St Silas, Pentonville London - Grade II
Architect: Thomas Ford & Partners

Solar Energy Production on Listed Buildings

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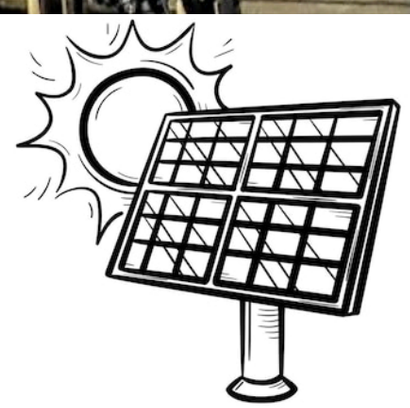
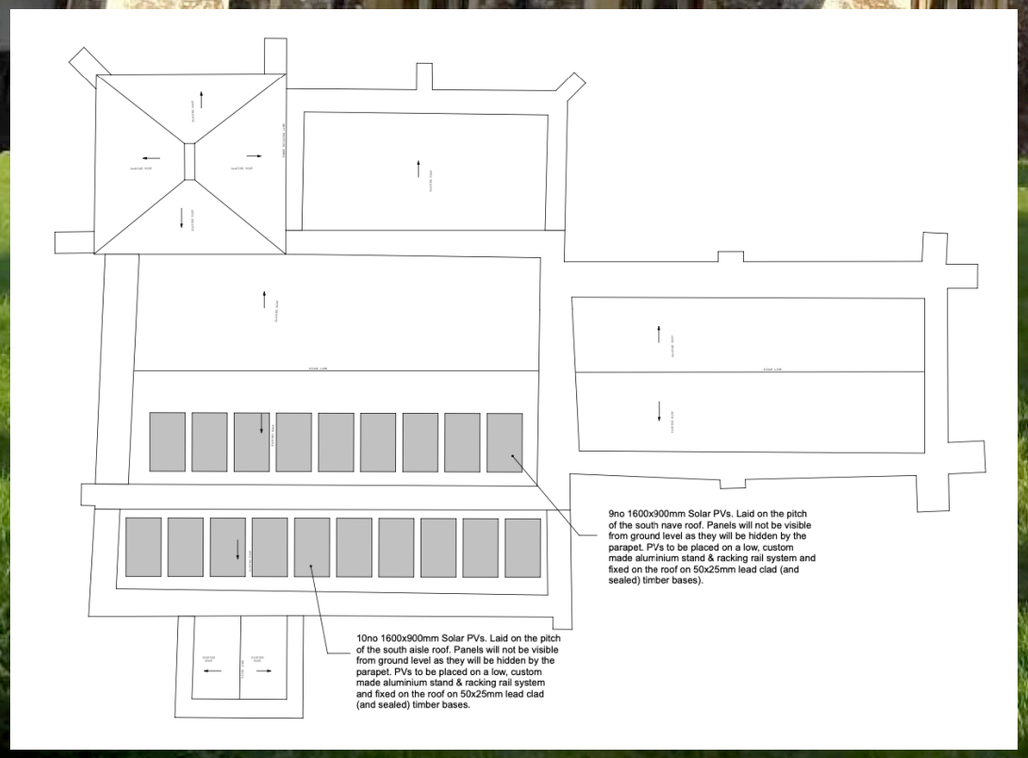
08 June 2023



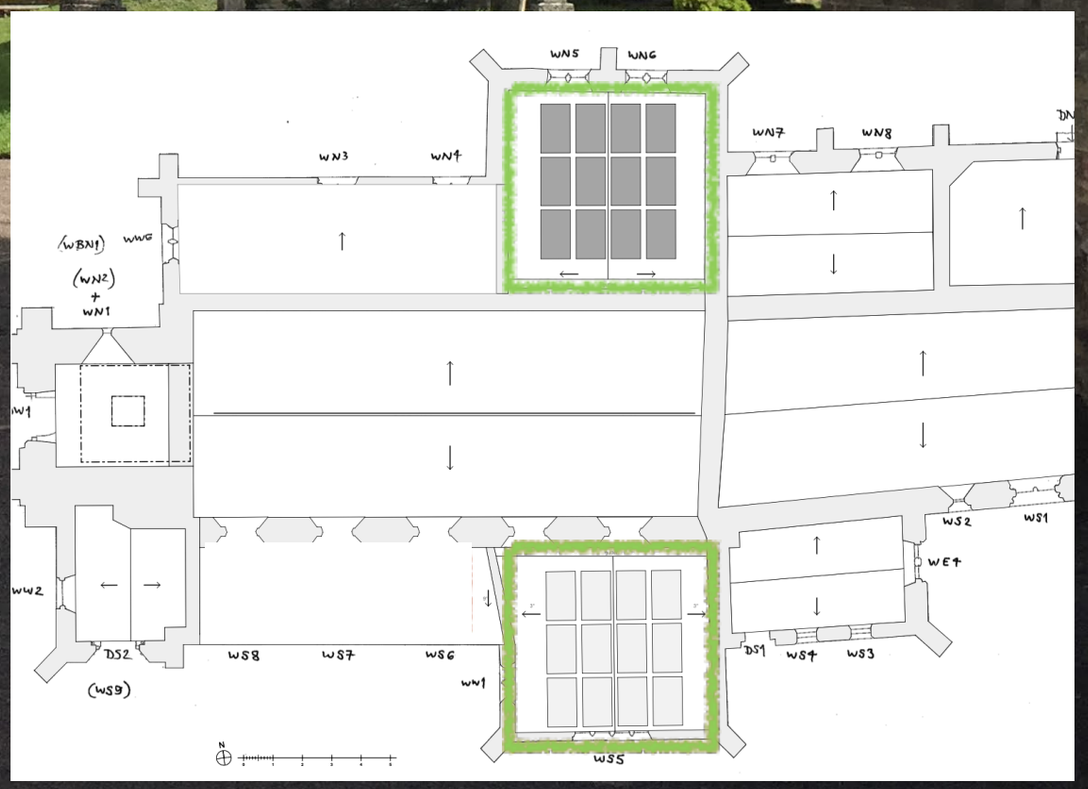
Case Study No1
St Leonard, Southoe - Grade I



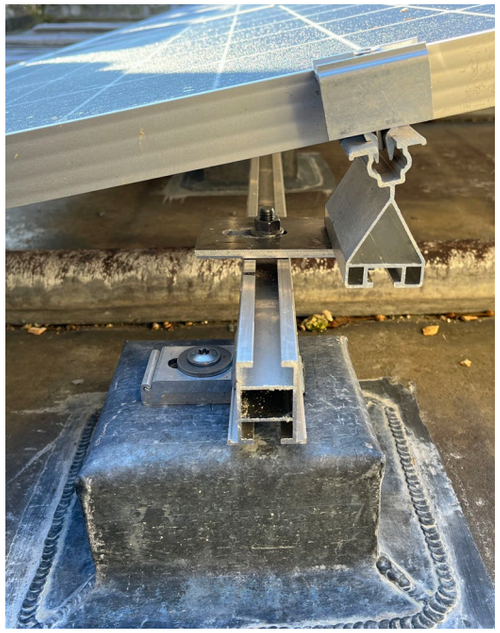
- 19 Solar PVs, on south aisle roof and south nave roof
- New heating system with ASHP
- Panels not visible from ground level, hidden from parapet
- PVs placed on a custom aluminium stand & racking rail system and fixed on 50x25mm lead clad timber bases.
- Netting under panels to protect against bird nests.

Case Study No2
St Vigor's with All Saints, Fulbourn - Grade II*

- Original discussion during 2016 re-roofing, congregation strongly against it.
- Second discussion in 2020, congregation strongly for it.
- Electrical heating internally.
- Original proposal, south aisle and south transept. Visibility concerns.
- Digital light study and on-site photo monitoring
- Approved proposal, south & north transept - 24 PVs



And now it is completed!!!



Key Steps

- Coordinated proposal for the entire building, not viewed in isolation
- Location
- Positioning
- Type & quantity of panels
- Installation methodology
- Reversible installation
- Planning Permission
- Faculty Permission
- Protection to biodiversity
- Wiring pathways
- Maintenance access

Gloucester Cathedral

Introduction

This is one of a series of short guidance notes on the technologies which can help the Church move towards net zero carbon. It has been written on a pro-bono basis by Briar Associates, on behalf of the Cathedral and Churches Buildings Division, with input from the Diocesan Environment Officers Energy Group.

Solar photovoltaics (PV) is a well-established technology which generates electricity from daylight. As they are installed 'on site', solar PV panels can make a strong statement about an organisation's commitment to reducing its carbon footprint, whilst reducing day-time electricity costs.

In simple terms systems consist of panels and inverters.

The panels can be fixed on to a roof of a building, or ground-mounted on land, and they convert the daylight that falls on the panel to electricity.

The inverters take the electricity generated from the panels and convert it, so that it can integrate with standard electricity in the grid. They are usually housed in a building such as a store or electrical distribution room.

For listed buildings and conservation areas, planning constraints may mean that panels on the church roof have to be hidden from street view. Church halls and schools are less likely to be constrained in this way, and may be able to install them under permitted development rules. Notwithstanding whether planning permission is or isn't required, faculty permission will certainly always be required.

'Clean' electricity for various uses

The electricity generated by the system can be utilised in many ways. Usually the majority is consumed by the building it is connected to, reducing the amount of electricity that the building uses (or "imports") from the national grid.

It can also be used to charge batteries for use in the evenings, when the lights and heating are on. Some churches might use the panels to part-power electric vehicle charging points in the car park.

Another potential use for *some* churches, if they have a hot water tank rather than point-of-use hot water heaters, is to use spare electricity from the panels to power an electrical water heater device, which would supply the church with hot

Solar PV systems age and a well-maintained, struc pecially when installing on or n

https://www.churchofengland.org/sites/default/files/2021-08/CCB_SolarPV_Guidance.pdf

We are in a time of change!

Churches are now pushing the envelope!

- St Matthew, Bankfoot - Diocese of Leeds - GII
- St John the Evangelist, Cutcombe - Diocese of Bath & Wells- GII*
- St Leonard, Farlington - Diocese of York - GII
- St John the Evangelist, Farsley - Diocese of Leeds - GII
- St Illogan Parish Church, Illogan - Diocese of Truro - GII

Thank you!

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