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 The parish faced challenges with outdated gas boiler heating systems and anticipated significant increases in energy costs.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 tCO_2e (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.