



Energy Saving Recommendations Report

for

The Rug Shed Limited

June 2019

Survey of The Rug Shed Showroom



European Union

European Regional Development Fund

OXFORD
BROOKES
UNIVERSITY



Bioregional

Cherwell
DISTRICT COUNCIL
NORTH OXFORDSHIRE

ORGANISATION OVERVIEW

Report overview

EiE carried out a site visit and met with Tamsin. All recommendations in this report are based on information and observations obtained prior to and during the site visit and information subsequently provided. The report is set out in order of recommended priority based on ease of implementation, carbon impact, cost and factors discussed on site.

Client details

Organisation name	The Rug Shed Limited	3 Reading Road Henley on Thames RG9 1AB
Contact name	Usman Afzal	info@therugshed.co.uk 01491 413321
Date of site visit	17/06/2019	Carried out by M Esvelt

Energy savings recommendations - summary

Below is a summary of the opportunities recommended in this report. Costs and savings have been estimated using available information; an explanation is provided in detail for each opportunity. Estimations have been made based on energy data provided.

Opportunity	Savings (kWh / yr)	Savings (£ / yr)	Cost (£)	Initial Payback (yrs)	Carbon Impact (tCO ₂ e / yr)
Review energy rates to ensure competitive prices	0	1,157	250	0.22	0
Upgrade lighting to LEDs	3,744	936	2,700	2.88	1.06
Control window lights	468	117	250	2.14	0.13
Manage heating and hot water	0	0	0	-	0
TOTAL	4,212 kWh/yr	£2,210/yr	£3,200		1.19 tCO₂e / yr

Site details

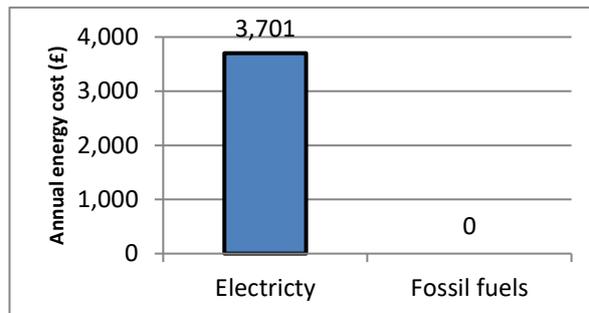
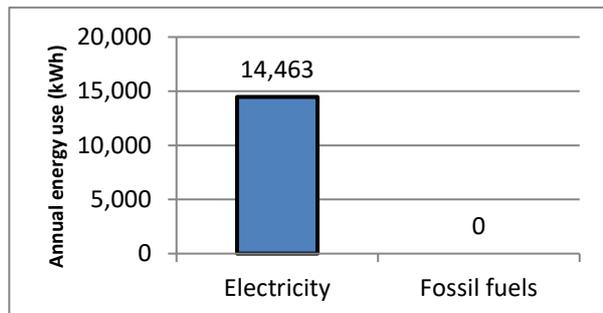
The shop is a ground floor retail unit in a building (circa. 1900) heated with electric air blown ceiling units. The site consists of a showroom, cellar access, back room, and staff room & toilets. There are floor to ceiling windows and doors at the entrance and two large skylights above the showroom.

ENERGY PROFILE

Energy consumption annual profile

Fuel type	Annual Energy use (kWh)	Cost per kWh (p)	Standing charge (p/day)	Approx. annual cost (£)
Electricity	14,463	25	23.46	3,701

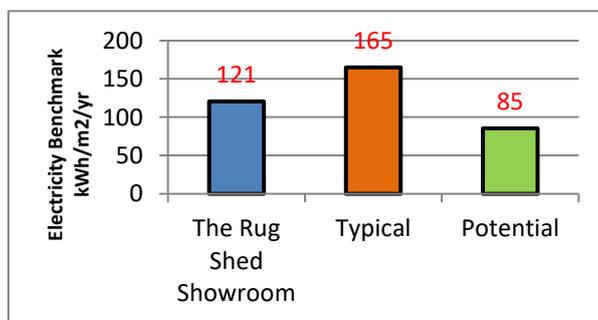
Energy profile breakdown for The Rug Shed Showroom consumption (left) and costs (right)



Consumption is based on actual readings from 10 Sept 2018 and 31 May 2019.

Energy benchmarking

Consumption benchmarks by fuel type



Benchmarks are calculated using data provided and compared to CIBSE figures for the building category "General retail".

ENERGY SAVINGS RECOMMENDATIONS

Review energy rates to ensure competitive prices		
Energy saving (kWh)	Cost saving (£)	Cost of action (£)
0	1,157	250
<p>Your electricity is currently charged at 25p per kWh (a reduction as previous rates were 27p to 29p per kWh). However, the current tariff is a much higher rate than many other similar sized businesses. Electricity prices between 14p to 16p per kWh are available for similar commercial businesses. Your electricity standing charge is currently 23.46p per day (down from 63p per day), which is average. This contract is just beginning (June 2019) and runs for one year.</p> <p>We have calculated the store is using about 14,463 kWh per year and a reduction of 8p per kWh in your tariff would save £1,157 per year. The savings will release financial resources for further energy saving actions. We recommend taking steps to improve tariff and maintain the current standing charge as soon as possible.</p> <p>There are several approaches to take. These include calling several electricity suppliers for better rates. Ofgem has a database of commercial suppliers here: https://www.ofgem.gov.uk/publications-and-updates/list-all-electricity-licensees-including-suppliers</p> <p>While this may seem futile, there are numerous suppliers that will offer a competitive rates in contracts of 1 to 4 years. Commercial comparison website can also be used online to illustrate potential tariffs and standing charges.</p> <p>Another approach is to use an energy broker. Some brokers work for free and are paid by the suppliers they use. Others are independent and charge a fee. If £1157 or more can be saved (as well as staff time), a budget of £250 for a new contract seems a reasonable investment. Energy brokers can be found on line.</p> <p>There may be a charge for leaving your contract early under your current supplier. Review the terms of the contract and consider paying this fee if the savings will outweigh the costs.</p>		
<p>Actions</p> <ul style="list-style-type: none"> • Review the date when your current electricity contract is up for renewal and check the penalty fees for early withdrawal. • Contact four or five other electricity suppliers to ask for their best price. Compare both tariff and standing charges against what you currently pay and your annual kWh of use (14,463kWh). • Go on to some energy comparison websites to identify available rates. • Consider using an energy broker who will review your tariff regularly to identify the current best prices and packages. • When switching suppliers, ensure that the meter ID number is correct and note the notification period prior to the end of the new contract (usually three months) is well known by responsible staff. Do not let the new contract ‘roll over’ at its end. Instead you or your broker can look for the best electricity contract to move to. 		
<p>Costs and savings</p> <p>Costs above refer to paying £250 to an energy broker, however staff can call suppliers for new contract offers. Savings are based on an 8p per kWh reduction in tariff for 14,463 kWh per year.</p>		

ENERGY SAVINGS RECOMMENDATIONS

Upgrade lighting to LEDs		
Energy saving (kWh)	Cost saving (£)	Cost of action (£)
3,744	936	2,700
<p>The lights in the shop include a range of fixtures and types. The rear showroom area is lit by LED track lights, while the front is lit by a combination of low voltage halogens and other non-LED lights. The back room and staff area are lit by fluorescent lights that are rarely on.</p> <p>The front retail lights are important for illuminating products and are on when the store is open (the front window lights are on all the time). These 50 lights can be replaced with LED Par30 spot lights that can be angled at product, as well as some downlights. LEDs use 30 to 80% less electricity and last 3 to 5 times longer than fluorescent and halogen lights. The existing ceiling recesses and wiring can potentially be used, but the current light fixtures will likely need to be changed. Below are some example replacements: https://www.thelightbulb.co.uk/9watt-par30-reflector-led-es-e27-screw-cap-warm-white-equivalent-to-89watts-30-degree-dimmable https://www.simplyled.co.uk/product/phoebe-led-corinth-6w-integrated-led-downlight-4000k/</p> <p>Discuss LED replacements with a retail lighting contractor and consider both the light quality preferred (known as colour temperature) that ranges from warm white, cool white or daylight and the level of brightness needed (measured in lumens).</p> <p>Ensure that, whichever supplier you use, they offer a minimum 5 year failure replacement guarantee and are prepared to let you test a number of LEDs to ensure the light quality is correct before making a final purchase.</p> <p>EiE can review any lighting quotes and comment if this is helpful in progressing this action.</p>		
<p>Actions</p> <ul style="list-style-type: none"> • Consult with a retail lighting supplier to determine equivalent LED replacements suitable for current ceiling wiring and holes. • We recommend contacting at least three lighting contractors for quotes. • Choose a preferred contractor and arrange for the controls to be installed. • For the back room and staff area, once current lights fail, ensure they are replaced with LED lights. Alternatively a lighting contract can replace these when replacing the front lights. 		
<p>Costs and savings</p> <p>Costs are estimated at £2,700 (£1,700 for lights and new fixtures and £1,000 for installation). Savings are based on lights being on 2,496 hours per year (8 hours per day, 6 days per week) saving an average of 30W per light.</p>		

ENERGY SAVINGS RECOMMENDATIONS

Control window lights		
Energy saving (kWh)	Cost saving (£)	Cost of action (£)
657	164	165
<p>The six window lights are constantly on and help highlight the products to passers-by. However, from 1am to 7am this is unlikely to have much impact on sales. There is a timer by the cellar access that may be used to switch the lights off.</p> <p>If the lights were off 6 hours per night (2,190 hours per year), £164 would be saved each year.</p> <p>We recommend making use of the current timer to switch lights off in the middle of the night. If the timer is no longer working, this can be replaced by an electrician with a digital Time Guard control: https://electricalcounter.co.uk/products/Controllers+%26+Timers/Timeguard+Time+Switches/7+Day/SupplyMaster+7+Day+Fused+Spur+Time+Switch/176695168</p>		
<p>Actions</p> <ul style="list-style-type: none">• Try the timer to control front window lights. If this is working, set lights to be off when there are no customers on the street (e.g. 1am to 7am).• If the timer is not working, install a new digital timer. Contact a qualified electrician to add a timer to that lighting circuit. Set the timer appropriately.		
<p>Costs and savings</p> <p>A 7-day timer costs £40 plus installation of approximately £125 (a half day for electrician. Savings are based on the six current 50W lights being off 2,190 hours per year.</p>		

ENERGY SAVINGS RECOMMENDATIONS

Manage heating and hot water

Energy saving (kWh)	Cost saving (£)	Cost of action (£)
0	0	0

The two heating units are controlled in the cellar access area. These were reported as being used only when the store is open and are switched off when not needed. There is also a portable heater available.

During the visit, a cold draught was reported when the large entrance door is opened in particularly cold weather. Two over door heaters were discovered with controls by the cellar access area. These are designed to provide a curtain of hot air so there is less of a draught when the door is opened. However these use 3 to 4kW each. We recommend the over door heaters are only used on cold days and in conjunction with the main heating. By continuing to use heating to keep the shop comfortable without heating unnecessarily, energy can be saved.



The hot water in the staff area is controlled manually and is used only when needed. Ensure this continues to be managed well and not left on when there are no users in the shop.

Actions

- Continue to manage heating and hot water as currently.
- Make use of over door heaters in cold weather and when other heating is on.

Costs and savings

There are no costs or savings for this action if heating and hot water continue to be managed well.

FURTHER RESOURCES

Funding

Possible sources of funding for the recommendations in this report:

OxFutures – 25% funding towards the cost of energy reduction and generation measures may be available for up to £10,000. Contact Alison Grunewald. E-mail: alison.grunewald@lowcarbonhub.org.