Environmental Sustainability Report 2016

Includes the ISCN-GULF Sustainable Campus Charter Report

ENVIRONMENTAL SUSTAINABILITY at OXFORD

UNIVERSITY OF OXFORD

ABOUT THIS REPORT

This report sets out the environmental sustainability work of the University of Oxford and focuses on the University's functional estate. The functional estate covers all the buildings that are used for its day-to-day activities including: specialist research buildings, teaching laboratories and lecture halls, sports facilities, libraries and museums, administrative and ceremonial buildings and does not cover the operations or buildings of the colleges, which are independent entities.

We trust that you will find the information useful. We would welcome feedback from our readers to help us continue to improve our communication regarding our environmental sustainability performance.

Notes on this report

The data for this report is extracted from the published Estates Management Record return for 2014/15 from Higher Education Statics Agency where appropriate. Examples and case studies may be taken from 2015/16. Please note that there is no Environmental Sustainability report for 2014 – the 2013 and 2015 reports follow consecutively. The change in the title is to better reflect the year of publication.

This is the University's fifth annual Environmental Sustainability report and its fourth Charter Report for the International Sustainable Campus Network (ISCN); it is the third year the two reports have been combined.

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VICE-CHANCELLOR'S WELCOME

As an institution, and as individuals, we have a clear responsibility to care for our environment. We at Oxford are committed to implementing and supporting programmes that effect lasting, positive environmental change. This is the fifth year that the University of Oxford has produced an Environmental Sustainability Report which catalogues these practices.

In June I attended the University's Sustainability Showcase, joining over 200 students and staff to celebrate a range of impressive work. During the course of the event, over fifty achievements were recognised, including projects from the University's new Carbon Innovation Programme (CIP). CIP, which was launched in October last year, was praised by the International Sustainability Campus Network for its innovative collaboration between staff and students on projects whose application will help the University reduce carbon emissions.

In addition to major new initiatives such as CIP, this year has also seen the continued success of ongoing activities. The University's Transport Strategy has seen the launch of a shuttle bus linking our scientific sites and a 4% increase in bicycle spaces. We have also installed our 1000th solar photovoltaic panel as part of our Carbon Management Strategy.

Over the course of the past few months, there have also been a number of notable 'firsts', including the first electric bikes for hire at docking stations across the University and city, the first Student Switch Off campaign in Graduate Accommodation, an 'Incredible Edible' vegetable patch piloted outside Earth Sciences, and the certification of the University's buildings within the Environmental Management System to a recognised international standard.

As Oxford continues to expand its world-leading research, the University's estate will need to evolve to provide the necessary infrastructure. This presents both opportunities and challenges for environmental sustainability given our mix of old and new buildings. While the University's overall emissions have increased by 2% since the setting of a baseline in 2005/6, work to reduce the environmental impact of a growing estate is reflected in a fall of 23% in our carbon emissions (per m2) during the same period. There remains much for us to do.

We are particularly pleased that our newest building, the Blavatnik School of Government, has received recognition not only for its architecture but also its sustainable design. Shortlisted for the prestigious Stirling Prize, it has also been awarded the environmental rating of BREEAM 'Excellent', placing it in the top 15% of BREEAM assessed buildings internationally.

Over the coming year we will continue to integrate environmental sustainability into our working practices, while seeking new ways to work together to reduce our environmental impact. We have made clear progress. There remains much more that, together, we can and must achieve.

Professor Louise Richardson
Vice-Chancellor, University of Oxford

Photo credit: John Cairns

WELCOME FROM THE CHAIR OF THE SUSTAINABILITY STEERING GROUP

This annual Environmental Sustainability report more than any other so far has involved hard decisions on what to include. Even though it feels like no time at all since we were completing last year's report, we have achieved so much since then. In many ways this is a wonderful position to be in, and shows the strong support across the University for this important area of work.

To echo the themes of the Vice-Chancellor's welcome, it is by continuing our efforts, while also seeking new challenges and opportunities, that we will make the greatest difference. The University has made significant efforts and progress but further improvements are needed to move towards its targets. In this regard, as much as this report looks behind us it also outlines some of the work we will undertake in the coming year and beyond.

As Chair of the Sustainability Steering Group I am in the fortunate position of commending this report to all our stakeholders and thanking everyone for their continued efforts. I encourage our students and staff to take part in available programmes, including the ever-popular Green Impact, Student Switch Off, Carbon Innovation and the training and events programme put together by the Environmental Sustainability team.

Once again, an exciting year lies ahead and we look forward to engaging with all our stakeholders as we continue this journey.

Professor William James
Chair, Sustainability Steering Group

TIMELINE

1997
University's Environment Committee established

2000
First Travel Survey undertaken

2005/2006
University's carbon emissions baseline

2008
Low-Carbon Advisory Group launched

2010/11
Carbon Management Strategy

2010
Oxonbike bike-sharing scheme launched

2011
Waste Management Strategy and Water Management Strategy

2013
The first building to target BREEAM Excellent from the outset opened

2013/14
Green Impact and Student Switch Off launched

2014
Sustainable Buildings Philosophy Document created

2016
1000th Solar PV installed

2016
First electric Oxonbikes

2016/17
Biodiversity Strategy and Engagement and Communication Strategy

2017
Work completed on the first Passivhaus building

1999
First Environmental Targets agreed

2005
Environmental Panel created

2008
First Environmental Policy established

2009
Assessment of environmental impacts

2010
Electricity purchase is through a green energy tariff

2011
Sustainability Steering Group formed

2011
First Annual Sustainability report produced

2013
Sustainable Procurement Strategy and Sustainable Transport Strategy

2014
Reuse programme WARPit launches

2015
Carbon Innovation Programme launched

2016
ISO 14001 certification received

2016
Science Transit Shuttle Launched

2017
Food Policy

OUR COMMITMENTS

We have made a number of commitments to work towards an environmentally sustainable future for our University.

We have identified our most significant impacts and we have a finalised our daft strategy for each of these areas. A list of our key policies and strategies is below.

Policies, strategies and standards

Feeding from the University's Strategic Plan and the Estates Services Strategy, the following documents drive our approach to sustainability:

- Environmental Sustainability Policy: this is the overarching document underpinned by detailed strategies, standards and, where appropriate, plans which outline our approach and objectives:
    - Carbon Management Strategy
    - Carbon Management Plan
    - Waste Management Strategy
    - Waste Management Plan
    - Transport Strategy
    - Transport Plan
    - Water Management Strategy
    - Sustainable Procurement Strategy
    - Biodiversity Strategy and site plans (Draft, estimated completion 2016)
    - Environmental Engagement and Communication Strategy (Estimated completion 2017)
    - Environmental Management System (ISO 14001:2004 standard)
    - Food Policy (Estimated launch 2017)

Governance

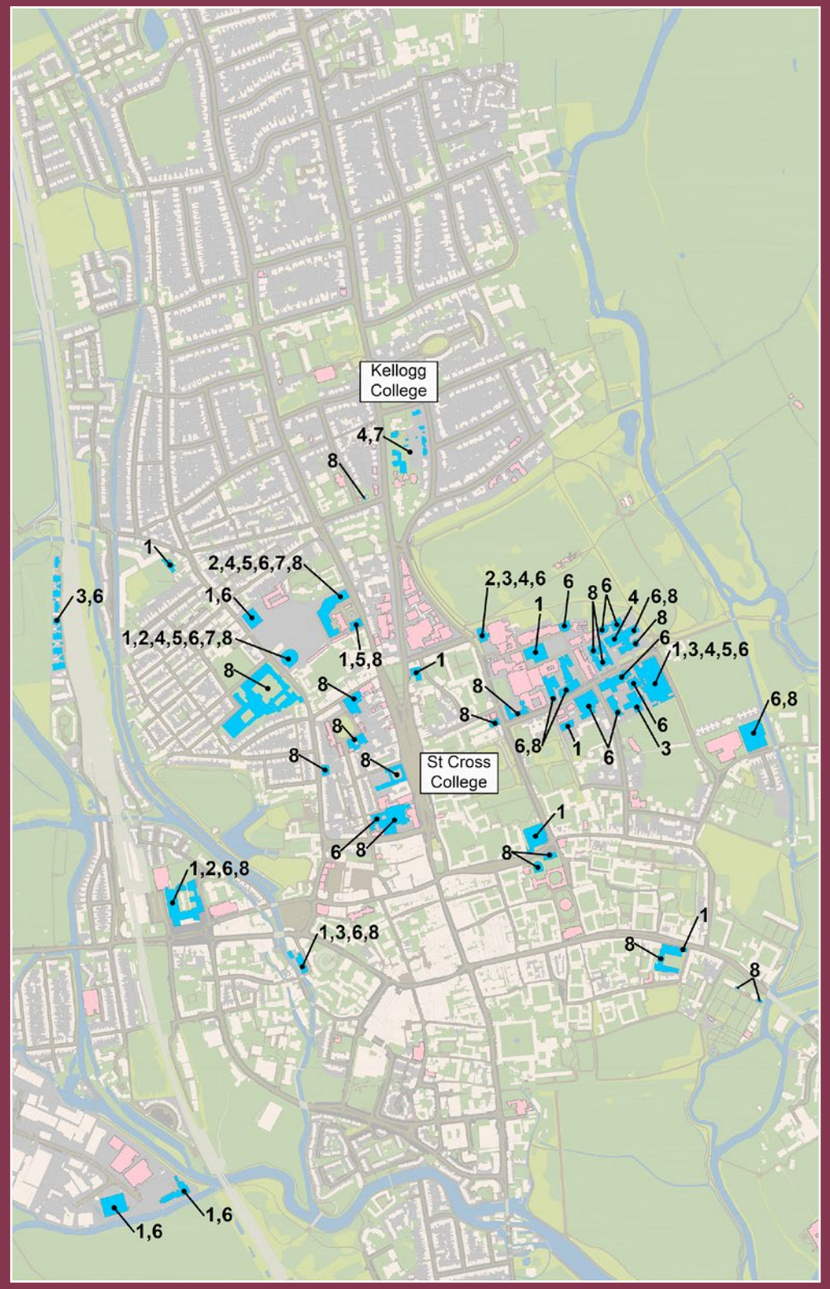
The Sustainability Steering Group advises on the actions required by the University to achieve the proposed strategies and targets, monitors progress against the agreed targets, and produces annual reports on its findings. Annual reports are provided to the Registrar and Buildings and Estates Sub-Committee. The Group also monitors national and international legislation and policy developments, and advises on their implications for the University.

The Sustainability Steering Group membership includes a student, appointed by the Oxford University Student Union (OUSU) Executive from among their own number or from the membership of the OUSU Ethics and Environment Committee.

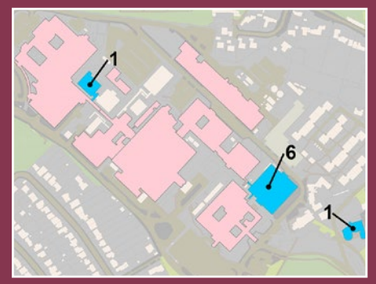
MAPPING SUSTAINABILITY

The map below shows the locations of some of the technologies and projects that are in place across the estate.

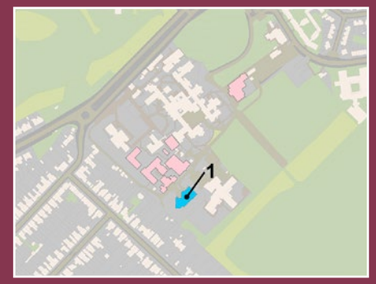
CENTRAL OXFORD SITE



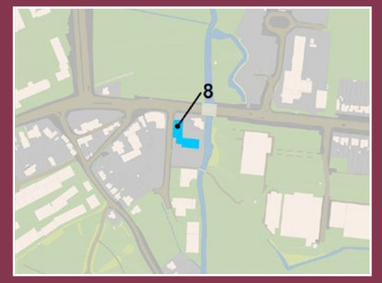
JOHN RADCLIFFE HOSPITAL SITE



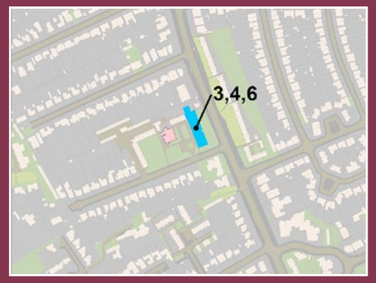
WARNEFORD SITE



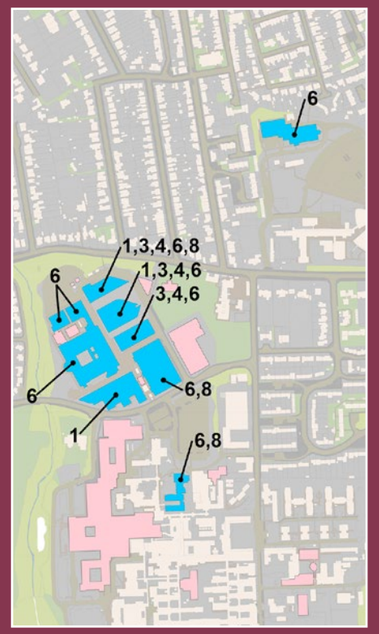
BOTLEY SITE



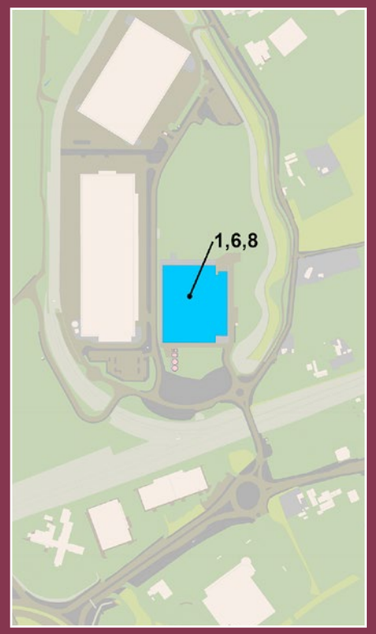
SUMMERTOWN CENTRAL SITE



CHURCHILL, OLD ROAD CAMPUS & NUFFIELD SITES



SWINDON SITE



Buildings with Environmental Technologies

Functional Buildings

1. Solar photovoltaic and/or solar thermal
2. Ground source heat pumps
3. Combined heat and power (CHP)
4. Passivhaus or BREEAM Excellent rated including pending
5. Rainwater harvesting
6. BMS optimisation and/or extensive lighting projects
7. Green roof, bee hives and/or biodiversity plan
8. Green Impact team

2016 AT A GLANCE

23% DECREASE
in carbon intensity (carbon emissions/m^2) since 2005/6

3% INCREASE
in total carbon emissions from 2005/6 to 2014/15

Water use increased from 2013/14 to 2014/15, equivalent to filling the Sheldonian theatre seven times

£50,000
SAVED THROUGH THE REUSE PORTAL WARPit

1000th
Solar photovoltaic panel installed in 2016

Blavatnik School of Government awarded the environmental rating of **BREEAM 'Excellent'**

First electric

OXONBIKES
AVAILABLE

39 sustainable impact assessments of products completed

Received ISCN international award for **COLLABORATIVE INNOVATION**

5,410 students
completed the Student Switch Off quiz

67 STAFF
completed cycle training

FIRST
'INCREDIBLE EDIBLE'
VEGETABLE PLOT PLANTED

50+ AWARDS
handed out at the Sustainability Showcase

3,212 actions
completed as part of Green Impact

6 BUILDINGS
received ISO 14001 Environmental Management System certification

OUR ENVIRONMENTAL PERFORMANCE – AN OVERVIEW

Positive progress on target/target achieved

Positive progress but behind target/no significant change

Negative progress against target/target missed

CARBON AND ENERGY MANAGEMENT - PAGE 16

Objective - reduce carbon emissions by 33% from 2005/6 baseline by 2020/21.

Performance

- 3% increase in total carbon emissions from 2005/6 to 2014/15
- 23% decrease in carbon intensity (carbon emissions/m^2) from 2005/6 to 2014/15
- 34% increase in total onsite energy generated from 2013/14 to 2014/15
- 96% increase in on-site renewable energy generation from 2013/14 to 2014/15
- Green energy tariff since 2010

Continual improvement - implement £3.4 million of project identified through the Carbon Reduction Programme, including increase in renewables, updating equipment with energy efficient models, improving lighting, and optimising building management systems.

SUSTAINABLE BUILDINGS - PAGE 19

Objective - all projects over £1m to achieve BREEAM Excellent rating

Performance

- Blavatnik School of Government (BSG) rated excellent
- BSG used building guides and videos to support the soft landing of the building
- Sustainable Philosophy Document reviewed
- Construction began on the first Passivhaus

Continual improvement – further develop guidance and information around new buildings; review opportunities for other accreditation schemes or systems. Gain BREEAM Excellent rating on all building projects worth more than £1m reaching completion.

TRANSPORT - PAGE 24

Objective –implement the transport strategy and embedded targets.

Performance

- First electric bike available through Oxonbikes bike share scheme supported by £34k grant from the government (Department of Transport)
- 74% of staff and students travel using a sustainable mode of transport
- Launch of the Science Transit Shuttle in 2016
- 67 staff completed cycle training in 2015/16
- 28,793 miles ridden on the rentable Oxonbikes since the schemes re-launch in 2014 to 2016
- Peak parking permits costs increasing to match park and ride costs

Continual improvement – complete the pilot of the Science Transit Shuttle, further expand and grow Oxonbikes and improve available data for international travel to inform policies and procedures.

BIODIVERSITY - PAGE 28

Objective - develop a biodiversity strategy and associated plans.

Performance

- Biodiversity strategy developed
- Four site plans included within the strategy
- Beehives on roof of Earth Sciences building
- 3,500 trees cared for by the University Parks team and 200 green spaces

Continual improvement – finalise the biodiversity strategy and develop an internal report.

WATER MANAGEMENT - PAGE 30

Objective - water use to fall by 11% by 2014/15 from 2009/10 levels.

Performance

- Water use has increased by 11% since 2009/10
- Water use per m^2 has fallen by 6% over the same period
- An estimated 2 million litres of water saved per a year by installing three water chillers

Continual improvement – review opportunities across the University to reduce water developing a new strategy, plan and long term objective.

MATERIAL RESOURCES - PAGE 32

Objective - create a baseline of consistent waste data from which to be able to set targets and objectives and continue to embed positive procurement practices utilising the Flexible Framework as appropriate.

Performance

- WARPit reuse programme saved an estimated £50,000
- Incredible Edible vegetable patch piloted
- 1,517 tonnes of waste used to create energy, including 56 tonnes of food waste sent for anaerobic digestion
- 39 product assessments undertaken, supporting purchasers to assess sustainable considerations
- Food policy developed

Continual improvement – To deliver the 2016/17 Sustainable procurement plan and review the University's waste strategy to set long term targets. Continue to identify and develop opportunities for reuse and low-impact disposal routes for problem materials.

COMMUNICATION AND ENGAGEMENT - PAGE 36

Objective - increase engagement including 40 teams participating in Green Impact during 2015/16

Performance

- 45 teams participating in Green Impact during 2015/16
- 50+ awards handed out at the Sustainability Showcase 2016
- 3,212 actions completed as part of Green Impact during 2015/16
- 5,410 students completed the Student Switch Off quiz during 2015/16
- 2,447 hours of staff and student engagement during 2015/16

Continual improvement – finalise an Engagement and Communication strategy and grow engagement programmes and uptake. Complete a sustainable engagement survey and incorporate stakeholder feedback.

CARBON AND ENERGY MANAGEMENT

Work in this area has led to positive results, with Scope 1 and 2 carbon emissions falling by of 9% from 2013/14 to 2014/15 and reflects a general downward trend since a peak in 2009/10. We have invested £1,624,346 in carbon reduction projects during 2014/15 and £2,305,442 in 2015/16 to further cut emissions. Further reductions are needed to meet the University's long-term target of reducing carbon (scope 1 and 2 emissions) by 33% from 2005/6 baseline by 2020/21. Total emissions in 2014/15 are 2.8% above the 2005/6 baseline, which means the target remains challenging. We have identified projects worth a further £3,542,136 commencing in 2016/17 that will continue to move the University towards its target.

The increase in total emissions is partly due to the University's continued success, leading to a growth in our research and teaching. This has naturally increased the internal floor area, which has grown 15% in the last five years and over 30% since 2005/6. The estate is expected to keep growing; this means there are both challenges and opportunities ahead in terms of carbon and energy. The success of the University's carbon-reduction efforts and investment in technologies is reflected in the drop in carbon intensity – emissions per unit of floor space. Across the University this has fallen 21.4% between 2005/6 and 2014/15, and 27% from a peak in total emissions in 2009/10.

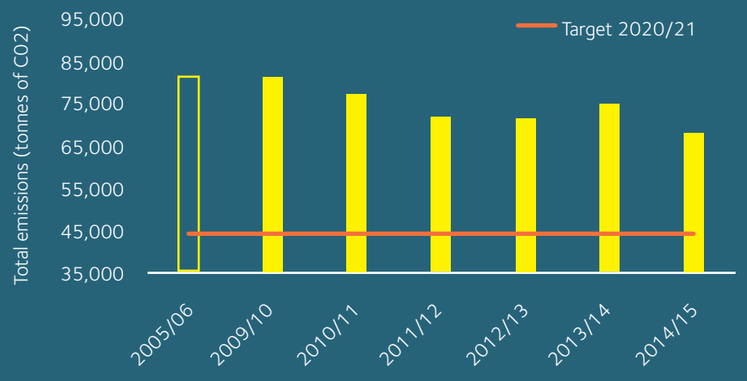
This progress reflects a substantial increase in renewable technologies across the estate. Our photovoltaic cells produced 66,131 kWh of energy in 2014/15 – double that of the previous year. The University installed its 1000th cell at the end of 2015/16 which will support further on-site energy production.

The interim target of cutting scope 1 and 2 CO2 emissions by 11% by 2015/16 (compared to 2005/6 levels) is unlikely to be met. We are still working to make significant progress towards the extremely challenging 33% reduction by 2020/21 and are encouraged by the reduction in carbon intensity across the estate.

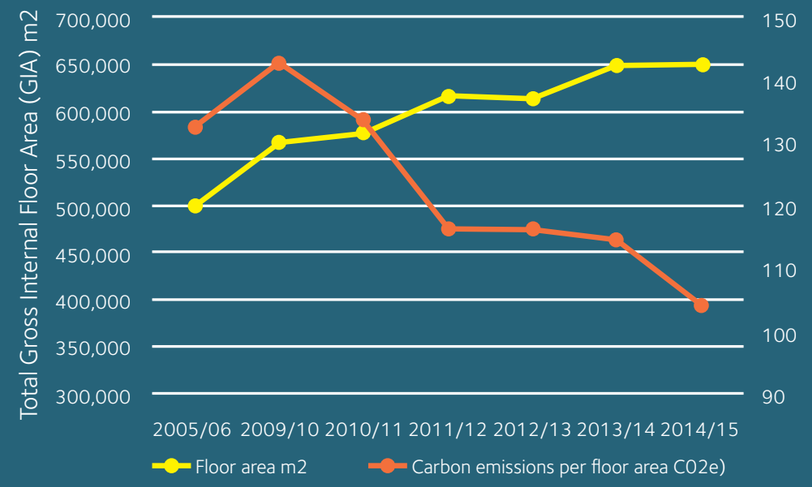
We continue to identify opportunities to reduce energy waste by engaging with building users and by continuing our Carbon Innovation Programme, which looks to crowd source ideas from staff and students across the University. More information on these programmes can be found on pages 38 to 39.

Scope 1 and 2 emissions: Scope 1 includes direct greenhouse gas emissions (GHG) from sources that are owned or controlled by the University such as natural gas combustion and University owned vehicles. Scope 2 accounts for GHG emissions from the generation of purchased electricity, heat and steam generated off-site. Electricity (72%) and natural gas (27%) are the most significant contributors to our carbon emissions.

Total Annual Carbon Emissions



Graph: Carbon emission intensity



WHAT WE SAID IN THE LAST REPORT	WHAT WE DID
Continue to deliver the Carbon Reduction Programme to move towards the University's 2020/21 target. Invest further in low- and zero-carbon technologies and to increase the University's onsite renewable energy generation.	Carbon emissions reduced by 9% from 2013/14 to 2014/15. Our photovoltaic cells in 2014/15 produced 66,131 kWh of energy in 2014/15 – double that of 2013/14 and £2,305,442 invested through the Carbon Reduction Programme.
Deliver the Carbon Innovation Programme in partnership with Environmental Change Institute.	Complete – the programme received an international award (see page 39).
Implement the identified and funded carbon reduction projects, which should collectively mitigate 7,119 tonnes of CO2.	Implemented projects with estimated 6,713 tonnes of CO2 of savings
Increase access to relevant staff of energy monitoring and reporting software.	New monitoring and measuring software is being updated with current information and we are looking to start a series of training sessions throughout 2016/17.

WHAT WE WILL DO

- Continue to identify and implement programmes of work
- Run the Carbon Innovation Programme and start work around Living Lab
- Further increase access to energy monitoring and reporting software for relevant staff
- Assess feasibility and applicability of ISO 50001 Energy Management System

FOCUS ON: SUSTAINABLE LABORATORY EQUIPMENT PROGRAMME

Our laboratories are a key part of our environmental impact – for example the Mathematical, Physical and Life Sciences and Medical Sciences divisions are responsible for 76% of our carbon emissions (scope 1 and 2), driven in part by the needs of research laboratories. Therefore the Carbon Reduction Programme includes a review of energy efficiency in laboratories. This includes: behaviour change, optimising ventilation, and replacing inefficient equipment. The Sustainable Laboratory Equipment Programme focuses on the energy efficiency of equipment and provides support to help upgrade it.

Glass dryers:

New energy efficient glass dryers have been identified that are fully insulated and have a 24-hour seven-day timer so that they can be programmed to switch off when not in use.

Simply reducing usage time and making the units more efficient will reduce the University's annual emissions by an estimated 370 tonnes of carbon.

Insulated units will also lose less heat to the air; this means laboratories will need less cooling as an added benefit.

Ultra Low Temperature (ULT) freezers:

ULT freezers use a significant amount of energy across the estate and there are more than 500 of them. Therefore a subsidy fund has been put in place to help departments upgrade their freezers to energy efficient models. Upgrading a freezer can save three tonnes of carbon a year.

Guidance on maintenance of freezers has been produced to share good practice and help laboratories further reduce their environmental impact.

SUSTAINABLE BUILDINGS

We have a continuous programme of construction and refurbishment with up to 80 projects underway at any one time. These can range from concept development to the occupation phase. Our ambitious capital master plan involves significant investment in the University estate. The growth of the estate matches the growth of world-leading research at the University as well as the expectations of our students and staff; it provides both challenges and opportunities.

The University has targeted an 'Excellent' rating under the BREEAM scheme for all major projects since 2009.

The BREEAM assessment evaluates a building's specification, design and use, considering topics including energy and biodiversity. The system is a standardised approach allowing buildings to be assessed against appropriate benchmarks.

1426

Divinity School was built, the oldest space still within the functional estate

1840

40% of the estate is built

2006

Natural Resource Impact Analysis supplementary planning document was adopted by Oxford City Council to assist planning officers in determining applications with regard to sustainability policies within the Local Plan.

2008

University Environmental Sustainability Policy was first approved by Council and included a commitment to sustainable building best practice.

2009

Policy agreed that buildings created in **projects worth more than £1m will achieve BREEAM Excellent ratings**. This was recognised as an ambitious target using the most robust sustainable buildings assessment methodology available.

2011

The new **Earth Sciences** building project was initiated before the BREEAM Excellent target was adopted, but the building includes many significant sustainable features. These include external solar blinds to prevent over-heating, natural ventilation to office areas using the 'passive stack effect' to draw cool air from external windows, and a significant ground source heat pump system.

2011

Sustainable Building Philosophy document approved to ensure continued best practice design. The document formed part of a growing Estates Services suite of design guidance, drawing on the experience of delivered projects.

2013

The Nuffield Department of Medicine building on the University's Old Road Campus in Headington was one of the first projects to target a BREEAM Excellent rating from the outset. Key design decisions were informed by the development of a 3D dynamic simulation model which assessed impacts of the distinctive architecture on energy performance and thermal comfort. Research laboratories are inherently energy-intensive spaces which require close environmental control, but the NDM building's design mitigates its environmental impact through a number of passive and active means.

2013

Estate Strategy (2013–2018)

2013

The **Andrew Wiles Building** was designed to be naturally ventilated when practicable with extensive solar shading, large window openings and exposed concrete thermal mass. The project also made the first step in delivering a site-wide energy strategy which aims to connect all buildings on the Radcliffe Observatory Quarter to an extensive ground source heat network. The building received a BREEAM Excellent certificate in 2015.

2013

Sustainable Building Officer role commences

2014

University sustainable building policy is kept under continuous review and the **Sustainable Building Philosophy** guide was revised to align with BREEAM 2014 and to include tools to support more effective integration into design. Greater focus was also brought to operational energy consumption with new requirements for detailed modelling during the design phase.

2015

Clearly communicating the sustainable features of the **Blavatnik School of Government** building to its occupants was a key project goal. The Soft Landings approach was adopted at a very early point in construction, and through this engagement an interactive building user guide was developed which explains to occupants and visitors how the building is designed to function. This will support maintaining its performance for the long term. See focus pages 22–23 for more information.

DUE 2016

An increasingly significant issue for University buildings is controlling overheating without requiring energy-intensive cooling. **The Big Data Institute**, due for completion in December 2016, will house computer-based research generating significant heat and provided an ideal testbed for a more radical approach to tacking this modern building design challenge.

The chosen solution was to supply the buildings air through a network of subterranean tunnels beneath the basement known as a thermal labyrinth. The relatively constant temperature of the ground will pre-heat the air in winter and pre-cool it in summer, minimising the energy required to create a comfortable internal environment. This system with be supplemented by low-carbon technologies including tri-generation – generating heat, cooling and power at the same time – and solar photovoltaic panels.

DUE 2017

Work on the first **Passivhaus certified building** at Kellogg College has commenced. The University continues to investigate construction best practice and opportunities to deliver truly sustainable and lower-energy buildings. The Kellogg Hub will be the first University building designed and built to the exacting Passivhaus standard rather than to BREEAM. The Passivhaus methodology is at the cutting edge of low-energy design and has proven that it can deliver comfortable buildings that perform as designed. As the first non-domestic Passivhaus project in Oxford, the Kellogg College Hub has the potential to lead the way both within the University and for the wider community.

WHAT WE SAID IN THE LAST REPORT	WHAT WE DID
BREEAM rating for Blavatnik School of Government.	Completed; Excellent rating received. See page 22.
Review of the Sustainable Buildings Philosophy Document.	The philosophy document is being reviewed.
Conduct a Passivhaus trial.	Kellogg has started construction on the first Passivhaus within the estate.
Undertake an external wall insulation trial.	A full feasibility study is expected to be completed in 2017.
Development of the Biodiversity Strategy.	Due to be signed off in Michaelmas 2016.

WHAT WE WILL DO

- Continue to improve the Philosophy Document for sustainable buildings and re-issue.
- Extend the period over which buildings are assessed after opening as part of soft landings, ensuring long-term building usage lessons are learnt and fed back into the design phase.
- Consider applicability of BREEAM and assess alternatives.
- Get BREEAM Excellent rating for the Big Data Institute.

FOCUS ON: BLAVATNIK SCHOOL OF GOVERNMENT

Founded in 2010, the Blavatnik School of Government (BSG) is one of the youngest departments of the University. Construction commenced on their new building in 2013 and in November 2015, the Blavatnik School of Government moved into its new, state-of-the-art premises in the Radcliffe Observatory Quarter. The building was officially opened in May 2016.

One of the goals was to ensure the new building was energy-efficient and sustainable. To achieve this, investments were made in a combination of modern control systems with groundbreaking technology. The building has been awarded a BREEAM Excellent rating.

Automated natural ventilation with daytime solar blinds and summer night cooling

The building aims to do most of its ventilation naturally, with a design that helps air to circulate. The six-storey central atrium draws warm air upwards, creating a natural flow of air through the building. To help keep the building cool in summer, during the day intelligent blinds react to the sun's position and intensity. Exposed concrete absorbs and stores daytime heat, which is then released back when exposed to cooler air at night. Heat recovery is employed during cool weather and mechanical ventilation is intelligently controlled to respond to internal air temperature and air quality.

Ground Source Heat Pump system for heating and cooling

The building is heated and cooled by a ground source heat pump system using an array of 72 bore holes beneath it. Over the year, this system is expected to contribute around 15% of the building's space heating and hot water demands, and all of its cooling. It absorbs heat from the ground to warm the building in winter. In summer, heat is moved into the ground to provide cooling, at the same time 'charging' the ground with heat that can be reclaimed when the weather gets colder. The system mirrors that of the Mathematical Institute, and is part of a wider strategy within the Radcliffe Observatory Quarter, where the various systems will be interconnected for maximum efficiency.

Solar panel electricity systems and low-energy lighting

The building has the largest permitted photovoltaic panel array on the rooftop. This is expected to generate over 27MWh each year – enough electricity to power 480 typical (26W) light fittings for eight hours a day, five days a week, 52 weeks a year. Buying this power from the grid would lead to emissions of more than 14 tonnes of CO^2 per year. Lighting in the building is low-energy and has intelligent motion-sensor controls: when a room is left empty, the light will switch off to minimise consumption.

Rainwater harvesting, green roof and storm tanks

Rainwater is harvested and stored underground, and used for toilet flushing to help reduce mains water consumption. We estimate this will save around 150,000 litres a year in mains water. Two levels of the building have a partial green roof (also called living roof) covered with vegetation that helps enhance biodiversity and also slows storm water run-off. The construction of the building also included the installation of two storm tanks to reduce the risks of inundation in the area around the building in the event of a deluge.

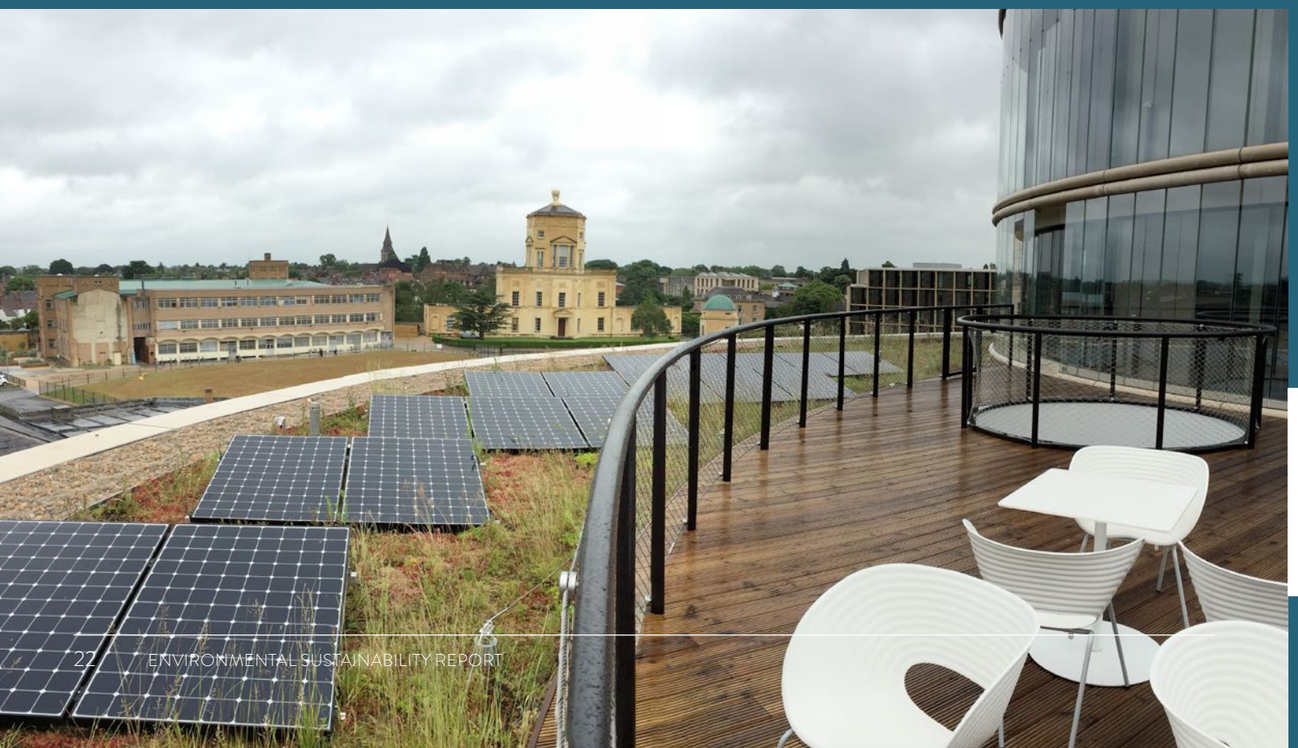
Beyond technology and automation

Ensuring a smooth occupation for the department and communicating these sustainable features was a key project goal and will be essential in ensuring the long term performance of the building. The project adopted the soft landings approach to begin this process at a very early point in construction and this engagement was continued through the development of an interactive building user guide explaining how the building is designed to function to occupants and visitors.

The building participated in Green Impact engagement programme in 2015/16 the team received a gold in their first ever year. BSG kindly hosted the Sustainability Showcase 2016; you can see more from the awards evening on pages 40 and 41.

THE BUILDING FEATURES INCLUDE:

- Access to natural light and air everywhere in the building; the "Window to the world" is the largest double glazed single pane of glass in Europe (10.5m x 3.2m).
- The building is expected to consume 49% less energy, and to emit 42% less CO^2 than average UK buildings of the same size and use.
- Its fabric and systems have been designed to accommodate the kind of weather projected for Oxford in 2040 under climate change.
- The building features 107 photovoltaic panels and a Ground Source Heat Pump, as well as 500m^2 of green roof.



Calum Miller, Chief Operating Officer of the Blavatnik School of Government, said: "We are very lucky to work in this brilliantly-designed and inspiring building, which so closely reflects our values of openness and collaboration."

TRANSPORT

Our Transport Strategy was informed by the travel patterns of all staff (including college employees), students and visitors in 2013. The strategy was formally adopted in December 2014.
The Transport Strategy objectives seek to reduce the number of car journeys on the network, to promote and improve the range of travel options and journey experience of sustainable transport, and to reduce the University's transport emissions of carbon and air pollution.

The strategy benefits not just the University of Oxford but the wider City, with extensive lobbying to support improved local cycle infrastructure and public transport schemes, an example is the successful bid to the Department of Transport to support the Oxonbike bike share scheme.

Partnering is a key aspect of the strategy and progress has been made working with the Oxford University Hospitals NHS foundation Trust to improve access to sustainable travel options for University staff based at their sites.

The strategy focuses on five core measures:

1. Demand Management

The University works to discourage car use. Since 1999 it has controlled staff commuter parking, actively managing demand by allocating permits according to need. Staff are charged 1% of salary for a perk parking permit (permits for central parking), rising to 1.75% by 2018. This is benchmarked to the cost of using the equivalent sustainable mode of travel, the Park & Ride. All parking income is transferred to the Green Travel Fund for expenditure on sustainable travel measures.

2. Sustainable Commuting

Half the University's staff live outside the ring road, beyond reasonable walking and cycling distance. Given that Oxford lacks the comprehensive public transport other cities, the University has achieved a very strong mode share for sustainable modes, with only 25% of commuting trips undertaken by single occupancy car in 2014 – a 50% reduction since 1997.

The University has a comprehensive package of measures to facilitate sustainable travel including:

- Becoming a member of Easit, giving staff a 15% discount on rail travel. This has saved staff a total of £200,000 since 2012;
- Interest-free loans for bus, rail and Park-and-Ride season tickets;
- 10% discount on bus tickets, with more than 1,200 applications processed annually;
- Support to cycle, ranging from loans to bike shares to help with maintenance and training. See our 'Focus on: cycling' page 26 for more information;
- Liftshare car-sharing platform and permits with 450 members and over 40 active car-share teams; and
- Personalised Travel Planning service available to all staff relocating to new buildings.

1,897 CAR PARKING SPACES IN 2014/15, 6% INCREASE FROM 2009/10.

3. Business Travel

Cycling is a particularly important mode with 40% of business trips made from Old Road Campus by bike. Examples of the University's efforts to promote this include:

- Bike-sharing models: Bike sharing is a solution to business travel needs within the city and the University has invested in expanding Oxonbike and hosts four electric bike hire stations. Other models such as the use of smart locks are also being explored.
- Pool bikes and bus passes help staff use sustainable travel modes to travel to and from meetings.

We recognise that the largest source of transport carbon is international travel. The University has appointed a new Travel Management Consultant which will manage all business travel needs, including comprehensive carbon reporting data and reviews to identify measure to achieve carbon savings. We look forward to reporting more on this in the future.

4. Fleet Management and Freight

A programme of exploiting the carbon and cost savings of Ultra Low Emission Vehicles (ULEVs) has started. This envisages the gradual replacement of the 120 strong vehicle fleet with ULEVS at the rate of two or three vehicles a year with rate of adoption expected to increase as the market develops and costs fall. Currently around 5% of the fleet are ULEVS.

The delivery of goods and services by freight operators is a source of local traffic congestion and emissions of carbon and other air pollutants. The University is exploring options for zero-emission last-mile deliveries and delivery consolidation in partnership with colleges and the private sector.

5. Improving Connectivity

Nearly 750,000 business trips are undertaken annually between the University's operations in the centre of Oxford and surrounding areas. To maintain the University's position at the forefront of global learning, the estate will further develop. This development across multiple separate sites, many outside the city centre, generates increased demand to travel which needs to be planned for and met sustainably.

In response to a growing demand to connect the University to the Harwell Science and Innovation Campus, a major centre for scientific research operated by the Science & Technology Facilities Council (STFC) the University launched a new service, the Science Transit Shuttle as availability of sustainable travel options is limited. The service will provide a direct connection to key research facilities and boost academic interaction with business.

A study into Dynamic Responsive Transit is also being undertaken to explore how technology can improve the carbon efficiency of the Science Transit Shuttle and reduce costs.

3,850 CYCLE PARKING SPACES IN 2014/15, 33% INCREASE FROM 2009/10.

FOCUS ON: CYCLING SERVICES

Training: Staff are offered up to six hours of free cycle training, with over 3,000 hours of training delivered since the scheme began in 2003. This ranges from learning to ride a bike and basic bike handling skills through to advanced skills for dealing with challenging traffic situations.

Mobile Mechanic: Free bicycle repairs for staff offered weekly across the estate; an average of 2,750 repairs have been carried out every year since 2003.

Purchasing a bike: An interest-free cycle loan of up to £2,000 and discounts at cycle retailers. Since 2005, more than 1,500 staff have taken advantage of the scheme to buy a cycle.

Self-service: Oxonbikes bike-hire scheme supported by the University. Since its relaunch in June 2014, Oxonbikes has had 9,298 rents with an estimated 28,793 miles cycled. A shared electric bike (e-bike) pilot project launched in May 2016.

Security: Cycle crime has fallen by 40% since Security Services started selling discounted D-locks and lights to staff and students. In the last three years, 3,000 D-locks and lights have been sold.

WHAT WE SAID IN THE LAST REPORT	WHAT WE DID
Review the feasibility of mass cycle storage and cycle share schemes	Oxonbikes, the cycle hire scheme, has expanded with the addition of electric bikes to the service
Review the feasibility of shuttle bus services to join University sites.	Science Transit Shuttle services launched in July 2016 for a one-year trial
Apply for funding for wireless recharge bus stops/ Zero emissions vehicles.	Funding bids were lodged for zero emission buses, the outcome of this bid is pending.
Continue to raise staff awareness and support sustainable travel choices	Ongoing eg Oxonbikes
Continue to work, support and review opportunities in partnership with wider city initiatives.	Ongoing eg Partnered with the County Council in bidding to the Department of Transport Sustainable Travel transition Fund to implement the 'Park and Pedal' project.

WHAT WE WILL DO

- Operate the Science Transit Shuttle to meet accessibility needs and gather the data necessary to assess the future potential to operate as a public transport service.
- Continue to raise staff awareness and support sustainable travel choices.
- Continue to work, support and review opportunities in partnership with wider city initiatives, including external funding bids.
- Improving our understanding of International Business Travel including capturing detailed data on carbon emissions.
- Work towards measures to address freight transport issues.

BIODIVERSITY

Our estate includes a patchwork of extensive, well established and wildlife-rich green spaces including Oxford Parks and Wytham Woods.

We recognised the need for a strategy to support and develop the smaller parcels of green space across the estate and city. We have therefore been developing a biodiversity strategy which is due to be adopted in December 2016. In order to manage the inherent complexity associated with biodiversity the University has developed mechanisms that reflect a very pragmatic approach, starting with better understanding its living campus in order to protect and enhance it.

The University commissioned a Biodiversity Assessment Report which focused on four key sites; Old Road Campus, Begbroke Science Park, Iffley Road Sports Ground, and Radcliffe Observatory Quarter. These sites are in a variety of settings; urban, suburban, and out of town. A plan has been in place for each of these since 2014.

Our strategy identifies four priorities that will be considered for each area:

- **Priority 1** – Protecting existing biodiversity
- **Priority 2** – Enhancing biodiversity where possible
- **Priority 3** – Connecting areas for wildlife
- **Priority 4** – Promoting engagement with biodiversity

WHAT WE SAID IN THE LAST REPORT	WHAT WE DID
Development of the Biodiversity Strategy.	Due to be signed off in Michaelmas 2016.

WHAT WE WILL DO

- Continue to implement the plans and undertake monitoring.
- Carry on expanding engagement through training and workshops.

FOCUS ON: BEGBROKE SCIENCE PARK

Begbroke Science Park was recognised as a key site. A biodiversity plan sets targets for habitats including grassland, woodland, boundary features (for example hedges), ponds, and urban – for example, bird boxes.

In 2014 targets were set for the condition of the grassland in the area. The aim was to improve the habitat to create a new wildflower-rich grassland by sowing with appropriate seed mix and subsequent maintenance. This target met the requirements of priorities 2 and 3.

To support planned works ecological monitoring took place on the site in 2014 and 2015. The survey included recording all plants within ten 2m by 2m quadrats. The 2015 monitoring report made three recommendations:

- Mow grass in April and late August each year, removing cuttings
- Scarify or harrow in winter to reduce fertility and support wild flowers
- Apply seeds in summer to fill in areas which have no growth on a trial patch, and extend if successful

We will be in a position to report on the impact of these recommendations and works in the following report when 2016 monitoring data is available.

WYTHAM WOODS AND UNIVERSITY PARKS

- 3,500 trees across the estate
- 390 hectares covered by Wytham Woods
- 1,160 bird boxes in Wytham Woods
- 680-year-old oak in Wytham Woods
- 200 green spaces maintained
- 6,500 people hold a permit to visit Wytham Woods
- 250 species and varieties of trees in the parks, several of which are vulnerable or endangered in the wild
  300,000 trees in Wytham Woods

WATER MANAGEMENT

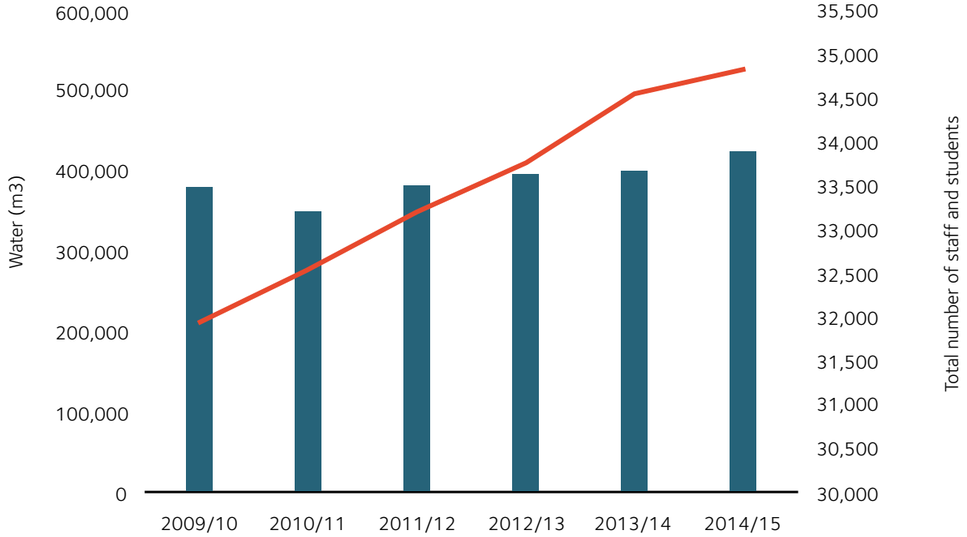
We use water in many activities across the University, from washrooms and kitchenettes to catering and cleaning. Significant amounts of water are also consumed in the large number of laboratories across the University.

The University water target set in 2009/10 was to reduce consumption by 11% by 2014/15 from 2009/10 levels. During this period, total water consumption increased. This increase partly reflects better monitoring and measuring, letting us capture more data. It also stems from a growing estate and rising staff and student numbers.

During 2014/15, the University consumed 424,314m^3 of water. This represents a 6% increase from 2013/14 – equivalent to filling the Sheldonian theatre an additional seven times. Water per internal square metre increased slightly from last year, though it remains 3% lower than in 2009/10. Water per full-time equivalent (student and staff) has been consistently lower than the baseline year 2009/10, with the exception of 2014/15.

The University will continue to implement technologies such as supporting replacement of equipment including replacing evaporators which constantly use water with equipment that recirculates water. Funding is available from the water reduction fund for small or medium-sized projects across the University that will save water, such as installing waterless urinals or replacement of water efficient laboratory equipment. We will also continue to engage staff and students on positive behaviours to reduce water consumption though our Green Impact engagement programme and training workshops.

Water Consumption



WHAT WE SAID IN THE LAST REPORT	WHAT WE DID
Install sub-metering in high consumption areas.	Meters have been installed as part of refurbishment projects.
Seek a partner which can deliver automatic water meter readings for all supplies and an increased availability of data for targeted water management initiatives. Review water consumption during 2015/16 and update the target.	Supplier has been identified and project scopes are being established.
Continue to raise awareness via the Green Impact engagement programme.	Water continues to be included within the programme and uptake across the University is growing.

WHAT WE WILL DO

We will continue to review and implement water-saving opportunities across the estate through equipment replacement, retrofitting and design of capital projects. The University will also continue to assess water-saving opportunities and approaches.

FOCUS ON: RAINWATER HARVESTING

Rainwater harvesting captures rain and uses it for operations such as flushing toilets. Using rainwater for these activities reduces the demand for clean drinking water, which has received energy-intensive treatment. Capturing rainwater can also help reduce localised flooding by attenuating water and reducing peak flows.

Rainwater harvesting has increased by over 1,512% between 2009/10 and 2014/15. Rainwater now accounts for 2.4% of water consumption – a two percentage point increase in six years. In 2016, two further systems were completed, including one within the Blavatnik School of Government (see pages 22-23).

2009/10 1,000m² OF RAINWATER

2014/15 10,347m² OF RAINWATER

MATERIAL RESOURCES

We have over 34,540 students and staff, and tens of thousands of visitors and guests undertaking and supporting world-leading research. Collectively, these operations have the potential for a wide range of products to be purchased and to produce significant volumes of waste.

Sustainable Procurement

Our Purchasing Department delivers the Sustainable Procurement Strategy and is working towards goals within the Flexible Framework. This is a widely used self-assessment mechanism developed by the business-led Sustainable Procurement Task Force, which allows organisations to measure and monitor their progress on sustainable procurement over time. We achieved level four of five in the Flexible Framework in 2015, and are now focusing on strengthening and widening work undertaken before progressing to level five.

We have published 39 impact assessments to help departments embed considerations of sustainability in their decisions. These cover the likely impacts of making particular purchases, as well as opportunities for mitigating negative impacts or taking positive action. To support these we have also trained 123 staff since November 2014 in good tendering practices.

Waste Management

Waste management is an important way the University influences material resources. The University's waste contract for non-hazardous waste relies on micro-chipped bins to accurately weigh bins on collection. The consistency of the contract across the University also supports data capture on recycling and recovery rates. This change in contract has meant that the University has changed the way it calculates its waste; rather than estimating all data, we now have accurate data for the majority of materials.

It has also caused us to review the routes of waste disposal. This means that the data as recorded by Estates Management Record (EMR) has significant fluctuations making it hard to accurately compare progress year-on-year. However, in 2014/15 the University recycled or recovered 74% of the waste it produced by weight via the main non-hazardous waste contract.

As well as recycling and recovering waste, the University is also working to reduce waste production through reuse. The University has a reuse platform (WARPit) through which University resources can be shared.

2014/15
200 STAFF
USING WARPit

£10,000
ESTIMATED SAVINGS FROM REUSE

2015/16
500 STAFF
USING WARPit

£50,000
ESTIMATED SAVINGS FROM REUSE

WHAT WE SAID IN THE LAST REPORT	WHAT WE DID
The Purchasing Department now aims to achieve the final level of the Flexible Framework, level five (lead).	We have made a decision to focus efforts on further strengthening and widening work undertaken during levels one to four, prior to moving to level five.
Work with suppliers to improve the University's electronic purchasing system to enable more sustainable product options to be flagged to devolved purchasers.	Work has continued in this area – for example, paper with environmentally beneficial properties such as recycled content are labelled as 'green items'.
Continue to implement the Waste Plan and Strategy and the Sustainable Procurement Strategy. Set waste and reuse targets for the University.	The waste plan and strategy has been further implemented, with an increase in food recycling and reuse of materials. A target has been postponed as the Waste Strategy will be reviewed in 2016/17, allowing for targets and strategies to align.

WHAT WE WILL DO

Deliver the 2016/17 sustainable procurement plan and review the University's waste strategy to set long term targets. Continue to identify and develop opportunities for reuse and low-impact disposal routes for problem materials and continually support those making purchasing decision to include sustainability considerations.

FOCUS ON: FOOD

Incredible Edible

Oxford University's Student Union's Vice-President for Charities and Communities launched an 'Incredible Edible' trial vegetable and herb plot. The plot has been created outside Earth Sciences in 2016. This is maintained by staff and students and grown for sharing; if successful, it will be repeated at other sites. People will then be free to pick and take freshly grown produce as they please.

Food Waste

The University has a food waste collection, with around 100 food waste bins collected from each month. Food waste is recovered via anaerobic digestion. Waste is broken down by bacteria, creating a gas which is used to create electricity, the food waste is further broken down into liquid digestate which is used help grow crops. In 2014/15, digestion of food waste increased from an estimated 7 tonnes to 56 tonnes as the new service embedded.

Sustainable Food policy

In early 2017 the University is set to launch its first ever Sustainable Food Policy, developed during 2016. This aims to ensure that purchasing and production of food at the University of Oxford fits closely with and supports the Environmental Sustainability Policy and Sustainable Purchasing Strategy. This Sustainable Food Policy considers three key areas that relate to University-owned shops and cafes; purchasing, on-site food production and communication of information. Progress against the policy will be reported on annually.

COMMUNICATION AND ENGAGEMENT

Departments and teams across the University carry out extensive work on community engagement and knowledge sharing. This report focuses on engagement works conducted by the Environmental Sustainability team within Estates Services. All data in this section comes from 2015/16.

Engagement is a key part of work around sustainability at the University. Since 2013/14 the University has run two key engagement programmes; Green Impact, and Student Switch Off. These have been joined by the Carbon Innovation Programme in 2015/16; this was recognised with an international award. All three programmes are planned to run in 2016/17, joined by Living Lab (see page 39).

Around this core, there is also a growing programme of training and events for students and staff; some are available to the public as well. The team delivered 999 hours of staff and student training.

FOCUS ON: MATERIALS MILLY

The Department of Materials has taken part in Green Impact for three years with great success, receiving several Gold awards so far.

The team is made up of a mix of staff and students, some of whom work in laboratories, resulting in a varied set of environments in which to engage building users. The department has successfully drawn on the talents of their staff to develop an innovative way to communicate sustainability messages to multiple audiences in an engaging way.

The project

Materials Milly – a fun and sustainable mascot – was created using recycled or second hand materials, in order to promote the sustainability messages that the department's Green Impact Committee wanted to get across to its staff.

Milly was designed to appeal to everyone; one of her outfits is a fetching lab coat (made from an old apron). However, as Milly tours the department, her coat can easily be removed to help her feel at home when she isn't in a laboratory.

Outcomes

Milly has proved extremely useful to the Green Impact team in promoting various sustainability messages throughout the year. For instance, in summer she featured in the departmental newsletter, encouraging people to avoid using air-conditioning.

Milly has been well received in the department:

'Milly also managed to put a bit of science behind instinctive notions like cooling pulse points to cool the body.'

'I think Milly is a brilliant idea. She's the right sort of common-sense reminder to get people thinking and has passed on information of the sort not readily found when one is new to MPLS'.

'Long may she continue (new students & post-docs are arriving every year).'

'Milly is adorable!'

COMMUNICATION

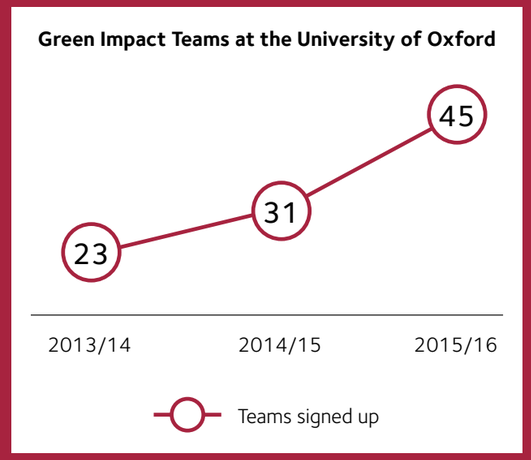
Central environmental sustainability information is communicated in a number of ways to all our stakeholders.

STAKEHOLDER	METHOD OF ENGAGEMENT/COMMUNICATION
Undergraduate and Graduate Students	• Student Switch Off, Green Impact, Carbon Innovation Programme and Living Lab • Representation at Environment and Ethics Reps meeting • OUSU membership to Sustainability Steering Group • Sustainability Student mailing list • Social media • Student Gateway • University website • Fairs, events and training
Staff	• Green Impact, WARPit, Carbon Innovation Programme and Living Lab • Sustainability Staff mailing list • News including staff news and Estate's news • University Website • Annual Sustainability Showcase • Forums and conferences • Social media • Presentations and training • Meetings and groups
Local Community	• Walks and talks • Low Carbon Oxford week: The Big Green Treasure Hunt • Social media • Group/meeting memberships • Website
International Community	• Social media • Group/meeting memberships • Website • Case studies • Articles
Higher Education Sector	• Social media • Group/meeting memberships • Website • Case studies • Articles
Alumni	• Social Media • Website

GREEN IMPACT

Green Impact is an environmental accreditation scheme that brings together staff and students across the University to make their office, building or department more sustainable. At the end of the year – joined by the Vice-Chancellor – teams, students and management come together to celebrate the part they have played in changing things for the better at the University.

Green Impact is open to teams of all sizes, across the University – any office, building, department, laboratory or college can participate.



Green Impact – 2015/16

- 3,282 actions were completed
- 45 Green Impact teams were registered
- 42 students received training including project assistant and auditing training
- 50+ Awards were handed out

STUDENT SWITCH OFF

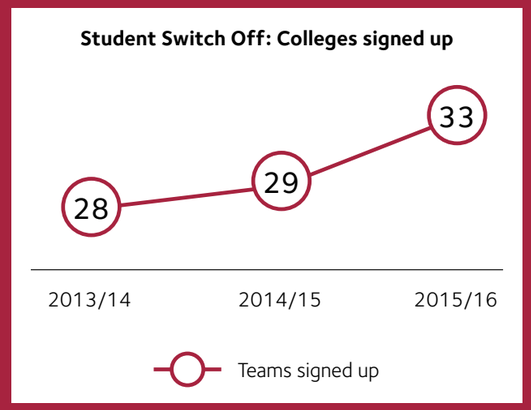
Student Switch Off is an energy-saving competition between Oxford colleges. Developed by National Union of Students, it is peer-to-peer-led and looks to embed positive behaviours in students with a few key energy saving messages.

Thirty-three Oxford colleges took part in the Student Switch Off competition in 2014/15, and once again the number of students who engaged with the programme was the highest in the country. This year 1,872 students (10.6% of those in participating colleges) pledged their support for Student Switch Off via face-to-face engagement, Facebook, online quizzes and email.

Oxford led the way with students submitting over 200 photographs for the Student Switch-Off photo competition. These pictures showed students taking small energy-saving actions an online gallery of these photographs is available here.

Colleges were recognised for running events which included a Blackout Bop at Jesus College, Fairtrade events at Lady Margaret Hall, a meat-free formal at Trinity College and a Charity formal at Worcester College. The overall winner of the 2016 Student Switch Off Award, presented at the Sustainability Showcase, was St Peter's College.

In 2016/17 the University will be integrating recycling challenges into this competition.



Student Switch Off – 2015/16

- 1,817 students pledged to save energy
- 7,773* people on the University's Facebook fanpage.
- 5,410* climate change quiz entrants
- 221* energy-saving photos submitted by students over the year.
- 84* attended ambassador training sessions

* = best in the country

CARBON INNOVATION PROGRAMME

Our Carbon Innovation Programme launched at the start of 2015/16 and is an exciting opportunity for staff and students to develop innovative ideas. Multi-disciplinary groups create proposals to reduce carbon emissions; they then develop a business case and present it to a panel of judges. If successful, they receive funding to implement their ideas on the University's functional estate.

One of the winning ideas from 2015/16 that is now being applied is an innovative plan aimed at reducing energy use by fume cupboards, by ensuring fan speeds respond to external wind speeds. An initial feasibility assessment for the Chemical Research Laboratory estimated that the potential energy savings from converting the laboratory exhaust system to variable controls based on wind speed could be of the order of £40,000 per a year and 189 tonnes of carbon per year.

The Carbon Innovation Programme was developed as a partnership with the Environmental Sustainability team within Estates Services, the Environmental Change Institute and New Energy Systems Thinkers, an interdisciplinary postgraduate programme.

The programme won this year's International Sustainable Campus Network Excellence Awards in the Innovative Collaboration category. It was selected as an outstanding example of 'excellence in the integration of sustainability-focused projects with the core education and research mission of the institution'.

The Carbon Innovation programme will run again in 2016/17.

LIVING LABORATORY

The University of Oxford has created and filled a post to develop a Living Lab within the University to:

(1) support the University's transition toward a sustainable, resilient and low-carbon campus;
(2) facilitate world-class research;
(3) guide and improve practice, and;
(4) enhance real-world learning.

The aim is to build on the strength of existing research, as well as the opportunities presented in the delivery of carbon reduction projects, to transform the campus into a test bed for innovation. A number of target areas and projects have been identified for funding via the carbon management programme and the Living Lab is working alongside these to create and support a research plan that deeply embeds sustainability across the University.

The Living Lab fosters cross-disciplinary collaboration, incorporating researchers, students, and facilities managers, working together with Estates Services to deliver its vision. The Living Lab will look to build a framework to support cross-departmental learning and improvement to the University's carbon reduction initiatives, demonstrate how to achieve (and surpass) carbon reduction targets in a cost-effective manner, further embed sustainability into the culture of the University and act as a resource for inspiring related teaching and research. The Living Lab concept will also contribute to and shape future research and policy in the field of energy and sustainability.

The Living Lab supported by the John Fell fund will help the University achieve its goal of doing world-leading research while supporting innovation that moves it towards its carbon reduction target (see page 16).

SUSTAINABILITY SHOWCASE

THE MANY FACES OF ENVIRONMENTAL SUSTAINABILITY AT THE UNIVERSITY OF OXFORD

Staff and students across the University support environmental sustainability. Below you can meet just a small handful of those making positive changes.

Emily Silcock, OUSU Vice President Charities and Communities

This year OUSU has worked hard on co-ordinating and expanding work on sustainability through its Environmental and Ethics Campaign. Emily Silcock, OUSU's Vice-President of Charities and Community, introduced termly meet-up for college Environment and Ethics reps so they could exchange ideas and collaborate on projects. OUSU ran a successful month of #VeggiePledge in November 2015, in which over 700 Oxford engaged. OUSU has also set up an their first vegetable patch outside the Earth Sciences building (see page 34).

In collaboration with Just Love Oxford and ISoc, the OUSU continues to run end-of-term clearouts. The work OUSU has been doing was recognised by the NUS with a Gold Green Impact award, of which OUSU is very proud.

Joanna Soedring, Social Science Library
Green Impact Staff Award

Joanna has been the driving force behind the Social Science Library's (SSL) Green Team over the past two years. She organises and chairs all the department's Green Team meetings, and provides advice and assistance on all aspects of greening the SSL. Her enthusiasm for green issues is infectious, and is reflected in the success of the SSL Green Team. SSL staff are now both aware of their environmental impact and taking positive steps to reduce it. The continued efforts of Joanna and the team were rewarded with Gold in 2015/16.

Lim Li Jun, IARU intern, University of Singapore

This summer, the University of Oxford and National University of Singapore exchanged a student from each university for a six-week internship through the International Alliance of Research Universities (IARU). Lim Li Jun worked with the Environmental Sustainability team at Oxford. It has been wonderful meeting people from various departments, and a rewarding experience working on a number of projects – from assisting the transport team in implementing the new pool bike system which uses a smart lock instead of conventional locks, supporting the launch of the Science Transit Shuttle and reviewing the use of guidelines and best practice documents to support the University's ongoing work. The internship has allowed me to gain knowledge and support the exchange of knowledge between the two universities.

Joanna Trewern, School of Geography
Green Impact Student Award

Joanna received the Green Impact student award in 2015/16 for her dedication and enthusiasm, singlehandedly establishing a Green Impact team within the School of Geography and the Environment this year. She has worked hard to engage staff strategically, encouraging gradual change and embedding Green Impact across the School. As a direct result of her efforts, the team are now up and running. The team received a Bronze award this year, and are set to continue to progress in future.

Joanna has kept up the forward momentum, and as she finishes her time at Oxford she has already arranged for others to take over, proving how much she cares about this process and the environment in general.

MEET THE ENVIRONMENTAL SUSTAINABILITY TEAM

Harriet Waters
Head of Environmental Sustainability

Harriet is responsible for long-term planning and direction of environmental sustainability at the University of Oxford, and oversees the delivery of the wide range of strategies and services implemented by the Environmental Sustainability team. Harriet also provides advice and support to departments across the University.

Vacant
Deputy Energy Manager

The Deputy Energy Manager is responsible for energy procurement, energy and carbon saving, energy analysis, energy compliance and water saving, with a key focus on monitoring energy use and delivering bespoke energy saving measures across the University's diverse estate.

Lucinda Lay
Carbon Reduction Programme Manager

Lucinda is responsible for delivering the Carbon Reduction Programme and coordinating the work of project managers and contractors and the multiple cross-functional projects that contribute towards the University's 33% carbon reduction target and Carbon Management Strategy.

Alan Wood
Energy Manager

Alan manages the Energy team, which is responsible for managing the electricity, gas and water supplies to University buildings and departments, ensuring a secure energy supply, and identifying energy and carbon saving projects. The team also supports new supply points for new buildings and major refurbishments and ensures the University is legally compliant in respect of the European Union Emissions Trading Scheme, Carbon Reduction Commitment and the Energy Saving Opportunities Scheme.

Andrea Isham
Energy Efficiency Assistant

Andrea collates utility company billing data (gas, electricity and water) for checking, filing, reporting and analysis. Andrea also solves billing and payment issues with end customers and utility companies, recharges utility bills between departments, and provides historical billing data.

Dr Rebecca Ford
Researcher and Programme Manager

Dr Rebecca Ford is a researcher in Energy at the Environmental Change Institute, where she manages the Oxford Martin Programme on Integrating Renewable Energy. Rebecca also leads the University's Living Lab initiative, which is supporting the reduction of carbon emissions by the University by 33% by 2020.

Tom Heel
Sustainable Buildings Officer

Tom drives sustainable building opportunities within the extensive University construction programme, advising capital project design teams and other Estates Services colleagues on compliance with University policies including relevant Philosophy Documents. Tom also ensures that projects are innovative and guided by industry best practice.

Ed Wigzell
Travel Officer

Ed supports the delivery of sustainable transport initiatives for University staff and students. He aims to encourage the use of energy-efficient public and communal transport, bicycles and walking, and to discourage unnecessary use of private motor transport. His work involves conducting travel surveys, developing staff and student travel benefit schemes, and liaising with local authorities and large employers in the area.

Rachel Purdon
Environmental Sustainability Projects Assistant

Rachel supports the delivery of Green Impact and Student Switch Off schemes as well as working to develop and extend the engagement and outreach of the team through events and training for staff and students and via social media. Rachel also helps support the implementation of the Environmental Management System.

Adam Bows
Sustainable Transport Manager

Adam provides direction and advice in relation to all aspects of the University's transport needs. Working with the Travel Officer, Adam is responsible for leading the implementation of the University's Transport Strategy, which aims to enable efficient operation of the functional estate whilst reducing the traffic congestion, air pollution and carbon emissions associated with the commuting and business travel needs of our staff and students.

Jennifer Jack
Environmental Sustainability Projects Manager

There are three main parts to Jennifer's role: engagement and behaviour change, delivered primarily through the Green Impact and Student Switch Off schemes; the development and growth of the Environmental Management System; and working closely with other teams on non-hazardous waste management.

Lucy Smith
Team Administrator

Lucy supports the team in all aspects of delivering their diverse work. She leads on coordinating certification to Customer Service Excellence and, outside of the team, supports the wider Business Management agenda of Estates Services.

SECTOR PRESENCE

The University is a member of, and reports to or meets regularly with, international, national, regional and local organisations to help promote sustainability and to share best practice. Some examples of these groups are listed below.

Local

The Oxford Academic Health Science Network (AHSN)
Oxford Strategic Partnership (OSP)
Oxford Green and Blue Space Network OGBSN
Environmental Change Institute (ECI)
Oxford University Students Union (OUSU)
OxfordHub (Oxhub)
Low Carbon Oxford (LCO)

National/Regional

The Southern Universities Purchasing Consortium (SUPC)
Sustainable Exhibitions for Museums (SEFM)
National Union of Students (NUS)
Association of University Directors of Estates (AUDE)
Environmental Association of Universities and Colleges (EAUC)
The Association of University Engineers (AUE)
Fit for the Future

International

International Association of Research Universities (IARU)
International Sustainability Campus Network (ISCN)

THE INTERNATIONAL SUSTAINABILITY CAMPUS NETWORK REPORT

The International Sustainability Campus Network (ISCN) is a network of universities and colleges which have signed up to the ISCN charter.

Its mission statement is:

"To provide a global forum to support leading colleges, universities, and corporate campuses in the exchange of information, ideas, and best practices for achieving sustainable campus operations and integrating sustainability in research and teaching."

ISCN members come from all over the world and share sustainability goals and performance indicators in their ISCN-GULF Charter Reports. They also report on three principles:

Principle 1: Sustainable Performance of Buildings on Campus

Further information on how the University of Oxford meets this principle can be found within this report in the following sections:

- Carbon and energy (pages 16-17)
- Sustainable buildings (pages 19-21)
- Transport (pages 24-25)
- Biodiversity (pages 28-29)
- Water Management (pages 30-31)
- Material Resources (pages 32-33)
- Communication and engagement (pages 36-37)

Principle 2: Campus-wide Master Planning and Target

Further information on how the University of Oxford meets this principle can be found within this report in the following sections:

- Our commitments (page 8)
- Overview (pages 14-15)

Principle 3: Integration of Facilities, Research, and Education

Further information on how the University of Oxford meets this principle can be found within this report in the following sections:

- Communication and engagement(pages 36-37)
- Sector Presence (page 46)

DATA SUMMARY

Topics	Priority Topics	Objectives & Targets	2009 / 2010	2013 / 2014	2014/2015
Principle 1					
Resource use	Water Consumption (m^3)	Reduce water use by 11% by 2015 compared to 2009/2010 levels	379,560 11.9 m^3 per person per year	399,374* (+5 from 2009/10) 12 m^3 per person per year	424,314* (+12% from 2009/10) 13.6 m^3 per person per year
	Rain/Grey Water	See related Water Consumption target	1000	994 (-1% from 2009/10)	10,347 (+3.5% from 2009/10)
	Electricity (kWh)	See related Carbon Target	110,752,829 195 kWh/m^2	114,878,816 (+3.7% from 2009/10) 177 kWh/m^2	105,566,874 (-5% from 2009/10) 162 kWh/m^2
	Gas (kWh)		99,013,026 175 kWh/m^2	89,511,456 (-9% from 2009/10) 134 kWh/m^2	98,121,578 (-1% from 2009/10) 151 kWh/m^2
	Oil (kWh)		540,607 0.9 kWh/m^2	283,505 (-47.56% from 2009/10) 0.4 kWh/m^2	350,402 (-35% from 2009/10) 0.5 kWh/m^2
	Total energy generated (renewables and CHP)		3,500	3,986,746 (+113,807% from 2009/10)	5,347,191 (+152,677 from 2009/10)
	Vehicles (litres)	See related Transport objectives.	213,000	244,331 (+15% from 2009/10)	102,770 (-52% from 2009/10)*
	Procurement Stages of the Flexible Framework	To plan and deliver the Sustainable Procurement objectives, as laid out in the Sustainable Purchasing Policy, by 2017.	Not reported	Achieved Level 4 in December 2014	Continued embedding and communication of Level 4

DATA SUMMARY CONTINUED

Topics	Priority Topics	Objectives & Targets	2009 / 2010	2013 / 2014	2014/2015
Waste, Recycling, Local Emissions, and Non-compliance	Total waste produced (tonnes)	Implement waste strategy and create and deliver a waste plan. Develop and implement a reuse platform for the University.	1,723 (23% Recycling Rate)	4,329 (34% Recycling Rate)*	3,474 (28.50% Recycling Rate)*
Building Design Aspects	Sustainable Building Standards	Sustainable Building Standards Building Projects over £1m to target points equivalent to BREEAM Excellent Pilot a low carbon design.	NIL	1 BREEAM Excellent rating – Andrew Wiles Building	1 BREEAM Excellent rating – Blavatnik School of Government
Principle 2					
Institution-wide Carbon Targets and Related Achievements	Carbon Emissions (tCO2)e	Medium Term: Reduce carbon emissions by 11% below the 2005/6 baseline by 2015/16 Long Term: Reduce carbon emissions by 33% below the 2005/6 baseline by 2020/21 Implement the Carbon Management Programme	81,000 (+23% from 2005/6) 143 kg CO2e per m^2	74,518 (+12% from 2005/6) 114 kg CO2e per m^2	67,806 (+3% from 2005/6) 104 kg CO2e per m^2
Food	Sustainable Food	Formalise a Food Policy.	Not recorded	The Sustainable Food policy drafted	Sustainable food policy developed, to be finalized in 15/16 and launched in 16/17

DATA SUMMARY CONTINUED

Topics	Priority Topics	Objectives & Targets	2009 / 2010	2013 / 2014	2014/2015
Land-use and Biodiversity	Biodiversity	Formalise the Biodiversity Strategy	Not recorded	The Biodiversity strategy drafted	Biodiversity strategy developed, to be finalized in 15/16 and launched in 16/17
Transport	Sustainable travel	Review strategy and set objectives and targets to increase the sustainability of business travel	2,900 cycle spaces	3,700 cycle spaces (+28 % from 2009/10)	3,850 cycle spaces (+33% from 2009/10)
Principle 3					
Commitments and resources for campus sustainability	Environmental Management	Certify an Environmental Management System and increase the scope reach	Not recorded	Further developed	6 University buildings accredited to ISO14001:2004
Commitments and resources for campus sustainability	Green Impact	To run Green Impact and sign up 40 teams	Not recorded	23 departments participated with the first annual awards	31 teams participated across departments and colleges
Commitments and resources for campus sustainability	Student Switch Off	To run Student Switch Off and sign up 28 colleges	Not recorded	28 colleges took part in Student Switch Off	29 colleges took part in Student Switch Off

For more information, contact the Environmental Sustainability team.

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