Annual Environmental Report 2023 / 2024

Energy and Environment Committee

Cover photo: *Wildflowers sown near Martell House*

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Statement

Ian Sibbald, 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. This report highlights progress on our environmental targets which are largely focused on the performance of our estate and facilities. Our academic contribution to sustainability is featured on the University website.

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). Cranfield supports the UK government's commitment to the UK reaching net zero by 2050. This is evidenced in our academic endeavours, our community outreach and by our challenging 2030 target.

We remain indebted to our staff and students who 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

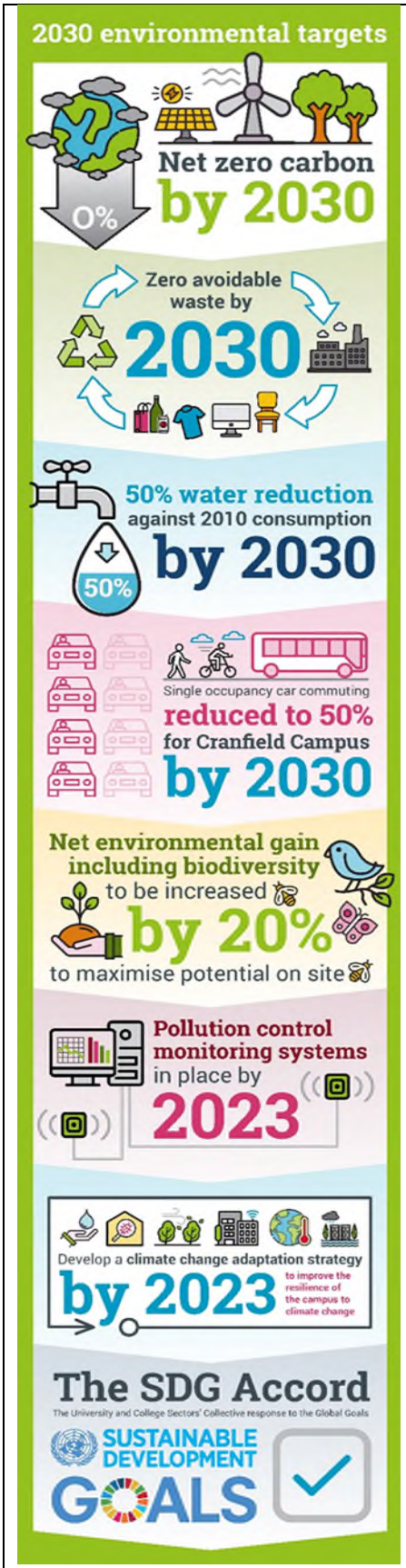
Issue	Description	Latest	Previous	SDG Contribution	Status	Comments
Carbon	Scope 1&2 emissions tCO2	8,951	9,532	THE – SDG* 13.4.1	A	5% reduction compared with the previous year
Carbon	Energy efficiency GJ/m2	0.71	0.82	THE - SDG 7.3	G	More efficient use of energy
Carbon	Renewable energy GWh	2,519	3,023	THE - SDG 13.2.3	A	Reduction in biomass output
Waste	Avoidable waste %	15.8%	18%	THE - SDG 12.2.4	G	Waste which could have been reduced, re-used, recycled
Waste	Total waste tonnes	942	988	THE - SDG 12.3.2	G	including COTEC figures for the first time
Travel	Commuting alone by car %	38%	38%	THE - SDG 11.4.1	G	Continuing impact of working from home
Water	Water use m3/head	39.8	34.4	THE - SDG 6.2.2	R	Total water usage has decreased marginally
Biodiversity	Biodiversity Action Areas ha	9.0	9.0	THE – SDG 15.2.3	G	Biodiversity areas sustained

Above: *table shows key performance indicators for our environmental targets and progress, including SDG (Sustainable Development goal) contribution and comments.*

** 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.

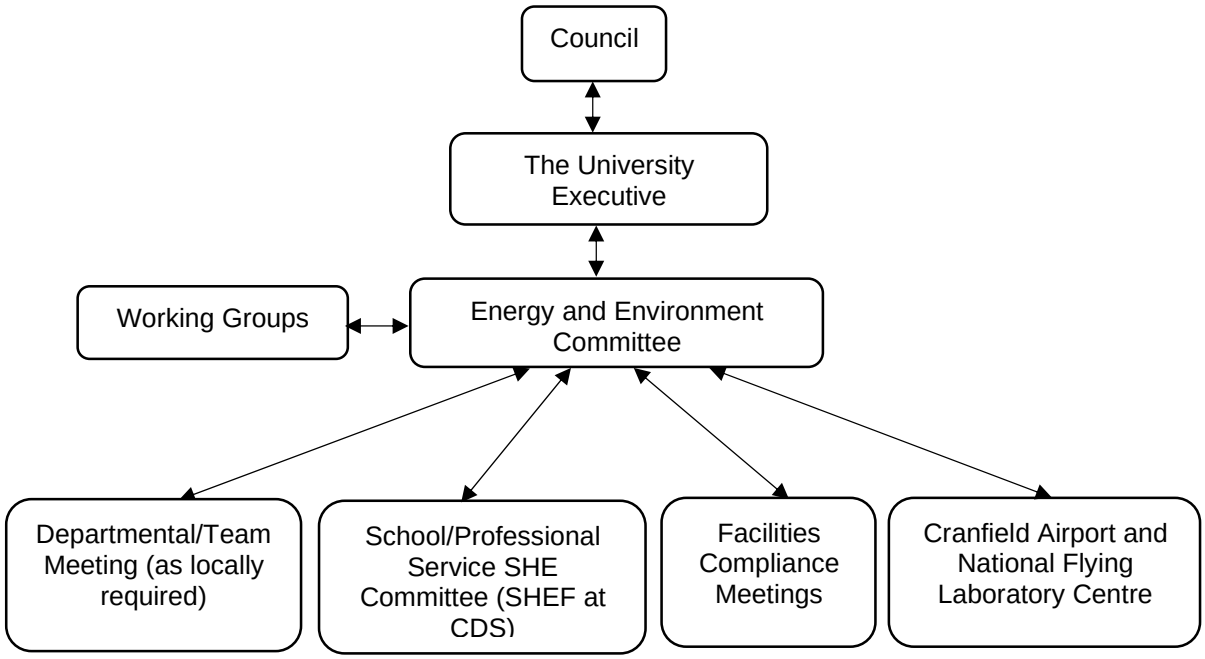
The risks of climate change impacts on the University are being investigated. This will be developed into a climate change strategy.

The University has signed the SDG Accord. This has lead 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) is an executive sub-committee reporting to the Cranfield Executive and Council on energy and environmental management issues. The priority of the Committee is to ensure Cranfield University demonstrates a leading capability in environmental performance by providing oversight and direction. and consists of senior managers from across the University along with student representation and members of the Energy and Environment Team. The Committee 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 to the Committee on a regular basis. This Annual report is approved by EEC and the University Council. The Committee 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.



Above: *Diagram shows governance structure for the Energy and Environment Committee*

The EEC also approves the annual environmental report which is then also approved by the University Executive and Council.

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 surveillance audit was carried out by BSI in May and June 2024.

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 MK:U at Bouverie House. Recertification was achieved in August 2024.

Scope of reporting

The environmental targets on page 4 encompass activities taking place on the Cranfield Campus, including subsidiary companies and tenants on site *(see Notes section near end of document).* 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 Notes section near end of document).*

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 '*People and planet University League*' (a student-led, People and Planet voluntary league table of University environmental performance). In People and Planet's University League, comparisons are made per student or per m^2 total floor area. Cranfield is a wholly Postgraduate University undertaking industrial scale research. This makes environmental impacts per student or per m^2 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.

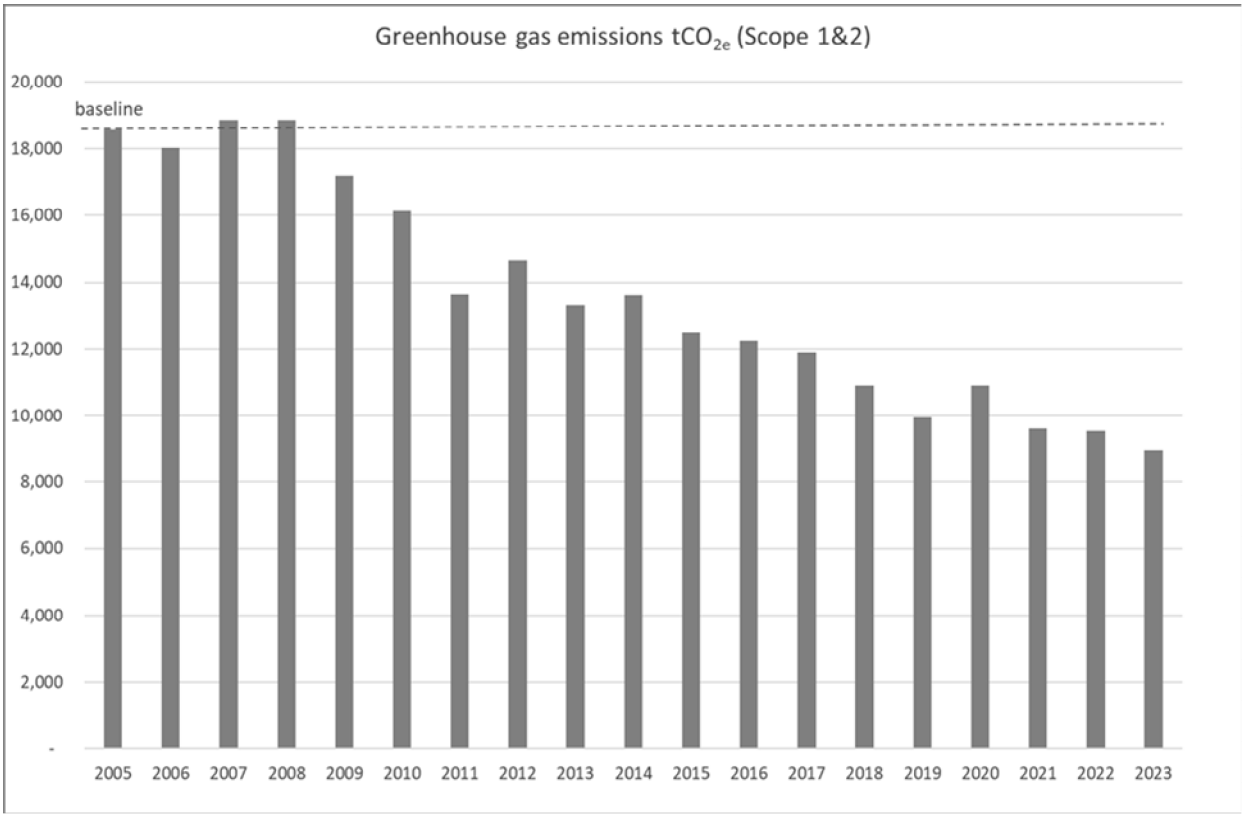
Base year recalculation policy

Our base year figures for reporting are reviewed from time to time to ensure like for like reporting. *(see Notes section near end of document).*

Carbon and Energy

Progress

Current Scope 1 and 2 emissions are 8,951 tonnes CO_2. A 5% reduction compared with the previous year at 9,532 tonnes. Recent investments in renewable energy and energy efficiency infrastructure are beginning to take effect. These potentially add up to emissions savings of over 3,000 tonnes of CO_2 and will become apparent over the next few years as the new systems bed in and are optimised. These measures include replacing gas boilers with air source heat pumps, adding buildings to the campus district heating system, improved heating and ventilation controls, insulation, LED lighting, solar photovoltaic installations, and a large battery. This year work has begun on extending the district heating to the residential estate which will see further savings in the future.



Above: *Graph showing the amount of greenhouse gas emissions in tonnes of carbon dioxide equivalent scope 1 and 2, from 2005 to 2023. Graph shows a downwards decrease in emissions with time.*

Note: *Year 2005 runs from August 2005 to July 2006, etc.*

Energy trends and efficiency

Total energy used has decreased and overall energy efficiency continues to improve with less energy used per building floor area. Renewable energy generation remains high with the enlargement of the solar farm but the biomass boiler has been inconsistent with its operation.

The University does not currently purchase “green” electricity as typically green electricity offered on the UK market does not provide additionality. The University is however exploring Power Purchase Agreements for new renewable energy electricity which will provide new capacity.

	2019/20	2020/21	2021/22	2022/23	2023/24
Total energy used (kWh)*	44,841,986	50,176,963	48,022,909	44,050,024	38,143,886
Renewable energy generated on site (kWh)	2,138,441	2,236,208	3,297,839	3,022,661	2,518,877
Renewable energy imported (kWh)**	2,599,468	3,061,439	4,716,080	5,444,942	4,324,709
Nuclear energy imported (kWh)**	1,138,553	1,223,056	1,961,987	1,855,017	1,271,384

**Includes electricity generated on site from gas and therefore excludes that gas from the total*
***based on UK Grid Average*
Above: *table shows total energy used in kWh and renewable energy generated/used in kWh, from 2019/20 to 2022/23.*

	2019/20	2020/21	2021/22	2022/23	2023/24
Total energy used (GJ)	161,431	180,637	172,882	158,580	137,318
Low Carbon energy used (GJ)	4,680	5,053	7,686	7,249	5,071

Above: *table shows total energy used in GJ and low carbon energy generated/used in kWh, year on year, from 2019/20 to 2022/23.*

	2019/20	2020/21	2021/22	2022/23	2023/24
Total energy used (GJ)	161,431	180,637	172,882	158,580	137,318
Floor area (m2)	169,005	185,856	192,495	193,201	190,448
Energy efficiency (GJ/m2)	0.96	0.97	0.90	0.82	0.77

Above: *table shows total energy used in GJ, total floor area in m^2, and energy efficiency per floor area in m^2 from 2019/20 to 2023/24 showing an increase in energy efficiency per m^2 with time.*

Scope 1 and Scope 2 emissions

	2019/20	2020/21	2021/22	2022/23	2023/24
Scope 1 (tCO_2)	8,343	9,277	7,252	6,769	6,998
Scope 2 (tCO_2)	1,599	1,613	2,357	2,763	2,073

Above: *table shows total energy used in GJ, total floor area in m^2, and energy efficiency per floor area in m^2 from 2019/20 to 2022/23 showing an increase in energy efficiency per m^2 with time.*

Scope 1 emissions have declined, and scope 2 emission increased as we have substituted gas for electricity (through the use of heat pumps). As the electricity grid gets cleaner or we add more renewable generation then the overall emission will reduce more quickly.

Scope 3 emissions

The measurement of Scope 3 emissions relies largely on third party data based on spend and there is a lag in obtaining and verifying realistic information. As soon as figures are available this report will be updated.

The University has established a Scope 3 working group to develop our reporting, guided by the Standardised Carbon Emissions Framework (SCEF) established by the Environmental Association for Universities and Colleges (EAUC) the environmental and sustainability champion within Further and Higher Education in the UK and Ireland.

Energy Champions Campaign

We worked closely with staff and students to run an Energy and Water champions campaign from November to March. Through the champions network we completed surveys and identified energy saving opportunities to improve heating efficiency and helped to spread awareness.

We also provided training to Green Team students to complete energy surveys of several buildings and deliver door-to-door awareness raising to family houses, handing out posters on 'how to save energy and water'.

Above: *photo of Energy Awareness posters created to support a campaign event*

Above: *student volunteers for door-to-door awareness raising to family houses*

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 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 Carbon Plan	See above
7.2.4	Plan to reduce energy consumption	This is set out in the annual Energy Plan	See above
7.2.5	Energy wastage identification	This is set out in the annual Energy Plan	See above

7.3.1	Energy use density- Total energy used per floor space	Ratio 0.71 GJ/m2	Energy used 137,318 GJ Floor space 193,201 m2
13.2.1	Low carbon energy tracking	See table above for trends	Renewable energy generated and imported is tracked
13.2.2	Total energy used Total energy used from low carbon sources	137,318 GJ 5,071 GJ	Based on low carbon energy generated on site and low carbon electricity imported as part of UK grid mix.
13.3.2	Climate Action Plan	Carbon Plan on website	Climate adaptation strategy adopted
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	
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

Above: *Table of SDG KPIs (key performance indicators) relating to Carbon & Energy reduction*

Above: *Photo of guided tour of new Energy Centre*

Water

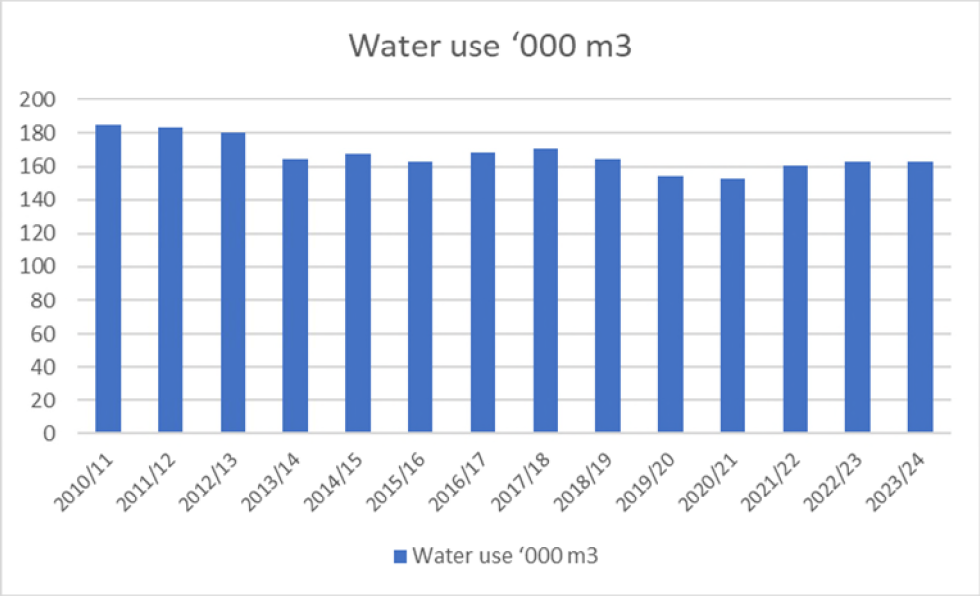
Improving metering and monitoring on the main Cranfield Campus has proved difficult this year due to difficulties in engaging with the water supplier.

Despite this we continue to promote and encourage efficient water use and the identification and reporting of leaks amongst staff and students. We do this through a variety of communication methods including the Energy and Water Champions Network, team / committee meetings and campus wide screen displays.

A dedicated section on water saving is also included in the Canvas Environmental Awareness Induction, for students.

The university published a revised Water Management Plan in March 24, to deliver commitments of the Water Policy.

The Water Policy is a statement of University commitment to reducing water use, promoting water efficiency and considering water re-use measures through education and research, our operations and our ambitions. All staff, students, consultants and contractors are expected to collaborate to deliver water consumption reductions and efficiencies.



Above: *graph showing water usage in Cubic Meters from 2010/11 to 2022/23. The total usage has dropped slightly, although not significantly.* **Note:** the water consumption figure for 2022/23 is estimated due the failure of the main supply meter.

	2020/21	2021/22	2022/23	2023/24
Total water used (m3)	153,481	160,580	162,478	161,872
Staff & Students (FTE)*	4,241	4,671	4,726	4,063
Water use efficiency (m3/staff&student)**	36.2	34.4	34.4	39.8

Above: *Table shows year on year comparison of water use and efficiency*

Includes Cranfield campus,MK:U, excludes Shrivenham. Excludes other Cranfield campus residents such as student partners and children and staff residing on site. The number for these in 2023/24 was 242.*

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;	Does not currently include water used by Cranfield University at Shrivenham as water metering and consumption is not under the University's control.
6.2.2	Water consumption per person	39.8 m3/person	This does not include non staff and students residing onsite (see above)
6.3.1	Wastewater treatment	Wastewater is treated on site	
6.3.2	Preventing water system pollution	Procedures include Spill Prevention and Response, Discharge to Sinks and Drains:	Controlled through ISO 14001 certified environmental management system
6.3.3	Free drinking water provided	Drinking water fountains and filtered water dispensers	Provided and stated on website
6.3.4	Water conscious building standards	BREEAM assessment on new buildings Compliance with Building Regulations	University Design Standards continue to be enhanced and developed.
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 has been developed and published	Options for water reuse and recycling are being explored
6.4.2	Water reuse measurement	None	This is still in the pilot stage
6.5.5	Promoting conscious water usage	Water conservation is promoted on campus	A project promoting efficient shower usage. Canvas Environmental Awareness module. Energy Champions campaign expanded to include water.

Above: *Table of SDG (Sustainable Development Goals) KPIs relating to water reduction, measures, and comments*

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.

Avoidable Waste

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.

Of the 942 tonnes of waste produced, 492 was segregated on site and either reused, recycled, composted or sent for anaerobic digestion. A further 123 tonnes was captured at the offsite treatment facility for recycling. Therefore 67% of the total waste is reused, recycled, composted or sent for anaerobic digestion. Avoidable waste is 15.8% of total waste. Tonnages are summarised in the figure on the next page.

Total waste

Total waste produced by the Cranfield campus over 23-24 was less than the previous year reflecting reduced numbers of staff and (mainly) students.

For the first year COTEC figures are included (58 tonnes)

	2021/22	2022/23	2023/24
Total waste (tonnes)*	1,052	988**	942
Staff & Students (FTE)***	4,671	4,726	4,063
Waste per staff & student FTE (tonne/person)	0.23	0.21	0.23

Above: *Table showing total waste, number of staff and students, and waste per staff/students*

**Cranfield campus +COTEC (for the first time) waste only, not including construction/demolition waste from development sites.*

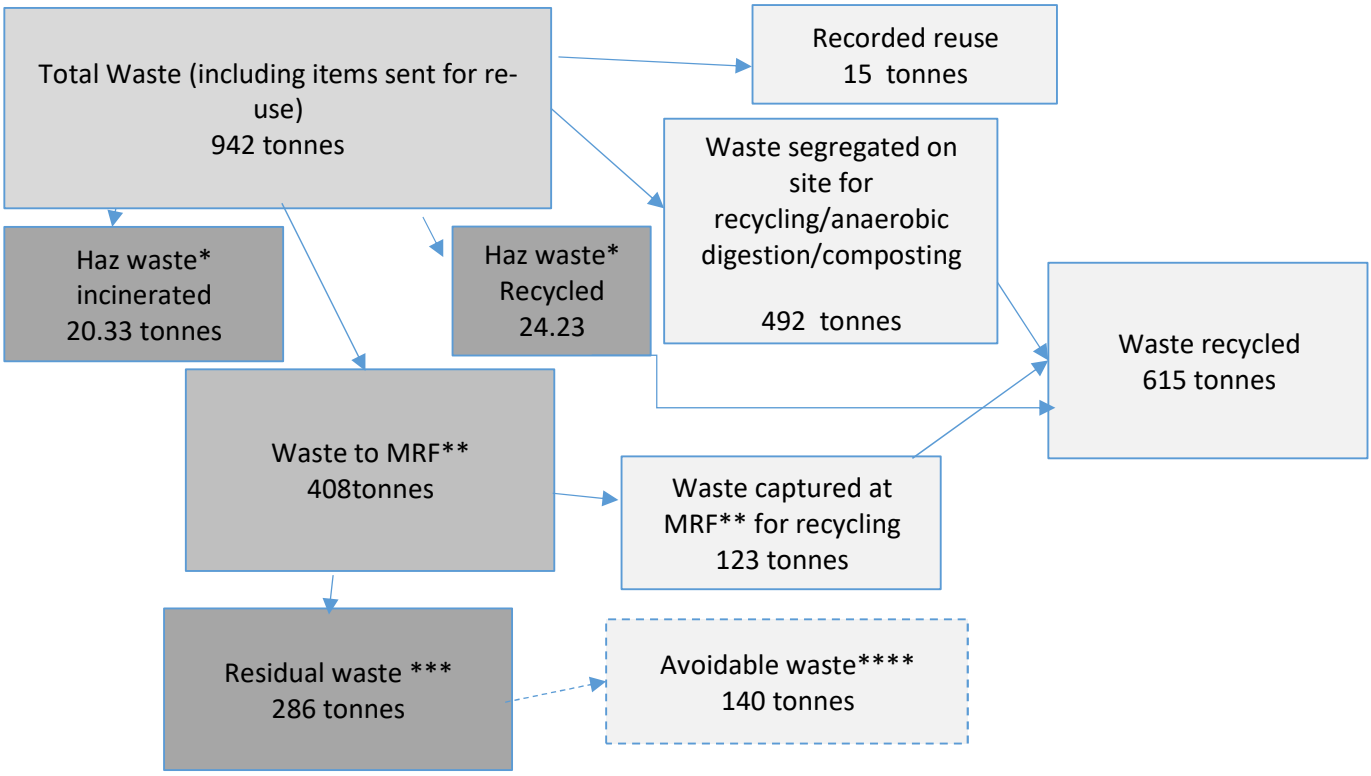
***22-23 figures include for the first time tonnages from CCCL).*

**** includes Cranfield and MKU, excludes Shrivenham. Excludes other Cranfield campus residents such as student partners and children and staff residing on site. The number for these in 2023/24 was 242.*

Procurement of resources

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

Where the waste goes



Above: *The diagram shows the breakdown of total waste generated on campus, and how it is managed. 440 tonnes of waste is segregated on site for recycling, and 408 tonnes of waste is sent to Cawley's Materials Recycling Facility (MRF). 140 tonnes of waste disposed of in general waste could have been recycled, composted or sent for anaerobic digestion.*

Notes*: This data is from tonnage and compositional audit information provided by the University's waste contractor. It does not include construction waste from development sites.*

**Haz waste – hazardous waste which is not recyclable..*
***MRF – Material Recycling Facility.*
****Residual waste – waste which is sent for incineration with energy recovery and landfill (0.5 tonnes bulky waste landfilled and the remainder energy recovery).*
*****Avoidable waste – waste which could have been recycled.*

Recording and monitoring of pre-consumer food waste from catering outlets

The University's Campus Services has placed reduction targets on food waste in an effort to reduce food being wasted during food preparation and service.

Food wastage (% revenue)	Reduction Target 23/24	Achieved	Reduction Target 24/25
Conference Centre	1.75%	1.63%	1.6%
Mitchell Hall	2.5%	1.89%	1.8%
Cranberries	1.25%	1.07%	1%
Overall	2.0%	1.90%	1.58%

Above: *Table shows Campus Service's food waste reduction targets per centre with progress made*

Cranfield achieves the Green Kitchen standard and Eco-smart certification

This year we are proud to celebrate two significant accomplishments: achieving the Soil Associations 'Green Kitchen Standard' across all our food and beverage outlets and Venue Cranfield's attainment of its ECOsmart certification. ECOsmart is the leading certification system for hotels and meeting venues. It is increasingly recognised as the credible and affordable marque that organisations can display to demonstrate their commitment to

environmental sustainability and achievement of recognised standards. These certifications are testament to the commitment of our teams towards the University's environmental targets.

Reuse of resources

The university's objective to increase the amount of items reused has continued, made possible by the university's relationship with re-use organisations such as Reyooz, Milton Keynes Play Association (MKPA) and Unigreenscheme. These are items such as furniture and equipment which would otherwise have been sent for disposal. The 23-24 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.

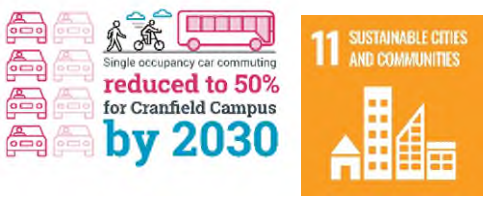
Table of SDG KPIs relating to Resources & Waste

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	Sustainable Food and Beverage policy adopted
12.2.3	Hazardous waste disposal policy	Procedures in place handling and disposal of hazardous waste	Hazardous waste procedure adopted
12.2.4	Disposal to Landfill policy	Target to monitor what goes to landfill/incineration and what can be recycled	Waste Code of Practice adopted
12.2.5	Minimisation of plastic	Single use plastics promotion	Waste Code of Practice adopted
12.2.6	Minimisation of disposable items	Single use plastics policy	Waste Code of Practice adopted
12.2.7	Extending disposal policies to supply chain	Currently ask suppliers for their environmental policies	This is being developed and incorporated within procurement processes
12.2.8	Extending minimisation policies to supply chain	Currently ask suppliers for their environmental policies	This is being developed and incorporated within procurement processes
12.3.1	Waste tracking Amount of waste generated and recycled	Waste and recycling figures made available on web site. Whole university / partial coverage	Does not include Shrivenham site as waste is not under the control of Cranfield University. COTEC now included.
12.3.2	Amount of waste generated (tonnes)	942 tonnes	Does not include construction waste.
12.3.2	Amount of waste recycled (inc energy recovery)	921 tonnes	This figure includes tonnage sent for energy recovery via incinerator
12.3.2	Amount sent to landfill	0.5 tonnes	Remainder is hazardous waste incinerated
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.	

Above: *Table of SDG (Sustainable Development Goal) KPIs relating to Resources & Waste*

Sustainable Commuting



New Travel Plan published with policy

A new Cranfield University Campus Travel Plan was published in July 2024, this serves as an update to the 2018 Travel Plan. Alongside this, a new Sustainable Travel Policy was published, and a Sustainable Business Travel Plan is currently in development. This will focus on reducing scope 3 carbon emissions associated with business travel. The University has also registered with Modeshift stars awards platform and aims to make progress towards improving engagement with sustainable travel.

Travel Survey

A travel survey in early 2024 confirms the trend seen in 2021 and the impact of working from home on the commute to Cranfield campus. Post 2020 the impact of Covid and subsequent working from home is obvious. Whilst this has reduced slightly it is good to see that bus usage has returned to pre Covid levels.

Journeys/week	2011/12	2013/14	2015/16	2017/18	2021/22	2022/23	2023/24
Car alone	70%	58%	59%	59%	35%	38%	38%
Car share	13%	11%	13%	10%	5%	7%	9%
Motorbike	1%	1%	1%	1%	0%	1%	1%
Bus	7%	19%	13%	18%	14%	13%	17%
Cycle	6%	8%	8%	7%	5%	4%	6%
Walk	2%	3%	5%	3%	3%	2%	3%
Other	1%	1%	2%	1%	5%	3%	5%
Working at home (Avoided journeys)					34%	29%	23%

Above: *Table shows percentages of staff and student travel modes from 2011/12 to 2023/24 according to travel survey data. Note that most staff travel to campus by 'car alone' if not working from home.*

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.

Cycling support and development

The cycle paths to the north and south of campus continue to provide a safer cycling and walking option for staff and students living in Cranfield village. The connectivity with National Cycle Route 51 also provides an option for those prepared to cycle from further afield.

A survey conducted in summer 2024 found that there are over 700 bicycle parking spaces on campus including higher-security bicycle lockers around the sports halls and for the new Baroness Young blocks. There is scope for more high-security lockers on campus. We also have two cycle repair stations by the sports hall and within the CSA recycling yard. In addition to this, local charity Cycle Saviours continue to provide maintenance 'pop-up workshops' once a month along with the sale of reconditioned bikes. In September and October 2023, Cycle Saviours held bicycle sales at Stafford Cripps. 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.

Above: *photos of Cycle Saviours carrying out repairs on bicycles and refurbished bicycles for sale*

EV car salary sacrifice scheme

An EV salary sacrifice scheme was introduced in early 2024 and is available to staff via the Vivup employee benefits portal. This offers the opportunity to purchase a new electric car at a discounted price.

EV car charging points

There are currently two rapid 50kW charging points provided by BP Pulse on campus. A tender has been sought to provide up to 40 slower 7KW and 22 kW charging points across the Cranfield campus over the next couple of years. These would mainly provide charging for staff and students but the 22 kW would also be suitable for visitors.

Road traffic calming measures

In 2024, Central Bedfordshire council commenced the building of road traffic calming measures along college road. This includes the installation of speed humps and new pedestrian crossings. This will make the journey to campus safer for cyclists and pedestrians. The road works are expected to be completed by winter 2024.

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	Assuming working from home counts as avoided journeys then this target is already met
11.4.2	Sustainable commuting promotion	Support for local bus service, cycling repair workshops, membership of liftshare	The University has a budget which helps to subsidise bus travel and support cycling and car share
11.4.3	Allow remote working	University allows up to three days/week working from home	This has had a big impact on the daily commuting figures
11.4.6	Pedestrian priority on campus	Zebra crossings at all key crossing points	Traffic calming measures currently being introduced.

***Above**: Table of SDG (Sustainable Development Goals) KPIs relating to Sustainable Transport*

Green Spaces and Biodiversity

The Cranfield campus is 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'.

During 2023 -24 tender specifications have been prepared for a baseline habitat condition assessment of both Cranfield campus and University owned land at Silsoe. This will form the basis of the Biodiversity Net Gain strategy and action plan. Areas have already been targeted for biodiversity actions such as the Chicheley brook, woodland and several grassland areas. The total biodiversity action areas cover over 9 ha or 10% of the Cranfield Campus seeing some action to increase biodiversity including the expansion of "no mow" areas.

Hedgehog Friendly

The University achieved Hedgehog friendly campus Gold standard in June 2024, this is thanks to our ongoing plan to increase and improve hedgerow habitat on campus, as well as installing hedgehog highways, and completing hedgehog surveys. We also delivered some community outreach working in collaboration with Holywell school in Cranfield Village to complete hedgehog surveys with school children and suggest ongoing actions for improvement.

Above: *photo of staff and student completing a hedgehog survey on campus*

Above: *photo of students building bug boxes*

Sustainability garden

The garden showcases and develops sustainable gardening practices. Staff and student volunteers maintain the garden which benefits both the garden and the wellbeing of those who volunteer and visit. In June 2024, we worked with students to build bug habitat boxes as an addition to the Sustainability garden. The garden has also been the perfect venue to host events such as staff team building sessions and our first ever Nature Explorers session with student families.

Bee hives

The Grounds contractor Nurture Landscapes continue to maintain bee hives on site. They have held bee awareness days and a honey harvesting event. Honey sales are donated to charity.

Practical biodiversity action

We have supported the ongoing maintenance of the Tiny Forest, a mulch ring laying event for Fedden field new tree plantings and campus tree planting events. We worked with the student Green Team to cut back scrub on campus to help maintain our wildflower meadow. We have supported and encouraged surveys In the Tiny Forest as part of their citizen science projects.

Above: *photo of volunteers laying mulch rings around new tree plantings*

Above: *photo of tree keepers maintaining the Tiny Forest*

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 & 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	Waste Code of Practice
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	This continues to be developed
15.2.1	Events about sustainable use of land	Regular wildlife walks around campus	
15.2.2	Sustainably farmed food on campus	Sustainable Food and Beverage Policy. Vegetable and fruit production in sustainability garden	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 is being updated as part of a BNG strategy
15.3.1	Sustainable use, conservation, and restoration of land policy	This is covered in the Biodiversity Action Plan	Biodiversity Action Plan is being updated
15.3.2	Monitoring endangered species	This is covered in the Biodiversity Action Plan	Biodiversity Action Plan is being updated
15.3.3	Local biodiversity included in planning and development	Target for 20% net environmental gain including biodiversity for new developments	Baseline habitat condition assessment underway
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 watercourse being developed
15.4.2	Minimisation of plastic policy	Single use plastics promotion	Waste code of practice
15.4.3	Hazardous waste disposal policy	Procedures in place handling and disposal of hazardous waste	Hazardous waste procedure

Above*: Table of SDG (Sustainable Development Goals) KPIs relating to green spaces and biodiversity*

Climate Adaptation

A strategy for Climate Adaptation has been approved and published on the University's website

Pollution Monitoring and Control

Cranfield Urban Observatory, with its campus-wide sensor network, is a key component of the Living Laboratory and facilitates research projects, securing links between the expertise, facilities and overall capabilities of our unique campus. As part of this, air, water, and soil sensors have been deployed across the Cranfield campus with the capability of monitoring a wide range of potential pollutants. Data is used both in teaching and learning and as a mechanism to monitor potential pollution on the Cranfield campus.

Community Involvement

This was a very successful year for staff and student engagement and also working with the local community including Holywell school in Cranfield village, families on campus, Tech Park tenants, and Oaklands College based in St Albans. We launched the new academic year with an ever-popular evening bat walk, and with Green Week 2023 Green Week opened with a live event 'Entrepreneurship for Sustainability panel discussion' which was created in collaboration with SOM Sustainability Business Network and attended by over 50 attendees. Throughout the week, we hosted Sustainability roadshows to recruit for more 'Energy and Water' champions in different areas of campus, hosted the popular 'honey harvesting' experience event and a stall from Hedgehog Friendly campus to recruit for more volunteers.

Kim Del Kaze was elected the new Green Officer and successfully took charge of the newly formed Green Team comprised of over 100 members and helped to lead events including energy saving awareness, practical conservation and tree planting at Emberton Country Park, film nights and discussion sessions, energy audit training/survey session, and a 3 day conference on campus with support from C-DICE on 'Sustainable Campus Eco-systems' . The conference featured talks, discussion sessions and workshops and was attended by PhD students from Universities across the UK as well as Cranfield students. Kim's work was recognised and he was invited to apply for a 'Green Gown award: student champion category.

As part of Hedgehog Friendly Campus we outreached to Holywell middle school in Cranfield Village, where we worked with the ecology club to set up hedgehog footprint tunnel surveys and track for the small mammals. We also provided advice going forward, and also worked with Oaklands College, St Albans to provide support. Our actions helped to earn us 'Gold' hedgehog

friendly campus award. We once again raised money for the Need Project Bedford Food Bank by selling leftover jars of honey during the Christmas Fayre which took place in December.

Regular events included the Gardening Club and Tree Keepers meet-ups. We supported Forest of Marston Vale and Emberton Country Park with volunteers. Tech Park tenants supported the mulch-ring laying session for the newly planted trees across Fedden Field. There were open doors tours of our sustainability facilities including the campus bee hives, the energy centre, biomass boiler and of Cawleys waste and materials recycling facility. We celebrated national and international days and events, this included the 'Big Plastic Count' where we encouraged staff and students to count the amount of plastic they waste. We also celebrated Fairtrade Fortnight in February alongside Campus Services, and promoted Earthday on social media alongside Earth Hour national switch-off event.

Total event engagement: 932 staff and students

Top events:

- Green Week 30 November 2023- attended by 264 people. Launched with a live streamed event in collaboration with SOM Sustainability network
- Practical volunteering at Emberton Park (Olney),
- Tree planting with the Marston Vale Community Forest at Houghton Park,
- Visit to Holywell School (Cranfield Village) to help with their Hedgehog survey.
- C-DICE funded conference on campus 'Nurturing Sustainable Campus Ecosystems' organised by Green Officer Kim Del Kaze - attended by 68 individuals from 5 different UK universities
- Honey Harvesting demonstration
- Bee keeping experience
- Visit to Cawleys Materials Recycling Facility

Above: *Photo of Green Week visit to Cawleys Material Recycling Facility*

Above: *Photo of students have fun planting whilst trees at Emberton park*

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:	461

Social media followers	Followers
Instagram	1037
Facebook	487
X	941

Above: *Tables showing summary of staff and student engagement on the intranet and via social media.*

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 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 audits carried out by students and the University laboratories to analyse local discharges. The new CHP unit is regularly use as a real life demonstration for teaching.
8. **Name:** The Energy and Environment Committee was previously known as the Committee 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 in 2023-4:

- Chair, Professor Chris Fogwill, Pro-Vice-Chancellor – School of Water, Energy & Environment
- Ian Sibbald, Director of Finance
- John Street, Director of Facilities
- Phil Longhurst, Director of Partnerships & Professor of Environment and Energy Technology
- Gareth Ellis, Head of Energy and Environment
- Christine Thompson, Corporate Planning Director
- Ginny Ford, Environment Advisor
- Ceri Dawson, Energy Advisor
- David Ford, Director of Information Technology
- Geoff Say, Director of Finance and Operations CDS
- Stewart Elsmore, Director of Campus Services
- Rosina Watson, Head of Sustainable Business Group & Associate Professor of Sustainability
- Becky Shepherd, Environment Officer
- Kim Del Kaze, CSA Green Officer
- Tania Rice (Committee 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.