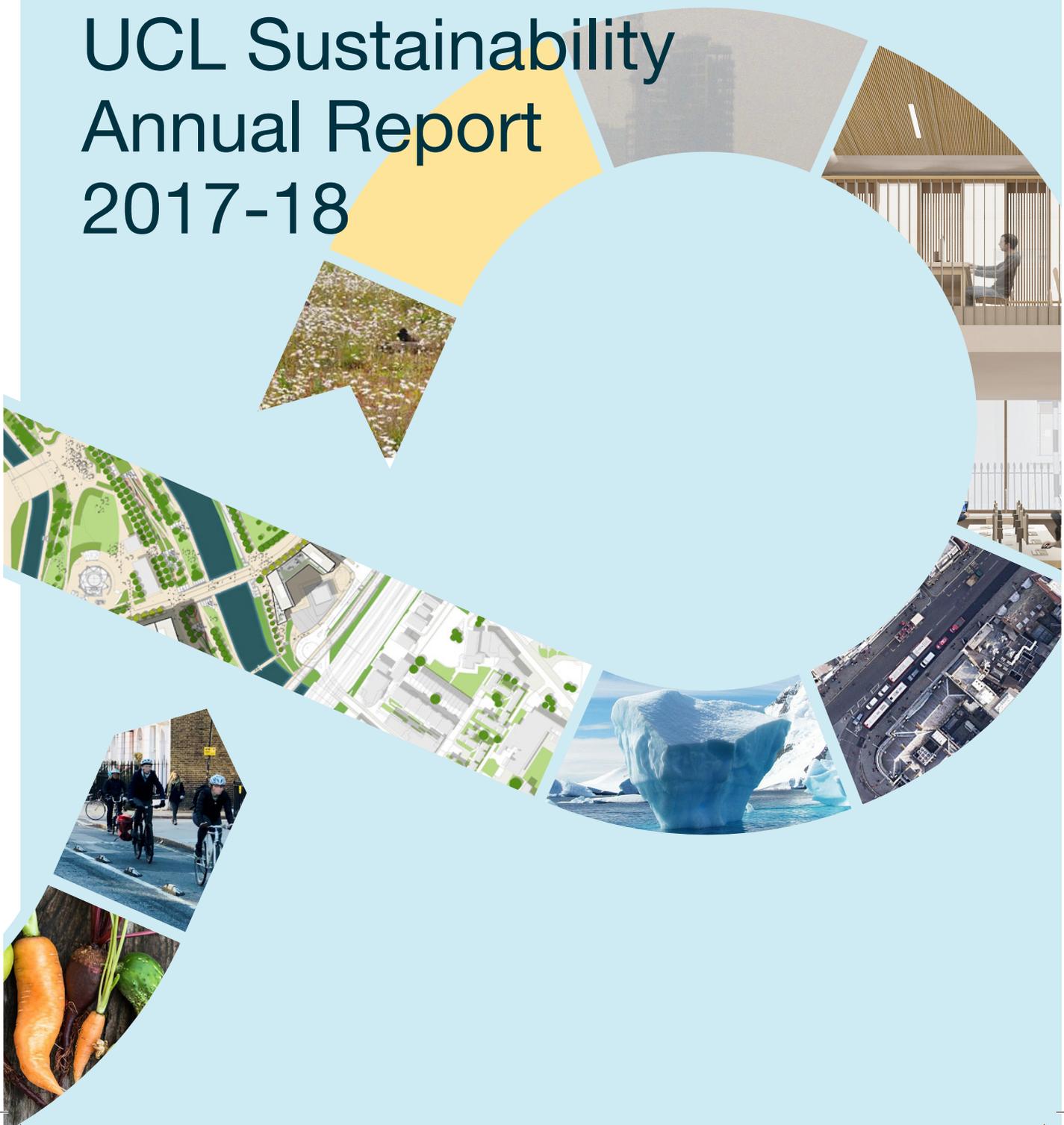




UCL Sustainability Annual Report 2017-18



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ENVIRONMENTAL SUSTAINABILITY STEERING GROUP CHAIR



Welcome

Prof Geraint Rees
Dean of the UCL Faculty of Life Sciences

2017/18 represented my first full year as the Chair of the UCL Sustainability Steering Group and I am delighted with the progress which we have made over the year. We continued to put sustainability into the heart of UCL's activities, driving change through the way that we operate; delivering local and global impact through our teaching, our research and our enterprise; and supporting our community to be the drivers of change.

Embedding sustainability into our education programmes and research is at the core of our approach. A survey of education for sustainability this year highlighted many of the programmes which UCL has in place – from parts of the curriculum which have been tailored to address local issues, to our Global Citizenship programme and volunteering activities.

UCL's research community continues to have an impact – finding solutions to many of the sustainable development goals. The annual report highlights a couple of research projects through which UCL academics are contributing to the UN Sustainable Development Goals.

Outside of our teaching and research, we continue to make operational improvements – enabling us to reduce our impacts on the environment and have a positive community benefit.

At the forefront of this, has been the work done by UCL Estates. UCL is spending £1.26 billion on its estate over the next 10 years and high levels of sustainability have been a key requirement for all our projects. In the past year, we have delivered another BREEAM Excellent building for the Faculty of Laws and are on track to achieve a BREEAM Outstanding award for our Student Centre which opened in early 2019.

This is an incredibly impressive building which achieves the highest energy standards and has drawn on innovative energy technologies such as ground sourced cooling to provide its energy.

Beyond the estate, we have continued to engage our community through events and initiatives like Green Impact and Reduce the Juice. Our 2017/18 Sustainability Awards were testament to the many activities undertaken by our community, ranging from Psychology and Language Sciences (PALS) projects, including the creation of an urban air pollution mask, to the Office of Vice Provost Advancement (OVPA) which sought to embed sustainability into its annual event, the Its All Academic Festival.

As we look forward, I am really excited by the emerging new Strategy. It will put sustainability at the heart of UCL and provide the inspiration for our whole community to get involved.

A handwritten signature in black ink that reads "Geraint Rees." The signature is written in a cursive style with a long horizontal stroke underneath.

Prof Geraint Rees



Sustainability and UCL 2034: Key Principles

Academic leadership

Research by UCL and the University of Leeds has demonstrated how the ice sheet's submarine edge is shifting. Their study, published in *Nature Geoscience*, shows that the Southern Ocean melted 1,463 km² of Antarctica's underwater ice between 2010 and 2016 - an area the size of Greater London.

This is just a sample of research that helped inform UCL's contribution to the Intergovernmental Panel on Climate Change's report on limiting global warming to 1.5°C. Co-author Professor Yacob Mulugetta said: "Every bit of warming will affect people, ecosystems and livelihoods all around the world, especially the poorest and most vulnerable."

Integrating teaching and research

UCL's Living Lab programme provides opportunities for students and staff to use UCL's estate and operations as a test-bed for research and learning. During the summer of 2018, an MSc Environmental Design and Engineering student, Isa Ibrahim, monitored a small array of panels on the roof of Central House and carried out a series of cleaning tests to assess the effect of dust and dirt on the panels. On average the electricity generated by the panels increased by around 25% after two rounds of cleaning. This improvement in performance shows the importance of regular panel cleaning in reducing carbon emissions.

Global Challenges

UCL researchers continue to develop innovative solutions to help live within our planetary limits. For example Dr Ilan Adler from UCL CEGE has developed a suite of low cost solutions for recycling agricultural waste. His social enterprise, Sistema Biobolsa worked with rural, peri-urban and

indigenous communities, teaching and promoting eco-technologies. The earliest prototypes at Surrey Docks Farm have already proven their value, with all gas being re-used on-site for cooking and heating water, while the liquid produced enriches the compost to grow food.

Accessible and publically engaged

Scientists from the UCL Centre for Biodiversity & Environment Research are monitoring bat life at the Olympic Park to identify what makes a park good or bad for wildlife. The researchers are monitoring the activity of bats in real-time using new, automated smart detectors developed and

installed by UCL and Intel scientists in collaboration with Arup, the Bat Conservation Trust and the London Wildlife Trust. The data collected will help the park's management make decisions that are better for biodiversity, as part of the Nature Smart Cities project which will operate from UCL East.

London's global university

Sadiq Khan, the Mayor of London, visited UCL to mark the launch of his 'T-charge' and promote action to tackle London's air quality. UCL is committed to supporting the Mayor and the GLA on improving the city's air quality, and is working in partnership with community groups, charities and businesses to develop solutions to deliver a better environment for Londoners. For example, in September 2017 UCL's Energy Institute and Institute for Environmental Design & Engineering collaborated with Public Health England to launch a new, fully-funded PhD studentship that will model the exposure of children to air pollution in deprived communities.

Delivering global impact

UCL's Extreme Citizen Science group's EPSRC-funded ExCiteS project demonstrated how people with limited technical literacy can successfully participate in formulating research questions and collecting the data that is important to them. ExCiteS started with the case of supporting Pygmy hunter-gatherers, local NGOs and other local indigenous partners to tackle illegal logging in the Congo basin. It quickly expanded to Namibia, Brazilian Amazon and cases in the UK to support several local communities with the aim to combine their local environmental knowledge with scientific analysis to improve environmental management.



Sustainability and UCL 2034: Key Enablers

Giving our students the best support

UCL's Sustainable Careers Week (a collaboration between UCL Careers and Sustainability) aims to demonstrate the multifaceted sustainability challenges organisations and businesses face across all sectors including construction, retail, policy, fashion and finance. Talks from sector leading experts, explained the

importance of sustainability literacy in the jobs market. Workshops and activities throughout the week provided the students with the new sustainability skills and knowledge.

Valuing our staff

To value the hard work of our staff and students, we partnered up with Students' Union UCL Volunteering Service and Kew Gardens to host Wellbeing Week – helping our staff and students to de-stress during the busy third term.

Bike-powered smoothie making, vegan markets, happiness trees and flower planting made up an eventful week inspired to get the community outside in the fresh air.

Financing our ambitions

Sustainability initiatives are delivering cost efficiencies across the organisation in the form of:

Reducing energy costs due to energy efficiency projects. £350,000 was saved in 2017/18 compared to the business as usual scenario.

Life cycle value considerations has been developed in the tender process. For example, UCL's new furniture framework stipulates all suppliers to provide a take-back and repurposing scheme extending the life of items.

Sustainable estate

Sustainability is interwoven in the decision making not only for new buildings like the New Student Centre but also in the operation and refurbishment of the existing estate. From achieving zero waste to landfill, installing innovative ground cooling systems or providing water fountains we are aiming to provide an estate that enables sustainable choices from our community.

Excellent systems

UCL was reaccredited under the ISO 14001 scheme in 2018 this recognises the systems and processes we have in place to manage our environmental impacts across the institution.

This year we have also developed an innovative linkage system between the room bookings system and the control system for heating and cooling – saving energy when rooms are unoccupied during the day.

Communicating and engaging

This year has seen the launch of a Laboratory Efficiency Assessment Framework (LEAF). Developed by UCL, LEAF is currently being piloted by 17 research institutions in their laboratory environments. The goal of the pilot is to evaluate the effectiveness of LEAF in improving laboratory sustainability and produce metrics on resource use. LEAF has the potential to drive systemic improvements by providing funding bodies with KPIs in the area.

The year in numbers

ISO 14001:
2015 Standard
accreditation



Three BREEAM
Excellent ratings
achieved for
building design
over the past year



In November 2017,
UCL received
“**first class**” status in
the People and Planet
Green League for the
third year in a row

Over **60** teams
and **100** Green
Champions,
took part in
Green Impact



UCL was ranked
26th most
ethical and
environmental
university out of
154 in the UK

Nov 2017 – UCL
received the
'Outstanding
Contribution to
Environmental
Sustainability' award
at the Camden
Business Awards



735 students and
staff pledge to
switch off during
Christmas and
Easter Switch off
campaigns



SAVING

1,004,957 kWh of energy
equivalent to **£100,300** and
300 tonnes CO₂

£350,000 was
saved in 2017/18
by reducing energy
consumption in
some buildings

Progress against the 2013 Sustainability Strategy:

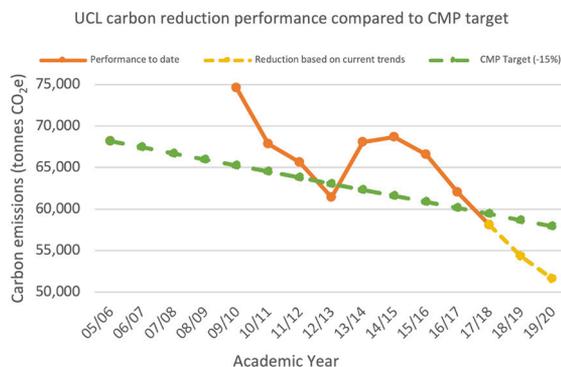
Strategic Aim 1: Create a Sustainable Campus

Managing our Carbon Emissions

In 2017/18 UCL achieved a 6.5% reduction in our carbon emissions compared to the previous year. This is a 14.8% reduction compared to our 2005-06 baseline, ensuring UCL is on track to exceed our 15% reduction target by 2020.

A number of activities contributed to this reduction including:

- Implementing the Heating and Cooling Policy across the campus has resulted in improved comfort in many rooms and a significant reduction in summer energy use.
- LED lighting and controls upgrades in the Institute of Archaeology and Medical School Building have saved 94 tonnes of CO₂ this year, equivalent to driving a car for 230,000 miles
- An overhaul to one of our Combined Heat and Power Plant (CHP) engines has improved its efficiency. The increased running hours this year saved 255 tonnes of CO₂.
- Planning permission was granted for two solar panel installations, at the Institute of Archaeology and Langton Close hall of residence. The energy generated by these panels will save 15 tonnes of CO₂ per year.
- Developing a carbon accountability scheme with academics. The aim of the scheme is to incentivise departments to reduce their carbon emission by rewarding them for reduced energy consumption.



New Drying Cabinets for teaching labs

As part of our drive to improve sustainability in our labs, this year we purchased 51 new drying cabinets. In addition to saving over 60 tonnes of carbon every year, these better insulated models have improved the comfort of the spaces they are in. Wendy Pratt, Lab Manager in the Dolphin Group, Pharmacology said “the new cabinet is much cooler than the old one, anything that reduces heat in here is great – especially in summer!”

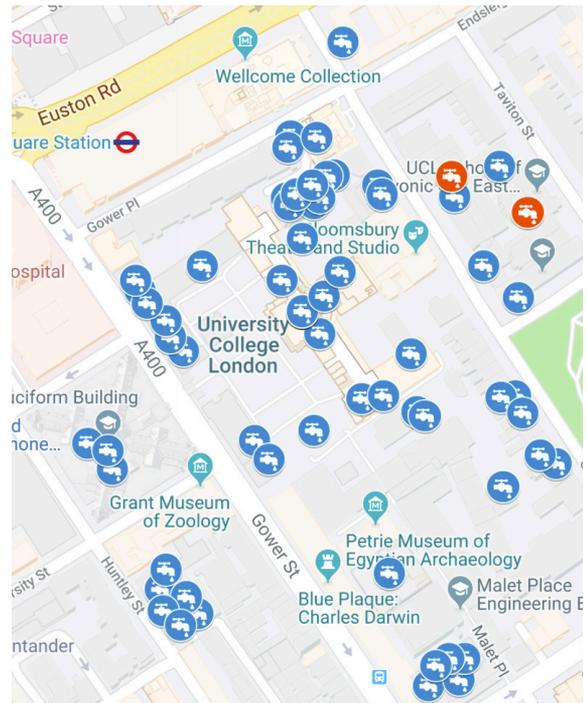
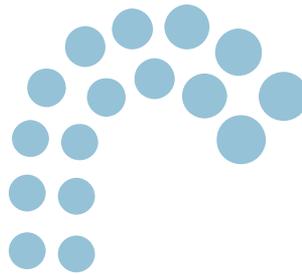
But it’s about more than just energy, Wendy says: “The design of this cabinet is nicer to use than our old one – the glass doors slide more easily and because it is new and not shabby it makes the room look more cared for – which I like to think encourages room users to tidy up after themselves!”

Reducing water consumption

UCL achieved a 4% reduction in indirect (Scope 3) CO_{2e} emissions for water consumption against a 2013/14 baseline. This puts us on track to achieve a 9% reduction by 2020.

Our work this year has included:

- Completed an audit of buildings and categorising buildings as low, medium and high priority for water fountain instillation. This has led to the installation of 2 new water fountains in key locations across the campus, which will provide greater provision of drinking water for our students and staff.
- Creating an online map of all UCL water fountains, which achieved 8000+ views in 2017-18. Additionally, water fountain locations have been added to UCL's online building map.
- Over the past year, UCL Estates has continued an extensive refurbishment programme of washroom facilities, not only to provide much needed repairs and upgrades, but also to help improve water efficiency. A total of 21 facilities have been completed including 90 WCs; 80 basins and almost 100 taps! To comply with UCL's sustainability requirements, all new WCs have water saving cisterns whilst taps have flow restrictors, significantly reducing potable water consumption.



Online map of all UCL water fountains, which achieved 8000+ views in 2017-18

www.ucl.ac.uk/greenucl/water



Designing and constructing sustainable buildings

UCL expect all of our new buildings and major refurbishments to achieve the highest possible levels of sustainability performance, and some of our recent projects are exemplars within the sector.

The Bentham House redevelopment and Wilkins Refectory, for example, have received recognition for their environmental performance in areas such as health & wellbeing; energy; waste; and water use.



Student Centre has already been recognised for exemplary environmental design at International BREEAM Awards.

Meanwhile our Student Centre opened in February 2019 and has already been recognised for exemplary environmental design at the 2018 International BREEAM Awards.

Even our smaller/ minor works projects are required to optimise environmental performance using our own in-house 'Mini-Ska' assessment tool.

CASE STUDY

Applying the Circular Economy

Optimising resource use is one of the core principles of UCL's approach to sustainable construction and over the past year UCL has been exploring the opportunities for further embedding a circular economy approach.

A circular economy means that products and materials are maintained at their highest value for as long as possible – whilst the use of resources and generation of waste is minimised. At the end of a product's life, options for reuse should be prioritised in order to create further value.



Working with our engineers and architects, as well as UCL academics, UCL has identified a range of potential opportunities in this area relating to mechanical and electrical equipment through to everyday items such as floor coverings, kitchen and bathroom fittings.

At UCL East, the architects and structural engineers have worked to specify 50% cement replacement in some building elements meaning that industrial by-products will be used instead of virgin materials as part of the concrete mix. This also has the potential to reduce associated embodied carbon emissions by over 50%.

Project Delivery / Soft Landings



Sustainable growth of the UCL estate is vital to facilitate high-quality research; to accommodate more students; and to deliver more world-class teaching. Working to create an environment with efficiency, innovation and wellbeing at its core.

UCL Estates are almost half way through a £1.2bn capital development programme which involves major refurbishments, upgrades to infrastructure, and new construction. Work is also due to start on a completely new campus at the Queen Elizabeth Olympic Park – ‘UCL East’.

UCL Sustainability is working in conjunction with UCL Estates Capital Projects team to ensure that we make the most of facilities which promise impressive environmental and sustainability performance; substantial operational cost savings; and first-class places for study and research.

To this end, UCL Estates has worked to introduce a comprehensive ‘Soft Landings’ process to help ensure that project design and management decisions are based on improving operational performance and meeting design expectations.

UCL Estates are also learning the lessons of completed projects through post-implementation reviews as part of an ongoing process of continuous improvement.

Key Achievements

ENERGY

Performance of all our new build projects is well beyond regulatory requirements (the Student Centre achieves a >35% improvement over Building Regulations, Part L).

RENEWABLES

Installed 400m₂ of solar (PV) panels on the Student Centre, as well as drilling three 150m boreholes for ground source heating and cooling. Together, these technologies will result in a 20% reduction in operational carbon emissions.

CONSTRUCTION WASTE

Projects are achieving >90% diversion from landfill. The Student Centre has achieved 100%.

WATER

Efficient sanitary fittings will reduce consumption by up to 55% in our new buildings.

ENVIRONMENTAL ASSESSMENT

Achieved three BREEAM Excellent ratings for building design over the past year.



Bentham House Redevelopment



The £21.7m redevelopment of Bentham House involved a major refurbishment and extension of the two existing buildings which are home to the UCL Faculty of Law, including 1,500m² of new space.

With an emphasis on environmental performance the extension has achieved a BREEAM Excellent rating at final certification, including a number of best-practice features:

- Improved energy management and efficiency features have resulted in a 30% improvement over Building Regulations (Part L) carbon performance.
- Solar PV panels generate clean, renewable energy, contributing to operational carbon reductions.
- A green roof will help to improve biodiversity, with drought-resistant planting to eliminate the need for a separate irrigation system.
- Priority was given to the use of low impact building materials, taking into account issues including resource use, pollution and climate change impacts.
- Staff and student wellbeing was central to the design approach, focussing on areas such as air quality, ventilation, natural daylight and acoustics.

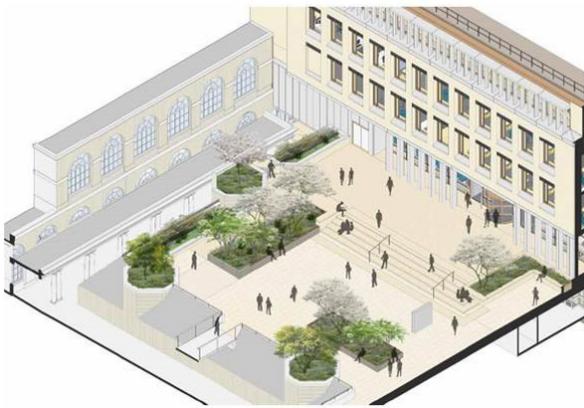




Creating a biodiverse campus

UCL Estates have continued to install green roofs on many of our new building projects. In the past year, this has included new roofs on Bentham House.

Other biodiversity highlights for the year were:



Japanese Garden for the Student Centre

The development of the Student Centre has provided major opportunities for the Japanese Garden which previously offered limited planting and biodiversity. For the first time, the area forms part of a simple, direct route from Gordon Street to the Wilkins building and, as such, will become a major thoroughfare.

A number of new raised planting areas have been provided to accommodate a range of native plant species with year-round displays, significantly enhancing the aesthetic and ecological value of the space whilst creating



potential for a range of gathering and events. Planting appropriate to the garden's shaded environment has been selected, including several taller shrub trees offering a sense of green enclosure to the space.

UCL Conservation Society

Bird walks

We have continued to deliver bi-weekly birdwalks around the three Bloomsbury squares, and recently hit our 50th birdwalk! We are seeing lots of people get involved, from all different fields and departments, and have recorded many species, including breeding pairs which are rare in Central London.

We also participated in RSPBs Big Garden Birdwatch in January 2018.

In May 2018 the Conservation Society participated in a BioBlitz in Devon, with collaboration from UCL based ecologists, local ecologists, local community and Nick Baker, TV wildlife presenter and expert ornithologist.

Throughout the year we have held mini-conferences and talks:

This is a key part of our education and engagement activities, these have included "The importance of pollinators" and "Microplastics and Me"



Reducing vehicles to campus

At UCL, we look to minimise the impact of our own delivery/logistics needs, while encouraging our communities to take up sustainable forms of transport, for both commuting and work purposes.



We have a target to reduce vehicles on campus by 25% by 2020



Logistics

Located in an increasingly congested part of the city and close to one of the worst roads in the UK for air pollution (Euston Road), UCL has been looking at ways to reduce the impact of its

supply chain deliveries on the local roads and environment.

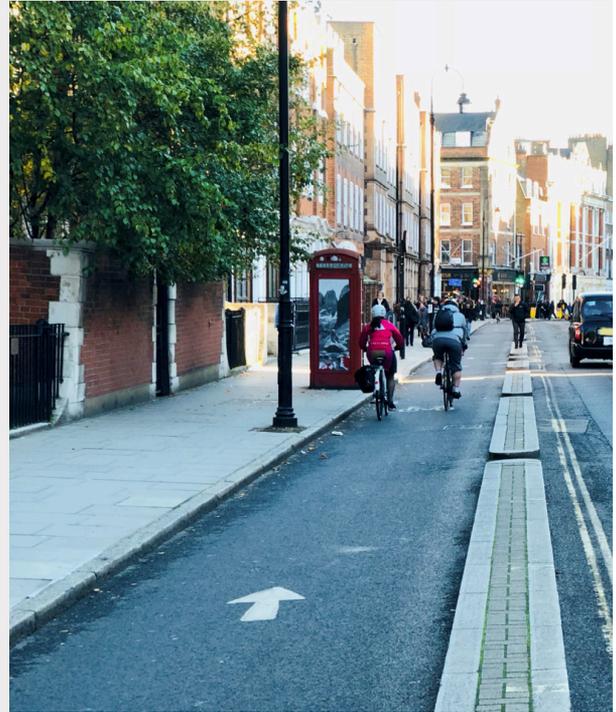
In 2014, UCL set a target to reduce vehicles on campus by 25% by 2020. We are currently on track to deliver against this target through the use of a construction logistics

and consolidation service and the introduction of a goods in service for courier deliveries. This has allowed us to track and control the vehicles which arrive at UCL, as well as begin to consolidate loads.

Other Sustainable Transport Initiatives

UCL is keen to encourage active travel and sustainable transport modes within our community. Actions which have taken place in past year to influence sustainable travel choices include:

- UCL put forward a representative to speak and give evidence at the public inquiry into the Tavistock/Torrington Place cycle lane; UCL gave support of making the eastbound trial permanent.
- Partnering with Camden Council to put on Dr Bike events – offering free bike repairs and maintenance. After a successful Dr Bike event in October (fixing over 70 bikes), UCL has agreed to hold regular events throughout the next year.
- Collaborating with UCL Students Union and their “Project Active” programme, arranged a free urban cycle skills training session. Led by Camden Council Bikeability instructors, this helped participants cycle more confidently and practice the skills needed for cycling in London.
- As part of our Green Week in October there was Sustainability walking tours, and Bird Walks (with the UCL Conservation Society). These not only promoted walking around campus, but also highlighted UCL’s amazing sustainability interventions and wildlife hotspots respectively.



CASE STUDY

Tavistock/Torrington Place Cycle Lane

A four-week Public Inquiry took place in October/November 2017 to review the arrangements of the Tavistock/Torrington Place cycle lane and its eastbound only traffic flow. The scheme was originally conceived as a trial, and had gained supporters both in favour and against it. UCL felt the scheme delivered a protected cycle route which promoted sustainable transport use to and from UCL, connecting the main campus, IoE and Bidborough House. The eastbound only flow also reduced traffic, making the corridor a more pleasant environment to walk in and enjoy.



For these reasons, Dr Andrea Sella gave evidence for UCL in support of making the scheme permanent and retaining the eastbound traffic flow.

The conclusions of the trial recommended retaining the cycle lane but reversing the traffic flow to westbound, on the basis of increased connectivity for motor vehicle users. Camden has subsequently decided to make the scheme permanent, while putting the traffic direction decision through further public consultation in 2018.

Managing our waste

Enthusiasm for reducing waste and recycling has never been higher at UCL, and over the past year UCL Sustainability has worked on number of initiatives in this area, with a particular focus on plastics.



In collaboration with the NUS and all UCL catering providers, the 'Ditch the Disposable' campaign was launched to help reduce the 1 million single-use coffee cups the institution gets through every year. The initiative involves separate pricing for disposables and early results suggest an impressive surge in the use of reusable cups, which are available on a not-for-profit basis around the campus.

UCL invested in stock of 300 new bins which are being deployed on a targeted basis to further standardise our waste infrastructure and provide clearer recycling facilities.

Meanwhile, UCL Warpit has helped facilitate the reuse of items ranging from furniture to lab equipment. This has resulted in over £500,000 savings since we started using the system in 2013. 3065 items were 'rehomed' through Warpit in the last year alone saving 132 tonnes of CO₂. UCL is one of only three organisations to reach such dizzy heights of reuse!

UCL has sent zero waste to landfill for the last 5 years and our 65% recycling rate is amongst the highest in the sector - 20% higher than the national household rate.



Providing healthy and sustainable food

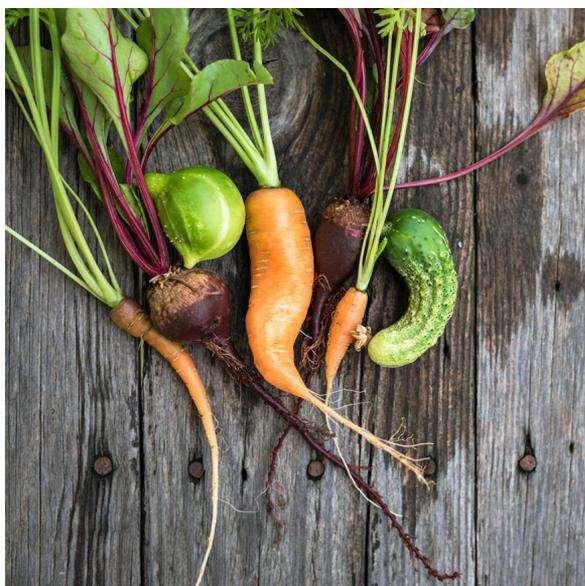
UCL recognises the importance of providing healthy and sustainable food, whether this be in catered accommodation, cafes, bars and restaurants or at catered events. To ensure this happens, our catering suppliers follow UCL's Healthy and Sustainable Food Policy. Key achievements in 17/18 include:

- All the tea, coffee, chocolate and sugar provided in our catering outlets is from ethical sources.
- 91% of our meat purchased was Red Tractor certified.
- All our university catering outlets are certified to Marine Stewardship Council (MSC) standards. 80% of our fish purchased was MSC certified. UCL is working with our catering providers to make this 100% next year.
- 88% of our eggs were free range, it was found that one product being used didn't contain free range eggs and this product has now been discontinued.
- Sodexo launched vegan meals on Thursday, which guarantees at least 1 hot vegan option in the Refectory every Thursday, while promoting more people eating "Flexitarian" diet. Following a flexitarian diet highlights an increased intake of plant-based meals without completely eliminating meat.
- In May, Sodexo launched a vegan competition - all customers were given a chance to let us know their favourite vegan dish. The winning dish was featured in the Refectory in May.
- Our partnership with Bio-Bean turns our coffee waste into sustainable, clean biofuel used in London's buses and 'Coffee Logs' designed for use in wood burners and stoves.
- UCL is audited and verified by the Food for Life Catering Mark award. UCL's catering partner Sodexo has achieved the Silver Food for Life Catering Mark at UCL.

#OneLess

Wonky Veg

UCL & Sodexo signed up in November 2017 for a 3 month trial of “Wonky Veg” ending in February 2018 – Sodexo started purchasing a box of “wonky vegetables” and used them within our hot food and salad offer within the Refectory and promoted them to students. Sodexo wanted to show that these vegetables which do not have a perfect shape or colour can still taste great and be used for cooking instead of going to waste. The trial results were feedback to Sodexo purchasing and they are looking into how they can expand wonky veg nationally.



Veg of the Week

Every Wednesday in January Sodexo featured a different vegetable in the Refectory as VEG OF THE WEEK. Customers were also informed on the health benefits of each vegetable. Vegetables featured included: kale, sprouting broccoli and leek.

The trial of returnable bottle scheme, instead of single use mineral water bottles, for catering hospitality at Bidborough House continued. Over a 2 and a half month period Sodexo delivered 95 bottles of water to Bidborough House and 23.2% went missing. UCL and Sodexo intend to develop additional communication methods to reduce this loss rate and put in place a long term approach.



Bentham's Farm

Bentham's Farm is a community of food growers who have established allotment space for volunteers at Ifor Evans in Camden. Highlights this year included;

- Successful crops of many fruit and vegetables in the 5 beds and greenhouse, despite difficulties with the weather (beast from the east and then drought in the summer)
- Started composting fruit and veg waste from Ifor Evans kitchen
- Held wassail event with performances from folksoc and maths choir, attended by 25 people
- Planted pear tree in addition to apple tree plant last year

Progress against the 2013
Sustainability Strategy:

Strategic Aim 2:
Engage, Empower
and Support
our Community

Engaging staff and students

With a community of 50,000 students and staff, UCL has both a duty and an opportunity to engage and provide education on how to solve the global challenges of today. Throughout 2017/18 UCL activities in this area have included:

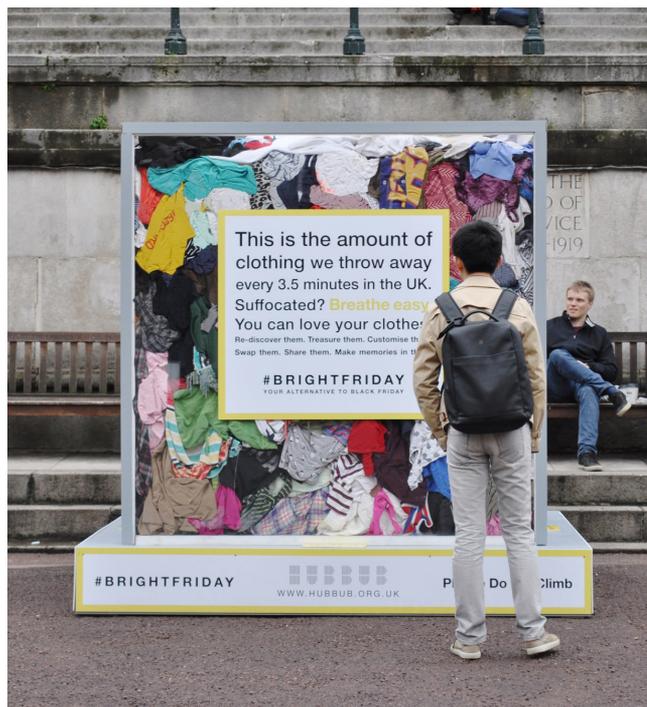
- Partnered with University of London to design Reduce the Juice, a new sustainability programme in UCL halls. 1804 students (60% of occupants) participated in the programme in UCL residences; with 30 students trained as Ambassadors.



- Reduce the Juice encourage students to use less energy and less water and recycle more in return for prizes.
- 29 students volunteered as Green Impact Project Assistants to support Green Impact teams. 69 students were trained as auditors to check the work of Green Impact teams.
- The Big Christmas and Easter Switch Off saw 735 students and staff pledge to switch off, saving 1,004,957 kWh energy / £100,300 / 300 tonnes CO₂



- UCL hosted three Sustainability Weeks. The first celebrated initiatives taking place within the organisation to encourage positive environmental and sustainability behaviours. This included a Sustainability Fair, Upcycling workshops, talks and cycling events. Sustainability Careers Week consisted of panel discussions and networking sessions focused on jobs in the sustainability sector e.g. energy, CSR, conservation and business. The final sustainability week titled 'Grow Wild' turned Wilkins Terrace into a garden for the week and saw students coming together to plant wildlife-friendly planters for the accommodation sites. This week also aimed to consult the community on the new sustainability strategy in particular the biodiversity project.



UCL's Fashion Revolution

- Tackling clothing waste on campus, UCL partnered with Hubhub to raise awareness of the issue, after a high proportion of students stated that their clothes were thrown out after being seen on Instagram. A large box of clothes was situated in the cloisters for a week during Black Friday displaying how many clothes are thrown out in the UK every 3 minutes to encourage students and staff to swap items instead of buying new. Swap shops continued throughout the year and in the summer term, the campaign focused on the social issues of the fashion industry. Students were encouraged to take photographs of their clothes on social media with the hashtag 'who made my clothes' and to tag the maker of said clothes in aim of getting fashion makers to provide fair pay and working conditions for their employees.

CASE STUDY

Celebrating UCL's Sustainability Champions

UCL's sixth Sustainability Awards ceremony, our largest to date, celebrated the achievements of over 60 teams and 100 Green Champions.

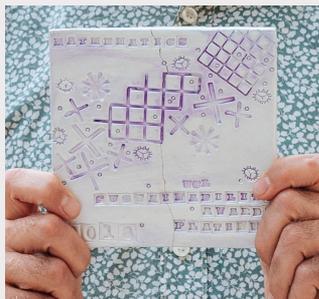
The joint winners were the Office of Vice Provost Advancement (OVPA) and Psychology and Language Sciences (PALS). Both teams undertook a variety of ambitious projects alongside completing the Office and Labs Green Impact workbooks.

The awards were hand crafted by artist Joanna Atherton, who imprinted plastics found along the UK coastline onto clay tiles. From sunglasses, to children's toys and cutlery the awards are a stark reminder of the longevity of disposable items.

Sustainability Education Award

Dr. Aeli Roberts was Highly Commended for the Sustainability Education Award. Throughout the last 10 years Dr Aeli Roberts has brought her unique combination of skills (in Chemistry, Law - as a qualified barrister - and Construction) to create and teach modules at both undergraduate and postgraduate level in sustainability and the way sustainability issues interact with the Built Environment. She has brought on board other research staff in this area so that Sustainability is now a key research theme within the School.

Dr Aiduan Borrion received the overall Sustainability Education Award for leading the development and delivery of a short course "conducting a life cycle assessment: from theory to practice application". The course was developed in collaboration with the Ellen MacArthur Foundation and was supported by UCL life learning investment fund in 2016.



The four-day course runs twice every year at UCL. It has attracted over 100 industrial professionals from 20 countries and is well known internationally for sustainability education.

PALS and OVPA

PALS undertook a variety of projects, including inventing an urban pollution mask, upholstering the department's furniture and creating a garden in Gordon House out of recycled materials. They also placed a camera in their catering outlets to monitor and improve food waste and ran a number of research projects on behavioural change studies and sustainability.

OVPA organised a walk to work day, created a garden in Bidborough House and embedded sustainability into the It's All Academic Festival. For the event, they replaced disposable water bottles, with a water refilling station and invited the audience to bring their own bottles as part of their sustainability engagement

Biodegradable, recycled, branded water bottles were given out to those that had forgotten their bottles. To displace plastic cups at the bar, reusable cups were available to borrow for a £1 deposit. This reduced a considerable amount of waste at the event. The audience also received free biodegradable glitter face painting, which was an innovative way of engaging the audience in sustainability. The Sustainability Team ran a number of sustainability tours on the day, and there were numerous talks on sustainability issues.

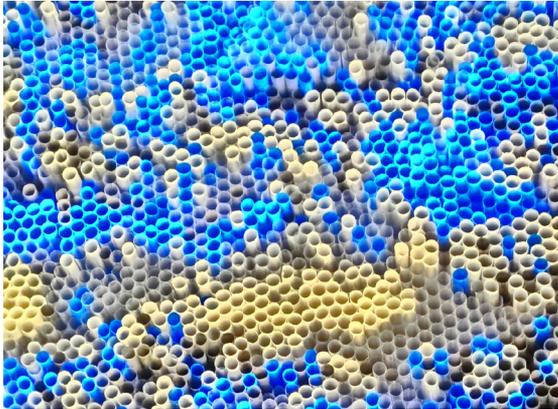


Sustainability projects from the UCL community

With increasing interest in sustainability, UCL's students and staff have continued to set up a range of community-led projects to solve some of our local and global sustainability issues. See some of their projects here:



- Student-led project, Zero Food Waste was created to tackle food waste and food insecurity. The project sees student volunteers transport food leftover from UCL cafes to nearby homeless shelters.
- UCL Conservation society are leading the UCL plastic-free movement 'OneLess' aimed at working with the university and its community to reduce disposable plastics.
- Student society Climate Collective are continuing to document people's reactions to climate change through social media.
- UCL's Greenest department, PALS has created the Chandler House Garden out of upcycled furniture from UCL's Warp-It to provide students and staff with a welcomed green space.



- UCL's Student Union has tackled a few key sustainability aims including banning straws from its bars and catering outlets.
- Meanwhile, Mullard Space Science Laboratory (MSSL) has created a community allotment.



- UCL's catering team have been providing sustainable cooking classes to students throughout the year. Our favourite 'Bready steady cook' teaches students how to cook with leftover bread, save money and reduce waste.



- UCL Public Policy and Fantasy Frontbench developed a series of debates on topical political issues. The first debate asked 'Should climate change be the UK's top policy priority?' was chaired by Dr. Helen Czerski, Physicist, Oceanographer and Broadcaster, co-chaired by a youth representative and featured a number of high-profile speakers including Natalie Bennett, former leader of the Green Party. Ahir Shah political satirist and Edinburgh Comedy Award 'Best Show' 2017 nominee, Prof. Mark Maslin, UCL academic and author of Climate Change: A Very Short Introduction and Dr. Emily Shuckburgh, deputy head of the Polar Oceans Team at the British Antarctic Survey and co-author of Climate Change (A Ladybird Expert Book).

Sustainable consumption and production

Building on our Silver award in the Responsible Procurement Code, this year UCL has increased attention and intensity of work supporting responsible procurement. Key achievements this year have included:

- UCL Sustainability team supported the tender for furniture suppliers, ensuring all furniture must be sustainably sourced, and compliant with Ska criteria. (SKA is a sustainable assessment tool aimed for fit-out and minor refurbishment projects)
- Suppliers must also offer a take back and refurbishment scheme. So that departments are easily able to have worn furniture brought back to life, which will cost less than replacing with new.
- UCL Sustainability team developed the tender for UCL's travel provider. Integral to this will be enabling bookers to understand and compare the carbon emissions for different travel modes, and developing promotion of UK and Euro rail travel over air travel.
- With student support and in collaboration with UCL Union, plastic straws have been removed across all catering and bar outlets.
- Jointly with members of the UCL Institute of Archaeology, we created UCL's first Repair Café – a pop up event all about repairing and mending broken items.
- During 2017/18 our suppliers were informed about the NetPositive supplier engagement tool, which helps organisations create a tailored sustainability action plan. Over 1000 suppliers are signed onto the tool.





CASE STUDY

Using NetPositive to help address modern day slavery in supply chains

UCL has adopted the NetPositive supplier tool which helps suppliers create their own sustainability action plan. Over 1100 UCL suppliers have signed up to use the tool. We are committed to better understand our supply chains, and enable greater transparency and responsibility towards people working in them. Importantly, we are utilising responses in the tool to interrogate and address Modern Day Slavery in our supply chains:

The tool revealed suppliers that selected No to the question 'Are you aware of Modern Slavery?' In response, UCL sent an email to these suppliers explaining Modern Day Slavery with links to the government webpage on Modern Slavery, followed by an email to all our suppliers detailing our Modern Day Slavery Statement Update.

Additionally, we are able to gather feedback on their staff focused projects and schemes which they communicate on the tool. This gives UCL an opportunity to support them in being developed.



CASE STUDY

Repair Café

UCL held its first Repair Cafe event during October's Green Week, aiming to be an antidote to the throwaway culture. The cafe brought together and promoted all aspects of fixing, mending and bodging that anybody can learn to do.

Heritage conservators from the UCL Institute of Archaeology presented the 'proper' way to look after your valuable possessions, demonstrating their techniques on abandoned UCL furniture.

While members of The Institute of Making offered a sewing workshop, mending items of clothing people brought along.

Dr. B/ke

Dr Bike was on hand, courtesy of Environment Transport Association, offering staff and students free bicycle checks and selling reconditioned bicycles. Over 70 people had their bikes looked at, and all 30 bicycles were sold, including a decommissioned postman bike.

Progress against the 2013
Sustainability Strategy:

Strategic Aim 3:
Provide the education,
advancement, dissemination
and application of
sustainable development

Creating a Living Lab

Over the past four years, UCL has been using a 'Living Lab' approach as a way of engaging our staff and students in addressing UCL's sustainability challenges. Through our Living Lab, UCL has been able to tackle recycling behaviours, create ways of mapping energy use within our buildings and investigate water consumption.

UCL Sustainability has continued our association with the Bachelor of Arts and Sciences (BASc) course, acting as the client in an exercise in finding an engineering solution to minimise water wastage.

In 2017/18, some of the Living Lab projects supported included:

CASE STUDY



Living Lab research – Improving recycling behaviours

The UCL Sustainability Team and Facilities Services Manager helped facilitate two studies looking into personal waste management practices, with a view to understanding and improving waste segregation, whilst further driving up our recycling rates. Both pieces of research highlighted the challenges around bin labelling and some confusion about 'what goes where'. Focussing on Central House, one of the studies also explored the use of 'nudge techniques' - using alternative signage on and around existing bins which prompted a reduction in the number of recyclable items placed in general waste.

To help build on UCL's recycling success we're working with our waste management contractors to standardise waste disposal facilities across the estate, as well as exploring new ways to drive down the amount of waste we produce.

CASE STUDY

Living Lab Research - Travel

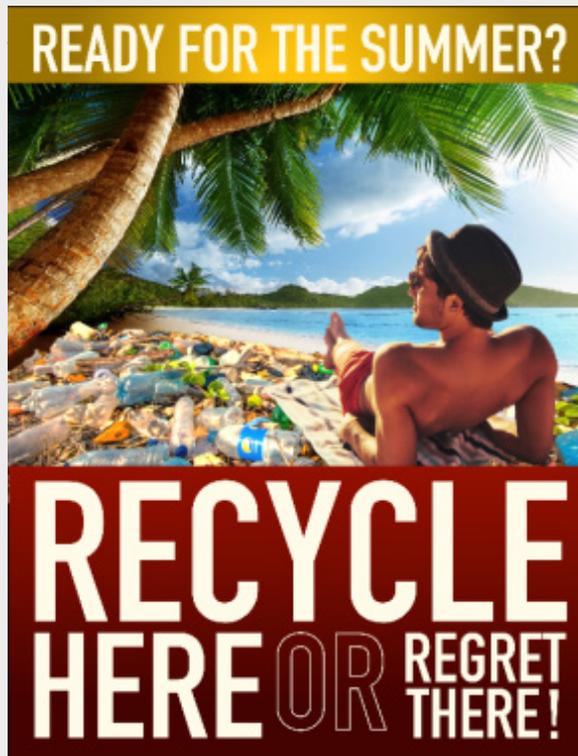
Travel for business and academic purposes by UCL staff results in almost the same level of carbon emissions as all our energy use on site.

To try and understand how we could reduce this impact, the sustainability team took on an intern (PhD student Lisa Juangbhanich) to investigate travel patterns and behaviours in her own department, the Bartlett School of Planning.

The initial part of the study involved collating journey information for all of UCL, which showed the large amount of carbon generated by air travel – 89% of total emissions. For an institution with a high level of research such as UCL, academic travel to conferences and for collaboration presents a huge challenge, as we try to reduce our carbon impact while maintaining our world-class research standing.

The study also considered the reasons behind staff travel, and choices around what type of transport to use. Interviews carried out with BSP staff revealed for example a wide range of reasons for choosing air travel over rail for European journeys, including concerns around time, particularly for those with families, and cost, particularly for more junior members of staff.

One of the most commonly proposed solutions was to replace the need for some travel with virtual alternatives, such as teleconferencing or skype meetings. Find out more about booking teleconferencing facilities at UCL here www.ucl.ac.uk/isd/services/get-connected/videoconferencing/rooms-facilities/centrally-bookable



Journey information for all of UCL showed the large amount of carbon generated by air travel – 89% of total emissions.



CASE STUDY

ClB: Investigating washroom water consumption

Through collaborating with Engineering Thinking module of the BASc course and UCL's plumbing team, we conducted a student-led project to reduce water consumption in a washroom of the Christopher Ingold Building.

Three groups of students measured water consumption of the toilet cisterns, urinals and sinks using flow meters installed with the aid of the plumbers. Additionally, motion sensors and floor pressure sensors were deployed to understand occupancy levels. Students were tasked with programming single board computers to collect data from these sensors.

Following analysis of the data, they proposed and implemented a range of interventions to reduce water consumption; physical measures included installation of aerators onto the taps and a cistern flush controller - both reduce flow to stated set rates. Other groups looked at behavioural change intervention – including posters explaining the importance to switch the tap off, and smiley face push buttons, to promote manual flushing of urinals thus removing the need for automatic flushing.

The results proved that aerators on taps provided significant water reduction, and subsequently we intend to fit these in the rest of the buildings washrooms. Importantly, the project provided the students with real life application of sustainability measures and experience of managing a project, which will support them entering work life.

Education for Sustainable Development

Over the last year, UCL has continued to develop its approach to education for sustainable development and sustainable literacy. Key highlights include:

Understanding Education for Sustainable Development at UCL

In 2017/18, UCL Sustainability recruited an intern to undertake a study of education for sustainable development at UCL. The outcomes of the study indicated the number of programmes in place which provide both our staff and students with opportunities to understand sustainability issues. It also highlighted opportunities for further enhancing ESD at UCL and we are developing these as part of the new Strategy.

Some of the existing ESD programmes highlighted in the study included:



Global Citizenship

For two weeks, students from different academic disciplines and cultural backgrounds collaborate to address today's global challenges. Amongst the strands which can be taken by our students are:

- Rise Up! Negotiating Urban Change – a simulation to understand the challenges and opportunities for urban change
- (un)urban: designing a green city – working with East London organisations to design a greener, healthier city
- Global Environmental Justice: examining climate change from the viewpoint of justice

 UCL GLOBAL CITIZENSHIP PROGRAMME



How to Change the World

Engineering students develop solutions for real-world problems with the help of industry experts. Their solutions are then presented to a panel of experts from various organisations. This scenario-based learning allows them to understand the application of their academic knowledge.

Complex Urban Systems for Sustainability and Health (CUSSH)

is a four-year Wellcome Trust funded project that will deliver key global research on the systems that connect urban development and health. Alongside partner cities in France, China and Kenya the project will assist decision-makers and the public about areas of development that afford the greatest opportunities for health and sustainability.

CASE STUDY

Grand Challenges: (un)urban



As part of the Global Citizenship programme in 2018, one of the strands – (Un)Urban: Designing for the Green City – looked at some of the issues faced by urban communities – from access to local employment to the availability of accessible and inclusive public realm. The strand invited UCL students to work with local organisations in East London on a local urban challenge and develop a set of creative solutions. Almost 80 students took part in this strand of the Grand Challenges and the students were split into a number of groups.

Some of the outcomes developed by the groups included:

- developing a 'meet and greet' event between businesses and young people to help young people in Hackney to find employment
- establishing a series of workshops with young people with the aim of empowering them to voice their concerns on local regeneration/development projects
- improvements to green space around Hackney – encouraging greater use of the spaces; increasing access to the spaces for everyone
- developing an inclusive public realm within the Olympic Park.

Research highlights – UCL’s response to our Global Challenges

Development of government policy and practice on climate change adaptation

Under the Climate Change Act 2008 the government must conduct a Risk Assessment and develop a National Adaptation Plan. The latest versions published in 2017 and 2018 respectively were informed by Chapter 5 (People and the Built Environment) of an Evidence Report. 14 prioritised risks were identified on which some form of action was required. UCL analysis and research co-led and helped inform large parts of Chapter 5. The government accepted the risk prioritisation based on UCL work and, through the NAP, set out actions it will take. A large number of policy and practice areas in several government Departments and Agencies are being introduced or further developed in line with the evidence. This includes areas dealing with: overheating in buildings; green infrastructure; flooding of inland and coastal areas; health and wellbeing; and, health and social care systems. The work on Chapter 5 of the Evidence Report was led by Sari Kovats (LSHTM) and Dan Osborn (UCL Earth Sciences and co-chair UCL Environment Domain), with significant input coming from Mike Davies’ team from UCL Bartlett. The actions taken by government will help the UK adapt successfully to climate change. UCL research papers and projects informed several other chapters in the Evidence Report, the Risk Assessment and Adaptation Plan.

UCL’s contribution to the IPCC report on Climate Change

- Scientists at UCL have joined experts from across the globe in writing the Intergovernmental Panel on Climate Change’s report on limiting global warming to 1.5°C.
- The report, highlights a number of climate change impacts that could be avoided by limiting global warming to 1.5°C compared to 2°C or more.
- Co-author Professor Yacob Mulugetta (UCL Science, Technology, Engineering & Public Policy) said: “The IPCC Special Report on 1.5°C Global Warming makes a compelling case for action today. Delay would shift the burden of responsibility to future generations.”

UCL’s Environment Domain connecting sustainability researchers

The Environment Domain hosted a series of Autumn workshops to communicate funding and other opportunities for the UCL Environment community, as well as giving researchers a space to present their key research interests and findings to a wider, informal UCL audience. There were 4 events during the autumn term focusing on the key Environment Domain theme areas of climate, water, urban and health. 54 individual staff members attended from a range of departments, roles and career stages, including professional services staff. The Environment Domain is now preparing for an official launch on 31 January where discussion will focus on the future of scientific research, with speakers including Professor Ian Boyd from Defra, Professors Georgina Mace and David Price from UCL and Dr Phil Heads from NERC.



New Gibbon genus reveals the magnitude of human-caused primate extinction

Bones of an entirely new but already extinct genus of gibbon have been discovered in China, revealing the magnitude of human-caused extinction of primates, according to a study by UCL Helen Chatterjee (Genetics, Evolution & Environment) and Dr Sam Turvey ZSL (Zoological Society of London).

Excavation of ancient tombs in Shaanxi Province, Central China (dating back from around 2,300 years ago) in 2014 revealed 12 burial pits containing animal remains which included gibbon bones.

Computer modelling revealed that ancient bones are from a new genus and species of gibbon - since named *Junzi Imperialis*. It is believed that *Junzi* probably survived until less than 300 years ago

Professor Helen Chatterjee worked with colleagues to measure key points on the skull and teeth found in the tomb. Compared to dimensions found in gibbons today, the analysis revealed characteristics differed so much that the bones must belong to a separate genus.

This demonstrates the human impact on primate diversity- this may be the first ape species to have perished as a direct result of human activities.

Antarctica retreating across the sea floor

Antarctica's great ice sheet is losing ground as it is eroded by warm ocean water circulating beneath its floating edge, a new UCL and University of Leeds study has found.

Research by the UK Centre for Polar Observation and modelling (CPOM) has shown that Antarctica's submarine edge (grounding line) is shifting.

The Southern Ocean melted 1,463km² of underwater ice between 2010 – 2016 (an area equivalent to greater London)

UCL team processed low level satellite data from CryoSat and other ESA missions to provide observations of ice elevation change data for further analysis by the science team at CPOM

Led by Dr Hannes Konrad from the University of Leeds, study co-author from UCL Alan Muir- UCL Earth sciences, CPOM and UCL MSSL and research fellow Lin Gilbert.

www.ucl.ac.uk/research/domains/environment

Progress against the 2013
Sustainability Strategy:

Strategic Aim 4:

Maximising the wider impact of UCL's environmental sustainability activities at local, regional, national and international levels through collaboration, partnerships and communication



UCL was recognised for its role in driving sustainability in Camden

Highlighting UCL's work in sustainability

In December 2017, UCL received the 'Outstanding Contribution to Environmental Sustainability' award at the Camden Business Awards as well as a Highly Commended award in the 'Employer of the Year' category.

The Camden Business Awards are a bi-annual event that recognise the leading business and organisations in the London Borough of Camden, where UCL's Bloomsbury campus is located. With 50,000 staff and students and a large, 200-year old estate, UCL was recognised for its role in driving sustainability in Camden.

Developing partnerships

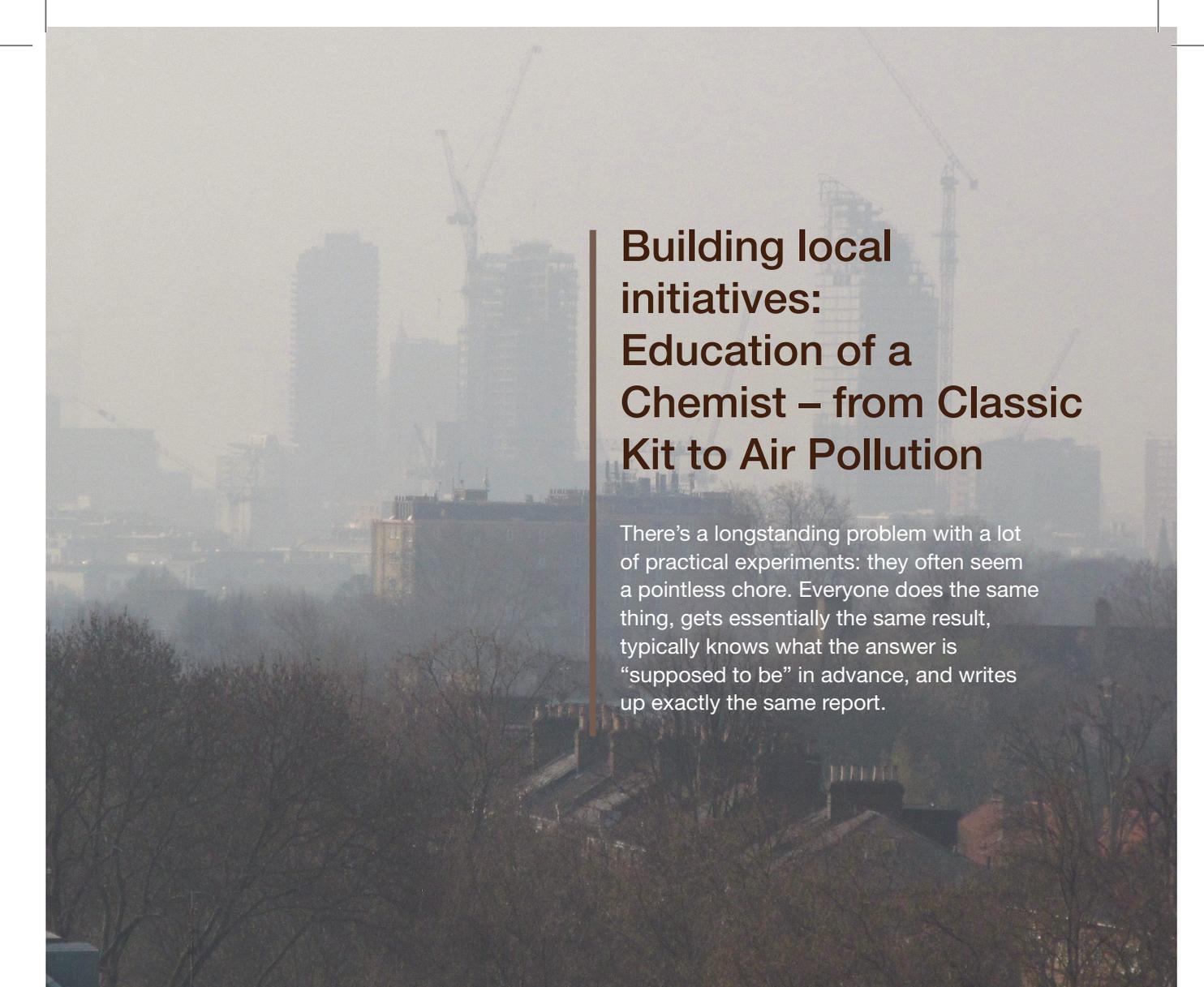
The Laboratory Efficiency Assessment Framework (LEAF) has been developed at UCL as a way of driving efficiency in the lab environment.



It's a tool containing a set of criteria aimed at improving the sustainability and efficiency of research laboratory spaces. Such spaces include typical wet laboratories, science teaching spaces, and IT research laboratories. The LEAF tool has been tested at both UCL and King's and early results indicate that significant savings, both financial and in terms of carbon, can be made through its application. Savings come from reduced energy consumption, reduced procurement/

waste, and empowering users to develop their own solutions around sustainability. Crucially, LEAF produces metrics on savings, thus allowing baselines, targets, and measures to be developed.

UCL is currently working with other institutions to test the tool's wider applicability across the HE sector.



Building local initiatives: Education of a Chemist – from Classic Kit to Air Pollution

There's a longstanding problem with a lot of practical experiments: they often seem a pointless chore. Everyone does the same thing, gets essentially the same result, typically knows what the answer is "supposed to be" in advance, and writes up exactly the same report.

This project was about giving a group of first year undergraduates the task of applying chemistry to real world situations, in this case, measuring air pollution near to local primary schools in London. Students were asked to make diffusion tubes to capture the nitrogen dioxide in the air. They were sent to primary schools to talk about air pollution and ask the pupils where they should site the tubes. Four weeks later, the students measured the NO_2 content and presented back to primary school pupils. The project really opened the students' eyes to research, teaching and environmental issues.

Managing our Sustainability Impacts

UCL has adopted an environmental sustainability management systems (ESMS) approach as a way of managing the implementation of its environmental sustainability policy and strategy.



As a large organisation, UCL has a variety of environmental impacts which need to be managed. An ESMS is a structured framework for an organisation such as UCL to manage these environmental impacts, control and improve our environmental performance and ensure UCL comply with environmental legislation.

UCL has built its ESMS from scratch, having previously had no system in place. The journey started in 2010 where UCL Estates adopted the Eco Campus programme at the request of the UCL Environmental Sustainability Steering Group. Following this UCL first achieved Bronze in 2010 and has incrementally progressed through each step to achieve Platinum in 2017, achieving accreditation to the 2004 standard of ISO14001.

This year, UCL has successfully reaccredited to the ISO14001:2015 standard, therefore ensuring our ESMS is in line with the latest developments. This further demonstrates the commitment and leadership for sustainability which exists at the university.



ISO 14001

ENVIRONMENTAL
MANAGEMENT

What next?

However, this is not the end; a key component is continuous improvement, and auditors will expect to see that demonstrated if UCL is to maintain our certification. All departments can play their part and any department could be audited as part of the external audit process, it's essential that all departments are able to demonstrate how they are addressing their environmental impacts. If you would like to volunteer your department to be part of the next audit, then please get in touch.

To do so many departments choose to take part in UCL's Green Impact Programme - an accreditation and award scheme that's all about staff and students working together in their departments to improve their environmental performance.



What next for Sustainability at UCL?

ENCOURAGING PACKED LUNCH
IN REUSABLE CONTAINERS
INSTEAD OF MEAL DEALS
(WRAPPERS, PACKAGING)

TAPS WITH SENSORS TO
AVOID WASTING EXTRA
WATER

ENCOURAGING
ECO FRIENDLY TRAVEL
TO CAMPUS

IMPROVE
WATER-FOUNDED
INFRASTRUCTURE

MOTION SENSORS
FOR LIGHT SYSTEMS

ACTUALLY RECYCLE.
NOT JUST MAKE IT LOOK
LIKE WE ARE. (CLEANERS
PUT ALL RUBBISH IN ONE BAG)

Paper Straws

Over the past year, UCL Sustainability has been reviewing its sustainability performance and identifying areas for development. We have done this with the engagement of our community.

Pop-up events during Sustainability Week have posed the question 'What should a sustainable UCL look like?' We've run workshops for students, staff and local community and business groups. These face to face events have been complemented with an online 'Design UCL's Future' campaign. We have also been working with UCL's world leading researchers in all aspects of sustainability to inform and critique the specific projects.

The release of the IPCC report on climate change and the public interest in plastics arising from Blue Planet all point to a need for a greater impetus to solve the global challenges humanity faces. The next strategy will set more ambitious goals and focus our actions in new directions. UCL needs a shared sustainability vision, celebrating and integrating the breadth of activity around environmental and social responsibility issues, and collaborating beyond our community. Sustainability is a challenge and an opportunity for everyone.

Our approach will rest on three foundational principles:

Building the capacity and infrastructure for our community to make sustainable choices

Ensuring knowledge, understanding and application of sustainability for our community

Through our innovation and research, we will be a positive partner

To give the strategy focus we are also proposing three signature campaigns:

Wild Bloomsbury

UCL's central London campus provides a unique opportunity to test solutions to green our streets and buildings. We think a wilder Bloomsbury would be a healthier Bloomsbury, where air pollution is reduced, walking and cycling are more appealing and we have space to rejuvenate in nature. There is some great UCL research we want to test, like bio-receptive concrete which encourages the growth of lichens and mosses to improve air quality.

Climate Change: Action!

So far we've worked hard to reduce our carbon emissions from our buildings. Next we need to focus on the wider carbon impacts of our operations and empower individuals to act on climate change. This will help us achieve the ultimate goal of transitioning UCL to a zero carbon organisation.

SOLAR ENERGY LIGHTS

Precious Resources: Respecting people and planet

UCL buys a vast array of items every year from chairs to test tubes to laptops. We want to create a circular economy model at UCL – buying with longevity in mind and developing ways to re-use and repurpose materials back into new products. We will engage our suppliers to ensure our products are made with sustainability in mind and the people making them have good working conditions. UCL's research into materials and the circular economy provides opportunities for innovation in product design, recycling, and sustainable sourcing.

What Next

Early in 2019 we will be analysing the results of our consultation to prioritise areas for action. We are aiming to launch the new strategy by the end of the 2018/19 academic year. You can see our progress to date and feedback via www.ucl.ac.uk/greenucl/design-ucls-future. This is an exciting time for sustainability at UCL and we look forward to working with the whole of the university and the external community to make it a success.

Sustainable Food Options

ENCOURAGE USE OF ALUMINIUM STRAWS BY OFFERING AT UCL ACCOM.

UCL SUSTAINABILITY

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