

# Energy Efficiency Scheme Project Proposal

09 February 2021

## Portishead Town & Parish Council – 3 Sites

North Weston Village Hall  
The Folk Hall  
Redcliffe Bay Hall

**The Energy Service**  
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**ENERGY  
SERVICE  
BRISTOL**

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# 1. Survey Results

## Measure 1: LED

The LED survey undertaken by the specialist lighting contractor, highlighted an upgrade to LED isn't a viable energy efficiency measure for these sites. 2 of the sites have already had LED installed and the other site had low energy lighting in place.



Measure Summary	
Projected Measure Cost	N/A
Current Lighting Annual Cost	N/A
New Lighting Annual Cost	N/A
Annual Saving	N/A
Payback Period (Years)	N/A
Annual Carbon Savings (Kg of CO2)	N/A

## Measure 2: Heating Controls

### **North Weston Village Hall:**

The site heating and DHW is provided by a single Worcester Greenstar Highflow 440 combi boiler located at the floor level in the kitchen area, under the worktop. It has a built-in timeclock, but this is not in use as the caretaker informs us it is broken.

To combat the lack of timeclock the caretaker sets the stat to its lowest setting after events finish and turns the stat up again before events start. The boiler water temperatures are also set low which will help improve their efficiency of operation, this also implies that the radiators in the hall do a good job of warming the space.



There is a ventilation system in the roof space, this was not investigated as it is never used. In summer months the skylight windows are opened to provide airflow/cooling.

Details of proposed works:

1. Replacement of the timeclock scheduled control of the boiler.
2. Installation of a Nest intelligent thermostat providing smart control of temperature, time scheduling and app control when WIFI connection is made available at the site. The old thermostat will be removed and the wiring repurposed as a power supply for the Google Nest Thermostat. The Google Heat Link module will be installed near to the boiler to provide the enable control signal and send power to the stat. A time schedule can then be programmed into the Nest as well as the setback temperature.

### **Redcliffe Bay Hall:**

Redcliffe Bay Hall currently has a very basic timeclock and room thermostat control for its two heating zones. These are running 24 hours a day every day of the week. This is in part due to the demands of the snooker table in the lower level requiring a minimum temperature be maintained to prevent damage.

This is relatively wasteful and provides no weather compensation, automatic set back, or time schedule for the hall heating zone which does not require 24-hour heating.

There is a single Valliant ecoTEC plus 831 combi boiler that provides heating to the whole site and DHW to the upper level. Control is provided by an iflo dual-system timeclock, but this is set up to control a second heating zone for the snooker room instead of the DHW. The two heating zones are controlled by the timeclock via on/off valves, one serving the upper level and the other the lower level.

Each level has a single thermostat which is set by the users and caretaker. Discussion with the caretaker revealed that to protect the snooker table, the heating for the lower level must be on 24/7 to 13°C. The caretaker also mentioned that the site suffers with condensation inside the hall which creates a slip hazard if the heating is not on in the upper level.

The DHW is on 24/7 and during the visit it was observed the timeclock was also overridden to be permanently on for both zones. The DHW in the lower level is provided by a single demand controlled electric heater.

Details of proposed works:

1. Replacement of current electromechanical timeclock and stats control with two modern Smart Thermostats, capable of presence detection for temperature setback and time scheduling. These would provide more accurate control of the heating in both areas and can automatically respond to use within the halls. If the site can provide a WIFI internet connection then this will provide weather compensation and the ability to remotely control the settings via an app or Desktop/Laptop computer with internet connection.



### The Folk Hall:

The Folk Hall and Portishead Town Council offices currently have timeclock control of a dual domestic boiler setup providing heating and the majority of DHW. The system meets the sites needs as there are neither under-heated nor over-heated spaces, but this is only as there is a caretaker on site to manually intervene and because the heating is currently warming the space to usable temperature even when the hall is not in use.

Significant improvements to the control of the heating could be made by the upgrade from a basic electromechanical timeclock & thermostat system to a modern smart thermostat such as the Google Nest. This would provide a temperature setback for periods of unoccupancy which it can determine using its presence detection capabilities and its ability to learn occupation patterns, as well as an easily accessible timetabling system via the Nest app which would use the site's pre-existing WIFI connection. This remote connection importantly allows the caretaker and other council staff to manage the system far more effectively and the room unit also gives users a clear indication of the temperature and the set-point which can significantly reduce user abuse of the heating controls.

A new smart thermostat would be installed for each of the three zones in the building.

#### Details of Proposed Works:

1. Determining of the two zones fed by the first-floor boiler
2. Installation of three Nest intelligent thermostats providing smart control of temperature, time scheduling and app or Laptop/PC control under the provision of WIFI access. The Google Heat Link modules will be installed near to the relevant boiler to provide the enable control signal. There will be one smart thermostat per zone, either installed where the pre-existing electromechanical stat wiring exists or on a movable stand and powered via a wall socket.

Measure Summary	
Projected Project Cost	£2,900.00
Total Annual Saving	£822.00
Payback Period (Years)	3.5



### **Measure 3: Insulation**



Insulating your plant room with pipework lagging and hard wearing removable insulation covers reduces wasteful heat loss. Reducing heat loss improves the efficiency of the system, reducing the amount of energy consumed. This reduces the organisational carbon footprint, burning less fossil fuel to achieve the same internal comfort conditions. It also Meets & Exceeds the Health and Safety “Touch Safe” Rating, providing a safer working environment for staff.

Our specialist insulation contractor visited site and concluded that there wasn't a requirement to increase the level of insulation in this building.

#### **Report Findings:**

##### **North Weston Village Hall:**

Cavity Wall Insulation:	Cavity Wall. Insulated as built with full fill fibre batt insulation.
Loft Insulation:	No Loft in Main Hall. Porch Area Insulation with Thermal Board.
Boiler Room Insulation:	No Valves Requiring Insulation

##### **Redcliffe Bay Hall:**

Cavity Wall Insulation:	Cavity Wall. Insulated as built with full fill fibre batt insulation.
Loft Insulation:	200mm Loft Roll Existing – None Required.
Boiler Room Insulation:	No Valves Requiring Insulation
Pipework Insulation:	No Pipework Requiring Insulation.

##### **The Folk Hall:**

Cavity Wall Insulation:	Solid Wall – No Cavity
Loft Insulation:	200mm Loft Roll Existing – None Required.
Boiler Room Insulation:	No Valves Requiring Insulation
Pipework Insulation:	Opportunity for Pipework Insulation



Measure Summary	
Projected Project Cost	£579.00
Annual Saving	£130.00
Payback Period (Years)	4.5

## 2. Financial Summary

**Table 1**

Year	LED savings	Insulation Savings	BMS Savings	Draught Savings	Total Annual Savings	Repayment schedule	Yearly net saving	Accumulative project savings
Year 1	£0.00	£130.00	£821.94	£0.00	£951.94	-£951.94	£0.00	£0.00
Year 2	£0.00	£130.00	£846.60	£0.00	£976.60	-£951.94	£24.66	£24.66
Year 3	£0.00	£133.90	£872.00	£0.00	£1,005.90	-£951.94	£53.96	£78.61
Year 4	£0.00	£137.92	£898.16	£0.00	£1,036.07	-£951.94	£84.13	£162.75
Year 5	£0.00	£142.05	£925.10	£0.00	£1,067.16	-£951.94	£115.22	£277.96
Year 6	£0.00	£146.32	£952.85	£0.00	£1,099.17	-£951.94	£147.23	£425.19
Year 7	£0.00	£150.71	£981.44	£0.00	£1,132.14	-£951.94	£180.20	£605.40
Year 8	£0.00	£155.23	£1,010.88	£0.00	£1,166.11	-£463.32	£702.79	£1,308.19
Year 9	£0.00	£159.88	£1,041.21	£0.00	£1,201.09	£0.00	£1,201.09	£2,509.28
<b>Year 10</b>	<b>£0.00</b>	<b>£164.68</b>	<b>£1,072.45</b>	<b>£0.00</b>	<b>£1,237.13</b>	<b>£0.00</b>	<b>£1,237.13</b>	<b>£3,746.40</b>
Year 11	£0.00	£169.62	£1,104.62	£0.00	£1,274.24	£0.00	£1,274.24	£5,020.64
Year 12	£0.00	£174.71	£1,137.76	£0.00	£1,312.47	£0.00	£1,312.47	£6,333.11
Year 13	£0.00	£179.95	£1,171.89	£0.00	£1,351.84	£0.00	£1,351.84	£7,684.95
Year 14	£0.00	£185.35	£1,207.05	£0.00	£1,392.40	£0.00	£1,392.40	£9,077.35
Year 15	£0.00	£190.91	£1,243.26	£0.00	£1,434.17	£0.00	£1,434.17	£10,511.51
Year 16	£0.00	£196.64	£1,280.56	£0.00	£1,477.19	£0.00	£1,477.19	£11,988.71
Year 17	£0.00	£202.54	£1,318.97	£0.00	£1,521.51	£0.00	£1,521.51	£13,510.21
Year 18	£0.00	£208.61	£1,358.54	£0.00	£1,567.15	£0.00	£1,567.15	£15,077.37
Year 19	£0.00	£214.87	£1,399.30	£0.00	£1,614.17	£0.00	£1,614.17	£16,691.54
<b>Year 20</b>	<b>£0.00</b>	<b>£221.32</b>	<b>£1,441.28</b>	<b>£0.00</b>	<b>£1,662.59</b>	<b>£0.00</b>	<b>£1,662.59</b>	<b>£18,354.13</b>

As displayed in Table 2 above, the repayment schedule will be fixed with a 0% Salix loan. Over time, the value of the savings increases as energy prices rise. This shows how the measures will make the site more resilient to these changes and improve energy security.

After the loan period, the site will be in direct receipt of 100% of the energy savings created by the project. As can be seen in Table 1 above, this starts to become highly significant. By year 10, the site will have cumulatively save **£3,746.00**, and after 20 years the site would have saved **£18,354.13** including the repayment of the project. To maximise these savings, it is the recommendation to proceed with all the proposed measures.



### 3. Professional Services

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The council's Energy Service will provide all the required services to deliver the energy efficiency measures at the site. The cost of this service is met by a 10% charge on top of the technical cost for the measures. This 10% charge is included within the Salix loan and paid out of the energy savings and will be factored into repayment calculations upfront for transparency.

The services can be broken down into three areas:

**Procurement** – The Energy Service will use its expertise in energy efficiency to create a specification for the measures at the site. We will engage with the market to ensure that the equipment and contractor provides good value for money and meets the required standards for operation at your site.

**Finance** – The Energy Service will use the information from your survey to build a viable energy efficiency project for the site. We will provide technical checks to the savings calculations and write a business case to Salix Finance to secure project financing. Salix is a government organisation created to increase the uptake of energy efficiency in the public sector by offering 0% finance. It is recommended to use this route, allowing for reserves to be saved for urgent and critical items.

**Delivery** – The Energy Service will create, arrange and manage a works contract with the provider of each measure. The Energy Service will appoint a dedicated Contracts Manager for the project who will ensure that a safe working site is maintained at all times. We will liaise with you to ensure that the project requirements are met and that the works do not result in disruption to normal business operation.





## 4. Why use the Energy Service?

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The Corporate Energy Efficiency Scheme has been designed so that all the services and support required to successfully deliver the energy efficiency measures suggested are on offer. As such we recommend using our service for a speedy and reliable project delivery – ensuring you maximise savings long into the future.

However, we understand that the council want to ensure that it makes the right choices regarding the delivery of this project. The Energy Service has a number of unique advantages that will give the school the confidence it is making the right choice:

**Expertise** – The Energy Service has delivered over £1m of LED lighting projects, £5m of insulation and has undertaken Building Management System (BMS) upgrades in the majority of our core buildings – saving us millions on our annual energy bills. As a result of this, we know the problems that can occur in these types of projects and how to mitigate them. We know the difference between a good quality product and what is required from a reputable installer. Our internal expertise will help mitigate risk and ensure a quality project is delivered at the site, ensuring energy savings long into the future.

**Value for money** – As we are engaging the market for a large number of energy efficiency projects across the region, the Energy Service has access to economies of scale, but also to a diverse supply chain. Our assessments of the market will always be impartial, transparent and have your best interests at heart.

**Assurances** – The energy efficiency marketplace can be rife with potential pitfalls, with a large number of cheap, poor quality products. Identifying good value but of a sufficient standard can be quite tricky. The Energy Service would use its experience to ensure good quality products and a competent installer through the creation of a robust specification. This would be in the contract and backed by insurance so if there are any issues the council have a contractual route through the Energy Service to resolve problems. The works contract and the professional services contract between the energy service and the council will provide assurances that the risks associated with delivering the works and ensuring long term energy savings, are mitigated.



## 5. Next Steps - Contract

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The next step in the process is to sign the Professional Services Contract with the energy service.

This agreement describes the services that will be provided to the site and will be the main legal agreement between the council and the energy service.

Please see attached this agreement attached in the email sent from the Energy Service, which will have been provided along with this report.

Upon signing the contract, the Energy Service will begin to work on the procurement of your measures along with other sites in your cluster. Some measures may take longer to complete than others due to complexity, availability, demand, etc. Following this, the Energy Service will work with the council to arrange a suitable time to arrange the work to commence.

It is the aim to have all measures complete within 9 months of the signing of the contract.

If you have any questions, please contact either your Account Manager, David Cox ([David.cox@bristol.gov.uk](mailto:David.cox@bristol.gov.uk), 07917720567) or the Scheme Manager, Freddie Collins ([Freddie.collins@bristol.gov.uk](mailto:Freddie.collins@bristol.gov.uk), 07585909015).

