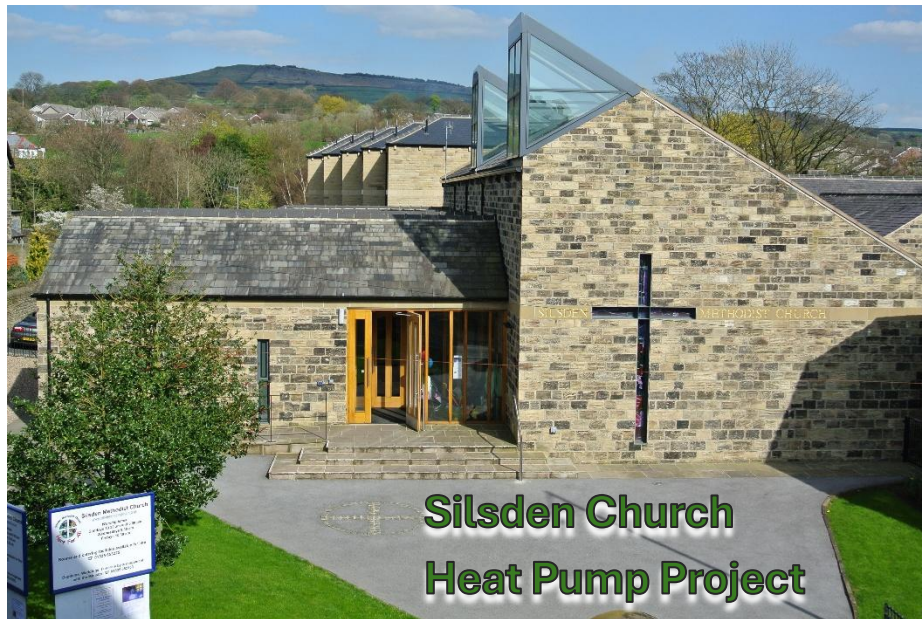


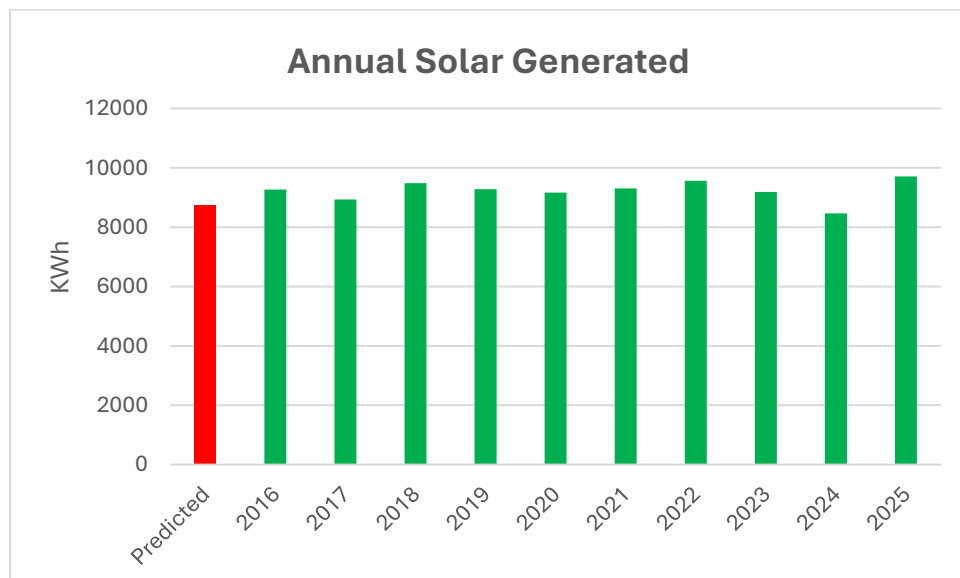
Silsden Methodist Church Towards Net Zero Project

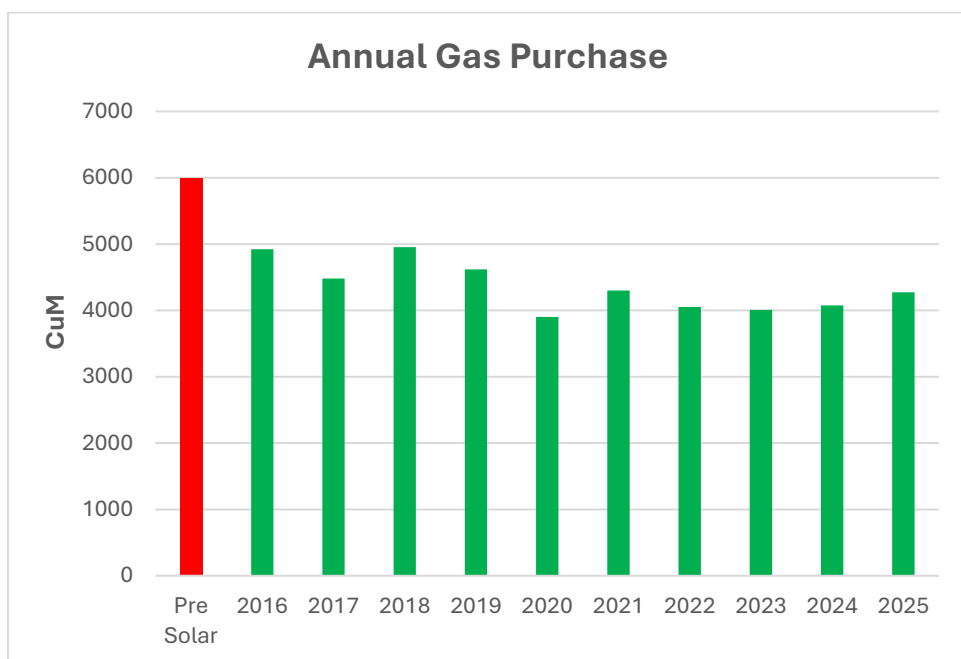
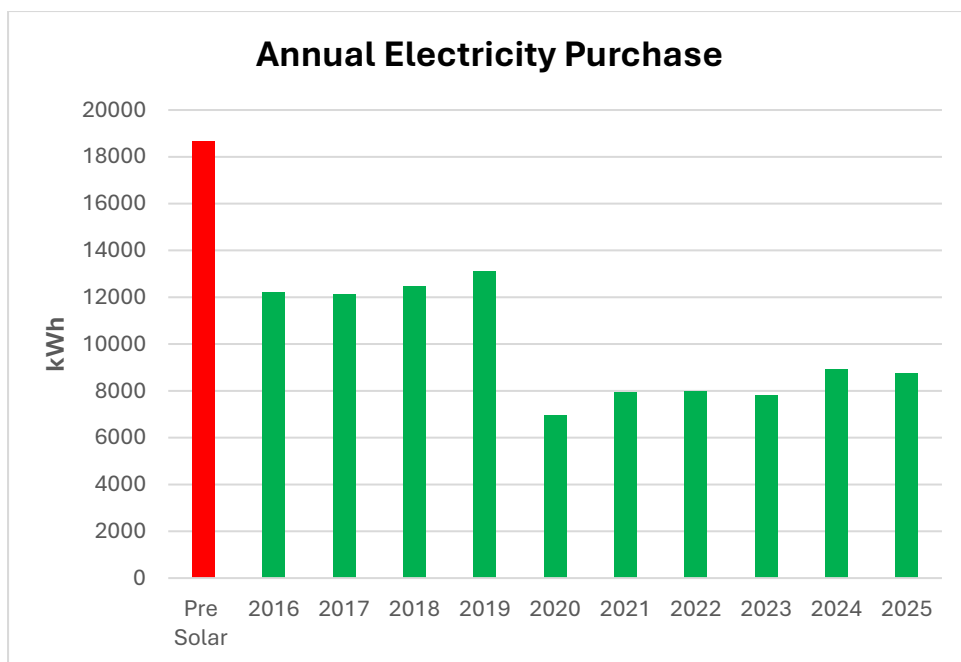


Background

The current Silsden Methodist Church in the Airedale Circuit and West Yorkshire District, was opened in September 2010. The original church building on the site was built in the 19th century but had to be demolished in the 1970s due to structural faults. The Sunday School building was then adapted to also include a worship area. Fundraising over many years resulted in the new build in 2010. The church is in a conservation area; the old Sunday School buildings were demolished and the external stone and roof slates from them were used on the new multipurpose building to keep it in character with the surrounding area.

In 2016, a 10kW solar panel system was added to the church, resulting in significant reductions in energy purchase and solar has been used as the main source of energy for the hot water requirements in the summer. Post-2020, we have also started to introduce LED lighting and be more careful in energy use, resulting in further reductions, as shown in the charts below.





In the period 2020 to 2025, we were purchasing on average 60% less electricity and 30% less gas every year than when the church was opened in 2010.

A combination of the Feed In Tariffs for solar power and the reduction in our energy purchase has resulted in us recovering the £16,000 investment for the solar panels in just under 7 years.

Heat Pump Project

In mid-2024, Silsden Methodist Church was chosen as one of the first churches in the West Yorkshire District to undergo an Energy and Carbon Efficiency Survey to identify the next steps in the goal of the Methodist Church becoming carbon neutral by 2030. The report recommended the next step as being the installation of heat pumps to replace the gas boilers.

The church building, having been erected in 2010, has a high level of insulation and underfloor heating throughout. Being a modern, flexible building in the centre of the town, it is in use every

day both for church use and other groups in the community who hire rooms. The combination of underfloor heating and heat pumps is therefore ideal.

A feasibility study was undertaken to establish likely costs and where the heat pumps could be appropriately located. Having received permission to proceed from the local Airedale Circuit Trustees and Yorkshire West District, the first step was to obtain planning permission. Planning is still required for heat pumps if they are above a certain size or more than one is to be installed; we met both of these criteria. The church being in a conservation area also meant planning permission was required as the pumps are mounted outside the building. In 2015, when we applied for planning permission for the solar panels, both the council conservation officer and some local councillors were not supportive, but the planning officer did give his approval. On this occasion, the application for the heat pumps was approved with no opposition.

By mid-2025, with planning permission in place, we had also chosen a contractor from the three who had quoted for the work. All the quotes were within a 10% range; we chose the middle quote as we felt they offered the better solution. Financing was also in place; £7,500 came from a government grant as we were replacing gas boilers, while a significant grant was received from the West Yorkshire District's Action for Hope Fund, as part of the response to the climate emergency. The Airedale Circuit and Silsden Methodist Church contributed to the balance.

In discussions with the contractor, it was decided to delay installation until early 2026 as a new range of heat pumps was to be released. The Silsden Methodist Church already holds a Gold Eco Church Award, and this project was about extending the eco credentials of the church. The new heat pumps use a more eco-friendly heat exchange gas; they are more efficient and also quieter when running so all positive from an eco-point of view.

Installation took place in April 2026 over a 2-week period. The gas boilers were removed; as the boilers were the only gas users in the church, we were also able to remove the gas meter to avoid any further standing charges. Two 13 kW Air Source Heat Pumps (ASHPs) were installed on the wall adjacent to the boiler/service room, making connection relatively easy. In the service room, a new hot water tank and buffer tank plus electrical system were installed. The water-recirculating pumps for the underfloor heating in the building were also upgraded.

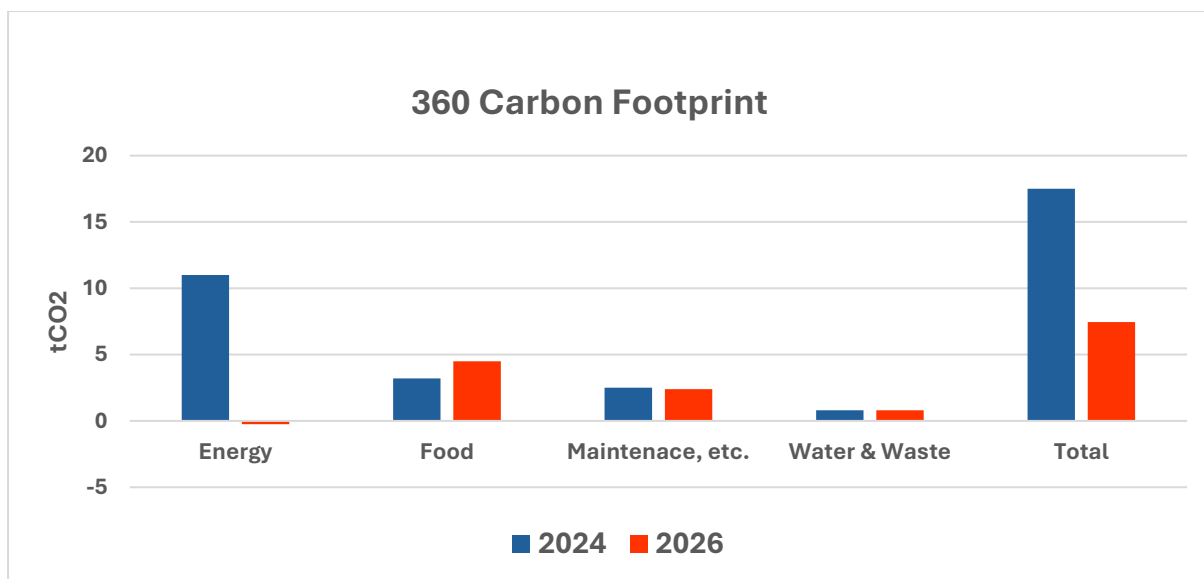
The ASHPs are installed external to the building and are adjacent to the car parking area around the church; plus, we know children play on bikes and skateboard in the car park. As the ASHPs are a very significant investment, we decided to protect them with a fence. CCTV has also been installed as a deterrent as there has been some low-level vandalism in the past.

Heat Pump Pictures below

The ASHPs are now fully operational, providing hot water and the underfloor heating. As we are entering the summer months, it is going to be sometime, at least 12 months, before we see the full effects of the change.

We are also in the process of changing our energy supplier to one with a 100% renewable tariff.

360 Carbon Footprint evaluations were done in 2024 based on data collected over several years prior to 2024. We have also done a predicted evaluation, 2026, on what the footprint should be post-installation of the ASHPs. We will only be able to confirm that after a minimum of 12 months' operation.



The energy element of the evaluation has reduced from 11.09 tCO₂ to -243kgCO₂. There has been an increase in the food element as we have a new group - Mainly Men - which serves a hot meal once a month. Overall, our CO₂ emissions are predicted to fall from 17.61 tCO₂ to 7.41 tCO₂, a circa 60% reduction.

The church has an estimated annual footfall of 33,500 and is in use for an estimated 5,100 hours per year, giving the following data.

	Footfall	Hours
	gCO ₂ /visit	KgCO ₂ /hour
2024	590	3.8
2026	384	2.5
Reduction	35%	34%

Early results from the first two months of operation have shown a 40% drop in our electricity purchase when historically, in the summer months, electric immersion heaters were used to heat the hot water. That heat is now being supplied by the heat pumps, and they are achieving a COP of 4.5 (for every 1kW of energy put in they produce 4.5kW of heat)

Main Contractor - Fervo Renewable Energy Ltd

Heat Pump Supplier - Stiebel Eltron

This report will be updated when we have 12 months operating experience

William Jowitt
Property Lead Silsden Methodist Church

04.07.2026



The two Stiebel Eltron Heat Pumps
(before final fitting of the
insulation and condensate
pipework)



On the left Underfloor Heating
Buffer Tank
On the right Hot Water Tank
(Pipework before insulation fitted)