



Historic Royal Palaces is the charity that looks after:

**Tower of London**  
**Hampton Court Palace**  
**Banqueting House**  
**Kensington Palace**  
**Kew Palace**  
**Hillsborough Castle**

We help everyone explore the story of how monarchs and people have shaped society, in some of the greatest palaces ever built.

We raise all our own funds and depend on the support of our visitors, members, donors, sponsors and volunteers.

## **Audit and Risk Annual Sustainability Report for the Year Ended 31st March 2018.**

### **Distribution**

The Audit & Risk Committee  
The Executive Board  
The NAO  
The Board of Trustees

Issued: May 2018

Andrew Favell (Health, Safety and Environment Adviser)



## 1. Basis of Opinion

The overall rating remains as Good, as the various reports that have been collected on all of our key sustainability themes have improved year on year.

## 2. Sustainability Strategy

A sustainability strategy has been developed and agreed in 2017/18 with key stakeholders across HRP Directorates to further focus on six key areas of sustainability, with a sponsor on the Executive Board.

Regular sustainability group meetings are being held to embed the strategy into the organisation and an agenda item for sustainability will remain on the quarterly local Fire, Health and Safety Committee meetings.

## 3. Conserve Water

This year saw a 3% decrease in water consumption at HRP. All sites continue the progress that has been made over the years, and which is now supported by regular environmental audit and impact assessments for all HRP sites. Initiatives have included:

- The installation of automated meter readings across the main palaces; which has enabled close monitoring of water leaks and allowed prompt repair.
- Grey water used at some sites where possible to irrigate and flush some of the public toilets.
- Some visitor toilets have been fitted with sensor taps
- The water pressure was reduced at the taps, thereby reducing overall consumption at some sites.
- Rain water and river water is used for irrigation where possible.
- Visitor urinals have been fitted with an electrical flow rate controller at some sites.

## 4. Biodiversity

HRP remains committed to the aim of biodiversity conservation to ensure that all life forms prosper through sympathetic, sustainable management.

Biodiversity is a key area of the HRP Sustainability Strategy which recognises the need to consider the conservation of biological diversity in all that we do within the gardens, estates, and the built environment at HRP.

A wide variety of strategic biodiversity work has been carried out at HRP including Environmental Impact Assessments, Tree Surveys and Ecological Survey Reports. This allows us where possible, to create new habitats or enhance existing ones to encourage local wildlife to flourish.

HRP has on-going plans and some of the key projects last year included:

- Tree and hedgerow planting to increase connectivity of habitat
- Working with Local Birdwatching Society to survey breeding and winter populations of birds across gardens & estates
- Survey undertaken for mink presence at Hampton Court Palace
- A badger survey and strategy report at Hampton Court Palace
- A camera trapping survey was undertaken in the Hampton Court Palace gardens with the Zoological Society for London to study the hedgehog population

- Gardens staff have been contributing biological records to increase our knowledge of species and populations present.
- Over 1000 wild flower plugs have been planted in the wildflower meadow at Kensington Palace to increase diversity of plant species
- During the restoration of the Great Pagoda at Kew, bat monitoring was undertaken and mitigation put in place to protect bat species, with talks given to the operatives involved in the construction work.
- At the Tower of London, a River Thames breeding bird assessment was carried out by the Illuminated River Foundation and the London Wild Life Trust
- At Hillsborough Castle 4500, new trees have been planted in the new car park.
- The restoration of the Walled Garden at Hillsborough Castle has included; planting new hedging, soft fruit, top fruit and herbaceous plants.
- The new newt pond created last year at Hillsborough Castle is thriving

### 5. Management of Waste

HRP continue to focus on waste management with our waste management contractors, Total Support Services (TSS) and Mite Ltd.

HRP have a zero-to-landfill approach and through our Materials Recycling Facilities our waste is either recyclable material sent to re-processors for reuse or refuse derived fuel which is converted into energy at a waste plant.

In addition to this cardboard is separated and bailed on site at the Tower of London and the Central Retail Warehouse. A successful trial has been conducted to pick up cardboard from sites without a bailer and take it to the Tower of London or the Retail Warehouse. This will maximise this waste stream and reuse the cardboard from all retail packaging. This will be implemented fully in 2018/19.

Data obtained from our waste contractors TSS and Mite Ltd indicate that overall, at HRP sites 42% of waste was recyclable material sent to re-processors for reuse and 58% of waste was converted into energy. (See figure 1)

Hillsborough Castle have achieved a high rate of recycling with 84% recyclable material and 16% waste to energy.

Kew Palace has all waste processed by the Royal Botanic Gardens Kew, however waste hubs have been installed to recycle paper on site.

HRP's catering concession Ampersand largely control their own waste management and would be expected to follow HRP's Approach as a minimum.

Introduction of central waste hubs into office areas at HCP have been increased to office areas, this allows waste division at source and segregation between general waste and dry/mixed waste.

Gardens and Estates continue to recycle 95% of their green waste producing compost for Home Park and the Formal Gardens at Hampton Court Palace.

Total Waste by site:

Waste to Energy / MRF		Cardboard Recycling (Bales)	Glass Recycling	Dry Mixed Recycling	Total by site	Landfill Saved (M3)	CO2 Saved	Waste Disposal Cost
Tonnes Energy	Tonnes MRF	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	£
<b>Tower of London</b>								
354.89	81.87	32.7	12.1	24.93	<b>506.49</b>	716	242	£94,492
<b>Kensington Palace</b>								
12.52	0	1.87	0	8.63	<b>23.02</b>	14.35	6.95	£6,800
<b>Hampton Court Palace / Retail Warehouse</b>								
105.04	45.88	44	22.95	21.08	<b>238.95</b>	246.94	86.3	£41,996
<b>Banqueting House Whitehall</b>								
0	15.85	0	4.27	0	<b>20.12</b>	1.99	6.4	£8,147
<b>Hillsborough Castle</b>								
3.683	20.14	0	0	0	<b>23.82</b>	*	*	£3,302
<b>Totals</b>								
<b>476</b>	<b>164</b>	<b>79</b>	<b>39</b>	<b>55</b>	<b>812</b>	<b>979</b>	<b>342</b>	<b>£154,737</b>

Figure 1 Data supplied by TSS and Mite Ltd

## 6. Sustainable Procurement

The current HRP environmental policy has been reviewed this year and has a section on sustainable procurement adopted by all departments.

In addition to this the sustainability strategy has identified a Procurement Sustainability Policy and a supplier code of conduct in the HRP Supplier Manual which will cover all of our functions; this is to be implemented as part of the 2018 5 year sustainability strategy.

As the contracting organisation, we expect our suppliers to ensure their practices are supportive of our approach. We expect to purchase goods and services that have been produced or are delivered with minimum impact on the environment and with due regard for social issues such as employment conditions and welfare.

Our catering supplier Ampersand is part of the CH&CO Catering Group Ltd. Their policy is to only work with suppliers who are able to demonstrate clear policies designed to reduce their impact on the environment and they aim to work closely with each of their suppliers on this agenda and monitor their performance for continuous improvement. As part of this process there are Environmental Sustainability questions sent to all food suppliers as part of their supplier audit and process.

## 7. Energy and Climate

Energy management in historic buildings and estates is always challenging, but HRP continue to carry out a number of energy saving initiatives across our sites last year resulting in a decrease in the amount of GHG produced. The overall

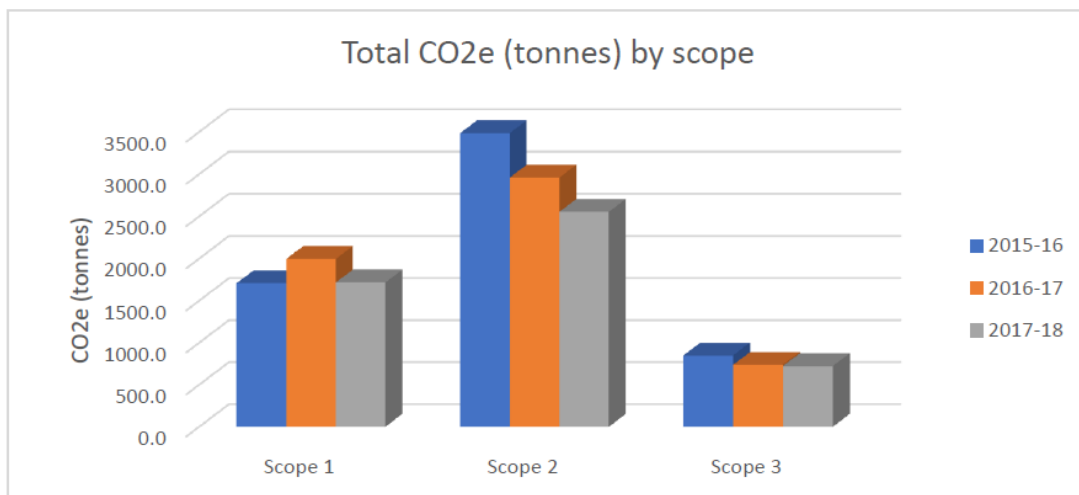
carbon footprint using the data available is lower than the year before, reducing from 5687 tonnes of CO<sub>2</sub>e to **4989** tonnes of CO<sub>2</sub>e.

It is important to note that whilst this drop is partly due to external factors and a change in the government greenhouse gas (GHG) conversion factors for 2017 by approximately 15%, there have been significant initiatives carried out all over HRP.

As HRP's activities grow it is not surprising that we consume a lot of energy; in 2017/18, our total energy consumption was **15.7 million kWh** at a cost of £1.05 Million, a reduction of 1.4 million kWh on 2016/17. The carbon emissions associated with our energy use (known as Scope 1 and 2 emissions) represent one of HRP's biggest areas of environmental impact, in particular those arising from our electricity use (Scope 2 emissions), as illustrated in Figure 2.

Another source of carbon emissions are those that arise as an indirect result of the goods and services that we buy; the waste that we generate; the water that we use; and the travel that our staff carry out for commuting and business travel purposes. These are known as our Scope 3 emissions.

The graph below shows the total emissions for Scope 1, 2 and 3 comparing the current year's figures to those from the previous two years. For detailed consumption figures see appendix 1.



*Figure 2 Data Supplied by TEAM (EAA Ltd.)*

Considering Historic Royal Palaces data, electricity and fuels represent the most emitting commodities, equating to 97% of the total CO<sub>2</sub>e emissions.

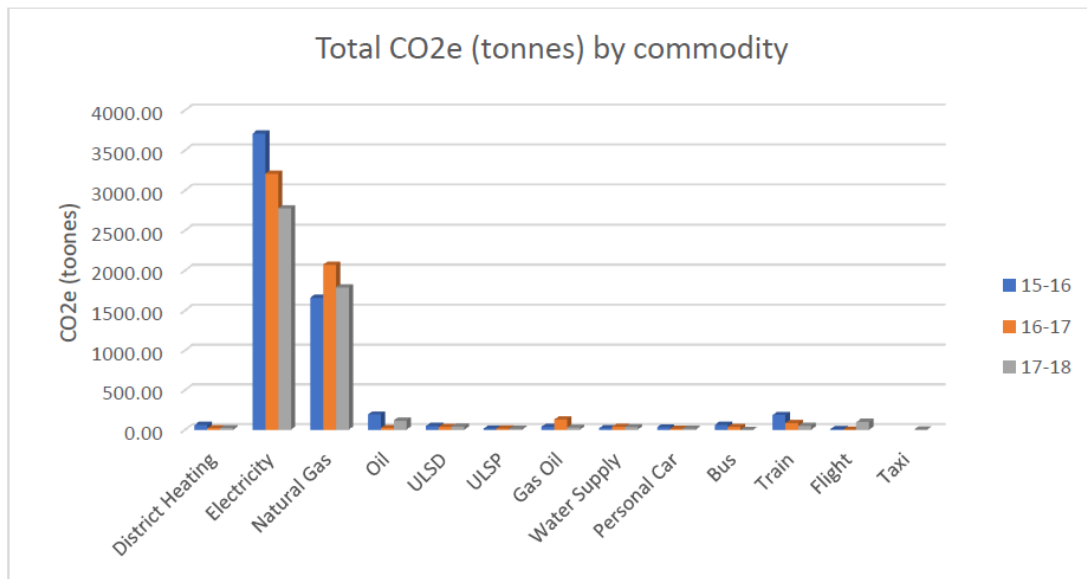


Figure 3 Data Supplied by TEAM (EAA Ltd.)

The graph above compares total CO2e emissions by commodity comparing the current year's figures to those from last two years.

**The Tower Group** has continued its project of LED replacement lights at the Tower of London, Banqueting House Whitehall and Hillsborough Castle.

**At Hillsborough Castle** last year's project to reinstate an old hydroelectric scheme has shown results already and has produced revenue generated from the sale of Renewable Obligation Certificates (ROCS). In the following year this scheme will have increased benefit when combined with a gas heat pump system. Based on predictions it should be worth almost £14,000 per year at present and almost £23,000 per year when connected to the gas heat pump.

**The Palaces Group** there has been a continual replacement and up-grade to LED lighting. There have also been stricter controls on the use of portable heaters during the winter months and a continue programme of upgrading boilers.

## Performance Overview

Goal	Achievements for 2017/18	Objectives for 2018/19
<b>A. Conserve and enhance our sites, enabling them to be enjoyed today and in the future.</b>	<ul style="list-style-type: none"> <li>A sustainability strategy will be developed in 2017/18 with key stakeholders to further focus on all areas of sustainability, with a sponsor on the Executive Board</li> <li>HRP to formally establish their legal qualification status with the Environment Agency</li> </ul>	<ul style="list-style-type: none"> <li>The HLB hydroelectric scheme will have increased benefit when it is combined with a gas heat pump system.</li> <li>ESOS audits to take place in 2018/19</li> </ul>

B. Create distinctive HRP experiences to convey the essence of each site, motivating people to visit and revisit.		<ul style="list-style-type: none"> <li>• Make sustainability projects such as the hydroelectric generation at HLB part of the visitor experience.</li> <li>• Develop a communications strategy through the sustainability group.</li> </ul>
C. Put our customers at the heart of all we do, seamlessly building relationships in every way they connect and engage with us.	<ul style="list-style-type: none"> <li>• Sustainable procurement champion in place</li> </ul>	<ul style="list-style-type: none"> <li>• Implement sustainable procurement policy</li> <li>• Implement the HRP supplier manual</li> <li>• The segregation of food waste to anaerobic digestion programme should be extended to as many sites as possible in the next financial year.</li> <li>• Provide sustainability communication to customers, members and donors.</li> </ul>
D. Be recognised for high quality, distinctive and transformative engagement, learning and research – onsite, off site and online.	<ul style="list-style-type: none"> <li>• The environmental online module will contain a section on sustainability</li> </ul>	<ul style="list-style-type: none"> <li>• Look at ways Public Engagement can educate about sustainability at our site and beyond.</li> </ul>
E. Reach new and broader audiences in the UK and overseas.	<ul style="list-style-type: none"> <li>• HRP has joined the National Trust fit for the future (FFTF) programme which will enable the organisation to look at sustainability with its peers and share knowledge and experience.</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainability Group to make use of the FFTF membership.</li> </ul>
F. Build a reputation for being trusted to care for the nation's most significant places and for being financially successful.		<ul style="list-style-type: none"> <li>• Develop a communications strategy through the sustainability group that engages all internal and external audiences</li> </ul>
G. Be equipped to deliver lasting success through great leadership,	<ul style="list-style-type: none"> <li>• Analysis of abstracted water from Longford River</li> <li>• Energy efficiencies highlighted in the tower</li> </ul>	<ul style="list-style-type: none"> <li>• Local fire, health and safety committee meetings to be used as a forum for discussion and these needs to be</li> </ul>

performance and ways of working.	<p>energy saving progress report 14/12/2016</p> <ul style="list-style-type: none"> <li>• Environmental Impact Assessments completed at all HRP sites</li> </ul>	<p>focused on reviewing key data for each site</p> <ul style="list-style-type: none"> <li>• key targets this year include, the sub metering of water consumption and more data analysis for each main supply</li> <li>• Energy data reviewed and analysed on a regular basis to determine actions</li> </ul>
H. Enable HRP's present and future growth through a sustainable business model.	<ul style="list-style-type: none"> <li>• Manage waste currently outside of the TSS remit.</li> <li>• Look at the feasibility of more collection and bailing of cardboard through the Retail team.</li> <li>• Waste collection will be reviewed in the programme of environmental site risk assessments, to analyse the figures more closely</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure that all waste management records are complete for each site</li> <li>• Implement the HRP Sustainability Strategy</li> <li>• Implement collection and bailing of cardboard through the Retail team.</li> </ul>

## Appendix 1

### Sustainability Data

Greenhouse Gas Emissions	2017/18	2016/17	2015/16	2013/14
Emissions Scope 1 (in Tonnes)	1716	1995	1707	N/A
Emissions Scope 2 (in Tonnes)	2552	2957	3482	N/A
Emissions Scope 3 (in Tonnes)	721	736	847	N/A
Total GHG emissions (in Tonnes)	4989	5688	6298	N/A

Energy	2017/18	2016/17	2015/16	2014/15
Total electricity consumption KWh	7.2m	7.1 m	7.1m	6.7m
Total gas consumption KWh	8.4m	9.9m	8.8m	9.8m
Consumption per visitor KWh	3.3	3.8	3.9	3.9
Total gas and electricity cost (£)	1.05m	1.2m	1.2m	1.3m
Total energy cost per visitor (£)	0.22	0.27	0.31	0.29

Waste	2017/18	2016/17	2015/16	2014/15
Waste recycled / reused	42%	28%	34%	N/A
Waste recycled / to energy	58%	72%	65%	N/A
Total Waste (in Tonnes)	809.4	684.2	689.5	835
Waste per visitor (in kg)	0.16	0.16	0.17	0.2
Total disposal cost (£)	154,738	140,825	144,715	N/A
Cost per visitor (£)	0.03	0.03	0.03	N/A

Water Consumption	2017/18	2016/17	2015/16	2014/15
Total Water Consumption (in m <sup>3</sup> )	111,810	115,758	84,337	86,395
Water Consumption (Lts /visitor)	23.6	29.0	21.2	22.7
Total Water Cost (£)	247,259	268,740	182,162	216,085
Water cost per visitor (£)	0.05	0.06	0.04	0.05

#### About our data

Sustainability information is reported freely by Historic Royal Palaces although publication is not required under the Royal Charter, contract with the Department of Culture, Media & Sports and Charity regulations we are governed by.

There are still limitations with the availability at a granular level and the accuracy of HRP's sustainability data. We continue to work with all stakeholders to improve data gathering process and quality of information.

Relevant figures for electricity, gas, water and transport have been included in this report. As some energy data for March 2018 was not available, some estimation has been made to calculate the final figures.

The emissions have been calculated by using the Sigma Software Database. The data stored in the database has been collected using invoices and/or meter readings provided by Historic Royal Palaces or by the energy supplier.

Travel emissions (personal car, bus, train, flight, taxi) have been calculated using the data provided (via Excel spreadsheet) by finance and applying the DEFRA Conversion Factors.