

ANNUAL SUSTAINABILITY REPORT 2023-24

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VICE-CHANCELLOR'S FOREWORD



I am delighted to present the 2023-2024 Queen's University Belfast Annual Sustainability Report.

Providing updates on our progress in implementing our Net Zero Plan and sustainability projects, the report includes case studies, key performance indicators and an overview of our work to address and incorporate the UN Sustainable Development Goals across all of our activity. The report covers five key themes:

- Sustainability in Campus Activities
- Research and Sustainable Solutions
- Sustainability in our Education
- Outreach and Partnership
- Engaging our Community on Sustainability

2023-2024 was unquestionably an exciting and ambitious year for sustainability projects at Queen's. In addition to conducting innovative, impactful and world-leading research addressing environmental challenges, we continued to enhance the sustainability of our university, its campus and operations.

We were proud to be ranked in the top 7% of universities globally for sustainability in the QS Sustainability Rankings. And we were again awarded Platinum status in the Northern Ireland Benchmarking Survey, placing us in the top 30% of Northern Ireland companies for environmental leadership. The University also achieved Green Flag Accreditation for the sixth successive year, recognising our Main Site as one of the UK's top green spaces.

Queen's is certainly driving real-world impact for people and planet.

We recognise, however, that achieving our ambitious net zero emissions by 2040 target requires ongoing collective effort and support from all our staff, students and external partners. We have and will continue to engage with the whole university community as we progress on this vital journey.

The sense of shared purpose propelling us toward that objective is evident throughout this report, and I would like to express my thanks to all members of our University community for playing their part in advancing sustainability at Queen's.

Professor Sir Ian Greer President and Vice-Chancellor

SUSTAINABILITY IN NUMBERS 2023-2024

ENGAGING OUR COMMUNITY



OF SOLAR PV

ON CAMPUS

215kW

23%

CAMPUS BIKE HUB

OF FLEET EV

ENHANCING NATURE ON OUR CAMPUS

TRAVELLING GREEN TO QUEEN'S

10 ELECTRICAL

NATIVE OAK SAPLINGS PLANTED ON CAMPUS







OF 'NO MOW' BIODIVERSITY **RICH GRASS**

MANAGING OUR WASTE



SUSTAINABILITY ACHIEVEMENTS





6TH YEAR

тор10% TIMES HIGHER **IMPACT RANKINGS** & OS IMPACT RANKINGS

2:1 IN THE PEOPLE AND PLANET UNIVERSITY LEAGUE

PLATINUM NORTHERN IRELAND BENCHMARK SURVEY

GREEN FLAG FOR 6TH YEAR



INTRODUCTION

Welcome to Queen's University Belfast Annual Sustainability Report for 2023-24.

This past year has been marked by extreme climate events. For the first time, global warming surpassed 1.5°C over an entire year, according to the European Union's climate service. We have witnessed devastating wildfires in Canada, catastrophic floods in Libya, severe droughts across North America, and record-breaking heatwaves in Europe.

These events underscore the urgency of the University's sustainability objectives. As part of our Strategy 2030, we are committed to embracing the United Nations Sustainable Development Goals (SDGs) and leading the transition to a carbon-neutral society. In June 2023, we strengthened this commitment by setting an ambitious target: achieving net zero emissions by 2040.

Our responsibility is clear. By taking bold action, we aim to drive meaningful change and contribute to a more sustainable future.

This report outlines the University's sustainability programmes and activities across teaching, research, and operations from **1 August 2023 to 31 July 2024**. It highlights our contributions to the Sustainable Development Goals (SDGs) and details our progress toward achieving net-zero emissions by 2040.

Bulb planting, Riddell Hall

KEY HIGHLIGHTS FROM 2023-24

RESEARCH AND SUSTAINABLE SOLUTIONS

In 2023/24 the University launched two significant sustainability focussed international collaborative research centres.

The Co-Centre for Climate + Biodiversity + Water will deliver solutions-focused research, innovation and policy in the fight against climate change, biodiversity loss and water degradation. The centre is hosted by Queen's, Trinity College Dublin and University of Reading, with partner institutions from across the UK and Ireland.

The Co-Centre for Sustainable Food Systems will drive societal and political change in food systems to help the industry's transition to climate neutrality by 2050. The centre is hosted by Queen's, University College Dublin and University of Sheffield, with partner institutions from across the UK and Ireland.

SUSTAINABILITY IN EDUCATION

2,173 modules from University Undergraduate and Postgraduate courses were mapped against the Sustainable Development Goals, with 43% identified as 'sustainability-focused or inclusive' and 50% classified as 'sustainability-supportive'.

The University delivered a number of Sustainability focused courses:

- MSc Leadership for Sustainable Development
- MSc Climate Change
- MSc Leadership for Sustainable Rural Development
- BSc Environmental Management
- BSc Planning, Environment and Development
- PG Cert Zero Carbon Engineering
- BSc Energy, Environment and Sustainability

SUSTAINABILITY IN CAMPUS ACTIVITIES

Queen's first Passivhaus project broke ground on Dublin Road resulting in the first Passivhaus purposebuilt student accommodation in Ireland.

A total of 215kW of Solar PV was generated on campus with feasibility studies continuing to identify future projects.

Queen's Travel Plan (2023-2028) was launched, providing us with a road map to a 25% reduction in carbon emissions from commuting by 2028.

Our University Business Travel Policy was updated to reflect our Net Zero commitments. This includes the adoption of a Sustainable Travel Hierarchy to guide travel decisions. In addition, supporting guidance has been developed to help staff make more sustainable choices when planning business travel.



OUTREACH AND PARTNERSHIP

The inaugural REACH '24 Arts and Sustainability Festival brought together leading experts in the arts world to explore the climate crisis and to discuss sustainable solutions to help tackle the crisis through music, creative writing, art and film.

ENGAGING OUR COMMUNITY ON SUSTAINABILITY

A range of 'Climate Conversation' events were hosted providing an opportunity for staff, students, communities, local businesses and civic partners to deepen their knowledge, share best practice and drive behaviour change. Highlights included our Staff Sustainability Summit, Sustainable Construction Conference and a 'Transforming Travel' Panel Discussion.

ENVIRONMENTAL, SOCIAL, GOVERNANCE AND THE SUSTAINABLE **DEVELOPMENT GOALS**

As part of Strategy 2030 and in response to our regional role as a leading organisation, the University is committed to advancing all 17 United Nations Sustainable Development Goals (SDGs) whilst also meeting Environmental, Social, and Governance (ESG) objectives.

Ø **1** NO POVERTY 10 Ň:**: ZERO HUNGER **GOOD HEALTH & WELL-BEING** 12 **QUALITY EDUCATION GENDER EQUALITY** 14 **CLEAN WATER & SANITATION LIFE ON LAND** 15 AFFORDABLE AND CLEAN ENERGY 16 **DECENT WORK & ECONOMIC GROWTH** 17 INDUSTRY, INNOVATION & INFRASTRUCTURE

REDUCED INEQUALITIES SUSTAINABLE CITIES AND COMMUNITIES **RESPONSIBLE CONSUMPTION & PRODUCTION 13** CLIMATE ACTION LIFE BELOW WATER PEACE, JUSTICE & STRONG INSTITUTIONS **PARTNERSHIPS FOR THE GOALS**

Our 2030 Strategy



Our vision is to be a global research-intensive university, generating internationally leading research coupled with outstanding teaching and learning, focused on the needs of our society, locally and globally.

EMBRACE THE UN SUSTAINABLE DEVELOPMENT GOALS

Universities are uniquely placed to shape the world in which we live, by helping to solve the challenges faced by individuals and communities at a local, regional and global level.

PROTECT AND DEVELOP BIODIVERSITY WITHIN OUR CAMPUS

Maintain and enhance biodiversity within our campus grounds.

SDG 6: CLEAN WATER AND SANITATION SDG 7: AFFORDABLE AND CLEAN ENERGY SDG 11: SUSTAINABLE CITIES AND COMMUNITIES SDG 12: RESPONSIBLE CONSUMPTION AND PRODUCTION SDG 13: CLIMATE ACTION SDG 14: LIFE BELOW WATER SDG 15: LIFE ON LAND

RESEARCH THAT ADDRESSES REAL WORLD NEED

Conduct innovative and world-leading research that changes people's lives.

LEAD AND SHAPE THE **AGENDA ON SOCIAL** TRANSFORMATION

Foster an environment where local impact and global ambition pervades all our activities.

TRANSPARENCY, REPORTING AND ASSESSMENT ON SOCIAL, ENVIRONMENTAL AND ECONOMIC **OUTCOMES AND OPERATIONS**

Foster an environment of openness and transparency to ensure monitoring, development and progress occurs via oversight, verification, certification and audits.

SUSTAINABILITY IN CAMPUS ACTIVITIES

Over 2023-24, work has continued to implement sustainability programmes across the campus. These efforts aim to focus on reducing the environmental impact associated with our buildings, whilst ensuring our university community is supported to make sustainable lifestyle choices.



SCOPE 1 & 2 EMISSIONS: We continue to make good progress against our carbon reduction targets, achieving a 29% reduction in our Scope 1 and 2 carbon emissions against the 2018-19 baseline. The reduction in carbon emissions is due to the procurement of our electricity from renewable sources and adjusting our on-site energy generation. Increased use of Combined Heat Power units has resulted in a 12% increase in Scope 1 and 2 emissions from 2022-23.



NET ZERO BY 2040



In October 2023, the University launched its Net Zero Plan. This plan provides a road map to how the University will achieve net zero greenhouse gas (GHG) emissions by 2040 across our scope 1, 2 and 3 emissions.

This ambitious target reflects not only the critical contribution that the University makes through world-











decarbonising our



14

building and retrofitting to the highest sustainability standards



the estate collaborating with the



on the island of Ireland.

avoiding unnecessary business-related travel and increasing uptake of sustainable travel





reducing waste and increasing recycling using the University campus as a Living Lab



leading research and education provision on sustainability, but also through its role as a social and civic leader in the

transition to net zero in Northern Ireland and more widely,

We will achieve net-zero via the following actions:

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engaging the whole University community

working in partnership with local industry, regional and national government, and Non-Government Organisations

ensuring we meet our targets with oversight from university leadership and transparent reporting



ANNUAL SUSTAINABILITY REPORT 2023-24

Net Zero Launch, October 2023

SCOPE 3 EMISSIONS: Our indirect emissions account for around 82% of the University's total carbon footprint in 2023-24, a 1% decrease from 2018-19. This figure includes student and staff travel, student travel to and from home address, business travel, procurement, capital goods, waste, water, sewage and grid transmission and distribution. This decrease is a result of changes in working patterns following COVID-19 and a reduction in emissions associated with capital goods.

Further information on our data can be found in the Performance Indicators and Achievements section of this report.

GRAPH: TOTAL NET SCOPE 1, 2 AND 3 EMISSIONS FOR 2023-24 (tCO2e)

Breakdown of Queen's University Belfast scope 1, 2 and 3 emissions for August 2023 to July 2024. In keeping with best practice and Environmental Association for University and Colleges guidance, the University is using dual reporting method which includes reporting on location-based together with market-based emissions. For reporting purposes, this is referred to as gross emissions and net emissions reporting. This graph provides a breakdown of our net (market-based) emissions.

Scope 1	Energy 15,605 tco2e
Scope 3	Student travel to and from home address - 16,179 tco2e
Scope 3	Procurement of goods and services - 37,326 tco2e
Scope 3	Capital goods (building works) - 3,658 tco2e
Scope 3	Staff and student commuting - 7,375 tco2e
Scope 3	Business travel - 5,434 tco2e
Scope 3	Other - 569 tco2e

DESIGNING IN SUSTAINABILITY FOR OUR NEW BUILDING AND REFURBISHMENT PROJECTS

7 AFFORDABLE AND CLEAN ENERG

In 2024, the University launched a Net Zero Design Guide which will build upon the capital work projects that have been built to BREEAM standards over the last 10 years.

Covering all aspects of design, construction, and maintenance, the guide emphasises creating healthy, high-performing, net zero carbon buildings whilst addressing challenges such as biodiversity loss, sustainable travel, waste reduction and the occupation performance of the building.

Aligned with the principles of our Net Zero Design Guide, the University has commenced design and construction of the first Passive House student accommodation project on the Island of Ireland, received planning approval in April 2024. Scheduled for completion in 2026, it will be certified to Passive House 'Classic' and BREEAM 'Excellent' standards, utilising air source heat pumps for all-electric space heating, cooling, and hot water generation. Additionally, a blue roof system has been integrated to enhance climate resilience – storing water in times of heavy rainfall to prevent flooding.

Additionally, the University has begun designing its first EnerPHit project (the Passivhaus standard for refurbishment) in line with the Design Guide's emphasis on energy efficiency and prioritisation of the reuse of existing buildings. The project will create flexible office accommodation with an exhibition space.

GREENING OUR LABORATORIES

CO 12 RESPONSIBLE CONSUMPTION & PRODUCTION

Our laboratories play a significant part in delivering world-leading research and teaching. However, they also bring significant challenges in terms of energy, water, and consumables usage. To address these challenges, we have been implementing our accredited Sustainable Lab Programme – the Laboratory Efficiency Assessment Framework (LEAF) across the University. 68 labs are participating in the programme, implementing 1,360 actions which are aimed at reducing environmental impacts and carbon emissions. These actions have brought improvements in waste management, energy use, procurement, and in terms of sustainability engagement with the broader Queen's community.

Dublin Road concept design, first Passive House student accommodation project on the Island of Ireland







LEAF Awards, June 2024

TRAVELLING SUSTAINABLY TO QUEEN'S

11 SUSTAINABLE CITIES AND COMMUNITIES

The University launched its **Travel Plan 2023-28**, committing to an ambitious 25% reduction in carbon emissions from commuting by 2028.

This target will be achieved by:

- Actively promoting the health and well-being benefits of all forms of sustainable travel
- Implementing and encouraging sustainable travel modes as viable alternatives to private car use
- Collaborating and advocating with key regional stakeholders and the wider community to support sustainable travel initiatives

Highlights of 2023-24 in promoting sustainable travel include the establishment of a 'Belfast Bike' docking station in Elm's Village, offering students in Queen's accommodation the opportunity to rent bikes for travel to Queen's and beyond. Additionally, Freedom Cycles, the Bike Hub within Queen's University, has continued to provide staff and students with affordable cycling options, including bike hire, low-cost servicing, and cycling equipment.

Emissions associated with business travel are a key priority for the University and will be addressed through the Net Zero Plan. To support this, **Sustainable Travel Guidance** and a revised Travel Policy were published in June 2024, providing a framework to help the University make climate-conscious decisions regarding business travel.

The University became a signatory of the International Educational Synergies Group's 'Climate Action Barometer', a global benchmark tool that measures the environmental impact of international education. This partnership is helping the University identify effective interventions to reduce emissions linked to international education and travel.

ENHANCING NATURE ON OUR CAMPUS

😚 15 LIFE ON LAND

Since 2021, the University has been a supporter of the All-Ireland Pollinator Plan. The All-Ireland Pollinator Plan is a framework bringing together different sectors across the Island of Ireland to create a landscape where pollinators can survive and thrive.

Several biodiversity projects have been implemented throughout 2023-24. In October 2023, over 7500 bulbs were planted, including 5000 bulbs planted throughout 7063m2 of 'no mow' biodiversity rich grass. Within Malone Playing Fields, a further 146 oak saplings were planted by students, staff and local community members.

The University has seven 'no mow' areas across campus. These 'no mow' areas are only cut twice a year (April and September), ensuring that insects are provided with food and a habitat throughout the Spring and Summer period. In April 2024, a new 'no mow' area was established outside our Physical Education Centre. This brings the total area of protected and managed areas on campus to over 7000m2.

Elm's Village Belfast Bike Docking Station







EMISSIONS ASSOCIATED WITH COMMUTING BY 2028.



SINCE 2019, 720 OAK SAPLINGS HAVE BEEN PLANTED WITHIN QUEEN'S UNIVERSITY CAMPUS.

SAVING H2O ONE DRIP AT A TIME

6 CLEAN WATER & SANITATION

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Queen's University is also taking significant steps in water conservation by partnering with NI Water to monitor and prevent water leaks across the campus. As part of this innovative pilot project, the University has designed and installed 72 water meters which provide an early warning system that can detect leaks before they become a problem. This proactive approach not only helps conserve water but also ensures that the campus is operating in a more sustainable and efficient manner.

The School of Chemistry and Chemical Engineering at Queen's University is making impressive strides in sustainability through the use of innovative waterless condensers. Traditionally, water coolers in labs can consume between 1 to 4 litres of water per minute. To reduce this significant water usage, the school received Green Fund support and designed 25 custom air condensers. These waterless condensers have been integrated into undergraduate lab sessions, helping the school save thousands of litres of water.



Creating waterless condensers

QUEEN'S BECOMES AN ACCREDITED LIVING WAGE EMPLOYER



DECENT WORK & ECONOMIC GROWTH

In June 2024 the University became accredited as a Living Wage Employer. The University has already been paying its employees the Real Living Wage since 2022, and the recent accreditation officially recognises the University's commitment to ensure employees, and any regularly contracted workers, are paid the living wage hourly rate.

The Living Wage accreditation is one of several initiatives the University has undertaken during the Cost-of-Living Crisis to support and invest in the University's community.

QUEEN'S ADVANCES ITS DIVESTMENT PROCESS

PEACE. JUSTICE & STRONG INSTITUTIONS

As a civic university, we believe that our financial decisions can and should reflect our commitment to making a positive impact on society. The University has already committed to ensuring our students are part of our overall decision-making structures and governance.

In 2024 we reviewed and updated our Responsible Investment Policy to clearly set our commitment on the consideration of environmental, social and governance (ESG) factors when managing financial assets. The new policy includes commitment to avoid investment in key sustainability areas including fossil fuels and companies listed by the UN Human Rights Council.

RACE EQUALITY WEEK

REDUCED INEQUALITIES 10

Queen's University Belfast has a strong commitment to race equality. As a signatory to the Race Equality Charter, the University is committed to identifying and critically reflecting on institutional and cultural barriers affecting Black, Asian, and Minority Ethnic staff and students.

In support of this commitment the University has delivered several activities during 2023/24. This included participation in Race Equality Week, with a "5-Day Challenge," designed to encourage staff and students to engage in daily activities that promote racial equity. Activities aimed to shine a light on intersectionality, recognising privilege, inclusive language and masking.

The Queen's Race Equality Charter Team hosted a breakfast discussion highlighting the ongoing work that is taking place within Queen's, and beyond, to drive race equality. They were joined staff and students within Queen's, Vice-Chancellor Professor Sir Ian Greer and MLA Kate Nicholl - who is the Chairperson for the All-Party Group on Ethnic Minority Communities.



RESEARCH AND SUSTAINABLE SOLUTIONS

Queen's University has a proud legacy of delivering innovative, impactful, and world-leading research that transforms lives for the better.

Today, understanding the relationship between people, the planet, and social well-being is more critical than ever. The climate crisis, alongside social inequalities, is no longer a distant threat—it is a present-day reality that demands urgent action. The choices we face now have the potential to shape a future that is both environmentally sustainable and socially equitable. As researchers, we have a responsibility to confront these challenges head-on.

At Queen's, our academics collaborate across disciplines and sectors to tackle both local and global issues, advancing the UN Sustainable Development



Goals and generating real-world impact. Much of our research directly addresses pressing environmental and social challenges, recognising that sustainability is not just about protecting the environment but also fostering social equity, health, and well-being. By focusing on these interconnected elements, we ensure that our work drives positive change not only for the planet but also for communities, creating a more just and sustainable world for all.

Our work drives positive change not only for the planet but also for communities, creating a more just and sustainable world for all.

COLLABORATIVE INNOVATION IN CLIMATE, **BIODIVERSITY, AND FOOD SYSTEMS**



17 PARTNERSHIPS FOR THE GOALS

In 2023-24, the University launched two major international collaborative research centres with a strong focus on sustainability.

The Climate+ Co-Centre is a €41.3million research programme for Climate + Biodiversity + Water addressing the interconnected challenges of climate change, biodiversity loss, and water degradation across Ireland and Britain. It is co-hosted by Queen's University Belfast, Trinity College Dublin, and the University of Reading, with participation from 14 academic institutions, including Newcastle University and the UK Centre for Ecology & Hydrology.

The Co-Centre for Sustainable Food Systems is a €31.5 million collaboration aiming to transform food systems in Ireland and the UK. It aims to drive societal and political change in food systems, supporting the industry's transition towards climate neutrality by 2050, and ensuring access to safe, nutritious, and sustainable food for all. It is jointly managed by Queen's University Belfast, University College Dublin, and the University of Sheffield, bringing together expertise from various discipline

These centres represent significant strides in collaborative research, uniting experts across disciplines and borders to address pressing global challenges in climate, biodiversity, water, and food systems.

DRIVING SUSTAINABILITY IN **HIGH-PERFORMANCE COMPUTING**

Reducing and recycling waste energy from High-Performance Computing (HPC) to heat hospitals, homes and schools is just one of the many ideas behind an innovative, new project led by Queen's.

HPC (High-Performance Computing) hubs provide access to powerful supercomputers that can tackle large-scale data-processing tasks, leveraging artificial intelligence and big data. These advanced technologies are empowering engineers, data scientists, and researchers to solve complex problems more efficiently, reducing both time and costs compared to traditional computing methods. However, a significant challenge with HPC is its high energy consumption, much of which is converted into waste heat. Addressing this issue is crucial as the demand for supercomputing continues to grow.

The Kelvin 2 HPC, located within Queen's, not only supports research across the region but is also at the forefront of investigating ways to reduce the carbon footprint of high-performance computing systems.

Researchers within the School of Electronics, Electrical Engineering, and Computer Science are exploring innovative methods to reduce energy consumption of HPCs, as well as capturing and repurposing wasted energy, making HPC systems more sustainable and efficient.

REDUCING AND RECYCLING WASTE ENERGY FROM **HIGH-PERFORMANCE COMPUTING IS JUST ONE OF** THE MANY IDEAS BEHIND AN **INNOVATIVE, NEW PROJECT** LED BY QUEEN'S



TACKLING THE LOUGH NEAGH MONSTER



14 LIFE BELOW WATER

Since 2023 Lough Neagh has repeatedly experienced blue green algae blooms. The bacteria forming these blooms are toxic and prove particularly dangerous to wildlife, pets and livestock.

Researchers within Queen's School of Biological Sciences have been focused on monitoring this biodiversity disaster to find a solution and ensure the Lough's biodiversity is maintained and extended. A key recommendation from researchers includes a focus on 'nature-based solutions. This includes working with farmers to create vegetated corridors along waterways, minimising the volume of contaminated water accessing our waterways.

URBANARK: AN URBAN FLOOD PREDICTION STUDY

SUSTAINABLE CITIES AND COMMUNITIES

UrbanARK is a collaborative research project with local authorities and between Queen's, New York University and University College Dublin funded under the US-Ireland Research & Development Programme.

Within Queen's the project is being led by the School of Natural, Built Environment. The research aims to improve the resilience and emergency preparedness of urban centres and their communities to the threat of coastal flooding. UrbanARK has partnered with local authorities and governmental agencies to address coastal flood risk assessment and communication in the context of three US and Irish study areas: New York, Belfast, and Dublin.

GIRLS AND YOUNG WOMEN'S VIEWS AND EXPERIENCES OF VIOLENCE **IN NORTHERN IRELAND**

q **5** GENDER EQUALITY

Researchers within Queen's University Centre for Children's Rights, in partnership with Ulster University and The Executive Office, have been collaborating on research to explore girls and young women's experiences of violence in Northern Ireland. This culminated in the publishing of a report in 2023, entitled 'It's Just what happens'.

Over 260 girls and young women across Northern Ireland took part in the research, sharing their views and experiences of violence. 73% of 12-17-year-olds who completed the survey reported experiencing at least one form of violence in their lifetime, demonstrating the extent of violence against girls in our society.

The report, commissioned by the 'Ending Violence Against Women and Girls Directorate' of The Executive Office, highlights the barriers girls and young women face when reporting violence, and what measures could be considered to prevent violence against females.

> The report ... highlights the barriers girls and young women face when reporting violence, and what measures could be considered to prevent violence against females.

SUSTAINABILITY IN OUR EDUCATION

We continue to prepare our students for leadership and citizenship in a global society, committed to sustainability and social responsibility. As a signatory to the SDG Accord, our educational programmes are increasingly focused on embracing the ethos of the United Nations Sustainable Development Goals at a local, national and global level.

EMBEDDING SUSTAINABILITY INTO OUR CURRICULUM



During the 2023-24 academic year, a total of 2,173 modules were mapped against the Sustainable Development Goals, with 43% identified as 'sustainability-focused or inclusive' and 50% classified as 'sustainability-supportive.' The University is committed to increasing these figures in the coming years.

One key initiative driving this progress is Leading Education for Sustainable Development in the Curriculum, a programme developed and piloted in 2023, which achieved full SEDA (Staff and Educational Development Association) accreditation in June 2024. This programme equips Queen's academics with a comprehensive understanding of Education for Sustainable Development (ESD) and its core competencies, including future-thinking and systems-thinking. Academics from diverse disciplines gained deeper insights into engaging learners through co-creation, partnership, transformative pedagogy, active learning, and authentic assessment. Upon completing the programme, participants reported a 119% increase in confidence in implementing education for sustainable development.

> 2173 MODULES WERE MAPPED AGAINST THE SUSTAINABLE DEVELOPMENT GOALS

INCREASING CARBON LITERACY LEVELS WITHIN QUEEN'S STUDENTS



4 QUALITY EDUCATION

The University is committed to providing free, certified Carbon Literacy Training to staff and students via a partnership with a local environmental charity, Keep Northern Ireland Beautiful. During the 2023-24 academic year, a total of 1117 individuals were trained.

The School of Medicine has committed to embedding planetary health and sustainability within their curriculum. To achieve this, in May 2024, all Level 2 Medicine students completed bespoke sustainability training tailored specifically to the health sector. Sustainability training focused on the unique impact the health sector has on the environment, the importance of green prescribing and individual actions students can undertake in their future careers.



STUDENT-LED SOLUTIONS: LEARNING THROUGH LIVING LABS



9 INDUSTRY, INNOVATION & INFRASTRUCTURE

The School of Natural and Built Environment has incorporated 'living-lab' opportunities into its curriculum, in partnership with the Estates Directorate. These livinglearning laboratories provide a collaborative environment where students, staff, and community partners work together to address sustainability challenges.

One example of this approach involved research on the embodied carbon of the University's Passivhaus student accommodation project. The research focused on assessing the carbon impact of the materials and construction processes used in the project. Through collaboration with the design team, the research identified areas for improving design efficiency and reducing embodied carbon emissions.

The findings were shared with senior University leadership and will inform future efforts to reduce embodied carbon in upcoming capital projects, contributing to more sustainable design and construction practices.

EQUIPPING STUDENTS WITH SKILLS FOR A SUSTAINABLE FUTURE

4 QL

4 QUALITY EDUCATION

Led by Careers and Employability teams, 70 students from across Queen's schools collaborated to address the urgent issue of climate change. The event, which was hosted by PwC Belfast, focused on how industry leaders can use the climate crisis as a framework for decisionmaking and action to address climate-related challenges.

Participants had the opportunity to hear from industry experts, work in teams, and present their solutions, all while developing essential employability skills such as teamwork, problem-solving, and communication.

OUTREACH AND PARTNERSHIP

Outreach and engagement are core elements to our civic university ambition and delivery of the University's Net Zero Plan. For both ambitions, winning the 'hearts and minds' of our local community will help the region collectively meet net zero targets but also improve the lives of the citizens of the region.

THE INAUGURAL REACH'24 ART AND SUSTAINABILITY FESTIVAL



17 PARTNERSHIPS FOR THE GOALS

The Reach'24 Arts and Sustainability Festival is one of the new and innovative ways Queen's is nurturing a culture of sustainability. The festival brought together leading experts in the arts world to explore the climate crisis and to discuss sustainable solutions to help tackle the crisis through music, creative writing, art and film.

The inaugural Reach'24 Arts and Sustainability Festival was hosted in April 2024 in collaboration with the Sustainable Development Solutions Network Ireland. The festival provided new perspectives and ideas on innovative ways to engage and motivate communities to take climate action. The festival programme featured film screenings, performances, workshops and talks on policy, practice and community engagement in the arts and sustainability sectors.

Over 1510 people attended the festival – widening awareness of the benefits of looking at sustainability through the lens of the arts, and the role of arts as a tool for addressing climate change and other sustainability challenges. Attendees included 78 children from a local primary school who engaged with festival participants, university staff and Belfast City Council to learn about the impact of plastic in an engaging way.



Reach'24 Arts and Sustainability Festival

THE COMMUNITY WELLBEING KITCHEN: IMPROVING HEALTH AND WELLBEING IN THE MARKETS, BELFAST



The Community Wellbeing Kitchen is part of a wider collaboration between Queen's and the Markets Development Association through the Queen's Community and Place programme, comprising one strand of a long-running programme in the Markets area, looking at addressing issues affecting local residents.

Key issues include physical and mental health, which is being exacerbated due to the cost-of-living crisis.

The programme provides tailored, facilitated training sessions to community volunteers on dietary topics aligned with mental health and physical wellbeing. These community volunteers are directly engaging with the Markets' community by hosting their own sessions using the mobile kitchens and cooking kits supplied by Queen's.

The aim of the project is to inspire long-term behavioural change, to achieve healthier results for individuals and families in the area.



PORTAFERRY MARINE LAB OPEN DAY

14 LIFE BELOW WATER

As part of the Portaferry Sails and Sounds Festival, Queen's Marine Lab, part of School of Biological Sciences, opens its doors annually to the local community.

Queen's Marine Laboratory hosts an annual, free open day on the first Saturday of August every year, attracting over 400 visitors. It is a family-friendly event which aims to inform, and inspire, our community to look after our marine environment.

Families can experience research in action by exploring how the wave tank supports academic studies in renewable technologies. They can also discover and learn about key species from our local marine and freshwater environments, including starfish, mussels, oysters, and seaweed.

Portaferry Marine Open Day

TOWARDS GREENER FRAGRANCES: ENGAGING SCHOOLS ON GREEN CHEMISTRY



INDUSTRY, INNOVATION & INFRASTRUCTURE

The project 'Towards Greener Fragrances' involved several of Queen's academics who worked with local schools on a sustainable chemistry project.

Participating schools were tasked with using ionic liquids in a greener and more sustainable way to produce specialist chemicals such as fragrances that have application in personal-care products like perfumes and food flavourings.

Overall, academics aimed to encourage increased uptake of study in chemical sciences in the post-primary and further-education community in Northern Ireland. Passionate chemistry students from all socio-economic and cultural backgrounds participated in the programme working with ionic liquids in schools and university laboratories and, ultimately, presented their findings at a conference.

TRANSFORMING OUR FOOD SYSTEM

AND POVERTY

In today's society, a tenth of our global population is undernourished while 25% are overweight, with over a third of the world's population unable to afford to eat a healthy diet. On top of this, food supplies are disrupted by heatwaves, floods, drought and conflict.

To tackle food poverty, in November 2023, a new Co-Centre for Sustainable and Resilient Food Systems was created and will be managed jointly by Queen's University Belfast and University College Dublin (UCD), working closely with the University of Sheffield.

The interdisciplinary team will create a vibrant, sustainable co-centre leading the way in transforming food systems, and delivering economic and environmental benefits to society. It will transform existing food systems, impacting everything from production to policy and from health to society through its research and outreach activities.

SUPPORTING STUDENT WELL-BEING: **CAMPAIGN TO COMBAT THE COLD**

1 NO POVERTY Ň:ŦŦ;Ť

In collaboration with the Students' Union, the University launched a campaign aimed at providing students with practical tips for staying warm during colder months. This initiative is part of a broader commitment to student well-being, which includes ongoing support throughout the academic year.

To further assist students, the campaign introduced an on-site refill hub, offering essential items for a basic meal. Students were able to access hot soup, bread, fruit, and cereal bars, ensuring they had nutritious options to keep them energized throughout the day.

Running over a two-week period, this campaign not only supported students' physical well-being but also contributed to fostering a caring and sustainable campus environment.

PHARMACY SERVICES SESSION FOR AFGHAN FAMILIES

REDUCED INEQUALITIES

In collaboration with the children's charity Barnardo's, the University hosted a workshop focused on pharmacy services for Afghan families newly settled in Belfast.

Newly qualified pharmacists from the University delivered presentations on the role of community pharmacists, the range of available services, health promotion campaigns, and how to access health services in their new community. A culturally sensitive session was specifically tailored for women in the group, ensuring that their unique needs were addressed.

The workshop was well-attended by Afghan refugee families, providing them with valuable information and connecting them to essential services available in their new environment.

THE PANTRY





4



OUTREACH AND PARTNERSHIP



ENGAGING OUR COMMUNITY ON SUSTAINABILITY

Our aim is to engage with the University's wider community on a range of sustainability topics, to drive positive change within our society whilst enhancing our community's knowledge on sustainability.

QUEEN'S UNIVERSITY CLIMATE CONVERSATIONS AND TALKS



A range of 'Climate Conversation' events have been hosted by the University, resulting in the engagement of over 2,500 individuals. These 'Climate Conversation' events aim to deepen knowledge on a variety of sustainability topics, share best practice and collaborate on key projects with a wide variety of partners to drive positive sustainability change within Belfast and beyond.

In February 2024 Queen's held its inaugural Sustainable Construction Conference – a half-day event dedicated to exploring and sharing knowledge on strategies for reducing carbon in buildings, with a particular focus on embodied carbon. Organised in partnership with Southwest College, Belfast City Council, Feilden Clegg Bradley Studios and HOK, the conference was open to all those involved in the design, construction and operation of the built environment.

In recognition of COP28 the University hosted a panel event entitled 'Connecting Belfast: Transporting Travel'. Panel members included representatives from the Alliance Party, Federation of Small Businesses, Queen's University Belfast, Sustrans, Translink and Department for Infrastructure. The event enabled open communication with key individuals in the travel industry and our community, ensuring our community were able to have their say on transport provision in Belfast, while hearing about future travel plans for the area.

PERIOD DIGNITY @ QUEEN'S



period products.

Period poverty is a societal issue of increasing urgency in the context of the current cost-of-living crisis impacting millions of people around the world, including in the UK and Ireland. Research has shown that in UK higher education at least 25% of women and people who menstruate have struggled to access or afford

As part of Period Dignity (a) Queen's, the University has now installed 45 free period product vending units in bathrooms, including all-access bathrooms, located across the main University campus and in key sites on the wider campus. The scheme follows pilots by the Students' Union and the Student Wellbeing Team providing free period products in the Library, Graduate School and One Elmwood, and similar pilots by Athena Swan Champions in their Schools.

QUEEN'S COMMUNITY FRIDGES, ALLOTMENTS AND PANTRY

2 ZERO HUNGER

The University is committed to ensuring our students are supported throughout the cost-of-living crises.

A range of initiatives have been implemented to alleviate, and prevent, hunger among our students. This includes:

- The provision of 'The Pantry', a free food re-fill station which has helped alleviate financial pressures for students.
- Student allotment in Elm's Village to enable students to learn about, and grow, their own food.
- Three community fridges in each of Queen's three accommodation sites.



PERFORMANCE INDICATORS AND ACHIEVEMENTS

The University has developed 16 key performance indicators (KPIs) to track our sustainability journey. We aligned our carbon emissions reporting with the Standardised Carbon Emissions Framework (SCEF) developed by the Environmental Association for Universities and Colleges (EAUC).

ACHIEVEMENTS 2023 – 2024

GREEN FLAG ACCREDITATION 6TH YEAR

NORTHEN IRELAND BENCHMARK SURVEY PLATINUM

TIMES HIGHER IMPACT RANKINGS 101-200 OUT OF 1,963

QS WORLD UNIVERSITY SUSTAINABILITY RANKINGS 103 OUT OF 1403

FAIRTRADE ACCREDITED

GOLD CYCLE FRIENDLY EMPLOYER

ISO 14001 CERTIFICATION ENVIRONMENTAL STANDARD ISO 50001 CERTIFICATION ENERGY STANDARD

SDG ACCORD

PLANETARY HEALTH REPORT CARD B

GREEN GOWN AWARDS HIGHLY COMMENDED CLIMATE ACTION AND BENEFITTING SOCIETY

BUSINESS IN THE COMMUNITY AWARDS SHORTLISTED

ATHENA SWAN GOLD AWARD

LIVING WAGE ACCREDITATION



ENVIRONMENTAL PERFORMANCE DATA

The data presented below outlines Queen's University Belfast's Scope 1, 2, and 3 greenhouse gas emissions for the reporting period August 2023 to July 2024.

In line with best practice and EAUC guidance, the University has adopted a dual reporting methodology that includes both location-based and market-based emissions. For the purposes of this report, these are referred to as gross emissions (location-based) and net emissions (market-based).

The following definitions apply:

 Location-based emissions are calculated using the average emission intensity of the power grid to which the University is connected, regardless of electricity purchasing agreements.

KEY PERFORMANCE INDICATORS

Total Scope 1 and 2 Location-based carbon emissions (energy and fuel use) (tCO2e)

Total Scope 1 and 2 Market-based carbon emissions (energy and fuel use) (tCO2e)

Carbon emissions from water use (tCO2e)2

Total Scope 1 and 2 Location-based carbon emissions per FTE staff and student (tCO2e/FTE)

Total Scope 1 and 2 Market-based carbon emissions per FTE staff and student (tCO2e/FTE)

Total Scope 1 and 2 Location-based carbon emissions per total income (tCO2e/£0000)

Total Scope 1 and 2 Market-based carbon emissions per total income (tCO2e/ \pounds 0000)

Scope 3 emissions (tCO2e)

Total water consumption (m3)

Percentage of waste diverted from landfill (%)

External Awards for Sustainability Initiatives

Percentage model split for commuting staff by single occupancy car journey (%)

Percentage model split for commuting staff by sustainable travel (%)

Percentage model split for commuting student by single occupancy car journey (%)

Percentage model split for commuting students by sustainable travel (%)

Number of staff and students who have completed Carbon Literacy Training

- Market-based emissions are calculated based on the specific electricity purchased by the University, including any Renewable Energy Certificates (RECs), Renewable Energy Guarantees of Origin (REGOs), or similar energy contracts.
- Baseline and reported data have been updated to reflect changes in the UK Government's carbon conversion factors.
- In addition, procurement data has been revised following updates to the reporting methodology. These changes have been retrospectively applied back to the 2018–19 reporting year.

Updated figures can be identified by accompanying asterisks.

2023 - 2024	2022 - 2023	2018 - 2019 baseline year
20,781	19,967*	22,065*
15,605	13,967	22,065*
26	34	74
0.836	0.797*	0.991*
0.627	0.557*	0.991*
44.00	43.35*	59.31*
33.85	30.30	59.31*
70,541	71,268*	78,914*
171,939	194,805	215,067
95.67	94.64	92.16
4	5	1
44	44	30.6
55	55	64.8
17	17	13
82	82	85
1117	557	0

Find out more at sustainability@qub.ac.uk @greenatqueens