# Case Study: Horsham Parish Energy Efficiency Project

This case study is to aid parishes exploring ideas to reduce energy consumption costs / carbon emissions. It is also helpful for potential donors /fundraising who want to know the effectiveness of smart thermostat technology in reducing energy consumption and carbon emissions.

# Background

Horsham Parish, with an annual energy consumption of 381,000 kWh and a carbon footprint of 72.7 tonnes in 2022, initiated a project to reduce energy consumption and carbon emissions across its five buildings. The parish faced challenges with outdated gas boiler heating systems and anticipated significant increases in energy costs.

# Project Overview

The project focused on installing Nest learning thermostats to optimize heating efficiency. A pilot study in the new Bethany extension of St Mary's Church in 2023 demonstrated a 10% reduction in gas consumption over four months, prompting a wider rollout to other parish buildings.

# Implementation

* 5 Nest thermostats installed across parish buildings
* 2 additional installations planned
* Remote control capability via smartphone app for staff and volunteers
* Installation work performed by parish members, minimizing costs

# Results

* Overall reduction in gas usage across all locations
* St Mary's Church nave: 20% reduction in gas consumption
* Improved visibility and control of heating systems
* Estimated annual savings: 7 tCO2e (34,232.4 kWh)

# Challenges and Solutions

1. Old thermostat controls: Addressed issues with solenoids in different heat zones
2. Complex boiler systems: Some installations required additional learning and adaptation
3. Existing equipment issues: Addressed leaks and maintenance needs before installation

# Key Benefits

* + Significant reduction in energy consumption and carbon emissions
  + Cost savings on energy bills
  + Improved comfort and ease of use for building occupants
  + Enhanced control and monitoring capabilities
  + Minimal additional outlay due to in-house installation

# Future Plans

* + Complete installation of remaining thermostats
  + Continue monitoring and optimizing energy usage
  + Explore further energy-efficient upgrades to achieve carbon footprint reduction goals

The project's success highlights the potential for significant environmental and financial benefits with relatively low-cost interventions across the diocese.