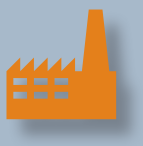
BDP.

2014 Environmental Management Report

Our designers
are passionate
advocates
of delivering
sustainable
environments
and places.

BDP's headline 2014 performance figures against our 2013 base-line, are as follows:



2.6% decrease in scope 1 and 2 CO_2 emissions per capita

36.1% decrease in CO_2 emissions per capita associated with business travel

1.3% increase in water consumption per capita

BDP's headline environmental targets 2014 - 2018:

5% reduction of total CO_2 emissions arising from scope 1 and 2 per capita on 2013 baseline

Develop a Business Travel Carbon Management Plan

5% reduction of total water consumption per capita on 2013 baseline

Scope 1 (direct emissions)
Scope 1 emissions arise from activities owned or controlled by an organisation that directly release emissions into the atmosphere (e.g. onsite gas boiler). For this report we have used the gas consumption figures from each of our studios to calculate resultant CO_2 emissions.

Scope 2 (indirect emissions)
Scope 2 emissions are associated with indirect emissions that are a consequence of an organisation's activities but which occur at sources it does not own or control (e.g. production of grid electricity). For this report we have used the electricity consumption figures of each studio to calculate resultant CO_2 emissions.

Executive Summary

A fundamental feature of BDP's professional service offer is the delivery of sustainable design to facilitate good environmental performance by our clients. This commitment to environmental performance is also integral to our everyday organisation across the practice.

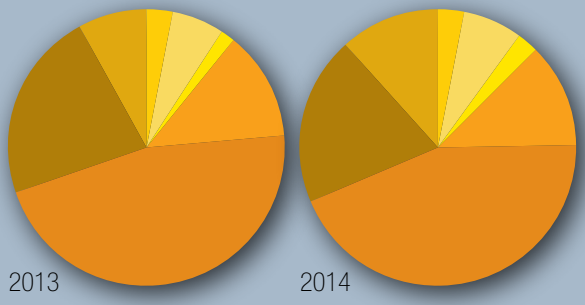
Since 2006, we have been recording the environmental performance of our studios in an effort to improve our efficiency and productivity, reduce the environmental impact of our operation and reduce our operating costs.

2014 saw the publication of BDP's first Environmental Report; providing reporting on environmental performance alongside the company's annual accounts. The first annual Environmental Report sought to establish the baseline for environmental improvements in all our UK studios and identified suitable targets against which we can measure our performance going forward. We set targets to reduce our carbon emissions and water consumption by at least 5% in each studio by 2018 (per capita, from a 2013 baseline).

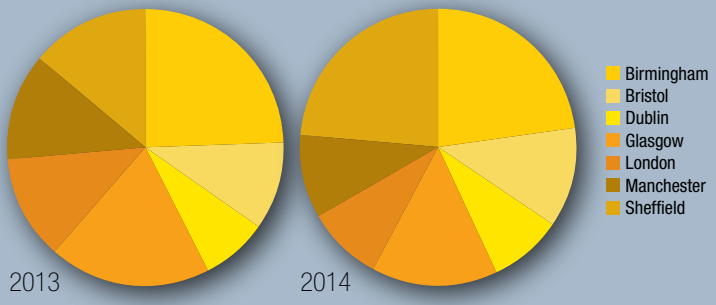
Furthermore, we identified issues with data granularity and set in place measures to improve our metering and monitoring to ensure that our metrics are as accurate as possible in each studio.

This report summarises the performance of each of our studios during 2014 against our targets. It seeks to identify links between practical studio performance (be this implementation of environmental initiatives, operational changes or data accuracy issues) with the reported environmental metrics. In doing so we can build a picture of cause and effect for each office and establish a plan to best manage and improve environmental performance going forwards towards our 2018 targets.

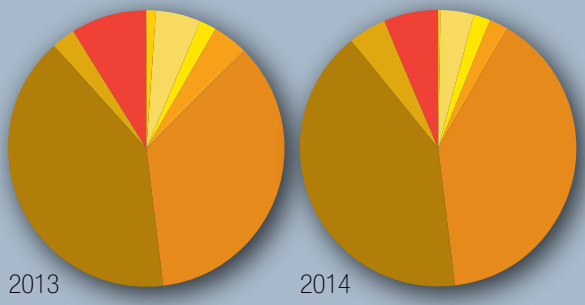
Total emissions from scope 1 and 2



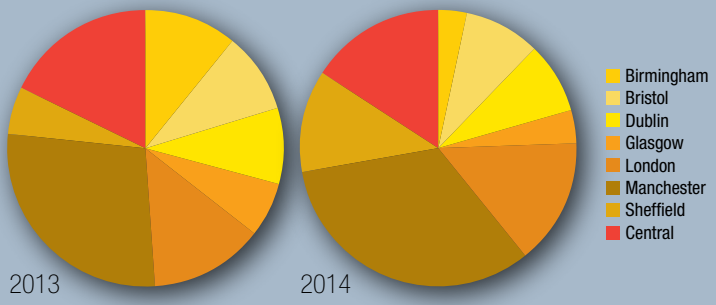
Scope 1 and 2 per capita ($kgCO_2e$)



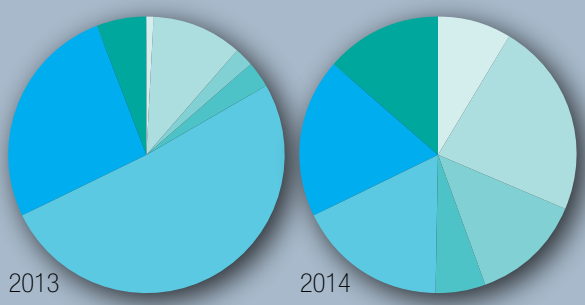
Total business travel emissions



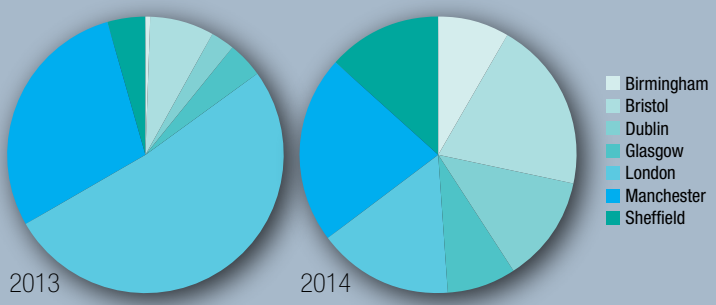
Business travel per capita ($kgCO_2e$)



Total water usage



Water usage per capita (m^3)



Introduction

A fundamental feature of BDP's professional services offer is the delivery of sustainable design to facilitate good environmental performance by our clients. This commitment to environmental performance is also integral to our everyday operation across the practice.

Since 2006, we have been recording the environmental performance of our studios in an effort to improve our efficiency and productivity, reduce the environmental impact of our operation and reduce our operating costs.

In 2013, the Board took the decision that we would communicate the environmental performance of each of our studios externally, thereby ensuring our accountability and instilling a commitment in all staff to address environmental performance. We are now committed to producing an environmental report annually to accompany the annual accounts and review at the end of our financial year.

2014 saw the publication of BDP's first Environmental Report; providing reporting on environmental performance alongside the company's annual accounts. The first annual Environmental Report established the baseline for environmental improvements in all our UK studios and identified suitable targets against which we can measure our performance going forward. Whilst our UK studios are located in intrinsically sustainable and energy efficient buildings, we recognise that there is scope for implementing both practical and behavioural change measures to further improve our environmental performance. As such, we have set targets to reduce our carbon emissions and water consumption by at least 5% in each studio by 2018 (per capita, from a 2013 baseline). Furthermore, we identified issues with data granularity and set in place measures to improve our metering and monitoring to ensure that our metrics are as accurate as possible in each studio.

This report summarises the performance of each of our studios during 2014 against our targets. It seeks to identify links between practical studio performance (be this implementation of environmental initiatives, operational changes or data accuracy issues) and the reported environmental metrics. In doing so we can build a picture of cause and effect for each office and establish a plan to best manage and improve environmental performance going forwards towards our 2018 targets.

Studio environmental headlines 2014

Summarised below are key initiatives undertaken in our UK studios throughout 2014 with the aim of improving our environmental performance:

- BDP are pursuing ISO 50001:2011 certification. This internationally recognised standard is awarded to organisations that operate a robust energy management system, and confirms BDP's compliance with the DECC Energy Savings Opportunity Scheme (ESOS) 2014 Regulations.
- In 2014, our Birmingham Studio secured a five year lease at 158 Edmund Street, a sustainably refurbished listed office building. The building utilises a number of innovative sustainable technologies which will contribute positively to the Studio's environmental performance, and BDP's energy/carbon and water efficiency targets. Notable features include a 10kWp Photovoltaic solar panel system, industry leading energy efficient HVAC system with heat recovery, and presence/daylight linked LED lighting.
- We have reviewed the BDP Design Process to better account for our environmental performance on all projects. This includes:
  - Inclusion of environmental considerations required within Project Director's Brief;
  - Update to our "Environmental Checklist" to enhance relevance to design issues;
  - Production of an environmental specification guidance note advising on items/issues to be considered within specification writing;
  - Subcontractor appointment standard letter to include reference to BDP Environmental Policy;
  - Project data template to require details of environmental credentials and performance for each project.
- We have introduced a studio environmental leaflet to our New Starter packs. The environmental leaflet provides information on the sustainable functions and features of each of our studios and 'how to' guidance to maximise environmental performance. The leaflets are also available in reception areas for visitors.
- Our recent ISO14001 audit reported favourably on BDP's environmental management system, confirming our continued adherence with the ISO requirements and successful monitoring and management of our internal environmental practice.

About BDP

BDP is a major international, interdisciplinary practice of architects, designers, engineers and urbanists. We work closely with users, clients and the community to create special places for living, working, shopping, culture and learning across the world.

Founded in 1961, we now have studios across the UK, Ireland, Netherlands, the MENA region, India, and China. 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 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. We have been working hard over the last five decades to deliver truly sustainable buildings and places that have improved and continue to improve quality of life, promote aspiration and drive prosperity.

We possess the technical, planning and design expertise to not only deliver resource efficient developments but also human, vibrant places in which people want to live, work and play. This expertise is connected and shared across professions to create successful developments that enhance quality of life now, without jeopardising our collective journey to a truly sustainable future.

We believe we have a duty to promote excellent environmental and sustainable design with our clients and in our projects, and to also ensure good environmental performance within our business operations.

Our studios

The interdisciplinary practice of BDP emerged in 1961 from one founded in Preston in the north west of England in 1936.

Since then our company has grown, giving a good geographical spread around the UK and Ireland - in addition to those further afield. While there is no longer a studio in Preston, in the north BDP is now based in Manchester, Sheffield and Birmingham. In the south the studios are located in London and Bristol; in Scotland, BDP is in Glasgow.

In addition to these studios spread across the UK and Ireland, studios also now exist in The Netherlands, the MENA region, India and China.

All of our studios range in size and vary in style – some in historic surroundings, others in the very latest BDP-designed buildings. Staff numbers and core activities are dependent on the size of the premises.

Birmingham
Birmingham studio is located at 158 Edmund Street, a high profile newly refurbished building situated in the heart of the city's traditional commercial core.

Bristol
Bristol studio, built in 1964, is situated close to College Green, in the heart of this historic city. It has a gross area of 563m^2.

Dublin
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 Dublin City. The building has three floors and an overall gross area of 790m^2. BDP occupies the ground floor area (197m^2). Due to increasing staff numbers, the architectural department has recently moved into a new 325m^2 studio adjacent to the existing building.

Glasgow
Glasgow studio has developed an enviable reputation as a leading practice in Scotland and is situated in the heart of the city's main shopping area, Buchanan Street. The studio has a floor area of around 1500m^2.

London
London's characterful 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 almost 5000m^2.

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. Designed by BDP, the studio 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 3000m^2. The fourth floor of the studio is currently tenanted. Our reported scope 1 and 2 emissions and water consumption figures discount the fourth floor area, which is outside of BDP use.

Sheffield
Also designed by BDP, the Sheffield studio has been instrumental in regenerating the historic Wicker area of the city. In recognition of its environmental credentials, the building was awarded a BREEAM Very Good rating. The building has a gross floor area of 1100m^2.

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 table outlines our staff numbers for 2013 and 2014. Scope 1&2 emissions and water consumption per capita figures are calculated based on the total staff occupying our studios (including any subcontractors and tenants who share our floor space). Business travel emissions account only for BDP staff, with Central staff reported separately.

	2013				2014			
	Studio Staff	Central Staff	Other occupants	Total	Studio Staff	Central Staff	Other occupants	Total
Birmingham	12.1			12.1	12.1			12.1
Bristol	56.6	1.0		57.6	49.2	0.1		49.3
Dublin	21.5			21.5	27.2			27.2
Glasgow	62.4	1.9		64.3	67.0	3.0		70.0
London	265.2	12.6	84.9	362.7	303.5	10.4	109.3	423.2
Manchester	144.4	31.6	*	176.0	140	31.6	*	171.6
Sheffield	52.3	1.8		54.1	40.6	1.0		41.6

Table 0.1 – Staff numbers per studio
** The 4th floor of our Manchester studio is tenanted. Our environmental reporting discounts the 4th floor occupation and energy/water consumption which is separate and outside of BDP use.*

Environmental Management System: ISO 14001: 2004

All of our UK & Ireland studios have been certified under ISO 14001:2004 since 2011. Key to maintaining the certification is continual improvement; demonstrating year on year progress in reducing the environmental impact of our operations. ISO 14001 also audits the processes and procedures we have in place for both monitoring our environmental performance and engaging staff in contributing to improving environmental performance.

Our last surveillance visit from our auditors LRQA in the first quarter of 2015 provided positive feedback for all areas of environmental management and the progress that we have made over the last 6 months. This includes an improvement in the completeness of our data set, which has allowed us to set new targets, and the broader role out of policy and expectations to employees through our new induction information. Integration of environmental considerations into our standard BDP design process was also well received. A key objective for 2015 is to see these implemented and integrated in the design services we offer, and to monitor this impact.

The 2014 annual environmental management report is a key document in demonstrating the successes or otherwise of our environmental management system. It acts as an important communication tool to engage our staff and stakeholders in a combined effort to continually reduce our environmental impact and enhance environmental credentials, as well as confidently justifying our position as an environmentally conscious design practice.

Energy Management ISO 50001:2001

BDP are pursuing ISO 50001:2011 certification. This internationally recognised standard is awarded to organisations that have a robust energy management system (EnMS) in place. ISO 50001 provides a framework to guide organisations to set specific energy targets, use data effectively, measure results and to continually improve performance. The EnMS falls under the umbrella of the broader ISO 14001 Environmental Management System, and will be audited concurrently with this standard by LRQA.

In addition to being seen as good practice and an important contributor to BDP's environmental credentials, the catalyst to achieving this standard has come from the Energy Savings Opportunity Scheme, or ESOS. This requires all organisations over a certain size to demonstrate to the managing authority (the Environment Agency in England) that they have undertaken an audit of their energy consumption. Organisations that are ISO 50001 compliant automatically comply with the requirements of the scheme and need take no further action.

BDP will undergo the formal audit for acceptance to the standard in summer 2015. In advance of this, there will be updates to policies, reporting procedures and management plans to demonstrate robustly that the principles are ingrained in our operation.

As with ISO 14001, ISO 50001 requires engagement from and with employees to ensure that they understand the role they play in the continual improvement of environmental performance.

Our Performance 2014

As an organisation that promotes a sustainable approach to the creation of the built environment, and has a reputation for the creation of leading sustainable building designs, it is only appropriate that we also take a sustainable approach to the way we deliver and support our business. At the heart of this approach is the way we run our studios.

Monitoring and recording our resource consumption began in 2006 and in 2010 we updated and formalised this process to align with the GHG Protocol scopes and emissions. Recording our consumption in this way is crucial to ensure our performance is comparable to other organisations in the UK. Monthly resource consumption data is collated across our studios and analysed to understand our ongoing environmental footprint, identify data trends and anomalies and inform action to improve as necessary.

The following sections summarise our environmental performance, detailing trends in carbon and water performance within each of our studios throughout 2014 compared to performance throughout 2013.

Since the formalisation of our studio environmental monitoring procedures in 2010, we have been working to improve the granularity of our data in order to ensure the integrity and accuracy of our environmental management and reporting. By improving the metering and sub-metering of our energy and, more recently, water usage within our studios we are able to determine a robust 2013 baseline.

We have calculated our carbon data throughout this report using the specific year's carbon conversion factors, as defined by Defra.

Scope 1 (direct emissions)
Scope 1 emissions arise from activities owned or controlled by an organisation that directly releases emissions into the atmosphere (e.g. onsite gas boiler). For this report we have used the gas consumption figures from each of our studios to calculate resultant CO_2 emissions.

Scope 2 (energy indirect)
Scope 2 emissions are associated with indirect emissions that are a consequence of an organisation's activities but which occur at sources it does not own or control (e.g. production of grid electricity). For this report we have used the electricity consumption figures of each studio to calculate resultant CO_2 emissions.

Carbon Conversion Factors

We have calculated our carbon emissions throughout the report using carbon conversion factors provided by DEFRA. DEFRA revise the UK carbon conversion factors annually, reflecting changes to the UK's energy mix consumed in UK power stations, and 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, as well as fluctuations in peak demand and renewables. Vehicle emissions factors are influenced by advances in automotive fuel efficiency.

The table below shows the carbon conversion factors we have used to calculate our 2013 (baseline) emissions and 2014 emissions. Whilst the emissions reported throughout this report are calculated using the conversion factor applicable to the appropriate year, our graphs also show emissions adjusted for 2013 carbon factors. This allows us to better understand emissions trends directly related to our company activities, compared to emissions trends resulting from changes to the UK energy mix and import reliance.

DEFRA Conversion Factors	Units	2013	2014
Scope 1 (natural gas)	$kgCO_2e/kWh$	0.18404	0.184973
Scope 2 (grid supplied electricity)	$kgCO_2e/kWh$	0.44548	0.49426
Car emissions (average car)	$kgCO_2e/km$	0.19023	0.18943
National rail	$kgCO_2e/km$	0.04904	0.04738
Domestic flight	$kgCO_2e/km$	0.326615	0.29316
Short-haul flight	$kgCO_2e/km$	0.192457	0.16625
Long-haul flight	$kgCO_2e/km$	0.226528	0.21022

Table 0.2 - DEFRA carbon conversion factors

BDP report on direct emissions associated with Scope 1, Scope 2 and business travel. "Well to Tank" emissions are not included.

Emissions - Scope 1 & 2

Table 0.3 provides a summary of our emissions in 2014 and comparison to our 2013 baseline year emissions. Overall, absolute emissions have increased by 3.5%. Scope 1 emissions have decreased significantly, however this has been offset by an increase in Scope 2 emissions.

Our targets use a per capita normalisation as an appropriate means of making comparisons across our studios and with similar organisations. This is due to the nature of the work we undertake and the variation in the size, performance and density of our studios. Despite absolute scope 2 emissions increasing, total emissions per capita have decreased by 2.6% across all our UK and Ireland studios against our 2018 reduction target.

Table 0.4 (overleaf) provides a breakdown of BDP's scope 1 and 2 UK and Ireland emissions per studio, comparing 2014 figures against our 2013 baseline. In general terms these are the emissions associated with heating and powering our buildings and ICT equipment. Overall, a majority of studios have achieved a reduction in scope 1 emissions (i.e. emissions associated with heating our buildings), however scope 2 (electricity) emissions have increased. Both of our largest studios, Manchester and London have seen a decrease in scope 1 & 2 emissions per capita, achieving emissions reduction in line with our 5% 2018 reduction target.

		2013 (Baseline)*	2014	% change
Total building CO_2 emissions ($kgCO_2e$)		939940.8	972530.7	3.5%
Total building emissions per capita across all studios ($kgCO_2e$/capita)		1256.1	1223.3	-2.6%
Scope 1	**Absolute ($kgCO_2e$)**	179,492.5	143776.7	-19.9%
	Total per capita across all studios ($kgCO_2e$/capita)	239.9	180.9	-24.6%
Scope 2	**Absolute ($kgCO_2e$)**	760448.3	828754.0	9.0%
	Total per capita across all studios ($kgCO_2e$/capita)	1016.2	1042.5	2.6%

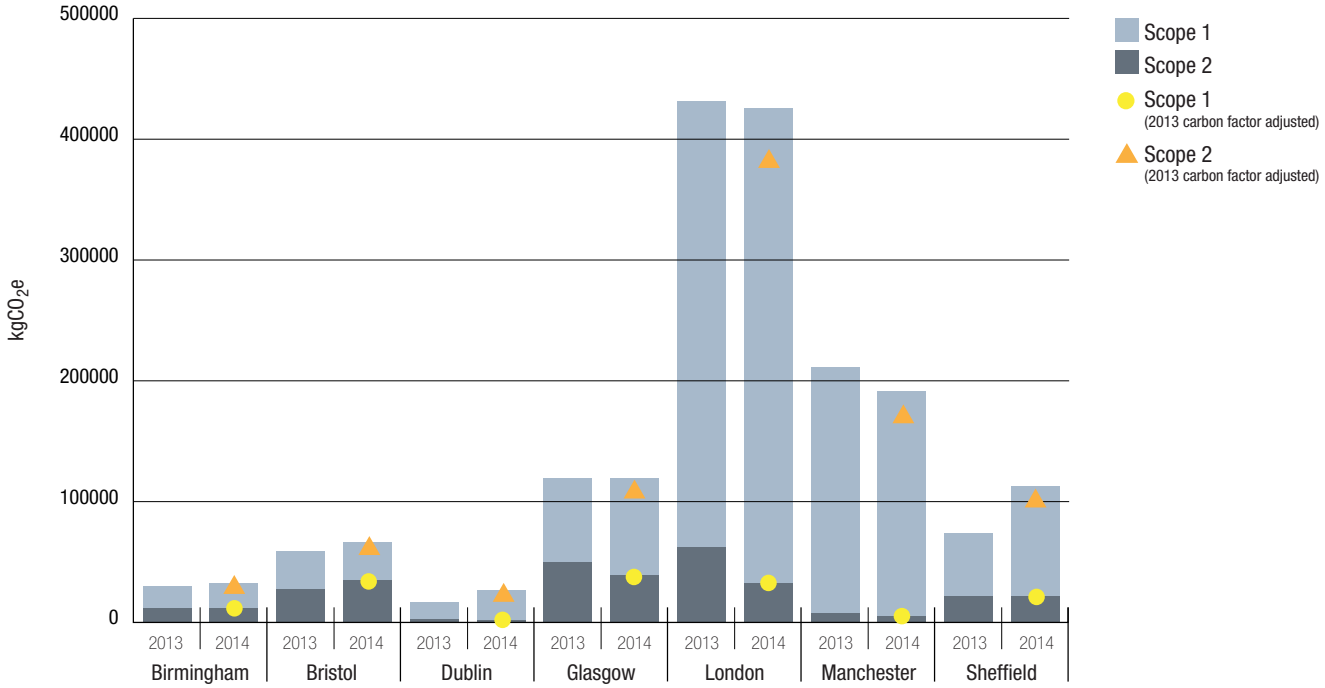
Table 0.3 – Total scope 1&2 emissions

** Baseline amended from 2013 Environmental Report to rectify missing data and provide a reliable and realistic baseline for all studios.*

	2013*		2014		Total percentage change	Percentage change per capita
Scope 1	**$kgCO_2e$**	**$kgCO_2e$/capita**	**$kgCO_2e$**	**$kgCO_2e$/capita**		
Birmingham	11340.5	937.2	11398.0	942.0	0.5%	0.5%
Bristol	27390.3	475.5	34412.4	698.0	25.6%	46.8%
Dublin	1793.4	83.4	1239.7	45.6	-30.9%	-45.3%
Glasgow	49331.0	767.2	38307.9	547.3	-22.3%	-28.7%
London	61682.5	170.1	32327.9	76.4	-47.6%	-55.1%
Manchester	6650.5	37.8	4786.6	27.9	-28.0%	-26.2%
Sheffield	21304.3	393.8	21304.2	512.1	0.0%	30.0%
Scope 2						
Birmingham	17772.0	1468.8	20431.7	1688.6	15.0%	15.0%
Bristol	30878.0	536.1	31808.1	645.2	3.0%	20.4%
Dublin	14482.9	673.6	24813.9	912.3	71.3%	35.4%
Glasgow	69800.5	1085.5	80572.3	1151.0	15.4%	6.0%
London	371099.2	1023.2	393826.9	930.6	6.1%	-9.1%
Manchester	204443.8	1161.6	186595.0	1087.4	-8.7%	-6.4%
Sheffield	51971.9	960.7	90706.1	2180.4	74.5%	127.0%

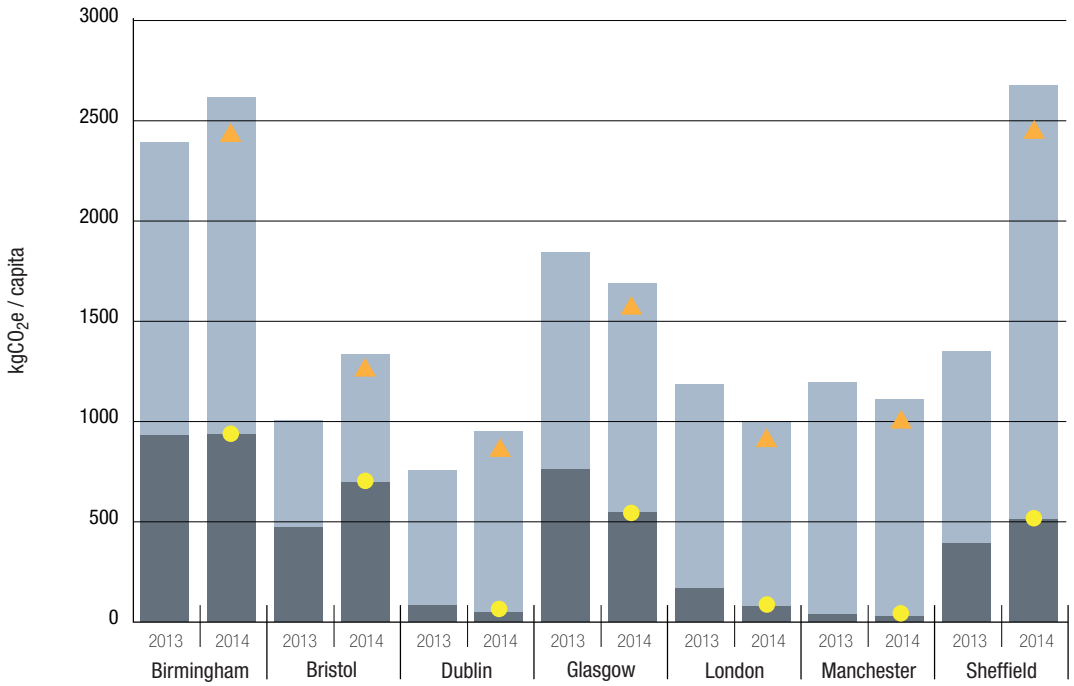
Table 0.4 – Scope 1&2 emissions per studio

** Baseline data updated from 2014 Environmental Report to account for data reporting issues relating to Sheffield and Bristol gas figures in 2013.*



Total emissions from scope 1 and 2 per studio

Figure 0.1



Scope 1 and 2 emissions per capita per studio

Figure 0.2

Water

Table 0.5 (adjacent) shows our water consumption across all studios in 2014, compared to our 2013 baseline. Whilst our overall total water consumption has increased by 6.6%, against our target (5% reduction per capita) our consumption has only increased slightly, with a 1.3% change from the 2013 baseline.

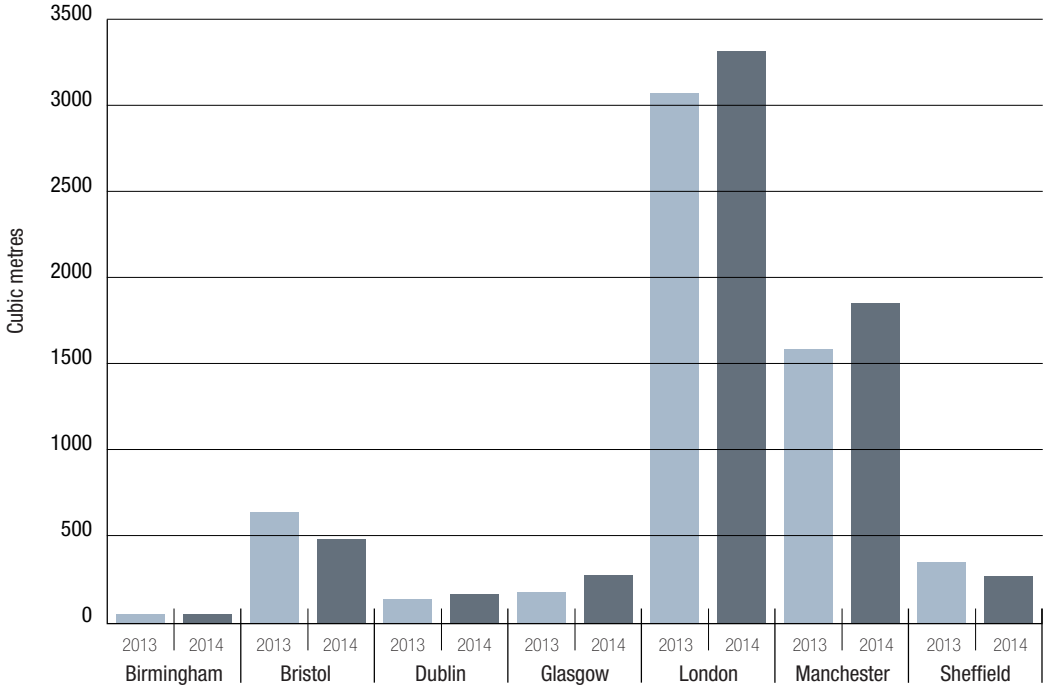
Table 0.6 shows total consumption for each studio and per capita. Against our per capita consumption target, Bristol and London have achieved reductions in excess of 5%. Significant increases in per capita water consumption were seen for both Glasgow and Manchester.

	2013 (baseline)	2014	% change
Total water consumption (m^3)	6023.2	6421.7	6.6%
Total water consumption per capita (m^3/capita)	8.0	8.1	1.3%

Table 0.5 Total water consumption

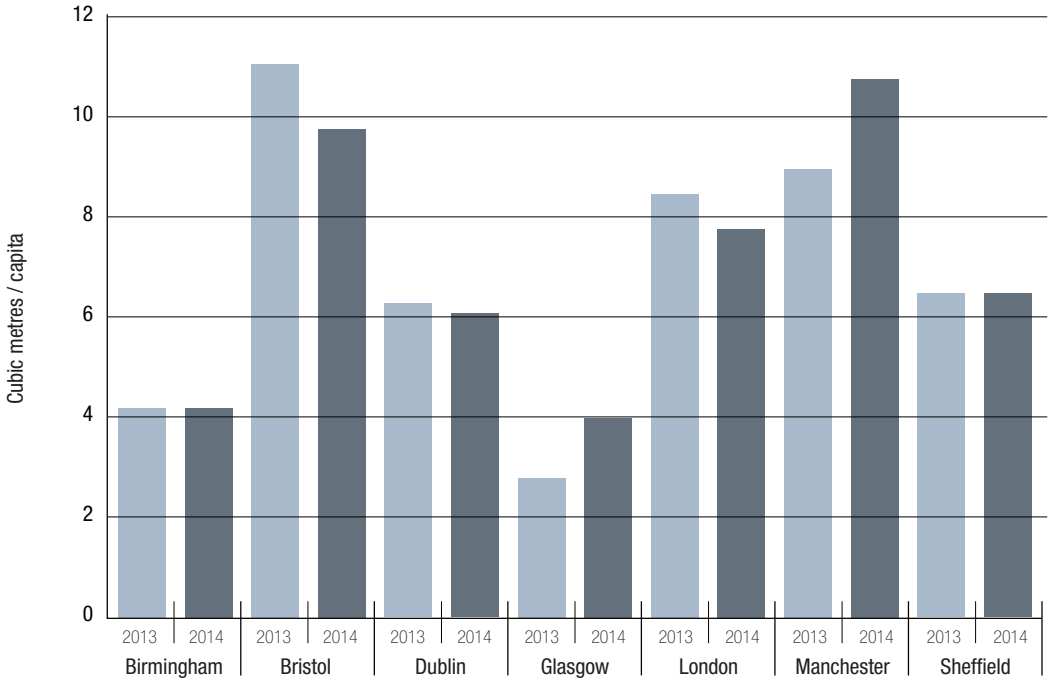
	2013		2014		Total percentage change	Percentage change per capita
Water	m^3	m^3/capita	m^3	m^3/capita		
Birmingham	50.3	4.2	50.3	4.2	0.0%	0.0%
Bristol	642.2	11.1	484.3	9.8	-24.6%	-11.7%
Dublin	136.0	6.3	166.5	6.1	22.4%	-3.2%
Glasgow	179.0	2.8	277.0	4.0	54.7%	42.9%
London	3075.0	8.5	3319.0	7.8	7.9%	-8.2%
Manchester	1590.2	9.0	1854.1	10.8	16.6%	20.0%
Sheffield	350.5	6.5	270.5	6.5	-22.8%	0.0%

Table 0.6 Water consumption per studio



Total water usage per studio

Figure 0.3



Water usage per capita per studio

Figure 0.4

Materials and Waste 

Waste Management

All of our UK & Ireland studios operate robust waste procedures which allow for the recycling of paper/cardboard, plastics, glass, organic waste, batteries and printer cartridges. We undertake regular audits of our contractors to ensure that the impact of our waste is minimised.

Our 2013 Environmental Management Report highlighted issues with waste data reporting consistency across our UK & Ireland studios. Our waste management procedures vary per office in line with the agreement we have in place with each local waste contractor. In some of our studios, co-mingled waste is collected for off-site recycling, whereas, in others recyclables are separated into different waste streams (paper, glass, plastics etc.) at source by staff, prior to collection. The impact of this varied approach is that comparable waste data for each studio is not readily available.

To improve the consistency of waste data we will undertake a review of the procedures for waste management and reporting upon renewal of waste management contracts for each of our studios. We will require that waste contractors provide waste quantities, so that each studio can accurately determine total volumes of the waste streams collected.

Resource Efficiency

As a company we can reduce the generation of waste through consideration of our use of resources in our day to day operations. In line with the principles of the Waste Hierarchy our focus is on the prevention and minimisation of waste production to reduce the quantity of waste generated and the environmental impacts associated with the resulting collection, segregation and recycling of recoverable materials.

Within our studios our largest waste stream (by volume) is paper and cardboard. As a design practice we have traditionally generated high quantities of paper waste. As our operations have become increasingly digitised we have the scope to reduce our paper consumption, and thereby our recycling requirements and associated environmental impacts. We have taken proactive steps to reduce paper waste including default printer settings for double sided printing, and time expired printing where items are deleted from the printing queue if not printed within a certain time frame.

Improvement proposals 2015

During 2015 we will undertake a review of the waste management procedures for each studio to ensure that recycling rates are optimised. We will work with our waste contractors to ensure that we are provided with sufficient granularity of data for waste streams so as to be able to report on, and set targets for, these with confidence.

In 2014 we produced 22575 kg of paper and cardboard waste which equates to 28.4 kg/capita.

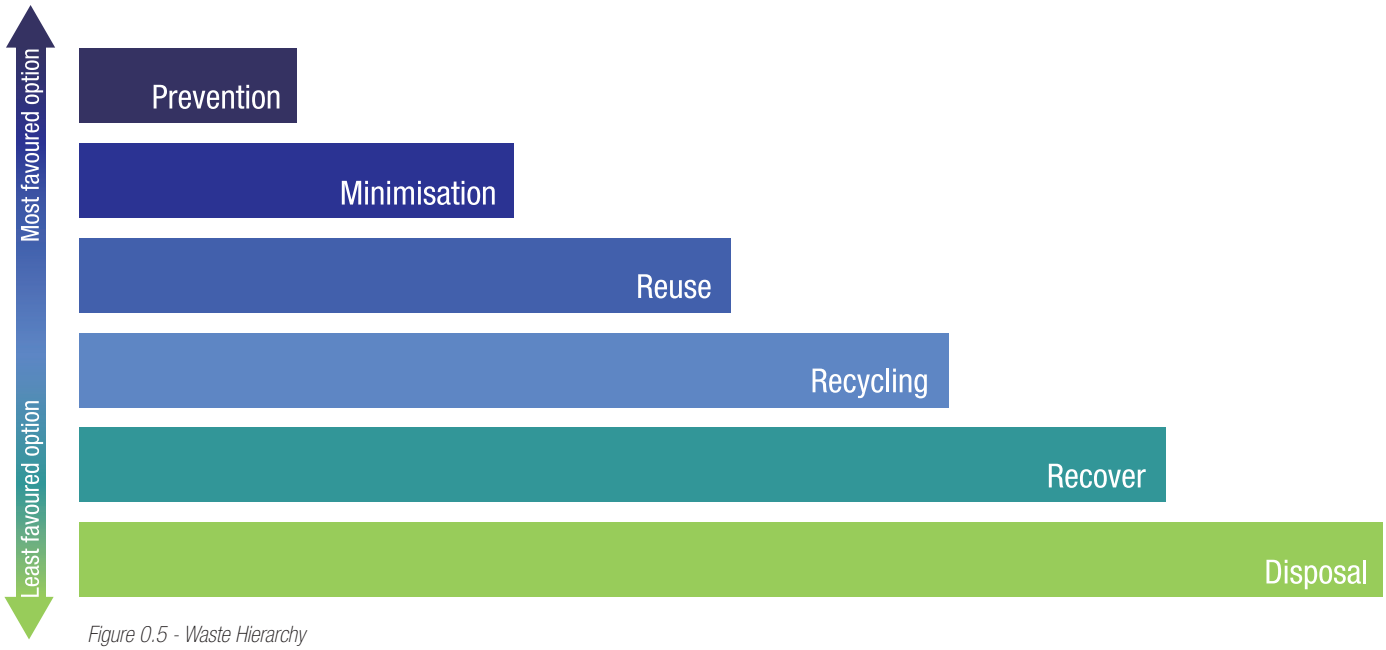


Figure 0.5 - Waste Hierarchy

Studio Analysis 2014

Scope 1 & 2 Emissions	Increased by 9.3% per capita
Water Consumption	No change per capita

Birmingham

In September 2014, our Birmingham Studio secured a five year lease at 158 Edmund Street, a sustainably refurbished listed office building. The building utilises a number of innovative sustainable technologies that contribute positively to the studio's environmental performance, and BDP's energy/carbon and water efficiency targets. Notable features include a 10kWp Photovoltaic solar panel system, industry leading energy efficient HVAC system with heat recovery, and presence/daylight linked LED lighting.

Our reported 2014 figures for carbon emissions and water consumption do not represent accurately the true performance of our Birmingham studio:

- Missing data from our previous studio premises (to September 2014) resulted in 2013 equivalent months data being used as a proxy in lieu of actual consumption data.
- Reported electricity consumption figures for September to December were inaccurate due to calibration issues with a newly installed electricity meter (2013 data used as a proxy in lieu of accurate consumption figures).
- Gas and water consumption for BDP studio space was not available for September to December due to a change in landlord and facilities management supplier.

Improvement proposals 2015

In order to address the issues with data granularity for our new 158 Edmund Street studio going forward, a number of measures have been implemented:

- Due to the small size of our Birmingham studio there is no designated Office Manager for the studio. In lieu of this, a Studio Environmental Champion has been assigned, responsible for monitoring environmental performance on a monthly basis. It is anticipated that engaging a studio-based Environmental Champion will provide an important link between the landlord and BDP to ensure that environmental monitoring is in line with that of our other UK & Ireland studios.
- We have engaged the landlord's facilities management company to establish robust monitoring and reporting procedures for monthly environmental data. At present, sub-metering arrangements do not allow for actual gas and water consumption figures for BDP to be separated from the wider multi-tenanted building. The new procedures will provide the Sustainability Champion with whole-building gas and water data each month from which to apportion our consumption by floor area.

Looking forward, we will explore options for sub-metering to BDP's studio space to obtain actual consumption figures for our operations instead of deducing a floor area based proportion from whole-building meter readings.

Scope 1 & 2 Emissions	Increased by 32.8% per capita*
Water Consumption	Decrease by 11.9% per capita

Bristol

Our Bristol studio underwent space reorganisation in 2014 to achieve greater efficiency of space utilisation. We vacated the ground floor in February 2014 and this area was decommissioned between February and September when new tenants took occupation in order to minimise energy consumption associated with unnecessarily servicing vacant space.

Despite space utilisation improvements, scope 1&2 emissions in our Bristol studio increased during 2014. This can be largely attributed to changes in working practice. During 2014 a significant amount of out of hours work was undertaken which resulted in additional hours of heating and lighting demand. Changes in IT requirements has meant that a majority of staff now use two monitors. Whilst this facilitates ease for design work, dual screens result in additional energy consumption. We are reviewing our IT procurement policy to account for consideration of energy consumption in specification of new IT equipment across our UK & Ireland offices. 2014 also saw a change in cleaning staff. The new staff were not initially trained in environmental good practice and this resulted in lighting being left on overnight.

Bristol experienced significant problems with gas data accuracy following installation of a new meter in June 2013. Despite recognition of a problem and several remedial visits by the engineer, the meter did not produce accurate readings until March 2014. This has been accounted for in the 2013 baseline gas figures and gas consumption figures are now reading correctly.

A spike in water consumption during January and February 2014 was identified and attributed to a faulty valve causing the ground floor urinal to flush continuously. The valve was adjusted and consumption returned to normal levels. Overall however, 2014 has seen water consumption in Bristol decrease.

Improvement proposals 2015

The Office Manager and Chairman have been in discussion with the building landlord to discuss the feasibility of installing new monitoring and sub metering technology to improve the accuracy of energy and water use data for BDP office space. The landlord has agreed to seek quotes for undertaking the works in 2015 and our Office Manager is continuing to pursue this.

To avoid unnecessary water use in toilet areas, the Office Manager has requested that the landlord install a PIR sensor operated system so there is no water used when the building is not in use. This is likely to reduce water use, particularly for urinals which are identified as one of the highest water consuming areas in the building. Additionally, PIR sensors to the water supply would mitigate leakage risk during out of hours periods.

** Scope 1&2 2013 baseline has been amended since 2014 Environmental Report to reflect identification of data anomalies. Faulty gas meter resulted in unavailable actual meter readings June-Nov 2013. For the purpose of establishing a representative baseline, 2012 gas figures were substituted June-Nov 2013.*

Scope 1 & 2 Emissions	Increase by 26.5% per capita
Water Consumption	Decrease by 3.2% per capita

Dublin

In September 2014 the Dublin architectural department moved to new premises adjacent to the existing office to accommodate increasing staff numbers in both the architectural and engineering teams; the engineering teams and general administration staff remain in the existing building. The total studio increased from 162m^2 to 615m^2 and the staff numbers increased from average 20 to 25 to 30 in late 2014.

A key attribute of the new studio space is the facility to accurately meter energy and water consumption for BDP operations. As the only occupant in the new studio building we take full control of energy and water metering, providing an accurate record of monthly energy and water consumption. The building utilises storage heaters and the meter is calibrated to provide separate day and night readings. In addition to standard metering a sub-meter will be installed for the comms room, allowing a further breakdown of data to aid energy management.

In 2014 the Dublin studio reported a 26.5% increase per capita in scope 1 & 2 emissions. The new studio operates storage heaters which are both inefficient and inadequate (resulting in daytime electric heaters being required to supplement in winter). This is likely to have impacted negatively on the building is energy consumption. Additionally, the absence of a gas supply leads to higher carbon emissions due to the relative carbon intensity of electricity versus gas supply.

At present both buildings are under occupied, resulting in less than optimal space utilisation and therefore high emissions associated with provision of energy and heating to the studios. It is anticipated that energy consumption will decrease per capita during 2015 as staff numbers increase and space utilisation improves.

During 2014, the Dublin studio reported a 3.2% decrease in water consumption per capita. The new studio utilises a Zipit water boiler in the kitchen area for dispensing hot water for teas/coffees which is instrumental in reducing both energy and water consumption. A dishwasher has also been purchased for the new building to allow for more economical washing of crockery.

Improvement proposals 2015

Individual metering capability of the two Dublin studio locations provides a catalyst for instigating behavioural change. A comparison of utilities data (normalised per floor area) for each studio is undertaken monthly and displayed in the studios to introduce a competitive element to internal environmental performance.

Looking forward, Dublin's energy consumption will be closely monitored to determine the impact of increased space utilisation on per capita carbon emissions. Options will be explored for reducing the carbon emissions associated with space heating, considering options for replacement of the inefficient storage heaters prior to winter 2015. It is recognised that significant energy consumption in the Dublin studio is attributed to lighting. An investigation into the installation of local task lighting is proposed for 2015 with a view to roll out in both studios if energy saving and cost benefits are proven.

Scope 1 & 2 Emissions	Decrease by 8.3% per capita
Water Consumption	Increase by 42.2% per capita

Glasgow

Our Glasgow studio has reduced scope 1&2 carbon emissions by 8.3% per capita during 2014. A review of the gas boiler settings in 2014 identified opportunities for improvements to achieve better efficiency. Adjustments to the boiler were undertaken in 2014 and have resulted in reduced gas consumption and lower scope 1 emissions (28.7% reduction per capita).

Water consumption has increased considerably in 2014. As there had been no significant events noted which would explain this increase, further investigations ensued. The landlord has confirmed that it is likely that one of the ground floor retail units has taken on unauthorised spin-off from the BDP water supply. Whilst the landlord is still investigating the issues, this may provide an explanation for the significant increase in water consumption in 2014.

Improvement proposals 2015

The Glasgow office is poorly insulated due to the existing original single glazed casement and sash windows in this Category B listed building. A programme of maintenance and partial refurbishment will begin during 2015, and will include replacement of windows to improve the material efficiency and reduce unnecessary heat loss.

Scope 1&2 2013 baseline has been amended since 2014 Environmental Report to reflect discovery of data anomalies. New landlord/FM provider resulted in no provision of gas meter readings March, July and August 2013. For the purpose of establishing a representative baseline, gas consumption for these months has been estimated based on adjacent month's consumption and informed by historical gas consumption trends.

Scope 1 & 2 Emissions	Decrease by 15.6% per capita
Water Consumption	Decrease by 7.5% per capita

London

Our London studio has been successful in reducing scope 1&2 carbon emissions during 2014 by over 15% per capita. Significant studio growth has led to occupant numbers increasing by 17% between 2013 and 2014. This has resulted in increased space utilisation and subsequently lower emissions per capita associated with building operation (heating, hot water and power).

In May 2014 our London studio underwent a process of server virtualisation, resulting in a decrease in power demand through a reduction in physical equipment within the server room. Server virtualisation also decreased the cooling demand for the server room due to a reduction in waste heat generation from equipment.

Other initiatives include a programme of lighting replacement in the washrooms and kitchens to replace compact fluorescents with more energy efficient LED. The 8.2% decrease in water consumption is attributed to staff behaviour as awareness of water conservation increases.

BDP London sits on the steering group for the Islington Sustainable Energy Partnership. This Local Authority-led partnership organisation seeks to bring Islington-based businesses together to knowledge share as well as report on operational emissions annually with the aim of driving down emissions across the borough. As part of the membership offer, there is the opportunity to achieve certification at Gold, Silver or Bronze levels where organisations can demonstrate increasing levels of pro-activity in the borough to reward and differentiate organisations that are doing more. BDP London has just been awarded the Silver certification on the basis of our working environmental policy and the systems we have in place to monitor and reduce energy, and achieving measurable reductions in emissions.

Improvement proposals 2015

Following the replacement of lighting in washrooms and kitchen areas in 2014, a full review of lighting will be undertaken in 2015 in order to optimise settings to maximise washing energy efficiency.

A new energy efficient air curtain was installed on 25th April 2015. The previous unit ran October to May 10 hours a day 5 days a week. Energy use of the old unit was 9kW (fixed) against 1.4kW (variable speed) for the new unit.

It is proposed that a thermographic survey is undertaken in 2015 in order to determine areas of significant heat loss within the converted brewery, to inform improvements to air tightness, reducing energy inefficiencies.

Scope 1 & 2 Emissions	Decrease by 7.0% per capita
Water Consumption	Increase by 19.6% per capita

Manchester

Our Manchester studio has successfully achieved a reduction in scope 1&2 emissions during 2014 against our 2013 baseline.

BDP's ICT servers are located within the Manchester studio, contributing to the annual carbon emissions for the studio. In late 2013 a server equipment refresh was undertaken involving the virtualisation of the BDP servers and reduction in physical server size. This resulted in a reduction in energy required for equipment and reduced server room cooling requirements.

A change in our Facilities Management provider instigated interrogation of our BMS system that resulted in changes to air conditioning and heating settings. This has improved energy efficiency through optimisation of heating, cooling and power systems performance to better meet our studio demand profile.

Water consumption has increased in 2014 as a result of a significant water leak in January 2014. As a result of our metering strategy the leak was identified and rectified quickly.

Improvement proposals 2015

Following consolidation of our Manchester studio in 2012, the 4th floor of our Manchester studio was sub-let, thereby relinquishing responsibility for energy and water consumption for the 4th floor area. Currently, utilities usage for the 4th floor is apportioned by floor area and deducted from BDP Manchester's reported electricity, gas and water use each month. 11 Ducie Street is a BREEAM Excellent certified building and achieved credit for the installation of energy and water sub-meters for tenanted areas and floor plates. At present the 4th floor sub-meter is inaccessible and not utilised. It is proposed that this sub-meter is bought back into use in 2015 in order to accurately monitor the energy and water use for the 4th floor, to allow more accurate reporting.

We have recently formalised our environmental introduction for new starters. As part of the induction process new staff members are taken on a tour of the building to understand first hand the sustainability attributes and how to optimise building performance (for example, the automatic and manual operation options for natural ventilation to ensure comfort and minimise energy inefficiency). A BDP Manchester Environmental Information leaflet is provided in the induction pack, and plans are to be put in place for a sustainability presentation by our Sustainability team at regular intervals throughout the year for all new staff.

Scope 1 & 2 Emissions	Increase by 99% per capita*
Water Consumption	Increase by 0.4% per capita

Sheffield

Our Sheffield studio typifies the impact on recent measures to improve data granularity. In September 2013 floor specific sub-meters were installed at 1 North Bank. The following significant increase in scope 1&2 emissions is testament to the inaccuracy of data apportioned by floor area. As building occupation expands with other areas tenanted, sub-metering will be important in understanding the breakdown of energy consumption and carbon emissions between tenants and BDP.

Aside from data granularity issues discussed above, an increase in per capita electricity and gas consumption can be attributed to a change in staff numbers which decreased from an average of 54 staff in 2013 to 42 in 2014, occupying the same floor area. The underutilisation of floor space results in heating, power and lighting inefficiencies, and subsequent implications for carbon emissions per capita.

Directly metered water consumption is not available due to the nature of the multi-tenanted building and no sub-metering. The consumption figures provided for 2013 and 2014 are based on industry benchmarks of consumption per capita.

Sheffield

Improvement proposals 2015

Looking forward, sub-metering for BDP floor area at 1 North Bank will allow gas and electricity consumption to be directly and accurately monitored. At present there are no plans to introduce a water sub-meter for BDP studio space; following a cost-benefit analysis it has been proposed that water consumption reduction potential is relatively small and that direct metering of BDP water consumption would not likely catalyse a significant reduction in water use. Instead, efforts will be directed towards utilisation of the new energy sub-meter data to drive improvements in scope 1&2 carbon emissions. As staff numbers increase during 2015 the Office Manager will review the communal utilities cost and water usage figures for the whole building to determine whether a water sub-meter would be appropriate to accurately monitor BDP water use.

Following a period of sole occupancy of the five storey 1 North Bank, in September 2014 BDP were joined by two new organisations. It is anticipated that occupation of additional floors in the building will result in reduced gas consumption for heating, and consequently reduced scope 1 emissions. With BDP staff numbers projected to increase in 2015, BDP studio space will also be better utilised which will improve energy consumption associated with heating and lighting office space.

Server Virtualisation was undertaken during the fourth quarter of 2014 in the Sheffield studio, resulting in a reduction of equipment and associated energy and cooling demands within the server room. It is anticipated that this will lead to a reduction in energy consumption for the Sheffield Studio going forward and environmental performance monitoring data will be interrogated in 2015 to quantify the resultant energy and carbon savings.

Utilising the expertise of our in-house engineers we have identified a potential saving by replacing our current kitchen extract system with a newer centrifugal based system which would include a timer clock. This will ensure more efficient air extraction at specifically targeted times rather than the current energy-hungry arrangement which runs around the clock.


Birmingham


Bristol


Dublin


Glasgow


London


Manchester

Emissions Business Travel

It is recognised that a degree of business travel is necessary for the company to seek and develop new business opportunities and deliver projects successfully. The extent of travel required is project specific and largely dictated by client demands. Rather than setting reduction targets as we have done for scope 1 & 2 emissions, BDP has instead focused on instigating a number of travel reduction initiatives to improve virtual working opportunities and limit business travel to essential travel only.

During 2014, we undertook a significant step change in our communications technology with the roll out of Microsoft Lync to all UK and Ireland studios. Lync facilitates more effective use of peer to peer and many to many video conferences and network hosted meetings. The system offers a user-friendly, desk based interface that brings together all communication methods into one package, facilitating ease of use and availability over the existing video conferencing facilities. The user-friendly interface and ability to easily access video conference facilities from individual laptops and PCs has meant that Lync has been well received and utilised by staff, and has resulted in a significant decrease in business travel emissions.

In 2014 we reduced our business travel emissions by 34%, equating to a 36.1% saving of 700 kg CO_2 per capita. Whilst annual fluctuations in project travel demand is likely to have impacted this reduction, the successful roll out of Lync across all UK & Ireland studios has also positively contributed in providing staff access to remote communication from their desks.

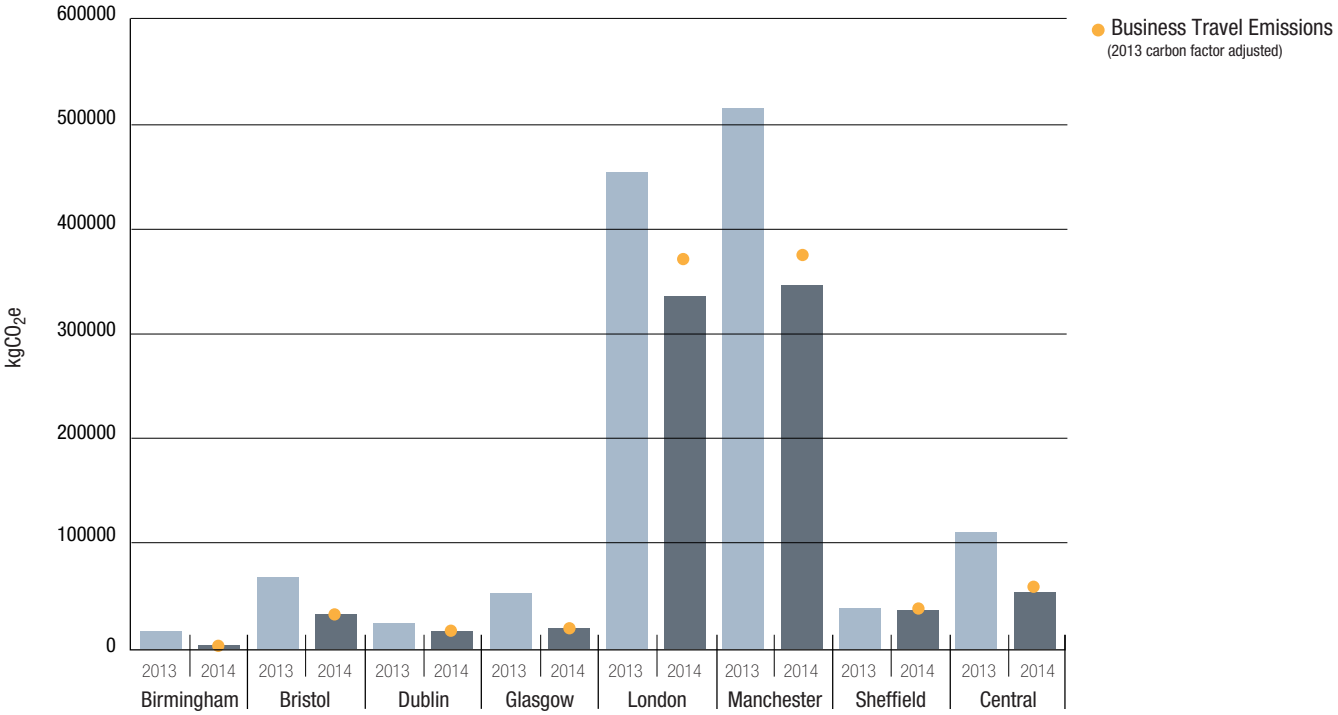
Improvement proposals 2015

BDP is committed to developing a Business Travel and Carbon Management Plan during 2015. The Management Plan will outline company-wide measures and procedures for business travel to ensure that all staff act to mitigate business travel emissions as far as possible.

At present our travel reporting does not allow for vehicle emissions from taxi journeys to be accountable in our business travel carbon emissions figures. Our travel data tells us that each studio makes a significant number of journeys by taxi and therefore we are looking into means of recording the mileage for each journey undertaken by taxi.

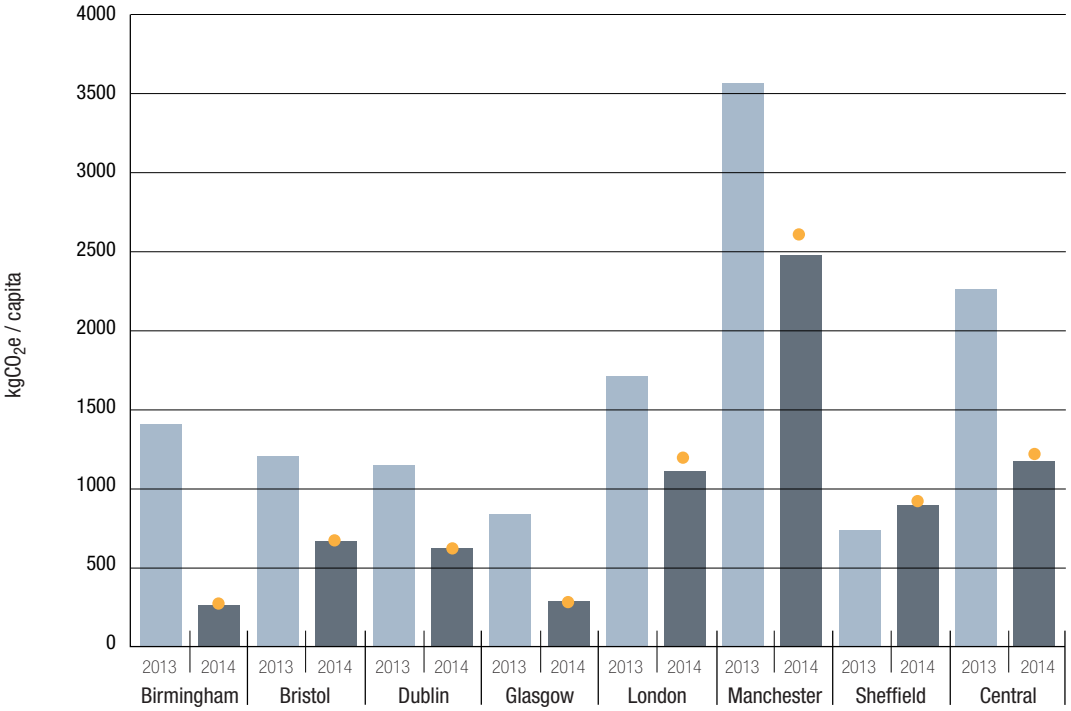
	2013		2014		Total percentage change	Percentage change per capita
Business travel	**kgCO_2e**	**kgCO_2e/capita**	**kgCO_2e**	**kgCO_2e/capita**		
Birmingham	17035.1	1407.9	3216.4	265.8	-81.1%	-81.1%
Bristol	68276.9	1206.3	32820.4	667.1	-51.9%	-44.7%
Dublin	24761.7	1151.7	16928.5	622.4	-31.6%	-46.0%
Glasgow	52505.9	841.4	19271.3	287.6	-63.3%	-65.8%
London	454622.3	1714.3	336602.7	1109.1	-26.0%	-35.3%
Manchester	515310.6	3568.6	346681.7	2476.3	-32.7%	-30.6%
Sheffield	38489.3	735.9	36501.2	899.0	-5.2%	22.2%
Central	110741.9	2264.7	53999.6	1171.4	-51.2%	-48.3%

Table 0.7 Total business travel emissions



Total business travel emissions per studio

Figure 0.6



Business travel emissions per capita per studio

Figure 0.7

2018 Targets and projections

2018 Targets

In 2013 we set targets to improve our environmental performance across our UK studios:

- 5% reduction in total BDP CO_2 emissions arising from scope 1 and 2 per capita against 2013 baseline
- Development of a Business Travel Carbon Management Plan
- 5% reduction in total BDP water consumption per capita against 2013 baseline

Projections

In 2014 we successfully achieved a 1.7% reduction against our emissions target, however our water consumption increased per capita from our 2013 baseline by 1.4%. In order to understand our current positioning in relation to our 2018 targets we have projected future figures based on our historical performance (i.e. assuming no implementation of measures to improve emission and water consumption performance).

Figure 0.8 projects our carbon emissions per capita. This shows that, despite an improvement in emissions against our 2013 baseline, emissions in 2018 are projected to be 10.6% higher than targeted.

Figure 0.9 projects our water consumption and suggests that our 2018 water consumption may be 7.8% higher than our target in 2018.

The projections are based on historical data that we have acknowledged have been subject to inaccuracies in data granularity. In particular water consumption data in studios located in multi-occupancy buildings is apportioned from whole building water consumption figures in some cases. In 2015 we will work with respective building landlords and facilities managers to further improve our confidence in environmental data.

Action Plan

The projections provide us with a valuable baseline against which we can assess the impact of future proposed environmental initiatives in meeting our 2018 targets. From 2015, environmental risk is to be integral in the evaluation of potential studio management projects. All proposed studio projects will be assessed for their contribution to achieving the overarching 2018 targets. Emissions and water reductions will be projected against the baseline to inform decisions on implementation. This approach will ensure that our environmental performance is a key consideration in decision making for each of our UK & Ireland studios.

International Offices

To date, our environmental reporting has focused on the performance of our UK & Ireland studios, in line with our obligations under ISO 14001 and 50001 In 2015 we will seek to undertake an audit of the environmental performance of our international studios in order to understand their current performance and propose opportunities for improvement.

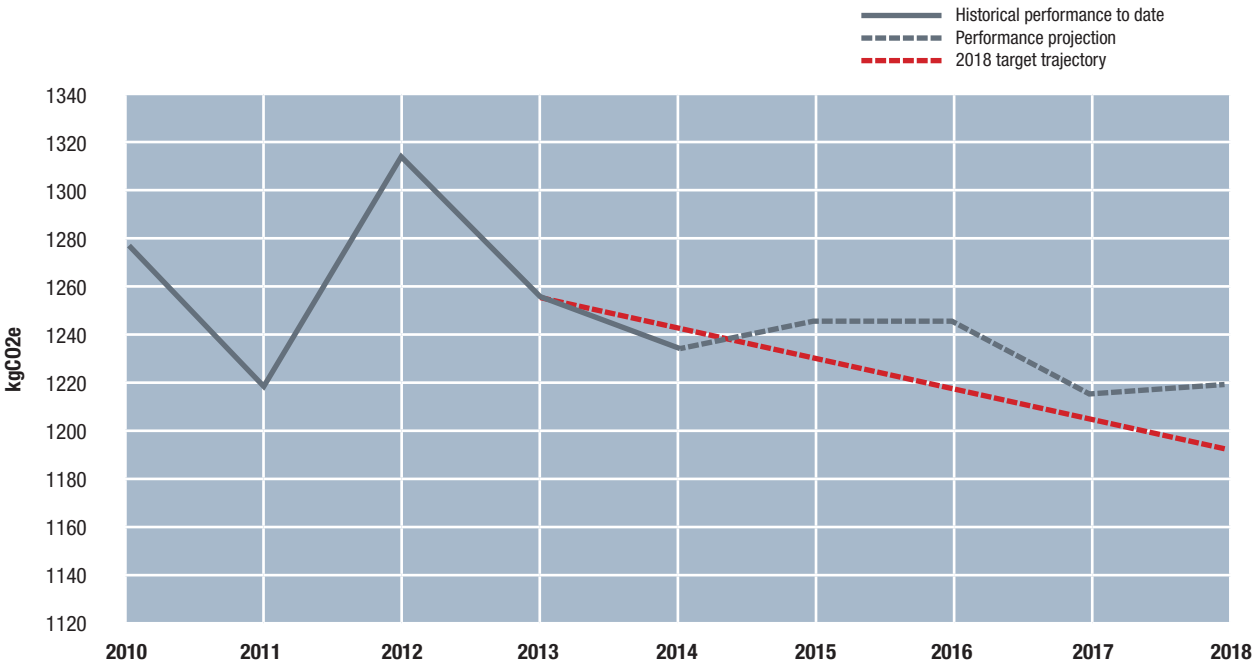


Figure 0.8 - CO_2 projection

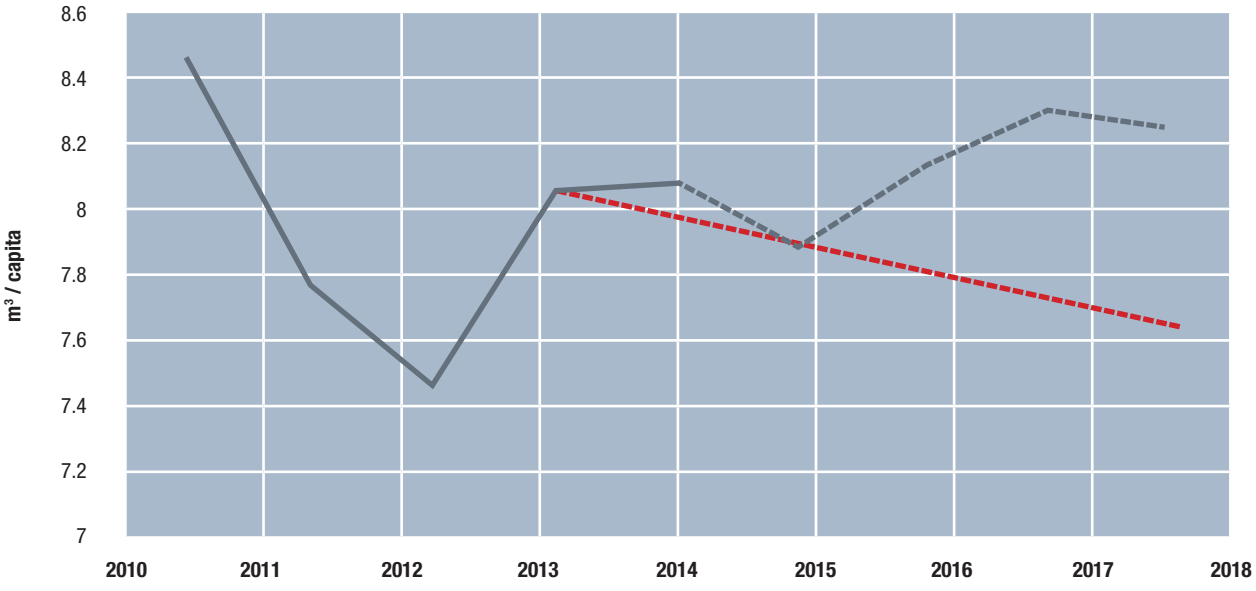


Figure 0.9 - Water projection

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