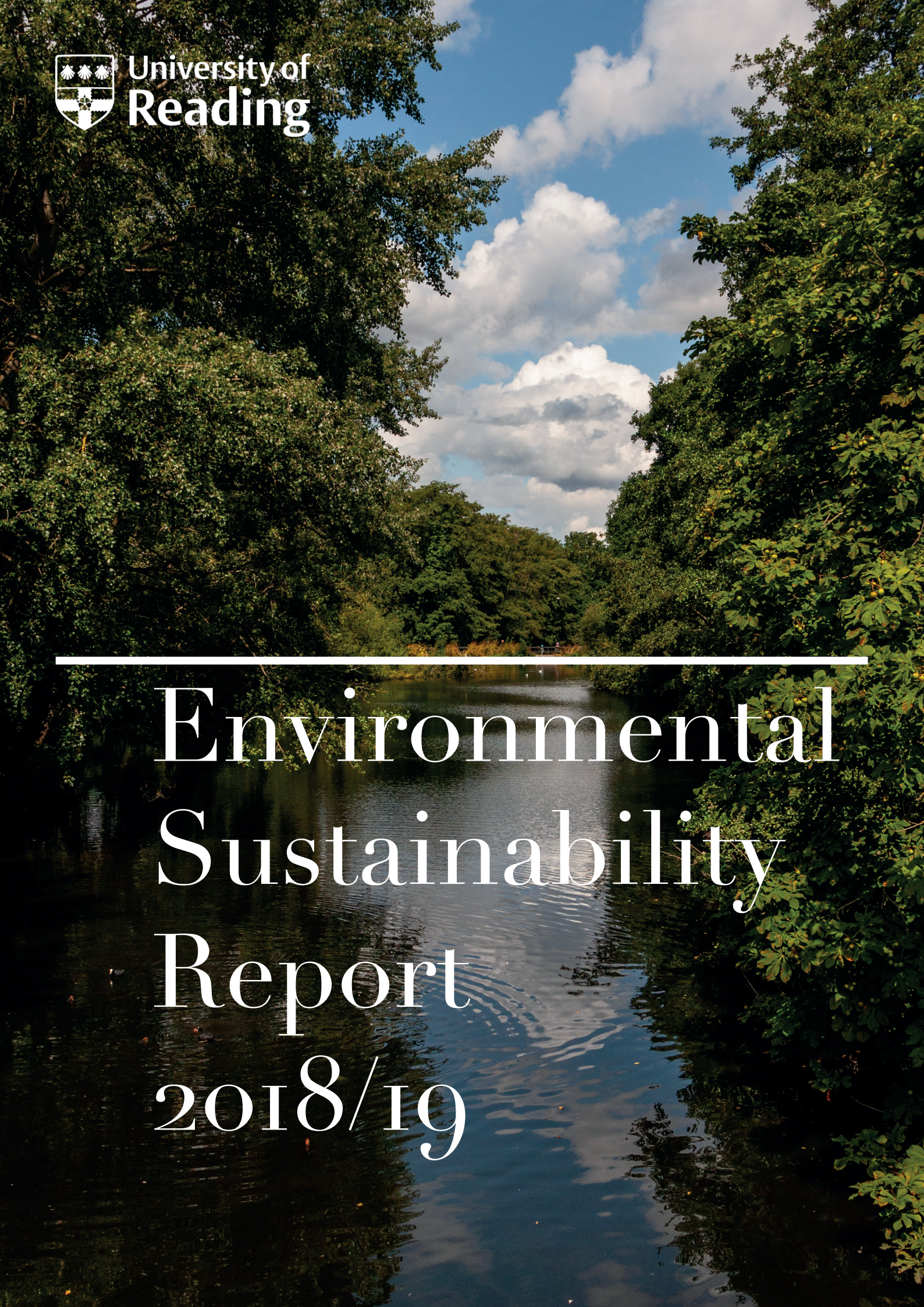


University of Reading

Environmental Sustainability Report 2018/19

CONTENTS

1. EXECUTIVE SUMMARY

This year has been one of contrast for sustainability at the University. Concerns around environmental issues locally, nationally and internationally have continued to grow in prominence, and this in turn has seen a distinct increase in the appetite and expectation for sustainability action within the University. This has also been evident in the appetite for sustainability to feature within the University's new core Strategy. At the same time, along with many institutions in the sector, the University has needed to cut back financially, and the sustainability budget has been significantly reduced. This, coupled with a number of personnel changes within Sustainability Services, has made for a challenging year, but one in which we have continued to make progress. The 2019/20 academic year promises to be an exciting one for sustainability, and one in which we can set new expectations for our ongoing environmental leadership.

In November 2018, we launched our staff JUMP behaviour change platform, which has seen over 16,000 sustainability actions reported in just 9 months. This really demonstrates how small actions can add up to big impacts, and in 2019/20 we will be looking to expand on this further, including the addition of a new 'wellbeing' theme in partnership with HR. A number of student-led engagement initiatives are currently evolving, and we are actively supporting a number of student groups to align our messaging and support each other's sustainability ideas.

We have now **exceeded 40% carbon reductions** since our 2008/09 baseline year, and are on track to reach 43% - 45% reduction by 2021. The programme has now delivered **£30 million in cumulative revenue savings** since 2011. This year alone, we have installed over 500 individual solar panels, at Whiteknights, London Road, Greenlands and Thames Valley Science Park. Meanwhile, energy efficiency continues to play a key role, such as in IT's upgrades and rationalisation of the University's central servers, which have delivered almost 100 tCO_2 and £45,000 of annual savings.

Further progress to reduce our overall carbon emissions has again been impacted by continued growth in our business travel emissions however, with a further **8.5% year-on-year increase**. Discussions continue on the most effective way to address this, and in 2019/20 we will be working with the Meteorology department to trial some initiatives to support lower carbon solutions.

Water consumption reductions are significantly less than previously reported, standing at **16.3% below our 2011/12 baseline**. The reasons for this are explored further in Section 3.2. Halls water consumption has however dropped by 7% year-on-year.

Our recycling rate has remained reasonably **static at just over 50%**, still some way off our 60% target for 2021. However, we are currently significantly exceeding our target for **total waste reductions per person**, with a 15.5% reduction compared to a target of 5%. Over the last 3 years, the Waste Strategy has delivered cumulative revenue **savings of £213,400**. Our re-use schemes have also continued to expand, with almost 20 tonnes of 'waste' furniture/ equipment being put back into circulation this year, delivering further avoided costs of **£90,000** over 2 years.

Sustainable travel initiatives were curtailed this year due to budget reductions, including the replacement of the full-time Sustainable Travel Co-ordinator role with part-time responsibility elsewhere in the team Despite this however, we have worked alongside Maintenance Services to influence their path improvement works, with a number of recognised pinch-points having been addressed as part of wider refurbishment work. Our cycle skills training has also been a real success, providing support to almost 100 students/staff.

2. INTRODUCTION

Welcome to our annual sustainability report. Here, we summarise our progress and achievements with our Carbon & Water Plan, Waste Strategy and Travel Plan, together with a look forward to our plans for 2019/20. For those that like the detail, we have produced more detailed reference information as appendices.

3. PROGRESS AGAINST TARGETS

3.1 CARBON, ENERGY AND BUSINESS TRAVEL

- We reached another milestone on our carbon reduction journey this year, reaching a 40% reduction in our carbon emissions; with final year-end emissions being **40.4%** lower in 2018/19 than in the baseline year 2008/09. Appendices 1 - 5 contain a detailed breakdown of our emissions scope and progress in each area.

- Our Carbon Management programme has now saved **£30m** cumulatively since 2008/09, compared to a business as usual scenario.

- For 'scope 1 and 2' emissions , we are close to another milestone; achieving a **49%** reduction against our 2008/09 baseline.

- In order to compare total energy consumption across different sources, we have introduced a new 'primary energy' metric to convert all delivered energy back to its primary energy sources. This is then normalised against floor area m^2 and against heating degree days, enabling the University to demonstrate continued energy reductions in line with the new ISO50001:2018 standard. A **1.8% reduction** in normalised primary energy has been seen compared to the average of the previous 2 years, therefore demonstrating continual improvement. A detailed breakdown of carbon and energy performance, including primary energy, are included in Appendices 3 and 4.

- Business travel emissions have continued to show significant year-on-year increases, with a further 8.5% growth. These emissions now account for 33% of our carbon footprint, compared to 20% in our baseline year.

- Despite funding reductions, we are **projecting to reach between 43%-45% reduction** against our 45% target for July 2021. Our exact progress will be sensitive to key estate changes, in particular closure of buildings resulting from the opening of the Health & Life Sciences building. Continued growth in business travel could also limit our ability to reach this target.

[1] Defined as Direct and Indirect emissions, covering electricity, gas, oil, refrigerant gases, fleet vehicle fuel. Scope 3 emissions are 'Value Chain' emissions. Appendix 1 provides further details of the University's emissions scope.

3.1 WATER

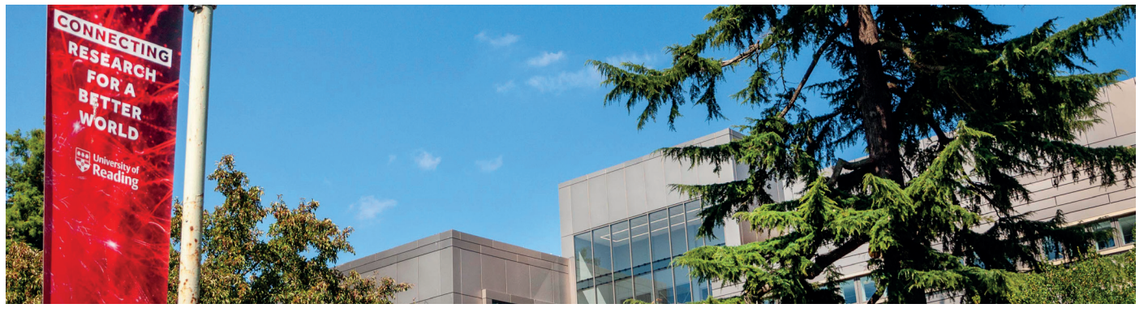
- Water consumption reductions are less pronounced than previously reported, with the non-halls estate now standing at **16.3% below our 2011/12 baseline**. This is due to:
  - Last year's consumption being under-reported due to some billing issues (last year's 28% reduction against baseline was actually a 22% reduction)
  - A long-standing meter fault at the supply to TOB1 has been fixed, increasing reported consumption by more than was previously understood (adding 8%). Improved forecasting will be introduced to ensure that such instances are better accounted for in the future.
  - Consumption at TVSP Gateway adds 2% to the University's total water consumption
  - Some large leaks on Whiteknights campus have occurred, accounting for approximately 1% - 2% of total annual consumption.
- Meanwhile, the halls have reduced their water consumption by 7% year-on-year, primarily due to some large leak fixes.

3.3 WASTE

- Total waste generated was 52.3kg per person, compared to the 2015/16 baseline of 61.9 kg per person; a **15.5% reduction**, and ahead of the targeted 5% per person reduction against the baseline set for 2021.
- The annual recycling rate was **50.3%**, compared to 49.5% in 2015/16. Meeting the 60% target for 2021 will be challenging, but facilities upgrades and new initiatives are ongoing (see Appendix 6). With increasing concerns about plastic wastage, we are seeing some rapid changes in the waste streams the University produces, presenting new opportunities as well as some challenges.
- Re-use of items, mostly furniture, via the online Warp-it system reached **11t**, with a further **8.2t** of additional items re-used via routes other than Warp-it. Re-use is therefore already well in excess of the target of 8.5t for 2021.

3.4 TRAVEL TO CAMPUS

- The University's 2017 Travel Plan set a target for 83% of commutes to the University to be by sustainable travel by 2022. The 2018 biennial travel survey confirmed this target has already been exceeded, with **85% of staff and student journeys** to campus being completed using sustainable methods (which we define as anything other than single-occupancy car use). We are now aiming for a further stretch target of 87% for 2022.



4. COMPLIANCE

4.1 ENVIRONMENTAL MANAGEMENT SYSTEM (ISO14001)

The operation of the Environmental Management System (EMS) enables the University to maintain compliance with its legal and other obligations, as well as improve environmental performance.

- The separate Greenlands EMS was successfully merged into the Whiteknights and London Road EMS in late-2018. The University now has one ISO14001-certified EMS that covers all three campuses.

- Auditing body NQA undertook the annual external audit of the EMS in March 2019, and recommended that the University retain the ISO14001:2015 standard.

- The annual external audit identified no non-conformities relating to clauses within the ISO14001:2015 standard.

The EMS continues to help embed sustainability by giving a framework to set objectives, identify opportunities and risks, and monitor progress via internal audits and management reviews.

4.2 ENERGY MANAGEMENT SYSTEM (ISO50001)

- All three campuses have been certified to the ISO50001 Energy Management standard (EnMS) since 2015 and Reading was one of first UK universities to gain such certification.

- In March 2018, NQA re-certified the University to the standard for a further 3 years, with no 'non-conformities', meeting every EnMS assessment point.

- Work to merge and certify the EMS and EnMS into one combined Energy and Environmental management systems (EEMS), is targeted for completion by April 2020.

4.3 PEOPLE & PLANET GREEN LEAGUE

- We were again awarded a '1st class' rating for our environmental and ethics performance, ranking 28th out of 154 institutions.

- Within the assessment criteria we scored top marks in both environmental management and auditing systems.

- Plans to improve our score for next year are already underway, including the submission of a paper to the University Executive Board (UEB) for their consideration of key target areas of focus.

5. COMPLETED PROJECTS 2018/19

5.1 CARBON, ENERGY & WATER

- The extension of the district heating network to the Hopkins building and Chemistry Research Wing, which began in 2017/18, was completed in September 2018. This targeted savings of 163 tCO_2 per year., Problems with the metering are currently preventing accurate measurement of deliver savings, which we are working to resolve.

- A further 516 solar photovoltaic (PV) panels, with a total capacity of 170 kWp, have been installed on the Wager, L022, L033, MERL Archive and TVSP Gateway buildings, expected to generate 119,000 kWh electricity and save 37 tCO_2 each year. This brings our total solar PV capacity to 346 kWp (1,390 panels) – expected to generate 300,000 kWh annually.

- The target generation from the 2017/18 PV installs on Edith Morley and Windrush (Greenlands) was 127,000 kWh. Edith Morley alone has produced 129,406 in its first year, 13% above its target, and more than making up for the low generation on Windrush due to some technical issues (which have now been resolved). Appendix 5 provides further details of our onsite generation outputs.

- IT have been working on a major upgrade and rationalisation of the central servers, which is delivering measured savings equivalent to 321,000 kWh and 99 tCO_2 over the whole year.

- Thames Water have been implementing water saving initiatives in washrooms across Whiteknights and London Road, and some good savings from these initiatives are anticipated.

- Appendix 2 provides further detail on carbon and water projects implemented this year.

5.2 TRAVEL

- Despite budget reductions, prioritised path improvements continue to be delivered by Maintenance Services. This included widening the path from Car Park 3 to Foxhill House and widening and improving the area from Eat @ The Square to the Chemistry road crossing. As evidenced in the Travel Surveys, path widening is very well received.

- A new 'Do You Need a Car?' campaign was launched, in discussion with the Student Union and the Communication team, to highlight the alternatives available to students and staff.

- Several hundred people took advantage of the range of free cycling support and events throughout 2018/19, including cycle training for 88 individuals, and maintenance support and advice for approximately 340 students and staff.

- Uptake of the 'Bus to work' scheme, which enables significantly discounted bus passes to be purchased, has almost doubled year-on-year.

- There has been a 267% increase in electric vehicle charging on campus year-on-year. Whilst this is from a low base, it indicates an increasing demand for such facilities, though this is typically still only 1 car charge per day.

- Appendix 7 provides further detail on the travel initiatives implemented this year, and on the uptake of different schemes.

5.3 WASTE

- Following a successful trial in 2018, paper cup recycling bins were rolled-out across many buildings in February 2019. Over 60,000 paper cups were recycled during the year.

- A rolling programme of upgrading recycling facilities is continuing, to improve their consistency and associated information. In 2018/19, bin upgrades for Chemistry/Pharmacy and Harry Nursten buildings were completed.

- Use of the Warp-it portal has gone from strength to strength, with various re-use challenges through the year and a staff take-home trial undertaken in January 2019. Over £45,000 in waste and purchasing costs have been saved this year as a result of the re-use of items via Warp-it.

- By working with an equipment re-seller, the University has enabled a number of items of unwanted laboratory equipment to be re-used by external organisations.

- Appendix 6 provides further detail on waste initiatives implemented this year.

5.4 ENGAGEMENT & AWARENESS

- We launched the new JUMP platform to replace our Green Impact programme, which has been well-received. JUMP has an engaging website and app, as well as highly customisable activities which can be changed regularly. The platform has seen 412 staff members signing up to get involved, who have collectively reported over 16,000 sustainability actions in the first 9 months of the scheme.

- The Sustainability Services website has provided a platform to engage staff, students and other stakeholders with a range of sustainability information, including all of our building-level energy data. To date the site has received over 90,000 page hits.

- Delivering the Sustainability Matters newsletter through the online Mailchimp system is proving successful, with 400 staff readers and over 200 student readers now subscribed.

- We have continued work to support key University events such as Open Days and Graduation by installing water fountains in key locations to help reduce single use plastic waste.

- Catering's Sustain It bottles and cups remain a very visible sign of sustainability action on campus.

6. PLANNED PROJECTS 2019/20

6.1 CARBON, ENERGY & WATER

- Despite significant budget reductions during 2018/19, we continue to push forward with opportunities for carbon reduction and energy saving.
- A number of initiatives for 2019/20 are strategic; looking at medium-term planning and associated financing solutions, particularly in relation to low-carbon heat.
- Reviewing further opportunities for solar PV installations on Whiteknights campus will be a key focus, with the aim of delivering at least 100 tCO_2 further savings per year.
- Lighting improvements are a key focus for this year, and a trial installation in Edith Morley corridors in 2018/19 is planned for rollout, targeting 89,000 kWh energy savings and 25 tCO_2.
- We are working with IT to partition off their server rooms, to enable ventilation and cooling requirements to be reduced. This is targeting savings of 90,000 kWh energy and 25 tCO_2.
- We are working with the Student Officers in RUSU to help 'green' the Students' Union, including exploring lighting, heating and solar panel opportunities.
- Appendix 2 provides the full list of carbon and water projects planned for this year.

6.2 WASTE

- An initiative to provide food waste collections in office areas will be trialled in certain buildings during 2019/20.
- A project to investigate improved recycling of laboratory plastics will take place in conjunction with staff from Technical Services.
- Promotional work will be undertaken to increase the re-use of unwanted items, both internally through Warp-it, as well as externally via selected organisations.
- Promotional work will also focus on improving recycling rates in existing facilities, including the clarity of information available.

6.3 TRAVEL

- Widening the footpath from RUSU to Black Bridge will be the key route improvement project this year. This was another 'pinch point' identified in the most recent (2018) travel survey
- The next biennial travel survey is due in early 2020. Results of the last travel survey are published here - https://sites.reading.ac.uk/sustainability/travel/travel-plan-monitoring/
- Installation of major new cycle parking has been completed as part of the Library refurbishment project
- We are undertaking expansion of the Co-Wheels scheme to introduce an additional car at the Northcourt Halls
- Continuation of the successful cycle skills promotion campaigns and events.

7 HIGHLIGHTS FROM ACROSS THE UNIVERSITY

7.1 BIODIVERSITY

- Whiteknights campus won a Green Flag award for the 9th year in a row, recognising it as one of Britain's best green spaces.
- Part of the Whiteknights campus is a Local Wildlife Site (LWS) which supports local and national biodiversity, notably the stag beetle, common toad and various amber list birds (Easton et al. 2009).
- There are two 'Friends' groups which have open membership for staff, students and members of the public: Friends of the University and Friends of the Harris Gardens. The Friends groups support funding and maintaining of the grounds.
- Green waste continues to be composted on site for use on the University's estate.

7.2 CATERING, HOTEL & CONFERENCE SERVICES (CHCS)

- The hot drink Sustain It reusable cup scheme continues along with a 20p levy on paper cups, which has increased reusable cup usage to 46%. This has seen over 174,000 paper cups being diverted from waste.
- 2018/19 has seen the removal of a significant amount of single-use plastic bottle products from all catering outlets, as well as the continuation of the successful Sustain-It bottle scheme.
- Plastic straws have been phased out of Catering and Bars outlets, with biodegradable straws now available made of straw. There are also now paper cup recycling bins in the majority of University buildings.
- In 2019/20, Catering are introducing new market stalls in some catering outlets selling a range of environmentally-friendly products.
- The University retains its status as a certified Fairtrade University and is now looking at the more stringent requirements to retain this certification in 2020.

7.3 SUSTAINABLE PROCUREMENT

The University's Procurement Team has continued its efforts to embed sustainability into its processes.

- There has been a combined effort to incorporate procurement communications with sustainability messages to raise awareness of sustainable procurement to both internal and external stakeholders.
- Work is underway to develop new category plans for utilities/ waste and travel which will all have a number of opportunities to support sustainability.
- The Procurement team continues to support the maintenance of the environmental ISO standards held by the University.
- Work is currently underway to implement an e-market place system which will give more visibility of sustainable products available from suppliers to the University.
- Stronger joined up approaches in the last year have been achieved to influence the development of policies.
- Close collaboration on a range of sustainability project tenders and appointments.

7.4 SPORTSPARK

- The SportsPark team have undertaken further efficiency improvements, which Sustainability Services have supported. The changing room refurbishments have included percussion tap controls for the showers, targeted to save 2,500 m^3 water/year, while the sports hall lighting has all been upgraded to LEDs, targeting 23,500 kWh and 7 tCO_2 savings/year.

8. SUPPORTING EDUCATION FOR SUSTAINABILITY

- Sustainability Services have continued to support students with their studies of environmental issues, providing interviews, data and more general guidance and information. Students from the School of the Built Environment (SBE), School of Agriculture, Policy and Development (SAPD) and the School of Archaeology, Geography and Environmental Science (SAGES) have been supported with projects covering behaviour change initiatives, energy management and recycling habits on campus.

- In 2019/20, further work will be undertaken to try and formalise some of these arrangements, particularly with the SBE, to develop a Living Lab framework for delivering greater practical value from these projects.

- The staff sustainability e-learning package has been revamped, which is a mandatory course for staff at all levels to gain a broad understanding of sustainability at the University. A video version of this has also now been produced for students.

9. FINANCIAL INFORMATION

9.1 INVESTMENTS

As part of wider cost reductions across the University, the Sustainability project budget was reduced by 63% during 2018/19, which has impacted the scope of what can be delivered. This particularly hit the carbon management and sustainable travel programmes, including the replacement of the full-time Sustainable Travel Co-ordinator post with part time cover from other members of the team. Inevitably this will have some impact on their ability to deliver their existing remit.

Improvements have continued to be made however, with £407,385 invested during the year, including:

- £363,217 in carbon reduction initiatives*
- £2,398 in water saving initiatives
- £29,786 in sustainable travel initiatives
- £11,984 in waste facilities improvements

*Plus a further £134,270 contribution from Maintenance Services to the district heating extension
A full list of investments is included in Appendix 2.

Identifying alternative funding solutions will be critical to ensuring continued progress, and this year, we were pleased to work with Reading Community Energy Society, who have funded the installation of 72 kWp solar panels at London Road and MERL; with an approximate value of £80,000.

9.2 SAVINGS

For our Carbon & Water Management programme, we measure savings in 2 ways; against the original 2008/09 target and against the start of the 2016-21 programme. The cumulative programme savings are as follows:

- £26,646,401[2] cumulative savings from original programme (investments made between 2009/10 and 2015/16)

- £3,036,940 cumulative savings from current programme (investments made since 2016/17)

Whilst the savings from the current phase of the programme are beginning to accumulate, they are £1,929,792 less than anticipated, due to lower than projected investment in energy saving projects.

Our Waste Strategy was signed off in 2017, and since the 2015/16 baseline year, has delivered cumulative savings of £213,400 against the predicted 'business as usual' costs, primarily because of the significant drop in the overall amount of waste the University has produced.

10. APPENDICES

https://sites.reading.ac.uk/sustainability/appendices-environmental-report-2018-19/

Thank you to all the contributors to this report.

[2] Adjusted to fix energy costs at 2016 prices so savings do not look over-inflated