INSPIRED EFFICIENCY

ENERGY · CARBON · SUSTAINABILITY

Quick Wins to Save Energy and Decarbonisation.

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www.inspiredefficiency.co.uk

Outline

- Introduction and Outline

- Quick Wins
  - Procurement of Energy
  - Set boilers and frost stats correctly
  - Background / Heritage Heating debate
  - Timers and Scheduling
  - Draught proofing
  - Easy to change lighting
  - Water Saving

- Decarbonisation Projects

- Questions

Energy Bills

- No church should be paying 20% VAT or Climate Change Levy (CCL) due to charitable status

- Check ALL bills (especially high winter bills) and if any found to have 20% VAT send in VAT Declaration to supplier (search "<supplier name> VAT Declaration" to find forms on line

[redacted]
CHURCH
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[redacted]

Contract Information *	
Contract Type:	Valid
Contract End Date:	14th April 2019
Payment Method:	Direct Debit

* Please see overleaf for further details

Gas Invoice No:	463295
Bill Date:	4th October 2018
Due Date:	14th October 2018
Our Ref:	CE1263341
Account No:	042055
Total Gas Cost:	£314.67
Total Standing Charge:	£0.00
Climate Change Levy (CCL):	£22.14
Sub Total:	£336.81
VAT @ 5%:	£0.00
VAT @ 20%:	£67.36
Invoice Total:	**£404.17**

Quickest Win is to procure all energy from 100% renewable suppliers

Energy Meters

- Check the ‘time’ on dual rate meters

- As churches typically use more energy in evenings and weekends errors in the time or day can lead to high cost errors

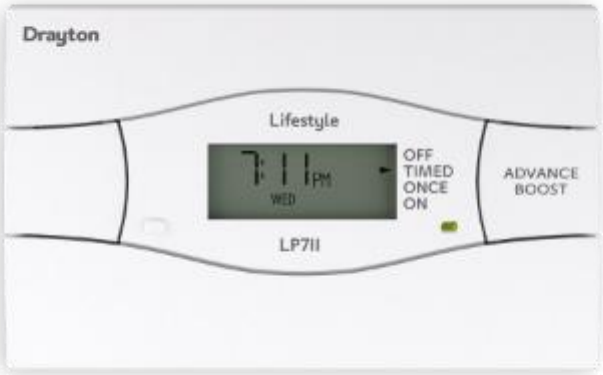
Boiler Controls

- Boiler Burner Settings – high flame should be lower temperature than low flame on dual burners

- Frost setting should be only just above freezing point – 30% of fuel costs can be due to frost protection

Background Heating

- For low use churches background heating is generally NOT required and can cause more issues than it solves
- Stable temperatures and humidity is more important
- Consider artefacts, wall paintings and organs

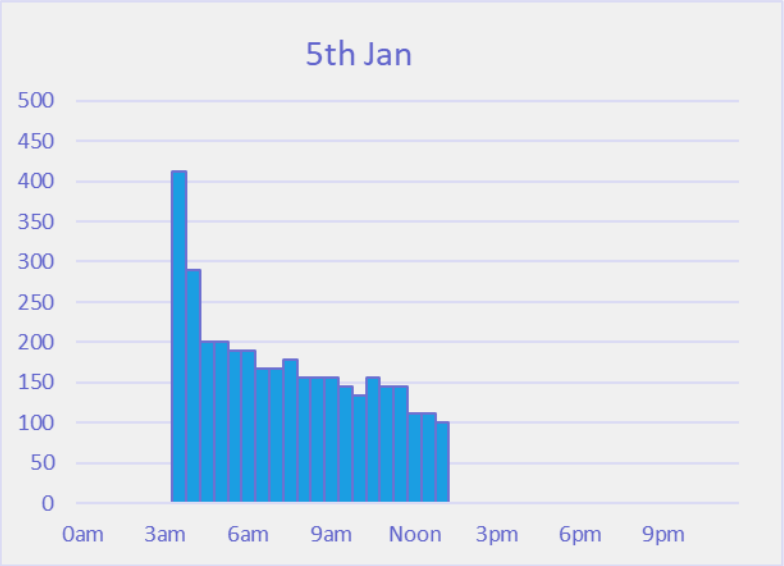


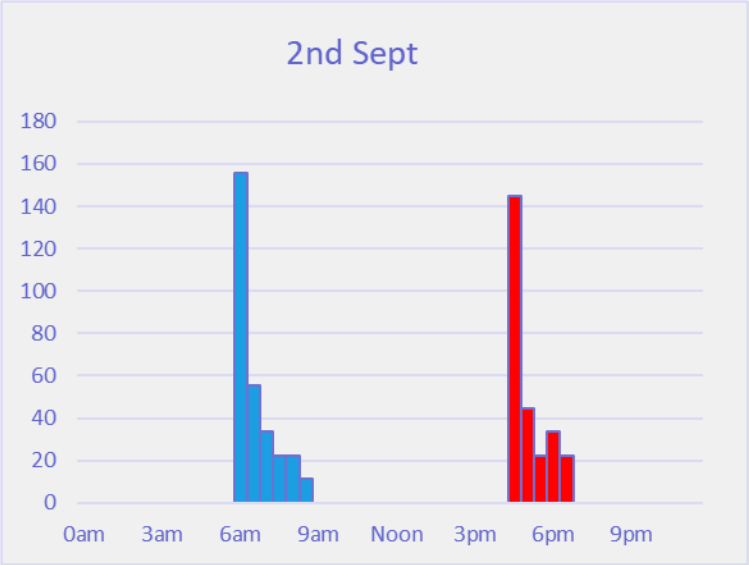
"Do not use background heating unless for the stabilisation of historic interiors"

Timers

- Hot water units and external lighting suit time clock controls
- For hot water, can simply change the wiring outlet
- External flood lighting (not security lighting), set off time no later than 11pm. Considers days of week, times of year.

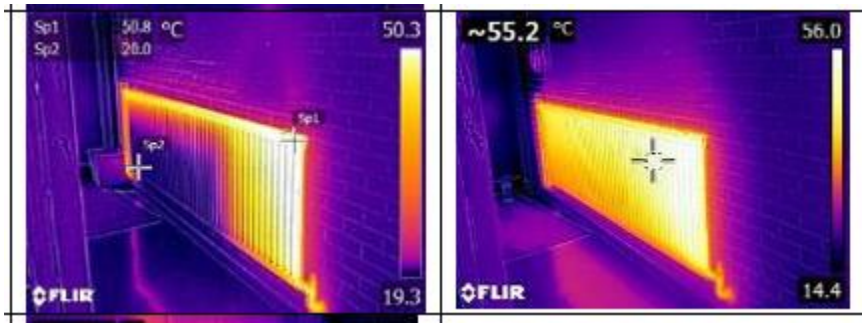
“Book End” usage

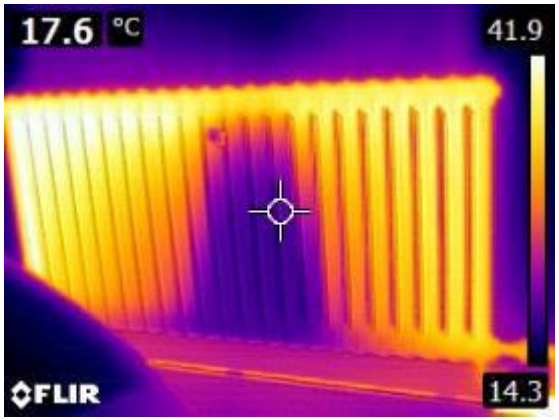


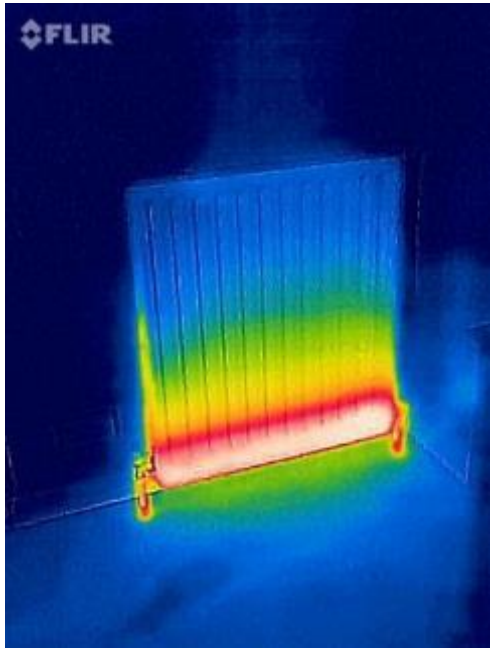


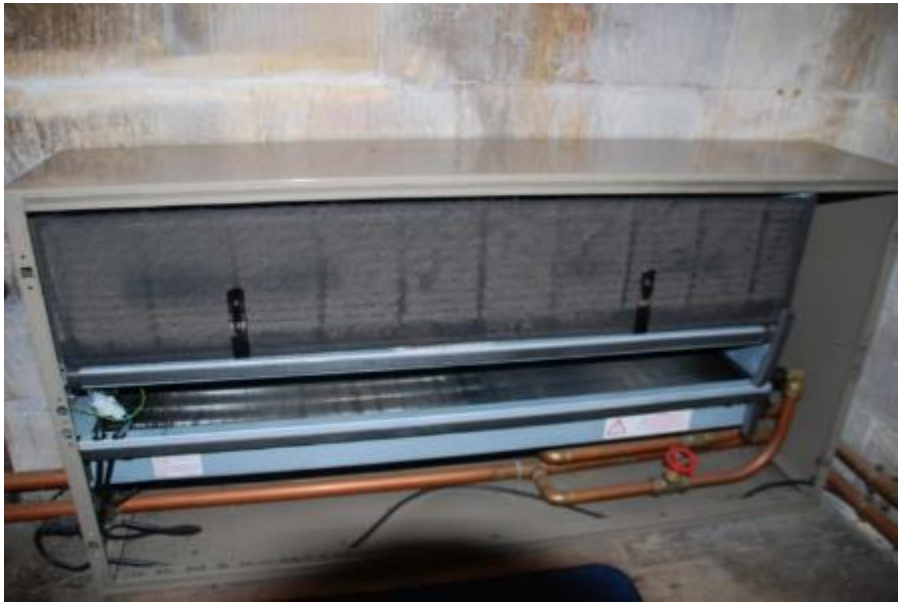
Combine usage together to avoid the warm up peak

Cleaning and Dusting!









Lagging Pipes

- Boiler rooms should not be the warmest place in the building!
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Draught Proofing

- Doors – particularly the base of doors – can be solved with a ‘sausage dog)
- Key holes – fridge magnets can be useful!
- Black plasticine around opening hopper windows

Easy to Change Lightbulbs

- PAR 38 - LED
- GLS (check base is Bayonet Cap or Edison Screw)
- Mains GU10 downlights (but not the Low Voltage MR12)

- All others can be changed but may require some level of expertise

Water Saving

- Can get free items from local water companies
- WC bags for placing into cisterns – also watch for leaks
- Kits to convert taps to low flow units

Changing Energy Costs vs Heat Pumps

	Historic	Capped	Un-capped
Elec	15p/kWh	32p/kWh	50p/kWh
Gas	3p/kWh	10p/kWh	15p/kWh
Ratio	5	3.2	3

	Coefficient of Performance (CoP)
Air-to-Air Source Heat Pump	4.5
Ground / Water Source	4
Air-to-Water Source Heat Pump	3.5
High Temperature Air to Water	2

Decarbonising (to save money)

Measure	Typical Payback (historic)	Typical Payback (new rates)
LED Lighting (include controls)	8-10 years	4-5 years
Insulate Pipework	4 to 6 years	1 to 2 years
PV Panels	9 to 11 years	4.5 to 5.5 years
Stored Hot Water to Electric Point of Use Units	6 to 16 years	2 to 6 years
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Decarbonising (to save carbon)

Measure	Typical Payback (historic)	Typical Payback (new rates)
Window Replacement	60 years +	20 years +
Heat Pumps	100 years + (if at all)	70years ++

Questions?

https://www.parishresources.org.uk/resources-for-treasurers/funding/