St John's Waterbeach

Churchroom Heating

Richard Stobart
8th June 2023

Background – a life expired gas boiler in need of replacement

The SCDC “Zero Carbon Communities” scheme gave us the opportunity to look beyond a simple replacement

Floor area 90 sq-m

Worst case heat loss 10.5 kW (for 21degC)

Heat pump rated output 16 kW

Solar PV rated output 2.97 kW

Solar panels would give us a basic generating capability – south facing helped – a simpler roof structure would have been better

A heat pump would allow some of the solar generated power to be used for heating


SAMSUNG


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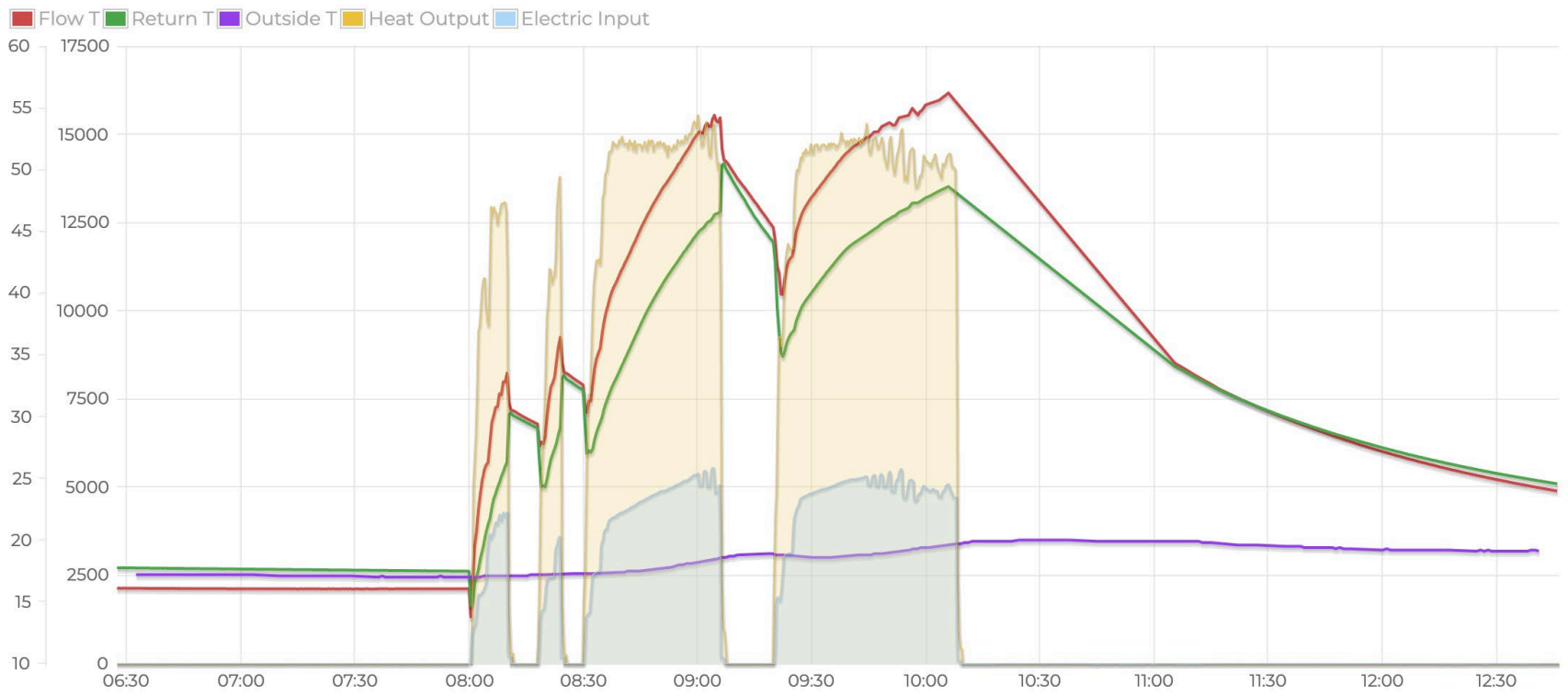
ARISTON
Please ensure you allow enough time to empty the dishwasher and leave the door slightly ajar.
Thank you

Setup | Apps | Dashboards | DemandShaper

HISTORY | H | D | W | M | + | - | < | > | BACK



COP in window: 3.08 SHOW DETAIL

ALL TIME HISTORY

Total Electricity input	Total Heat output	All-time COP
9 kWh	25 kWh	2.87

Powered by OpenEnergyMonitor.org | low-write 11.0.5

Open Energy Monitor

Heat pump “app” outputs

COP of about 3

Maximum heat output of about 15kW

The Future

- Continue to improve thermal insulation and reduce draughts
- Install a battery to help provide heating and lighting power for evening events (5kW, 10kW?)
- Install solar panels on the South Aisle roof (may add 10kW)
- Replace gas boiler in Church with a heat pump/boiler hybrid