

King's Sustainability Team  
King's College London



# SUSTAINABILITY STORIES

2021  
2022

# CONTENTS

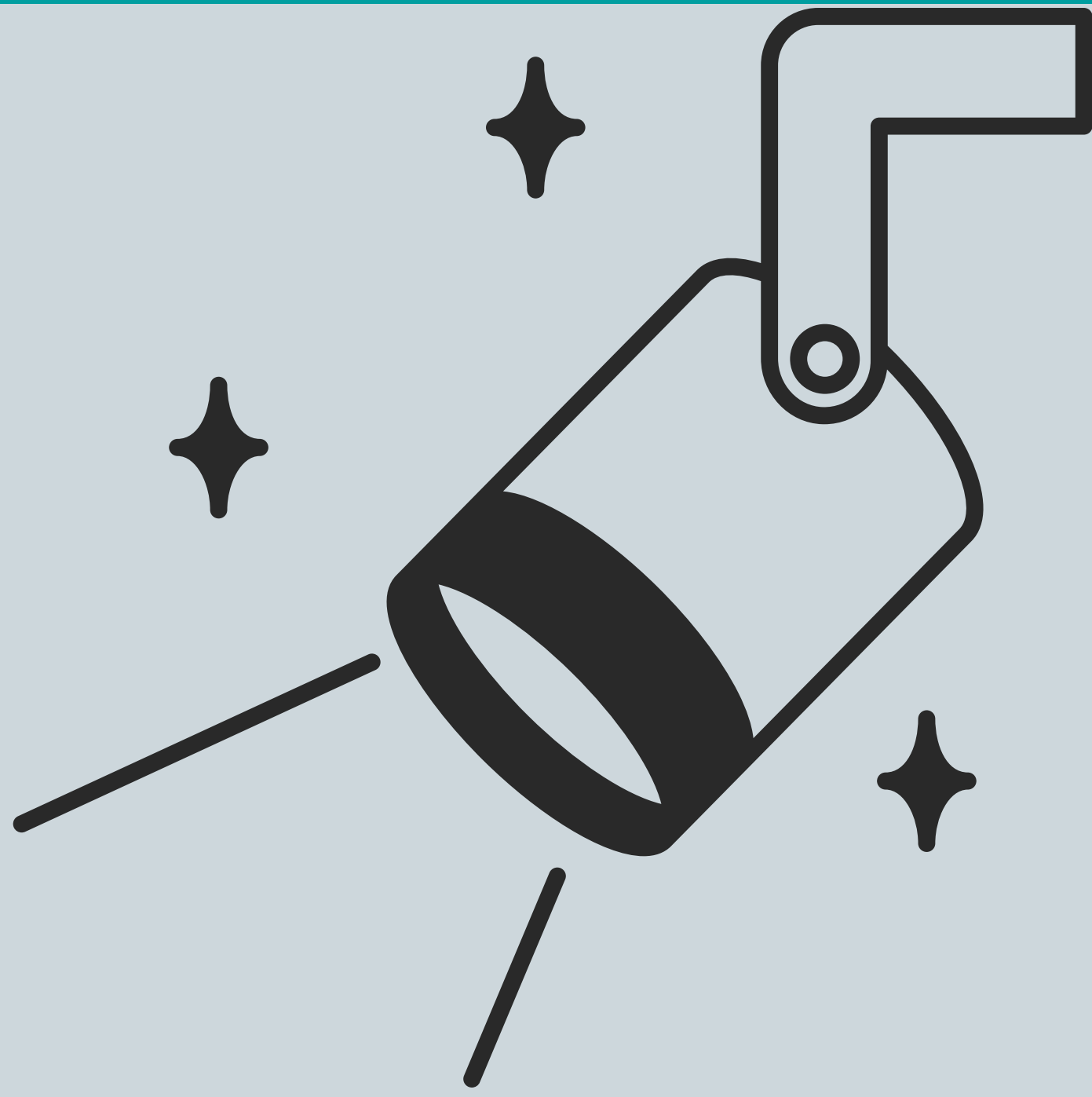
## SUSTAINABILITY SPOTLIGHTS

King's Food  
Procurement

## SUSTAINABILITY CHAMPIONS – CASE STUDIES

Introduction  
Strand Estates and Facilities  
Estates & Facilities Lavington  
Street  
Geography Offices  
Institute of Psychiatry,  
Psychology & Neuroscience  
The Dickson Poon School of Law  
Social Mobility & Widening  
Participation  
King's Sport  
Research Management and  
Innovation Directorate  
School of Global Affairs  
King's Entrepreneurship Institute

Student Sustainability Auditor  
Quotes  
Laboratory Champions  
Cold Storage and  
sustainability  
5th Floor Guy's Immunology  
& Microbial Sciences  
Britannia House Chemistry  
Research  
Centre for Developmental  
Neurobiology  
Department of Twin Research  
Diabetes at Guy's Campus



# **SUSTAINABILITY SPOTLIGHT**







# King's Food

King's Food work hard to make sure its restaurants are more environmentally conscious, by supporting student initiatives and transitioning to plant-led menus, such as the new collaboration with Beyond Meat, to introduce 'Beyond Meat Monday's' onto campus.

They have an increased focus on local and independent suppliers, removed palm oil from food produced in-house, engaged with students and the local community to redistribute unsold food, removed beef from restaurant menus and serve vegan and vegetarian options as the default options at meetings and events. The King's Choice Menu currently features 70% vegetarian and vegan options, and Roots at Bush House was the first 100% plant-based cafe at a UK university café.

King's Food have started a project to determine the carbon emissions produced per menu item and are deciding how to best display this information to encourage the consumption of lower carbon over higher carbon dishes. Additionally, they have trialled the Too Good To Go app to help reduce food waste. The app allows for the sale of food that would have otherwise gone to waste at a reduced price.

In addition, King's Food collaborated with student groups participating in the Sustainability in Practice module on projects looking at food waste management, reducing carbon emissions from food, and evaluating the viability of a bring-your-own-lunchbox programme.



# Procurement

Third party contracting is the largest area of carbon emissions at King's, which is why it is critical to the university's climate and sustainability plan.

The Procurement & Contracts Team have established a partnership with Electronics Watch, the human rights monitoring organisation, to improve supply chain transparency. This provides better assurance regarding eradication of modern slavery and assurance of ethical employment practices in our electronics supply chains.

King's Socially Responsible Procurement Policy means King's will only purchase goods and services from businesses who can clearly demonstrate policies and working circumstances that are beneficial to employee welfare. All suppliers are required to sign our Sustainable Supply Chain Code of Conduct, or if they are deemed high-risk suppliers, the Electronics Watch Code of Conduct. Additionally, the Procurement Team is currently a contributing member of the newly established Sustainable Science Committee group.

A Responsible Procurement Advisory Group (RPAG) was established with membership from across the university. This group allows for those with expertise and enthusiasm for sustainability and social value to contribute to procurement exercises that pose risks or opportunities in this regard. For example, a sub-group was established for the disposable glove tender given the modern slavery and environmental risks attached to this purchase.





# SUSTAINABILITY CHAMPIONS





# Introduction

Sustainability Champions is a behaviour change programme focused on supporting staff at King's to make a positive environmental and social difference. Champions work across all areas of King's, from faculty offices and academic teaching spaces, campus operations, research and teaching laboratories, to our halls of residences.

Sustainability Champions work hard to make King's a more sustainable working environment; reducing the negative and maximising the positive social and environmental impacts.

The programme has proven to be crucial in helping King's embed sustainability and efficiency throughout the university. It also brings together King's staff and students together - across departments, faculties and the five campuses - empowering the King's community to make positive changes within and beyond their own work environments.

This chapter of Sustainability Stories is full of brilliant examples of work our individual champions and teams have carried out over the past academic year. We hope these stories can inspire and motivate more sustainability work, as well as put a spotlight on the fantastic work of those involved in the programme.



# Strand Estates & Facilities (E&F)

It was an exciting year for Strand E&F Sustainability Champions team – where our number of initiatives increased, and we had very good fun doing some of the activities together. Our team remains varied and has a richness of skillsets which are pivotal to hitting our yearly targets, comprising of colleagues from the logistics team, managers on duty and campus projects.

Our Sustainability Champion Assistant (SCA), Anna Goodden, teamed up with us and her support has proven invaluable.

During our day-to-day operations and with the encouragement and support of the Strand E&F Champions, our Campus Operations department has made a great effort to re-utilise existing furniture and redeploy them in newly refurbished areas or donated to charity (specifically the British Heart Foundation). We have re-used and re-deployed almost 150 items between task chairs, storage units and desks, saving over £20k and 6600 KgCO<sub>2</sub>e.





The team have also identified over 500 redundant carpet tiles left over from large refurbishments which are now being re-used in student spaces (informal learning spaces and teaching spaces). In 2018, it was estimated that each single carpet tile produced just over 13kg CO<sub>2</sub>, by utilising all 500 tiles E&F Strand Champions could potentially save another 6500kg CO<sub>2</sub>e.

We donated seating cushions to the Chaplaincy office to be used in the Bush House prayer room this year. We also introduced eco-friendly umbrella dryers at our busiest Strand buildings - completely eliminating use of plastic bags. We are also working with the Energy Team at King's on the installation of state of-the-art solar panels on the roof of Bush House.

Members of our team are directly involved in the organisation of E&F Equality Diversity & Inclusion (EDI) coffee sessions and regularly host them. To further this work, our department has also taken on a project aimed at increasing the accessibility within the campus. This has brought challenges, due to buildings dating back to the 1800s and some being of listed status. However, we have been able to install hold-open devices and automatic door opening systems throughout the campus to facilitate accessibility for wheelchair users.

Finally, we have made an effort to participate in other initiatives, including the Spotlight for Sustainability podcast logo competition, attending sustainability workshops and seminars, running the sustainability toolbox talks for over 200+ colleagues at Strand and beyond (educating campus operations, cleaning & security staff on sustainability and well-being), Shots for Hope competition submission, King's listening campaign, crisps blanket making workshop and making a LGBTQ+ allyship pledge.



# Estates & Facilities Lavington Street

This year Megan our lead Sustainability Champion was away on maternity leave. It has proven to be a little bit difficult to develop a Gold Action plan as we aren't fully back in the office full time, and we all work various schedules, all across the campuses. We have also had a lot of movement from various departments into our office space. There were monthly meetings to ensure no matter the locations of the champions we were still meeting to motivate each other, either via teams or in person catch ups.





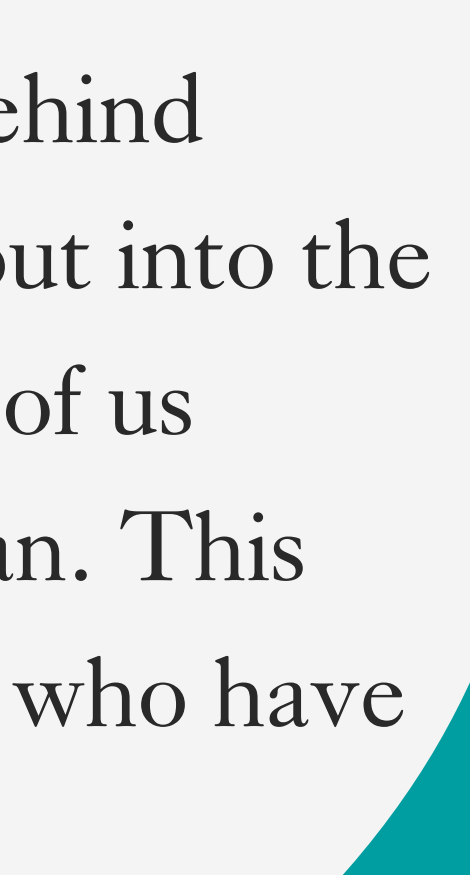


We discussed various ways in which we could bring innovative and a different style of sustainability into our office space.

One exciting project we focused on was bringing algae walls into King's College London, with our team members starting to grow some of the algae themselves. The idea of the algae wall is that you have a container designed in any shape you want and inside sits water and algae. In this device you design a section, where air is supplied into the design and a section that releases air. The point behind this design is to take in the polluted air, and through photosynthesis, release oxygen. The team is still working through the design stage of this project and hope to start rolling this out in our office next year.

As a team, we set up monthly sustainability workshops because we wanted to build a safe space for sustainability to be discussed with the wider community at Lavington Street and King's College London. Each workshop was dedicated to a specific section of sustainability. This enabled the team to come together, problem solve and come up with innovative ways of keeping people engaged.

Although this year has proven to be tricky to get everyone together, all team members have been extremely enthusiastic about our sustainability knowledge. There has been a true passion behind everyone in this group to bring the topic of sustainability out into the public at King's College London. It has been a delight, all of us working together to develop an impactful Gold Action Plan. This group has remained a kind supportive group of individuals who have worked hard to make each action achievable.





**"I have learnt that there are many small steps I can take to become more sustainable. I'm on a renewable energy contract and I have loved sharing my life experiences with the team!"**

**Julie Allen, Built Environment Asset Manager**

**"I am working hard on ensuring I take sustainability more seriously in my personal life. I have taken part in the KEATS Sustainability & Climate: Learn, Discover, TakeAction module which really opened my eyes to how I can be more efficient and how to make a difference in my day-to-day life, from investments and banking to social mobility."**

**Negar Khoshooee, Project Manager**

**"I learnt about algae walls and how they can help clean the air and provide more oxygen. I have also learnt that even though Bulb was a renewable energy supplier the only actual green energy supplier is electricity. I have applied for a worm box from my council and I'm happy our Sustainable Easter workshop was a success!"**

**Ruadhan Jenkins, Business Support Manager**



## Most positive impacts:

1. Emissions from commuting are down as people are travelling into the office on various days.
2. Not printing as many pieces of paper using our office printers. This has been helped since putting in place DocuSign, meaning contractual documents can be signed digitally rather than being printed for signature.
3. More people in the office are now putting in pronouns within their signatures.
4. Many people within our department are now part taking in EDI coffee morning and invoking some really interesting conversations.





# Geography Offices

Fieldwork is a key part of the undergraduate courses offered by the Geography department. This has traditionally included a variety of international options, allowing students to learn both human and physical geography field techniques in different settings. However, following discussions on carbon impacts, the challenges and opportunities posed to travel from the Covid pandemic, and involvement with the Royal Geographic Society's best practice guidelines, this year, a review took place to assess the carbon impact of alternative field-trip options. This review allowed the department to explore opportunities to improve the sustainability of field-trips which are vital to teaching.

As part of this process, the carbon footprint of the first-year undergraduate field-trip was assessed. This showed that the traditional field-trip to Spain resulted in 0.54 tonnes of CO<sub>2</sub> emitted per student, compared to 0.05 tonnes for an alternative trip to York. As a result of this, this year's field-trip is being undertaken in York. Previous arguments against changing field-trips to domestic options included the perception that international trips were a major draw for students to the programmes on offer at King's.

As a result, Sustainability Champions have been supporting this initiative by designing and distributing a survey to undergraduate students to gauge their opinion. Alongside further carbon accounting and assessment of factors such as EDI, survey results will help to inform potential changes to other international field-trips, which currently include Lisbon, Tenerife, and San Francisco.





The tables shows the carbon difference calculated between the York and Spain field-trips. Overall, the carbon difference between the options is notable, with the Spain trip being 8-11 times more carbon-intensive per person depending on the methodology used.

**York**  
**(19 September 2021 - 25 September 2021)**

<b>Tonnes CO2e travel</b>	<b>1.86</b>		<b>Tonnes CO2e travel</b>	<b>2.99</b>
<b>Tonnes CO2e accommodation</b>	<b>1.33</b>		<b>Tonnes CO2e accommodation</b>	<b>1.33</b>
<b>Total tonnes CO2e for trip</b>	<b>3.19</b>		<b>Total tonnes CO2e for trip</b>	<b>4.32</b>
<b>Tonnes CO2e per student/staff</b>	<b>0.05</b>		<b>Tonnes CO2e per student/staff</b>	<b>0.07</b>

**Spain**  
**(17 February 2020 - 22 February 2020)**

<b>Tonnes CO2e travel</b>	<b>67.52</b>		<b>Tonnes CO2e travel</b>	<b>69.12</b>
<b>Tonnes CO2e accommodation</b>	<b>6.90</b>		<b>Tonnes CO2e accommodation</b>	<b>6.90</b>
<b>Total tonnes CO2e trip</b>	<b>74.42</b>		<b>Total tonnes CO2e trip</b>	<b>76.03</b>
<b>Tonnes CO2e per student/staff</b>	<b>0.54</b>		<b>Tonnes CO2e per student/staff</b>	<b>0.55</b>



# More positive impacts

## Research

- The department has research related to 16 SDGs, with a strong focus on environmental research
- The King's Undergraduate Research Fellowship (KURF) allows students to assist staff in research within the Geography Department and many KURFs investigate sustainability specifically.

## Education

- A large body of students within the department receive education on sustainability topics, across 16 of the SDGs. For example, the Sustainability in Practice module, which is aimed specifically at teaching students about sustainability, policymaking and teamwork in conjunction with the Sustainability Team.
- The Sustainability Champions run workshops and seminar series educating staff and students about different environmental issues.
- Increased employability for students through careers events, internships and education.
- As a result of this education, every year a reasonable portion of Geography graduates go on to sustainability-focused roles, including at King's.
- Research into improving education at King's such as Robert Francis's KURF on speeding up marking turn-around time for coursework and essays.



# Equality, Diversity and Inclusion (EDI)

- There is an EDI committee in place for the Department, led by Daniel Schillereff
- Achieved Athena SWAN Bronze award in 2019. We aim to apply for Silver in 2022-23
- We are undertaking an evaluation of inclusivity within recruitment practices
- EDI is a standing item on student-staff committees, and in the staff meeting.
- Recent activities:
  - Organised a series of events for Black History Month
  - Consultation funded by the department and led by two PhD students exploring racialised students' perspectives on curriculum and practice





# Institute of Psychiatry, Psychology & Neuroscience (IoPPN)

The IoPPN Champions ran stitch and pitch sessions, which were designed to offer people the space to not only practice their own stitching and craft skills, but to talk about ideas they have on sustainability, with others across the college.

We held over three events since the sessions started at the beginning of 2021. The impact on those who do come is large, as the stitching side of the sessions allows attendees to repair their clothes rather than throwing them away and people can learn skills from one another, such as knitting, which can be great for their wellbeing as well as helping people reduce their contribution to fast fashion.

The pitching element was created so that people can think about sustainability projects they are interested in and need help with developing. We are also hoping to bring in people who are interested in a particular issues e.g. gender equality and then invite those involved in it.

During Sustainability Month 2022, we had 12 attendees and the discussion was productive, with people sharing tips on zero waste products and vegan recipes. The next sessions will be about gender equality and racial equality.

The idea is to discuss topics that seem so big (e.g. climate crisis, racial and gender equality) and then look at the small steps we can take together that can help the problem.





# The Dickson Poon School of Law



Over the Summer of 2021, to prepare staff for a return to the office and move towards bookable office spaces in Somerset House East Wing (SHEW), we ensured the office tidy up was undertaken as sustainably as possible.

## Stationary

Lever arch files and other folders were placed in the student's common room, which were advertised via our student representatives for students to use for their studies. A lot of staff had hoarded stationary in their dedicated desk space. Therefore pens, pencils, staplers, and notebooks were sorted as follows:

- Any pens/biros that were not working were recycled via Rymans
- All reusable stationary was placed in the stationary cupboard and any new stationary relocated to the storeroom, to ensure that staff used existing stationary first.

## Office Furniture

Warp-it was used for any unwanted furniture. Warp-it is an online platform for reusing materials/goods through the university.

## Welcome Merchandise for Students

Existing tote bags and merchandise to given to new students as part of Welcome Week. This saved money and disposed of items in a more sustainable way. Any tote bags which were branded with old dates were donated to a local foodbank in Alton, Hampshire.



## Water Coolers

Following a campaign from the Law Sustainability Working Group, the water cooler units were removed from the staff and student common rooms as well as other areas in SHEW. Staff and students are being encouraged to bring in water bottles and use water refill stations instead.

## Other positive sustainability impacts include

- Ongoing initiatives to address inequality and enhance diversity in Law (e.g. Conversations about Race, work of EDI Committee).
- Greater prominence of sustainability in the Law School through standing agenda items at SC3 Committee and periodic updates at Law Executive Team and Faculty meetings.
- Continuing work to embed Law School research activity on climate law and governance (the Environmental Research Group) into sustainability initiatives & projects.
- Progress in enhancing staff and student engagement with sustainability through the promotion of Sustainability Month in February 2022, and the circulation of staff/student guides on sustainability.





# Social Mobility & Widening Participation

I'm a Sustainability Champion because I deeply care about our planet, and everyone on it. My overarching aim in life is to make a difference. My work in WP is incredibly fulfilling as the work I do each day, supports the most underrepresented prospective students to achieve their aspirations. But I can't help wondering what the future looks like for the young people we work with, including their planet. I can't just sit back when there is something I can do to help.

The work to address inequality features within the SDG's and the Sustainability Champions has helped KCLWP reach a wider network of motivated and caring staff across King's to support and extend the reach of our central WP department.

In particular, embedding sustainable practice further within our department. We have linked three SDG's to our new 2022-25 strategy. Our gold action plan focuses on delivering sustainable events, by reducing our material footprint and promoting awareness. I'm excited that the work we'll focus on through this scheme will leave a legacy. Making the world a better place for everyone we work with, and hopefully inspiring others along the way.



# King's Sport

This year King's Sport partnered with Alive & Kicking the world's only not-for-profit ball manufacturer with centres across sub-Saharan Africa that create hundreds of ethical jobs for adults facing disadvantages and inequalities.

Alive & Kicking have created 1,074 jobs between 2019-20 alone, with 90% of employees having never had formal work before and 85% of employees have gone onto education, training, or other employment.

King's Sport has worked with Alive & Kicking for several months to develop a custom-made ball line. The balls will serve as equipment for the BeActive programme, an award-winning King's activity programme available for staff and students.

The King's community can also claim their very own Alive and Kicking ball for free through the King's Move app, which rewards participants with points when they track their physical activity.

**“The partnership between King's and Alive & Kicking isn't just about producing beautiful handmade sports equipment, it is about creating a positive impact. Thanks to King's support, 1,395 young people will gain regular access to sport, two sports coaches will be trained to deliver award-winning mental health education all year round, and one new full-time job will be created for an adult who has never had a job before – all through the production of a sports ball”**

**Ben, Alive & Kicking**



## **More positive impacts from King's Sport:**

- Reusable cups have been introduced at the sports grounds to replace disposable plastic cups.
- Switch from red diesel to more sustainable HVO fuel at sports grounds.
- Partnership with Akuma to get all uniforms in the UK from a more sustainable company.
- Wellness Clinic providing education opportunities and free workshops and holistic wellness advice internally and for the wider community.





# Research Management and Innovation Directorate (RMID)

RMID manages the submission to the Research Excellence Framework. This includes the submission of Impact Case Studies which explore who the beneficiaries are of King's research and how we benefit the community through the dispersal of our research in commercial activity, social projects and government.

The Analytical Platforms team works to ensure centrally managed research facilities are well maintained and efficiently run which reduces the replication of scientific equipment between individual research groups. The new sustainable labs assessment tool Lab Efficiency Assessment Framework (LEAF) was developed within this team which has helped numerous labs at King's reduce their environmental impact.





The Entrepreneurship Institute (part of RMID) supports the development of 20+ businesses per year, many of which solve social and environmental problems, while creating meaningful employment opportunities and attracting millions of pounds of investment to further grow the start-up ecosystem in the UK.

RMID has a Research and Researchers Network which meets to ensure collaboration between departments and to plan social and wellbeing activities. This network helps to engage staff outside of their work duties and contributes to reducing stress levels and ensuring we have a friendly work community.





# School of Global Affairs (SGA)

As we reflected on how to hire a more diversely, we realised we needed to make a change in where we advertised our roles. We decided to collaborate with Creative Access, who facilitate the hiring of underrepresented talent in a variety of industries. With their help, we were able to hire Daisy as our very first SGA Sustainability Intern. Daisy worked with our team and the Sustainability Team to develop her skills and took a leading role in the Sustainability Development Goal mapping project. After being with us for only a couple months, Daisy received not one but two job offers in sustainability roles and is now working on policy making at the Royal Society. We are hoping to continue the scheme in the new year.





# King's Entrepreneurship Institute

Here at the King's Entrepreneurship Institute, we are on a mission to solve the world's biggest problems.

Whether at the idea stage or within an established company on the King's20 Accelerator, we have been working to set a new expectation that working within the institute means every start-up must engage with this missions and act accordingly. This involves challenging our ventures to disrupt the conventional start-up model and incorporate social impact and to 'Think Lean' in terms of environmental footprint.

Our particular focus has been on embedding sustainability education within our King's20 Accelerator curriculum. For the 20/21 academic year, we mapped how our King's20 ventures (all 100 of them!) are actively contributing to the different UN Sustainable Development Goals (SDGs).






We found that 92% of the start-ups we incubate are working on at least one of the SDGs. We also did a similar mapping exercise for our Idea Factory finalists. This resulted in us now asking in all programme application forms how the start-up is approaching and acting on sustainability, using the SDGs as a core framework.

The alignment with the SDGs and the realisation that many actors in our ecosystem are already doing great work on sustainability without a specific effort to encourage it, has been real fuel to taking this further with the sixth cohort of King's20 for the 21/22 academic year.

Shaped by the training of one of our team in the B-Corp Methodology, our core message for this year has been that 'all entrepreneurs can – and must – role model a better future, whatever their business is about' and to inspire them to see their roles as influences who can nudge customers, employees, partners, investors, leaders, organisations and colleagues to join in.

This led to us introducing the 'Smashing Sustainability' series, a practical exploration of sustainability in a start-up friendly way through peer-to-peer hackathons, events, panel discussions, and expert mentoring.





# King's20 Ventures by SDG

Here are how our King's20 ventures contribute to the UN Sustainable Development Goals. Note: some ventures contribute to multiple SDGs.

			<b>1. No Poverty</b>	<b>2. Zero Hunger</b>
			<b>4</b>	<b>2</b>
<b>3. Good Health and Well-being</b>	<b>4. Quality Education</b>	<b>5. Gender Equality</b>	<b>6. Clean Water and Sanitation</b>	<b>7. Affordable and Clean Energy</b>
<b>46</b>	<b>24</b>	<b>6</b>	<b>1</b>	<b>2</b>
<b>8. Decent Work and Economic Growth</b>	<b>9. Industry, Innovation and Infrastructure</b>	<b>10. Reduced Inequality</b>	<b>11. Sustainable Cities and Communities</b>	<b>12. Responsible Consumption and Production</b>
<b>22</b>	<b>43</b>	<b>22</b>	<b>30</b>	<b>19</b>
<b>13. Climate Action</b>	<b>14. Life Below Water</b>	<b>15. Life on Land</b>	<b>16. Peace and Justice Strong Institutions</b>	<b>17. Partnerships for the Goals</b>
<b>8</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>9</b>



# Student Sustainability Auditors

**"I had a great time learning about how the Sustainability Champions are making a difference."**

**"I really enjoyed learning about the different ways teams around King's are tackling sustainability and the diverse range of initiatives being undertaken."**





**"Overall we were very impressed to hear how much effort they are making within a big team, and we also enjoyed hearing perspective from staff."**

**"I have enjoyed this opportunity learning more about what different departments are doing at King's in terms of sustainability."**

**"It was really exciting to look into all the meaningful work the sustainability team and the sustainability champions are doing."**





# LABORATORY CHAMPIONS





# LEAF Laboratories Summary



**£151,250 total cost savings**

**121 Total CO2 savings (Tonnes)**



**36 labs**

**23 Gold Awards**

**3 Silver Awards**

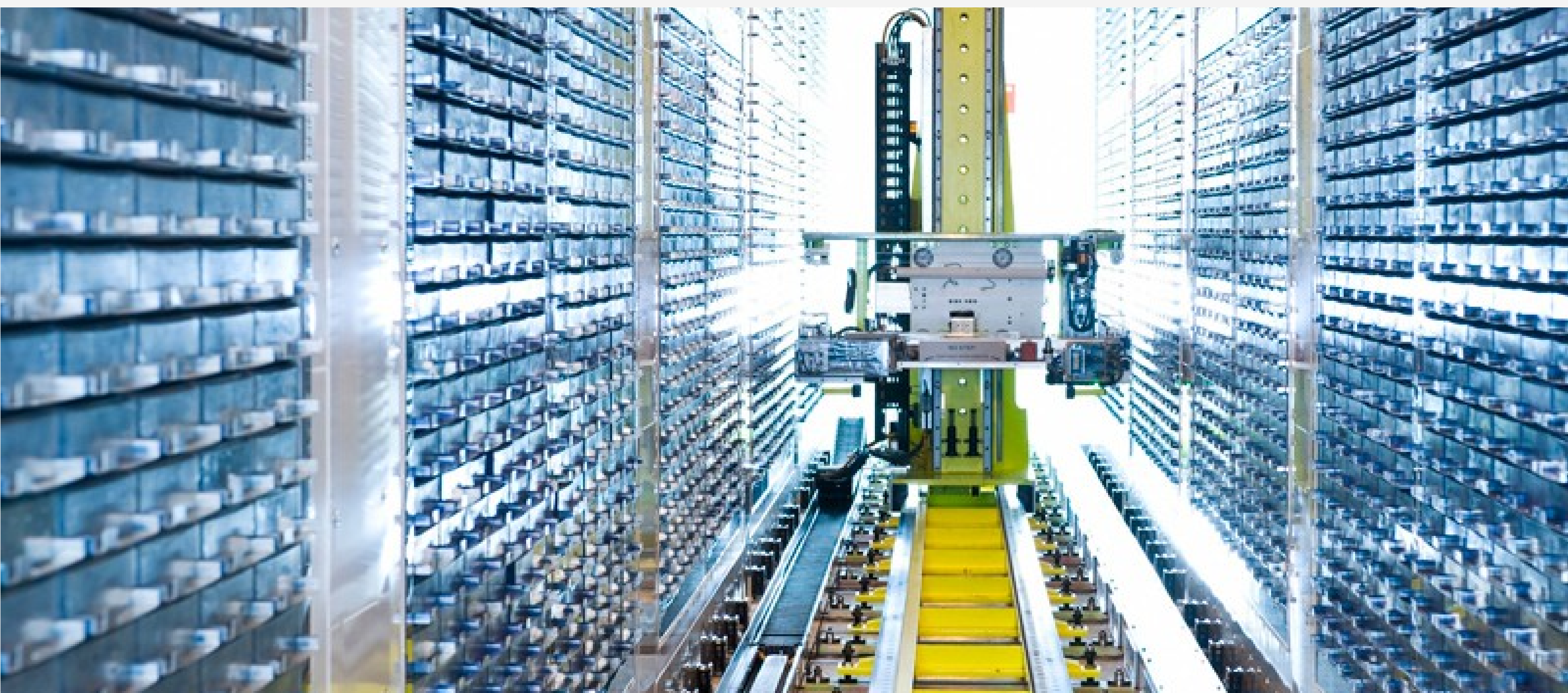
**5 Bronze Awards**



# Cold Storage and Sustainability

Ultra-low temperature (ULT) freezers are an essential resource in medical science, as they allow biological samples and vaccines to be preserved safely at very low temperatures. Many lifesaving vaccines, including the Pfizer (COVID-19) vaccine, require ULT freezers for storage and they are vital to research laboratories, including ours here at King's, where we have over 550!

Like any cooling, freezers are extremely energy intensive, particularly ULT freezers. Depending on their age and model, these freezers can use the same amount of energy as the average UK home and require further energy to cool the spaces they occupy. Beyond the impact of the energy consumption, cold storage devices utilise refrigerant gases, which are HFCs. While these gases are far less harmful on the environment than their predecessors (CFCs), they can still cause problems if released into the environment. In the UK, there are regulations in place to avoid their release, but old equipment can still lead to leakages.

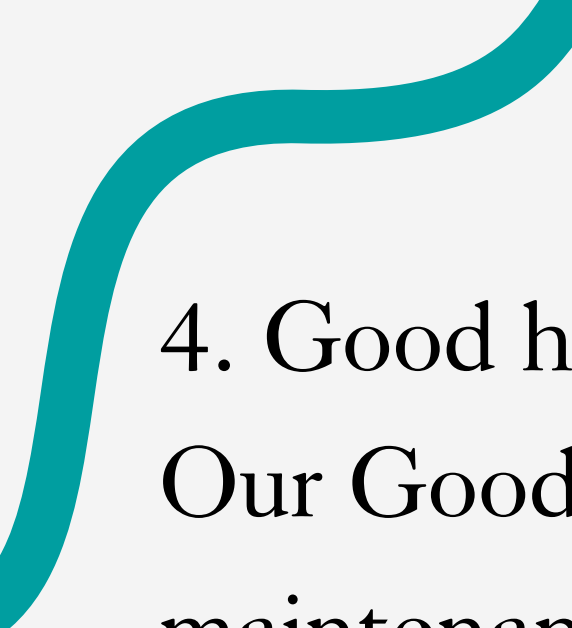




# So, what can we do to manage our ULT freezers sustainably?

1. Procure energy efficient freezers - To start, we can aim to purchase more efficient units. At King's, we promote sustainable procurement both through our tender process and sustainable lab programme (LEAF).
2. Manage samples efficiently – Storing our samples efficiently means we can maximise our freezer space. King's Department of Women & Children's Health have recently transformed their sample management system by adopting microtubes that take up less than half the space of previously used containers. This has had the dual effect of increasing the internal capacity of each freezer and reducing the volume of plastic required. Shared around the college, this practice is now being adopted by others, including groups within the School of Basic & Biomedical Sciences.
3. Store only what we need – By removing samples that are no longer needed we can consolidate our holdings. To support this, King's Freezer Replacement Scheme offers to pay for new, ultra-efficient, fully-racked ULT freezer if researchers can consolidate the contents of freezers in their area, so that two older freezers can be taken away in exchange for one new energy efficient one. This scheme aims to reduce carbon emissions and encourage the adoption of efficient management system.






4. Good housekeeping - Smart freezer management goes a long way! Our Good Practice Guide provides some great tips and tricks on maintenance such as defrosting and clearing filters.

5. Reduce the temperature – Check what temperature the freezers are set at. While many operate at  $-80^{\circ}\text{C}$ , historically they all were set to  $-70^{\circ}\text{C}$ . That  $10^{\circ}\text{C}$  difference leads to an impressive 25-30% in energy saving, and has been implemented in some of King's sites like the Wolfson Centre for Age-Related Diseases.

As our research and laboratory practices grow, we must ensure that consideration is given to the impacts on the environment and integrating sustainable practices such as those listed above is crucial to delivering impactful research, while minimising our environmental impact. Whether you are directly involved in freezer management, or have a supporting role, we can all play a part in sharing this knowledge and raising awareness amongst our peers, which in turn can go a long way in creating a wider mindfulness about their environmental impact and how we can support a more sustainable infrastructure at King's.





# 5th Floor Guy's Immunology & Microbial Sciences

We have worked to increase the temperature setting on ULT freezers across the floor with the end result that half of the units on the floor are now set to  $-70^{\circ}\text{C}$  rather than  $-80^{\circ}\text{C}$ . We will be making another push on this and are hopeful that we should be able to get the numbers up to 2/3rd of the units on the floor. A further 6 units have had temperatures raised to  $-70^{\circ}\text{C}$  this year.



Improved access to recycling points in labs has reduced the amount of recyclable material going into clinical waste and we have maintained as much recycling as possible throughout the Covid pandemic. We hope improved signage around recycling points will further improve recycling rates across the floor. Having a dedicated 2.5l glass bottle drop-off point on the floor has much improved rates of glass bottle recycling. Previously glass waste collection was intermittent and unsure but now we have a much more controlled route to reusing/recycling. Cool pack recycling on the floor has now been discontinued unfortunately although we estimate many kilos ( $>50\text{kg}$ ) of material was recycled rather than going to waste in the period the scheme was running. We have instructions on display on "in-lab" recycling of cool packs in the hope that we may be able to retain at least some recycling from what is a very common packing/waste item.



This year we hope to add more 5th floor chemical stocks to our online chemical database and have also disposed of a substantial amount of old/outdated chemicals with potentially more to go as part of ongoing lab renovation projects. We will be cooperating with the ongoing King's cold storage and Biobanking initiative in the hope that more permanent Biobanking solutions can be found for many of the stored trial samples archived on the floor. This still makes up a potentially large usage of freezer space on the floor.

In the past year a large amount of redundant chemicals have been cleared from the floor and what remains should be largely catalogued and in active use by laboratories. Online catalogues of chemicals and relevant MSDS sheets expanded this year. Additionally old samples from ULT freezer storage have been cleared and this is something we hope to encourage across the floor as part of the King's cold storage/biobanking strategy.





# Britannia House Chemistry Research

We have raised the temperature of one more ULT to -70C. We now have 3x -70C (one is the back-up) and 2x -80C ULT freezers. Most of the drying cabinets have timers so temperature is lowered during the night or they are completely turned off when possible.

We have a NMES Technical Support Function Team meeting every month where Sustainability is part of the standing agenda. These meetings involve all technical staff in the NMES departments and is a great opportunity to discuss practices and processes regarding sustainability in the faculty as a whole. We have taken part in the LEAF audit for 3 consecutive years where we have been awarded Gold.

Most of the sterilisation is done by autoclaving which is done in batches for better efficiency. Waste is also autoclaved in large batches.





# Centre for Developmental Neurobiology

Our freezer temperatures have been lowered to -70C where possible. New freezers are set at -70C when they come into the centre.

The drying cabinet we use is an energy efficient model from sustainability funds replacing an old drying cabinet and it is set on a timer. We have 2 ovens which are shared throughout the Centre, one in each wing and they are only switched on when required.

Dishwashers are new energy efficient models purchased in 2021. The design of the chamber utilises more space and there is lower water consumption per cycle. The washers are always run to full capacity.

Freezers are regularly de-iced and filters cleaned. Freezers are placed 15cm away from the wall so as not to impede their heat source.





# Department of Twin Research

Each lab has their own 24-hour monitors (oxygen, freezer alarm, etc.) and a team that is informed of any breakdowns. All Freezers have a DARCA alarm system for monitoring the temperature. A number of back-up storage spaces are available for use in case of freezer breakdowns. An oxygen monitor is placed in the liquid nitrogen room, alerting everyone on the oxygen levels at any time. As well as T-scan software that keeps lab personnel informed of temperature changes in liquid nitrogen tanks. There is also an SOP for the breakdown of freezers and what to do in case of electrical power failures and moving of entire freezers to different locations.

Each freezer has a sign indicating where the nearest back up freezer is to quickly relocate the samples.

We have 3 back up freezers, 2 of them are run at  $-70^{\circ}\text{C}$  with unused racks and boxes inside to increase the efficiency of their running. One of the backups is switched off but ready for use when needed.

To reduce consumption of materials we make sure to re-use equipment such as nalgene boxes to store samples. Instead of disposing of sample storage boxes we use them again for different projects. Foam racks used for urine and saliva are also reused and kept in the lab. Plastic bags or containers that are sent to us containing samples are also kept and later on used for shipment.



As a biobank we have a heavy use of freezers that consume large amounts of energy. The majority of our freezers have been purchased within 10 years and are as energy efficient as possible. Whenever we get quotations for electrical equipment, we compare price and energy efficiency of different models on the market.





# Department of Diabetes

## Waste disposal

For clinical waste - we have started to label our department bags and count them on disposal for recording purposes. This only started in January 2022 so we don't have any previous data to compare with. However, due to the provision of general and recycling bins in the labs we are confident that the amount of clinical waste has reduced as people use these alternate streams where appropriate.

## Schemes

The lab participates in a number of recycling schemes available on campus. Pipette tip boxes and ethanol bottles are recycled via NHH stores. We are able to arrange for the majority of our ice/cool packs to be re-used via a scheme hosted by 2B scientific

## Reducing waste from purchases

We are promoting the use of the supply centres in NHH stores to reduce the packaging from external deliveries, so far we have 3 groups using the Helix store. We also encourage bulk purchasing where possible, particularly between groups, as this can reduce packaging also.

The department holds an inventory of the shared chemicals used in labs. Each research group has lists of their samples and any group-specific reagents/chemicals which are sorted through on an annual basis. We would like to keep a centralised record so there can be more collaboration between groups where resources can be shared. We have also raised the temperature of our -80C freezer to -70C.





**THANK YOU TO ALL  
SUSTAINABILITY CHAMPIONS**



**WANT TO GET INVOLVED?**

**GET TOUCH AT [SUSTAINABILITY@KCL.AC.UK](mailto:SUSTAINABILITY@KCL.AC.UK)  
TO GET INVOLVED**