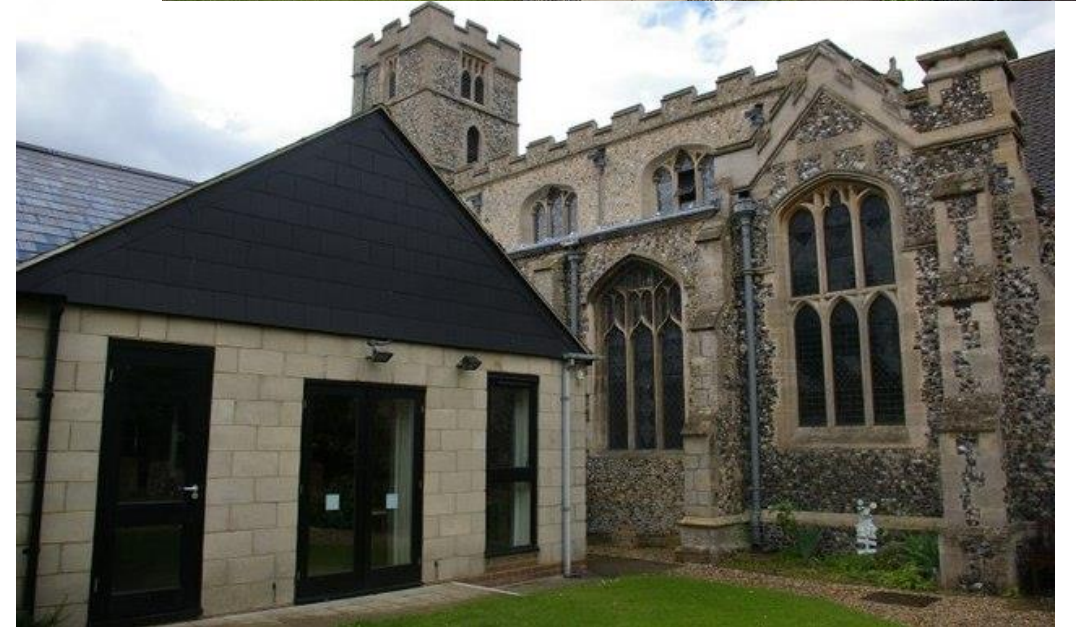


St John's Waterbeach

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







HISTORY

H

D

W

M

+

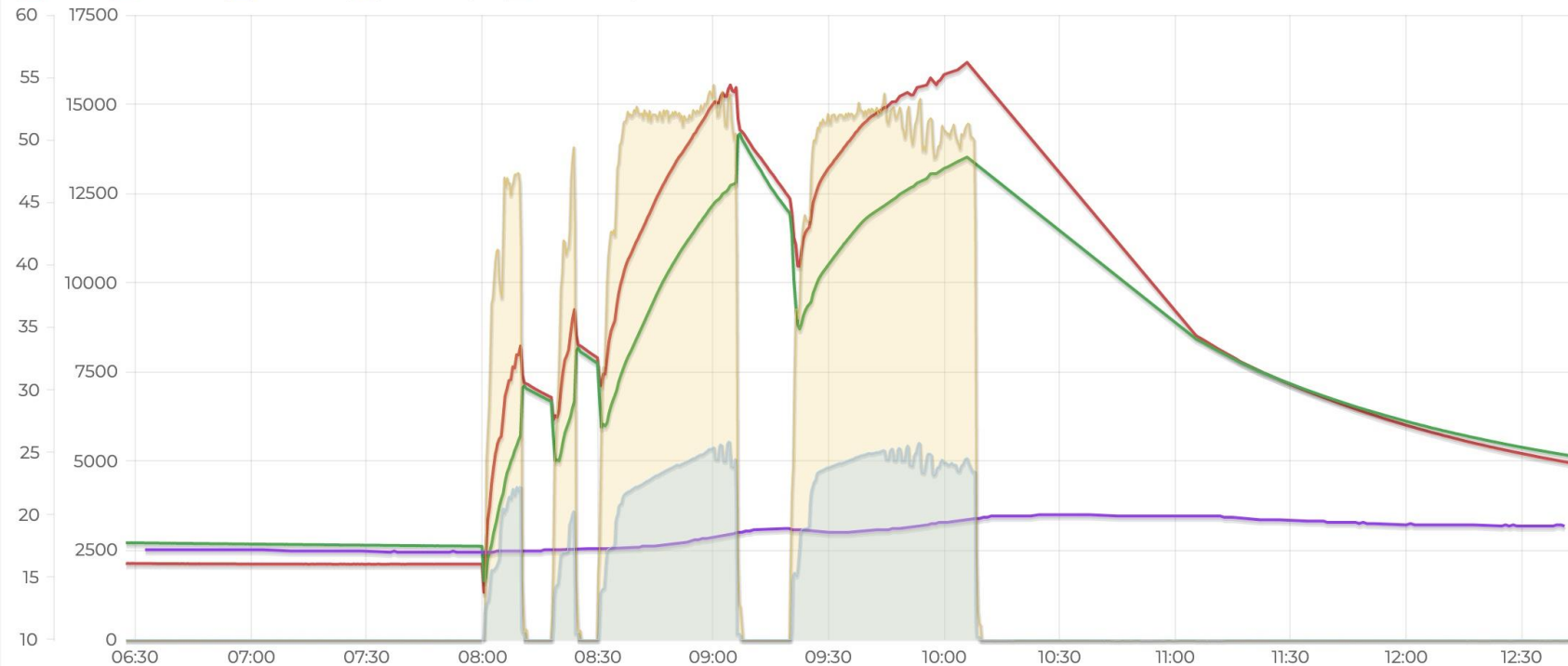
-

<

>

BACK

Flow T Return T Outside T Heat Output Electric Input



COP in window: 3.08

SHOW DETAIL

ALL TIME HISTORY

Total Electricity input

9 kWh

Total Heat output

25 kWh

All-time COP

2.87

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