



Annual Environmental Report 2021 / 2022

Annual Environmental Report

Energy and Environment Committee

November 2022



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Statement



Professor Phil Hart, Chair Energy and Environment Committee

Our vision is to be valued globally for tackling the real-world issues of today to deliver a sustainable future. We work in partnership with business, academia, governments and other organisations to develop and deliver applied research and innovative science, technology, engineering and management.

Here, the Energy and Environment Committee (EEC) reports progress on our environmental targets. This is largely focused on the performance of our estate and facilities. Our academic contribution to sustainability is featured on the University website. Given the University undertakes world leading research and learning on sustainability and the environment it is important that we are reflecting this in our operations. Key performance indicators highlighted below and through the report are correlated with the Times Higher Education Impact Awards criteria giving an indication of the contribution to the UN Sustainable Development Goals (SDGs).

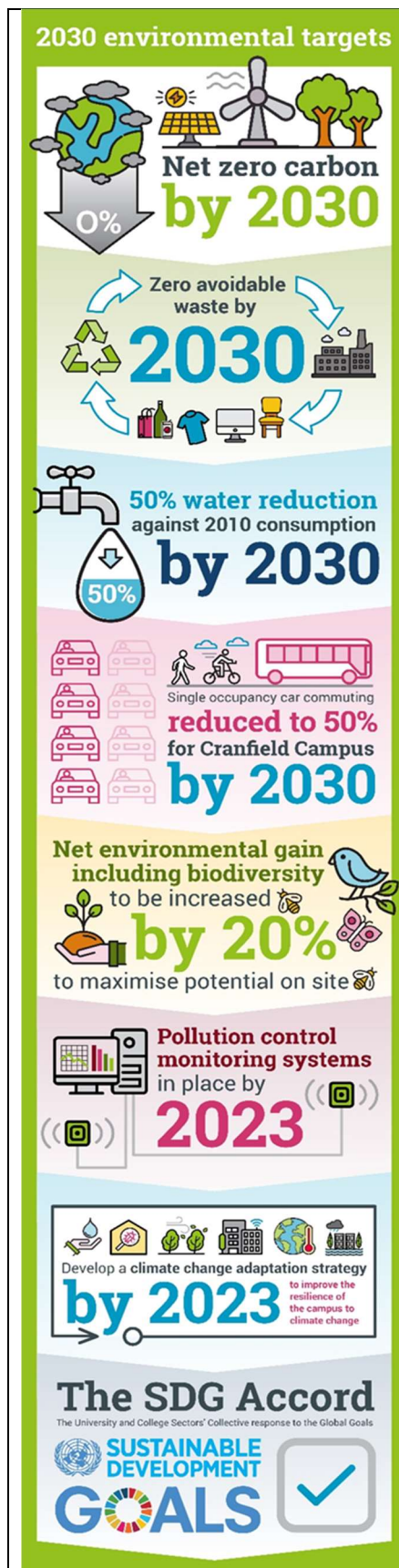
We remain indebted to our staff and students that contribute to our on-going improvements and to our Energy and Environment Team, Energy and Environment Committee and working group members who lead and coordinate our combined efforts. We are grateful for the on-going support of our contractors who help with the efficient running of the estate.

Key performance indicators

Issue	Description	Latest	Previous	SDG Contribution	Comments
Carbon	Scope 1&2 emissions tCO2	9,609	10,890	THE – SDG* 13.4.1	12% reduction year on year
Carbon	Energy efficiency GJ/m2	0.79	0.83	THE - SDG 7.3	New buildings added on site
Carbon	Renewable energy GWh	3,298	2,236	THE - SDG 13.2.3	Biomass output increased
Waste	Avoidable waste %	18%	N/A	THE - SDG 12.2.4	Percentage of total waste in residual waste which could have been avoided
Waste	Total waste tonnes	1052	784	THE - SDG 12.3.2	Previous figure was affected by Covid
Travel	Commuting alone by car %	35%	59%	THE - SDG 11.4.1	Impact of Covid/working from home
Water	Water consumption m3/head	34.1	36.2	THE - SDG 6.2.2	Water consumption has increased after Covid
Biodiversity	Biodiversity Action Areas ha	8.6	8.1	THE – SDG 15.2.3	In addition, 3000 (0.6ha) of trees planted

* THE-SDG refers to the Times Higher Education Impact Awards Sustainable Development Goals categories. Note: there are more indicators and objectives highlighted under each section in the report.

Environmental Targets



In 2020 the University Council committed to a new set of environmental targets. The strategy for delivering these targets can be found at <https://www.cranfield.ac.uk/about/our-sustainable-university/our-2030-environmental-targets>

The targets are to be achieved by academic year 2030/31. They include All Cranfield University activities including the activities of any subsidiaries including MK:U.

The aim of the Net Zero Carbon target is to reduce Scope 1 and 2 carbon emissions as quickly as possible through energy saving and renewable energy. Any remaining emissions will require other measures. The strategy for Scope 3 emissions is still being developed and these emissions will be included as deemed appropriate for the sector.

The Zero Avoidable Waste target aims to minimise waste ending up in landfill or going for incineration and embraces the application of circular economy principles.

The water reduction target aims to be consistent with best practice and future supply pressures in this part of the UK.

The sustainable commuting target continues to focus on promoting alternatives to the car. Walking, cycling and bus are the main options.

Biodiversity will benefit from the new target ensuring any development on site results in a net environmental gain. The masterplan for the University sets out areas for new buildings and also a wildlife corridor where new habitats can be established.

The application of sensors on campus through the Urban Observatory is helping with the monitoring of air, water and soil. This will be developed in the short term to set out new pollution control monitoring and targets.

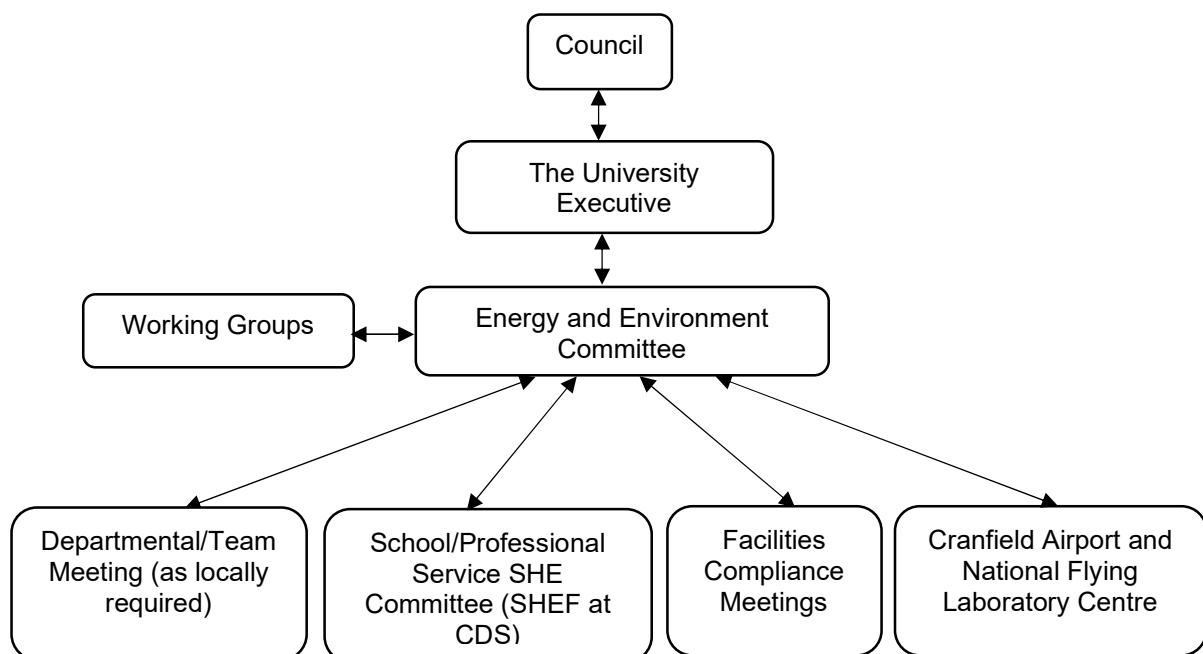
The risks of climate change impacts on the University are being investigated. This will be developed into a climate change strategy.

The University has signed the SDG Accord. This has led to more focus on the SDGs and how the university's contribution can be better communicated and developed.

Quality assurance

Governance

The Energy and Environment Committee (EEC) reports to the Cranfield Executive and Council on energy and environmental management issues. The priority of the Board is to ensure Cranfield University demonstrates a leading capability in environmental performance by providing oversight and direction. The Board is a sub-committee of the Executive and consists of senior managers from across the University along with student representation. The Board has working groups, with members drawn from operational and academic staff and students, to progress key environmental objectives. A dedicated Energy and Environment team facilitates delivery of the objectives and reports progress towards target to the Board on a regular basis. The Board aims to ensure a close relationship between EEC's environmental activities across the University and the teaching, learning and research taking place within the Themes on environmental best practice. The Governance structure is outlined below



ISO 14001:2015

Cranfield University operates a university wide environmental management system. The system provides a framework for managing our environmental impacts, risks, and opportunities, for setting environmental objectives and establishing programmes to achieve them. The scope of the certification covers all University operations including Cranfield Defence and Security at the Shrivenham and COTEC sites.

A successful re-certification audit was carried out by BSI in December 2020 followed by further surveillance audits, the most recent being May 2022 when the subsidiary Cranfield Conference Centre Ltd (CCCL) was added to the scope of the certification.

In a climate of continuous improvement, the reporting of all environmental incidents and near misses is encouraged.

ISO 50001:2018

Cranfield University operates a university wide Energy Management System, which provides a framework for managing our energy use. The scope of the certification covers all University operations on the Cranfield campus, Cranfield Defence and Security at the COTEC site and MKU at Bouverie House. Certification was achieved in August 2018 and the second annual surveillance visit was completed by Lloyds in July 2020. There were no major or minor non-conformities. In August 2020 a further audit was undertaken by Lloyds to transition from ISO 50001:2011 to ISO 50001:2018 and that was also successfully completed with no non-conformities. In June 2021 there was a recertification audit without any non-conformities and a surveillance audit in July 2022 found only one minor non-conformity.

Scope of reporting

The environmental objectives on page 4 encompass activities taking place on the Cranfield Campus, including subsidiary companies and tenants on site (*see note 1, page 15*). The University's operation at the Cranfield Ordnance Test & Evaluation Centre (COTEC) is included. The University is not directly involved in the management of Shrivenham Campus, so the University activities there do not contribute to the key performance indicators such as carbon emission in this report (*see note 1, page 15*).

Other reporting

In line with the Higher Education Statistics Association (HESA) requirements, the University submits environmental data as part of the annual estate management reporting statistics. This data attempts to exclude tenant data and differs slightly from the data that appears in this report. Under the new Streamlined Energy and Carbon Reporting (SECR) rules, which replaced the Carbon Reduction Commitment (CRC) Energy Efficiency scheme in 2020, the University reports its annual carbon emissions in the University's annual Finance report. That data includes all primary energy use by the University Group, all imported electricity use and all fuel put into University owned vehicles or private or hire vehicles used for Business Travel. . Data submitted to HESA is also used by the 'Green League' (a student-led, People and Planet voluntary league table of University environmental performance). In the Green League comparisons are made per student or per m². Cranfield is a wholly Postgraduate University undertaking industrial scale research. This makes environmental impacts per student or per m² appear high. This annual report focuses on how the environmental performance of the University is improving over time. The University is also participating in the THE (Times Higher Education) Impact Awards. The contribution of the environmental management of the university estate to the SDGs in line with the THE criteria is highlighted in this report.

Base year recalculation policy

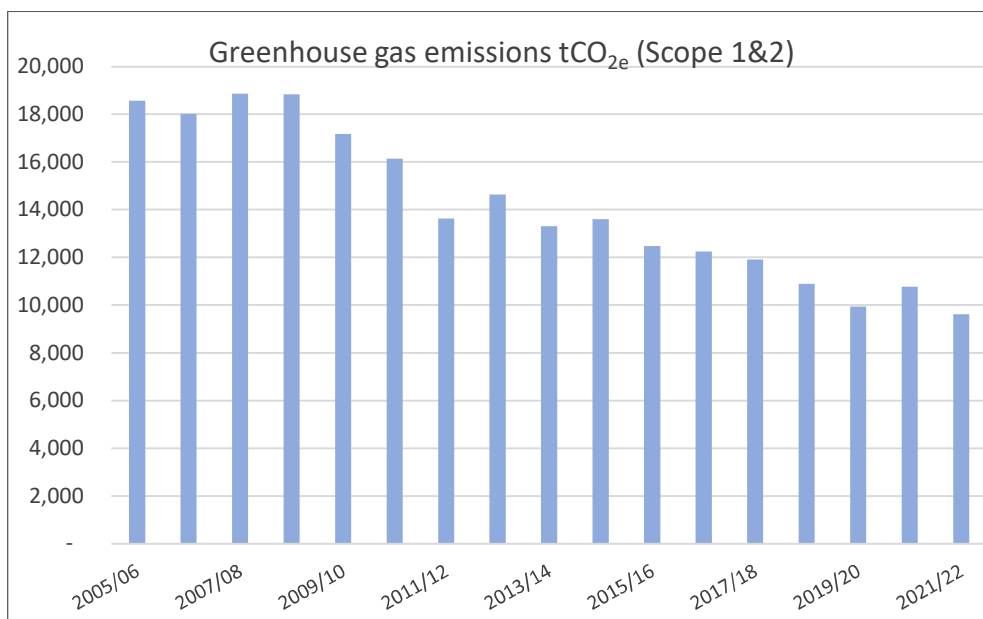
Our base year figures for reporting are reviewed from time to time to ensure like for like reporting. In 2013, the University sold Sudbury House Hotel prompting a recalculation of the base-year carbon emissions data and subsequent years to remove reference to this asset, similarly the acquisition of Martell House was taken into account (*see notes 2 and 3, page 15*).

Carbon and Energy



Progress

There has been a 49% reduction in emissions compared with the baseline. Most of this has come within the last 12 years. The downwards trend has been approximately 4% per year. This needs to be increased to nearer 6% to achieve zero carbon for scope 1 and 2 emission by 2030. To accomplish this the import of natural gas must be drastically reduced. Hence the strategy to install heat pumps, and the use of clean electricity.



Energy trends and efficiency

Total energy used has decreased slightly compared with the previous year, although the longer-term trend is slightly up, and recent figures have been impacted by the Covid pandemic. Nevertheless, the overall energy efficiency continues to improve with less energy used per building floor area. Renewable energy use has increased with the enlargement of the solar farm and increased operation of the biomass boiler. The University does not currently purchase “green” electricity as typically this does not provide additionality in the UK market.

	19/20	20/21	21/22
Total energy used (kWh)	37,873,836	42,968,224	42,451,366
Renewable energy used (kWh)	2,138,441	2,236,208	3,297,839

	19/20	20/21	21/22
Total energy used (GJ)	136,346	154,686	152,825
Floor area (m ²)	169,005	185,856	192,495
Energy efficiency (GJ/m ²)	0.81	0.83	0.79

Scope 3 emissions

Most Scope 3 emissions are difficult to measure and report on as they rely on third party data. Estimates for supply chain emissions can be made based on spend. The University is currently reviewing this approach and will be reporting on scope 3 emissions later in the year.

Infrastructure

The A £5 Million project funded through the Government's Public Sector Decarbonisation Scheme has been installed. This includes improvements to the heating distribution, improved Building Management System control, additional buildings added onto the network and a 1 MW Air Source Heat Pump. There are also LED lighting upgrades and a solar farm extension with batteries to help balance the electrical system as reliance on the existing Combined Heat and Power system is reduced.

Following the successful bid last year, a further £11 Million bid to Public Sector Decarbonisation Scheme has secured funding for further measures to reduce carbon on the Cranfield campus. This will see the insulation of the two large aircraft hangars, further improvements to the district heating with an additional air source heat pump and an additional solar PV array.



Extension to solar farm



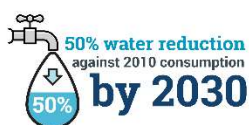
Battery and Air Source Heat Pump

Table of SDG KPIs relating to Carbon & Energy

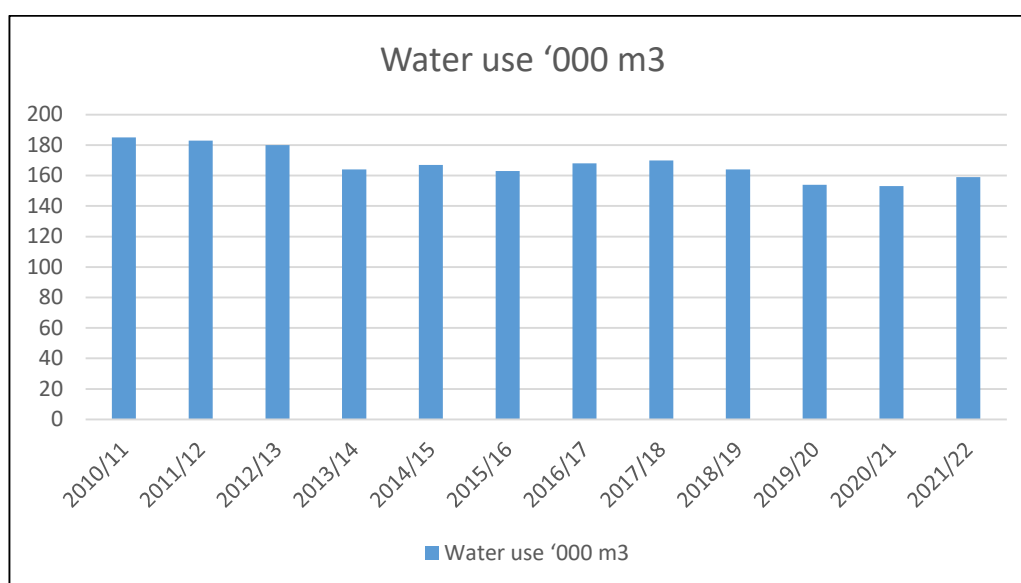
The SDG indicators below are taken for the Times Higher Education (THE) Awards criteria. The measures are what the university is doing to meet that indicator.

THE reference	Indicator	Measures	Comments
7.2.1	Energy and Efficient Renovation and Building	New buildings are assessed to the BREEAM standard	Key measures are being incorporated into University design guide / standards to address refurbishments / renovations
7.2.2	Plans to upgrade energy efficiency of buildings	These are set out in the annual Energy & Carbon Plan	See on website: https://www.cranfield.ac.uk/about/our-sustainable-university/carbon-and-energy-management
7.2.3	Carbon management and emission reduction process	This is set out in the annual Energy & Carbon Plan	See above
7.2.4	Plan to reduce energy consumption	This is set out in the annual Energy & Carbon Plan	See above
7.2.5	Energy wastage identification	This is set out in the annual Energy & Carbon Plan	See above
7.3.1	Total energy used per floor space	Ratio 0.79 GJ/m ²	Energy used 152,825 GJ Floor space 192,495 m ²
13.2.1	Low carbon energy tracking	Solar 0.9 GWh Biomass 2.4 GWh	
11.4.8	New build standards	New buildings are assessed to the BREEAM standard	
11.4.9	Building on brownfield sites	The University is using brownfield for new buildings	This is set out in the campus Masterplan
13.2.2	Total energy used	42,451,366 kWh	
13.2.3	Total energy used from low carbon sources	3,297,839 kWh	Note "Green Electricity" is not purchased as it typically does not provide additionality in UK context
13.3.2	Climate Action Plan	Energy & Carbon Plan on website	Climate adaptation strategy being developed
13.4.1	Commitment to carbon neutral university	Net zero carbon by 2030 target	Includes scope 3, but exact definition being developed
13.4.2	Carbon neutrality date	2030	

Water



Water consumption was greater than last year but has not increased dramatically considering the extra 400 students living on campus in the new Baroness Young Halls of residence. The consumption per head decreased from 36 to 34 m³/person/year (see table below). This year has seen a very dry spring and summer. Extra water was used to help establish trees planted in the previous winter as part of the new residential halls planning requirement. Rainwater collected at Building 54 was used and water which had passed through the sewage treatment works was trialled. However mostly mains water was used. Given the success of the trial with the water from the sewage treatment plant its use will be further explored in future years, whilst ensuring compliance with quality and safety requirements.



Water use over the last 12 years has reduced as improvements have been made to infrastructure reducing leaks and improving efficiency of use. This is despite an increase in people living and working on campus.

	20/21	21/22
Total water used (m ³)	153,481	159,112
Staff & Students (FTE)	4,241	4,671
Water use efficiency (m ³ /person)	36.2	34.1

Table of SDG KPIs relating to Water

The SDG indicators below are taken for the Times Higher Education (THE) Awards criteria. The measures are what the university is doing to meet that indicator.

THE	Indicator	Measures	Comments
6.2.1	Water consumption tracking	Water consumption reduction is key target;	
6.2.2	Water consumption per person	34.1 m ³ /person	159,112 m ³ 4,629 persons
6.3.1	Wastewater treatment	Waste water is treated on site	
6.3.2	Preventing water system pollution	ISO 14001 certified environmental management system	
6.3.3	Free drinking water provided	Drinking water fountains and filtered water dispensers	
6.3.4	Water conscious building standards	BREEAM assessment on new buildings	
6.3.5	Water conscious planting	Plantings are made at the appropriate time of year to avoid water stress	Guidance on suitable drought tolerant plants for the site is being developed
6.4.1	Water reuse policy	A water management policy is being developed	Options for water reuse and recycling are being explored
6.4.2	Water reuse measurement	None	This is still in the pilot stage
6.5.2	Promoting conscious water usage	Water conservation is promoted on campus	A project promoting efficient shower usage

Resources and Waste



The university is committed to putting the principles of the Circular Economy into practice by putting processes in place to:

- prevent materials from becoming waste in the first place
- ensure waste that is created is recycled, composted, or sent for anaerobic digestion and not sent to landfill or incineration*.

*Recyclable, compostable or digestible waste that ends up in the residual waste stream (waste sent for landfill or incineration with or without energy recovery) is defined as AVOIDABLE. Another way of defining Avoidable Waste is defined in the Government's Resources and Waste Strategy as: Waste that is technically, economically, and environmentally feasible to reuse or recycle, or, where this does not apply, it is (technically, economically and environmentally) feasible to replace with alternatives that are reusable or recyclable.

Waste reduction

This year is the first year of reporting waste tonnage per FTE staff and student, and is a better reflection of progress in waste reduction as the campus population changes.

	21/22
Total waste (tonnes)*	1,052
Staff & Students (FTE)	4,671
Water use efficiency (m3/person)	0.23

*(Cranfield campus waste only)

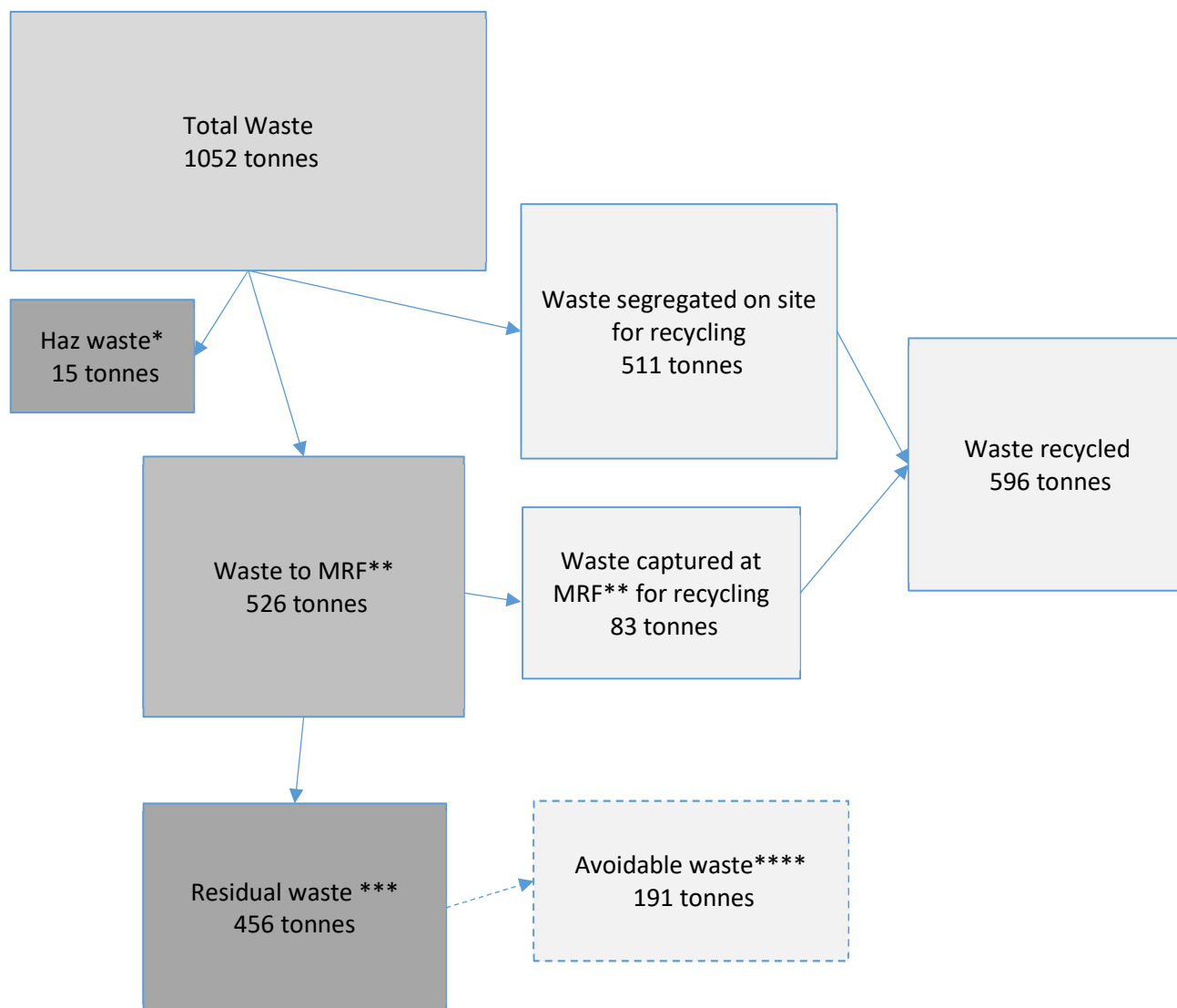
The previous year figure for total waste figure was 784 tonnes. This was heavily affected by the Covid pandemic and the reduction in activity on site.

Recording and monitoring of pre consumer food waste from catering outlets has been intermittent due to disruption of services caused by the pandemic. The university is on track to provide this information in the next annual report 2022-23.

The overarching target is to reach Zero Avoidable Waste by 2030. The starting point is to gather information on the materials ending up in the residual waste stream and use best management practices to apply the waste hierarchy to these materials: prevent, reduce, reuse, and recycle.

Avoidable Waste

An audit of waste was undertaken of recycling and residual general waste bins around the different functional areas of the campus from residential to technical buildings. The proportion of waste found in the residual general waste stream that could have been recycled, composted or sent to anaerobic digestion was weighed and calculated, and this percentage applied to the total residual waste arisings figure. The chart below summarises the results



*Haz waste – hazardous waste which is not recyclable

**MRF – Material Recycling Facility

***Residual waste – waste which is sent for incineration and landfill

****Avoidable waste – waste which could have been recycled

Notes: this data is from 2 audits representing 1% of the total residual waste. In future years further audits will be scheduled to gain confidence in the results. It does not include construction waste from development sites.

Of the 1051.7 tonnes of waste produced , 49% was segregated on site and either recycled, composted or sent for anaerobic digestion. Avoidable waste is 18% of total waste. Further analysis reveals that 65% of the avoidable waste is food, 12% is paper and card, 9% is recyclable plastic, 8% coffee cups and 6% is compostable takeaway containers.

Reuse of resources

The university's objective to increase the amount of items has seen steady progress. There have been several collections of redundant equipment and furniture from desks, chairs and filing cabinets to larger pieces of lab equipment, made possible by the university's relationship with re-use organisations Right Green, Reyooz, Milton Keynes Play Association (MKPA) and Unigreenscheme. These are items which would otherwise have been sent for disposal. More work will be done to convert these interactions into figures to be reported in 2022-23.

The 2021 student moveout campaign saw a continued arrangement with the British Heart Foundation's 'Pack for Good' campaign and The NEED Project. The donations provide much needed items for the charity shops and families in need in the local area.



Construction

The Baroness Young Halls of Residence have been completed and assessed against BREEAM (Building Research Establishment Environmental Assessment Method) criteria. The buildings scored 5 out of a possible 14 points in the materials efficiency section and 5 out of a possible 9 points in the waste section. Future construction will aim to achieve higher scores in these areas.

Procurement of resources

We are working to strengthen our procurement processes to include circular economy principles and sustainability requirements at each procurement stage.

Table of SDG KPIs relating to Resources & Waste

The SDG indicators below are taken for the Times Higher Education (THE) Awards criteria. The measures are what the university is doing to meet that indicator.

THE	Indicator	Measures	Comments
12.2.1	Ethical sourcing policy	Promoting Fair Trade	Developing sustainable food policy
12.2.3	Hazardous waste disposal policy	Procedures in place handling and disposal of hazardous waste	Waste policy and code of practice being developed
12.2.4	Disposal to Landfill policy	Target to monitor what goes to landfill/incineration and what can be recycled	Waste policy and code of practice being developed
12.2.5	Minimisation of plastic	Single use plastics promotion	Waste policy and code of practice being developed
12.2.6	Minimisation of disposable items	Single use plastics policy	Waste policy and code of practice being developed
12.2.7	Extending disposal policies to supply chain	Currently ask suppliers for their environmental policies	This will be developed and incorporated within procurement processes
12.2.8	Extending minimisation policies to supply chain	Currently ask suppliers for their environmental policies	This will be developed and incorporated within procurement processes
12.3.1	Waste tracking	Waste and recycling figures made available on web site	
12.3.2	Amount of waste generated (tonnes)	1,052 tonnes	
12.3.2	Amount of waste recycled	596 tonnes	
12.3.2	Amount sent to landfill	456 tonnes is residual waste	This is currently sent for incineration. A proportion of this is likely to end up in landfill as ash
12.4.1	Sustainability Report	SDG reporting on web site: https://www.cranfield.ac.uk/sustainable-development-goals . Also report to EAUC for SDG Accord annually.	



Green Team Tour of Materials Recycling Facility

Sustainable Commuting



Travel Survey

A travel survey in late 2021 shows the potential impact of working from home on the commute to Cranfield campus. This may have been too early after the Covid pandemic. However, it is interesting to see the impact on the single occupancy car journeys in particular.

Journeys/week	2011/12	2013/14	2015/16	2017/18	2021/22
Car alone	70%	58%	59%	59%	35%
Car share	13%	11%	13%	10%	5%
Motorbike	1%	1%	1%	1%	0%
Bus	7%	19%	13%	18%	14%
Cycle	6%	8%	8%	7%	5%
Walk	2%	3%	5%	3%	3%
Other	1%	1%	2%	1%	5%
Working at home*					34%

*Avoided journeys

Cycling support and development

A new cycle and footpath has been installed between the north of Cranfield campus and the north of Cranfield village. This path is completely off road and provides a safer route for staff and students cycling and waling from the village to campus



In September 2020 Cranfield University began working with the social enterprise Cycle Saviours, who operate a bicycle repair and refurbishment scheme within the umbrella of the Milton Keynes Christian Foundation. They run maintenance 'pop-up workshops' and community events and places of work like Cranfield University. They offer training and employment in the form of an apprentice scheme to those not in school or employment. Cycle Saviours only sell

reconditioned bicycles. They salvage old bicycles and what cannot be refurbished is used for repairs or recycled.

In September and October 2021, Cycle Saviours held bicycle sales at Stafford Cripps the bicycles sold out within 2 hours. All students that attended were advised about road safety for cycling and walking particularly at night. Each student that attended was given a high visibility reflective vest and a leaflet about cycling at the university. Bicycles were also registered on the University cycle registration scheme established to keep track of bicycle owners.

There have been 8 repair sessions from September 2021 – July 2022. More than 134 bicycles were repaired. The bicycles presented by the students have a variety of issues. The main issue is tyre repair or replacement, which is a quick repair. The other main issue is rust on brakes and chain mechanisms, due to bicycles being parked outside, not protected from the weather. The sessions are subsidised and run at a cost of £350 – £450 per session. For an average of 20 repairs this is £22.50 per repair. Cycle Saviours are on site between 4 and 6 hours depending on the issues they encounter. There are always two qualified mechanics and 2 apprentices and a member of the Energy and Environment team. Student feedback has been very positive, and a number have donated their bicycles at the end of term for refurbishment and resale to new students.

Uno Bus

The Uno bus service which connects the University to Bedford and Milton Keynes is subsidised by the university for staff and students to use. It is a public bus service and so the local community also benefit from a much more frequent and comprehensive service than anywhere else in rural Bedfordshire. Despite severe restrictions during the Covid pandemic, the service has bounced back and is busier than ever.

Uno set up a stand for welcome week to promote the bus service and provide the students with travel and ticketing information. Several meetings were held with student representatives throughout the year to answer queries and plan improvements to the service. Engagement with students has been ongoing through social media.

Table of SDG KPIs relating to Sustainable Transport

The SDG indicators below are taken for the Times Higher Education (THE) Awards criteria. The measures are what the university is doing to meet that indicator.

THE	Indicator	Measures	Comments
11.4.1	Sustainable commuting target	Travel plan and surveys; Target reduce single occupancy car commuting to 50% by 2030	
11.4.2	Sustainable commuting promotion	Support for local bus service, cycling repair workshops, membership of liftshare	
11.4.3	Allow remote working	University policy to allow three days/week working from home	
11.4.6	Pedestrian priority on campus	Zebra crossings at all key crossing points	Next year traffic calming being introduced on College Road

Green Spaces and Biodiversity



The Cranfield campus is located in a wildlife rich setting, providing opportunities for students, staff and visitors, to enjoy the benefits of experiencing biodiversity. As a landowner and a centre of learning the University has a responsibility to conserve protected species and 'practise what we teach'. Biodiversity will benefit from the new target of 'Net Environmental Gain including biodiversity to increase by 20% to maximise potential on site' by ensuring any development on site results in a positive impact on biodiversity. The masterplan for the University sets out areas for new buildings and also a wildlife corridor where new habitats can be established.

Areas have been targeted for biodiversity actions such as the brook, woodland and several grassland areas. The total biodiversity action area increased this year from 8.1 ha to 8.6 ha, with an expansion of "no mow may" areas.

Sustainability garden

An area has been set aside to showcase and develop sustainable gardening practices. The garden has been developed from what was previously student allotments. The garden is now a communal area, for use by staff and students. The raised beds have been increased by adding old tractor tyres from the old Silsoe College site and a circular bed added for perennial fruit and vegetables. Fruit trees grown from grafts taken from trees lost to the development of Baroness Young Halls have been planted in the area as part of the orchard project. Members of staff from the Energy and Environment team are leading on this initiative and have introduced a gardening club.

Beehives

2022 has been a good year for the apiary. There are now 6 hives that are all healthy and producing honey and stores for the coming winter. There has been investment in beehive equipment as well as honey harvesting equipment from the University and Nurture. There was some swarming during the summer months. These swarms did not travel far and were collected by the university beekeepers. Three of these captured swarms were grown on and have graduated to other apiaries run by Nurture. Two were destroyed by wasps. As these swarms resulted from the university hives, there was a concern about queenless hives. However, all that swarmed have successfully requeened and are producing plenty of brood and honey.

Trees

The University is in the Forest of Marston Vale community forest area. So as part of the new Baroness Young Halls accommodation development over 3,000 trees have been planted. Some as specimen trees other in the form of woodland planting. In all 0.6 ha of tree canopy cover will result as the trees mature.

Table of SDG KPIs relating to green spaces and biodiversity

The SDG indicators below are taken for the Times Higher Education (THE) Awards criteria. The measures are what the university is doing to meet that indicator.

THE	Indicator	Measures	Comments
14.4.1	Water discharge guidelines and standards	The water treatment works has a discharge consent	Pollution monitoring of the main watercourse through campus is being developed
14.4.2	Minimisation of plastic plan	Single use plastics promotion	Code of practice being developed
14.5.1	Minimising alteration of aquatic ecosystems	The main watercourse through campus is managed to enhance biodiversity as part of grounds maintenance	
14.5.2	Monitoring the health of aquatic ecosystems	Pollution monitoring of the main watercourse through campus is in place	This needs further development
15.2.1	Events about sustainable use of land	Regular biodiversity walks around campus	
15.2.2	Sustainably farmed food on campus	Vegetable and fruit production in sustainability garden	Only for demonstration and community engagement
15.2.3	Maintain and extend current ecosystems biodiversity	Target for 20% net environmental gain including biodiversity for new developments; Biodiversity Action Plan	Biodiversity Action Plan needs updating
15.3.1	Sustainable use, conservation, and restoration of land policy	This is covered in the Biodiversity Action Plan	Biodiversity Action Plan needs updating
15.3.2	Monitoring endangered species	This is covered in the Biodiversity Action Plan	Biodiversity Action Plan needs updating
15.3.3	Local biodiversity included in planning and development	Target for 20% net environmental gain including biodiversity for new developments	
15.3.4	Alien species impact reduction policy	This needs to be included in the Biodiversity Action Plan	Biodiversity Action Plan needs updating
15.4.1	Water discharge guidelines and standards	The water treatment works has a discharge consent	Pollution monitoring of the main watercourse through campus is being developed
15.4.2	Minimisation of plastic policy	Single use plastics promotion	Code of practice being developed
15.4.3	Hazardous waste disposal policy	Procedures in place handling and disposal of hazardous waste	Code of practice being developed



Grizzled Skipper Butterfly

Climate Adaptation



The strategy for Climate Adaptation is still being developed. A draft has been produced which is now under review.

Pollution Monitoring and Control



The system for air, water and soil monitoring on site is still being developed.

Community Involvement

There is a staff green team and one led by students. The Energy and Environment Team provide support to both teams and help to organise events as well as providing information on environmental issues within the University.

Events

Several events were organised throughout the year. Here are some of the highlights:

Climate Café Virtual, September 2021: Meeting with new students to discuss climate issues, led by Rosina Watson

Green Week, November 2021: Included a talk on Cranfield's net zero goal, hedgehog friendly campus, Cawley's MRF tour, hay raking in one of the biodiversity action areas

Climate Change Quiz January 2022

Tree planting- February 2022: Tree planting in Bedford with Marston Vale Community Forest

Cranfield Gardening club launch, March 2022: Followed by regular meet ups

Earth Day, April 2022: Team presented live from the Grenville Turner suite with students and academics. A litter picking event also took place in the woodland.

Meet the bees, May and July 2022: Bee keeping experience sessions

Hedgehog Survey workshop, May 2022: Followed by hedgehog surveys on campus

Wildlife walks including butterfly count sessions, throughout the year

Green Team photo quest, Prize for photography and caption

In all there were some 648 participants.

Communications

There have been regular communications through social media and on the intranet. The following tables show the level of engagement:

Intranet	Hits
Average Intranet hits per month:	305

Social media followers	Followers
Instagram	579
Facebook	450
Twitter	789

Top social media posts	Description	Hits
Twitter	Hummingbird Hawk Moth video	3,634
Facebook	New cycle path map	1,180
Instagram	Video of Hummingbird Hawk Moth /Sustainability Gardens	2,500

Notes

1. **Dates:** Baseline and target years refers to the financial/academic year August to July (for example, for the Carbon target, the baseline year for carbon reporting is financial year 2005/2006 and the net zero target is to be achieved in academic year 2030/2031).
2. **Scope:** Tenants are included where it is not possible to distinguish between what is and is not a direct impact to the University as opposed to an impact of others operating on site. Examples include waste, car travel, some aspects of energy and water consumption and sewage discharges. As measurements and monitoring on site improve, this may become easier to distinguish. Additionally, the University is providing utility and other services to tenants and is in a position as landlord and service provider to influence their behaviour and assist in the reduction of their environmental impacts, whilst at the same time having an interest in minimising the risks to the University. The converse applies to the University's presence at Shrivenham. Here the University occupies space on a MOD site. For many of the targets it is not possible or appropriate to include this space as there is no operational control by the University (it is managed by MOD) and no data.
3. **Base Year Recalculation Policy:** Cranfield University will ensure that its greenhouse gas reporting is up to date, accurate and consistent with current Government guidance. In particular, when there are structural changes that have a significant effect on the baseline and the reported progress towards targets, the baseline and, if necessary, data for years in between will be recalculated.
Base year recalculation: It is important that progress is measured on a like for like basis. This means that any changes in calculation methodologies are applied to the previous figures as well as current figures.
Structural changes may include: mergers, acquisitions, and divestments; outsourcing and insourcing of relevant activities; changes in calculation methods or improvements in the accuracy of factors, such as emission, factors, or activity data that result in a significant impact on the base year figures; discovery of significant errors, or a number of cumulative errors that is collectively significant. The recalculation will be triggered and reported if the structural changes would result in a change of greater than 2% in the total baseline figure. At the same time any errors in the current year reporting greater than 2% will be amended and relevant reports updated, or notes attached explaining amendments.
4. **Changes to data:** Our carbon footprint is recalculated each year for all years in order to account for errors, changes to the scope and material changes to the conversion factors provided by DEFRA for company reporting purposes. They may not therefore compare directly with previous figures reported in the University Financial Statement. See also our baseline recalculation policy above. Note the figures exclude emissions for tenants on Cranfield Campus, Silsoe Campus, COTEC where these can be separately identified. University subsidiary companies are included. The same principle will apply to data for other targets.
5. **Water consumption and discharges figures:** These are for Cranfield Campus, including tenants. COTEC is included. Shrivenham data is not included. Discharges are taken as the average of the three consent targets.
6. **Waste figures:** These are for Cranfield Campus and include some, if not all, tenant waste. Note the key performance indicator for recycling is waste segregated on site. However, the waste contractor further segregates waste at their depot. This elevates the overall recycling performance, and it is this figure, which is reported in the HESA Estates Management Reporting.
7. **Academic expertise:** Wherever possible, the University is making use of its academic expertise and facilities to enhance its response to environmental improvement. The estate is also offering opportunities for research and teaching. Examples of this include energy audits carried out by students and the University laboratories to analyse local discharges. The new CHP unit is regularly used as a real life demonstration for teaching.
8. **Name:** The Energy and Environment Committee was previously known as the Board for Energy and Environment (BEE).

Glossary

AIRC Aerospace Integration Research Centre; EEC Energy and Environment Committee; BOD Biochemical Oxygen Demand; BREEAM Building Research Establishment Environment Assessment Method; CHP Combined Heat and Power; COTEC Cranfield Ordnance Test and Evaluation Centre; CRC Carbon Reduction Commitment; DEFRA Department for Environmental Food, and Rural Affairs; EA Environment Agency; EAUC the Environmental Association for Universities and Colleges; GIS Geographical Information System; HESA Higher Education Statistics Agency; IMEC Intelligent Mobility Engineering Centre; LED Light Emitting Diode; MOD Ministry of Defence; OU Open University; PV Photovoltaic; SECR Streamlined Energy & Carbon Reporting, SHE Safety Health and Environment; SHEF Safety Health Environment and Fire; SUDS Sustainable Urban Drainage System.

Energy and Environment Committee

Members:

- Chair, Professor Phil Hart, Director of Energy
- Ian Sibbald, Director of Finance
- John Street, Director of Facilities
- Gareth Ellis, Energy and Environment Manager
- Ginny Ford, Environment Advisor
- Angus Murchie, Energy Advisor (until April 22)
- David Ford, Director of Information Services
- Geoff Say, Director of Finance and Operations CDS
- Stewart Elsmore, Director of Campus Services
- Rosina Watson, Head of Sustainability Group
- Becky Shepherd, Environment Officer
- Gilbert Soyus, CSA Green Officer
- Abbi Legate, PA to Director of Energy (Board Secretary)

Further information

For further information, please visit our environmental pages on the University Website:

<https://www.cranfield.ac.uk/about/our-sustainable-university>

or the University Intranet: <https://intranet.cranfield.ac.uk/EnergyEnvironment/Pages/default.aspx>

If you have any questions on any other topics outlined within this report or would like to provide us with any feedback, please contact the Energy and Environment Team at green@cranfield.ac.uk.