Cost-Saving Analysis of Implementing Three Hive Units for Southwell Town Council - Old Court House, Burgage NG250EP

Agenda item 123.

Executive Summary

This report presents an analysis of the cost savings achieved by installing three Hive units to manage heating at The Old Court House facility over one year. By leveraging Hive's smart thermostatic control, the business benefits from automated temperature regulation, enhanced energy efficiency, and optimized power usage. This analysis estimates potential cost savings, calculates the return on investment (ROI), and offers recommendations based on projected energy consumption reductions and financial outcomes.

Project Overview

- **Location**: The Old Court House
- **Size of Premises**: Approximately 660sqm
- **Current System**: Centralized heating with programmable thermostats
- **Units Installed**: Three Hive units, integrated with existing system
- **Installation Cost**: £740 Inc Units
- **Operational Goal**: Reduce annual energy consumption and associated costs through intelligent control and automation.

1. Baseline Costs Without Hive Units

Before installing the Hive units, the baseline cost analysis for the Central Heating system was as follows:

Average Monthly Energy Consumption: 3077 kWh

- **Annual Central Heating Operational Cost**: £2896 (based on £0.75 per kWh and historical consumption data)
- **Percentage of Total Energy Consumption Attributable to Central Heating**: Approximately 100%

2. Estimated Cost Savings with Hive Units

Key Savings Factors:

- **Smart Temperature Regulation**: Hive units dynamically adjust temperatures based on occupancy and usage patterns, reducing unnecessary energy use.
- **Energy Efficiency Optimization**: Through predictive analytics, Hive units reduce peak energy demands, optimizing Central Heating operation during non-peak hours.
- **Remote Management**: Enables Central Heating control adjustments based on real-time data, further minimizing waste.

Projected Savings Breakdown:

- **Reduced Energy Consumption**: Estimated reduction of 10-20% in CENTRAL HEATING-related energy use, resulting in annual savings of approximately 7384 kWh.
- **Reduced Utility Costs**: Based on the projected energy reduction, annual Central Heating operational costs are expected to decrease from £2896 Total without Hive to £2316.80 Total with Hive.

Category	**Without Hive Units**	**With Hive Units**	**Savings**
Annual Energy Usage (kWh)	36924 kWh	29540 kWh	7384 kWh (20%)
Annual Cost £2896	Total without Hive	£2316.80 Total with Hive	£579.20 Annual Savings

3. Return on Investment (ROI)

To assess the financial viability of this installation, we calculate the ROI based on total installation costs versus annual savings.

- **Total Installation Cost**: £740 Total Installation Cost for 3 Hive Units
- **Annual Cost Savings**: £ 579.20 Annual Savings
- **ROI Calculation**: (Annual Savings / Installation Cost) × 100

With projected annual savings of £579.20 Annual Savings and installation costs of £740 Total Installation Cost, the ROI is approximately 78.2 ROI%. This indicates that the cost of Hive installation can be recouped in approximately 13 months.

4. Additional Benefits

- **Improved Operational Efficiency**: Reduced manual adjustments and automated temperature control save staff time and improve comfort.
- **Sustainability**: Reduced energy consumption contributes to environmental goals, aligning with corporate sustainability objectives.

5. Recommendations

1. **Monitoring**: Regularly track energy savings to validate the effectiveness of Hive units. Adjust settings if actual savings differ significantly from projections.
2. **Employee Training**: Train facility managers on optimal Hive settings and remote-control capabilities to ensure maximum savings.
3. **Consider Additional Units**: If the installation proves successful, additional units in other sections of the building may further increase energy savings.

Conclusion

The installation of three Hive units presents a promising opportunity for reducing annual Central Heating -related expenses by approximately 20% at The Old Court House. With a payback period of under 13 months and notable environmental benefits, this investment aligns with the Council's financial and sustainability goals, enhancing operational efficiency over time.

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