

# SUSTAINABILITY REPORT 2018

**Bethany Martin**

The Castle Climbing Centre  
Green Lanes, London N4 2HA  
[www.castle-climbing.com](http://www.castle-climbing.com)

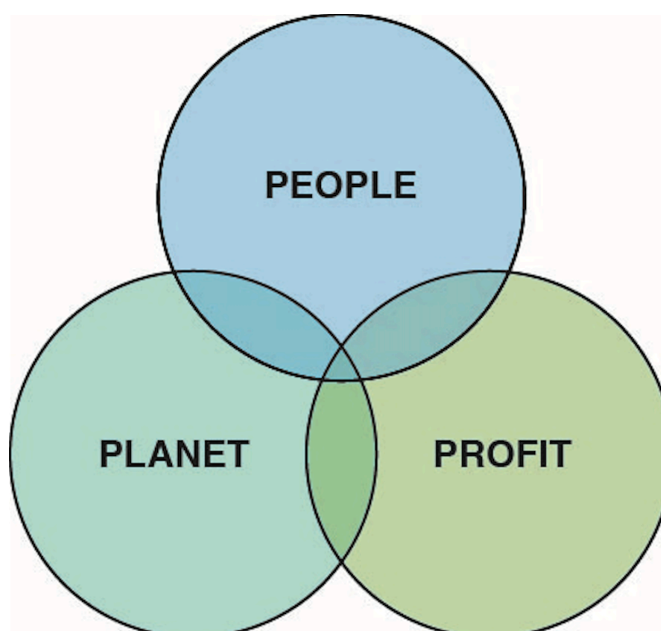


<b>INTRODUCTION</b>	<b>2</b>
<b>MANAGEMENT, HEALTH &amp; WELL-BEING</b>	<b>4</b>
ENVIRONMENT	4
EMPLOYEES	4
CUSTOMERS	5
CASTLE PROJECTS PROMOTING HEALTH & WELL-BEING	5
<b>ENERGY</b>	<b>6</b>
ELECTRICITY	7
GAS	8
IMPROVEMENTS AND CONSIDERATIONS FOR 2019 AND BEYOND	11
<b>TRANSPORT</b>	<b>11</b>
<b>WATER</b>	<b>12</b>
IMPROVEMENTS AND CONSIDERATIONS FOR 2019 AND BEYOND	13
<b>MATERIALS</b>	<b>14</b>
PRODUCTS & SUPPLIERS FOR SHOP, CAFÉ & KITCHEN – SEE DEPARTMENTS	13
CONSTRUCTION	14
CLIMBING WALLS & ROUTE SETTING	14
CLEANING & MAINTENANCE	15
OFFICE MATERIALS	15
IMPROVEMENTS AND CONSIDERATIONS FOR 2019 AND BEYOND	15
<b>WASTE</b>	<b>16</b>
<b>LANDFILL &amp; RECYCLING</b>	<b>16</b>
COMPOST	17
CONSTRUCTION WASTE	17
IMPROVEMENTS AND CONSIDERATIONS FOR 2019 AND BEYOND	17
<b>LAND USE &amp; ECOLOGY</b>	<b>17</b>
<b>THE GARDEN</b>	<b>18</b>
BIODIVERSITY	19
IMPROVEMENTS AND CONSIDERATIONS FOR 2019 AND BEYOND	19
<b>DEPARTMENTS</b>	<b>20</b>
FINANCE	20
RECEPTION	20
SHOP	20
KITCHEN	21
GARDEN	21
INSTRUCTING, LESSONS AND GROUPS	21
EVENTS & CORPORATE BOOKINGS	22
IMPROVEMENTS AND CONSIDERATIONS FOR 2019 AND BEYOND	22
<b>SUMMARY</b>	<b>23</b>
<b>APPENDIX</b>	<b>24</b>
1.A EMPLOYEE DATA METHODOLOGY	24
2.A METHODOLOGY FOR ENERGY DEMAND FOR SPACE HEATING PER YEAR (KWH/M <sup>2</sup> )	24
3.A THE ETHICAL CONSUMER'S ENVIRONMENTAL RATING OF CLIMBING BRAND	25

## Introduction

Sustainability is central to the values of The Castle Climbing Centre. We believe that it is our responsibility to alleviate our demand on the planet's resources in all our business operations. In 2010, we set three clear and ambitious targets to be achieved by 2015, these were: (i) to become carbon neutral, (ii) to become water neutral and (iii) to send zero waste to landfill. With The Castle growing in popularity and size year on year, this has not been without its challenges. The Castle's Grade II\* listed status has both posed a hindrance and presented unique solutions for sustainable technologies. We work with engineers, architects and specialists to design energy efficient building management systems that utilise The Castle's architecture without modifying the building envelope. As well as developing and improving our internal processes, we acknowledge that our responsibilities stretch beyond the walls of the climbing centre. We are committed to influencing our staff, customers and the industry to embrace more sustainable practices.

Our journey towards becoming a sustainable business has seen our understanding of 'sustainability' evolve. In addition to reviewing the environmental impact of The Castle Climbing Centre's operations, this report considers our impact and reach within the community. Among other influences, we take inspiration from The Brundtland Report (1987) definition of Sustainable Development as a commitment to "meeting the needs of the present without compromising the ability of future generations to meet their own needs". We acknowledge that climate change is an environmental and social justice issue, affecting the lowest contributors first and worst. We also acknowledge that a healthy, connected community has greater capacity to consider and reduce its ecological footprint. For The Castle to develop sustainably we must contribute to building an equitable society in which no one is left behind.



## Management, Health & Well-Being

### Environment

**Lighting:** The Castle has varying degrees of daylight, with some areas receiving little or no natural light. The centre uses Thorlux Smartscan lights, which are operated by movement sensors and adjust according to the amount of natural light in the room.

**Noise:** Noise levels vary throughout the centre. At peak times noise levels can be quite high. Music levels are changed at times when customers with specific needs are visiting the centre.

**Temperature:** Due to the vastness of the building it can be difficult to regulate and maintain consistent, comfortable temperatures for both staff and exercising customers. To address this challenge, an under-floor heating system was installed in the reception and café mezzanine in 2015 and employees are supplied with jackets and gloves. Similarly, in the summer some parts of the centre get very warm, in these areas industrial fans are installed for customers and employees.

**Air Quality:** Climbing chalk dust does affect the air quality in climbing centres. They have high levels of PM<sub>10</sub> and PM<sub>2.5</sub> particles due to loose magnesium carbonate (chalk)<sup>1</sup>. Other climbing centres have taken various measures to address this issue, including banning loose chalk and installing air filters. Air filters are installed in the men's changing rooms and office. We are currently working with engineers and occupational hygienists to build appropriate air cleaning measures into our heating and ventilation systems around the rest of the centre. We are also exploring alternative, more environmentally-friendly chalk and grip products, whilst raising awareness of issues around excessive chalk use in climbing centres among customers.

### Employees

**Table 1 High Performance Sports Employee Statistics 2018**

	The Castle	Benchmark
<b>Number of employees</b>	92	N/A
<b>Turnover</b>	2%	3%
<b>Workforce Stability</b>	92.77%	N/A

The table indicates turnover and work force stability rates, see [Appendix 1.A](#) for methodology. Benchmarking is difficult to do given the nature of our industry and the availability of data. However, we have been able to obtain a figure for the wider "leisure industry" sector and this is the benchmark we are working to until we can get better data.

Consultation processes and team meetings with employees help inform business decisions and maintain the Castle's community ethos. In 2018, the Employees Benefit Trust was established, which six employees manage, four of whom were elected. Recent developments to improve working conditions include a new, much more spacious and comfortable staff room and adjustments in pay to reflect the London Living Wage.

<sup>1</sup> [Dust Exposure in Indoor Climbing Facilities](#), B. Almand-Hunter et al., 2014

<sup>2</sup> [Haringey.gov.uk Figures about Haringey](#); Dec 2015;



## Customers

In our 2018 Customer Survey, The Castle's sustainable ethos and community atmosphere were frequently cited as reason for visiting the centre. Of 2,050 respondents, 98.3% believe it is a good thing that we are working hard to reduce our environmental footprint, whilst the 1.7% did not. This contrasted with 70.5% respondents being aware of our environmental policy. The main areas for improvement within the Castle were customer service and overcrowding.

We do not currently record ethnicity information about our customers, however it is clear that the majority of our customers are of the white ethnic group. This is starkly contrasted with the locality, where Haringey, is listed as the fifth most ethnically diverse borough in the country, with two-thirds (and over 70% young people) of the population being from an ethnic minority background<sup>2</sup>. Gender data shows that 43% of our customers identify as women (Jan, 2017). When compared with figures such as '29% regular, independent women climbers... in the indoor arena' and 27% of members of the British Mountaineering Council being women<sup>3</sup>, the Castle's gender data is encouraging. We run women-only social groups, events showcasing women-specific equipment and celebrate International Women's Day to encourage women's participation in climbing.

We are committed to ensuring The Castle is a welcoming and inclusive environment and strive to remove barriers to accessing climbing walls. We welcome any suggestions from the community as to how to improve our accessibility.

## Castle Projects promoting Health & Well-Being

- \* The Garden volunteer scheme, traineeships, paid work for Castle staff, after-school club and family-friendly events, organic produce for sale and used in the café
- \* Healthy vegetarian and vegan food from the café
- \* Inclusive Climbing
- \* Social sessions including The Session and Women's Bouldering Social
- \* Art sessions
- \* Yoga and Climbers Clinic Physiotherapy
- \* Bike Mechanic and bike parking spaces, as well as frequent marketing encouraging people to cycle to The Castle
- \* Growing Communities pick up point

---

<sup>2</sup> Haringey.gov.uk [Figures about Haringey](#); Dec 2015;

<sup>3</sup> [BMC Independent Organisational Review Group Report](#), British Mountaineering Council; Nov 2017

## Energy

The Carbon Trust estimates that industrial buildings could be losing up to 75% of heat generated through the building fabric<sup>4</sup>. The Castle is a Grade II\* listed building, which restricts tampering with the building fabric making sealing up leaks and insulating challenging. Engineers have estimated that there are 10 to 14 air changes per hour in The Castle; a surprisingly low figure given the 'leaky-ness' of the building. The performance comparisons in table 2 offer a benchmark for building envelope airtightness and energy demand for space heating. By studying the flow of air around the centre, we are able to design energy efficient systems that overcome the challenges presented by the complexity of the architecture.

**Table 2: Performance Comparison between a typical new build, a new Passivhaus and a retrofit EnerPHit standard.**

Outline Specification	UK New-Build	New Passivehaus	EnerPHit
<b>Total energy demand for space heating kWh/m2/year</b>	55	≤15	≤25
<b>Build envelope airtightness X building volume/hour</b>	6+	≤0.60	≤1

As part of our target to become carbon neutral, we are committed to both reducing energy consumption by all means possible and ensuring our energy is from renewable sources. Since 2012, Ecotricity has supplied the Castle Climbing Centre with 100% green electricity and frack-free gas. Our efforts to reduce our energy consumption in recent years include following:

In 2013, the Men's Changing Rooms were fitted with a Mechanical Heat Ventilation Recovery (MHVR) unit, which allows air exchange between the changing rooms and the rest of the centre that both cleans (with a HERPA filter to remove chalk from the air) and warms the air without energy use. The HERPA filter is cleaned monthly and changed once a year.

The Wells, opened in 2014, are 8 metres underground and therefore require a sophisticated Building Management System to efficiently manage ventilation, temperature and ground water. The technology utilises the existing infrastructure of the site to remove ground water and monitor temperature and carbon dioxide levels. Three electric water pumps installed in pre-existing tunnels pump out ground water. Airflow is managed through a natural 'stack effect', drawing fresh air into the building, from the tower down to the climbing areas. A monitoring system records the carbon dioxide and temperature levels in the Wells. There are two pre-existing underground inlets, which are opened if the temperature is too high. Heating (currently gas) automatically turns on if the temperature drops too low, see Box 1 for an example. When the carbon dioxide concentration rises above 1200ppm, vents open regardless of the temperature. In 2016/2017, we won the Rushlight Energy Reduction Award for this Natural Ventilation System, which reduces our energy consumption by approximately 30% (equivalent to 17 tonnes of carbon dioxide per year).

<sup>4</sup> Building Fabric CTV069, The Carbon Trust; March 2018

During winter 2016/17, the heating was set to turn on if the temperature dropped below 10°C, a temperature considered to be “just comfortable for climbing”. This resulted in an atmosphere that was too damp, which is not good for the longevity of the climbing walls and meant the Wells were much less popular than other parts of the centre. In response to this, the heating was set to come on if the temperature dropped below 18°C during the winter of 2017/2018, this prevented the dampness and there was a noticeable increase in usage of the wells.

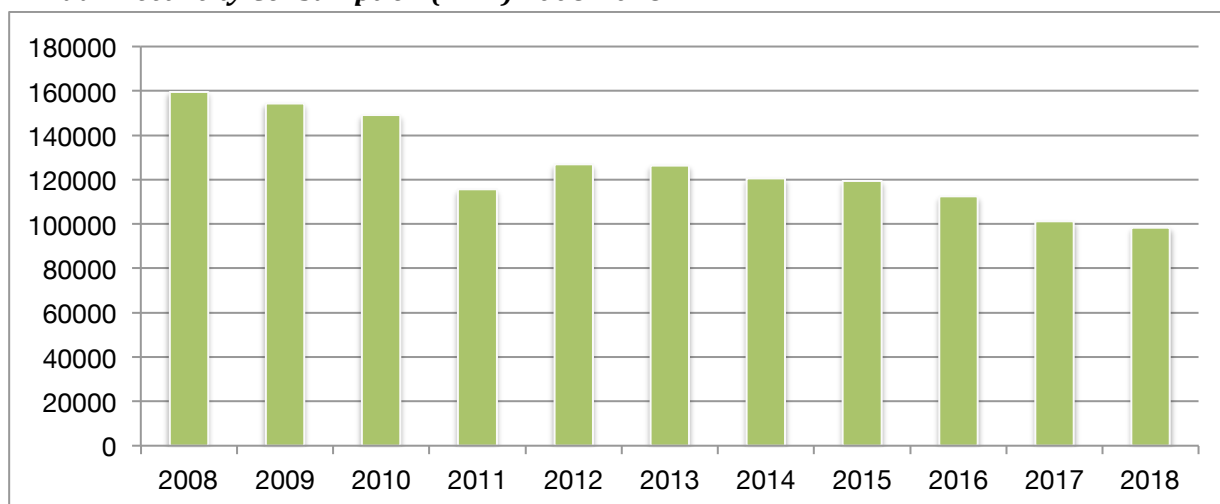
#### Box 1 The Wells Building Management System

Installation of Thorlux Smartlights began in 2015 and was completed in 2018, with all lighting in the centre now using Thorlux technology. These lights are known to reduce energy consumption from lighting by over 70%. Thorlux are committed to minimising the environmental impact of their manufacturing process and have established a carbon offsetting scheme, which plants trees in Monmouthshire, Wales.

We have been looking into generating on site renewable energy since 2010. The Castle’s Grade II\* status places some restrictions on the positioning of solar panels. This barrier coupled with the need to reinforce the roof to make it strong enough to hold solar panels has delayed their installation. In September and October 2018 roof reinforcement construction work was completed. Solar panels and solar thermal will be installed in 2019. We are installing a new energy-efficient centralised water heating system, which relies on solar thermal heating and possibly air source heat pumps, which will vastly reduce our gas consumption.

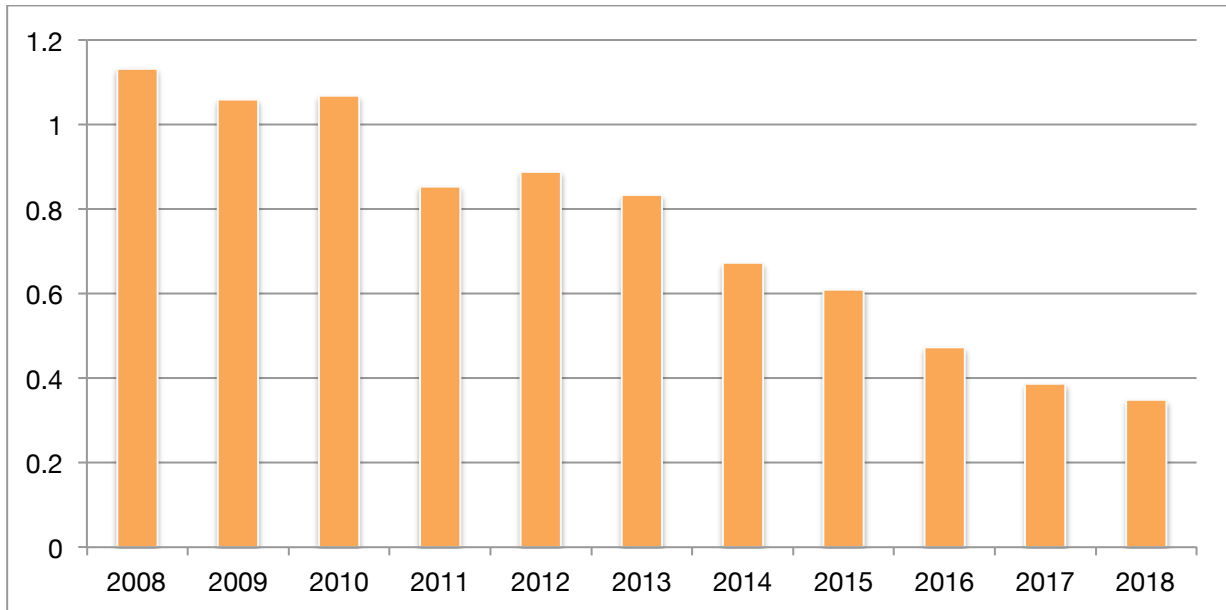
## Electricity

### *Annual Electricity Consumption (kWh) 2008-2018*

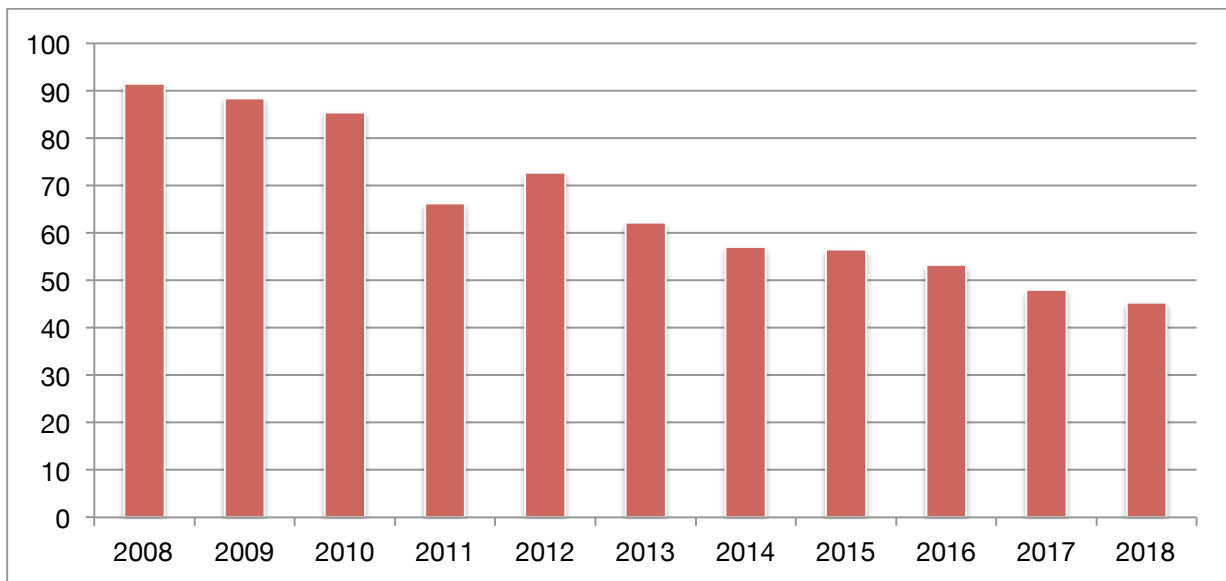


Despite The Castle increasing dramatically in size (in terms of number of customers, employees and building developments) there has still been a 38.4% decrease in overall electricity consumption over the past 10 years. The increase in electricity usage in 2012 is likely associated with the construction work in the engine house, which resulted in new areas opening in 2013, including the opening of the new Competition Wall (April, 2013), Loft, Outdoor Boulders and oak staircase running from the Loft down to the Wells. These developments continued into 2014 with the opening of the Wells in July.

### ***Annual Electricity Consumption (kWh) per visitor 2008-2018***

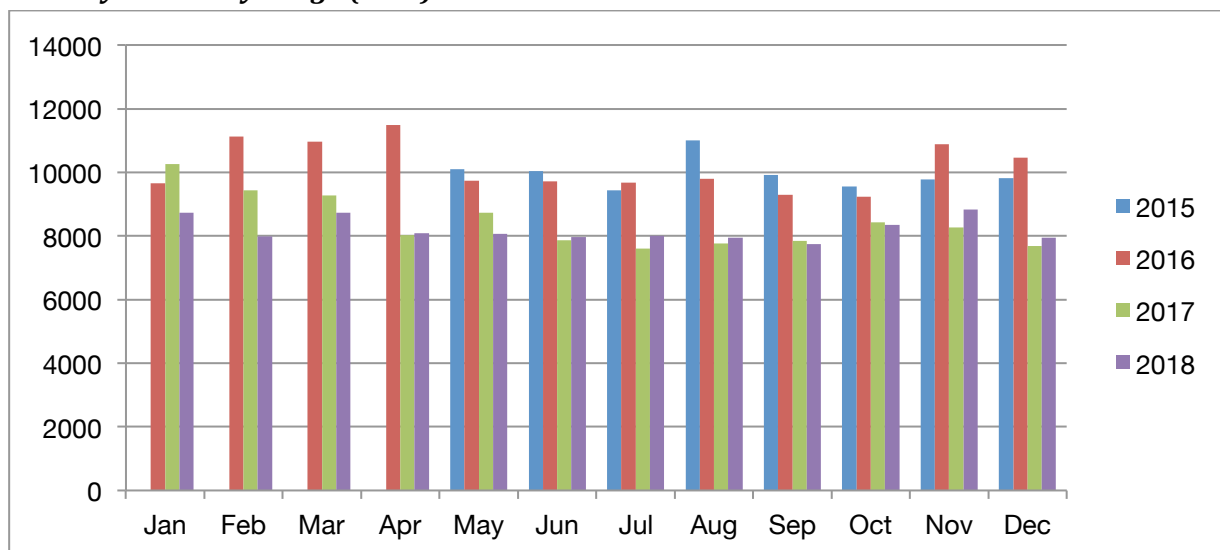


### ***Annual Electricity Consumption (kWh) per Gross Internal Floor Area of the Centre (m2) 2013-2018***



Both graphs above (showing electricity consumption per visits and per floor area of the centre respectively) reflect the same pattern and indicate even greater decreases in energy consumption per unit with overall decreases of and 69.2% and 50.5% respectively, since 2008.

### Monthly Electricity Usage (kWh) 2015-2018

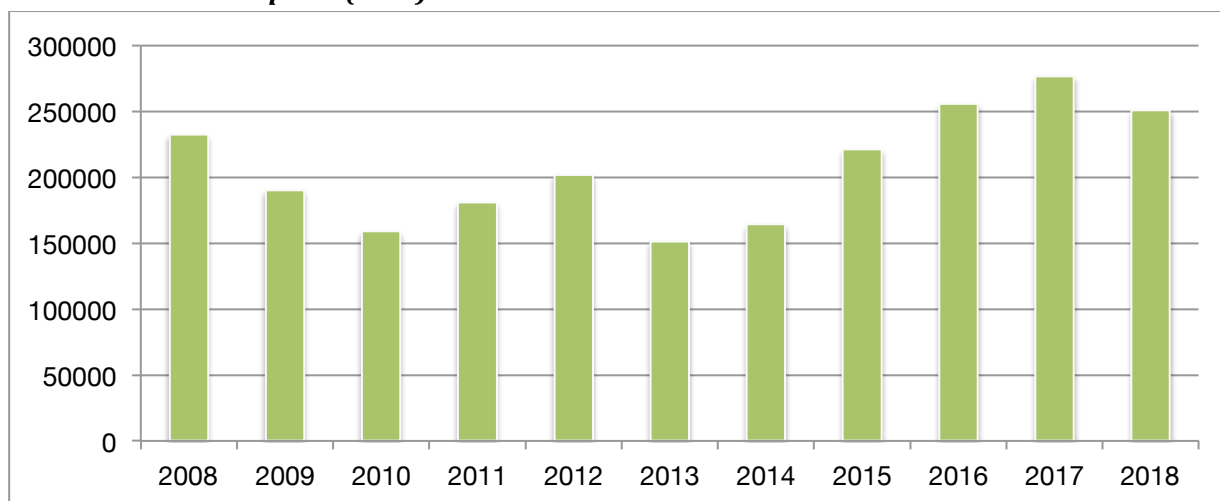


This data interestingly shows an increase in electricity consumption between November and December of 2015 and 2016, followed by an average decrease of 25% between 2016 and 2017. This pattern continued into the first winter months of 2018 with a decrease of up to 15% in electricity consumption compared to 2017. In contrast, despite considerable reductions in energy consumption between 2016 and 2017 all year round, there has been little change between the summer months of 2017 and 2018 and even increases in electricity consumption in the November and December in 2018. We hope that improvements to the thermal performance of the buildings (better insulation and ventilation) will reduce energy consumption across all seasons.

### Gas

Gas is supplied to different areas of The Castle from the mains via three boilers and two independent radiant heaters. Currently the system is difficult to monitor and, although the boilers have reasonably good efficiency ratings, the overall system could be far more efficient. In 2019 and 2020 we will install an efficient centralised water heating system that uses technologies including Solar Thermal.

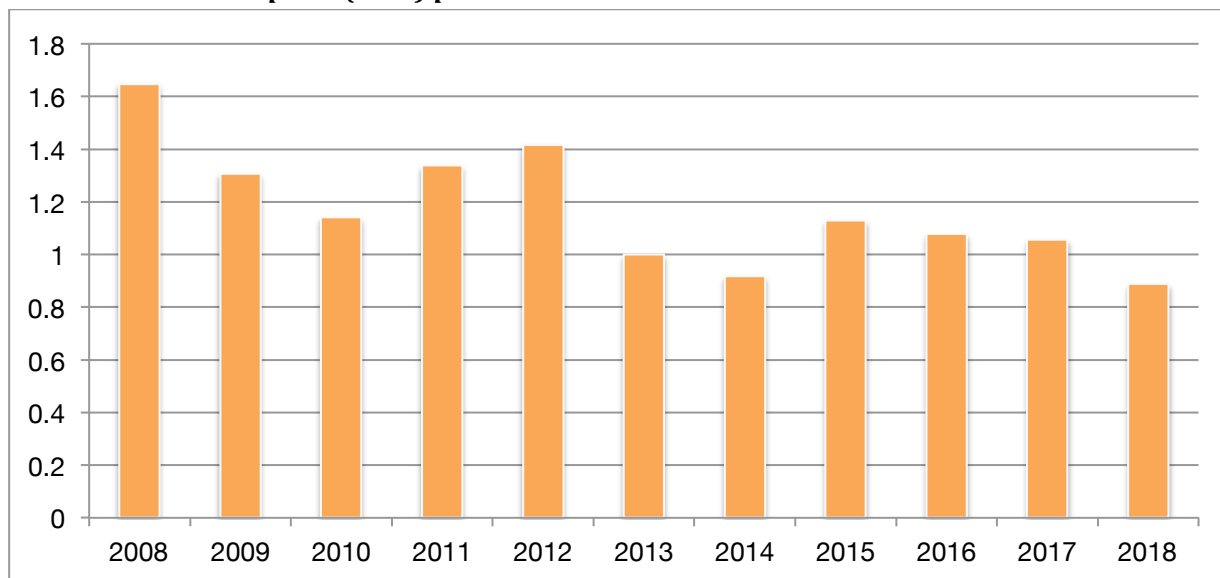
### Annual Gas Consumption (kWh) 2008-2018





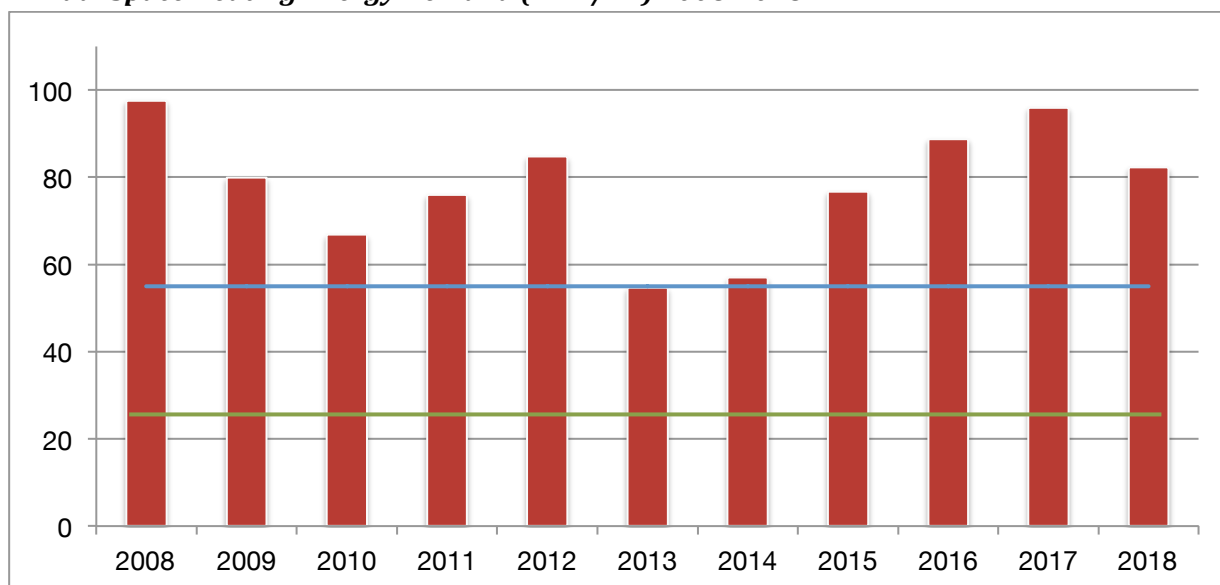
This graph shows that although demand for gas has not increased linearly, it increased by 15% between 2008 and 2017 and a shocking 45.2% between 2013 and 2017. This indicates that number of visitors to the centre places a high demand on gas consumption. It is likely that this demand is for hot water in the showers, Kitchen (opened 2011) and Café. More encouragingly, there was a 9.3% decrease in gas consumption between 2017 and 2018. Regardless, this data shows that further investment in reducing our demand on gas and designing a more efficient gas heating system is necessary.

#### ***Annual Gas Consumption (kWh) per visitor 2008-2018***



When compared to visitor data, annual gas consumption per visitor has decreased by 46.1% since 2008, which contrasts to the 15% increase in annual gas consumption in the same time period. Encouragingly, it appears that despite an increase in gas consumption per visitor in 2015 to 2017, 2018 data indicates are back to our lowest gas consumption per visitor since 2008.

#### ***Annual Space Heating Energy Demand (kWh/m<sup>2</sup>) 2008-2018***



Calculating the annual space heating energy demand allows us to benchmark our energy consumption for space heating against standards, such as the UK New Build and EnerPHit, the Passivhaus retrofit, see table 2. This calculation is based on the assumption that 15% of total gas consumed is for heating water; appendix 2 provides the data and methodology for this calculation. The blue line shows UK New-Build specifications of 55 kWh/m<sup>2</sup>/year and the green line is the standard for EnerPHit, the Passivhaus Certificate for retrofit buildings. The graph shows that the space heating energy demand at The Castle mostly exceeds these specifications, except for in 2013 and 2014 where demand dropped to around the UK New Build specification.

### Improvements and Considerations for 2019 and Beyond

- Circuit monitoring system to monitor of return on investment of energy efficiency investments and make improvements to electricity-demanding departments.
- Centralised, efficient boiler system with Solar Thermal water heating.
- Monitor the true demand for energy for heating hot water to produce more accurate estimations for space heating energy demand.
- Waste Heat Recovery System in all new showers could recover [around 60% of wasted heat](#), which could be used for under floor heating or placed near hot water pipes, see [Ecodrain](#).

### Transport

Our site is situated in a Level 4 connectivity zone according to Transport for London, with Manor House and Finsbury Park underground stations within a 15-minute walk and a bus stop with lines running into central London directly outside The Castle.

There are 12 parking spaces available at The Castle, which is below the maximum number of car parking spaces per number of customers specified by BREEAM. This recommendation is to discourage customers from driving to the centre. There are currently no clearly marked disabled parking spaces.

The Castle is very bicycle friendly. We have capacity for 200 bicycle parking spaces, although at peak times they are often full. Showers are also available for cyclists (and climbers!) and kit lockers are big enough to fit a bicycle helmet. There is no drying space for cycling gear other than the changing rooms. Bike locks are available from reception for customers that have forgotten their bike lock. In 2018, The Castle participated in the OFO bicycle scheme and provided a hub for the bicycles. Bicycle security and theft has been a big challenge at the Castle. We record all thefts, review CCTV footage and advise customers to report the incident to the police. In 2018, we upgraded our CCTV to three high quality cameras. We have seen a reduction in bike thefts over the years, from 46 reports in 2016 down to 24 reports in 2018. This may be the result of successful prosecutions that used our CCTV images.

Employees and Board Members do very little business travel. Long distance travel is for climbing conventions or to visit suppliers. Use of trains and overland options are encouraged as opposed to taking flights. There is an eco-day scheme available to employees, which offers an extra day holiday as an incentive to use more environmentally friendly means of travel.

## Water

The UK Government has a target to reach [a low carbon water industry by 2050](#). This document recommends a decentralisation of the water supply and a lower quality of non-potable water such as grey water, rainwater and surface water with end of tap water treatment for drinking water. Currently we collect grey water from the kitchen and men's changing rooms and have capacity for the collection of 10,000l of rainwater, all of which is used by the garden. Due to architectural challenges, none of this water is currently used for non-potable purposes such as toilet water.

Despite implementing numerous water reduction technologies, a system has not been in place for monitoring the extent of which this has reduced water consumption. This will be addressed in future developments. Our water bill for 2018 has more than halved since 2016. When contrasted with visitor data and the growth of the Café and Kitchen, this is very encouraging.

Heating of water is calculated to account for 89% of CO<sub>2</sub> emissions associated with water; The Castle has multiple demands for hot water, including the toilets, showers, kitchen and café. Various efforts have been made to reduce hot water usage, for example self-closing showers and the installation of a pre rinse spray arm on the Café sink taps. A new centralised, efficient water heating system, harnessing solar thermal energy, will greatly reduce the amount of energy demanded for heating water.



**Table 3 Review of efforts to reduce water consumption**

	Efforts to date	Challenges
<b>Men's Changing Rooms</b>	Falcon Water Free Urinals. Self-closing taps with average flow rate of 44cm <sup>3</sup> /s Waste water swale into the garden. Showers supplied with natural soaps to reduce water pollution.	According to manufacturers, cassettes need changing every 12 weeks, however in reality they need changing every 3 weeks. It appears that the plastic and environmental costs of cassette production are likely to offset water savings.
<b>Women's Changing Rooms</b>	Self-closing showers. Replacement of the boiler in 2018 improved the pressure and temperature of the showers.	Bathroom taps run for an average of 30 seconds, expelling 4-4.5litres of water each press. Average flow rate = 150cm <sup>3</sup> /s. Showers do not allow for temperature control.
<b>Unisex Toilets</b>	Self-closing taps with average flow rate of 44cm <sup>3</sup> /s.	
<b>Disabled Toilet</b>		Taps can be turned on and left on. There have been cases of the bathroom flooding.
<b>Compost Toilet</b>	Water-free solution	This toilet is not very accessible. Encouraging customers to use the toilet more.
<b>Unisex Showers</b>	Self-closing showers	
<b>Water Fountains</b>	Loft, Comp Wall, Lower Traverse, men's changing rooms/unisex bathrooms. All self closing.	
<b>Café</b>	New tap hose for washing up. Signs discouraging reusable plastic cup use with affordable, reusable water bottles to purchase.	Low pressure in tap hose makes it ineffective
<b>Kitchen</b>	Monitoring gas consumption for hot water of the Kitchen boiler. Tap hose for washing up.	
<b>Garden</b>	10,000L capacity for rainwater, which is used to water the garden. Men's showers and kitchen swales water different areas of the garden.	

### Improvements and Considerations for 2019 and Beyond

- New low-water solution to the Men's Urinals.
- Adjustable volume [self-closing taps fitted with aerators](#) to supply the least volume of water necessary for hand washing.
- Waste Heat Recovery System in the showers could recover [around 60% of wasted heat](#). This system could be used for under floor heating or placed near hot water pipes. See [Ecodrain](#).
- More investment in alternative toilet technologies, such as compost toilets.
- More swales for grey water use including unisex toilets and showers.
- Waste Water Abatement.

## Materials

### Products & Suppliers for Shop, Café & Kitchen – see Departments

### Construction

AMRO Construction is responsible for maintenance and building developments at The Castle. They are committed to sourcing environmentally responsible materials, as well as following specifications set by Cook Townsend Architects.

Material	Supplier/Environmental Considerations
<b>Timber</b>	FSC-certified, Birch Plywood, Russia
<b>Steel</b>	Recycled from old climbing walls
<b>Piping; HEP<sub>2</sub>O plastic &amp; copper</b>	Polybutylene has markedly less environmental impact in terms of pollution than other piping materials (including galvanised steel, copper, PVC-C). High resistance to stress and temperature compared to other plastics. Long life span.
<b>Cables</b>	Low smoke
<b>Flooring</b>	Rubber supplied by Dalsouple (France), great for sound insulation and some thermal insulation
<b>Paint</b>	Water-based, lasts 10 years. Dulux/Leyland
<b>Insulation</b>	50% Woodwool (where possible), Polyurethane, blanket multifoils
<b>Roofing</b>	EPDM (rubber)

### Climbing Walls & Route Setting

As much as we champion sustainability, safety must come first. Climbing holds must be made of strong, durable material that does not break or chip. The two main materials used for holds are Polyester Resin (PE) and Polyurethane (PU). PE can have a life span of up to 10 years but is extremely rigid and brittle making it much more likely to break or chip, whilst PU wears out quicker than PE losing its rock-like texture. Therefore, PU is normally retired after 3 or 4 years but it is much less likely to break. Our main suppliers are Serious Climbing, Volx Holds and Beta Holds, all of whom have developed their own PU technology. PU is also considered to be a more environmentally friendly alternative to PE. The climbing holds are cleaned between each set on site using a pressure washer fuelled by red diesel (following COSHH regulations). New route sets are every 6 to 7 weeks for bouldering walls and every 3 months for rope walls. Retired holds have been given to organisations for other uses, such as London Zoo for the monkeys to use.

Our top roping ropes are Edelrid Transformer Ropes, these are certified with the Bluesign® Standard and the parent company, Vaude Sport GmbH & Co., is a market leader in environmental production. Despite this, it must be noted that climbing ropes are made from synthetic fibres as these are far stronger than natural fibres. The lifespan of ropes at The Castle is about 6 to 9 months before they are retired. Old rope is available to anyone that wants it as long as they sign a disclaimer that they will not use the equipment for climbing. Retired ropes are used for a range of purposes from mooring boats to skipping ropes to art installations. London Zoo even uses ropes from The Castle for the monkeys and big cats.

Our climbing walls are made from FSC-certified birch plywood from Russia and are mostly built in-house by the route setting and construction teams at The Castle. The most recent refurbishments and new builds have been the Panels, Pen, Café steep/vertical lead lines, Tower and Mezzanine. The life cycle of climbing walls are dependent on a number of factors, such as the frequency of new route sets, maintenance and humidity. If it is possible to access the back of the wall it is easier to maintain and



replace parts (such as T-nuts). The Café top rope walls were built in 1996 and maintenance to the back of the walls in 2008 has greatly prolonged their life. Bouldering walls are predicted to have a lifespan of 10 years, whilst rope walls have a lifespan of 15 years. The plywood from retired climbing walls is used for other building work in the centre.

### Cleaning & Maintenance

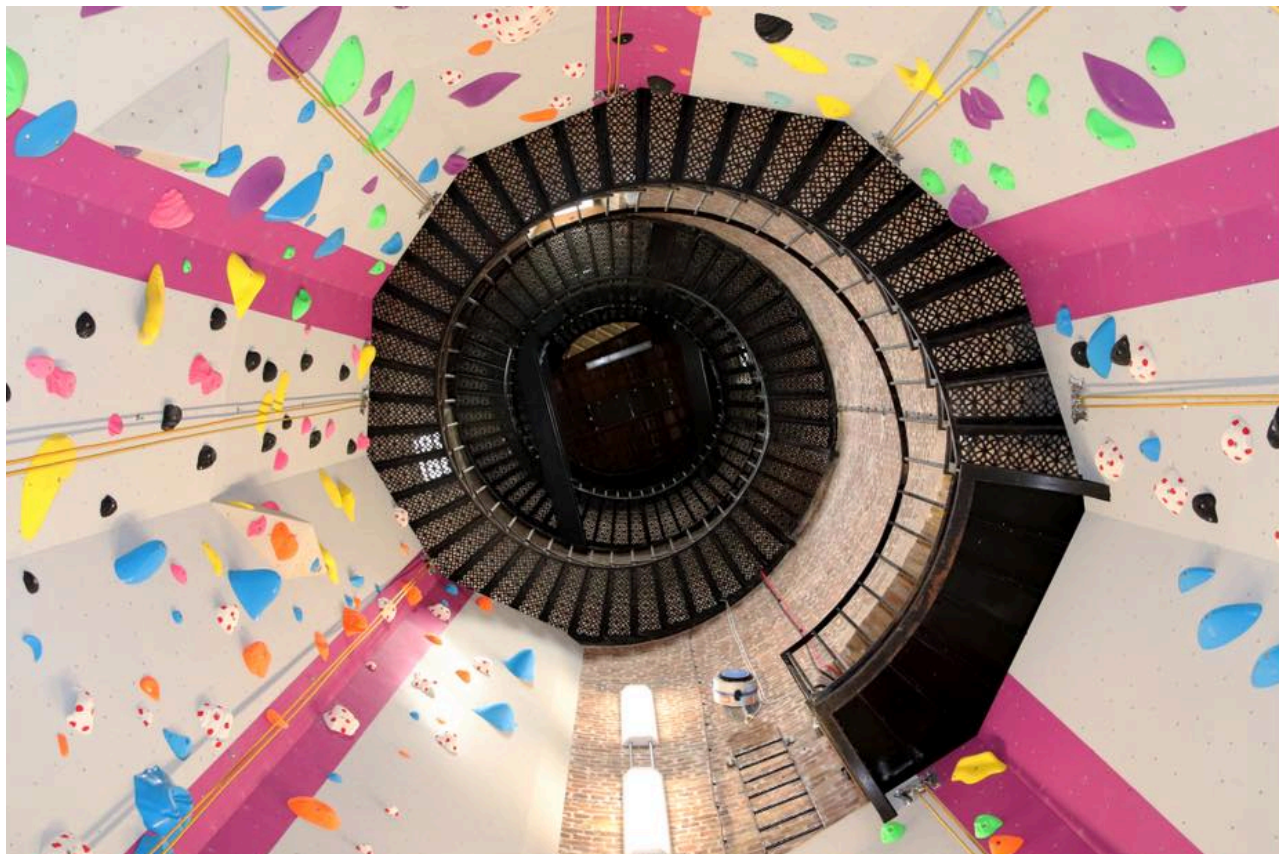
The cleaning of centre is outsourced to Master Cleaning, a company that offers an eco service. The Café and Kitchen use environmentally friendly cleaning products, such as Ecover.

### Office Materials

The main suppliers for office materials, such as pens, paper, ink cartridges are Green Stat. Green Stat pay extra for carbon off set postage. Till roll and Wristbands and supplied by [Till Roll King](#) and [IDC Band](#), respectively. Employees are encouraged to print documents only when necessary.

### Improvements and Considerations for 2019 and Beyond

- Raise awareness with customers around material challenges in the climbing industry.
- Events and partnerships with environmentally friendly climbing brands.
- Implement a monitoring system to record the quantity of materials being used in building construction and for climbing walls and route setting.
- Construction waste is very rich in nutrients and can be a perfect environment for a wide range of biodiversity.



## Waste

### Landfill & Recycling

In 2010, as part of the Sustainability Policy, we committed to a **Zero to Landfill waste policy**. Over the years, efforts to reduce waste and improve recycling have included frequent internal waste audits, clearly signposted landfill, recycling and compost bins in all areas of The Castle and transparency with customers and employees. In March 2013, we started a 5-year contract with ACM Waste Management, having chosen ACM due to their commitments to reduce waste to landfill. Throughout this time the service was very unsatisfactory. ACM did not regularly collect the bins and frequently evaded communications. It was later discovered that the company had been fabricating how (and how much of) the waste was being processed.

Once the contract ended with ACM, we switched to First Mile Recycling in April 2018. First Mile Recycling collects two 1100-litre bins for recycling twice a week and one 600-litre bin for general waste once a week. Based on the amount of waste we produce, First Mile use average calculations to articulate the approximate impact of our waste. In October 2018, Gavin, Clive and Beth visited the First Mile 'Sacktory' in West London to learn how the waste is sorted and distributed amongst recycling partners. It was an impressive, largely indisputable operation offering a recycling solution for all wastes including plastic, grass, food, cooking oil, batteries, electronics, construction and confidential. Figure 2 is a First Mile Report for October 2018. This report is based on monthly averages and provides an approximation for our waste. First Mile is currently developing the technology to be able to track our waste more accurately. Based on this data, we can estimate that we have saved £878.38 in landfill tax in 2018 (using April 2018 landfill tax of £88.95 per tonne).

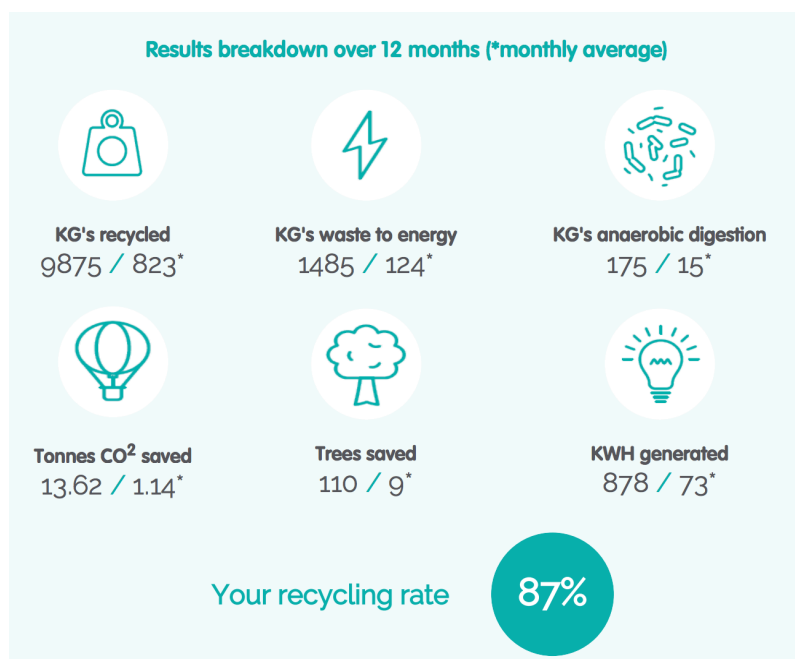


Figure 2, First Mile Recycling Report for The Castle Climbing Centre. October 2018

## Compost

We produce around five tonnes of compost annually. There are a number of systems set up on site, including Ridan Composter, Wormeries, Garden Waste, Leaf Mould and a Compost Toilet. All food waste from the café and kitchen is processed in the Ridan composter. Since 2015, the garden has been able to solely rely on Castle-produced compost. There are plans to install more compost toilets in the centre. For infrequent, larger Castle events First Mile collect compostable cutlery and plates.

## Construction Waste

McGrath Brothers collect a skip load of waste from construction about once a month. McGrath Brothers claim that 90% of waste is recycled. Many retired materials are repurposed for other uses around the centre. The steel from old climbing walls is kept and used for new climbing walls.

## Improvements and Considerations for 2019 and Beyond

- Work with First Mile to analyse quality of waste and improve.
- Raise awareness with customers about waste reduction.
- Stock and use recyclable and minimal packaging goods.
- Reduce cling film use in the Café and Kitchen.





## Land Use & Ecology

### The Garden

Our permaculture garden began in 2009. It is now approximately one acre in size, with 115m<sup>2</sup> productive vegetable and salad growing space and another 200m<sup>2</sup> area for fruit trees, forest garden and other herbs. All the produce from the garden goes to the kitchen and café, any surplus produce such as salad leaves is sold to customers at peak growing times. Seeds are sourced from Tamar Organics and Real Seed Company and the Garden saves seeds from a number of plants including beans, tomatoes, chilli, lettuce, chard, rocket, red orach, perennial kale and various wild flowers.

The Castle Garden began processing herbal teas using a solar dryer to naturally dry the herbs in 2012 with records being kept from 2014 onwards. Twelve blends of Garden Herbal Teas are currently on sale in the Castle Cafe. Up until 2017, there were still a number of items that did not get valued, as they were processed separately such as garden-made jams, chutneys, juices and cordials. The beehives in the Garden also produce honey, which is used in the kitchen, and beeswax, which is made into balms and sold in the shop. In the table below this value is listed as 'additional produce'. The table shows a huge increase in produce from 2016 to 2017, this is because the fruit trees (planted seven years ago) came into full maturity and 2017 was the first year of abundant fruit.

There are 3-4 garden volunteer traineeships each year from April to October. Trainees learn urban community food growing and kitchen gardening. For the past five years most trainees have gone onto employment in growing. One of them (our first trainee) now works in the Garden! An average of ten volunteers join each volunteer day. These days are held on Mondays and Thursdays, weekly. The Garden has a Mini Plot Scheme, which provides members of the community with a small allotment patch to grow their own produce.

Every year climbers and volunteers from the garden harvest surplus apples and pears in the local area. Over the last 3 years we have also collaborated with Feedback Global who provide many more apples gleaned from farms close to London, which would have otherwise gone to waste. Sustain Urban Food Routes funded an apple presser in 2012, which has allowed us to press 1-2 tonnes of apples making up to 200 litres of juice each year. The juice is sold through the cafe at the Castle and the profits have been going to various charities such as refugee charity and community food enterprises.



**Table of Garden Produce in weight (kg) and value (£) 2012-2018**

Year	Weight (kg)	Value (£)	Additional Produce Value (£)	Total Value (£)
2012	428.33	4,128.33	-	4,128.33
2013	599.38	2,894.41	-	2,894.41
2014	846.57	4,067.93	2,854.32	6,922.25
2015	769.87	4,174.95	1,600.56	5,775.51
2016	844.32	4,078.50	2,201.34	6,279.84
2017	1,317.40	7,364.17	2,462.37	9,826.54
2018	936.83	5,863.45	2,798.24	8,661.69

The garden holds monthly health and well-being events celebrating the seasons, which engage the local community in food growing and nature connection. The garden is frequently visited by a network of local community food growers and permaculture groups and is part of a London wide network of community food growers [Capital Growth](#) and a member of [Community Food Growers Network](#). The Garden has also appeared in local and national press and been featured in the International Permaculture Magazine. The Castle is also a collection point for Growing Communities vegetable box scheme.

### Biodiversity

The Castle Garden is home to all sorts of wildlife. There are bird boxes, bughouses, solitary bee houses, the pond and old logs, and areas left wild at the edges and hedgerows to encourage biodiversity. A resident fox has occupied the same foxhole, under the hazel trees, for the past five years. The pond has many breeding tadpoles and, this year, caddis fly larvae were found in the pond indicating unpolluted water. The Garden practices natural beekeeping using Warre hives, top bar hive and a log hive. Sean is our natural beekeeper and holds regular courses in sustainable bee keeping and bee biology.

### Improvements and Considerations for 2019 and Beyond

- Exercise and Play Structures built around the garden.
- Educational signs.
- Clearer information to customers and members of the local community about free access to the garden.
- More outreach to engage the local community in garden events and volunteering.



## Departments

### Finance

We bank with Metro Bank. Metro Bank is one of the most ethical banks according to Ethical Consumer with an [Ethical Rating of 12.5](#). The People's Pensions Scheme provided by B&CE is a multi-employer scheme operated on a not-for-profit basis. There is an [Ethical Fund](#) available.

### Reception

Reception has collection point for projects and charities and a community board to advertise local projects and events. Supported organisations include Refugee Rescue Clean-Up Lesvos, Dorset Bolt Fund, Climbers Against Cancer, Crouch End Festival and The Red Box Project.

### Shop

The shop aims to stock the most ethical brands in the climbing industry; many products have the Bluesign® trading mark. Where possible, products are locally made including all-organic soap (also stocked in the toilets and showers) and beeswax balm.

There appears to be a challenging trade-off between environmental impact and safety and durability in the climbing industry. For example, climbing gear is often anodised to increase durability of products. Anodising is especially important for sea cliff climbing to prevent metal erosion. The Shop stocks non-anodised gear, however, customer demand is for anodised equipment as it is considered safer. Similarly, customers like equipment to be coloured so that it is easy to choose equipment whilst under pressure. Other materials commonly found in the climbing industry are cotton, per- and poly-fluorinated carbons (PFCs) and leather. [Appendix 3.A](#) shows the Ethical Consumer's 2017 review of brands in the climbing industry by assessing environmental reporting, pollution (chemical processes) and leather and cotton sourcing. Top brands were 3<sup>rd</sup> Rock, Edelrid (Vaude) and Mountain Equipment Co-operative.

### Café

In previous years the Café has ensured all suppliers align with The Castle's sustainability values and comply with the Purchasing Code. The meat and dairy industry is both inhumane and a main contributor to climate change and deforestation. The Café does not serve any meat products, so as not to contribute to the demand for meat. The Café prices have always been low compared to other London cafés.

The Café sells affordable refillable water bottles and coffee cups and offers a 10% discount on drinks if customers bring their own cups to encourage behavioural change towards single-use plastics. The Café do not offer take away cups unless for special events and these are compostable and collected by First Mile. Customers are encouraged to bring their own water bottle and rely less on our plastic reusable cups to reduce excessive washing up.

The drinks fridge is adapted from a freezer. The lid lifting upwards reduces cold air loss when opened. This uses significantly less energy than an old, element style light bulb.

Bins on the Café main floor and mezzanine are clearly labelled landfill, recycling and compost.

Suppliers are as local and ethical as possible and include: Marigold Health Foods, Suma Wholefoods, JDs Food Group, Taste of Sicily, Moreton Dairy, Café Connections, Nisbets.

## Kitchen

The Kitchen opened in 2011. All the produce from the garden is used in the Kitchen and any excess is sold to customers. The Kitchen aims to buy as organic and locally as possible, in some cases it is not possible due to increased prices for Soil Association Organic. The main suppliers are [Sarah Greens Organics](#), [Ripple Farm Organics](#), [Chegworth Valley](#), [Langridge Organic](#) and [Hodmedods](#). Some produce that aren't possible to get in the UK, such as bananas, chocolate, nuts and oils, are sourced from [Co-Op Suma](#). Sourdough is sourced from [Better Health Bakery](#), a local bakery part of Hackney mental health charity, The Centre for Better Health.

The Kitchen does its best to limit food waste by not cooking too much food. The Kitchen orders food in bulk to reduce packaging. Compostable greaseproof paper is used wherever possible, however there is a reliance on cling film in both the Café and Kitchen, which is non-recyclable. In 2019, we will be implementing an alternative system, to reduce our cling film consumption.

## Garden

See [Land Use and Ecology](#).

## Instructing, Lessons and Groups

The Castle Climbing Centre promotes access to climbing for all; beginners, families, children, LGBTQIA+, disabled, low income and all under-represented groups.

### *Instructing & Lessons*

- \* Student and Never Stop Safety Seminars
- \* Taster Sessions
- \* Access Auto Belay
- \* 1:1 Coaching
- \* Private Parties
- \* Corporate Team-Building Activities
- \* Crack School Wideboyz Masterclasses
- \* Boot Demos and New Stock Events – brands include Scarpa, La Sportiva, Pongoose, Eco Bras
- \* Guest Masterclasses, including Hazel Findlay, Franco Cookson, Sandra Berlin

### *External Meet-Up Groups*

Never Stop, London Meet-Up Climbing, Not So Trad LGBT group, Universities (UCL, Kings), Rockhoppers (Tuesdays & Thursdays, weekly), North London Mountaineering Club, London Mountaineering Club, The Climbers Club, The Alpine Club, Paraclimbing London.

### *Inclusive climbing*

Started by Sophie Charles in 2008 with one disabled client who attended sessions for 4 years. Since then the programme gradually became more established with 2 regular individuals and occasional group bookings. Across 2015, Sophie worked with 6 regular clients and a [Guardian article](#) was published about her work. By 2017 this had increased to 11 regulars and the project won the Innovation Award in July. This year, inclusive climbing hosts 15 individuals on a weekly basis, 9 individuals fortnightly (or less) and 3 regular group bookings. Inclusive climbing collaborates with Sense, Headway and Garden School. Sophie moved on to new projects earlier this year and inclusive climbing is now ran by Zoe Miles.

In 2018, the Castle Climbing Centre became a sponsor for paraclimber and Castle regular Anoushé Husain. Anoushé is part of London's paraclimbing community and has begun holding regular paraclimbing socials. The Castle is looking to hold more paraclimbing events and remain a resource for the paraclimbing community.

In the United States, Adaptive Climbing is the term used for physical and learning disabilities; there has been much progress in the US in this area and much that we can learn from. Special climbing walls have been designed and organisations focussing on particular special needs and training programmes exist. Given the already existing groundwork and client base, this is an area of climbing worth investment from the Castle and external funding bodies to implement a training programme, fairer allocation of resources to customers and application and development processes. This work can also be applied to other programmes aiming to increase diversity and inclusion in climbing.

## Events & Corporate Bookings

### *Annual Events*

- Blokfest
- Garden Party, Christmas Party
- Young Guns
- International Women's Day
- Women in Adventure Film Tour (as of 2018)
- The Castle Garden holds an average of 9 seasonal celebratory open days, often with activities for children, tasters of garden produce, talks and walks about the garden, bees and produce. The events are open to the public and advertised locally for the community to attend.

### *External Organisations using The Castle Climbing Centre facilities*

Organisation	Frequency
<b>React First, First Aid</b>	8 courses/year
<b>Babcock, Fire Brigade Training</b>	5 courses/year
<b>Choir</b>	1/week excluding school holidays
<b>Yoga (Johanna)</b>	1/week excluding school holidays
<b>Yoga (Sophie)</b>	1/week excluding holidays
<b>Yoga (Kundalini)</b>	1/ week
<b>Bee Course</b>	1 or 2/year

## Improvements and Considerations for 2019 and Beyond

- Transparent, well-communicated application processes for Castle Projects.
- Collaborate with local community groups to give more people the opportunity to access climbing.
- Switch to using [Ecosia](#) as a search engine.

## Summary

Since Yvon Chouinard's pioneering days, the climbing industry has been shifting towards more environmentally conscious practices, strongly promoting a 'leave no trace' climbing ethic in the outdoors. It seems hypocritical to think that the climbing industry is damaging to the environment. However there appears to be little obligation for brands and climbing gyms to consider their environmental impact. The rise in popularity of indoor climbing as a sport independent from outdoor climbing has somewhat diluted the traditional climbing ethic<sup>5</sup>. Few UK-based climbing centres mention their own environmental efforts or publish environmental reports and climbing brands are not transparent about their supply chains. Similarly, social impact in climbing in the UK is a conversation that is in its infancy compared to climbing in the United States.

The reluctance to lead the way in sustainability as an industry and sport is perhaps down to a number of challenges and trade-offs that outweigh concerns about environmental impact. As mentioned in this report, one trade-off is safety. Safety concerns inform our decisions on the materials used for equipment both outdoors and indoors. When anodised equipment is more reliable and durable that's what climbers opt for, regardless of the chemical processes involved. Climbing holds must be made of a material that imitates rock textures (without polishing too quickly) and is unbreakable. Chalk is now a staple in most climbers' kit bag, but the dust from magnesium carbonate mines in China cake the landscape and result in large-scale plant death, soil degradation and reduced microbial activity. The dust also poses a risk for the respiratory health in local towns and cities and studies show the same concerns in climbing gyms.

Despite this there is a strong argument for investing in and developing sustainable climbing centres and climbing gear. This report shows that we continue to be a market leader in our commitments to the environment and sustainability. Our investments in sustainable technology and practices have resulted in huge savings on energy, water and waste and offer further promising returns on investment. The Castle presents numerous architectural challenges to being energy efficient and sustainable, however working alongside engineers and architects these challenges have given rise to unique solutions. Similarly, organic produce from our permaculture garden has an estimated total value of £45,500 since records started in 2012, notwithstanding the non-quantifiable value the garden holds for many members of The Castle community. In the recent 2018 Customer Survey, customers quoted The Castle's sustainable ethic as a reason for climbing at the centre and 97% stated they cared about sustainability. Investing in sustainability is not simply a sensible business decision. If we want to preserve our rock faces, it is the responsibility of everyone – businesses, governments and individuals alike – to reduce our demand on the planet. The Castle's values 'bring the traditional climbing ethic indoors' and by doing so, influence customers, employees and other members of the community to reflect these values on and off the rock.

---

<sup>5</sup> Natalie Berry, [Social Climbers - The Evolving Indoor Climbing Industry](#); July 2018

## Appendix

### 1.A Employee data methodology

$$\text{Annual Turnover Rate (\%)} = \frac{\text{Number of employees who left}}{(\text{Beginning} + \text{ending number of employees}) / 2} \times 100$$

$$\text{Total Workforce Stability Index} = \frac{\text{Number of employees at Company > 12 Months}}{\text{Number of employees}}$$

### 2.A Methodology for Energy Demand for Space Heating per year (kWh/m<sup>2</sup>)

$$1. \text{ Account for boiler efficiency (86.17\% av.)} = \frac{\text{Total year gas consumption (kWh)}}{100} \times 86.17$$

$$2. \text{ Minus energy demand for hot water (assumed 15\%)} = \text{Answer (1)} - \left( \frac{\text{Answer (1)}}{100} \times 15 \right)$$

$$3. \text{ Annual space heating energy demand (kWh/m}^2\text{)} = \frac{\text{Energy demand for space heating (Answer 2)}}{\text{Gross Internal Floor Area (m}^2\text{)}}$$



### 3.A The Ethical Consumer's Environmental Rating of Climbing Brand

### USING THE TABLES

Ethiscore: the higher the score, the better the company across the criticism categories.

● = bottom rating,  
○ = middle rating,  
empty = top rating (no criticisms).

BRAND	Environmental Reporting		Pollution & Toxics	Leather Sourcing	Cotton Sourcing	Annual Sales Data '15	COMPANY GROUP
3rd Rock			○			-	3rd Rock Private Limited
Edelrid				○		£47.89m	Vaude Sport GmbH & Co. KG
MEC	○	○				£248.1m	Mountain Equipment Co-Operative
Wild Country	○	●		○		£109.9m	Mountain Experience Beteiligungs-Holding GmbH
Alpkit	●	●				-	Alpkit Ltd
Petzl	●	●				-	Big Bang
Five Ten	○	●	●	●		£12.46bn	Adidas AG
Patagonia	●	●	○			£135.7m	Patagonia Works
Beal	●	●	○			£10.9m	Beal S.A.
Boreal	●	●	○			£3.29m	Calzados Boreal, SL
Red Chili	●	●	○			£876.4k	Red Chili GmbH
Tenaya	●	●	○			£739.1k	Tenaya Sports SL
Moon	●	●		○		-	Moon Climbing Ltd
Black Diamond	●	●		○		£104.7m	Black Diamond, Inc
Core Climbing	●	●		○		£104.2k	Core Climbing Ltd
DMM	●	●		○		£10.37m	Excalibur (Wales) Limited
Evolv	●	●	○	○		£378.9k	Evolv Sports & Designs
La Sportiva	●	●	○	○		£51.1m	La Sportiva S.P.A.
Mammut	●	●	●	○		£776.4m	Conzeta AG, Tegula AG
Arc'teryx	●	●	●	○		£1.87bn	Amer Sports Oyj
Scarpa	●	●	●	○		£55.72m	Calzaturificio S.C.A.R.P.A.
PrAna	●	●	●	●		£1.56bn	Columbia Sportswear Co Inc
The North Face	●	●	●	●		£8.69bn	VF Corporation Inc