Financial Year **2018-2019**

# Environmental Management Report

**January 2020**



BDP.

# Foreword



*2018 concluded our five year reporting period from our 2013 baseline, where we exceeded each of our targets – keeping our Scope 1 and 2 emissions below 1,000kgCO2e/capita, implementing measures to encourage sustainable travel decisions and reducing water consumption by 5% per capita. We are in the process of developing a new business-wide sustainability strategy to ensure our activities can support our climate and biodiversity emergency declarations. We are intending to set our most ambitious targets yet to make sure we are playing our part in the global response required to keep global temperature increase below 1.5°C.*

*Our strategy will move us from a typical model of continual improvement to one of transformative change and will ensure we evaluate a much broader range of impacts, and work harder to keep us at the forefront of sustainable design. We have already started through utilising our wealth of expertise to develop robust outcome-led design frameworks for green infrastructure, circular economy and low carbon design.*

*This year, through interventions and awareness campaigns across our studios, we have reduced Scope 1, 2 and travel emissions per capita by 16% from FY 2017-2018. Our next steps will include monitoring an increased proportion of our Scope 3 emissions (including our supply chains) and building our community of sustainability champions across the practice to help us promote positive change internally and externally.*

*Through communicating our performance publicly we are demonstrating that this is a core component of our business operations. In maintaining openness and transparency we hope that we will positively influence others to consider how they work and behave.*



**Philip Gray**
Head of Sustainability

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# Targets and Summary of Performance

| Our headline environmental targets 2019-2021: | Our headline 2018-2019 performance against these targets: |
| --- | --- |
| Continual reduction in Scope 1 and 2 carbon emissions and energy use year on year, both in total and per capita | Reductions in total (13%) and per capita (18%) Scope 1 and 2 CO2 emissions against the previous year. Reductions in total (6%) and per capita (11%) energy consumption against the previous year |
| Implement practical measures in studios to encourage and incentivise travel decisions<br>Cap CO2 emissions from transport at the FY 2017 – 2018 level of 808kgCO2/ capita | 704 kgCO2/capita of emissions from transport, representing a 13% reduction from FY 2017-2018 |
| Maintain water consumption to below the FY 2017 – 2018 level of 7.8 m3/person/year | 14% increase in water consumption per capita against the previous year |
| Birmingham studio to record general waste consumption and Dublin studio to record commingled recyclables. All other studios to reduce general waste/capita year on year. | General waste in all of our offices (*1 excluding Birmingham) has reduced by 39%/capita over the last year. |

*1 See page 20

# Longer Term Targets

**Due to the relocation of our Sheffield, Dublin and soon Birmingham studios, we are aiming to establish a new baseline following FY 2020-2021.**

**We have started the process of recording our Scope 3 emissions, with the intention of setting Science Based Targets (SBTs) in 2021, based on the 1.5°C or 2°C IPCC goal AR5 RCP 2.6. In the interim we will continue to put in place measures to enable the implementation of SBTs, including monitoring:**

- Primary emissions associated with our design services
- Emissions associated with waste
- Business travel by taxi
- Employee commuting
- Spend on goods and services
- Mileage data from suppliers
- Investments

# Headline Performance Figures FY 2018-2019

**Throughout this Environmental Management Report we compare performance against the previous reporting year – FY 2017-2018. This enables us to measure and benchmark progress.**

NB: This financial year we have made some changes to improve the accuracy of our reporting. As the numbers of staff from our London office are increasing on project sites, we now exclude staff working remotely on-site from our studio calculations. We have also updated the carbon factor for electricity in our Dublin studio, where Ireland is yet to experience the same rapid decarbonisation of electricity occurring in the UK.

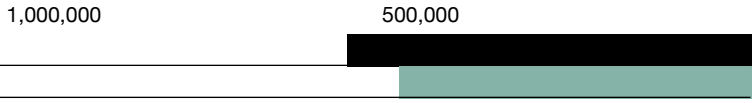
Total energy consumption (kWh)

| | | |
|---|---|---|
| 2017-2018 | 2,317,119 | |
| 2018-2019 | 2,185,611 | -5.68% |



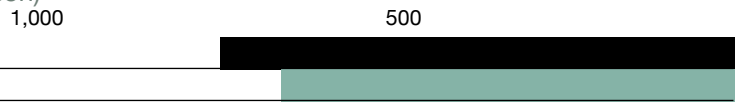

Total Scope 1 and 2 emissions (kgCO2e)

| | | |
|---|---|---|
| 2017-2018 | 592,798 | |
| 2018-2019 | 515,402 | -13.06% |



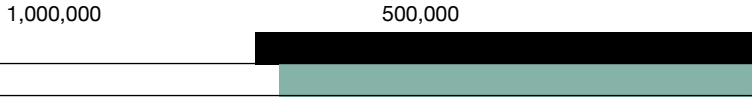

Total Scope 1 and 2 emissions per capita (kgCO2e/person)

| | | |
|---|---|---|
| 2017-2018 | 738 | |
| 2018-2019 | 603 | -18.36% |



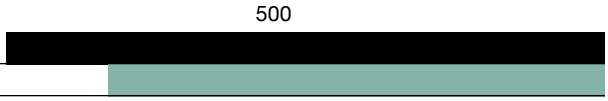

Total business travel emissions (kgCO2e)

| | | |
|---|---|---|
| 2017-2018 | 703,454 | |
| 2018-2019 | 664,840 | -5.49% |



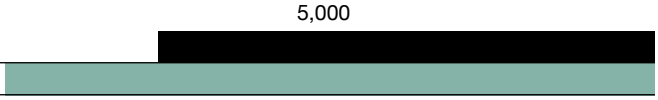

Business travel emissions per capita (kgCO2e/person)

| | | |
|---|---|---|
| 2017-2018 | 808 | |
| 2018-2019 | 704 | -12.82% |




Total water use (m3)

| | | |
|---|---|---|
| 2017-2018 | 6257 | |
| 2018-2019 | 7281 | +16.37% |




Water usage per capita (m3/person)

| | | |
|---|---|---|
| 2017-2018 | 7.79 | |
| 2018-2019 | 8.52 | +9.27% |



# Introduction

This report provides a comprehensive review and analysis of our environmental performance across all of our UK and Ireland studios during FY 2018-2019, in line with our own environmental ambitions and ISO 14001 and 50001 certification commitments. It reports on progress against targets and aspirations established in our previous Annual Environmental Report (FY 2017-2018).

Now in our sixth year of public reporting, we continue to record and evaluate performance trends and report on progress against out targets. This Annual Environmental Statement covers the financial year from July 2018 to June 2019 (inclusive). Prior to FY 2017-2018 our environmental reporting was on performance from January to December.

Our Environmental Report FY 2017-2018 concluded the five year reporting period from our 2013 baseline, having met our targets. Our revised targets are outlined in our section on Targets and Summary of Performance.

In FY 2018-2019 we have maintained both ISO 14001 and 50001 certification, and will transition to the updated ISO 15001:2018 over the next year to demonstrate our commitment to the continual improvement of our energy management system.

## Studio Environmental headlines 2018-2019

Summarised below are some of the initiatives undertaken in our UK and Ireland studios throughout 2018-2019 that have contributed to our improved environmental performance:

| Studio | Initiatives undertaken in FY 2018-2019 |
|---|---|
| Birmingham | - Timing for heating has been adjusted and is now controlled from within the Birmingham studio's demise. |
| Dublin | - A new, more efficient, water pump and taps were installed in the Dublin studio and cisterns upgraded in March 2019.<br>- The studio introduced plastic recycling.<br>- Dublin is now part of a car and bike sharing club with electric vehicle options. |
| Glasgow | - The two back-up boilers in Glasgow were replaced in October 2018. |
| London | - Controls for air handling units and boilers were replaced in our London studio in July 2019.<br>- Segregated bins have been installed on each floor of our studio and the canteen is working towards becoming disposable free. |
| Manchester | - In a switch to reusables, single use cups are no longer provided in the canteen.<br>- A large number of taps have been upgraded, water leaks fixed and the cleaning of water tanks has been planned to prevent the need for them to be emptied.<br>- The rear staircase and WC lighting has been upgraded to LED (June 2019). |
| Sheffield | - We have worked with the building management and cleaners in our Sheffield studio to ensure waste is segregated appropriately and recorded specifically in relation to our operations rather than an estimate taken from the building total. |
| All | - We have increased our number of environmental champions and communication of environmental responsibilities to staff across our studios.<br>- All of our studios now segregate and recycle waste. |

# About BDP

**Founded in 1961, our studios extend across the UK, Ireland, Netherlands, the MENA region, India, China, Singapore and more recently Quadrangle in Toronto. BDP has a leading track record in all major sectors including health, education, workplace, retail, urbanism, heritage, housing, transport, leisure, public safety and energy utilities.**

We are an integrated design practice of architects, designers, engineers, urbanists and specialists. We work closely with users, clients and the community to create sustainable living environments, regenerate communities and stimulate human interaction. We design many kinds of environments across the world, from buildings to learn in, live in, spend leisure time, to trade and create commerce, and for wellbeing and recovery.

In 2016, we combined forces with Japan's leading engineering practice Nippon Koei to form an integrated design group of international reach. Sharing a philosophy which places an emphasis on design integration and community impact, the group offers a unique combination of deep technical skills in engineering, architecture and the full range of design disciplines. In 2019, we joined forces with Quadrangle, one of Canada's most respected architecture and interior design practices, to enhance our expertise and resources across Canada and North America and enable us to share knowledge and approaches to sustainability and innovation.

BDP is in a fortunate position where the decisions our designers and consultants make can influence the way people behave and the impact they have on the environment. Over the last six decades we have been working to deliver truly sustainable buildings and places that improve quality of life, promote aspiration and drive prosperity.

We believe we have a duty to promote high quality sustainable design within our projects and to ensure excellent environmental performance within our business operations.


Dublin
UK
Rotterdam
Toronto
Shanghai
New Delhi
Abu Dhabi
Singapore

# Our Studios

**All of our studios range in size and vary in style – some in historic surroundings, others in new BDP-designed buildings. The number of staff employed by BDP has increased year on year since 2013 with the average number of staff in FY 2018-2019 reaching a FTE of 956, 101 of which are co-located on project sites.**



## Birmingham

Our Birmingham studio is located at 158 Edmund Street, a high profile newly refurbished building situated on Colmore Row, a conservation area in the centre of the city. The premises are billed as highly sustainable, with intelligent lighting throughout and solar PV on the roof. The studio accommodates a team of 25.

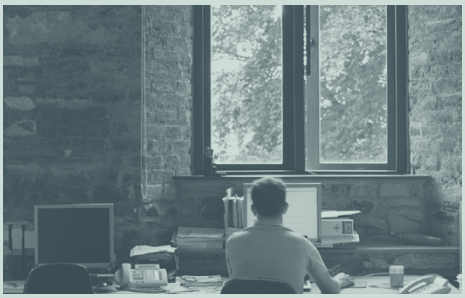
Studio Manager: Collene Turner
*Tenure: Multi-tenanted, occupying 143m2 of 1 floor since 2014*



## Bristol

Our Bristol studio, built in 1964, is situated close to College Green, in the heart of this historic city. It has a gross area of 563m2 and an average staff number of 64.

Studio Manager: Jamie Lloyd
*Tenure: Multi-tenanted, occupied since 2003*



## Dublin

Our Dublin studio is situated in the Old Stone Building at Blackhall Green, just off Prussia Street. This area was previously known as the gateway to the city. The building has three floors and an overall gross area of 792m2. BDP now occupies all three floors. The Dublin studio has an average of 54 members of staff.

Studio Manager: Frank Fleming
*Tenure: Sole occupants since December 2017, previously split between Old Stone Building and neighbouring studio*



## Glasgow

Our Glasgow studio has developed a reputation as a leading practice in Scotland and is situated in the heart of the city's main shopping area, Buchanan Street. The studio accommodates around 70 staff and has a floor area of 1216m2.

Studio Manager: Laura Clark
*Tenure: Multi-tenanted, occupied 2nd and 3rd floors since 2004.*



## London

Our London studio is situated in a converted brewery in Clerkenwell. The vast reception space hosts a multitude of social and educational events both for BDP and external companies. This is the largest of our UK and Ireland studios, with a gross floor area of over 4000m2. It currently accommodates an average of 385 staff. There are approximately a further 100 members of staff associated with our London studio based at project sites (therefore do not contribute to this footprint and are not included in our per capita calculations for the studio).

Studio Manager: Paul Hobbs
*Tenure: 4 floors plus basement, main occupants since 2003, with area of basement let to tenants*



## Manchester

The exemplary Manchester studio overlooks the Piccadilly Canal Basin, centrally located adjacent to Manchester's vibrant Northern Quarter.  It has been recognised as one of the best new buildings in the city. The studio, designed by BDP, sets new standards for energy efficiency in the north west of England and has achieved a BREEAM Excellent rating – the first naturally ventilated building to receive this rating in Manchester. This is our second largest studio with a gross floor area of around 3000m2 and an average of 197 staff.

Studio Manager: Kevin Sutton
*Tenure: Main occupants since building opened in 2008, 4th floor let to tenants*



## Sheffield

The Sheffield studio, accommodating approximately 50 staff, relocated to new premises in January 2018, now occupying the entire 759m2 of the sixth floor at 3 St Paul's Place. The new BREEAM Excellent building is connected to the local District Heating System.

Studio Manager: Susan Brookes
*Tenure: Multi-tenanted, occupy 6th floor since 2018*

# Staff Numbers

**To account for fluctuation in staff numbers over time, and between studios of different sizes, we set and report against per capita targets. The tables below outline our staff numbers for FY 2017-2018 and 2018-2019, demonstrating the fluctuation and overall increase in staff numbers over our reporting years.**

**Scope 1 and 2 emissions and water consumption per capita figures are based on the total number of staff present in each studio. Business travel emissions account for all BDP (UK and Ireland) staff, with our central executive and support staff reported separately.**

## FY 2017-2018

Table 1

| | Studio Staff | Central Staff | Total | |
|---|---|---|---|---|
| Birmingham | 23.3 | 0 | 23.3 | |
| Bristol | 60.6 | 0 | 60.6 | |
| Dublin | 49.4 | 0 | 49.4 | |
| Glasgow | 68.6 | 3.0 | 71.6 | |
| London | 337.3 | 13.9 | 351.2 | *1 |
| Manchester | 157.1 | 33.2 | 190.2 | |
| Sheffield | 53.8 | 2.0 | 55.8 | |
| | | | **802** | |

## FY 2018-2019

Table 2

| | Studio Staff | Central Staff | Total | |
|---|---|---|---|---|
| Birmingham | 25.6 | 0 | 25.6 | |
| Bristol | 64.3 | 0 | 64.3 | |
| Dublin | 53.9 | 0 | 53.9 | |
| Glasgow | 63.2 | 3.0 | 66.2 | |
| London | 372.1 | 13.3 | 385.4 | *2 |
| Manchester | 161.4 | 36.0 | 197.4 | |
| Sheffield | 48.2 | 2.0 | 50.2 | |
| | | | **843** | |

*1 An average additional 70 members of staff associated with our London office were based on project sites in FY 2017-2018.

*2 An average additional 101 members of staff associated with our London office (not included within the figure above) were based on project sites in FY 2018-2019 and contribute to our business travel emissions. 12 non BDP persons who share BDP floor area not included above also contribute to our Scope 1 and 2 emissions and water consumption per capita.

# ISO 14001 and 50001

All of our UK and Ireland studios have been certified under ISO 14001 since 2011 and recertified against ISO 14001:2015 in March 2019.

Following recertification in July 2018, our energy management system for our studios remains in compliance with ISO 50001: 2011 and therefore the Energy Savings Opportunity Scheme, with plans to recertify under ISO 50001:2018 in 2020.

The following opportunities for improvement were raised during our spring 2019 audits, with regard to our environmental and energy management systems:

- **The environmental checklist needs to be applied more fully for project operational control to take full effect.**
- **Storing and maintenance of records and archived information needs to be improved.**
- **The planned move of our Birmingham studio provides an opportunity to improve the granularity of our environmental monitoring and should form part of the selection criteria.**

This annual statement demonstrates that BDP as an organisation takes environmental management seriously. It serves as an important communication tool to engage our staff and stakeholders to demonstrate our continual improvement, as well as confidently justifying our position as an environmentally conscious design practice.

# Detailed Performance FY 2018-2019

**The following section summarises our environmental performance during 2018-2019, our sixth year of formal annual environmental reporting. Our environmental performance targets are based on improvements on our previous reporting year FY 2017-2018.**

**Despite some improvements in metering, greater granularity in data is required to enable more effective interventions, thereby achieving efficiency improvements and consequential utility cost savings. Sub-metering and the provision of accurate and available data is now a key consideration in agreeing new studio lease agreements.**

## Energy Use and Carbon Emissions

Tables 3 and 4 below provide a summary of our 2018-2019 energy consumption and carbon emissions against the previous reporting year (FY 2017-2018).

Total Energy Consumption — Table 3

| | 2017-2018 | 2018-2019 | % Change |
|---|---|---|---|
| Scope 1 (kWh) | 749,520 | 672,259 | -10.31 |
| Scope 2 (kWh) | 1,567,599 | 1,513,353 | -3.46 |
| Total kWh | 2,317,119 | 2,185,611 | -5.68 |
| Scope 1 (kWh)/capita | 934 | 786 | -15.78 |
| Scope 2 (kWh)/capita | 1,952 | 1,770 | -9.35 |
| Total (kWh)/capita | 2,886 | 2,556 | -11.43 |

Total Scope Emissions — Table 4

| | 2017-2018 | 2018-2019 | % Change |
|---|---|---|---|
| Scope 1 (kWh) | 138,679 | 118,609 | -14.47 |
| Scope 2 (kWh) | 454,119 | 396,792 | -12.62 |
| Total kWh | 592,798 | 515,401 | -13.06 |
| Scope 1 (kWh)/capita | 173 | 139 | -19.69 |
| Scope 2 (kWh)/capita | 566 | 464 | -17.95 |
| Total (kWh)/capita | 738 | 603 | -18.36 |

Overall, both energy consumption and resulting Scope 1 and 2 emissions have decreased relative to FY 2017-2018, with carbon emissions falling to 603 kgCO2e/capita in 2018-2019.

Gas consumption has decreased significantly compared to the previous reporting year in all studios, with the exception of our Dublin studio which has made a transition from electrical to gas heating. The studios have seen a corresponding total reduction in Scope 1 emissions per capita of 20% relative to FY 2017-2018, discussed further in the Weather Normalisation section of this report, page 12.

A reduction in Scope 2 emissions per capita against performance in FY 2017-2018 of 18% has also been made. A major factor in this has been the decarbonisation of grid electricity, as demonstrated in the Carbon Conversion Factors section of this report on page 12. Nonetheless, evidence of our improved performance is demonstrated through an overall reduction in electricity consumption of 3%, or 9% per capita, relative to FY 2017-2018. Further to this, over 50% of our electricity (kWh) is procured through REGO or GoO renewable energy tariffs accredited by Ofgem.

The reduction in Scope 1 and Scope 2 emissions is also partly attributed to the increase in staff numbers. While electricity consumption from small power items increases relative to the number of staff, the demand on building systems per capita, including those for heating and lighting, has decreased relatively as our studios are closer to full capacity.

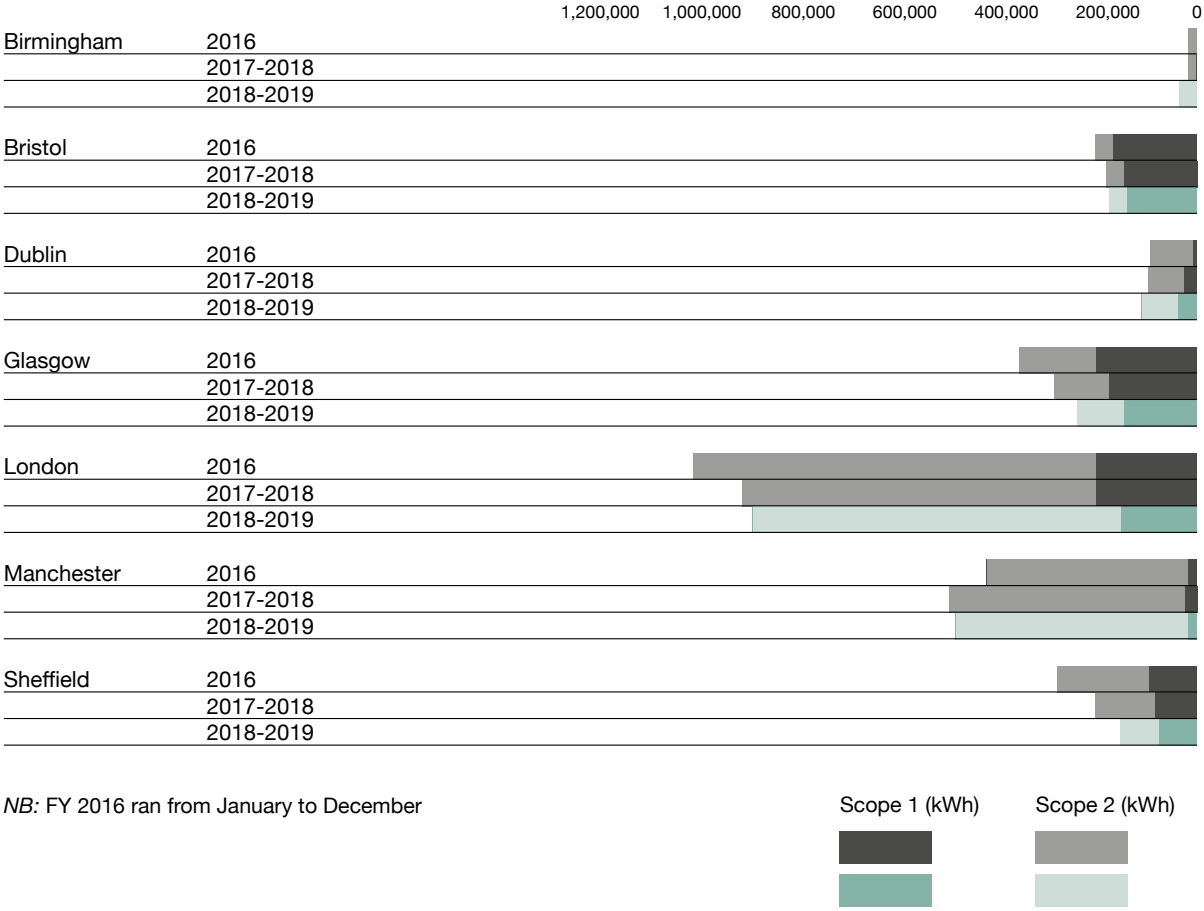
A copy of our environmental action plan for each studio, including planned interventions for continued improvement, can also be found at the back of this report.

The following graphs summarise energy consumption and associated carbon emissions for each of our UK and Ireland studios in comparison to the previous two reporting years 2016 and FY 2017-2018.

Figures 1 - 4 show total energy consumption and carbon emissions by studio. This is illustrated in total and per capita.

## Energy Consumption (kWh) Per Studio

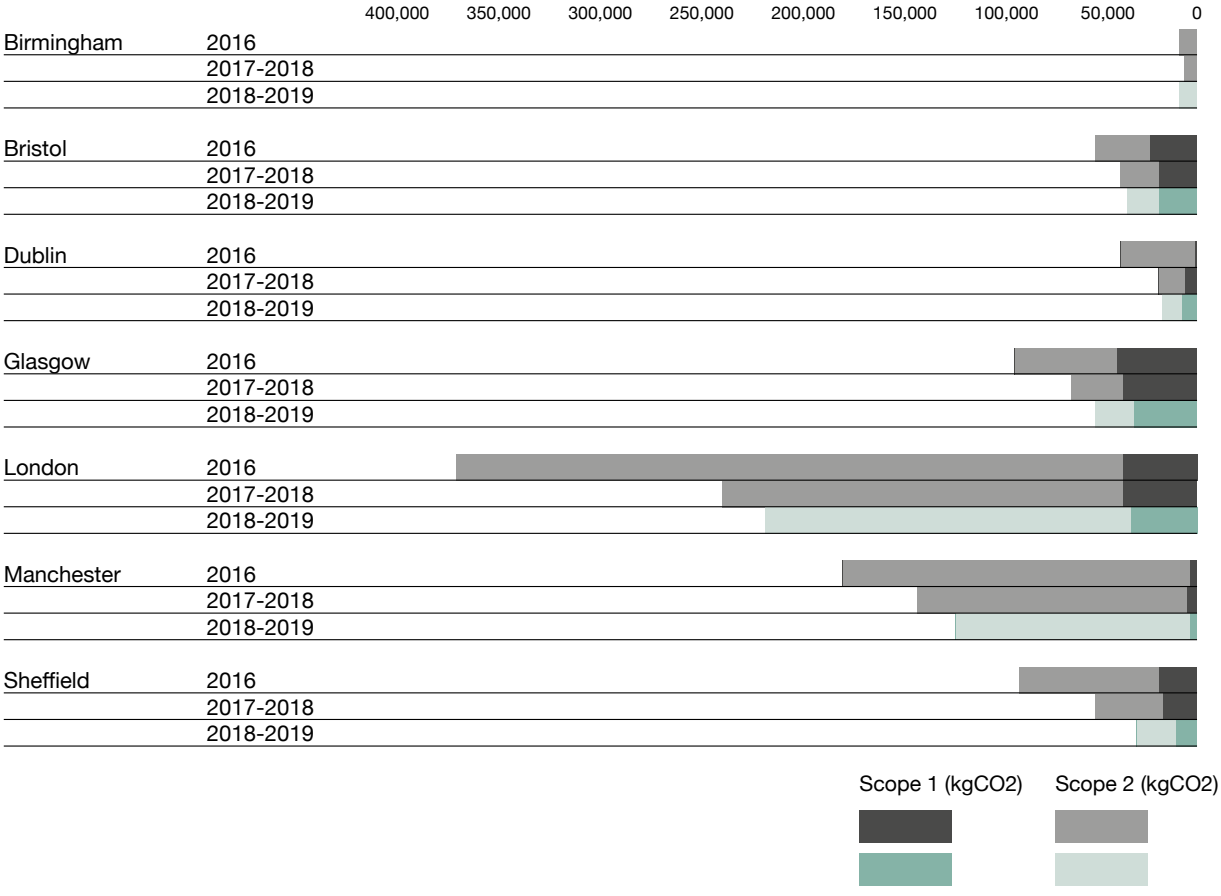
Figure 1




*NB:* FY 2016 ran from January to December

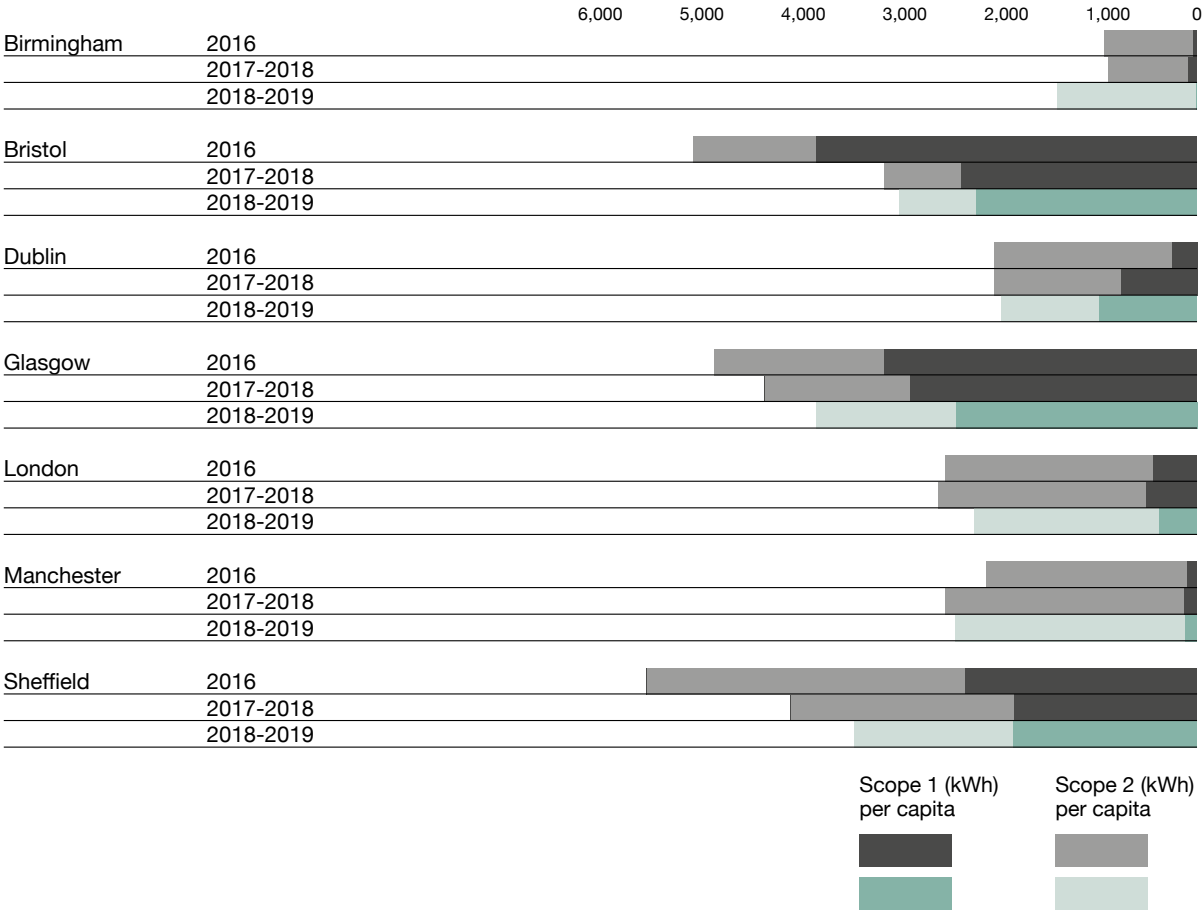
## Carbon emissions (CO2e) per studio

Figure 3



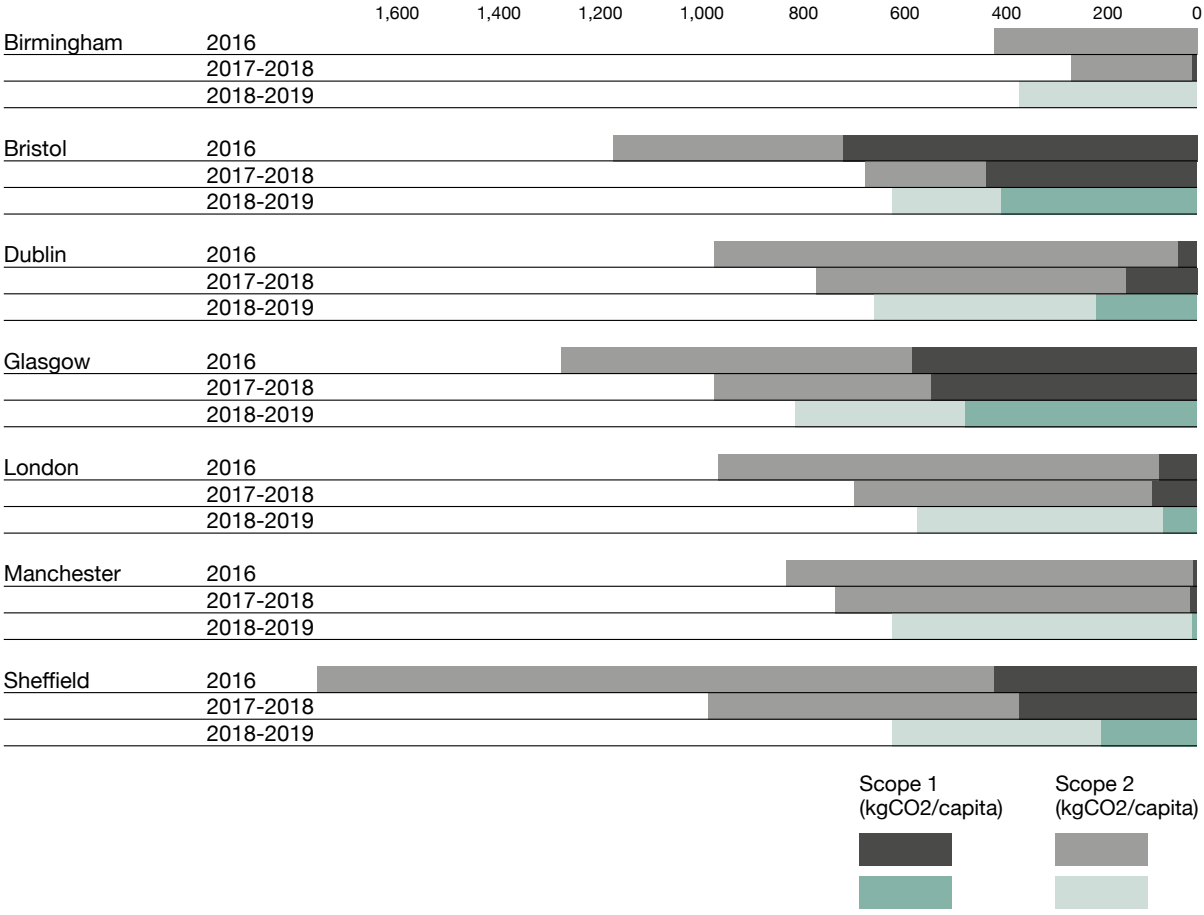
Energy consumption per capita (kWh/capita) by studio

Figure 2




Carbon emissions per capita (CO2e/capita) by studio

Figure 4



# Carbon Conversion Factors

We have calculated our carbon emissions throughout the report using carbon conversion factors provided by BEIS. BEIS revise the UK carbon conversion factors annually, reflecting changes to the UK's energy mix consumed in UK power stations, proportion of gas, electricity and fuel imported from abroad. Carbon factors can vary considerably year on year due to the influence of the relative prices of coal and natural gas, fluctuations in peak demand and renewables. Vehicle emission factors are further influenced by advances in automotive fuel efficiency.

The table below displays the carbon conversion factors used to calculate our emissions in each reporting year.

Defra Conversion factors (Scope 1, 2 and travel) Table 5

| | Units | 2016 | 2018 | 2019 |
|---|---|---|---|---|
| Scope 1 (natural gas) | kgCO2e/kWh | 0.18400 | 0.18396 | 0.18385 |
| Scope 2 (grid supplied electricity) | kgCO2e/kWh | 0.41205 | 0.28307 | 0.2556 |
| Car emissions (average car) | kgCO2e/km | 0.18307 | 0.17753 | 0.17337 |
| National rail | kgCO2e/km | 0.04885 | 0.04424 | 0.04115 |
| Domestic flight | kgCO2e/km | 0.27867 | 0.29832 | 0.25493 |
| Short-haul flight | kgCO2e/km | 0.16844 | 0.16236 | 0.15832 |
| Long-haul flight | kgCO2e/km | 0.19162 | 0.21256 | 0.19562 |

Though we record where we are able, we do not currently measure and publish our total Scope 3 emissions. As set out in our Targets and Summary of Performance, we are putting in place processes to enable us to further monitor our Scope 3 emissions and set Science Based Targets.

# Weather Normalisation

Heating degree days (HDDs) are a measurement designed to quantify the demand for energy needed to heat a building derived from measurements of outside air temperature.

Whereas in previous years an increase in HDD usually resulted in an increase in gas consumption, despite an increase in the number of HDD in FY 2018-2019, our gas consumption was lower in FY 2018-2019 from the previous year. This is partly a result of improvements to our heating controls in London and Birmingham, and upgrade of boilers in Glasgow, and in part, likely due to the more gradual reduction in temperature experienced throughout the winter FY 2018-2019, compared to the fluctuations throughout FY 2017-2018 brought by the 'Beast from the East'. The opposite can be seen for Dublin where there was a reduction in the number of HDD and increase in gas consumption. This was due to the switch from electrically led to gas heating.

Figure 5

Birmingham

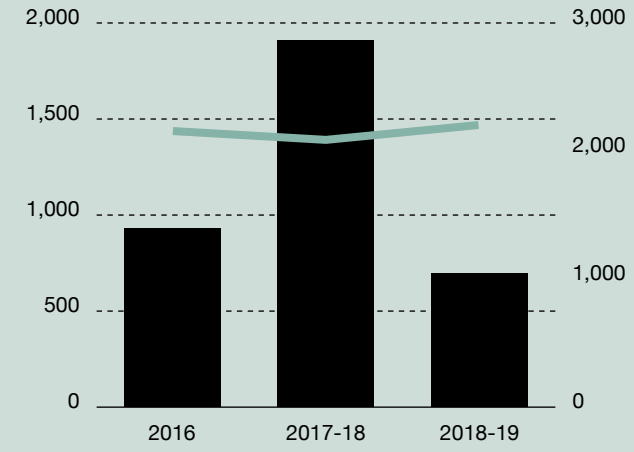



Figure 6

Bristol

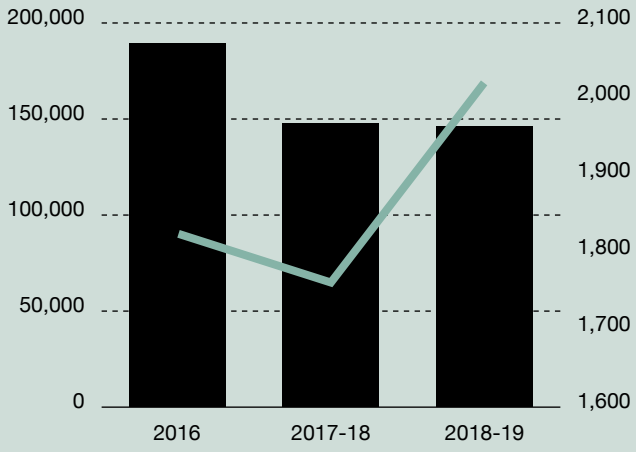



Figure 7

Dublin

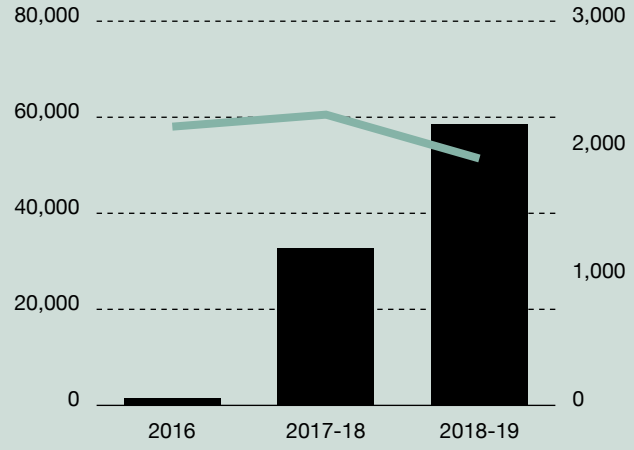



Figure 8

Glasgow

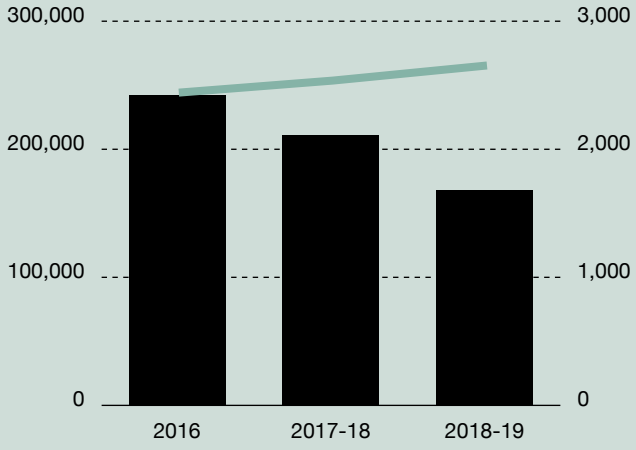



Figure 9

London

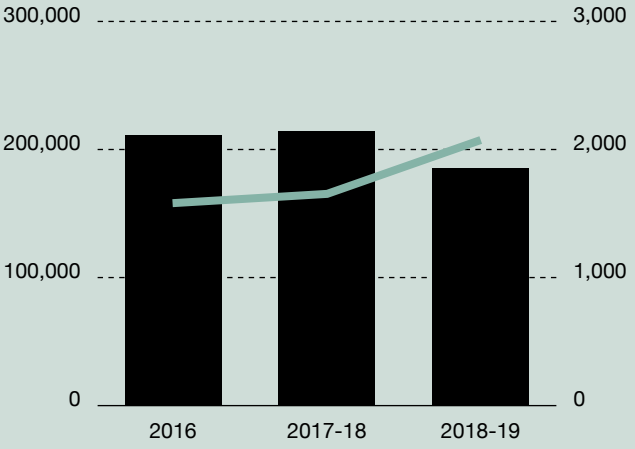



Figure 10

Manchester

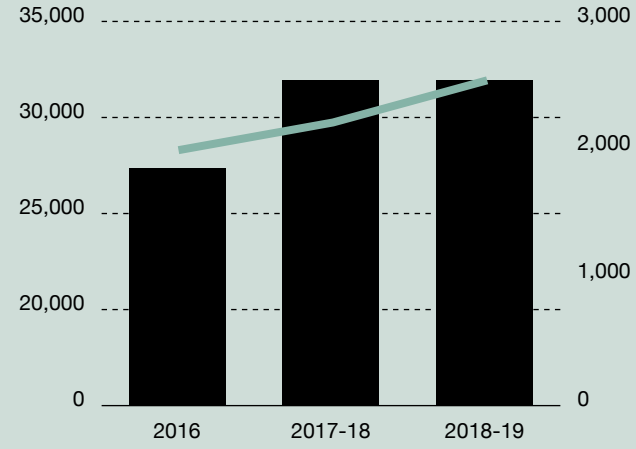
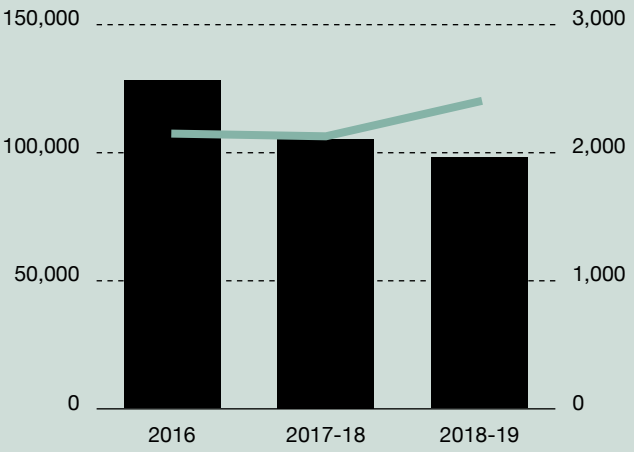



Figure 11

Sheffield




**Gas Consumption (kWh)**
left axis

**HDD at 15.5°C**
right axis

# Water

Tables 7 and 8 and figures 12 and 13 show water consumption by studio, and normalised per capita. Although we reduced our total water consumption between 2016 and FY 2017-2018, water consumption has risen by 9% per capita in FY 2018-2019. This is due to a significant increase in water consumption in our Bristol studio. The building manager is investigating whether there may have been an undetected leak or another reason for the large spike in consumption. Omitting Bristol from our calculations, our remaining offices have consumed just 0.1m3 over our target of maintaining water consumption below the FY 2017-2018 level of 7.8 m3/person/year.

The improvement achieved in Dublin can be attributed to the installation of a new, more efficient water pump, and upgrades to taps and cisterns. Reductions in our Manchester studio have mostly been achieved through the effective use of the rainwater harvesting system. In our Glasgow studio, improvements have been aided by communications from our studio manager and environmental champions leading to more environmentally conscious behaviours.

Data granularity remains an issue across our studios, with limited water consumption data available.

Total water consumption — Table 6

| | 2017-2018 | 2018-2019 | % change over previous year |
|---|---|---|---|
| Total (m3) | 6,257 | 7,281 | + 16.37 |
| Per capita (m3) | 7.79 | 8.52 | + 9.27 |

Water consumption per studio ($m^3$) — Table 7

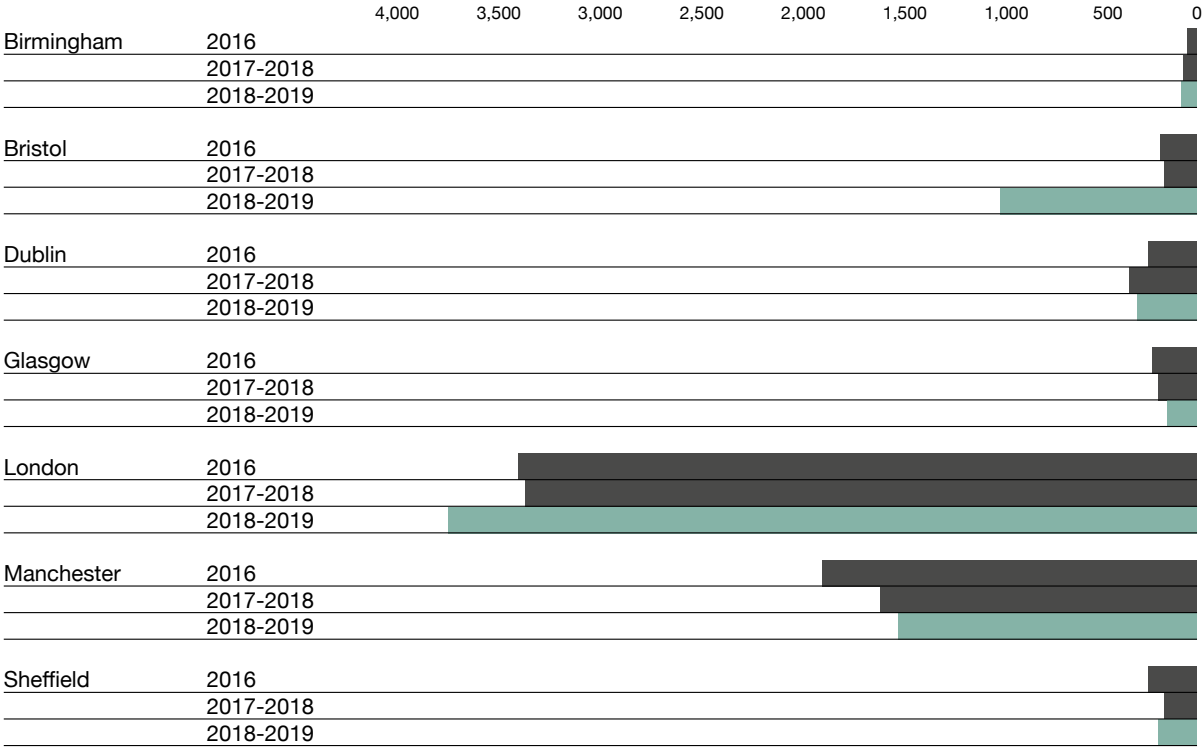
| | 2017-2018 | 2018-2019 | % change over previous year |
|---|---|---|---|
| Birmingham | 126.21 | 153.15 | + 21.35% |
| Bristol | 219.00 | 1019.50 | + 365.53% |
| Dublin | 411.50 | 394.80 | - 4.06% |
| Glasgow | 258.00 | 205.00 | - 20.54% |
| London | 3378.00 | 3761.00 | + 11.34% |
| Manchester | 1664.32 | 1523.95 | - 8.43% |
| Sheffield | 200.08 | 223.80 | + 11.86% |

Water consumption per studio per capita ($m^3$/capita) — Table 8

| | 2017-2018 | 2018-2019 | % change over previous year |
|---|---|---|---|
| Birmingham | 5.42 | 5.98 | + 9.39% |
| Bristol | 3.61 | 15.86 | + 77.23% |
| Dublin | 8.34 | 7.32 | - 13.80% |
| Glasgow | 3.60 | 3.10 | - 16.23% |
| London | 9.60 | 9.46 | - 1.45% |
| Manchester | 8.75 | 7.72 | - 13.32% |
| Sheffield | 3.58 | 4.46 | + 19.65% |

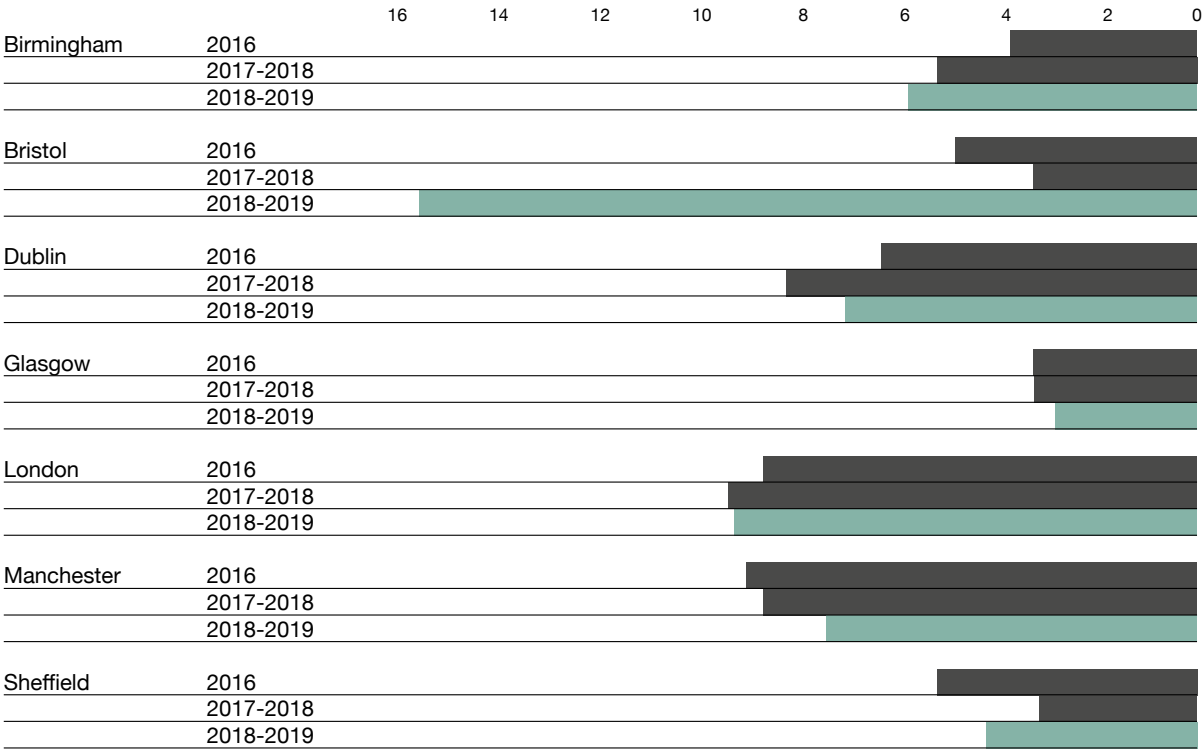
Total water consumption ($m^3$) by studio

Figure 12




Water consumption per capita ($m^3$/capita) by studio

Figure 13



# Business Travel Emissions



We continuously strive to improve the way we work and the processes we have in place to minimise the impact we have on the environment. One of the many ways we aim to reduce our carbon footprint is to actively encourage and promote sustainable travel.

UK transport CO2 emissions are expected to have risen by 35% between 1990 and 2030, with transport accounting for around a quarter of UK greenhouse gas emissions. Furthermore, being inactive is a serious threat to our health. Current physical activity levels in the UK are low, with only 66% of men and 58% of women meeting the NHS recommendation of at least 150 minutes of weekly exercise.

Although we recognise that the extent of travel required is project specific and largely dictated by project requirements, in FY 2018-2019, we set ourselves the target of capping CO2 emissions from business travel at the FY 2017-2018 level of 808kgCO2/capita. The 704kgCO2/capita from business travel in FY 2018-2019 contributed 54% of our total Scope 1, 2 and measured Scope 3 carbon footprint. This will become increasingly challenging to maintain and reduce as we measure more of our Scope 3 emissions (to include taxi mileage), and will be revised once we are confident that all business related travel is accounted for. In FY 2018-2019, we have achieved a 5.5% total, 12.8% per capita reduction in business travel emissions from FY 2017-2018. The introduction of satellite offices in Cardiff, Leeds and Liverpool, should further reduce the need for travel as they are strategically located close to major project locations.

Table 9 demonstrates that we have reduced the number of kilometres travelled per capita by 1.64%. The greatest reduction achieved was in the distance travelled by international flight, which contributes the largest portion of our business travel emissions, as illustrated in figure 15, despite a significantly higher number of kilometres travelled by train (the lowest carbon option). We have also reduced our distance travelled by short haul flight. While there has been an increase in uptake of rail travel, we have further work to reduce our domestic flights, particularly as this is the least fuel efficient mode of transport used. Another contributing factor to the reduction in carbon emissions from business travel is the continued decarbonisation of fuel for all of the modes of transport opposite; this is why we also report our travel in km.

Business Travel

Table 9

| Mode of travel | Total kilometres 2017-2018 | Total kilometres 2018-2019 | % change over previous year | Kilometres/ capita 2017-2018 | Kilometres/ capita 2018-2019 | % change over previous year |
|---|---|---|---|---|---|---|
| Car | 345,613 | 375,777 | + 8.73% | 395 | 396 | + 0.25% |
| Train | 1,722,260 | 2,122,674 | + 23.25% | 1,978 | 2,248 | + 12.01% |
| Domestic flight | 348,220 | 418,275 | + 20.12% | 400 | 443 | + 9.71% |
| Short haul flight | 618,967 | 638,548 | + 3.16% | 711 | 676 | - 5.18% |
| International flight | 1,700,814 | 1,557,192 | - 8.44% | 1,953 | 1,649 | - 18.44% |
| Total | 4,735,875 | 5,112,465 | + 7.95% | 5,437 | 5,412 | - 1.64% |

Our reported business travel emissions for 2018-2019 have been calculated based on train and rail travel bookings through our travel provider Egencia, part of the Expedia group specifically aimed at business travel. Vehicle emissions are calculated based on business mileage expenses claims. At present we are unable to account for vehicle emissions from taxi journeys; however we are in the process of reviewing our expenses process to enable this and other personal transport modes, to be reported in future.

Our Business Travel Carbon Management Plan has been successfully embedded across the practice, to provide staff with alternative, sustainable travel options, reducing reliance on single occupancy car use.

As part of the Travel Plan, we have established a travel hierarchy, setting out a decision making framework to minimise travel, where possible, and its impact. Staff are required to follow this framework to help them make the right travel/transport decisions.

1. Can the journey be avoided through the use of audio or video conferencing facilities? Video conferencing facilities and equipment are available in all our studios. Alternatively, Skype for Business is now fully established in all our studios, allowing employee-to-employee video conferencing facilities with additional options such as sharing screens.

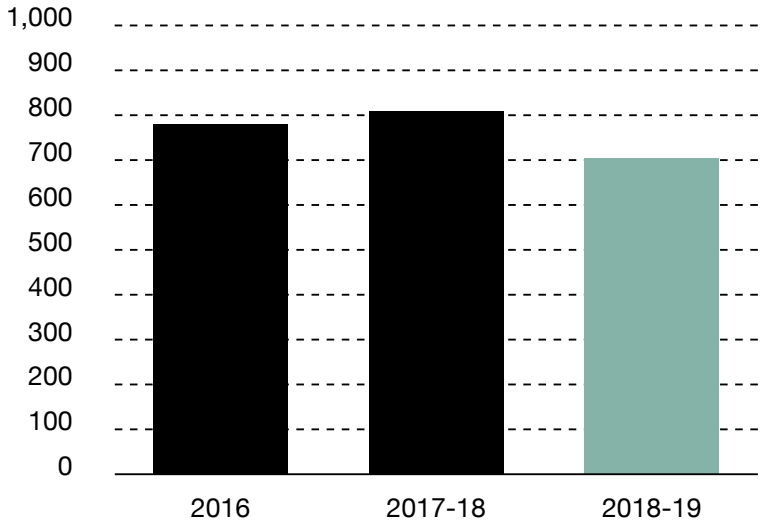
2. Can the journey be carried out by foot, bicycle or public transport? Cycle facilities are provided at nearly all our studios to make it easier for staff to not only commute to work by bike, but to encourage our staff to utilise cycle transport for business travel. Two Brompton bikes are available in our Manchester and London studios, with another at a site office, and an access key for the Santander Cycle Hire scheme is also available in the London office, with a cycle helmet and high-vis jacket available on request. To encourage the use of public transport as an alternative to car use, BDP pays or reimburses the cost of a business journey made on public transport.

3. Where none of the above options is feasible, private transport can then be considered. Where car travel is necessary, we encourage our staff to explore opportunities to car share, request a hire car with low emissions, and if possible, utilise a park and ride facility.

4. Air travel as the last resort. Whilst we recognise that air travel may sometimes be required as part of our client facing work, we believe it is still necessary to challenge the need, frequency and mode of travel. The need to fly should take into consideration the purpose of the trip, total duration of the journey and total length of the trip. Staff are required to consider all suitably alternative travel options available before booking air travel.

Business Travel (kgCO2e) per capita

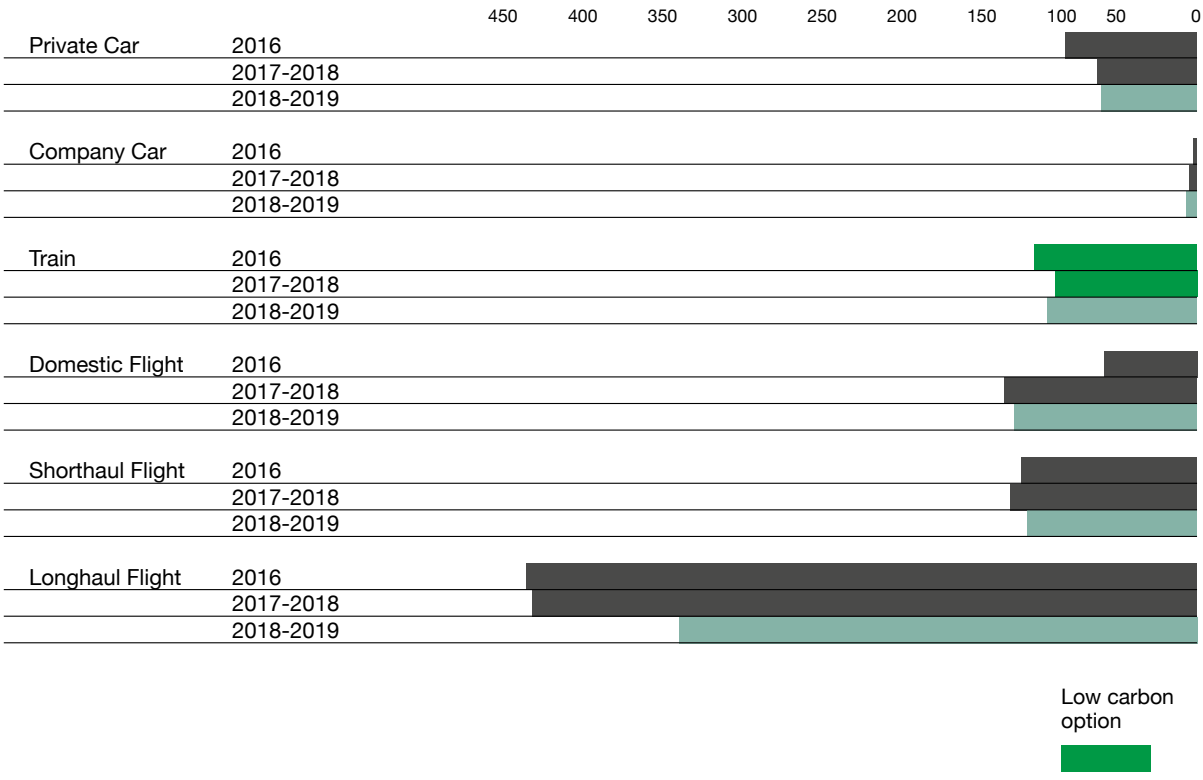
Figure 14




Figures 14 and 15 show our overall Business Travel emissions per capita and by studio (per capita), from the previous two reporting years.

Business Travel by Transport Mode (kgCO2) per capita

Figure 15



# Materials and Waste

All of our studios have in place robust waste management procedures to ensure that we are accountable for the waste we produce and make every effort to maximise waste diversion from landfill. Waste management procedures vary considerably between each studio. For example, in some studios commingled waste is collected for sorting and recycling off site, whilst in other studios waste is separated at source. At the end of FY 2018-2019 our Dublin and Birmingham studios began to weigh samples of general waste to enable full reporting on waste for FY 2019-2020 alongside all other offices.

Where our studios are located in multi-tenanted buildings, waste management is typically dealt with on a whole-building basis. Whilst the variation in data per studio does not lend itself well to the analysis of data trends, we feel that it is important to our environmental reporting to include yearly figures. Table 10 below shows the availability of waste data and waste streams across all of our studios, demonstrating the variation in approach. Over the past year, a number of studios have added waste streams to their waste management strategies. Dublin now has a plastic recycling collection, and new triple compartment bins have been installed on each floor of our London office.

Waste streams at our studios — Table 10

| Waste | Birmingham | Bristol | Glasgow | Dublin | London | Manchester | Sheffield |
|---|---|---|---|---|---|---|---|
| White paper/ Cardboard | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Commingled recyclables (plastic) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Glass | x | ✓ | ✓ | ✓ | ✓ | x | x |
| Organic waste | x | ✓ | ✓ | x | ✓ | ✓ | x |
| General Waste | x | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Printer Cartridges | x | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Mobile Phones | x | ✓ | ✓ | x | ✓ | x | x |
| Computers | x | ✓ | ✓ | ✓ | ✓ | x | x |
| Printers | x | ✓ | ✓ | ✓ | ✓ | x | x |
| Batteries | x | ✓ | ✓ | x | ✓ | x | x |
| WEEE | x | ✓ | ✓ | ✓ | ✓ | x | x |

Table 11 reports the quantities of waste and recyclables generated in FY 2018-2019 compared to FY 2017-2018. When interpreting this table it is necessary to refer to the waste data availability table 17 to note where lack of data availability may impact on reported figures.

Despite an increase in staff numbers, we have significantly reduced general waste by 35%. In our Sheffield studio, general waste feeds into the local Veolia district heat system, which also provides heating to our building. In London, our chosen waste contractor First Mile, collects waste and converts it to energy to power London homes.

Our reduction in general waste demonstrates the effectiveness of office campaigns reminding staff to reduce waste and recycle, initiatives to go disposable free in our London and Manchester canteens, and the increase in availability of mixed waste streams. Machine upgrades in FY 2017-2018 have resulted in a reduction in electronic waste since.

Although much of the waste previously sent to landfill is now recycled or converted to energy, we aim to reduce all waste to a minimum and will be working to assess where we can reuse materials and reduce waste through our supply chains.

Quantities of waste and recyclables

Table 11

| Waste | | 2017-2018 | 2018-2019 | % change over previous year |
|---|---|---|---|---|
| White paper/Cardboard | Kg | 13,886 | 10,190 | - 26.62% |
| Commingled recyclables (plastic) | Kg | 50,927 | 65,838 | + 29.28% |
| Glass | Kg | 179 | 192 | + 7.26% |
| Organic waste | Kg | 30,358 | 29,233 | - 3.71% |
| General waste | Kg | 27,273 | 17,756 | - 34.90% |
| Printer cartridges | Units | 282 | 186 | - 34.22% |
| Mobile phones | Units | 24 | 8 | - 66.67% |
| Computers | Units | 103 | 75 | - 27.18% |
| Printers | Units | 3 | 3 | 0.00% |
| Batteries | Kg | 146 | 194 | + 32.71% |
| Other WEEE | units | 2,004 | 1,229 | - 38.67% |
| Total non-electrical waste | Kg | 122,623 | 123,208 | + 0.48% |

# IT Energy and Environmental Improvements



Across all of our UK and Ireland studios, a programme of continual IT improvements ensures that we benefit from the latest developments in energy efficient and environmentally sound products, including server virtualisation to reduce physical space, energy consumption and cooling requirements, and Virtual Desktop for collaboration. This enables staff in our Sheffield, Glasgow, Dublin and India studios to work remotely and collaborate on projects in London and Manchester without the added travel emissions. Each pod enables up to 60 staff to work virtually at any one time. The robust technological infrastructure also saves time and power used to download and reload large amounts of data to local drives.

Over the next financial year there are plans to replace the ageing air conditioning in our Manchester server room. This should reduce the energy required to keep equipment operating within its optimum temperature ranges.

# Summary

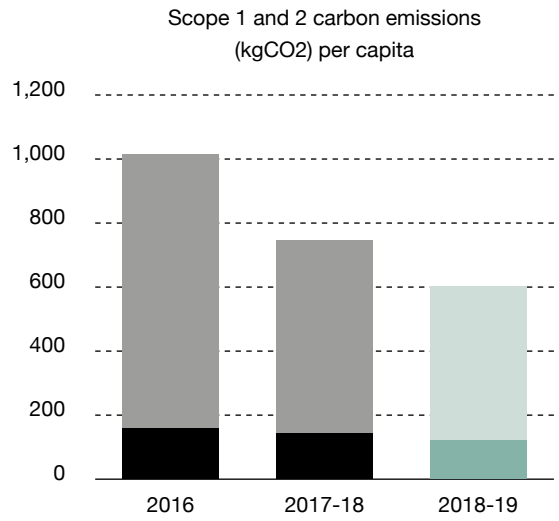
In FY 2018-2019 we have been successful in considerably reducing our Scope 1 and 2 carbon emissions to 603 kgCO2e/capita, with an 18% reduction from FY 2017-2018. The studio environmental headlines 2018-2019 and Energy Use and Carbon Emissions sections detailed some of the studio-specific initiatives that have been successfully implemented to contribute to our reduction in carbon emissions, most predominantly these have included improvements to heating controls and boiler upgrades.

The following graphs provide a summary of our environmental impact over FY 2018-2019. Although our energy and carbon performance continues to improve, the greater challenge is to measure and drive down our water consumption and other Scope 3 related emissions.

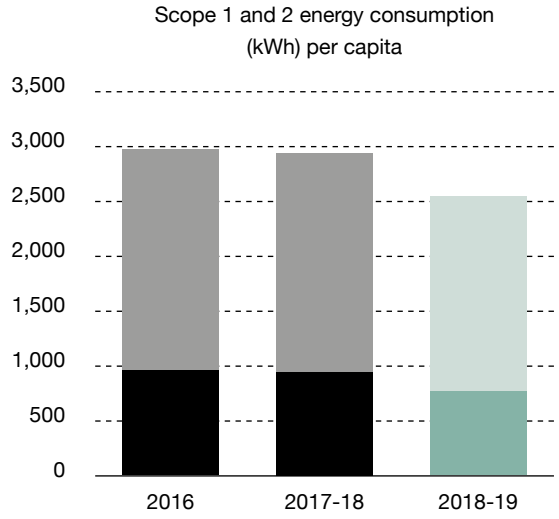
Our interventions will continue to be determined based on those that offer the greatest benefit to our working environment, and where the investment required is appropriate for our commercial position and length of lease.

We will continue to review the relevance of targets, and adapt or amend where we feel necessary. In doing this we will ensure that we continue to drive down our environmental impact.

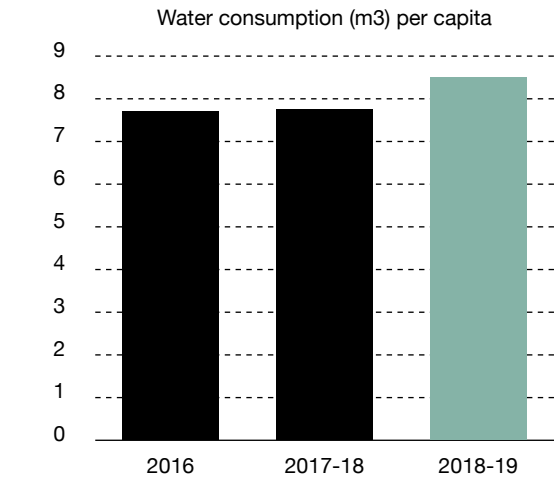
Carbon Emissions — Figure 16




Energy — Figure 17




Water — Figure 18

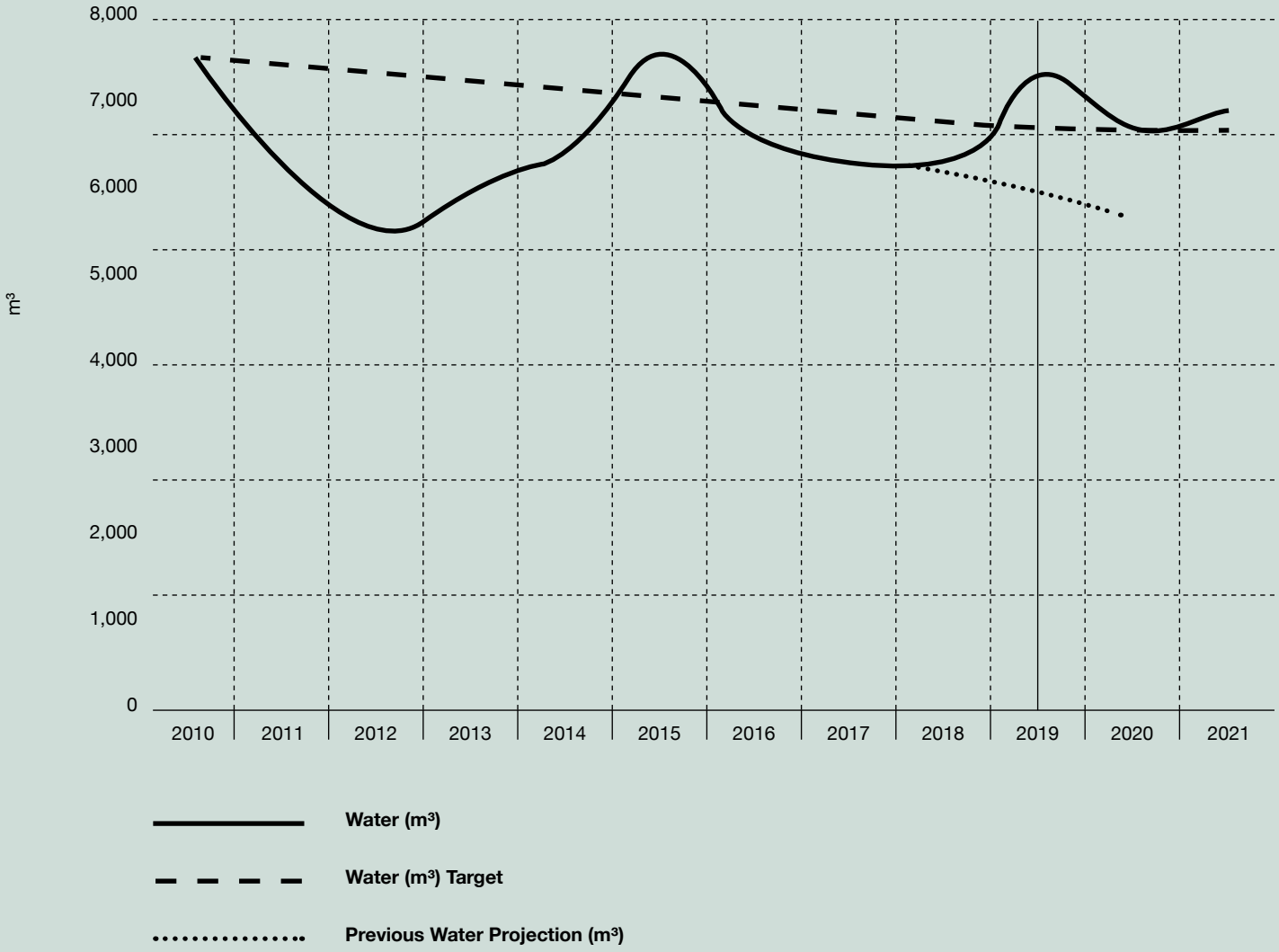


# Future Projections

Figure 19 below provides a projected energy consumption and CO2 emissions on the basis of the trend analysis applied to the data collected since 2010. It demonstrates that, while meeting our energy and carbon targets of a continual reduction on the previous year's performance, energy consumption and resulting emissions have also improved slightly beyond our FY 2018–2019 projections. However, the graph also highlights that while gas and electricity consumption have declined significantly, we cannot rely on the decarbonisation of grid electricity to help maintain the rapid trajectory towards eliminating carbon emissions.

Projected future energy consumption and carbon emissions (All Studios) Figure 19






Following progress in reducing water consumption in 2016 and FY 2017-2018, in FY 2018-2019 we have seen a spike in water consumption above projected performance in FY 2018-2019 and our target to cap water consumption. This increase cannot solely be attributed to our increase in staff numbers and is suspected to be due to an undetected leak in our Bristol studio, which is currently under investigation by the building management following a greater than 200% rise measured from the water meter since January 2019. As a result we will investigate the potential for installing PIR linked water shut off valves in the bathrooms of all studios where they are not yet present. This, we hope, will eliminate further spikes characterised by the peaks in figure 20 below. The figure indicates projected water consumption on the basis of the trend analysis applied to the data collected since 2010. In addition to leak detection measures, we will continue to drive behavioural change to reduce water consumption and bring our performance back in line with our target to cap consumption at 7.8m3/person/year.

Where our staff numbers continue to grow and we expand to acquire new office space, our total energy and water consumption may rise with business growth, even where we continue to achieve reductions per capita. Environmental performance will play a key role in the selection criteria of new office space.

# 2019/2020 Action Plan

| | |
|---|---|
| Birmingham | – Consider environmental performance and monitoring in studio relocation<br>– Arrange waste contractor to collect compostable waste separately<br>– Increase the capacity for secure bike storage and changing space |
| Bristol | – Investigate with the landlord the feasibility of installing gas and water sub-metering and/or a water shut off valve for the ground floor<br>– Provide further guidance on sorting waste into the relevant waste streams |
| Dublin | – Resolve issues with recording taxi and air mileage through Deltek Vision<br>– Investigate feasibility of grey water storage and/or rainwater harvesting<br>– Provide further guidance on sorting waste into the relevant waste streams |
| Glasgow | – Replace WC flush mechanisms with dual flush when they need replacing<br>– Implement Environmental Champions initiatives |
| London | – Provide guidance note for new pod cooling<br>– Replace chillers<br>– Investigate feasibility of grey water storage and/or rainwater harvesting<br>– Installation of wall rack for Brompton to increase visibility |
| Manchester | – Replace boilers with more efficient models<br>– Upgrades to ageing air conditioning systems in the server room<br>– Investigate electric/ low carbon taxi company as chosen provider |
| Sheffield | – Replace task lighting with LEDs<br>– Investigate installation of tap limiters<br>– Maintain studio communications to encourage use of segregated recycling in new premises |

**Europe**


11 Ducie Street
PO Box 85
Piccadilly Basin
**Manchester**
M60 3JA

16 Brewhouse Yard
Clerkenwell
**London**
EC1V 4LJ

7 Hill Street
**Bristol**
BS1 5RW

158 Edmund Street
**Birmingham**
B3 2HB

15 Exchange Place
**Glasgow**
G1 3AN

3 St Paul's Place
**Sheffield**
S1 2LF

Blackhall Green
**Dublin**
Ireland
D07 V0RF

Walenburgerweg 74
3033 AG
**Rotterdam**
Netherlands


**Asia**


PO Box 41670
202, Al Jahili Tower
Corniche Road
Markaziyah East
**Abu Dhabi**

Unit A,Floor 17
Urban City Centre
45 Nanchang Road
Huangpu District
Shanghai
200020
**China**

L 20 Green Park (Main)
New Delhi
110016
**India**

8 Marina View, #07-04
Asia Square Tower 1
Singapore 018960
**Singapore**


**North America**


Quadrangle
901 King Street West,
Suite 701 Toronto,
ON M5V 3H5
**Canada**



London
**Philip Gray**
Head of Sustainability

philip.gray@bdp.com


January 2020




**www.bdp.com**
sustainability@bdp.com