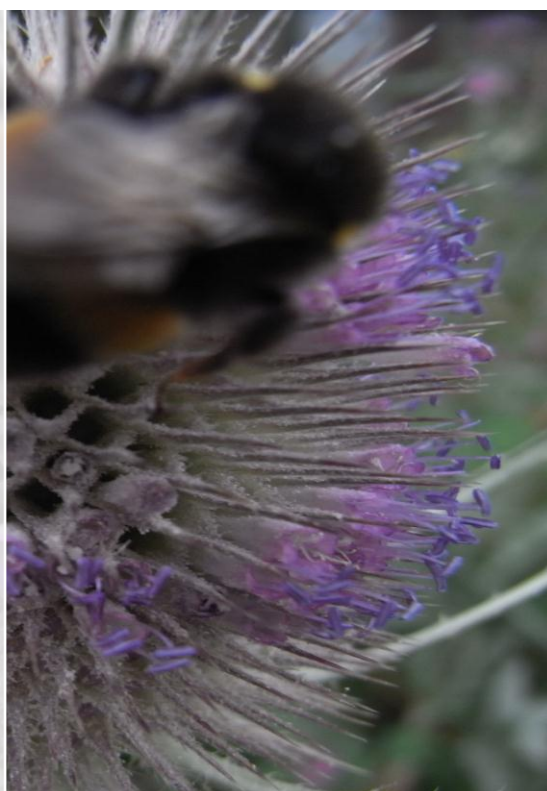


Annual Environmental Report

Audrey Seguy and Claire Lee

2011



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For publication



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EXECUTIVE SUMMARY

This is the fourth Annual Environmental Report of High Performance Sports (The Castle Climbing Centre, The Castle Cafe and The Castle Shop) and fulfils our obligations set out in our Sustainability Policy. This report is our best attempt at analysing the environmental impact of our business between January and December 2011.

EMS We achieved Gold level for procurement by the Mayor of London's Green Procurement Code and were Highly Commended at their annual awards. We also won two categories (Sustainable Building and Sustainable Procurement) in the Sustainable City Awards 2011/2012. We have been further recognised as industry leaders when our Chief Executive, Steve Taylor, was invited to present our sustainability policy at the Innovation for Extremes conference.

Carbon Footprint We have calculated our carbon footprint using the methodology recommended in the Greenhouse Gas Protocol Standard using the latest emissions factor figures available in this year's report. Changes in factors have effected the results and we have pointed this out where relevant. **Our carbon footprint for 2011 is 100.17 tonnes CO₂e**, a 14.5% reduction from 2010 and 27% reduction from when we started reporting in 2008. This reduction is entirely due to a decrease in our electricity consumption over the year.

Inputs There were three major changes in 2011 that have affected our procurement. The first was the development of a kitchen in which we can prepare food from garden produce, radically changing our café procurement. The second was the refurbishment of the shop, enabling us to extend our range of sustainable products. The third was upgrading our IT systems to a more efficient and reliable network.

Outputs DEFRA emission factors for waste produced changed significantly in the time between. In addition we had previously underestimated the waste produced in previous years. This has been corrected in this report and a like for like comparison concludes that the carbon emissions from our landfill waste has decreased. A landfill audit (May 2011) showed that we were still sending too much recyclable waste to landfill. Since then we've made changes and have further reduced the amount of landfill waste by 78% (volume).

Travel While our overall business travel has decreased the carbon emissions have increased because of the higher percentage of travel by car. This is due to an increase in travel by guest route setters.

Energy & Resources Electricity consumption has decreased, but as the electricity monitoring units were not fully functional we have not been able to determine which of our actions has contributed to this saving. Gas consumption increased over 2010 levels, due to the heaters being fully functional and increased demands from the kitchen. Water consumption has remained constant despite the increased demand from the garden, due to our rainwater collection and greywater recycling systems being used for irrigation.

Garden The garden has continued to be a major focal point of our sustainability drive. We've increased our garden staff to keep pace with garden developments. New features include more growing areas, wildlife habitats, wetlands and landscaping. This year, garden produce featured more prominently on the café menu with homemade food and herbal teas.

Events Our two major events – the annual garden party and xmas party- continue to set the standard for low impact events both in terms of procurement and waste. 2011 also saw an increase in garden events to promote the work we're doing and to thank the volunteers.

Incentives The first two grants in our new Employee Eco-Grant scheme were awarded in 2011. We continue to offer the Bike to Work scheme for staff and incentivise salaried staff to travel sustainably through our eco-days holiday bonus.

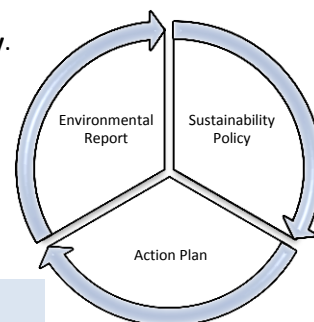
2011 has seen us make continued progress towards our goals. Notably, completing the kitchen has allowed us to take the next step in integrating the garden with the café. We are pleased that our electricity consumption has decreased, but need to invest in finding out exactly how this has happened and in which areas we can continue to make progress. We continue to lay the groundwork for our final phase of development which should result in significant energy savings while helping us become one of Europe's best climbing centres.

Audrey Seguy and Claire Lee
October 2012

OUR ENVIRONMENTAL MANAGEMENT SYSTEM

The **Action Plan** starts with the targets that are set out in our **Sustainability Policy**. It is reviewed annually by the Management Team. Our annual **Environmental Report** monitors our management of our environmental impact.

The Castle Café developed its own sustainability policy in 2011 (issued January 2012) following the seven principles of sustainable food, as advocated by Sustain (see Inputs – Café).



ENVIRONMENTAL AWARDS / ACCREDITATION

THE MAYOR OF LONDON'S GREEN PROCUREMENT CODE

The Castle Climbing Centre was Highly Commended in the SME Organisation Category 2011 at the annual MGPC Awards. We were Gold Level members for January-December 2011. www.greenprocurementcode.co.uk



THE SUSTAINABLE CITY AWARDS

The Castle Climbing Centre won the Sustainable Building and Sustainable Procurement Categories of the Sustainable City Awards 2011/12.

OBSERVER ETHICAL AWARDS 2011

We applied for the Observer Ethical Business of the Year Award in 2011.

SPREADING THE WORD

In April Steve Taylor was invited to give a presentation about the Castle's environmental and sustainability work at the annual **Innovation for Extremes Conference** held at Lancaster University Business School. The conference was originally set up to promote innovation in the textiles field of outdoor equipment manufacture. However, in the last few years the focus of the conference has shifted to encompass sustainability as well. <http://innovation-for-extremes.net/blog/steve-taylor-castle-climbing-committing-to-sustainability>

Steve received great feedback and was contacted by a number of people wanting to know more about what we're doing here. As a result of his presentation, Steve gave an interview to outdoor company Rohan. <http://rohantime.com/18920/the-greenest-line/>

TAPWATER.ORG

The Castle Climbing Centre signed up to be a 'filling station' with tapwater.org in Feb 2011. Tapwater.org is an organisation that encourages local businesses to become free filling stations. <http://www.tapwater.org/>

CARBON FOOTPRINT

ORGANISATIONAL BOUNDARIES

We calculated the carbon footprint of the trading activities (climbing centre, shop and café) and premises (London, Buxton) of High Performance Sports Ltd. We do not include other companies that operate within the centre such as Bikemech, RAT, TAG, ClimbersClinic and Geckos.

SCOPE FOR CO₂E EMISSIONS

The most widely accepted approach when measuring an organisation's greenhouse gas (GHG) emissions is to identify and categorise emissions-releasing activities into three groups (known as scopes). The three scopes are:

- **Scope 1 (Direct emissions):** Activities owned or controlled by your organisation that release emissions straight into the atmosphere.
- **Scope 2 (Indirect emissions from electricity, heat and steam):** These are indirect emissions that are a consequence of your organisation's activities but which occur at sources you do not own or control.
- **Scope 3 (Other indirect):** Emissions that are a consequence of your actions, which occur at sources which you do not own or control and which are not classed as scope 2 emissions. Included in this category are business travel, waste disposal, water consumption and purchased goods.

The Greenhouse Gas Protocol (<http://www.ghgprotocol.org/>) requires Scopes 1 and 2 emissions to be included in the organisation's carbon footprint. Scope 3 emissions may be included at the organisation's discretion. In the interest of consistency with methodology used in previous years, we will include the following Scope 3 emissions: water consumption and business travel. As with previous years, we also report on the environmental of other aspects of our business such as customer travel and procurement though these do not figure in our carbon footprint calculations.

METHODOLOGY

We have used the Defra GHG conversion factors, but as the Carbon Trust's carbon footprint calculator is no longer available there may be slight discrepancies between the figures used in 2010 and those used in 2011. Changes in the conversion figures from those used in 2010 to 2011 have been identified and, where relevant, have been explained in the footnotes.

TOTAL CO₂E EMISSIONS

TOTAL CO₂E EMISSIONS

	CO ₂ e - 2011 ¹	CO ₂ e - 2010	CO ₂ e - 2009	CO ₂ e - 2008
Total emissions	100.17 tonnes	117.19 tonnes	125.07 tonnes	136.79 tonnes
Per visitor	680g	769g	784g	889g
Per staff member	1.56 tonnes	1.63 tonnes	1.95 tonnes	2.63 tonnes
Per square meter (2000 m ²)	0.050 tonnes	0.059 tonnes	0.063 tonnes	.068 tonnes
Per square meter climbing area (1500 m ²)	0.067 tonnes	0.078 tonnes	0.083 tonnes	.091 tonnes

¹ Visitor numbers and Annual Statistics show in Appendix D

	Tonnes CO2e - 2011	Tonnes CO2e - 2010	Tonnes CO2e - 2009	Tonnes CO2e - 2008
Travel	2.64	2.59	3.01	4.73
Electricity	60.63	81.52	83.07	85.73
Gas	34.49	30.74	36.48	44.26
Water	2.41	2.34	2.51	2.07
TOTAL	100.17	117.09	125.07	136.79

INPUTS (PROCUREMENT)

THE CASTLE CAFE

The Castle Café expanded its operations in 2011 to include a kitchen. Sustainable elements of the build are detailed in the Property Development section below. In terms of operations, the kitchen allows the café to process more of the organic food grown in the garden, reduces the transport associated with some of the produce and draws attention to our commitment to sustainable food. Knowledge of sustainable food production and seasonal menus were key qualities we looked for when recruiting chefs. A complete list of produce we've harvested is in **Appendix A - Garden Produce**.

Being able to create our own dishes in the kitchen has meant we could stop buying prepared dishes (Mother Earth, Covent Garden Soups and Clive's Pies), cutting down on our supplier chain. We have also managed to replace a number of our traybakes with homemade versions, with a view to eventually replacing all snacks with homemade versions. By the end of 2011, nearly all of our supplies were organic.

Products that were not yet organic by the end of the year include:

Products that aren't certified organic:

Orange Juice	Some flours	Tyrrel's crisps
Sundried Tomatoes	Red Bull	Eat Natural bars
Muesli	Snickers, Twix, Mars, Starburst	Pulsin protein snacks
Bombay Mix	Tray Bakes (JDs)	Shaun's Nut bars
Chocolate spread	Burt's crisps	Fruit & veg for café/kitchen
Some jam/chutneys	Covent Garden soups	Torq Energy drink powder
Vegetable spread	Innocent smoothies and juices	

The Café's Sustainability Policy was issued in January 2012, based on the Seven Principles of Sustainable Food²:

1. Use local, seasonally available ingredients as standard to minimise the energy used in food production, transportation and storage.
2. Specify food from farming systems that minimise harm to the environment, such as certified organic produce.
3. Limit foods of animal origin. Ensure that meat, dairy products and eggs are produced to high environmental and animal welfare standards.
4. Exclude fish species identified as most 'at risk' by the Marine Conservation Society, and choose fish only from sustainable sources- such as those accredited by the Marine Stewardship Council.
5. Choose Fairtrade-certified products for foods and drinks imported from poorer countries, to ensure a fair deal for disadvantaged producers.
6. Avoid bottled water and instead serve plain or filtered tap water in reusable jugs or bottles to minimise transport and packaging waste.
7. Promote health and well-being by cooking with generous portions of vegetables, fruit and starchy staples like whole grains, cutting down on salt, fats and oils, and cutting out artificial additives.

² http://www.sustainweb.org/sustainablefood/sustainable_food/

THE CASTLE SHOP

Since its start in August 2010, the shop has gone from strength to strength. Now that we have complete control of the products we stock we strive to find companies manufacturing products with as little impact as possible.

The Castle shop now stocks a vast range of **organic cotton clothing** from various suppliers. We emphasise these product choices to our customers with additional signs and labels. In our forward orders, shop manager Paul Winder has increased the organic cotton range of clothing from Moon Climbing (now 43%) and Prana (now 24%). Unfortunately, the key sellers - the Cypher Pant (Moon), Mojo short (Prana) and Axion jean (Prana)- are not made from organic materials.



The independent
industry
textile
standard

The **bluesign® standard** is the world's most stringent textile standard for environmental protection, consumer protection and occupational safety. All environmental aspects of production are evaluated at the screening: water and air emissions, noise levels, energy and material use, as well as working conditions related to dangerous materials. Products that are made from at least 90% bluesign® certified materials are given the "bluesign® approved

fabric" label. We currently stock bluesign products from Mammüt and Edelrid. Patagonia are requiring all their suppliers to adopt the bluesign standard by 2014, produce approved materials by 2015 and have a full range of bluesign products by 2016. <http://www.bluesign.com/>

Other points:

- The Castle Hand and Lip Balms were sold through the shop. (See Garden section below)
- Paul sourced some new locally made chalk bags from Pitch Climbing Designs.
- We are investigating getting non-anodised hardware from DMM.
- Beal ropes. Following a staff training trip with Lyon Equipment, our staff got in touch with Beal to enquire about the working conditions and social impact of moving their production to Madagascar. Satisfied with the responses given, we've continued to stock Beal ropes. Beal plant a tree for every rope purchased³.
- We continue to prioritise the Boreal and La Sportiva climbing shoe ranges as these are produced in Europe.

The shop underwent a major refurbishment in August/September 2011 which is detailed in the Property Development section below.

CLEANING / MAINTENANCE

CLEANING

We have not made any significant changes to our cleaning processes in 2011.

MAINTENANCE

³ <http://bealplanet.com/sport/anglais/contri-environment.html>

Lighting: Last year we planned to convert the approximately 125 fluorescent light fittings so that they could take the more efficient T5 tubes. Unfortunately, the casings themselves are at the end of their life span and will need replacing. We are currently researching other options while continuing to replace lights with more efficient alternatives. We purchased several solar powered lights with motion sensors to illuminate key outdoor areas (compost area, fire escape)

Over the course of the year we replaced:

- 36 x E-matic Linear Converters
- 50 x Energy Saving Tubes
- 10 x Halogen Bulbs

We recycled 72 bulbs in the course of the year (as per WEEE guidelines for safe disposal of electrical products).

PROPERTY DEVELOPMENT

KITCHEN BUILD

The kitchen was finished in 2011. Janos Atkins donated the commercial oven and other kitchen materials from the now defunct Pangea Project. The refrigeration system used in the Kitchen is detailed below (Other centre equipment).

SHOP REFURBISHMENT

The shop refurbishment was carried out over two months in August and September 2011. The design increased the shop's storage and display areas, created a manager's office and a changing area and included a number of environmentally friendly features. These include improved insulation, more low-energy lighting, efficient heating and natural ventilation. A key component to the refurbishment was the development of a low-energy drying cupboard for our hire shoes to eliminate the use of aerosol deodorant sprays.

NEW GYM BUILD

In December 2011, Chief Routesetter Mike Langley led the development of a gym area above the Wave. The floor was built using FSC certified timber and laid with Interface carpet tiles made from pile yarn with backing containing pre-consumer recycled material. The gym has a velux window for natural ventilation and light as well as a single low-energy panel light. We selected a refurbished second-hand rowing machine rather than purchase a new one.

CLIMBING WALLS & CLIMBING EQUIPMENT

HOLDS

We continue to source our holds (relatively) locally- with production either in the UK or Europe. There are generally higher environmental standards to adhere to in Europe and emissions from transportation are reduced. This year, we added HRT holds to our regular suppliers.

Supplier	Location
Core Climbing	Sheffield
HRT Holds	Bulgaria

Revolution Holds	Germany
Holdz	Ossett (West Yorks)
Bendcrete	Cheshire

ROPES AND OTHER CLIMBING EQUIPMENT

The Castle Shop supplies the centre with replacement rope and equipment. In 2011 we replaced 1100m of gym rope (1200m in 2010). We continue to test new wall ropes to find longer lasting ones. Retired ropes are in high demand and we are able to give them away rather than throw them out.

In 2011, the route setting team also retired climbing holds. Rather than throw these away we recycled them by selling them to customers for use on their own home-made climbing walls and using them in the garden as markers.

CLIMBING WALLS - WAVE REFURB

2011 saw a number of walls being redesigned / refurbished using only FSC certified timber.

- The Wave
- The top out boulders in the Mezz
- A number of new volumes were built or remodelled

OTHER CENTRE EQUIPMENT

DISABLED TOILET

A new energy efficient hand dryer was purchased for the disabled toilets to replace the existing one. For this toilet we chose a **Tornado Hand Dryer HS5800**.

REFRIGERATORS

It is recommended to replace fridges after approximately 8 years as they're inefficient and use more than twice the energy as that of a new fridge. New refrigerators were purchased for the staff area and TR3 with A+ energy ratings.

We also purchased a chest freezer for the new kitchen which we then adapted to use as a fridge. Refrigerators are terribly inefficient as every time you open the door, the cold air comes cascading right out onto the floor. Chest freezers don't suffer from this draft effect and so can be converted into super-efficient refrigerators. Energy usage with a chest-freezer-turned-fridge is barely 0.1kWh a day, compared with modern stand-up refrigerators that use around 1kWh a day.

ICE PACKS

We replaced our throw away ice packs with reusable ones to reduce landfill waste.

IT: COMPUTERS AND PHONES

We outsourced our IT support and phone systems and upgraded our entire network over six months in 2011. Our previous IT network model was based on low energy workstations (thin clients) but required high energy servers on site. Our new model uses low energy workstations chosen for a long working life (5 years instead of the standard 3 years) with energy efficient monitors. Our IT company estimates that we get a 60% reduction

in power usage (2.5 tonnes CO₂e per year) over the desktops that were replaced. They took into consideration the embedded carbon footprint cost of replacing the server against the ongoing carbon cost of keeping the old server going. With the lower energy profile of the new server (40W per processor, compared with 120W per processor for the old server) the balance came out in favour of replacing our systems. Our aim was to recycle or re-sell all the decommissioned equipment by advertising to staff and using eBay.

PRINTERS

We exchanged our lease on the office printer for a new one in November 2011. We selected a Kyocera printer because of their commitment to sustainable design in printing equipment⁴. They have received the Blue Angel product recognition- a Germany environmental award⁵. Key aspects of their design philosophy include:

- Full lifecycle analysis for every new product⁶
- Use of long-life technology
- Simplification of component parts and coding for easier recycling
- Smaller toner particles that require less energy for fusing and reduce toner consumption (by 30% on average)
- Faster warm up time to reduce energy consumption and encourage use of sleep mode
- Reduction of ozone generation by using positively charged photoconductors

The model we selected- the Kyocera TASKalfa 250ci KX- has several features that we hope will decrease our environmental impact:

- Full lifecycle analysis conducted for all new products
- Default black & white, double sided printing
- Low power standby mode
- Handles recycled paper well

We've stopped using the Reception printer and now use this office printer for all of our printing needs.

STATIONERY

In 2011 had a 20% decrease in spending from 2010. Just under half of the stationery total is made up of a yearly order of eco-pens printed with our logo. We continue to use The Green Stationery Company, a company whose philosophy echoes our own.

In 2011 we also cleared out some storage areas and located a number of boxes of blank plastic membership cards which we no longer use. We sold these to another climbing wall to avoid recycling them.

PUBLICATIONS

We have a subscription to Permaculture magazine which we display in the café. We also distribute Jellied Eel and Ethical Eats- local sustainable food campaign magazines.

CLOTHING

There was a slight increase over previous years in staff clothing purchases. Clothing is returned to us once a member of staff leaves the Castle. If the clothing is in good condition we wash it and re-use it for other

⁴ http://www.kyoceradocumentsolutions.co.uk/index/products/sustainable_design.html

⁵ <http://www.blauer-engel.de/en/index.php>

⁶ http://www.kyoceradocumentsolutions.co.uk/index/products/sustainable_design/lifecycle_assessment.html

members of staff. Once items are worn and torn they're used for rags around the centre or passed to Bikemech for oil rags.

All of our clothing comes from the Continental 'Earth Positive' range which uses organic cotton and water centred inks. The supplier is licensed by the Soil Association and the Control Union to supply fully certified organic products in accordance with the Global Organic Textile Standard.

OUTPUTS (WASTE PRODUCED)

LANDFILL WASTE

WASTE TO LANDFILL

In May 2011 Ray Eckermann conducted a landfill audit of our waste bin.

AUDIT FINDINGS

Top non-recyclable waste:

1. Greasy/oily rags (Bikemech)
 2. Latex gloves (Bikemech)
 3. Finger tape
 4. Duct tape
- Out of one full bag from the shop, not one single item should have been in landfill bags. The recyclable waste in the bag was heavily contaminated by compostable food waste.
 - Once all the rubbish was separated into the correct streams and consolidated, it became clear that the amount of black bin bags used to collect the rubbish was too many. What could have gone in 3-4 bags was actually spread over 19 bags.
 - Considering the volume of waste, only half a caddy of composting was gathered which is a vast improvement and shows that people are beginning to understand our requirements and buy into what we are doing.

Following the audit we improved the signs on our waste stations and decreased the size of our landfill bins to encourage more customers and staff to recycle. In September 2011, we reduced the size of our landfill bin from one 1100ltr bin to one 240ltr bin per week (78% reduction in volume).

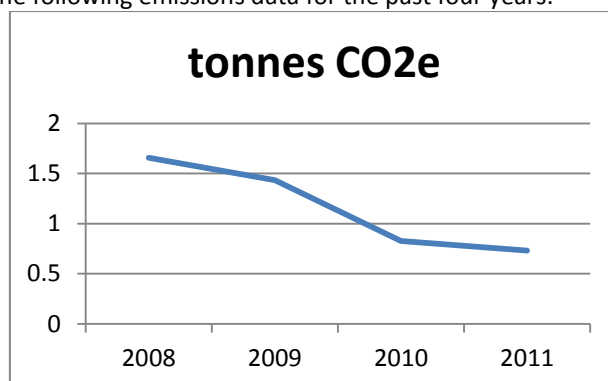
We do not weigh the waste in our audits, therefore do not have accurate enough information about how much waste has been going to landfill. We had been estimating that our 1100l bins only carried 40kg, but Poole Borough Council have found that the average weight of their 1100ltr bins to be 81kg when filled with general waste (not food waste, which is generally much heavier)⁷. Our current waste carriers have confirmed that the average weight of waste in the 240l bin is 40kg. This year, rather than trying to estimate the composition of the bins, we have used the average GHG emissions factor for commercial and industrial waste⁸. These factors account for the increase in carbon emissions reported in this report in spite of the apparent decrease in landfill waste.

⁷ <http://www.ecofoodrecycling.co.uk/news/2011/01/29/food-waste-bin-weights-prove-to-be-heavy/>

⁸ **2012 Guidelines to Defra/DECC's GHG Conversion Factors for Company Reporting.** Commercial and Industrial waste to landfill – 199 Gross kg CO₂e emitted per tonne of waste treated. Note that this has been revised upwards significantly from 90 kgCO₂e/tonne (conversion factor used in the 2010 Environmental Report).

Landfill	tonnes	CO2e	tonnes CO2e
Commercial & Industrial Waste, average	3.680	.199	.732
2011 Total	3.68		0.732
2010 Total	2.08		0.317
2009 Total	3.60		.341
2008 Total	4.160		.394

To compare like-for-like, if we were to use the same figures (2012 guidelines) and an average 80kg weight per 1100l bin we would have the following emissions data for the past four years:



RECYCLING

SKIPS

Our skip suppliers (McGrath) have a Materials Recovery Facility (MRF) in Hackney and estimate that around 98% of the waste they collect is recycled⁹. We hired 2 skips from them in 2011 compared to 4 in 2010. These were usually filled by old building materials with an average 40kg per m3 of waste.

Skips	Size (m2)	tonnes waste	tonnes CO2e ¹⁰
McGrath skip Apr 11	6.12	0.2448	
McGrath skip Oct 11	6.12	0.2448	
Total 2011	12.24	0.490	.006
Total 2010	24.48	0.979	.40
Total 2009	18.36	0.734	.35
Total 2008	22.95	0.918	.43

RECYCLING

We changed waste carriers in September 2011. Our new waste carriers, Bywaters, handle both our landfill and recycling waste. We did not conduct a recycling audit in 2011, so we do not know the composition of our

⁹ <http://www.mcgrathgroup.co.uk/home.html>

¹⁰ Using the same estimates of composition as previous years (50% wood, 40% aggregate, 5% mixed commercial/industrial and 5% metals) and 2012 Closed Loop recycling figures from Defra we estimate 13kg CO2e per tonne of waste. 2008 to 2011 figures are from previous environmental reports.

recycling bins. However, most of the recyclable materials have a conversion factor of 21kg CO₂e per tonne of waste, which is the main figure we've used¹¹.

Recycling	tonnes	CO ₂ e	tonnes CO ₂ e
Mixed recycling (cardboard, paper, glass, plastic, aluminium)	12.24	.021	.257
2011 Total	12.24		.257
2010 Total	10.07		-19.14
2009 Total	10.07		-19.14
2008 Total	6.74		-16.06

The recycling data does not bear much resemblance to what was reported last year as the system of calculating CO₂e has changed significantly.

- In 2010 emission factors for waste disposal were based on a full life-cycle assessment and included not only the carbon costs of treating and transporting waste but also any potential benefits were offset (resource extraction or electricity generation) with energy recovery.
- In 2012 the emission factors for waste disposal were changed so that they're now based on those that are attributable to the reporting company which disposes of the waste material. They do not include any potential benefits or offsetting – these are now attributed to the user of the 'new' recycled material or the user of the generated energy.

COMPOSTING

The Ridan composter has produced a total of 2 tonnes of compost in 2011 (2.25 tonnes in 2010). The compost is used in the garden on our fruit and vegetable plots, thus closing a loop. Had we put this kitchen waste to landfill we would have produced 1.5 tonnes CO₂e (compared to just 12kg by composting).

Composting	tonnes	CO ₂ e ¹²	kg CO ₂ e
Kitchen waste	2	6	12
2011 total			.012 tonnes CO₂e
2010 total			.068 tonnes CO₂e
2009 total			.04 tonnes CO₂e

Emission factors for waste disposal of organic food and drink waste by composting method have also changed significantly between 2010 and 2012 - decreasing from 30 CO₂e per tonne to 6 CO₂e per tonne.

WASTE SUMMARY

Waste type	Amount (tonnes)	Tonnes CO ₂ e
Landfill	3.68	.732
Skip	.490	.006
Recycling	12.24	.257
Composting	2	.012
2011 total	18.41	1.007
2010 total	15.579	-18.355
2009 total	16.696	-18.67
2008 total	12.496	-15.24

¹¹ DEFRA figures GHG Conversion factors 2012

¹² DEFRA figures GHG Conversion factors, August 2012

TRANSPORTATION

For the purposes of this report we have included all transport costs that we incur directly such as route setter travel expenses, Steve's trips from Buxton and any other business trips. We have not included personal commuting, customer transport and deliveries.

BUSINESS TRAVEL

TRIPS REQUIRED BY BUSINESS & MODE OF TRANSPORT

We travelled less in 2011 compared to travel in 2010, but more was done by car, thus increasing our carbon emissions. This is likely due to an increase in the amount of mileage claimed by guest setters.

Method of travel	Total distance (km)	Total CO ₂ e	% of total km	% of CO ₂ e
Train	19,984	1.13 (-66%)	70% (down from 95% in 2010)	43.0%
Underground	296.7	0.022 (+38%)	1.05%	0.8%
Bus	36.5	0.0031 (-16%)	0.13%	0.1%
Car	7,961.90	1.49 (+270%)	28% (up from 7.96% in 2010)	56.4%
2011 Totals	28,861 km	2.64 tonnes		
2010 Totals	33,534.20 km	2.56 tonnes		
2009 Totals	24,999.30 km	2.29 tonnes		
2008 Totals	18,853.40 km	1.799 tonnes		

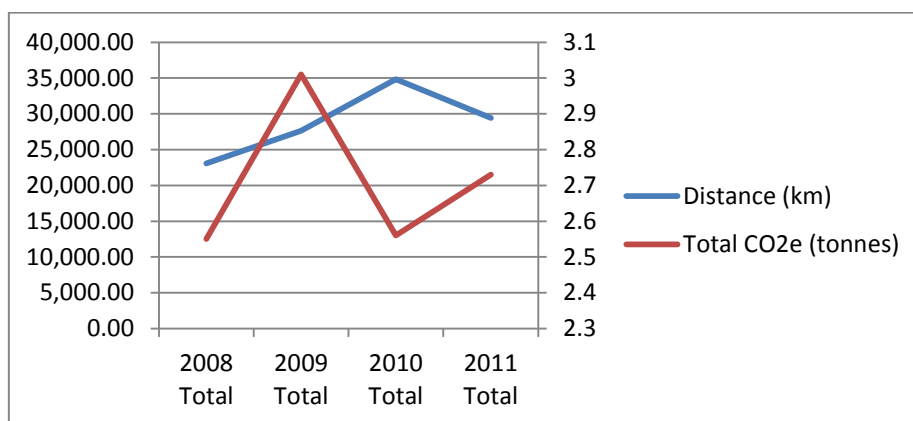
STAFF TRIPS TRAVEL PAID FOR BY THE CASTLE

Date	Description	Cost	Distance (km)	Total kg CO ₂ e
12/04/2011	Staff Trip to the Roaches - Peak District	£79.44	581.5	91.17
2011 Total			581.5 km	0.09 tonnes
2010 Total			1281 km	0.29 tonnes
2009 Total			2654 km	0.72 tonnes
2008 Total			4208 km	.75 tonnes

SUMMARY OF BUSINESS TRAVEL

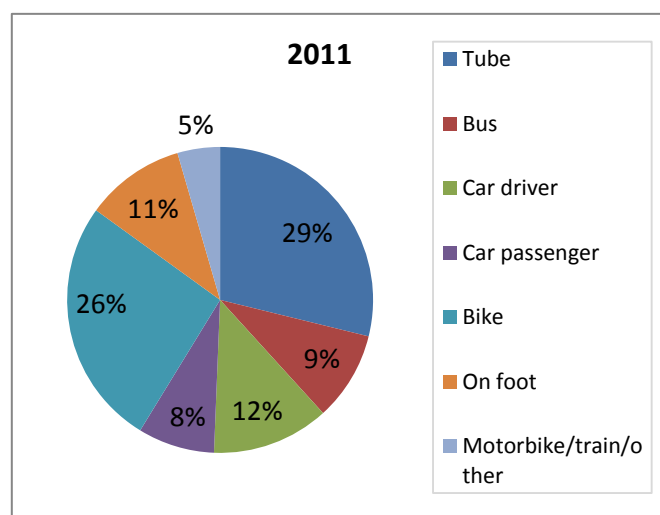
Date	Distance (km)	Total CO ₂ e (tonnes)
2011 Total	29,442.5	2.73
2010 Total	34,815.2	2.56
2009 Total	27,653.3	3.01
2008 Total	23,061.4	2.55

The chart below shows that while our overall business travel has decreased, the CO₂e emissions have increased.

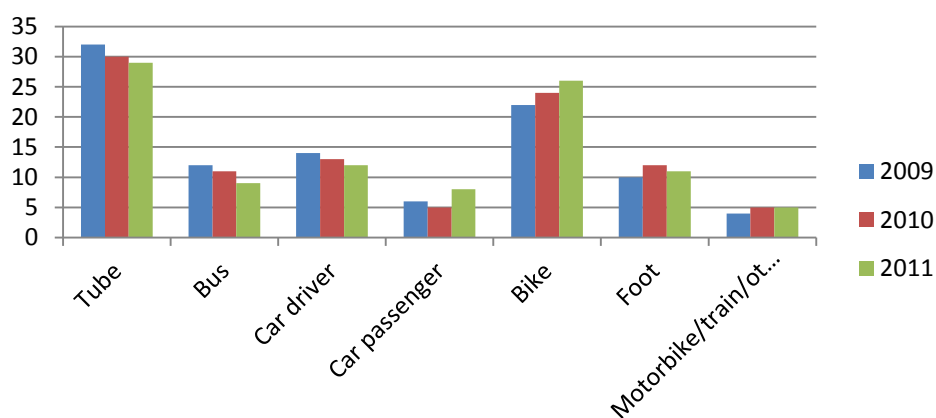


CUSTOMER MODES OF TRANSPORT

Although we do not include customer travel in our carbon footprint calculations, we conduct a survey every year in March to see how our customers travel to the centre. There have not been any major changes over previous years, though the trend towards increased journeys by bicycle is encouraging.



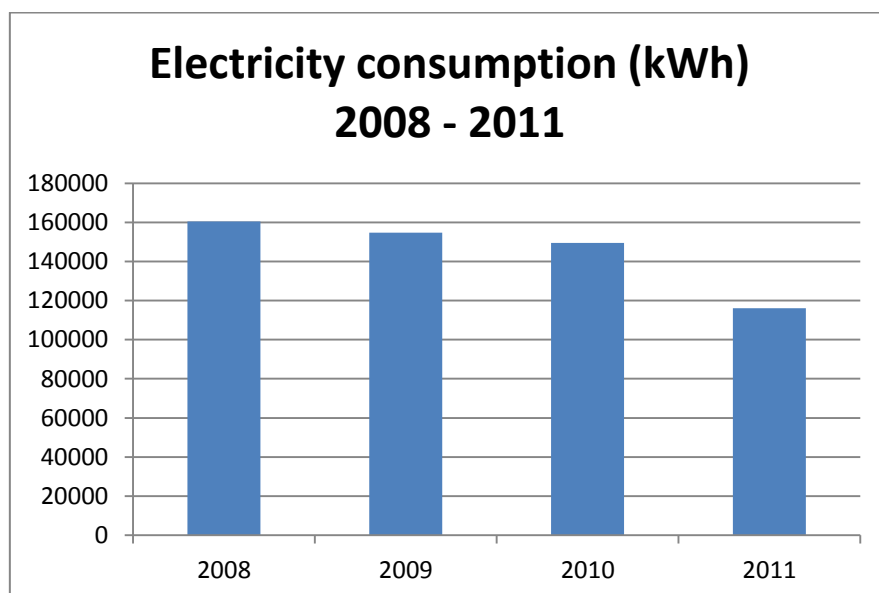
Customer Modes of Transport 2009-2011 (%)



ENERGY & RESOURCE CONSUMPTION

ELECTRICITY

We have continued to have difficulty with the installation and use of our electricity monitoring units. This was complicated by the addition of new areas which had not been factored into the initial installation. We are very encouraged by the 22% decreased in consumption compared with 2010, but we have not yet analysed the circuit board data to determine where this saving has come from.



We continue to use Green Energy UK (<http://www.greenenergy.uk.com/>) to supply both The Castle and the Buxton office. We use their Deep Green tariff which has no CO₂ emissions¹³ (though GHG Protocol requires national standard emissions to be reported unless the energy is generated on-site).

CASTLE CLIMBING CENTRE

Source	kWh		CO ₂ e ¹⁴
Green Energy (2011)	115568		60.14
		Total 2011	60.14
		Total 2010	81.52
		Total 2009	82.85
		Total 2008	85.73

BUXTON OFFICE

Source	kWh		CO ₂ e
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¹³ <http://www.greenenergy.uk.com/FuelMix/Default.aspx>

¹⁴ The electricity conversion factor used represents the average carbon dioxide emission from the UK national grid per kWh of electricity used at the point of final consumption (i.e. electricity grid transmission and distribution losses are included), factoring in net imports of electricity via the interconnectors with Ireland and France. This represents a combination of the emissions directly resulting from electricity generation and from electricity grid losses.

Electricity emission factors from 1990 to 2010 per kWh (electricity CONSUMED); Amount USED per year, kWh; Total Direct GHG (2010 figure); **kg CO₂e per kWh; Scope 2; 0.52037** (Table 3c). 2012 DEFRA Conversion Factors.

Compared to **kg CO₂e per kWh; 0.52462** - 2011 DEFRA conversion factors.

Green Energy (2011)	457		0.24
		Total 2011	0.24
		Total 2010	0.28
		Total 2009	0.22
		Total 2008	0.42

GAS

CASTLE CLIMBING CENTRE

Source	kWh		Tonnes CO ₂ e ¹⁵
Eon	181068		33.54
		Total 2011	33.54
		Total 2010	30.74
		Total 2009	35.23
		Total 2008	43.01

Our gas consumption peaks in the winter months as we use the gas heaters. The heaters were broken for some of the previous winter which helped keep our gas consumption down. This year, with the heaters in working order and the added demand of the kitchen, our consumption has resumed its normal pace. We do not anticipate that this will decrease until we complete the final phase of our development which will insulate the building.

BUXTON OFFICE

Source	kWh		Tonnes CO ₂ e
Estimated amount	6727 estimated		1.25
		Total 2011	1.25
		Total 2010	1.25
		Total 2009	1.25
		Total 2008	1.25

WATER

CASTLE CLIMBING CENTRE

Source	m ³	Million litres ¹⁶		Tonnes CO ₂ e ¹⁷
Water supply (Thames Water)	2293	2.293		.789

¹⁵ Total Direct GHG; kg CO₂e per unit; Natural Gas; Scope 1; 0.18521 (Compared to 0.18360 from 2011 conversion figures). 2012 DEFRA Conversion Factors.

¹⁶ 1m³=1000 litres

¹⁷ As per DEFRA's GHG conversion factors at 344.1kg CO₂e per million litres for water supply and 708.5kg CO₂e per million litres for water treatment. Bio-energy and water conversions - Table 9a (All Scopes) DEFRA Conversion Figures

Wastewater	2293	2.293		1.625
				Total 2011
				2.41
				Total 2010
				2.34
				Total 2009
				2.48
				Total 2008
				2.04

There has been a slight increase in our water consumption (2252 m³ in 2010) which was compounded by a change in the GHG emissions calculation. We are now using mostly harvested rainwater in the garden, enabling us to keep the overall water consumption low in spite of increased demand.

BUXTON OFFICE

Source	m ³	Million litres		Tonnes CO ₂ e ¹²
Estimated amount	29 (supply)	.029		.00998
	29 (waste)	.029		.02055
				Total 2011
				0.03
				Total 2010
				0.03
				Total 2009
				0.03
				Total 2008
				0.03

GARDEN

Summer 2011 was our second growing season and we continued to develop more areas in the garden for more produce, flowers, herbs and wildlife. We have taken on more permanent staff in the garden including medicinal horticulturalist, Nick Quinn, who works part-time and is responsible for the cultivation and use of our herbs and Min Willis, who provides additional labour.



- Nick has created more **herb beds** and planted a **lavender hedge**.
- We've created a **drying room** using scrap wood left over from other building jobs to cope with the glut in herbs by drying them and using them throughout the winter months for cooking, teas and medicinal purposes.
- Steve Taylor led the project to construct a **swale** running down the hillside to filter greywater from the men's showers to irrigate the garden.
- Our young **fruit trees** and shrubs started to produce some fruit this year. The crop included raspberries, strawberries, apricots, apples, pears, plums and figs. Ida held a scrumping day, employing volunteers to collect apples from the Castle Garden and various neighbours who didn't want their fruit. This has been turned into cider which will be ready to enjoy early in 2012.
- Barry, one of our long term volunteers researched, designed and created a **wildlife pond** with two overflow areas in order to provide food, shelter and safety for the wildlife in the garden.
- In November, we planted a **new hedge** at the front to provide us with a natural boundary. We took part in a community tree planting scheme with the Woodland Trust who donated 450 saplings. We had a great team of volunteers who planted out 300 plants (crab apples, dog rose, elder, hazel and blackthorn) which will all prove useful for a wild harvest later!
- Min created new **garden terraces** in front of the bee hives, filling them with herbs and flowers which were specifically planted, not only to attract the bees but also be used in the cafe and salads.
- Tom Trimmins, a local furniture maker, ran a woodworking workshop for staff to make **three new bee hives** for the garden, one of which was installed alongside our existing hives. In August, we had our first harvest of honey, with over 30 jars produced and sold in our café.
- We built a polytunnel garden shed to propagate seedlings.

- We continue to host a **Growing Communities micro site** and we are a pickup point for their organic box scheme. <http://www.growingcommunities.org/>
- The **Community Mini Plots scheme** continues to thrive, giving local gardeners, climbers and staff the opportunity to grow their own veg.
- Ida invited climbers to **warmup** for their climbing session by pushing wheelbarrows of soil and mulch in exchange for tea and a snack in the café.
- We ran part of our **all-staff workshop** in the garden, splitting into teams to complete various tasks. This was successful in that it encouraged more staff to get involved in the garden.
- The **Federation of City Farmers and Community Gardens** brought a group to tour the Castle garden.
- Our own local exchange trading system offer volunteers the chance to earn 'Castle Quids' for their help in the garden. These in turn can be exchanged for a free climb or course.

A complete list of produce grown in our garden is found in **Appendix A – List of Garden Produce**.

CASTLE BALMS



In December 2011 Nick produced the first batch of hand and lip balms to sell in the Castle shop. The balms are made at the Castle using beeswax from the Castle bees and other local hives, blended with organic olive and sunflower oil, infused with herbs taken from the Castle garden and scented with essential oils. The herbs used from our garden are Calendula, Comfrey, Plantain and St John's Wort.



REAL BREAD CAMPAIGN

We took part in the Real Bread Campaign's 'Bake Your Own Lawn' campaign. Ida Fabrizio (pictured right), our Garden Co-ordinator, grew wheat in a 1.5 metre patch of land. This was scythed, threshed and winnowed at the annual Castle Garden Party with the help of party goers and their kids. 1.17kg of wheat was produced.

http://www.sustainweb.org/realbread/bake_your_lawn/

CASTLE EVENTS

Over the course of the year we held two big events. At each of these we have tried to keep waste to a minimum and source our supplies responsibly.

THE CASTLE GARDEN PARTY - 14TH AUGUST 2011

Each year we hold our Garden Party to give something back to our customers and also promote the garden and what we have achieved in the previous year. 2011's party was the biggest we've put on so far. Not only did we provide the usual BBQ, music entertainment, outdoor climbing wall and dyno competition, we also put on a show stopper with a high slackline stretched between our 80ft up in the air (pictured right). This not only drew in the crowds but also the press. Hackney Gazette covered the event and mentioned our environmental work in relation to the garden party.

In addition, this year we invited the following organisations to promote themselves and run activities:

- The **BMC** promoted their **Access and Conservation Trust** <http://www.thebmc.co.uk/bmc-access-conservation-trust>
- **Eco Active** ran composting activities <http://ecoactive.org.uk/>



- **Magnificent Revolution** showed us how to harness bike power
<http://www.magnificentrevolution.org/>
- **Growing Communities** promoted their organic veg box scheme
<http://www.growingcommunities.org/organic-box-scheme/>

We were very pleased that after a party for 150 guests we had only ½ bag of rubbish to go to landfill, mainly from items brought in from outside the centre by customers.

SIBL, REEL ROCK TOUR & XMAS PARTY - 10TH DEC

For a number of years we have hosted a competition round of the Southern Indoor Bouldering League, having anything between 100 to 250 people through our doors on the day to take part in the competition. We usually choose this time of the year to throw a Xmas party for our customers, to thank them for their support through the year and give them something back.

- Using our new kitchen, we cooked a selection of organic vegetarian buffet food.
- We served organic ale, lager, cider and spirits
- We used compostable plates and recyclable cutlery which was kept so we can reuse it again for other events. The plates were put on the bonfire afterwards as we realised they took a long time to compost and probably wouldn't be very good for our composter. The ashes from any fires we have are then used on the garden.
- Biodegradable, recyclable plastic glasses are used for the party.
- The amount of rubbish left over from such a large party was minimal and consisted mainly of items brought in by customers from outside.

GARDEN EVENTS

Throughout the year Ida runs a number of events to involve the climbing and local community. These include:

- Weekend volunteer days in the garden with lunch and snacks provided by The Castle Café
- Wassail bonfire (January/February) – traditional way to mark the planting of the apple trees
- Garden party (August – see below)
- Apple scrumping and pressing (September)
- Bonfire night (November)

EMPLOYEE INCENTIVES

CASTLE STAFF ECO-GRANTS

The purpose of the eco-grants is to allow Castle staff the financial freedom to volunteer for environmental projects, taking time off from their jobs whilst the Castle pays them a stipend whilst they're away. The scheme started in December 2010 to carry on momentum from the 2009 Castle Environmental Awards. Applications are submitted twice a year and the allocation of the award is decided by a panel of peers led by HR Manager Ben Levey. In January 2011 the panel awarded two eco-grants totalling £3627.23 (pre tax).

- **Caroline Talbot** undertook a six-month internship with Green Alliance, an environmental think tank working with key UK political leaders. She was involved with membership and fundraising research, media monitoring and maintaining a contact database for MPs. Along with learning new skills and gaining an insight into the corporate and political side of environmental work, Caroline also used her own experience from the Castle, by recommending and implementing changes to Green Alliance's internal environmental policy. <http://www.green-alliance.org.uk/home/>

- **Miriam “Min” Willis** got involved with the Hillyfields project - a woodland management scheme near Dartmoor National Park. Their main aim is to introduce native woodlands to the area whilst dealing with the issues of conservation and teaching the local community about their landscape. In her time spent at Hillyfields, Min learnt about woodland management, the use and treatment of the wood felled for use and helped build a larch round house. As a member of our garden staff, the experience Min gained has been put to good use. <http://www.thehillyfield.co.uk/Welcome.html>

BIKE TO WORK SCHEME

The Castle takes part in the national Bike To Work scheme, offering staff the opportunity to purchase bicycles for commuting in a tax efficient way. One staff member took advantage of this in 2011.

ECO-DAYS

The Castle allows salaried staff to take additional paid holiday when travelling if they choose sustainable travel means rather than flights. In 2011, six eco-days were taken.

RESEARCH AND DEVELOPMENT

We have continued to prepare the plans for the final phase of development of The Castle, expected to start in 2013. This includes building additional climbing walls and making the building as energy and resource efficient as possible. To this end we've been working with a team of structural engineers, architects, heating/ventilation specialists, planning consultants and builders. The work carried out in 2011 towards this includes:

- Installing Power Predictors on the roof to investigate whether wind power is a possibility
- Diverting the shower waste water
- Investigating the bunkers and pits for development
- Installing and plumbing rainwater tanks
- Various building surveys

CONCLUSION – ACTION POINTS

With our constantly evolving management structure and the loss of key staff, the environmental policy has not been as actively managed as in previous years. We aim to rectify this in 2012 by:

- Producing the Environmental Report earlier in the year so that we are acting on more current information;
- Applying for environmental awards to promote our work;
- Continuing to work towards formal accreditation.

Other action points that emerge from this report are:

- Analysing our electricity consumption data;
- Continually reviewing the supply chain for the café and shop and setting objective targets about procuring sustainable products;
- Recruiting someone to produce annual waste stream audits;
- Working with Bikemech to reduce their waste to landfill;
- Using only rainwater/greywater to irrigate the garden; and
- Improve our transport associated emissions.

APPENDIX A – LIST OF GARDEN PRODUCE

Below is a list of produce harvested from our garden. From 2012 we began to weigh the amounts harvested.

Produce	Herbs (for teas - both fresh and dried)
Green leaf salads	Mint
Tomatoes	Lemon Verbena
Cucumbers	Fennel
Squashes	Chamomile
Peppers	Lemon Balm
Onions	Nettles
Garlic	
Carrot	
Beetroot	
Chard	
Sweetcorn	
Courgettes	
French Beans (purple & yellow)	