

Scarborough Rugby Union Football Club

Energy and Sustainability Targets

2014 - 2020

Executive Summary

Scarborough Rugby Union Football Club is committed to improving its energy performance and reducing its overall energy use and carbon footprint as well as increasing waste recycling. This plan details the key energy management strategy including an assessment of current practices, analysis of current demand, our desired goals, and strategies for increasing efficiencies and changing behaviour to lower overall energy use and increase recycling at Scarborough Rugby Club.

Our strategy for 2014 to 2020 will focus on five key targets.

- a. Lighting – Car park, corridors and bar and function areas.
- b. Staff awareness
- c. Heating controls.
- d. Waste & recycling.
- e. Increase solar provision

To further our efforts, SRUFC has developed this plan for Energy management and Sustainability. This plan will be reviewed on a regular basis to ensure progress is being made and to update as necessary.

Signed.



G N M Young, Chief Executive

Date: 20/11/2013

Building Name:	Scarborough Rugby Union Football Club,
Location:	Silver Royd, Scalby Road, Scarborough.
Square metres:	2,975 sq. m
Date of last energy audit:	July 2013
Date of EPC	9 th April 2013
Number	0897-2428-1230-8790-1203
EPC Rating	B
EPC Score	34

Energy & Sustainability Team

Name	Title
Graeme Jeffery	Operation Manger
Jim Hughes	Energy Performance Officer

Site info:

The two storey building is of filled cavity wall construction, and is heated by a natural gas fired combined under floor and radiator system. There is a mechanical ventilation system, which is mostly used to provide cooling throughout the summer months.

The site's usual opening hours are:

Monday-Friday: 06:00 – 23:00

Saturday and Sunday: 08:00 - 01:00

The property already has a 30kW solar photovoltaic system installed, which is about five months old.

Utility Data Tracking

By tracking and analysing our energy consumption and costs we gather a fuller understanding of how our utilities spent. It helps us to identify inefficiencies, and helps us make better decisions in maintaining, improving, or eliminating programs. With more detailed information including internal and external factors (weather, staffing, and IT changes) we will have a complete overview of our energy consumption.

The following table provides a monthly breakdown of our current year compared to our usage of the previous year.

Historical Electric Data

	2014 Kwh used	2014 Co2 Tonnes	2015 Kwh used	2015 Co2 Tonnes
January	17617	8.51	17712	8.55
February	15332	7.41	15218	7.35
March	15674	7.57	15685	7.58
April	14077	6.80	12305	5.94
May	11708	5.65	10284	4.97
June	11788	5.69	8089	3.91
July	12332	5.96	9733	4.70
August	12475	6.03	9603	4.64
September	14272	6.89	10791	5.21
October	17608	8.50	14372	6.94
November	19429	9.38	17187	8.30
December	16015	7.74	15173	7.33
Total	178327	86.13	156152	75.42

Annual Energy Data (Actual & projected)

Type	2013	2014	2015	2016 projected	+/- %	Co2 Tonnes
KWh (SM) Electric	185717	178327	156152	150000	-5.00	73.00
Gas	316563	256010	250000	250000	-2.3%	46.00
Water	1297	1087	1100	1100	.1%	

Waste.

The aim should be to achieve 65% recycling with 0% to landfill by the target date of 2020. To reach these targets the following would be an ideal programme

	2014	2015	2016	2017	2018	2019	2020
Recycle	50%	52%	55%	58%	60%	62%	65%
Landfill	20%	18%	15%	12%	8%	5%	0%

Benchmark Energy Performance

The recent energy audit undertaken for the club by the appointed company of the RFU states: - "that even though your club has longer opening hours than many we have visited you still use significantly less energy than the average Yorkshire club. This demonstrates how efficient your building already is and should be used as a benchmark against which further energy reductions can be measured. Due to the already very efficient building envelope and services we have not been able to identify sufficient projects to reach the 15% target. This is largely due to your club already being below the RFU average"

Targets for the years 2014 to 2020

The overall aim of the RFU is reduce usage by 15% by 2015 using the 2012 figures as the benchmark. Below we detail our aim to reduce carbon in the period 2014 to 2020. Whilst this may not seem to be a particularly stretching target it should be noted that as a relatively new build the building itself is regarded as very high performing already. Significant investment will be needed to replace old style lighting throughout the building if and significant savings are to be seen. Otherwise the figures below remain the target.

The Energy Audit undertaken by NEP Energy Services and planned by the RFU states NEP have identified projects which have the potential to achieve annual cost savings of £1,606 and reduce your carbon emissions by 3.5 tonnes per year.

Actual usage in brackets.

Year	Estimate of units to be used	% reduction (both kWh & Co2)
2014	186,693 (178327)	2% (-3.98%)
2015	180693 (156,152)	2% (-7%)
2016	175,659	2%
2017	170,390	2%
2018	165,278	2%
2019	160,320	2%
2020	155,510	2%
Total	-31183	14%

2016 Initial Target.

	2015 kWh used	2016 target kWh	2014 Co2 used	2015 target Co2
January	17712	17112	8.55	8.2
February	15218	14718	7.35	7.2
March	15685	15100	7.58	7.4
April	12305	11800	5.94	5.7
May	10284	9750	4.97	4.7
June	8089	7600	3.91	3.8
July	9733	9233	4.70	4.5
August	9603	9106	4.64	4.4
September	10791	10200	5.21	5.1
October	14372	14081	6.94	6.7
November	17187	16500	8.30	8.2
December	15173	14800	7.33	7.1
Total	156152	150000	75.42	73.00

Annual Fuel Mix Disclosure Statement

Under Haven Power's license to supply electricity, we are required to let our customers know about the fuel mix of the electricity we supply.

Source of Electricity Percentage

Coal 20%

Natural Gas 32%, Nuclear 4%, Renewable 42%, Other Fuels 3%

Environmental impact 316g CO₂/kWh plus 0.00034g, high level radioactive waste/kWh

1 Energy Management

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review/ Completion date
1.1	Involve staff in saving energy. Consider issuing bi - monthly staff newsletters informing staff of a specific topic each time, together with details of progress made to date and targets for the next quarter. The aim would be to achieve a 5% saving on electricity costs.	£0	5% or 4 tonnes	£1200	All staff	Ongoing
1.2	Create an awareness campaign. Use posters and stickers to raise interest. Tell staff how much energy is being consumed and where and ask them for suggestions to reduce consumption.	£0	As above	Inc. above	All staff	Ongoing
1.3	Record energy consumption and set targets for reduction. Monitor monthly / weekly the nPower HH electric readings and investigate any anomalies.	£0	Various	Various	EPO / OM	Ongoing
1.4	Record activities and successes. Make sure staff are kept informed of progress. Consider implementing a reward scheme for the team or individual that makes the most progress or comes up with the best idea.	£0	Potential	Potential	All staff	Ongoing
1.5	Carry out regular internal energy audits. Carry out regular energy saving 'walk-rounds' particularly 'out of hours' to identify and put right any unnecessary uses of energy,	£0	Potential	Potential	EPO / OM	Ongoing
1.6	Read & record meter readings. Set up a system to read and record gas and water meter readings on a weekly basis. (n.b. electric on HH on line)	£0	Potential	Potential	EPO / OM	Ongoing
1.7	Gym extension and additional hours: Although fitted with LED lighting there will be some additional costs.	£0	Potential	Small increase in costs	EPO / OM	Ongoing

2 Heating

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review / Completion date
2.1	Check the heating controls regularly and upgrade if necessary. Heating generally accounts for around 50% of a business's energy spend. Check that any heating controls (i.e. boiler timers and thermostats and room and radiator thermostats) are working properly and reflect the occupancy patterns of the building.	£0	2% or 1.5 tonnes	£400	EPO / OM	Fortnightly checks
2.2	Check room temperature settings. Room temperatures should be set between 19°C and 21 °C. It is not uncommon in buildings with multiple users, to find that temperature settings have been left at maximum by people mistakenly trying to heat the building as quickly as possible. Train users how to use the controls or make them tamper proof. Reducing the temperature by 1 °C will save up to 8% of your heating fuel costs.	£0	Inc. above	Inc. above	All staff	As required following planned pattern of occupancy
2.3	Check hot water temperature settings. Hot water temperature controls should be set to no more than 60 °C. This is the minimum temperature required to combat legionella.	£0	CO ₂	£	EPO / OM	Monthly in line with regular HSE requirements
2.4	Service your boiler. Regular servicing will keep the boiler running at peak efficiency. Heating costs can increase by 30% or more if the boiler is poorly operated or maintained	£	CO ₂	£	EPO / OM	Twice a year.
2.5	Improve heating zoning. If several of parts of the building are occupied at different times of the day and on different days of the week it could be that certain areas are heated even when they are unoccupied. Improved zoning along with appropriate time and temperature controls will allow us to match the heating to the occupancy patterns of the building saving fuel and cutting emissions.	£0	CO ₂ potential savings	£ potential savings	EPO / OM	On-going.

3 Cooling

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review/ Completion date
3.1	Check air conditioning temperature settings. A 1°C reduction in temperature increases an air conditioners energy demand by about 30% and a 3°C reduction doubles it. Ensure that cooling is only used for higher than usual temperatures - at least 24°C but ideally above 26°C and maintain a 'dead band' between 19°C - 24°C when neither the heating nor the cooling systems will be on at all.	£0	CO ₂ potential savings	£ potential savings	EPO / OM	On-going.
3.2	Train our staff. Provide training for key staff on operating the air conditioning units and make sure that they are always switched off out of hours. Display instructions on individual units and ensure any hand-held remote controllers are always returned to allocated storage areas.	£0	CO ₂ Up to 2%	£500	EPO / OM	On-going.
3.3	Service the air conditioners regularly. Energy consumption can increase by up to 30% if not serviced regularly. Between services, check that filters are kept clean and cooling vents remain unobstructed every two weeks.	£	CO ₂ Up to 2%	£inc. above	EPO / OM	On-going.

4 Lighting

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review/ Completion date
4.1	Replace Reception and corridor lights: on ground floor with LED equivalent. These use less than 40% of existing.	£ 1,000	CO ₂ c 5 tonnes	£900 p.a	Board	Completed
4.2	Replace the 50W halogen spotlights: in various areas with LED equivalent. These use less than 30% of existing.	£ TBA	CO ₂ - CO ₂	£	Board	2014-2016
4.3	Replace any of the old style T8 fluorescent tubes: in changing rooms and corridors with the new thinner 'T5' tubes. These will go into adapted fittings but use about 30% less energy.	£ 1500	CO ₂	£720	Board	2014-2016
4.4	Replace car park lampposts lights and bollards with LED equivalent These use less than 30% of existing.	£ 750	CO ₂	£ 700	Board	2014-2016
4.5	Replace current lights in bars, upper level corridors and function rooms, (square fluorescents, and decorative lights) with LED equivalent These use less than 30% of existing.	£ 5,000	CO ₂ C8 tonnes	£3200	Board	Bar and function room to finish, all other done 2016.
4.6	Replace pitch floodlights with LED equivalents. These use less than 30% of existing.	£TBA	CO ₂	£ - £	Board	2015-2017
4.7	Encourage staff to turn off lights. Staff switching off lights when not needed can save up to 15% of lighting costs. Fluorescent lights use only a few seconds worth of energy to start up, so it is almost always cheaper to turn them off than to leave them on and this is one of the most visible statements that you can make to the public about your commitment to the reducing your environmental impact.	£0	CO ₂ potential savings	£ potential savings	All staff	On-going.
4.8	Make better use of natural lighting. People prefer to work in natural light and using it saves money. You can: <ul style="list-style-type: none"> Keep windows and roof lights clean and switch off the lights where they compete with natural sunlight. Angle the blinds so that light is reflected off the ceiling. Trim vegetation preventing the light from entering the ground floor rooms or, ideally, replace it with low growing deciduous shrubs. 	£0	CO ₂ potential savings	£ potential savings	EPO / OM	On-going.

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review/Completion date
4.9	Use timers to ensure that lights in public areas are turned off at the end of the day, alternatively incorporate controls for these lights into a building energy management system (BEMS) so that they can be controlled from a central PC.	£ Significant	CO ₂ potential savings	£ potential savings	EPO / OM	On-going.
4.10	Clean and maintain the lighting systems. Traditional halo phosphate fluorescent lights dim with age so it is important to replace them regularly. The efficiency of lighting systems (including skylights and windows) can deteriorate by more than 30% over two years due to the build up of dust and dirt. Set up a lighting maintenance and cleaning programme.	£0	CO ₂ potential savings	£ potential savings	EPO / OM	On-going.

5 Office Equipment

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review/Completion date
5.1	Train staff to use standby, sleep and 'hibernate' modes. Most office equipment (PC's, printers, photocopiers etc.) can be set to revert to standby, sleep and hibernate mode after standing idle for a pre-set period of time. On standby mode, a PC's running costs will be reduced from around £50 to £15 a year. Ensure that all staff understand how to set 'power down' modes on their PC's. Where possible switch them off.	£0	CO ₂ potential savings	£ potential savings	EPO / OM	On-going.
5.2	Make someone responsible. A member of staff should be given responsibility for switching off common user equipment such as photocopiers and printers overnight and at weekends.	£0	CO ₂ potential savings	£ potential savings	EPO / OM	On-going.
5.3	Use laptops instead of desktop PCs. Laptops are designed to be energy efficient with a typical maximum power demand of about 40W as opposed to the 150W or more required by a desktop PC.	£ £	CO ₂ potential savings	£ potential savings	Board	On-going.

6 Optimising Power Supply, Energy Prices and Green Electricity

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review/ Completion date
6.1	Check energy prices. When the time comes to renew the gas and electricity check by getting quotes from alternative suppliers or energy brokers.	£0	CO ₂ potential savings	£ potential savings	Board	New electric in place march 15 and gas Dec 15
6.2	Use time switches, or remote controlled, switches to save money. Make sure that non-essential equipment, like printers, security monitors and coffee machines and drink vending machines are not left on accidentally by fitting seven day, programmable time switches. These only cost a few pounds but if fitted to a vending machine, for example, it could save up to £150/year.	£50	CO ₂ minor savings	£500	EPO / OM	On-going.
6.3	Install Voltage Power Optimisation equipment. Consider installing voltage power optimisation equipment like the PowerPerfector'. Search for grants to offset cost.	£10,000	CO ₂ 11 tonnes	£2,500	EPO/ Board	To be reviewed in 2016 / 17
6.4	Install and monitor use of Inn Energy Device. This device is for use on all drinks coolers in cellars. They are effective in working out a pattern of usage and have the potential to save up to £500pa per machine.	£59	CO ₂ 3 tonnes	£600+	EPO / OM	Completed

7 Waste and Recycling

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review/ Completion date
7.1	<p>Reduce. Look at how much waste we are currently producing and the different material types.</p> <ul style="list-style-type: none"> Identify materials that could be reduced. Encourage staff to reduce their usage through intranet, internal staff newsletters and posters. 	£0	CO ₂ potential savings	£ potential savings	EPO / OM	Q3 2016
7.2	<p>Reuse. Before disposing of any resources check to see if they have a reuse value.</p>	£0	CO ₂ potential savings	£ potential savings	EPO / OM	Q3 2016
7.3	<p>Recycle. Ensure that we are sending the minimum amount of waste to landfill by:</p> <ul style="list-style-type: none"> Identifying which materials we are currently recycling Identify if we can recycle more material types Maximise recycling rates – don't let recyclables sneak into your landfill bin 	£0	CO ₂ potential savings	£ potential savings	EPO / OM	Q3 2016
7.4	<p>Compost. If you have green spaces at your work consider composting your food waste, reducing costs of landfill</p> <ul style="list-style-type: none"> It will enable you to compost waste on site and produce a quality feed for your outdoor areas. Lots of materials can be composted such as fruit peelings, food leftovers, tea bags, coffee granules, paper, cardboard and paper towels. 	£0	CO ₂ potential savings	£ potential savings	EPO / OM	Q3 2016
7.5	<p>Set up a recycling system. The most effective way to ensure workers fully participate in the above is to ensure that we make it easier for them to reuse and recycle than landfill.</p> <ul style="list-style-type: none"> Clearly label bins with what can be put in them Place paper bins close to desks and printers Have fewer and smaller landfill bins Assign a 'champion' in each area to promote this 	£0	CO ₂ potential savings	£ potential savings	EPO / OM	Q3 2016
7.6	<p>Printer Cartridges. There are many organisations that will recycle our printer cartridges.</p>	£0	CO ₂ potential savings	£ potential savings	EPO / OM	Q4 2014
7.7	<p>Purchase green office products. Identify where green, environmentally friendly, products and supplies can be sourced.</p> <ul style="list-style-type: none"> Use recycled paper for office use and marketing material Buy recycled stationary 	Non capital	CO ₂ potential savings	£ potential savings	Admin assistant.	On going

8 Water

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review/ Completion date
	Control water costs. It is estimated that most businesses can cut water costs by 30% by understanding how much they use and identifying simple changes to cut consumption.					
8.1	Assess toilet cisterns. These account for over 40% of water consumption. Check for the sound of continuously running water and replace faulty valves. Reduce the cistern volume of older toilets by fitting a hippo or cistern dam and save up to 20% per toilet.	£	CO ₂ potential savings	£ potential savings	EPO / OM	Q3 2017
8.2	Install infrared sensors. Passive infrared sensors could help you to reduce your water consumption in the urinals and save money. The payback is usually only a few months.	£	CO ₂ potential savings	£ potential savings	EPO / OM	Q3 2017
8.3	Check taps regularly. A tap dripping just two drops per second wastes nearly 10,000 litres/yr. A dripping hot water tap means you are paying to heat the water before losing it.	£	CO ₂ potential savings	£ potential savings	EPO / OM	On going
8.4	Fit flow restrictors and/or aerators to taps. Flow restrictors reduce consumption from 15 – 18 litres/minute to 8 – 10 litres/minute. Energy efficient showerheads can make even bigger savings.	£ - £	CO ₂ potential savings	£ potential savings	EPO / OM	Q3 2017
8.5	Water Harvesting. Identify the maintenance requirement of the water harvesting system and put system in place Investigate and set up system to monitor the split between water harvester and mains water.		CO ₂ potential savings	£ potential savings	EPO / OM	Q3 2015

9 Building Fabric

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review/ Completion date
9.1	Cut out drafts. Typically, 35% of the heat in a commercial building is lost through ventilation and air infiltration (drafts). Make a significant difference to the heating bills at a minimal cost by checking doors, windows and roof lights regularly and ensuring that draught proofing is in good condition and that any cracks and gaps are repaired promptly.	None	CO ₂ potential savings	£ potential savings	EPO / OM	On-going.
9.2	Solar Panels Identify the manufactures maintenance regime and put a plan in place to carry it out to ensure 100% efficiency.		CO ₂ potential savings	£ potential savings	EPO / OM	Completed
9.3	Exit doors. Ensure that all staff throughout the day keep external doors (pitch side) closed when not required, significant heat is lost and cold air enters the building.	No cost	CO ₂ potential savings	£ potential savings	All staff	On-going.
9.4	Assess windows. Up to 25% of the heat lost in commercial buildings is through the windows. Fit thermal blinds or curtains and encourage users to close them at the end of the working day to help keep the heat in during the winter months.	£ - £	CO ₂	£	£ - £	On-going.

10 Any other actions

	Action	Capital cost	CO ₂ saving	Cost saving	Responsibility	Review/ Completion date
10.1	Hand Dryers. Consider changing the hand dryers for Dyson Blade dryers.	£450	CO ₂ 326kgs	£82	Board	On-going.
10.2	Staff and visitor information board; Set up notice boards in a public area to show current state, planned progress and recent achievements. (great PR and grant attraction)	£100	CO ₂	£	EPO / OM	On-going.
10.3	Web site; Set up page on web site for Energy & Sustainability. Put EPC, Energy audit and this action plan for public view also keep up to date with achievements. (great PR and grant attraction)	£0	CO ₂	£	Web Master & EPO	Completed.