



BDP.

Environmental Management Report

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

BDP's headline performance figures 2010 - 2013 are as follows:



11.46% decrease in overall scope 1 and 2 CO₂ emissions



17.91% decrease in CO₂ emissions associated with business travel



15.51% reduction in overall water consumption



Water usage per capita* = 8.39m³



Total Building CO₂ emissions per capita* = 1234.69kg

*Based on total consumption divided by average staff total for 2013.

BDP's headline environmental targets 2014 - 2018 are as follows:

Total BDP CO₂ emissions arising from scope 1 and 2: 5% reduction per capita on 2013 baseline

Development of a Business Travel Carbon Management Plan

Total BDP water consumption: 5% reduction per capita on 2013 baseline

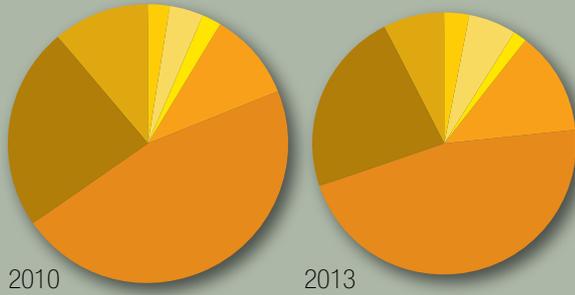
Scope 1 (direct emissions)

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 CO₂ emissions.

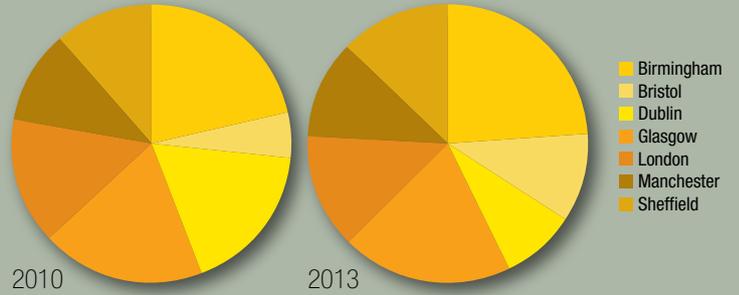
Scope 2 (energy indirect)

Scope 2 emissions are associated with indirect emissions that are a consequence of an organisation's activities but which occur at sources they do 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 CO₂ emissions.

Total emissions from scope 1 and 2

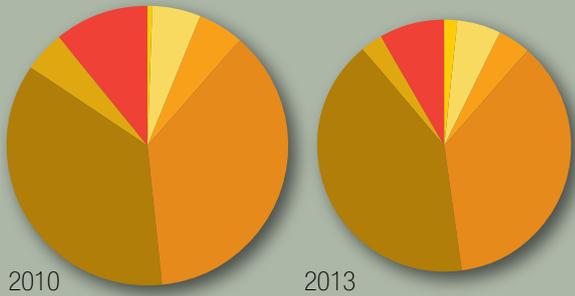


Scope 1 and 2 per capita (kgCO₂e)

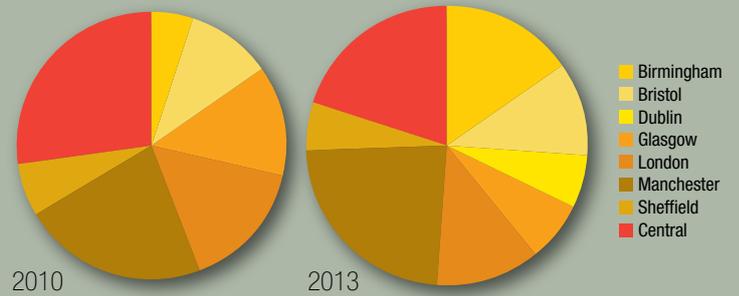


- Birmingham
- Bristol
- Dublin
- Glasgow
- London
- Manchester
- Sheffield

Total business travel emissions

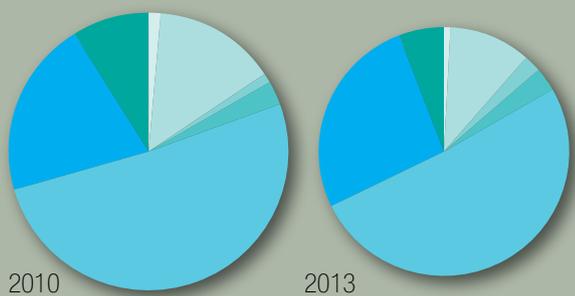


Business travel per capita (kgCO₂e)

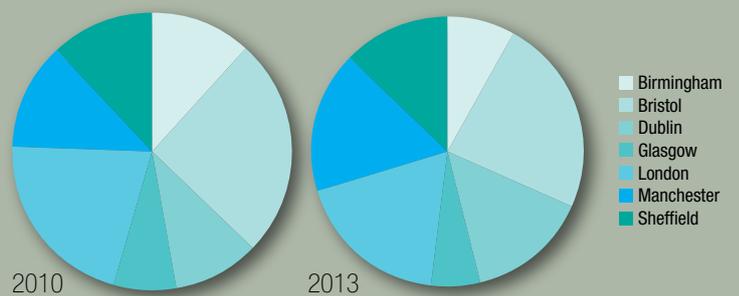


- Birmingham
- Bristol
- Dublin
- Glasgow
- London
- Manchester
- Sheffield
- Central

Total water usage



Water usage per capita (m³)



- Birmingham
- Bristol
- Dublin
- Glasgow
- London
- Manchester
- Sheffield

*Directly metered water consumption is not available due to the nature of the multi-tenanted block and insufficient sub-metering. The consumption figures provided are based on a combination of industry benchmarks and supplier bills, which are apportioned by the landlord to tenant floor area.

**Directly metered water consumption is not available due to the nature of the multi-tenanted block and insufficient sub-metering. The consumption figures provided are based on industry benchmarks of consumption per capita.

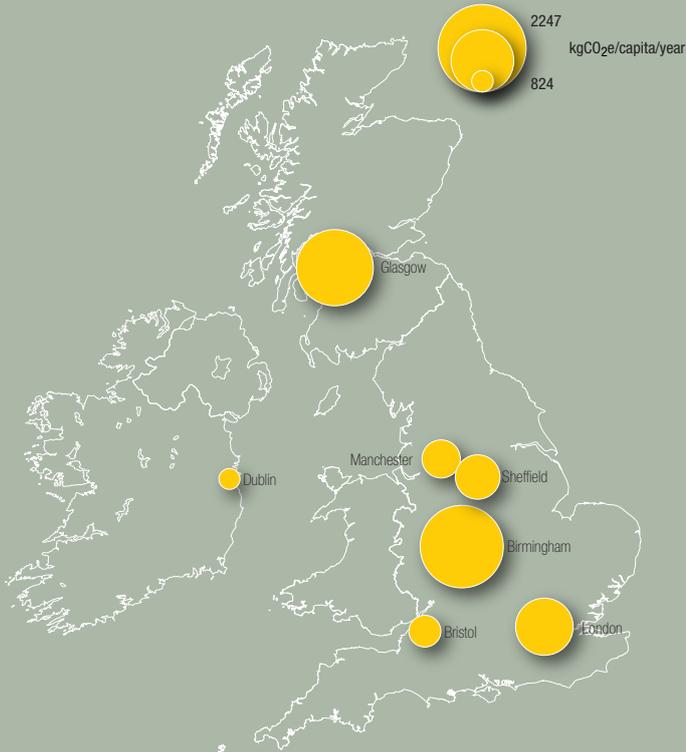
2013 total CO₂ emissions from scope 1 and 2



2013 total CO₂ emissions from business travel



2013 CO₂ emissions per capita (based on scope 1 and 2)



2013 water usage per capita



Introduction



As a design practice we pride ourselves on delivering sustainable design to facilitate good environmental performance for our clients. As such we believe that this commitment to environmental performance is integral in our everyday practice within our studios

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.

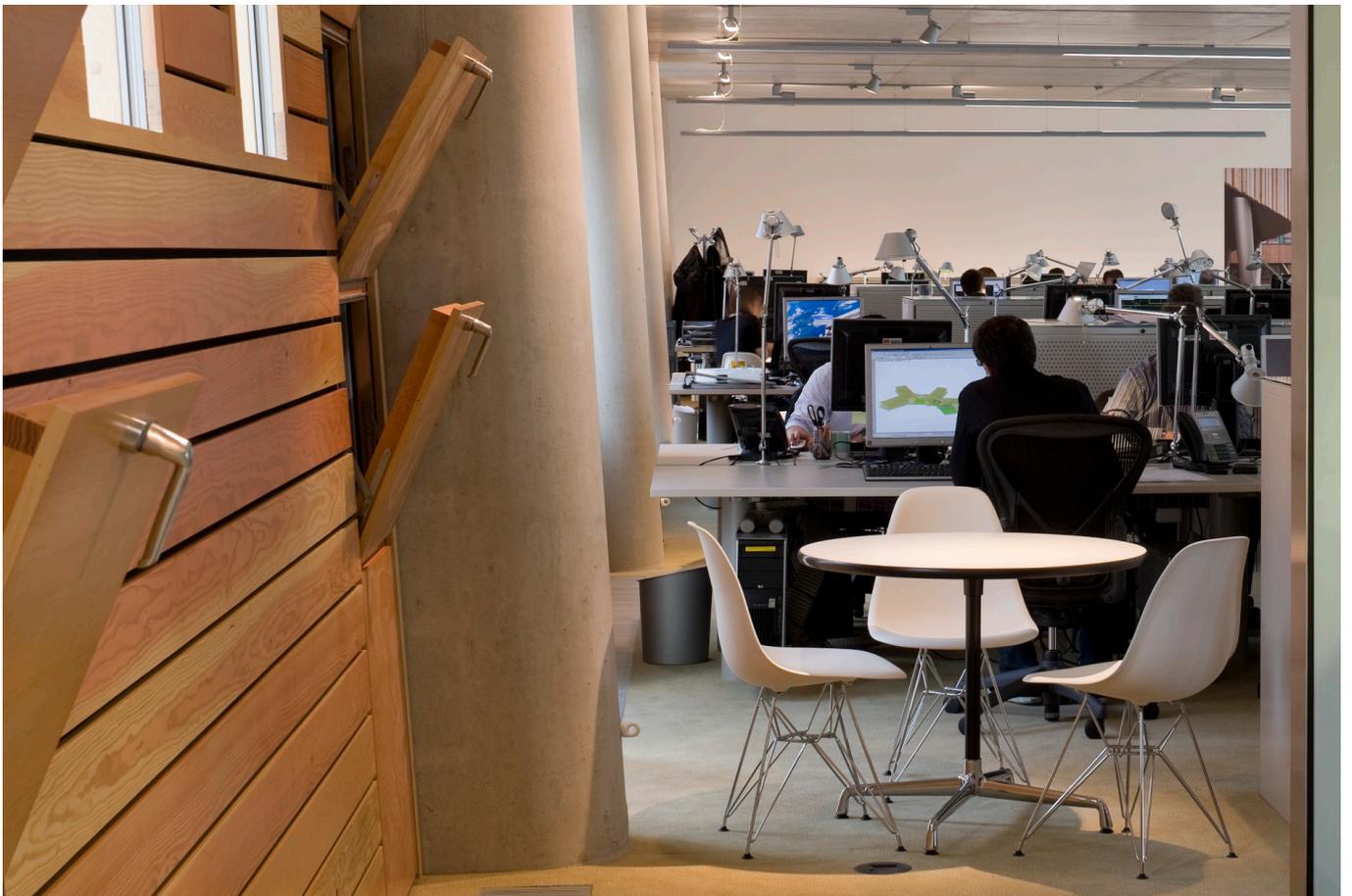
BDP holds ISO 14001:2004 certification. This certification is based on our ongoing commitment to monitor the environmental performance of our business operations, develop targets to deliver environmental performance improvements and annually review and revise our targets to ensure ongoing improvement in our environmental performance.

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 annually producing an environmental report to accompany the annual accounts and review at the end of our financial year.

This report addresses the following key objectives:

- Review and report on environmental studio performance to date.
- Identify issues with data granularity and set in place measures to improve.
- Set four year targets for the improvement in our environmental performance concerning energy/carbon, water and waste management (to be reviewed each year within subsequent annual environmental reports).
- Outline studio specific measures to be implemented to achieve our company targets in 2014.

Measurement, target, plan and commitment.



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. As such, 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 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 good environmental and sustainable design with our clients and in our projects and to ensure good environmental performance within our business operations too.

In 2011, our Environmental Management System (EMS) was formally recognised and ISO 14001:2004 certified. This was a product of our dedication to the necessary organisation, processes and communication to achieve this duty. This certification is based on our ongoing commitment to:

- Comply with all legal and other requirements that relate to our environmental aspects.
- Aim to use resources efficiently and to minimise waste, water usage, energy consumption and other consumables.
- Monitor the environmental performance of our business operations and design services.
- Develop targets to deliver environmental performance improvements for our design services and business operations.
- Review and revise targets annually against actual environmental performance to deliver continual improvement.
- Endeavour to continually reduce the environmental impact of the outputs of our design services and of our business operations and prevent pollution.
- Report on environmental performance and achievements.
- Develop a strategy for the firm to move towards sustainable procurement of the goods and services used in business operations.
- Communicate this policy to our employees, contractors and stakeholders.
- Review this policy annually or when there are significant changes.

This commitment has been ratified by our Chief Executive and steers everything we do as an organisation.

Our studios

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

Since then it 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 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 Ireland, 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 has a splendid classical stone façade and is situated on Colmore Row, a designated conservation area in the centre of the city. It has a gross area of 396m² and is the studio with the fewest staff, usually accommodating around 20 people.

Bristol

Bristol studio, built in 1964, is situated in a tucked-away spot close to College Green, in the heart of this historic city. It has a gross area of 718m² and an average staff number of 50.

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 790m². BDP occupies the ground floor area (197m²) accommodating 21 staff.

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 accommodates around 70 staff and has a floor area of around 1500m².

London

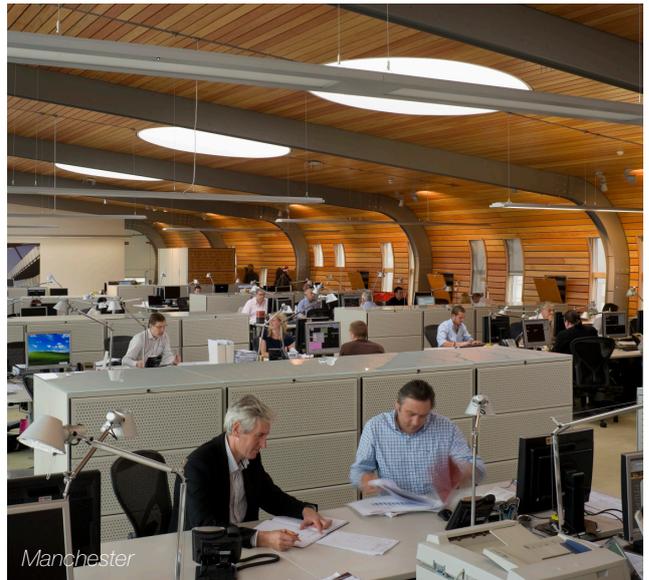
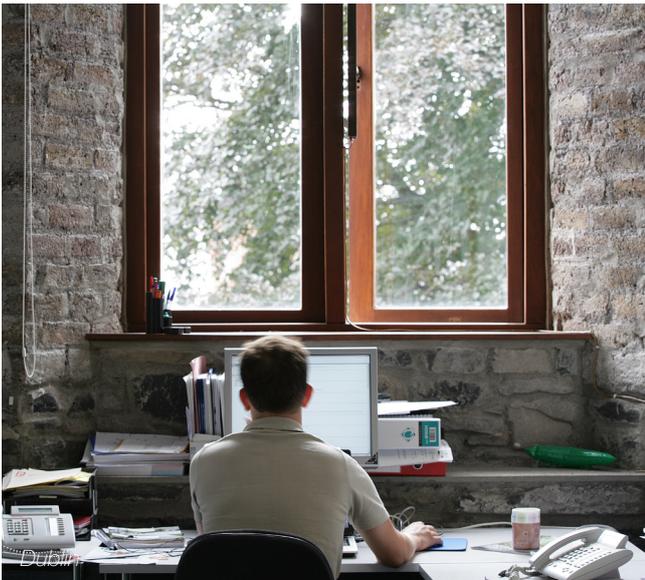
London's characterful studio is situated in a converted brewery in Clerkenwell. The vast reception space hosts a multitude of social and educational events both for BDP and external companies. This is the largest of our UK and Ireland studios with a gross floor area of almost 5000m² and currently accommodates the largest number of BDP staff - in excess of 300.

Manchester

Manchester studio is stunning, overlooking the Piccadilly Canal Basin and 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 studios with a gross floor area of around 3000m² and around 175 staff.

Sheffield

Also BDP designed, Sheffield studio has been instrumental in regenerating the historic Wicker area of the city and has achieved a BREEAM Very Good rating. Around 50 people work in this studio within a building with a gross floor area of 1100m².





Environmental Management System: ISO 14001

All of our UK and Ireland studios have been certified under ISO 14001:2004 since 2011. Key to maintaining the certification is continual improvement, either in the progress we make in driving down emissions and consumption or the improvements we make in data gathering and the process of managing our employees and studios.

Over the last 18 months, we have been working hard to standardise the internal reporting process to achieve consistency across the data provision from each of our studios. This has highlighted a number of aspects where the data we want is not currently available, and therefore has informed the environmental management plan for each studio.

Towards the end of 2013 we updated each studio's Environmental Management Plan. These studio-specific plans provide bespoke targets and actions that each studio is to pursue throughout the year, backed by approved development budgets. Tied with our continual monitoring of consumption, the implementation of these plans allows us to measure the impact that these interventions have, or develop a record of measures that constraints have prevented us from integrating.

Our ISO 14001:2004 certification and associated management demonstrate that BDP is committed to maintaining and improving sustainability at home as well as on clients' projects. In doing so we enable cost savings, reduce environmental impact and enhance environmental credentials, as well as confidently justifying our position as an environmentally conscious design practice.



Sustainability in our Design Process

In addition to our ISO 14001:2004 certification, our design process is certified under ISO 9001:2008. This is an invaluable key to the way in which we expect to deliver design integrity on each and every project. It sets out how the firm organises itself to achieve this goal, and provides a detailed structure and methodology for organising ourselves on projects.

In terms of sustainability, currently, we use gateway checklists at the end of each key RIBA stage which are internal quality assurance checklists used to ensure and maintain integrity in the design process. These internal audits are planned and documented verification measures undertaken by one of our auditors, who ensures that activities comply with planned arrangements and that processes are effective in achieving both the sustainability and project management objectives.

These audits verify that the procedures being implemented are practicable and that the processes are effective. In addition, they also verify that the appropriate follow-up actions are being carried out and that the necessary action has been implemented by the Quality Director when it has been identified in audit reports and procedures in the BDP Design Process.

Though we promote and advocate sustainability and environmental consciousness in all of our design work, part of our ongoing ISO 14001/9001 certification, as highlighted in our recent audit, requires us to formalise the way we monitor this environmental impact to internally rate and rank our projects.

We are in the process of developing a new robust checklist that will allow us to record and quantify the measures taken at different stages of design to ensure that the environmental impact of our buildings is minimised. This extends from where we locate our buildings through the design process to the monitoring of performance from the occupied building.

Our Performance 2010-2013

As an organisation which 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 proper 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 consumption is comparable to other organisations in the UK. Monthly resource consumption data is collated from across our studios and analysed to understand our ongoing environmental footprint, identify data trends and anomalies and take action to improve our performance.

The following sections summarise our environmental performance, detailing trends in carbon and water performance within each of our studios from 2010 to 2013. It should be noted that our studio environmental management plans also include measurements and targets for carbon emissions.

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 2010/11 carbon data using 2013 carbon conversion factors. As this is our first report, we wanted to observe the changes we have made without accounting for grid de-carbonisation.

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 CO₂ 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 they do 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 CO₂ emissions.



Emissions - Scope 1 & 2

Table 4.1 shows BDP's scope 1 and 2 UK and Ireland emissions. In general terms these are the emissions associated with heating and powering our buildings and ICT equipment. This consumption is displayed as kgCO₂e across scope 1 and scope 2, using Defra's emissions factors appropriate to each reporting year.

Table 4.2 displays BDP's emissions by studio coupled with the percentage change on our 2010 figures. This information is shown as kgCO₂e as a total and per capita. We believe that a per capita normalisation is more appropriate for making comparisons across our studios and with similar organisations due to the nature of the work we undertake and the variation in the size, performance and density of our studios.

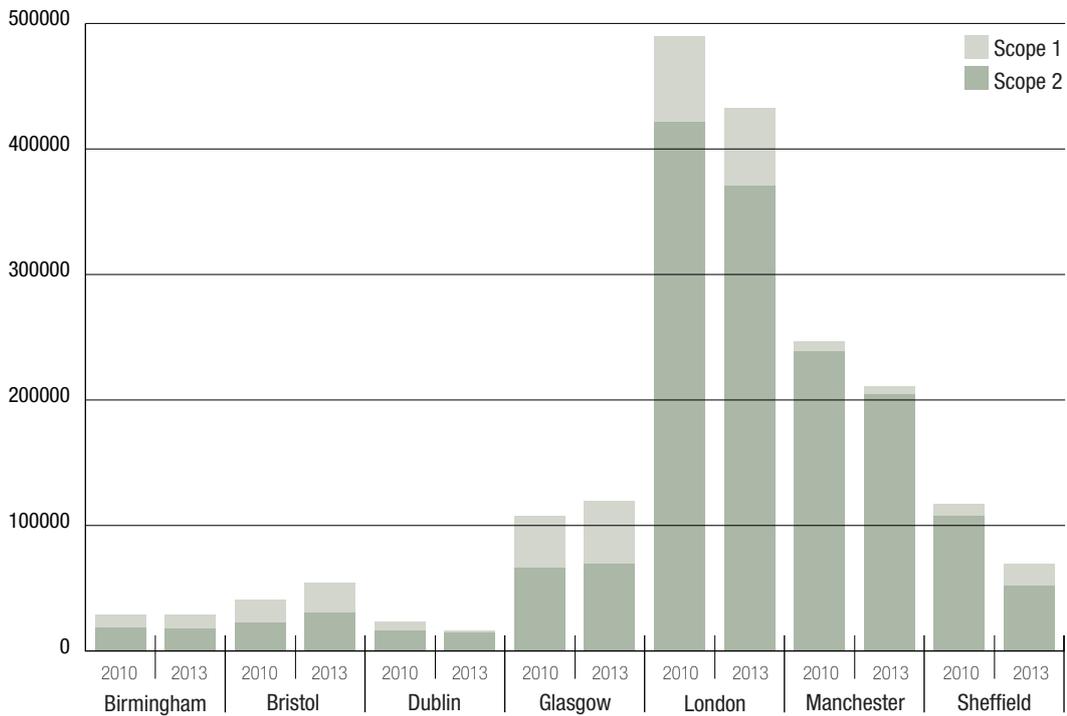
	2010/11	2013	% change
Total building CO₂ emissions (kgCO₂e)	1052638.83	932027.85	-11.46%
Scope 1	160770.94	171664.53	6.78%
Scope 2	891867.89	760363.32	-14.74%

Table 4.1 Scope 1 and 2 CO₂ emissions as a total, per scope and percentage change

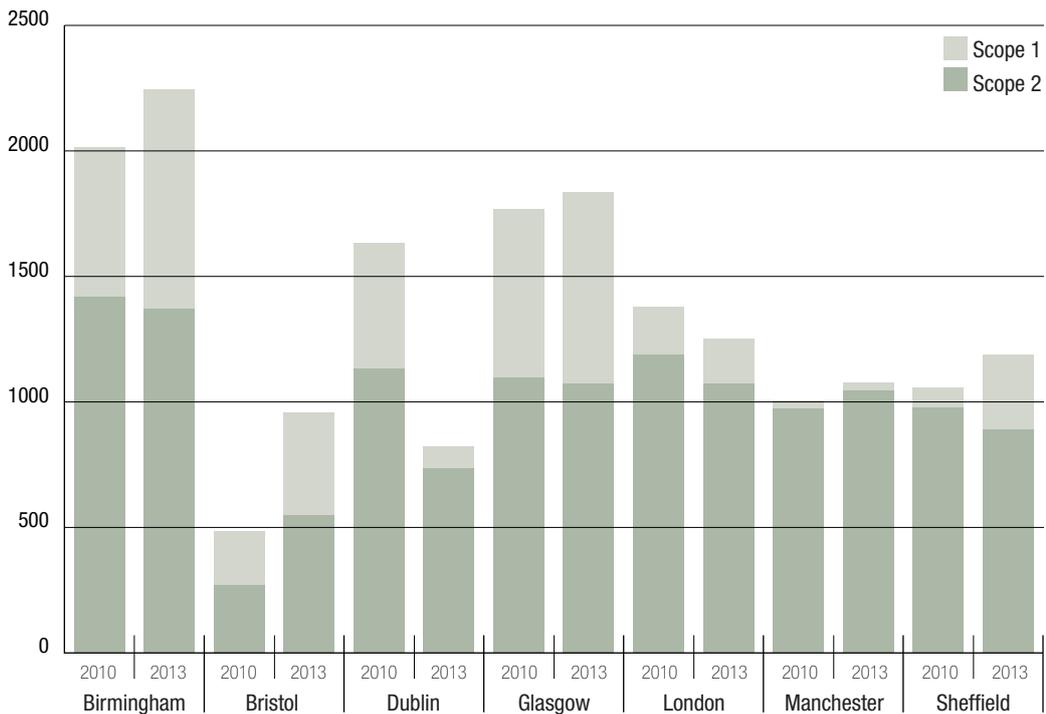
	2010		2013		Total percentage change	Percentage change per capita
	kgCO ₂ e	kgCO ₂ e/capita	kgCO ₂ e	kgCO ₂ e/capita		
Scope 1						
Birmingham	10759.98	597.78	11340.54	877.98	5.40%	46.87%
Bristol	17746.33	212.11	23321.36	412.77	31.42%	94.60%
Dublin	7131.89	500.48	1793.40	90.80	-74.85%	-81.86%
Glasgow	40707.14	671.92	49331.00	758.94	21.19%	12.95%
London	67598.43	190.28	61682.48	178.27	-8.75%	-6.31%
Manchester	7819.35	31.87	6650.47	33.93	-14.95%	6.46%
Sheffield	9007.83	81.52	17545.27	300.35	94.78%	268.44%

Scope 2						
Birmingham	18302.99	1417.01	17687.00	1369.32	-3.37%	-3.37%
Bristol	22661.12	270.85	30878.00	546.51	36.26%	101.78%
Dublin	16126.82	1131.71	14482.91	733.31	-10.19%	-35.20%
Glasgow	66367.61	1095.48	69800.48	1073.85	5.17%	-1.97%
London	421786.26	1187.29	371099.18	1072.54	-12.02%	-9.67%
Manchester	238728.72	973.08	204443.82	1043.08	-14.36%	7.19%
Sheffield	107894.37	976.42	51971.92	889.68	-51.83%	-8.88%

Table 4.2 Total scope 1 and 2 CO₂ emissions and percentage change per studio and per capita



Total emissions from scope 1 and 2 per studio



Scope 1 and 2 emissions per capita per studio



Analysis - Scope 1 & 2 Emissions

Birmingham

The reported data for our Birmingham studio demonstrates a 5.40% increase in scope 1 emissions and 3.37% decrease in scope 2 emissions.

Directly metered gas consumption is not available for this studio due to the nature of the multi-tenanted block and insufficient sub-metering. The consumption figures provided are based solely on consumption averages, which are apportioned by the landlord to tenant floor area.

Similarly, our electricity consumption figures for both 2010 and 2013 include six months of actual data combined with six months of consumption averages. In future, actual consumption data will be made available for this scope in order for a more robust analysis.

Bristol

Data gathered between 2010 and 2013 for scope 1 and 2 demonstrates an increase in CO₂ emissions of 31.42% and 36.26% respectively.

Scope 1 emissions in the Bristol studio have been impacted by a number of significant faults with the heating system in 2010 and 2011. This resulted in a lack of control of the heating system so that in 2010 there was little heating available. In 2011, ongoing control issues resulted in the boiler running continuously throughout the day and night regardless of weather and occupation. Work was undertaken to rectify problems with the heating system in 2012, with a new control panel, and zoning valves to reduced consumption. A faulty gas meter was observed in 2012 impacting on the granularity of data recorded. Further data granularity issues between June and October 2013 were attributed to further faults with the new gas meter. Since October 2013 the heating system has been operating efficiently with full control and metering capacity.

The increase in scope 2 emissions is in part attributed to the installation of additional security lighting following a series of burglaries in August 2011. The additional lighting and continuous operation of this throughout the night time hours resulted in a significant increase in the studio electricity consumption and therefore scope 2 emissions. Furthermore, the decline in staff numbers has resulted in a reduction in studio density from one person per 10m² in 2010, to one person per 11.5m² in 2013. Under-utilisation of space has thereby resulted in a proportional increase in heating and lighting demand per capita. Counter to the aforementioned activities which have caused an increase in carbon emissions, improvements to the studio lighting has improved the efficiency of lighting and associated carbon emissions within the studio. Lighting improvements include PIR activation in studio, toilet, print room and kitchen areas, and zoned lighting for approximately 5% of studio lighting in areas of intermittent use.

Dublin

Total scope 1 and 2 CO₂ emissions for our Dublin studio demonstrate a significant 74.85% and 10.19% decrease respectively.

Scope 1 emissions in Dublin were unusually high during 2010 which is attributed in part to a period of extended cold weather in the region with record cold winter month temperatures. Similarly, the monthly data indicates that heating demand was much higher during the summer months in 2010 than during the summer months of following years. Following this unusual year, the Dublin studio has kept the thermostat at a low ambient temperature throughout the year and has limited heating use throughout the summer months.

The decrease in scope 2 emissions can be attributed to the successful implementation of energy saving initiatives targeting a reduction in electricity demand between 2010 and 2013. Energy saving initiatives in Dublin focused on behavioural change aspects including; single daily use of the dishwasher only when full, switching off rows of lights when not required and switching off all appliances when leaving the studio, ensuring nothing is left in standby mode. The reduction in scope 1 and 2 emissions demonstrates that, within a small studio such as Dublin, simple measures to save energy have a substantial impact on the overall energy demand and associated carbon emissions.

Glasgow

Scope 1 CO₂ emissions for Glasgow have increased since 2010 by 21.19% and 12.95% per capita. Scope 2 emissions have also shown a marginal overall increase of 5.17%, although an overall decrease in emissions per capita of 1.97% in line with fluctuation in staff numbers during this period. The gradual change of light fittings to IRC halogen has had a positive impact on electricity consumed by studio lighting, and subsequent scope 2 emissions. During 2013, the Glasgow studio reduced the number of operational boilers from six to four. The reduction in operational boiler capacity was due to units being taken out of commission for remedial or repair work. The additional load placed on the existing aged (10 year old) remaining four operational boilers looks likely to have decreased the overall efficiency. Completion of outstanding boiler remedial work is intended for summer 2014, bringing the capacity back to six boilers. Glasgow's studio manager will be monitoring the changes in gas consumption and resultant CO₂ emissions during this change in order to inform decisions as to further actions necessary to maximise the efficiency of the boiler system.

London

Total scope 1 and 2 CO₂ emissions for our London studio have decreased by 8.75% and 12.02% respectively. Significant in this reduction trend is the reduction in staff numbers, resulting in a consolidation of occupied areas and thereby a reduction in overall heating and lighting requirements within the studio. Since 2010 the London studio has undertaken a programme of lighting efficiency improvements with the phased change of halogen spotlights to LEDs over a three year period. The installation of motion sensors has further reduced scope 2 emissions associated with lighting by reducing unnecessary lighting usage when areas are unoccupied.

Manchester

Data gathered between 2010 and 2013 for scope 1 and 2 demonstrates a decrease in CO₂ emissions of 14.95% and 14.36% respectively. This reduction can be attributed to a consolidation of floor area following the sub-letting of the top floor of the building to external tenants in 2012. Relinquishing responsibility of the top floor results in a significant saving in the energy and carbon associated with servicing this area, which equates to 16% of the total internal building area.

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. Although the anticipated resultant energy use and carbon reduction are not evident within the 2013 reporting figures which inform this report, significant savings are likely to result from the reduction in power for less equipment, intelligent systems and reduced server room cooling loads. It is anticipated that the energy and emissions reductions will be evident in future reporting.

Sheffield

Between 2010 and 2013 our Sheffield studio has seen an increase in total scope 1 CO₂ emissions by 94.78% and a 51.83% decrease in scope 2 emissions. Following a change in landlord and facilities management in 2010, new metering equipment was installed and operational from July 2011 resulting in increased accuracy of gas consumption data for the studio. The perceived increase in scope 1 emissions between 2010 and 2013 is therefore attributed to improved data granularity rather than an actual increase in gas consumption. There were no other significant alterations to building operation or function during this period which would result in a significant increase in gas consumption and associated emissions.

Similarly for scope 2 emissions, installation of improved accuracy electricity meters in August 2013 now provides improved data granularity for electricity consumption where previously consumption was estimated as a percentage of total building floor area. Over the last three years, ongoing collaboration between the studio manager and landlord has resulted in refinement of the BMS control settings in order to achieve optimum energy performance and comfort conditions. Installation of lighting sensors to studio areas has achieved a reduction in overlighting and therefore reduction in associated energy use and carbon emissions.

Emissions - Business Travel

Table 4.3 shows BDP's total CO₂ emissions associated with business travel. Table 4.4 displays BDP's emissions by studio coupled with the percentage change on our 2010/11 figures. This information is shown as kgCO₂e as a total and per capita. We believe that a per capita normalisation is more appropriate for making comparisons across our studios and with similar organisations due to the nature of the work we undertake and the variation in the size, performance and density of our studios.

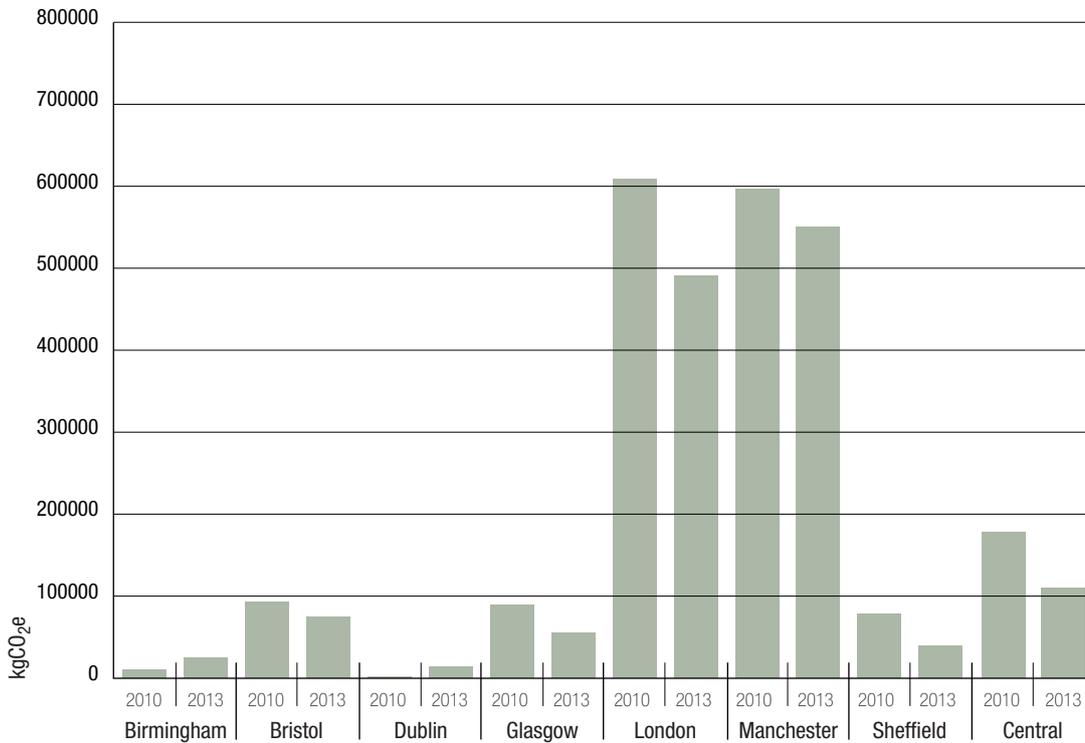
	2010/11	2013	% change
Business Travel (kgCO ₂ e)	1654830.04	1358406.97	-17.91%

Table 4.3 Total CO₂ emissions from business travel

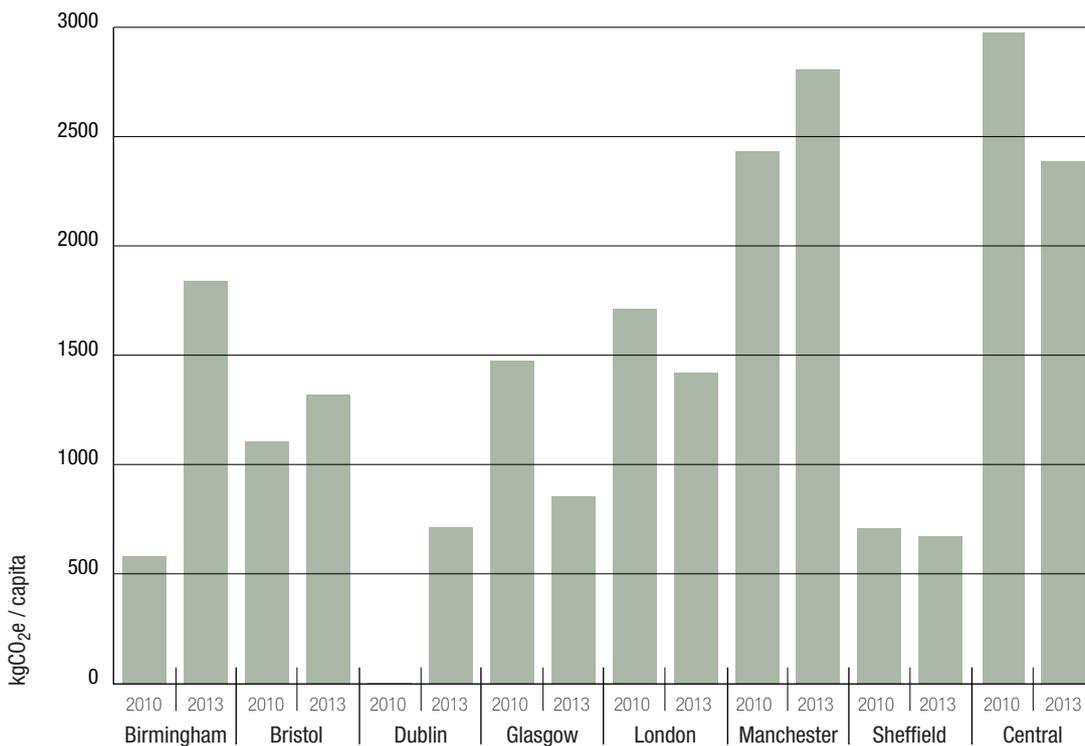
	2010/11	2013
Total number of business travel flights	1241	710

	2010/11*		2013		Total percentage change	Percentage change per capita
	kgCO ₂ e	kgCO ₂ e/capita	kgCO ₂ e	kgCO ₂ e/capita		
Birmingham	10389.24	577.18	23797.69	1842.40	129.06%	219.21%
Bristol	92509.27	1105.69	74500.47	1318.59	-19.47%	19.26%
Dublin	-	-	14004.90	709.11	-	-
Glasgow	89293.18	1473.89	55354.71	851.61	-38.01%	-42.22%
London	608593.55	1713.14	490573.59	1417.84	-19.39%	-17.24%
Manchester	597148.20	2434.03	551303.26	2808.68	-7.68%	15.39%
Sheffield	78127.60	707.04	39084.70	669.07	-49.97%	-5.37%
Central	178769.00	2979.48	109787.65	2386.69	-38.59%	-19.90%

Table 4.4 Business travel CO₂ emissions per studio and per capita (* Due to incomplete data set for 2010, the baseline year for Business Travel is July 2010-June 2011.)



Total business travel emissions per studio



Business travel emissions per capita per studio



Analysis – Business Travel

Between the 2010/11 baseline year and 2013, BDP has experienced a 17.91% reduction in carbon emissions associated with business travel (private/company car, air and rail) and a 47.79% reduction in business flights.

A significant proportion of international work is undertaken out of our London and Manchester offices, with Manchester providing a 'home base' for the heads of both the Shanghai and Delhi offices. This explains the considerably high emissions for both Manchester and London studios. International work inevitably requires a degree of staff travel for engagement meetings and site visits, subject to client demands.

Business travel is integral to the function of the Central team in order to establish and grow the network of international offices. In order to better understand the impact of the Central team's international air travel, Central business travel emissions are reported as a separate area from the UK and Ireland studios.

Since the 2010/11 baseline year, there has been an overall reduction in

total yearly mileage from company cars, rail and air travel with only a small increase in total mileage from private cars. This reduction can be attributed to favouring alternative meeting methods wherever possible. All of our studios have video conferencing facilities to reduce travel wherever possible, in addition to web based communication software including GoToMeeting and Skype. Business travel bookings within each office are monitored by the Studio Manager to ensure that virtual meetings and use of public transport, walking and cycling is prioritised wherever possible in line with the BDP Travel Policy. In 2011, we commenced phasing out the company car scheme to directors, this will be completed mid 2014.

BDP has a strong cycling culture across all UK and Ireland studios with staff using cycles for commuting and travel for local business. All studios have cycle racks and changing/shower facilities for staff. To accommodate cyclists in Bristol, Manchester and London, additional cycle racks have been installed in place of staff car parking spaces. In 2014, our London studio will be increasing the capacity of its bike storage cage to accommodate the increasing number of staff cyclists through the installation of a new two tier rack.



Water

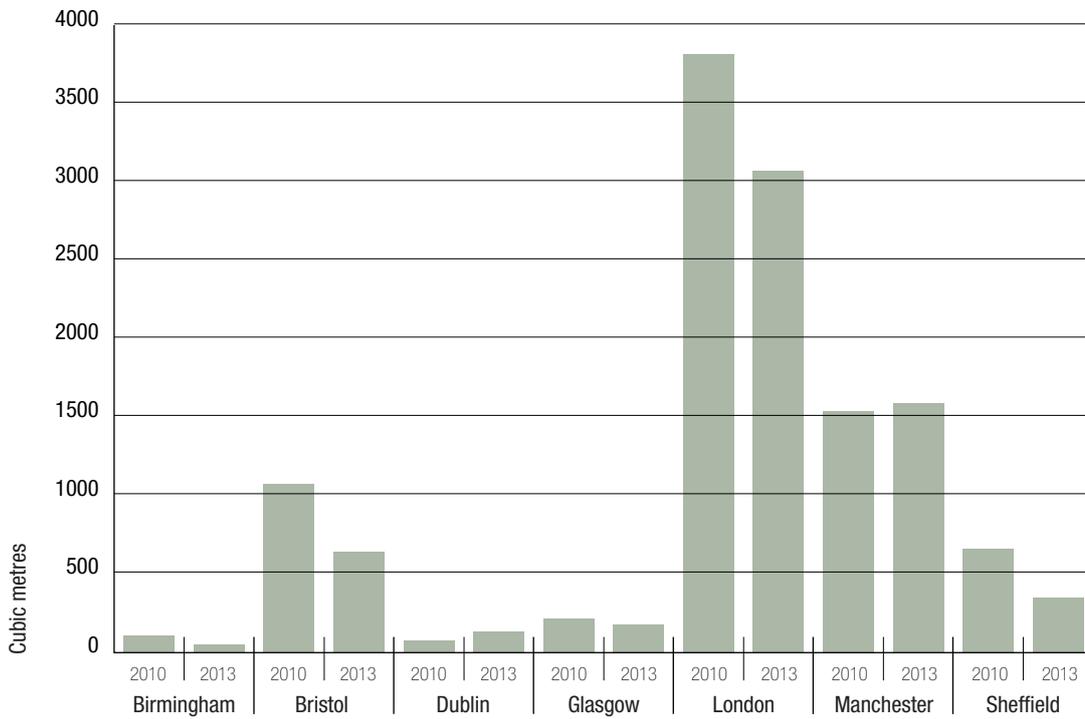
Table 4.5 shows our total water consumption across all studios over the three years from 2010 to 2013. The figures are shown in m³ per annum and show a 15.51% decrease over the recording period. Table 4.6 shows this total broken down by each studio as a total and per capita. We believe that a per capita normalisation is more appropriate for making comparisons across our studios and with similar organisations due to the nature of the work we undertake and the variation in the size, performance and density of our studios. For each set of figures, the percentage change between years has been provided.

	2010	2013	% change
Water (m ³)	7499.00	6336.25	-15.51%

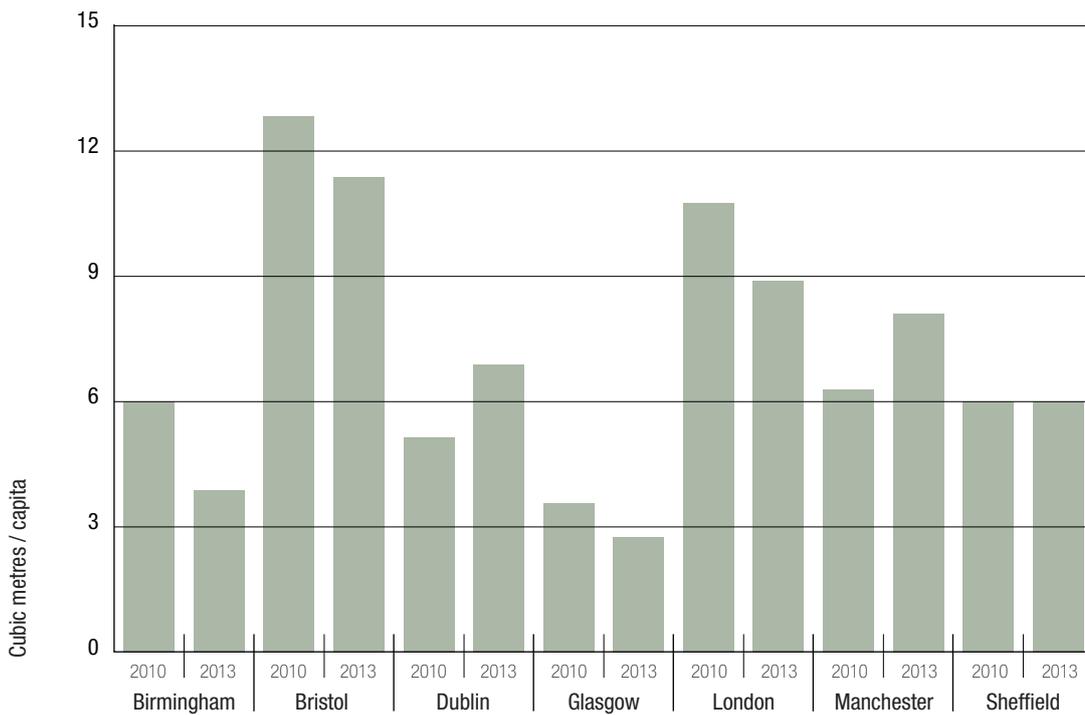
Table 4.5 Total building water consumption and percentage change

Water	2010		2013		Total percentage change	Percentage change per capita
	m ³	m ³ /capita	m ³	m ³ /capita		
Birmingham	108.00	6.00	50.28	3.89	-53.44%	-35.12%
Bristol	1074.00	12.84	642.21	11.37	-40.20%	-11.45%
Dublin	73.19	5.14	135.97	6.88	85.79%	34.05%
Glasgow	216.00	3.57	179.00	2.75	-17.13%	-22.76%
London	3822.00	10.76	3075.00	8.89	-19.54%	-17.39%
Manchester	1542.81	6.29	1590.19	8.10	3.07%	28.83%
Sheffield	663.00	6.00	350.50	6.00	-47.13%	0.00%

Table 4.6 Water consumption and percentage change per studio and per capita



Total water usage per studio



Water usage per capita per studio

Water Use Analysis

BREEAM offers comparable water consumption values per capita per year which can be used to measure our performance. The three categories are devised to demonstrate good (4.5 – 5.5 m³/capita/year), beyond good (1.5 – 4.4 m³/capita/year) and best practice (<1.5 m³/capita/year) water consumption figures. It is important to note that only two of our studios throughout 2013 (although our Birmingham studio figures are based upon industry benchmarks) have operated within the beyond good practice constraints while none of our other studios can be classified within these categories. It is, however, encouraging to observe an overall reduction in water consumption for the majority of our studios since 2010.

Birmingham

Directly metered water consumption is not available due to the nature of the multi-tenanted block and insufficient sub-metering. The consumption figures provided are based on a combination of industry benchmarks and supplier bills, which are apportioned by the landlord to tenant floor area

Bristol

Between 2010 and 2013 the Bristol studio has achieved a reduction in water use of 40.20%. The studio shares a single water meter with the whole studio. As such the granularity of data is less than if the studio was separately sub-metered.

In 2012 the Bristol studio trialled a range of measures to reduce water consumption including mains electric sensor activated urinal cistern filling as the previous battery system was proving unreliable. Tap aerators were fitted to kitchen and washbasin taps and Hippo bags used to reduce the cistern volume in the toilets.

For several months in 2012 the studio trialled a waterless urinal system. Whilst achieving water savings, the system had some undesirable side effects of odour and pipe scaling and the trial was discontinued. In August 2013 cistern fill to the urinals in the landlord common areas was increased as the previous low fill was causing the pipes to block.

Dublin

Dublin has experienced a significant increase in water usage of 85.79% total, or 34.05% per capita between 2010 and 2013. Following installation of waterless urinals in 2009 Dublin achieves one of the lowest per capita water use figures of all of the studios. The Dublin studio is located within a building which is served by a single water meter serving both BDP studio space and that of other tenants on the upper two floors. A significant increase in water consumption between 2010 and 2013 coincides with the occupation of the upper two floors by a new tenant, and the subsequent removal of the waterless urinals installed to be replaced with traditional cistern-fed fittings. The switch to higher water consuming sanitary fittings, coupled with a significant increase in building occupation resulted in a return to pre-2009 level water usage for the building. Due to the single meter arrangement for the building BDP's water usage figures cannot be accurately extracted from the total figure, thereby providing a potentially inaccurate reflection of trends in water use by BDP's Dublin studio during this period. However further analysis of historical water usage data demonstrates that the building is currently now operating at 10% below 2009 water usage figure despite an overall higher building occupancy. Moving forward the Dublin studio intends to inquire about staff levels in the other tenants' offices to report the water usage on a per person ratio rather than splitting the consumption by floor area to improve reporting accuracy.

Glasgow

A water meter was installed in 2011 at our Glasgow studio providing accurate water consumption data for the studio, independent of the rest of the building. The improvement in data granularity has resulted in a perceived 17.13% decrease in water consumption between 2010 and 2013.

London

Between 2010 and 2013, the studio achieved a 19.54% reduction in potable water consumption, equating to a per capita reduction of 17.39%. This reduction was achieved through a number of key water efficiency initiatives. In March 2011, ceiling mounted PIR sensors were installed providing the facility of water cut off to toilet areas when not in use, thereby reducing unnecessary potable water consumption out of hours. Zip taps installed in each of the kitchen areas provide instant hot water, reducing water wastage, and providing energy savings, through the avoidance of overfilled kettles.

Manchester

Water consumption at our Manchester studio has increased by 3.07% between 2010 and 2013. However, a faulty water meter prior to 2013 means that the accuracy of the 2010 baseline figures is questionable. A new water meter was installed in 2013. In March 2013 the Manchester studio experienced a significant water leak which increased the potable water consumption during this period.

The studio operates a rainwater harvesting system which provides non-potable water for WC flushing on the lower ground, ground, first and second floors. During periods of low rainfall, the rainwater tank located on the lower ground floor is topped up with mains water, thereby resulting in an increase in potable water consumption during dry summer months.

Sheffield

Directly metered water consumption is not available due to the nature of the multi-tenanted block and insufficient sub-metering. The consumption figures provided from 2010 to 2013 are based on industry benchmarks of consumption per capita.

Discussions with the landlord regarding possible installation of water meters are ongoing, as are efforts to extract water consumption information in relation to our kitchen, from the property management accounts department.

Our Targets 2014-2018

Based on the performance to date we have set targets to reduce CO₂ emissions arising from scope 1 and 2 as well as to reduce potable water consumption. 2014-2018 targets are detailed in table 5.1 and 5.2.

These targets, alongside a significant update of policies and processes, are part of our policy to ensure continual improvement and continual reductions in emissions and water consumption.

BDP's headline environmental targets 2014-2018 are as follows:

- Total BDP CO₂ emissions arising from scope 1 and 2 – 5% reduction per capita on 2013 baseline.
- Development of a Business Travel Carbon Management Plan.
- Total BDP water consumption – 5% reduction per capita on 2013 baseline.

BDP's carbon emissions and water reduction targets 2014-2018 are as follows:

Target	Scope 1 & 2	
	Reduction target percentage	kgCO ₂ e/capita
Scope 1	5%	216.00
Scope 2	5%	956.75
Total	5%	1172.75

Table 5.1 Scope 1 and 2 Emissions Reduction Target (per capita).

Target	Water	
	Reduction target percentage	m ³ /capita
Total	5%	7.58

Table 5.2 Water Reduction Target (per capita).

Waste

Achieving sufficient granularity of waste data has proved more arduous. Whilst our waste contractors have been able to provide accurate monthly weight reports for white paper and cardboard, an accurate breakdown of co-mingled waste has not always been possible for some of our studios.

Table 5.3 shows our available waste data for 2013. Our studio managers have been working closely with the waste contractors to obtain an accurate monthly breakdown of co-mingled waste. It is proposed that sufficient data for all waste streams will be available in order to establish a robust waste baseline for all of our UK and Ireland studios within the *2015 Environmental Management Report*. From this established baseline we will then be able to set targets, monitor and report improvements in our waste management practice in future years in the same way as we have done for energy, carbon and water within this report.

	Birmingham	Bristol	Dublin	Glasgow	London	Manchester	Sheffield	Total
White paper/ cardboard (kg)	2180	2410	29	1177	5184	960	427	12367
Co-mingled recyclables (kg)	540	185		35	33680	36342		70782
Glass (kg)		60		20	3700			3780
Organic waste (kg)		840			1368	4580		6788
General waste (kg)		7200		3228	16575			27003
Printer cartridges (units)				22	100		21	143
Mobile phones (units)					12		6	18
Computers (units)			3	2	32			37
Printers (units)			2		1			3
Batteries (kg)		50		32	40			122
Other WEEE* (units)				8	270			278

Table 5.3 Total waste figures for each studio during 2013 (*WEEE - Waste Electrical and Electrical Equipment Directive).



Environmental Management Plan - Targets, Objectives and Deliverables

Our studios vary in size, occupancy and building design and the opportunities for improving environmental performance is specific to each studio. As such, we have developed bespoke Environmental Management Plans (EMPs) for each studio that detail specific targets and measures for environmental improvement. The Environmental Management Plans provide a key mechanism for environmental performance and each EMP is reviewed and updated annually. We believe that engagement of all of our staff within each studio is crucial to achieving environmental performance improvements. As such, we will work to ensure that the targets and objectives are well publicised and easily understandable so that all staff take ownership for improving environmental performance within their studio and wider working environment. Each studio Environmental Management Plan identifies a Top Three Actions for improving environmental performance in 2014-15. These actions will be publicised on our intranet and within our studios to increase environmental awareness and instigate a collective drive to improving studio environmental performance.

The following section outlines key environmental targets and measures which we are seeking to implement over the next financial year in each of our studios in an effort to reduce resource consumption.

Birmingham

Obtaining accurate energy and water meter readings for our Birmingham studio has previously been problematic owing to the external management of the building by an agent. This creates two issues: firstly, our specific energy consumption is only provided on the basis of occupied floor area, and secondly, it doesn't account for fluctuations in business intensity or studio population (across all tenants in the building).

Our Birmingham studio is now looking to relocate to a new premises which will allow for better space utilisation, and inherently better energy management. The new studio will have facility for independent energy and water metering and control so as to allow BDP better facility to monitor and control environmental performance within the studio environment.

Bristol

Our Bristol studio has recently undergone space reorganisation so as to achieve greater efficiency of space utilisation. As a result the ground floor is vacant at present. A key energy and carbon reduction measure for 2014 is the complete decommissioning of the ground floor. This will ensure that the unoccupied space is not being unnecessarily serviced (heating, ventilation and lighting).

Bristol's 2014 environmental management plan actions also include full utilisation of the zoned heat monitors to determine high energy use areas and take steps to reduce consumption. Bristol's Studio Manager will also be working with the landlord to improve the accuracy in energy metering. As part of this collaborative approach the feasibility of installing AMR/half-hourly meters will be assessed.

In February 2014 the building landlord was requested by BDP to install PIR activated flush fill in the ground floor urinals in order to limit cistern fill and flush during occupation only. BDP are now in discussion with the landlord to provide a separate water sub meter for the BDP studio so as to allow improved accuracy of meter reading and water use reduction.

Dublin

In previous years our Dublin studio has effectively undertaken measures to reduce energy usage and resulting CO² emissions. Moving forward, and to continue this trend, further experimentation is currently ongoing to minimise out of hours energy use for both the Dublin studio and future projects.

In April 2014, the Dublin studio began to phase in the use of webcams and headsets to facilitate an increase in web-based meetings which are being favoured over travelling to design team meetings. It is hoped that this will reduce resultant CO² emissions from business travel during 2014.

The Dublin studio will shortly be moving to new premises to accommodate increasing staff numbers. As the only occupant in the new studio building we take control of energy and water metering. 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.

Glasgow

Our Glasgow studio has identified opportunities for improvements in energy utilisation through improvements to lighting controls throughout the studio environment. As such a key energy and carbon reduction measure for 2014 targets is the upgrading of studio lighting to auto daylight controlled lighting. It is envisaged that this measure will provide a significant energy saving, minimising unnecessary artificial lighting where daylight levels permit.

A review of the gas boilers within the Glasgow studio in early 2014 identified a need for refurbished in an effort to reduce energy consumption. This has since been approved and work is to be undertaken during early summer when boiler demand should be low. Consumption figures during autumn of 2014 will be closely monitored by the studio manager to establish improved energy performance as a result of better boiler efficiency.

London

Our recent review of central ICT has resulted in measures implemented to reduce the energy consumption associated with our servers. The volume of server equipment in our London studio has been reduced, resulting in a decrease in energy and carbon associated with equipment power as well as space cooling within the server rooms. 2014 will see continued efforts to reduce the energy consumption of central ICT equipment. Provision of a separate sub meter for the server area is proposed to allow accurate monitoring of energy use within this area.

Additional 2014 Environmental Management Plan actions for London include additional sub metering for tenanted areas to ensure accuracy of data for BDP energy consumption. The London studio will also continue the lighting upgrade programme to daylight auto controlled lighting.

Manchester

Our Manchester studio houses BDP's central ICT equipment. Recent environmental initiatives have focused on reducing the carbon footprint of the studio through improvements to ICT equipment efficiency, as well as server virtualisation to considerably reduce both equipment loads and cooling loads. Designed by BDP, the Ducie Street studio is well equipped in terms of energy efficient equipment, temperature/lighting metering and controls. As such our 2014 energy and carbon reduction targets focus on behavioural change initiatives, in order to maximise the operational efficiency of the building and further reduce our environmental footprint in line with our established targets. The energy awareness campaign is intended to achieve increased awareness of energy saving issues, temperature and climate control within the studio.

Our Manchester's studio fourth floor is sub let to external tenants. Currently electricity and gas consumption are apportioned by floor area. Moving forward, full utilisation of all sub meters will ensure accurate consumption figures are obtained for both BDP studio space and sub tenanted fourth floor.

Sheffield

Our Sheffield studio is landlord owned and managed. Ongoing improvements to the energy efficiency and metering capability thereby rely on a collaborative approach between studio manager and the landlord management. Our 2014 targets focus on ensuring that the control and efficiency of our studio energy usage is managed to optimal performance levels by the landlord, thereby requiring collaboration with the landlord's facilities management company.

Business Travel

It is recognised that a degree of business travel is necessary for the company to seek and develop new international business opportunities and deliver projects abroad. The extent of travel required is project specific and largely dictated by client demands, so that an absolute reduction target is not appropriate. Instead, BDP has committed to a number of travel reduction initiatives to improve virtual working opportunities and limit business travel to essential travel only.

All of our offices have Video Conferencing facilities to reduce travel wherever possible, in addition to web based communication software including Skype and GoToMeeting. During 2014, developments in our communications technology will see the roll out of Microsoft Lync to all UK and Ireland studios. Lync will facilitate 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 which brings together all communications methods into one package, facilitating ease of use and availability over the existing video conferencing facilities. Our current Video conferencing systems will also integrate into the system and replacement of the older systems will improve reliability. Following the roll out of Lync, our Central ICT team will maintain a log of Video Conferencing for analysis against future air travel. This will allow us to assess our progress against our target to reduce air travel through the continued growth of virtual communication facilities across the business.

BDP is committed to developing a Business Travel and Carbon Management Plan during 2014. 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.

* Summary

The aim of our first Environmental Management Report is to record externally our environmental performance against our company targets, and establish actions to ensure we continue to achieve a year on year reduction in our environmental footprint.

Key to accurate environmental performance monitoring and assessment is concise data. In collaboration with our studio managers and studio landlords we have been able to achieve sufficient data granularity to provide energy, carbon and water figures for our studios for 2013, and set targets from the established 2013 baseline. Data granularity issues do however remain within our reporting of waste performance. A key priority for 2014 is the improvement of our waste data, to be addressed by our studio managers in collaboration with the waste contractors for each studio. It is proposed that sufficient data for all waste streams will be available within the *2015 Studio Environmental Report* in order to establish a robust waste baseline for all of our UK and Ireland studios. From this established baseline we will then be able to set targets, monitor and report improvements in our waste management practice in future years in the same way as we have done for energy, carbon and water.

Within this report we have set targets for the reduction in our energy consumption, carbon emissions and water use for the period 2014-2018. Achieving these targets requires that specific measures are distilled down from corporate to studio level. Each of our studios maintains an Environmental Management Plan which outlines specific measures for achieving environmental performance.

BDP is committed to the annual reporting of our environmental performance through our annual Environmental Management Report. Subsequent reports will display our environmental performance figures, review progress against our targets, and provide a catalyst for action to further improve our year on year environmental performance.

Manchester

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