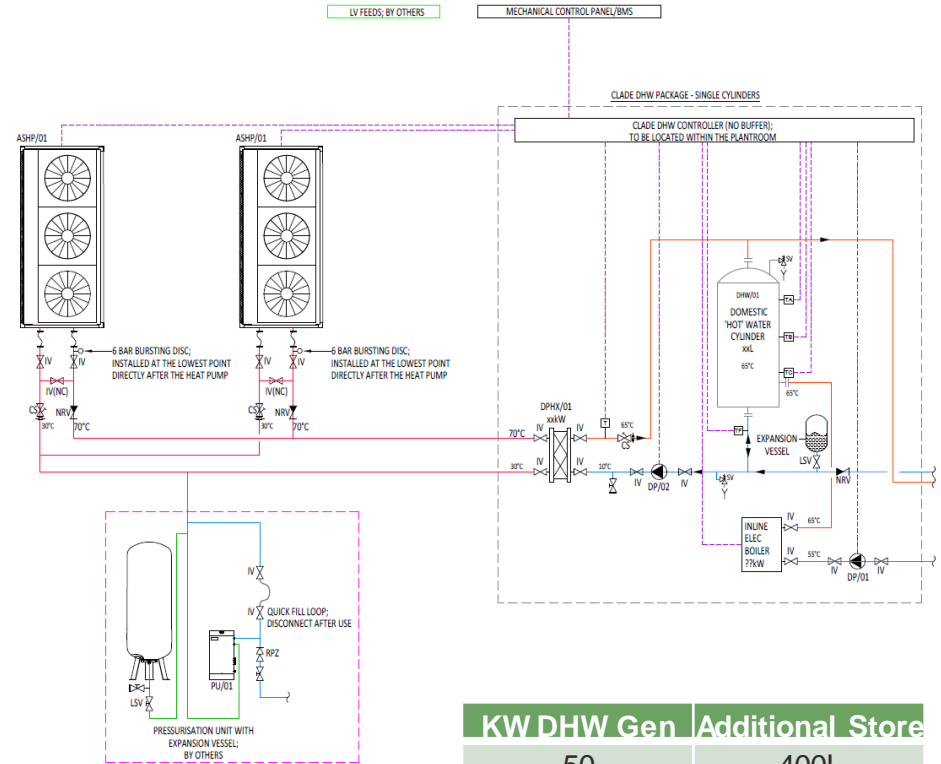
### Clade No buffer DHW

- **More efficient**
- **Simpler**
- **Cheaper**

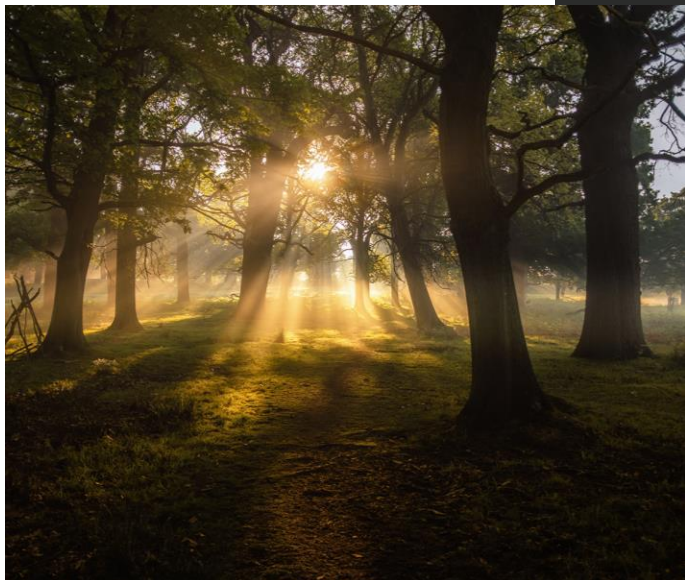


## NO BUFFER DESIGN //

- Add additional volume to the cylinder above demand for defrost and smooth operation (see table)
- If using Acers, 2No is the minimum.
- Must have inline electrical boiler for reheating the DHW-R circuit or immersion heaters within cylinders.
- LTHW on 70-30°C
- DHW produced to 10-65°C – Pasteurisation at this temperature takes around 6 minutes.
- PHX and pumps sized to the summer condition output of ASHPs.
- Cylinders work on a 10V, 5V, 0V signal to the ASHPs on temperature sensors within cylinders.



KW DHW Gen	Additional Store
50	400L
75	500L
100	750L
150	1050L
200	1400L
300	2100L



THANK YOU //

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