



Church Hall Gawsworth

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Contents	Proposals for Infra-red, LED, and insulation

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Summary of opportunities

The brief was to introduce cost-cutting measures that could save money in the operation of the church hall. We were also informed that there were concerns over the efficiency of the current heating system. The following proposals address the brief by providing a cost efficient solution to lighting, heating and retaining heat at the church hall. Attention has been paid to both the response time when demanding heat and the ongoing running costs. We have also planned for an even thermal distribution across the main room space.

As with any heating proposal we would always look to ensure that any new heat is retained within the property as efficiently as possible, to this end we have also provided details on building insulation for the loft space.

To further mitigate building running costs we had also looked at the lighting for the building and this is addressed in the LED section.

These measures should offer noticeable savings in the day-to-day operation of the hall.

Loft insulation

Insulation is always the first area to look at when increasing efficiency in a building with regards to heating. It is important to retain any existing heat as it minimises what you need to generate. On initial inspection the loft space is empty space with no insulation deployed within. It is our proposal to supply and install one of two options. Option 1 will see 170mm thick insulation installed and option 2 will see 200mm insulation installed

Loft insulation	Cost
Loft insulation option 1 170mm deep	£229.00 plus VAT
Loft insulation option 2 200mm deep	£266.00 plus VAT
Installation	£200.00 plus VAT

DAVE Skeels 07917 785 868



Infra-red heating

Infra-red heating has a number of key benefits which is making it an extremely popular option for modern heating requirements in any environment from offices to warehouses to halls.

By deploying it within the hall it will enable you to heat the space:

1. Quickly and responsively. Rather than wasting money heating the hall when it's not needed infrared can be turned on shortly before any activity and will directly heat the people and fabric of the hall making it more responsive
2. Efficiently. Normal convection heating relies on heating the air which then rises up to the roof. This means you have to heat spaces from the top down which is very wasteful, especially in high-ceilinged rooms. Infrared is a direct downward heat that directly warms the people and fabric of the room first and the air second.

This will enable you to use less energy as well as eliminating any complaints about being too cold.

As a general rule these are some of the benefits attributed to infra-red:

- Far Infrared Heating is 100% natural for our bodies and our well-being. Unlike more traditional heating methods which merely heat the air in a room it works on the basis of gentle, long-wave infrared which penetrates the air and heats solids. The best way to describe it is like the effect of being warmed by sunshine.
- Far Infrared heating does not heat air but the fabric of the building and the items and people it comes into contact with. The fabric of the building can retain heat for longer, creating better thermal comfort, so your property will ultimately be warmer.
- Far infrared heating is ideal for both internal and external applications
- There is less damp and mould because infrared heating warms walls and keeps them dry.
- Reduced energy use. Experience shows that a sufficiently insulated building fitted with infrared systems and controls can expect significant reductions in energy usage.
- Almost 100% of the electrical energy used by Infrared heaters is converted into heat. Compared with other gas oil or electric solutions, Infrared heating saves between 30 – 60% of the annual energy usage.
- Zoned heating is more efficient with infrared. Not only do you not have to waste money heating the air in areas and rooms that aren't used but it is quick to work so rooms can be heated swiftly
- Far Infrared heaters require no maintenance or servicing. Our heaters use solid state elements unlike water-based heating or fan-assisted systems, which often require servicing, inspection and repair costs.
- Far Infrared heating is completely free of all carbon emissions. When used with electricity produced either by wind or solar generated electrical energy, is one of the only heating systems that can truly claim to be 100% carbon free.



As requested we have reviewed your site and can confirm that infra-red is a suitable technology for deployment.

Given that the space of circa 60m² is fully enclosed, with a loft space above the manufacturer has specified a minimum heat generation of 50-60 watts/m². Based on this we are looking at an overall heat requirement of c.3030 watts.

The UK manufacturer recommends 12* 280w panels affixed to the ceiling pointing down to the floor. This will compensate for the room being at a lower than desired temperature and allow for faster warm up times if the room is not used continuously.

This specification is around 1/3 of the electrical load of the existing heating solution, i.e. electrical convected heat.

Infra red heating	Cost
12 x 280w Flat panel heaters	£1620.00 plus VAT*
12 fixing kits	£132.00 plus VAT*
Optional slide on cover	£43.00 plus VAT (each)
Thermostatic control	£58.00 plus VAT
Installation inc board and cable	£1530.00 plus VAT
1 x delivery	£12.00 plus VAT

LED Lighting

The site currently has the older style 6ft fluorescent T8 lighting tubes deployed as such the running costs are elevated when compared with the new modern LED units.

Our proposal is to swap out the 6ft linear T8 units for LED equivalents to provide a running cost saving of **51%**. Not only will there be savings of **51%** the maintenance will reduce significantly too. We also propose to install a new LED flood light with PIR motion sensor above the main entrance door too.

There are a number of smaller lamps on site, notably in the toilets and externally to the "carriage style" lights. Although LED would benefit these units and there will be a reduction in running cost it will be small due to the existing lamps being energy savers. As the brief was to reduce cost we feel that on the small lamps the return will be small and elongated, however should you wish to improve light levels and cut maintenance cost LED is absolutely the way forwards.



LED lighting	Cost
8 x Twin replacement LED units	£518.00 plus VAT
LED flood light with PIR	£25.87 plus VAT
Installation	£270.00 plus VAT*

*The installation cost is correct when ordered with the IR heating.

Summary

Gawsworth Hall has three excellent and relatively low-cost opportunities to reduce energy used in heating and lighting going forwards.

As additional benefits these systems will reduce ongoing maintenance and improve any lighting or heating issues that may have been experienced in the past.

The new lighting options would demonstrate savings of over 50% in running costs and, although it's harder to quantify, we would hope for similar levels of savings in the heating.

To enquire further or to place an order please contact Dave on 07917 785868 or Steve on 07540 123588.



Background

Complete ECO are an independent energy management specialist offering a wide range of solutions for both cost and carbon reduction. We assess the opportunities, report back to you and arrange for quotes from our network of trusted suppliers and installers.

We bring a clear, straight forward and honest approach to renewable and energy saving technologies providing details on potential costs and projected savings together with funding options.

Our proposition

1. Free survey
2. Market leading Products
3. Instant electrical savings
4. Instant carbon savings
5. Long term manufacturer's warranties
6. Hassle free supply and installation
7. Detailed provision of all financials
8. Purchased or assisted purchase

Do you know every opportunity you have to reduce your energy bills?

We have spent years developing an understanding of a vast range of technologies from solar PV to infra-red heating and some you may not have even heard of such as magnetic fuel conditioning. We can assess your site for all possible opportunities and report back on costs and savings.

Through our extensive network of supply and installation providers we then find the best fit for any given requirement in terms of price, experience, size and approach. This means we can help you tackle any job from large scale to domestic and use the appropriate qualified specialists in that area.

What does all this mean for our clients?

Put simply:

- Independent advice based on a wide experience of the market
- Reliable, optimum solutions carried out by qualified experts at competitive prices

Regards

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