

# University of Oxford

## Environmental Sustainability Report

### 2019-2020



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## Contents

Forward by Harriet Waters.....	3
Introduction.....	4
Structure of this report.....	5
Overview.....	6
The Team.....	7
Environmental Sustainability Performance in numbers .....	8
The Environmental Impacts of Covid-19.....	8
Environmental Sustainability Strategy development .....	9
Implementation of environmental sustainability policy .....	10
Energy and Carbon.....	10
<b>Resource Management</b> .....	14
Water.....	14
Waste.....	15
Warp it.....	16
<b>Travel</b> .....	17
Demand Management.....	17
Sustainable Commuting .....	17
Business Travel.....	17
Fleet Management and Freight.....	18
Improving Connectivity.....	18
<b>Biodiversity</b> .....	20
<b>Sustainable Food</b> .....	22
Engagement .....	24
Green Impact.....	24
Student Switch Off - SSO.....	25
Awareness and outreach .....	25
Cooperation with Oxford SU and students.....	26
Spotlight on carbon reduction by development and refurbishment .....	27
Spotlight on sustainable laboratories.....	28
Case Study: Ultra-low temperature freezers – Cutting emissions by replacing inefficient equipment .....	29
Conclusions.....	31

## Forward by Harriet Waters

Before we got here, 2020 was billed as a super year for sustainability with international level negotiations planned for biodiversity and climate change. Due to the COVID 19 pandemic, these discussions have been put on hold but the issues remain and have been clearly illustrated by the extreme weather and worrying species decline that has happened over the year. The public demand for change is as strong as ever with a desire to use lessons learned during the pandemic to move to a more sustainable 'normal'.

We have experienced some amazing changes. Remote working has really tested our resilience and ability to change, we have coped without flights and used much less paper. Many of us will also make more sustainable changes to our home life. In the background, the environmental sustainability team have been working with an impressive group of academics and colleagues across the University to develop the University's first ever sustainability strategy. The working group is chaired by Dr David Prout, PVC for Planning and Resource Allocation. The comprehensive strategy will set ambitious, bold targets and set out the University approach to sustainability for the coming years.

This year, perhaps more than any other, we have been hugely impressed by the amount of support, challenge and enthusiasm we have had from the University community. Collaboration like this is the lynchpin of our strategy. I'm very excited to see what kind of a step change the clearly expressed sustainability goals of the University will make over the next five years. I hope you will be a part of that change.

Harriet Waters

Head of Environmental Sustainability

Estates Services, University of Oxford

## Introduction

This report reviews the environmental sustainability work of the University of Oxford over the period August 2019 to June 2020.

The report focuses on the University's functional estate – the buildings that are used for its day-to-day activities. It includes all the buildings and facilities that either support or directly deliver research or educational services to the University, such as specialist research buildings, teaching laboratories, lecture halls, sports facilities, libraries, museums, offices and ceremonial buildings.

The quantitative data in this report is extracted from the published Estates Management Record return for 2018/19 from the Higher Education Statistics Agency where appropriate. The report does not cover the operations or buildings of the colleges or of Oxford University Press, 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 the way we communicate our environmental sustainability performance.

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## Structure of this report

The Environment Sustainability team at the University has established a range of policies and projects which tackle an array of sustainability issues. The chapters of this report provide an overview of progress in the main areas covered by the environmental sustainability team, up to July 2020.

The following illustration lists the issues the team covers through setting policy and active projects:

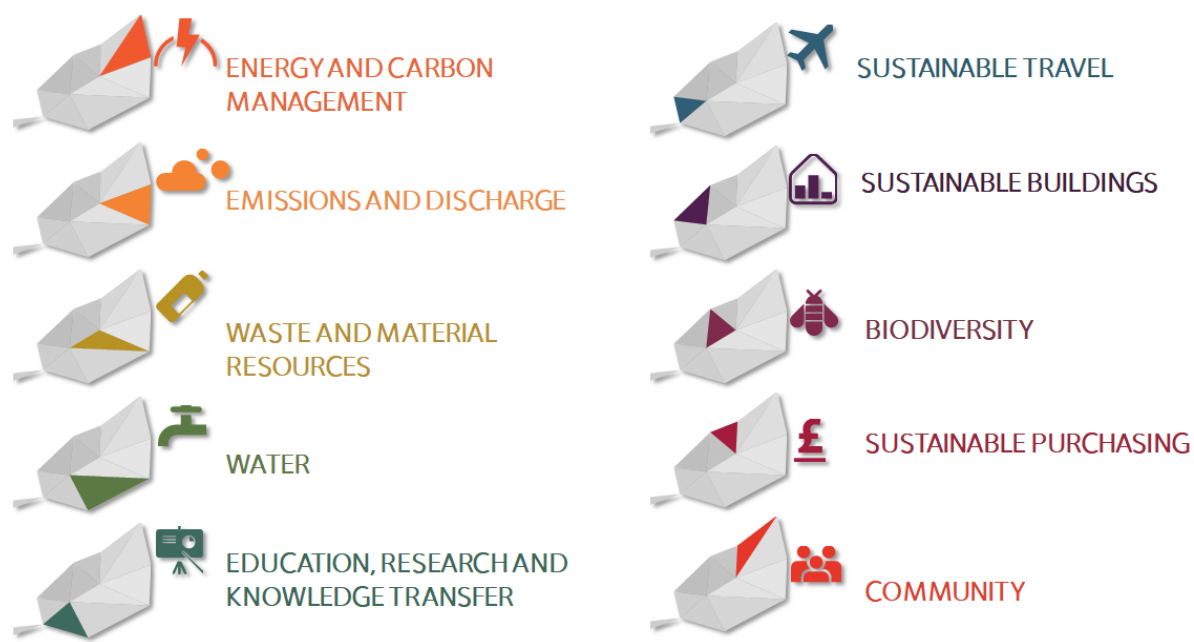


Figure 1 - List of issues within the remit of the Environmental Sustainability team.

The report will relate to the following fields of activity:

- **Energy and carbon:** encouraging energy-efficient practices and investing in the University estate to reduce carbon emissions.
- **Resource Management:** encouraging prevention and reduction of waste and reuse of resources before recycling or disposal, as well as reduction of water consumption through monitoring and introduction of water-efficient practices and technologies.
- **Travel:** reducing emissions from commuting and University-owned vehicles.
- **Biodiversity:** enhancing wildlife habitat on University-owned land wherever possible and supporting broader initiatives as appropriate.
- **Sustainable food:** addressing all aspects of sustainable food production and consumption throughout the University's catering and hospitality services.
- **Engagement:** raising awareness of environmental sustainability issues and promoting behaviour change among staff and students.

The report also highlights activities to promote sustainable laboratory practices and carbon reduction by development and refurbishment, as examples of the comprehensive work that is done on these fields.

## Overview

2019–20 was characterised by a new sense of urgency around environmental issues. Oxford University Press declared "Climate emergency" as word of the year for 2019. The Extinction Rebellion movement burst onto the mainstream with a series of civil disobedience activities intended to compel government action. Swedish schoolgirl Greta Thunberg started an international *#FridaysForFuture* movement, with young people in 150 countries taking part in weekly strikes to demand stronger climate policies. Public interest in the UK soared, with the proportion of people saying they are "very" or "fairly" concerned about climate change reaching 80% in March 2019, the highest since 2008.<sup>1</sup>

In Oxford, students and staff also demanded rapid change. City Council members unanimously declared a climate emergency and, in April 2019, set a target to reduce the Council's net emissions to zero by the end of 2020.

In her annual oration, Vice-Chancellor Professor Louise Richardson addressed the challenges the climate crisis poses for the University as a world-leading institution: "At an institutional level, we can examine our own practices and targets and ask if they are enough... Personally, I am not convinced that they are".

While she acknowledged the work already being done, the Vice-Chancellor called for a detailed ambitious sustainability policy to be developed for the University..

This announcement was the beginning of a process designed to create a strategy to enable the University to do better. More about the strategy development process and its interim results will appear later in the report.

The strategic planning work built on a commitment made in early 2019 to reduce carbon emissions by half by 2030. This announcement was followed by an internal campaign during the first half of the 2019–2020 academic year and engaged all parts of the University.

Since March 2020, the global effects of the Covid-19 pandemic have dominated the agenda, transforming how the University operates. The pandemic affected the work of the University during Trinity and Hilary terms. Facilities were closed from March 2020 onwards. However, the core work of the University continued through remote work and teaching. The financial consequences of the pandemic were not fully understood while writing this report.

### University of Oxford in numbers

The University of Oxford hosted 24,299 students in the 2019–2020 academic year, and 14,478 staff members.

More than £100 million per year is spent on major building projects with the intention to invest £2 billion in the University estate over the next decade.

The University, along with the colleges and OUP, is the largest employer in Oxford and plays a major role in local economy.

Source of data <https://www.ox.ac.uk/about/facts-and-figures> , accessed July 2020

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<sup>1</sup> Guest post: Polls reveal surge in concern in UK about climate change, Carbon Brief website, accessed May 2019

## The Team

The Environmental Sustainability team sits within Estates Services, one of the University's central administrative departments. The following figure presents the team's structure and fields of responsibility.

### ENVIRONMENTAL SUSTAINABILITY

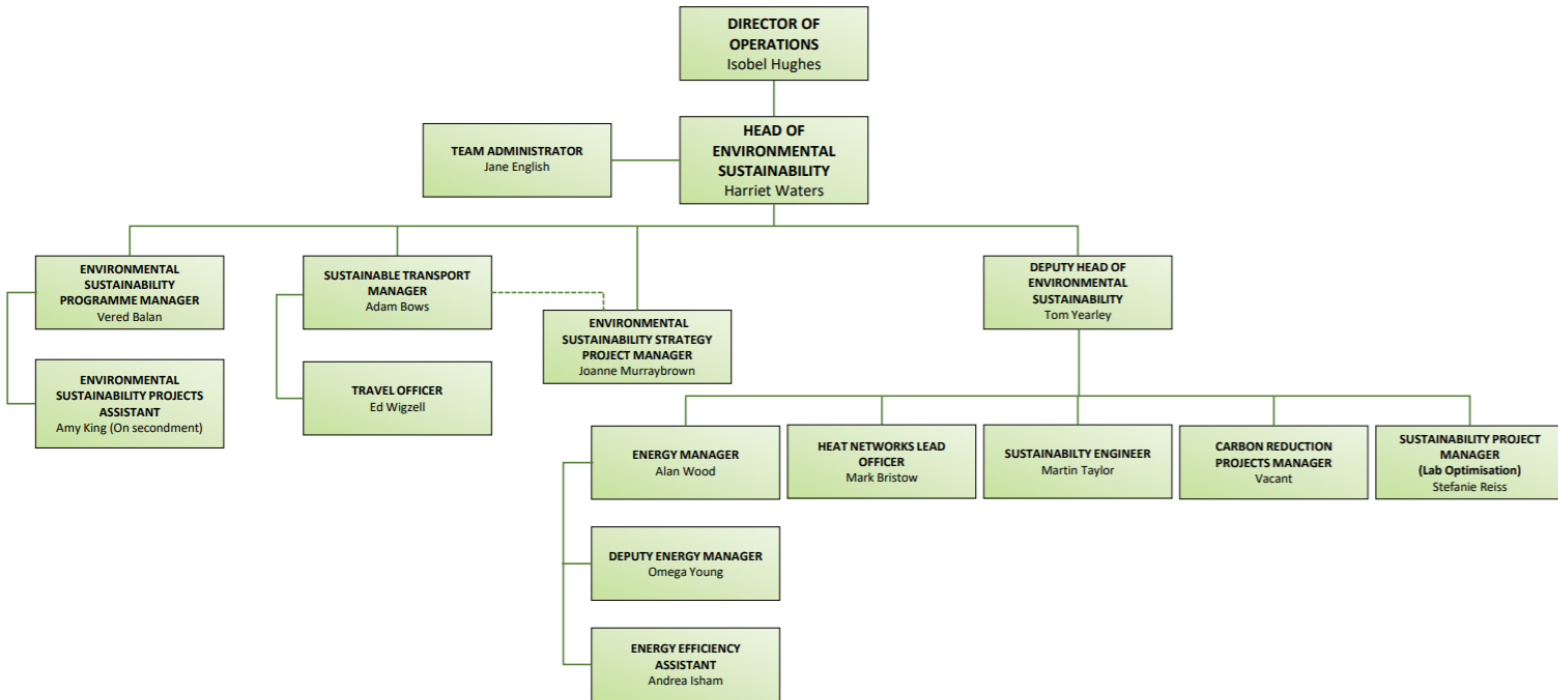


Figure 2 - Structure and fields of responsibility of the Environmental Sustainability team.

Other parts of Estates Services support the implementation of the Environmental Sustainability policy, in areas including:

- Manage the main catering contract and environmental sustainability requirements in food management.
- Protect and enhance biodiversity on University estates.
- Implement environmentally sustainable procurement policy and offer training and guidance to University stakeholders.
- Invest in infrastructure for transport and energy efficiency.
- Planning and implementation of environmental sustainability standards for capital projects
- Operating waste management contracts and hazardous waste operation.

## Environmental Sustainability Performance in numbers

- ❖ Total Carbon emissions 48,970 tonnes carbon equivalent, scope 1 & 2
  - A reduction of 26% compared to the 05/06 baseline and 40% against our peak emissions during 2009/10.
- ❖ 27% of staff use public transport for commuting, 44% cycle or walk to work
- ❖ 2,334 tonnes of non-residential waste mass generated,
  - a decrease of 3.5% compared to previous year.
- ❖ 687,843kWh photovoltaic energy generated on site
  - A 50% increase, but still less than 1% of our electricity use.
- ❖ 983 car parking spaces offered to University staff
  - A decrease of 75% from the previous year.
- ❖ 1,106 tonnes of waste recycled, 1,238 tonnes incinerated for energy generation.
  - No general waste goes to landfill.
- ❖ 100% of electricity is purchased through green tariffs from renewable sources.
- ❖ 4,669 cycle parking spaces.
- ❖ £972,737 invested in energy efficiency.
- ❖ 52 pieces of laboratory equipment were replaced with new energy-efficient models.
- ❖ 26 teams were awarded for their Green Impact activities.

Source: Estates Management Record return for 2018/19 from the Higher Education Statistics Agency

## The Environmental Impacts of Covid-19

Following dramatic changes in the operation of the University during Covid-19 pandemic, the Environmental Sustainability team conducted a small survey to quantify environmental consequences of the lockdown. The following infographics present some preliminary results:

Nationally:

- ❖ Air pollution dropped by 59% across Oxford. This represents a greater percentage decrease than that seen in cities like London, Birmingham and Glasgow.
- ❖ We halved our car usage in May, while cycle usage doubled.

Across Oxford University:

- ❖ We saved 7,462,130 sheets of paper in April-May 2020. That represents 93% decrease in paper use over lockdown.
- ❖ The reduction in flights had lowered our carbon emission by 7,500 tonnes. That is the equivalent of flying around the world three and a half times.
- ❖ We went from holding 22 meetings a day on Teams during February to 3,424 during May.
- ❖ We sent 1,671,552 private chat messages in May, compared to 139,039 sent in February.



## Environmental Sustainability Strategy development

The University Vice-Chancellor's announcement of an ambitious new direction on environmental sustainability was the start of a process designed to create a strategy to enable the University of Oxford to do better. A group of leading academics and staff took the first steps towards an answer at a roundtable in November 2019. This discussion has continued through the formation of the Environmental Sustainability Strategy Working Group, chaired by Dr David Prout, Pro-Vice-Chancellor (Planning and Resources). These discussions resulted in the early drafts of a new strategy that will push the University policies to go further and do better on sustainability.

The initial draft was published in March 2020 and was open for consultation. The consultation aimed to stimulate debate across the University about ambitious action for the short, medium and long term. The goal was for the University to reduce its environmental impact, become a global leader in sustainability, and ultimately reach net zero carbon emissions and net biodiversity gain.

The Environmental Sustainability Strategy Consultation survey asked University staff and students: 'Are we doing enough?'

Around 1,000 responses were received made up of 53% Staff, 47% Students.

Overall the consultation revealed high levels of support from staff and students for the priorities and measures that were suggested. Participants urged the University to commit to do more and sooner. Figure 3 demonstrate the responses for each of the measures that were suggested.

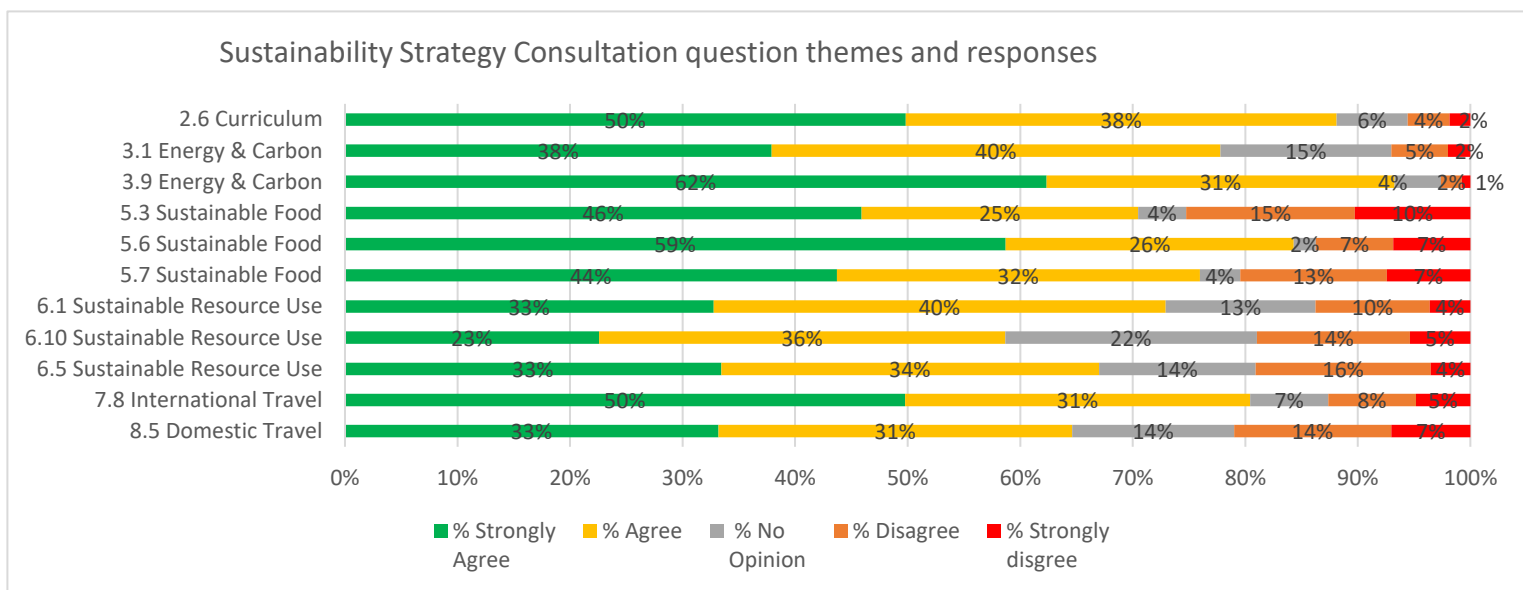


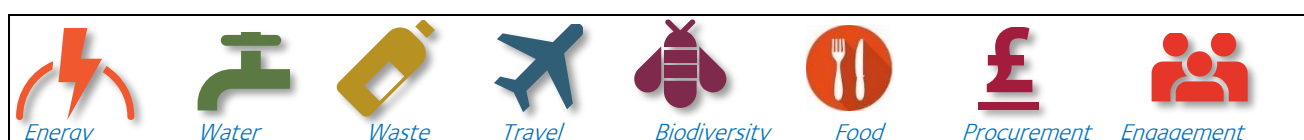
Figure 3: levels of support from staff and students for the priorities and measures that were suggested

A second consultation will take place in autumn 2020 to gain feedback on the draft strategy. The revised strategy incorporating the feedback from the consultation will be presented to the relevant committees and Council for approval at the beginning of 2021.

Figure 4 - Strategy Development Process and timeline



## Implementation of environmental sustainability policy



### Energy and Carbon

We face a growing threat of irreversible damage from a changing climate and urgently need to reduce emissions. The University has a long-standing commitment to reducing greenhouse gas emissions (referred to hereafter as carbon emissions) across all of its activities.

The University estate is one of the most significant energy users in Oxford. This means there are substantial opportunities to reduce the energy consumption and the carbon footprint of current and future buildings. The University has been working with many stakeholder groups to create targets and detailed delivery plans to realise those opportunities.

This has included developing a Carbon Reduction Programme, with projects to encourage energy-efficiency and reduce carbon emissions across the estate. A target was set in 2011 to reduce carbon emissions by 33% by 2021 (against the 2005/6 baseline year).

The University has made very significant investments in attempting to meet this target. It has spent around £1 million annually on carbon reduction interventions, such as efficient new buildings, increasing the efficiency of mechanical and electrical systems and installation of more renewable energy sources. These measures, combined with a corresponding fall in the grid electricity carbon factor, means that the target is likely to be achieved.

A summary of the objectives for 2018/19 and corresponding outcomes are set out below. The University carbon emissions for 2018/19 were 48,970 tonnes of carbon, which represents a reduction of 26% against the 2005/6 baseline and 40% against our peak emissions during 2009/10. The estate

has grown by 3.2% over the same period. The impact of the carbon reduction programme has been recognised by several national and international awards<sup>2</sup>.

### What we set out to do in 2018/19, category of the action, what we achieved

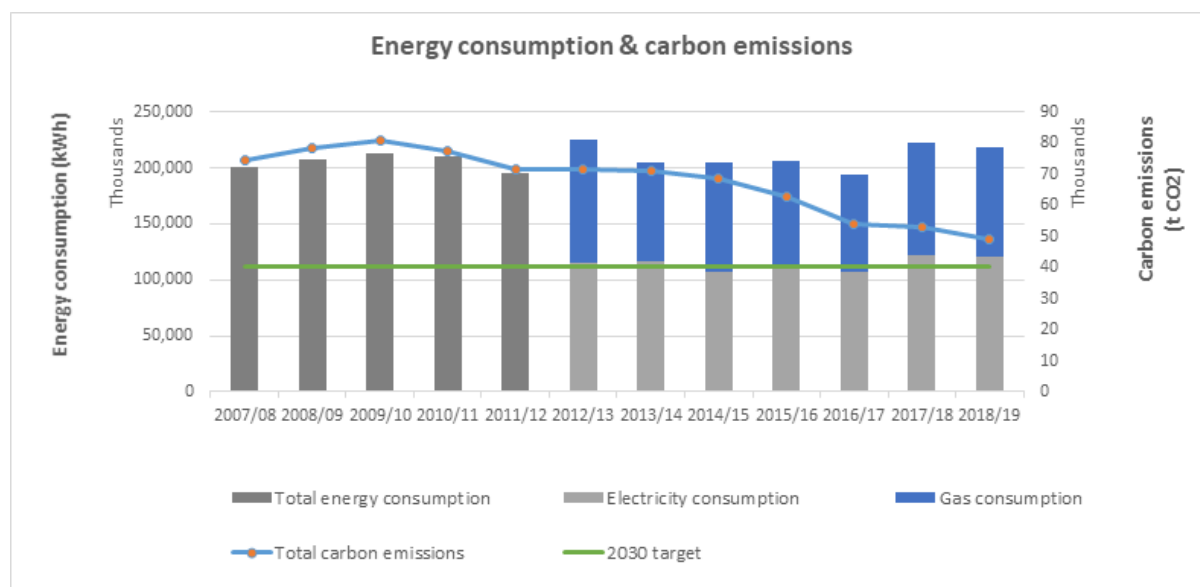
- ❖ Refresh and improve the Universities carbon target. Strategic, Achieved
- ❖ Work with a range of service providers to gain access to the relevant skills and resources to establish a strong pipeline of potential carbon reduction initiatives. Strategic. Partly achieved
- ❖ Continue to engage University staff, students, and stakeholders in the climate crisis and draw on the skills and experience of these groups to change behaviour across the organisation. Strategic. Partly achieved.
- ❖ Integrate Passivhaus design into the palette of building design requirements. Energy efficiency. Achieved
  - Passivhaus design philosophy formally adopted by the University as part of the sustainability design guide. 12 University staff and contractors responsible for the delivery of projects received in-depth training in Passivhaus design techniques and processes.
- ❖ Development of IT Server efficiency. Energy efficiency. Partly achieved
  - Two large IT suites now have PUE live on Systems Link.
- ❖ Procurement route for mechanical upgrades. Energy efficiency. Partly achieved
  - Three procurement tasks are at various stages of completion.
- ❖ Local Energy Oxfordshire (Project LEO) support. Energy efficiency. Partly achieved
  - Ongoing five-year programme. One trial completed.
- ❖ Identified a lack of power records for equipment. Ongoing programme to define delivery path.
- ❖ Building Management Systems (BMS), data collection and monitoring. Energy efficiency. Partly achieved.
  - ❖ Replacement of inefficient equipment, in particular upgrading pumps, fans and lab equipment. Energy efficiency. Partly achieved.
    - This is a rolling programme.
- ❖ Expand the current online support to departments to enable them to recognise further opportunities for energy and carbon reduction. Reporting. Achieved.
  - There has been an overhaul of the IT reporting system on energy usage. The University's online energy portal has been expanded to include all buildings and departments on the estate. All departments now have access to data on their buildings and activities.
- ❖ Use high-quality independently verified energy data, to achieve full compliance with current UK and European energy and carbon legislation. Reporting. Achieved.
  - External verification of energy data was completed, and full compliance achieved.
- ❖ Complete feasibility and procurement work on delivering heat networks on two of the University's main science sites. Low carbon and renewable energy. Partly achieved.
  - Procurement exercise still ongoing.

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<sup>2</sup> British Institute of Facilities Management 2018; Finalist, Environmental Association for Universities and Colleges (EAUC) 2018, Green Gown; CIBSE (Chartered Institution of Building Services Engineers) Building Performance Awards 2018; Highly Commended, Environmental Association for Universities and Colleges (EAUC) 2016, Green Gown; Winner, Environmental Association for Universities and Colleges (EAUC) 2016, Green Gown; International Sustainability Campus Network (ISCN) 2016

The total energy use and carbon emissions of the University estate are shown in figure 5.

Figure 5: Energy consumption and carbon emission



### More about Energy and Carbon

- ❖ Working with the LEO project, a method for electricity grid balancing is being developed which will enable management of peak loads and maximise the use of alternative energy sources.
- ❖ Eliminating gas from the heating of buildings has been identified as a critical step on the road to Net Zero. A programme of works to enable alternative heat sources to be deployed has been drafted and progress will begin next year.
- ❖ Converting aging building stock from static "on/off" operation to become fully reactive to occupants and activities. This is an extension to the BMS Optimisation work that was completed last year and some mechanical trials that have proven savings of up to 70% in carbon emissions.
- ❖ The three largest IT server rooms, and soon to be all the IT suites, now have full energy assessment available live. Improving the efficiency of our server rooms to industry standard or better is now a live programme after the initial trial has been consistently returning savings of 72% for the past 2 years.
- ❖ Commitment to fully evaluate the potential of a heat network at the Old Road Campus is underway. Heat networks are seen as key to reducing the carbon of building conditioning.
- ❖ An Oxford start-up company are trialling active radiator controls; a system that monitors building occupants through Wi-Fi usage and adjusts room temperatures to accommodate. It will also be linked to room bookings through an active calendar.

### Looking ahead

In the face of an escalating global climate crisis, we have created a new carbon target. Our previous goal of cutting carbon emissions by 33% by 2021, had led the way to a more ambitious goal. We are now committed to cutting our carbon emissions by 50% from their peak by 2030. The key areas of focus to achieve this are:

1. Remove fossil fuel heating and replace with renewable energy alternatives;
2. Energy savings from lab equipment replacements;
3. Energy savings from IT cooling efficiency projects;

#### 4. Energy savings from improving the efficiency of heating equipment.

The Covid-19 pandemic has delayed progress on several forthcoming carbon reduction projects. These will be completed as soon as possible.

A feasibility study will also be carried out to assess the entire estate and understand further opportunities to reduce the University's carbon emissions.

We have identified projects worth a further £3.5million, which will continue to move the University towards its 2030 target. Along with the past investment in this area, the impact will continue for years to come.

## Resource Management

The University has more than 37,000 students and staff, and tens of thousands of visitors and guests each year. Collectively, these operations have a significant footprint in terms of resource management and waste.

Management of material resources is, therefore, a key focus. We aim to reduce the environmental consequences of resource use, create less waste, and reuse and recycle as much as possible across the University.

## Water

We use water in many activities across the University, from bathrooms and kitchenettes to catering and cleaning. The large number of laboratories across the University also consume significant amounts of water.

In 2018/19, the University consumed 440,350 cubic meter<sup>3</sup> of water. This represents a 25% increase from 2016/17.

The water-management strategy is currently in the data collection phase. The award of the contract to provide the University's water to a new company has enabled the collection of 9 months of consumption data for all supplies. This has been uploaded to our monitoring and targeting software system.

### What we set out to do in 2018/19, category of the action, what we achieved

- ❖ Install metering in high consumption areas. Water conservation. Achieved and being implemented as part of the refurbishment process.
  - The next buildings to receive additional metering will be on the ROQ site.
- ❖ Seek a partner that can deliver automatic meter readings and provide data for targeted water management initiatives. Water conservation. Achieved.
  - Award of the water provider contract to a new company has improved the data available on water use.
- ❖ Continue to raise awareness about water conservation via the Green Impact Engagement Programme. Water conservation.
  - Monitoring and addressing water usage is part of the Green Impact scheme. Teams are encouraged to raise awareness and pursue efficiency measures in water use.

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<sup>3</sup> Source: Estates Management Record return for 2018/19 from the Higher Education Statistics Agency

### *Looking ahead*

To further improve our ability to collect water consumption data, an extensive sub-metering project is underway. The next site to receive additional metering will be the Radcliffe Observatory Quarter site. Once it is completed, water audits will be conducted at the Andrew Wiles Building and Blavatnik School of Government, any viable water-saving measures that have been identified will be implemented, and the savings will be determined.

Once the data collection and reporting methods are established, the University will be able to develop a proactive water management plan, addressed to the unique needs of each section.

We will also continue to engage staff and students on positive behaviours to reduce water consumption through our Green Impact engagement programme and training workshops.

## Waste

Waste management is an important way in which the University manages its material resources. We do this by:

- Encouraging the reuse of materials across the University through a sharing portal – WARPit.
- Working with our waste service provider to increase recycling and monitor and measure waste production.
- Working in partnership with staff, and students to develop solutions to reduce the University's waste.

The University's contract for non-hazardous waste relies on microchipped bins to accurately weigh waste on collection. Having a single contract in place across the University supports data capture on recycling and recovery rates. Rather than relying on estimates, we now have accurate data on most waste materials. This allows more precise billing for waste management, creating a financial incentive for each part of the University to manage its waste better.

Further examples of activities to reduce waste:

- 1) Changing formerly paper based procedures to digital, including internal billing, payslips, and accident reports.
- 2) Working to reduce packaging waste by consolidating equipment shipments and flagging suppliers who collect packaging for reuse.
- 3) Diverting food surplus to local charity organisations.
- 4) Promoting engagement tools

The figure below represents the waste stream distribution of the University estate.

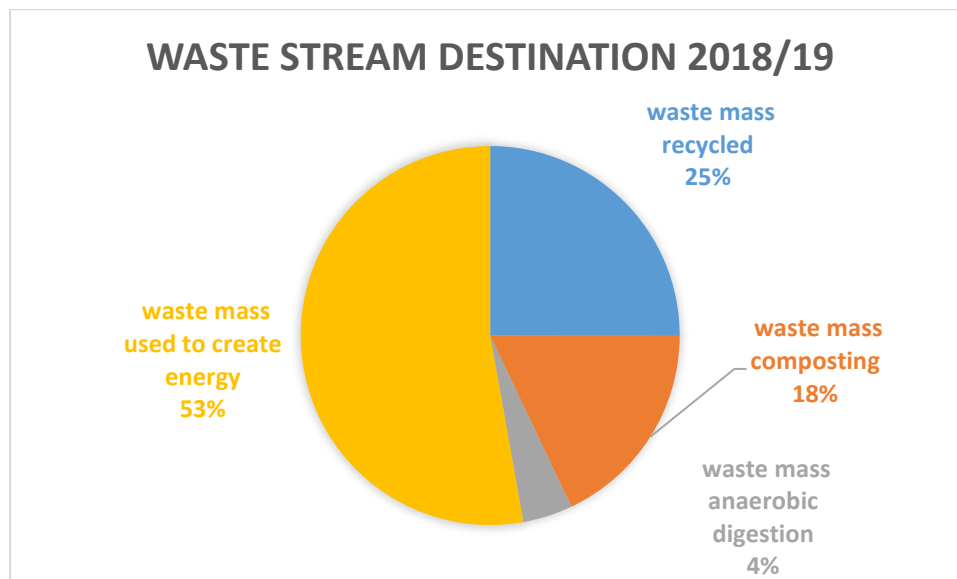


Figure 6: Waste stream by destination 2018/19

### Warp it

The university is a member of the Warp-it network, which allows it to redirect redundant equipment to be reused within other parts of the University and colleges.

In the past year redirecting equipment within the University saved an estimated £114,555 in procurement and waste charges.

More than 1,300 members of the University are listed to offer and receive redundant resources. Out of these about 500 were active in the past year, and 230 joined.

Apart from the financial savings, this reuse of equipment represents savings of 10,000kg of waste and 52 tonnes of carbon.

However, the Environmental Sustainability team has so far lacked the capacity to promote Warp-it to reach its full potential. This should change in the coming year.

### Looking ahead

The following initiatives are in the process of evaluation and planning and are expected to be implemented in the coming years:

- Offer University and colleges a wide schedule for green waste collections.
- Start collecting coffee pods for recycling and relaunch the Select Coffee Grounds service.
- Refine the paper cup recycling service.
- Close the loop on plastics recycling by directing waste to granules to be used as lumber for furniture.
- Launch a food composting service including 'Vegware' and other biodegradable packaging.
- Initiate 'Unicycle' waste box service for recycling small-volume items that are considered difficult to recycle or different from most items in the existing relevant waste stream.
- Improve recycling and reuse by engaging with stakeholders and expanding outreach activities.



## Travel

Please note, the information in this chapter presents a snapshot of the situation pre Covid-19 pandemic. As a result of the pandemic, we adjusted some of our practices on a temporary basis.

The University is committed to encouraging the use of efficient public and communal transport, bicycles and walking, and to reducing carbon emissions from work-related travel and University-owned vehicles. To manage the University's growth and increasing demand for transport in a sustainable way, we have developed a Transport Strategy which aims to:

- Reduce the numbers of car journeys on the network
- Promote appropriate sustainable transport alternatives
- Improve users' journey experience
- Improve local air quality
- Reduce the University's carbon footprint.

The travel strategy focuses on five core measures:

### Demand Management

The University works to discourage car use through a range of parking policies. Since 1999 it has controlled staff commuter parking, actively managing demand by allocating permits according to need. Staff are charged 1.75% of salary per annum for a peak parking permit, which is benchmarked to the cost of using the equivalent sustainable mode of travel, the Park & Ride. All income from parking policies is transferred to the Green Travel Fund to be invested in sustainable travel measures.

### Sustainable Commuting

The University aims to help staff and students to commute sustainably to work and study. More than half the University's staff do not live within reasonable walking and cycling distance. The University has a comprehensive package of measures to facilitate sustainable travel, including:

- Interest-free loans for staff on bus, rail and Park-and-Ride season tickets.
- Membership of *Easit*, a social enterprise that aims to encourage sustainable commuting. This gives a 15% discount on rail travel and a 10% discount on bus tickets, saving staff a total of £200,000 annually.
- Support for cyclists, including loans for bikes and cycle equipment and free maintenance provision and free cycle training.
- Access to a car-sharing platform.
- Personalised travel planning service available to all staff relocating to new buildings.

### Business Travel

The biggest travel-related impact comes from international travel. The University has recently appointed a new Travel Management Consultant, who will review all business travel needs and identify potential carbon savings. We look forward to reporting more on this in the future.

### *Cycling:*

Cycling is a particularly important mode, with 40% of business trips made to and from Old Road Campus by bike. The University has invested in bike sharing schemes, working with local partners, departmental pool bike, electric bike and bus passes.

### Fleet Management and Freight

The delivery of goods and services by freight operators is a source of local traffic congestion as well as a source of carbon emissions and other air pollutants.

We are exploring the potential cost savings and reduction in emissions from replacing the 120 vehicle fleet with Ultra Low Emission Vehicles (ULEVs). Currently, these make up only around 5% of the fleet. We are currently replacing two or three vehicles per year, with the rate of adoption expected to increase as the market develops and costs fall.

The University is also exploring options for zero-emission last-mile deliveries and delivery consolidation in partnership with colleges and the private sector.

### Improving Connectivity

A key measure in the strategy is improving connectivity across the University estate. Nearly 750,000 business trips are made 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 continue to develop. This development across multiple separate sites, many outside the city centre, will generate increased demand to travel, which needs to be planned for and met sustainably.

### *Science Shuttle:*

The activity of the Science Transit Shuttle continued to grow strongly since it was relaunched as a public bus service last year. The relaunch has replaced the minibuses that were formerly used with full-sized buses that have greater capacity and better accessibility for disabled users. More than 85,000 passengers have ridden on the two Science Transit shuttle routes since the relaunch in July 2019, and in January 2020, the service set a new record of more than 4,000 passengers a week.

### What we set out to do in 2018/19, category of the action, what we achieved

- ❖ Central Area Parking Strategy reducing the volume of parking approved by BESC and implementation commenced. Demand Management. This was adopted and is now being implemented.
  - Space freed up will be reallocated to landscaping, creating pleasant green amenity space and adding more cycle parking spaces and disabled car parking.
- ❖ Successfully transition the Science Transit Shuttle from a private minibus to a commercially operated public bus service, halving the cost to the University. Improving Connectivity. Achieved.

- o Successfully reducing costs to the University while maintaining connectivity and improving passenger capacity.
- ❖ Liaise with the County and City Councils on the emerging Zero Emission Zone and demand management proposals for Oxford, which will improve the city's air quality, substantially reduce traffic volumes and create safer, more pleasant spaces for walking and cycling. Improving Connectivity. The University has supported proposals for the first phase of Zero Emission Zone.

*Looking ahead*

1. Proactively influence and shape the City and County Council's Zero Emission Zone and Connecting Oxford proposals to protect and advance the University's interests.
3. Develop proposals for a pilot freight consolidation centre.
4. Implement the Oxford Greenways project, a masterplan for connecting Oxford to its outlying settlements by bike, securing the £150-200m funds necessary from the Central Government.
5. Implement the Central Area Parking Strategy.
6. Continue to convert the fleet to Ultra Low Emission Vehicles (ULEV) and maintain the staff Electric Vehicle Charge Point pilot at Old Road Campus and Osney Mead.
7. Continue the growth of the Science Transit Shuttle.



Figure 7: Green Travel Fund implementation

## Biodiversity

The University recognises that even within our urban setting, we can create essential spaces for nature and connect areas of wildlife habitat. From creating living roofs and nesting boxes, to changing how we manage large green spaces, we are working to enhance these areas.

The University's biodiversity strategy has been in place since 2016. It lists three key priorities:

- 1) Include biodiversity considerations in planning and avoid destruction or damage to existing habitats.
- 2) Increase biodiversity where possible.
- 3) Provide opportunities for staff, students, and visitors to the University to play an active part in supporting biodiversity on our doorstep.

### *Key activities*

Swift tower – in 2019, Oxford's latest Swift Tower was installed near the University Parks' pond. The structure contains 25 nest boxes for endangered swifts and is based on the outcome of a public design competition run by the Oxford Swift City project.

The tower received planning permission in late 2018 and will provide much-needed nesting space for swifts.

During spring 2020, the first nesting swifts were reported in the tower.

More swift nests are installed throughout the University estate, often as a result of the engagement projects by staff and students. Swift nests were installed in the School of Geography and Environment (Dyson Perrins building) and Radcliffe Observatory Quarter.

Biodiversity issues are overseen by the Biodiversity Action Group, which consists of academics and practitioners from relevant University departments, among them, Estates Services, and Environment Sustainability. The Action Group decided to use Old Road Campus as a case study for implementing proactive measures to enhance biodiversity. In spring 2019, Thames Valley Environmental Record Centre carried out a survey of the area. The survey team proposed measures to support biodiversity in the area. The steps were suggested to the Capital Projects and University Parks teams. The suggested measures were also the focus of public discussion with Old Road staff and students over two workshops and two site visits. The responses from all the relevant parties were captured and are now being developed into actions for the Parks team.

A stakeholder networking event was hosted by the Oxford Partnership for Operationalising the Conservation Hierarchy (OxPOCH) project, Oxford Networks for the Environment (ONE) and the Oxford Martin School (OMS). Representatives from the Environmental Sustainability team presented the outline of the biodiversity chapter in the environmental sustainability strategy draft. The discussion related to the draft strategy which proposes net biodiversity gain as a key commitment, but achieving this could be done in multiple ways, with different techniques and emphasis.

On the theme of land use, it became apparent that improving sustainability across the whole estate is essential. Examples of ideas to do this are listed below:

- *Turning lawns to wildflower meadows*
- *Creating 'messy' habitats such as scrub in the landscaped parts of the estate*
- *Integrating food production into the estate (eg, fruit, nuts, herbs)*

- *Dedicated allotments for staff and students*
- *Strategically joining up and creating green corridors to improve ecological connectivity*
- *Green walls and roofs*
- *Promoting engagement*
- *Improving plant mixes to emphasise native species*
- *Committing to no-development areas on the estate*
- *Bringing biodiversity into the University's core development ethos as part of our cultural heritage.*

In its suggested strategy, the University has an ambition to offset its negative impacts on biodiversity and achieve net gain across its operations. An assessment in spring 2020 explored the potential for the University to carry out biodiversity enhancement on its estate. This work will be used to prioritise future University action on biodiversity. The actions proposed range from simple low-cost interventions through to larger projects such as habitat restoration and creation. The next step will be for the University to identify the interventions that it wants to prioritise or use to offset a specific impact, and to then undertake surveys at the proposed location to ensure suitability of the intervention and to specify the actions involved.

## Sustainable Food

**Please note, the information in this chapter presents a snapshot of the situation pre Covid-19 pandemic. As a result of the pandemic, we adjusted some of our practices on a temporary basis.**

The University of Oxford is committed to ensuring the sustainability of its purchasing and production of food. The Sustainable Food Policy considers three key areas that relate to University-owned food outlets: purchasing, on-site food production, and communication.

The more significant section of food outlets in the University is managed through one subcontractor, Compass, under the *Compass at Oxford* catering contract. Compass operates 19 cafes under the title 'Beyond Ordinary' brand, as well as providing a hospitality service for meetings and events and fine dining for formal events.

Additional cafes operate in the Said Business School, which holds the Soil Association's Food for Life Catering Mark; and at the University museums.

The contract with Compass started in 2018 and is overseen by Facilities Management. During the tendering process, each bidding company was asked to present their environmental sustainability policy, which was taken into consideration.

A joint working group, with representatives from both the University and Compass, reviews the contract's environmental sustainability performance and sets goals for further improvement. Issues that are covered by the committee include food waste, the use of disposable cups and utensils, plant based diet variety, and sourcing.

The University appointed Good Food Oxford to carry out an independent review of its food policy. This review took place in summer 2019 and included interviews of various stakeholders. The results were reported to the overseeing committee and incorporated in the environmental sustainability strategy outline.

In the past year, the following sustainability measures were implemented:

- 1) Introduced recyclable coffee cups with designated bins. This is in addition to selling reusable cups and using china mugs in the outlets.
- 2) Removed plastic cutlery from takeout services. Consumers can buy wooden ones for a small charge.
- 3) All Beyond Ordinary cafes have been awarded two out of a possible three stars by the Sustainable Restaurant Association (SRA). The accreditation assesses several key areas, including food sourcing, social impact, environmental footprint, food waste and recycling. A detailed report has been produced for every cafe and will provide a benchmark for further improvements. Hospitality services were accredited with three stars.
- 4) Transports food using electric vehicles.
- 5) Plant-based diet:
  - a. The first all-vegetarian cafe was opened at Old Road Campus.
  - b. Half the items on most Compass cafe menus (excluding sites where three main courses are available) are meat-free.
  - c. 68% of the Compass hospitality brochure is meat-free.

- 6) All fish products have Marine Stewardship Council (MSC) accreditation.
- 7) The University received accreditation as a Fairtrade University for the second time. The accreditation was achieved due to cooperation with University units and colleges to promote Fairtrade products and increase awareness to the importance of Fairtrade.

'Food sustainability was discussed at the stakeholder networking event hosted by the OxPOCH project (see Biodiversity chapter above). Among the steps suggested there were the following

- *Setting more rigorous targets for consumption, sourcing and waste.*
- *Calculating and displaying the environmental impact of food consumption across the University.*
- *Determining factors affecting food choice by consumers, such as labelling, and using this to meet new impact targets by prompting more sustainable consumption patterns.*
- *Using the University and college estate to grow food and herbs.*
- *Improving food waste management by active monitoring and providing more food waste bins across the whole functional estate.*
- *Making academically-informed choices when it comes to setting benchmark certifications such as organic, Red Tractor, MSC-certified, Fairtrade, etc.*
- *Providing incentives for tenant farmers to support the University's carbon and biodiversity goals.*

#### Food and waste management practices across the University as part of the Compass contract:

- The production kitchen serving the University uses central system to plan out menus, which provides the chefs with appropriate portion sizing and shopping lists so they can order in the correct amount for each recipe.
- Offering a weekly wastage sheet for all cafes, showing amounts of meals ordered, sold and wasted. This helps the catering teams order more accurately from the production kitchen based on previous sales data.
- Producing most of the required food in house enables adjusting orders and be more flexible if they have unexpected changes in sales.
- Close monitoring and rotating stock through the different cafes, e.g. stock with a shorter use by date can be moved to a larger cafe to sell quicker and ensure it is not wasted.

#### Top five Compass contract's cafes by proportion of reusable cups used in March 2020

% reusable cups used

- Osney One – 66%
- Richard Doll – 50%
- William Dunn – 49%
- Welcome Trust Centre – 39%
- Wellington Square – 38%

## Engagement

As an educational institution with a broad audience of staff and students, engagement is a valuable tool to improve environmental sustainability in the University. This is particularly true because the University is a decentralised institution within which individual departments and colleges have considerable autonomy to make decisions in areas such as operational practices, procurement and individual behaviours. This means it is essential to nurture people who can serve as agents for change to improve environmental sustainability across the University.

Engagement with the wider University fell into three main categories:

- 1) Green Impact and Student Switch Off (SSO) – tool to help involve staff and students in the work of promoting environmental sustainability, with an emphasis on behaviour change.
- 2) Communications to increase awareness and encourage staff and student to choose more sustainable practices.
- 3) Consultation on the new Environmental Sustainability strategy.

### Green Impact

The University has taken part in the National Union of Students (NUS) Green Impact scheme since 2013. This is a sustainability and social responsibility engagement and reward programme. It runs from November to June each year and provides simple, effective ways for staff and students to make their building, department, or college more sustainable.

Participants form in groups and receive guidance and support to help them do this. At the end of the year, there are awards to celebrate and honour their achievements.

The Environment Sustainability team supports staff and students in the implementation of the scheme. On December 2019 NUS, which operated the national Green Impact scheme, conducted a review of the implementation of Green Impact in Oxford University. This was based on discussions with Green Impact teams and stakeholders. The recommendations offered a set of tools to strengthen the work of Green Impact across the University and increase its effectiveness. A number of these have already been implemented and others are planned for future years.

### *Activities:*

- Green Impact has 154 Green Impact teams. Forty-one of these teams are new.
- There are 823 active users, of whom 177 joined in the past year.
- 35 teams submitted a workbook at the end of the year, of which 6 are labs
- Fourteen teams adjusted to lockdown by implementing the "Green Impact working from home" workbook.
- Sixteen teams are nominated for a Gold or Gold Plus award, one for a Silver award and six for Bronze awards.
- Additional activities during the past year:
  - Run six training events with about 95 participants.
  - Run 'Green Impact on tour' events in different locations to support the teams and promote cooperation and exchange of ideas. Due to the coronavirus pandemic, some of the planned meetings were suspended and replaced by online meetings and ongoing Teams group discussions.
  - Fifteen students engaged with Green Impact operation as project assistance and auditors.
  - Produced regular newsletters to report the progress of teams, share information and inspire participants.



## Student Switch Off - SSO

Over the course of the year 15 participating colleges compete in a series of challenges addressed to improve awareness and thereby energy efficiency and recycling rates. Each receives awards depending on what percentage of the college gets involved.

Overall, more than 2,200 students took part in the challenge, 70 attended the training and about 1,500 interacted with online activities.

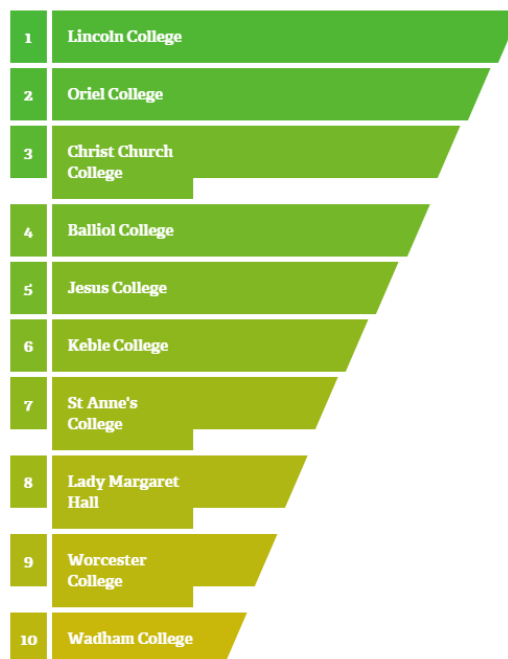


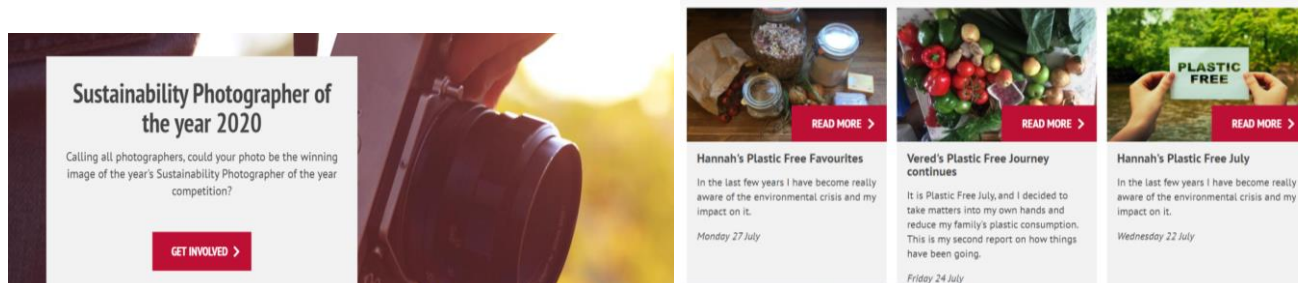
Figure 8 College participation rates in SSO activities as % from the student body in SSO

## Awareness and outreach

The Environmental Sustainability team sends out a monthly newsletter to about 2,600 subscribers, both staff and students. It covers various relevant topics, to raise awareness, generate interest and initiate outreach activities.

Another publication is explicitly addressed to lab personnel.

Throughout the year, numerous engagement activities were offered to the wider University public. Among them were New Year's resolutions, Veganuary, Fairtrade Fortnight, Plastic Free July, Sustainable Photography award, edible gardens and environmental sustainability during lockdown.



## Cooperation with Oxford SU and students

Most of our work on environmental sustainability with students is in collaboration with the student union and college Environment and Ethics Officers (E&E). In many cases, the students lead an independent agenda. Among the leading sustainability projects in the past year are:

1. On October 2019 the student union initiated a climate assembly to craft a community-led Climate Action Plan
2. University Divestment resolution from fossil fuel investments and seek net-zero business plans across the university's entire investment portfolio. The resolution, brought by the student-led Oxford Climate Justice Campaign, a campaign supported by Oxford SU, has earned wide support from the student body and student council and is sponsored by members of Congregation.
3. The Student union played an important role in developing the environmental sustainability strategy, and students were closely involved in the strategy consultation.

## Engagement activities across the University:

- A stakeholder networking event hosted by OxPOCH project, Oxford Martin School, and ONE Networks, to bring people together to discuss how best to promote sustainability within the university, and get feedback on the draft proposals for a new 'Environmental Sustainability Strategy' for the University. As mentioned before, the event focussed on two main areas for sustainability within the university: food consumption and land-use.
- Oxford hub, operated eight environmental programmes with a total of 189 volunteers in the past year, offering 1184 hours of volunteering. Oxford Hub operates regularly OxUnbox, non-profit refill shop, making plastic-free shopping available in central Oxford, the hub delivers engagement activities/events run throughout the year. Survey of environmental volunteers indicates this activity as inspiring to pursue further environmental actions.
- 'The Oxford University Careers Service is now giving students access to potential employers' environmental credentials. All recruiters looking to advertise positions to Oxford students are asked a series of questions on their approach to environmental sustainability, based on the Oxford Martin Principles for Climate-Conscious Investment. Their responses are made available to students, allowing them to make informed decisions about their future employment options.

## Spotlight on carbon reduction by development and refurbishment

The Sustainable Design Guide was launched in November 2017, in collaboration with Oxford City Council. It sets out what the University expects in environmental terms from new building projects and refurbishments, and who is responsible for delivering it. Carbon emissions from buildings are a major part of the University's environmental impact, and significant improvements in this area are needed if it is to achieve its ambitious new target of halving total carbon emissions by 2030.

The Design Guide is an opportunity to minimise the operational energy consumption of buildings and to deliver wider sustainability benefits by using the Passivhaus methodology to guide the construction of new buildings and refurbishment of existing ones.

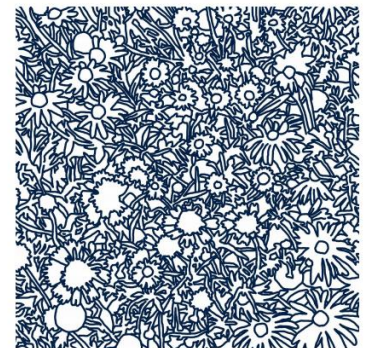
The methodology has already been applied to the upgrade of several buildings across the estate, including a refurbishment of the Grade II listed Dyson Perrins building. This is in the University's Science Area and was its main centre for research into organic chemistry from its foundation in 1916 until its closure as a research laboratory in 2003. The building is now being remodelled to redesign teaching spaces and accommodate more offices for academic staff. We are working with University contractors to apply the Passivhaus Planning Policy (PHPP) tool, which will ensure that the refurbished building is extremely comfortable for its occupants while also using very little energy for heating and cooling. The internal facades are being replastered to improve airtightness and U-values. Glass panels are being replaced with more efficient versions, and louvres and shading devices are being installed on the external facade to manage solar penetration.

We are working with the Repairs and Maintenance teams to ensure that refurbishment and upgrade projects under £5 million in value also incorporate the PHPP tool to understand the impacts of modification.

The Passivhaus Support initiative seeks to identify further opportunities for upgrades to existing buildings.



Estates Services  
Sustainability Design Guide



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Estates Services Sustainability Design Guide v 1.1 (Nov 17, 2017)

## Spotlight on sustainable laboratories

Laboratory buildings account for over 60% of the University's energy usage and carbon emissions. Making them more efficient is critical to support the University's carbon target of halving peak emissions by 2030.

To do this the Environmental Sustainability team has created the Sustainable Labs programme, which specifically focuses on energy reduction and sustainability in labs.

We encourage and support best practice so that sustainability becomes an integral part of everyday lab work.

Lab sustainability includes all the elements that the Environmental Sustainability team focuses on: energy and carbon reduction is a priority, but most of the other areas are relevant, including waste, water.

### *Objectives*

- Deliver projects working towards the target of reducing carbon emissions by 50% from their peak by 2030.
- Engage staff and students and support and encourage them in adopting sustainable practices in their labs.
- Work with colleagues in purchasing, with the University waste contractor, etc., to identify ways to improve sustainability.

### *Activities*

- Set up a network for sustainable lab leaders, facilitated through Microsoft Teams.
- Introduced the new Laboratory Efficiency Assessment Framework for labs.
- Carried out a programme of equipment replacement (including ultra-low temperature freezers, glass drying cabinets, greenhouse lights and other lab equipment).
- Introduced lunchtime meetings for lab leaders at Old Road Campus.
- Organised workshops on behaviour change and freezer maintenance for lab leaders.

### *Results*

- Realising savings of approximately 200 tonnes of carbon per year.
- Shared good practice and initiatives through the sustainable labs' network, including workshops, meetings, newsletters, Teams meetings and online information.
- Made lots of information and best practice examples available online, with more in-depth information and resources distributed through the Teams platform.

### Goals and outcome:

- Publish at least 4 newsletters – outcome: published nine newsletters, now has more than 200 recipients.
- Create platform for sustainable lab leaders – outcome: Microsoft Teams platform now has more than 50 active users.
- Create best practice guidance documents – outcome: created best practice pdf, slides and videos.

- Encourage more sustainable purchasing practices – outcome: published information about preferred suppliers' sustainability services online.

### Case Study: Ultra-low temperature freezers – Cutting emissions by replacing inefficient equipment

Ultra-low temperature (ULT) freezers are found in many University laboratories, keeping samples at temperatures between  $-70^{\circ}\text{C}$  and  $-80^{\circ}\text{C}$ . To maintain such low temperatures, ULT freezers consume a great deal of energy. For instance, a single unit could use up to 12,000kWh a year – almost as much as four UK households.

The Environmental Sustainability team has managed a project funded by the University's Carbon Management Fund to replace the most inefficient units with the new Eppendorf Cryocubes – the greenest model on the market. This reduces running costs per unit by up to 76%. The aim is to cut carbon emissions by replacing inefficient equipment.

The ULT freezer project started with a comprehensive audit, identifying more than 600 units across the University. Phase 1 focused on replacing the most inefficient of these. 11 departments received brand-new super-efficient freezers completely free of charge

In total this saves around 115MWh of electricity and 35 tonnes of carbon per year, meaning the replacement programme will pay for itself in less than nine years. Further energy and cost savings can be expected through reduced need for air conditioning.

In phase 2, we are continuing the replacement programme and also supporting departments, so that over time we will replace more inefficient freezers with efficient versions. We also encourage labs to share and reduce freezer space wherever possible, because the simplest way to save energy is to have fewer freezers.

The freezer project is, however, not just about buying new equipment. Freezers that are well looked after consume less energy and have longer lifetimes. Therefore, we provide best practice guidance and resources too, such as our quick tips. We will apply lessons learned to similar initiatives, including other replacement programmes for lab equipment. We will communicate what we learn through our lab sustainability network so it can be applied across the University.

## ULT freezers (Phase 1+2), 2018 - 2019

35 ULT freezers

15 buildings:

- **Science area:** Biochemistry, CRL, Pathology, Plant Science, Zoology, Le Gros Clark, Medawar, Pharmacology, Rodney Porter, Sherrington
- **ORC:** Wellcome Centre, Richard Doll, NDM RB, ORC RB,
- **JR:** WIMM

**Electricity:** 265,000 kWh/year (=70%)

£35,000

**Payback:** <10 years

**Carbon:** 80 tonnes of carbon



*The first freezer was delivered to the NDM Research Building*



## Conclusions

The coming year is expected to offer plenty of opportunities for staff and students to engage with environmental sustainability. The expected consultation for the University's Environmental Sustainability Strategy is planned for autumn 2020. The new strategy is expected to be adopted in early 2021 and will form the framework for future sustainability approach.

We extend the invitation, to all staff and students, to engage with Green Impact and pursue better environmental practices in their department, building, lab, unit etc.

**For more information, contact the Environmental Sustainability team.**

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