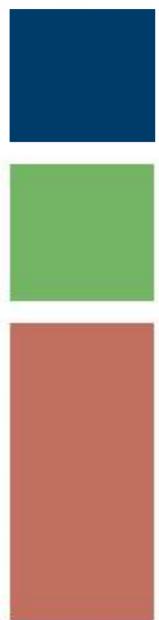




**ANNUAL
SUSTAINABILITY
REPORT**
Academic Year 2017/2018



UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh




University College Cork
World's First Green Campus



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1. Foreward

Academic year 2017/18 marked ten years since UCC students embarked on the Green Campus programme. Those ten years have seen many changes, both on our campus and globally. Our FTE of students has increased by approximately 2,000, while our campus has grown to include many of its largest and most energy intensive buildings e.g. the Western Gateway building. Despite this, 2017 saw the university reach its Public Sector Energy Efficiency target of a 33% reduction in consumption, three years ahead of schedule.

Following on from the publication of the University's Sustainability Strategy in 2016, the sustainability agenda is becoming fully embedded in UCC, with Green Campus and sustainability highlighted in the following university plans and policies:

- University Strategic Plan 2017-2022,
- Community Engagement Plan "UCC Together With and For the Community" 2017-2022,
- ERI Strategic Plan 2018-2022,
- Glucksman Gallery Strategic Plan 2018-2022,
- UCC Procurement Strategy 2017-2022,
- UCC Academic Strategy 2018-2022.

In May 2018, we welcomed delegations from the Universidad Nacional de Colombia, University of Massachusetts, Lowell, and the Central American University in El Salvador to take part in our first "Sustainability Summer School". This followed on from the continuation of our University Wide Module in Sustainability, which was also streamed to Skibbereen and Dingle for the first time this year.

In September 2018, UCC was the first University in Ireland to be awarded a rating under the Association for the Advancement of Sustainability in Higher Education's STARS programme. We were also the first University outside of the US and Canada to achieve a gold rating. The STARS assessment is completely transparent and UCC's submission can be viewed in its entirety on the STARS [website](#)¹.

In October 2017, UCC Green Campus launched its new [website](#)², where students, staff and the public can find up-to-date information on sustainability activities at UCC. This publication is our first annual Sustainability Report, highlighting progress against the Sustainability Strategy and actions being undertaken across the various divisions and offices within UCC at both local and global levels. Indicators relate back to the University's Sustainability Strategy, while the targets for each indicator are based on international best practice, STARS benchmarks and UI Green Metric guidelines. The timeline for these targets is the next STARS submission date of 2021.

¹ <https://stars.aashe.org/institutions/university-college-cork-national-university-of-ireland-cork-co-corcaigh/report/2018-07-20/>

² <http://greencampus.ucc.ie/>



2. Sustainability at UCC



UCC's Sustainability Strategy (2016) set out our goals and ambitions in incorporating sustainability into all aspects of university life. The Strategy focused on nine key areas: Sustainability Citizenship; Teaching and Learning; Research; Food, Health and Wellbeing; Landscape, Heritage and Natural Resources; Recycling and Waste Management; Energy, Water and Climate Change, Procurement and Contracts; and Commuting and Business Travel. The Strategy also specifically calls for the use of the University's infrastructure for research and learning in relation to sustainability. Strong links are being built between the University's operational staff and its researchers, and the next year will see these formalised in the first UCC "Living Laboratory Seed Fund".

UCC's vision is "To be a world-class University, leading the drive towards sustainability in Higher Education Institutes and beyond, to our community, region and planet."

2.1 Mission

- To facilitate the development and empowerment of future leaders in sustainability through our research, teaching and learning activities;
- To engage our student body, staff and wider community in becoming active citizens for sustainability;
- To minimise the local, regional and global environmental impacts of our educational, research, and ancillary operations, and infrastructural development;
- To enhance the health and well-being of the University and wider community through the facilitation and promotion of healthy eating and living as an integral part of sustainable living;
- To be an overall positive force in the journey towards creating a sustainable world for all.

The Sustainability Strategy speaks directly to the United Nations Sustainable Development Goals and much work is ongoing across the university to assess how the goals are implemented across our teaching, learning, research and outreach, as well as to measure the impact of these activities.



2. Sustainability at UCC

The Sustainability agenda at UCC is driven by both “bottom-up” and “top-down” approaches. The Green Campus Committee (GCC), in operation since 2007, is the student-led element, which sits regularly throughout the year and runs events and campaigns with a sustainability theme. The GCC also has representation from academia and operations (B&E). The GCC is chaired by the Deputy President of the Student’s Union and the Chairperson of the Environmental Society.

The Green Forum (GF) was established in 2013 to play a more “strategic” role in the longer-term direction of sustainability activities within UCC. The GF is chaired by the Deputy President and Registrar, Prof. John O’Halloran, and the Director of Buildings and Estates, Mark Poland. The GF has representation from operations, professional services, subsidiary companies, contractors, academia, and the Student’s Union. The GF sits twice per year. Finally, a Sustainability Review Group composed of key operational staff within the Buildings and Estates office and the Deputy President and Registrar meets every six weeks to review progress against the Sustainability Strategy. The UCC Student’s Union this year elected a part-time Environmental Officer onto their Equality Working Group. The Student’s Union in UCC also engage with the Union of Students in Ireland’s Sustainability Manager.

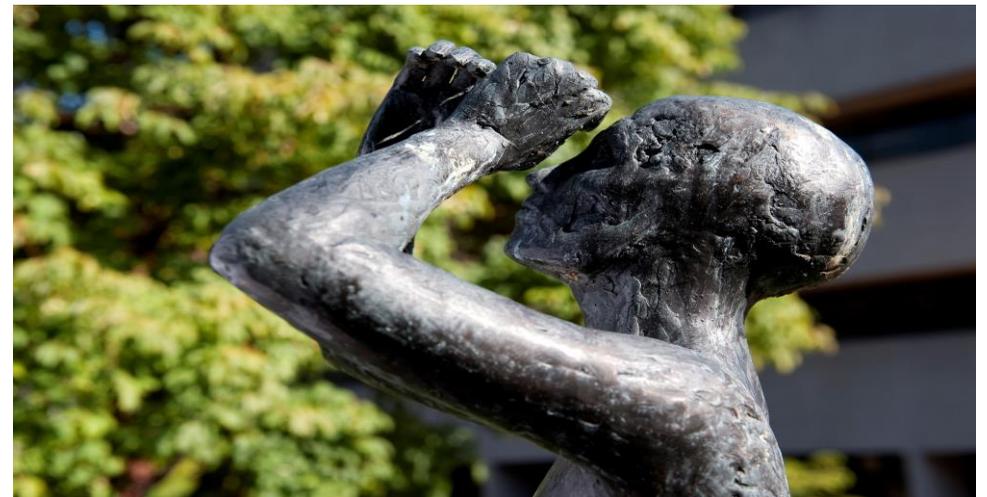
As a “Green Campus”, UCC aims to become a “Living Laboratory” for sustainability solutions, thus the integration of sustainability across teaching, research, operations and outreach is a key strategic goal. There is academic representation on the GCC, GF and Sustainability Review Group, as well as other *ad hoc* committees that address specific environmental aspects, for example, energy and climate. Close links also exist between the GCC, GF staff at the Environmental Research Institute, UCC’s flagship Institute for interdisciplinary environmental and sustainability research.

UCC’s “green” activities are informed by national and international best practice. The University has been guided over the past decade by the continual improvement methodology of the Green Flag programme. In future years, the benchmarking opportunities provided by the STARS programme will inform action plans and policies.



Fig. 1 Groups within UCC with responsibility for sustainability and “green” activities.

UCC Sustainability Highlights Academic Year 17/18



3.1 Sustainability Citizenship

UCC’s Sustainability Strategy calls for the engagement of staff and students from a wider range of university disciplines and functions. The Saver Saves scheme, which establishes “Green Teams” in departments and buildings across campus is key to achieving this. There are currently 6 teams in operation in buildings across UCC. The University’s Energy Manager and Sustainability Officer work directly with the teams to support sustainability campaigns in these buildings. Engagement with the wider student body, through the broader Clubs Guild and Societies Executive is also taking place. Each year, UCC’s Sustainability Officer addresses Captain’s Training for Clubs and President’s Training for Societies. UCC Sustainability is also represented on the University’s local community engagement group, which is looking at ways to improve the relationship between the university and residents living in the vicinity of UCC’s campus.



Above, Maria Kirrane and Paul Bolger attend UI Green Metric workshop in Indonesia (Apr, 2018), and below at the Green Campus Ireland Network Meeting, Dublin (Feb, 2018).



The Sustainability agenda at UCC is also informed by, and feeds into, the activities of many internal and external groups, agencies and networks. Local environmental groups that UCC students and staff engage with include Cork Nature Network, Cork Climate Action and Cork Environmental Forum. In Academic Year 2017/18, UCC also signed up as a member of the International Sustainable Campus Network and the Talloires Network.

Sharing best practice is also key in facilitating a more sustainable future. In 2017/18, UCC was represented at the An Taisce Changemakers Summit, the Green Campus Network Meeting, the UI Green Metric Conference and the EAUC Annual Conference. UCC is a partner in the Cork Learning City network and in September 2017, Cork welcomed the International UNESCO Learning Cities Conference to the city. As part of this, delegates visited UCC campus and were given a “green” tour.

Strategic Aim



- To engage our student body, staff and wider community in becoming active citizens for sustainability, and establish sustainability citizenship as a central component of the University ethos – with students and staff giving a commitment to learning more about sustainability and taking responsible action.

Table1. Progress update against “Sustainability Citizenship” targets and indicators.

Indicator	Target	Status
Number of students and/or staff involved in Green Campus initiatives	At least one from each dept., function, society and club	●
Campus awareness of UCC sustainability initiatives	100%	●
Number of student organisations/societies on-campus relating to sustainability	Ten	●
Number of staff organisations/societies on-campus relating to sustainability	At least one focused; all incorporating SDGs into activities where practical	●
Number of students and staff involved in such sustainability relevant organisations	At least one from each dept., function, society and club	●
Overall participation in sustainability initiatives, activities and societies as % of staff and student FTE figures	100% of students and staff have participated in at least one event	●
Green flag status	Maintain	●
Status in the Green metrics and/or other green/sustainability rankings measures	Maintain STARS Gold	●



3.1 Sustainability Citizenship

Outreach and Engagement

The An Taisce Climate Ambassadors Programme trains and supports individuals to take action in their communities on climate change. Dr Paul Bolger and Prof John Sodeau (ERI), Aoife Deane (MaREI) and two of our Green Campus student committee members, Susan Butler and Julie Lin were all selected as Climate ambassadors in 2017/18. Ambassadors receive professional communications training from An Taisce and are then required to carry out four actions within their community/school/campus. The Ambassadors also attended the first “regional gathering” as part of the Dept. of Communications, Climate Action and the Environment’s National Dialogue on Climate Action.

UCC Green Campus again employed a number of students through the UCC Works Scheme in 2017/18. The UCC Works Scheme provides students with a structured approach to engaging with co-curricular activities. It also gives students recognition of this commitment on their diploma certificate. Projects undertaken by Green Campus students included data gathering for the UCC carbon footprint calculation and engaging with local climate action groups. Student members of the UCC Green Campus Committee are also eligible to take part in the scheme, provided they dedicated the required 40 hours per year to the initiative.



Above, UCC students Ana Pascanu, Susan Butler and Robyn Dennehy attend An Taisce “Change Makers Summit” in October 2017



UCC Student’s Union Deputy President and Green Campus Co-Chair Kelly Coyle

“ This is my first year on Green Campus but after only a few months in it’s hard to miss how important Green Campus is to the students in UCC. We have so many students interested in what we get up to and interested in getting involved in doing our bit to help the environment. Green Campus in UCC really is student led and student driven and our green initiatives are always well received by the general student population.”

UCC’s Glucksman Gallery take environmentally themed artworks to local schools.

The Glucksman Gallery Strategic Plan (2018-2023) highlights three priority strands for its educational programme: Health and Wellbeing; Equality and Diversity; Climate Action and Sustainability. The Gallery’s educational outreach programme is delivered to primary and secondary schools throughout Cork.

As part of the “Classroom Museum” project, funded by Cork County Council and UCC Green Campus, the Glucksman Gallery took artworks from the UCC Collection to three primary schools in rural Cork. The artworks, by Fiona Kelly, address the issues of environmental degradation and urban encroachment. Students were invited to explore the artworks and then create their own responses. The workshops explored both local and global environmental issues. 74 children took part in the project, which culminated in an exhibition of their pieces at the Glucksman Gallery and a “green tour” of campus. Teachers from the three schools attended a masterclass in UCC, which was accredited by the UCC Centre for Continuing Professional Development. The final product will be a toolkit for schools throughout Ireland (and further afield). The “Classroom Museum” is one of a series of collaborations between UCC Green Campus and the Glucksman Gallery, working with local schools to explore environmental concerns through art. Many of the projects are funded through the savings that the Gallery has made as part of the “Saver Saves” scheme (see section 3.7).

Student artworks on display at the Glucksman Gallery and Cork County Mayor meets the students involved.



3.2 Learning and Teaching

UCC’s activities in embedding sustainability into the formal and informal curriculum are driven by the priorities outlined in the government’s “National Strategy on Education for Sustainable Development”, which the University also played a role in developing. The Strategy lists 9 Key Principles of ESD, namely:

1. To balance environmental , social and economic considerations
2. To promote lifelong learning; - be locally relevant while also linking the local to the national and international
3. To engage all sectors of the education system, as well as the non-formal education sector
4. To be interdisciplinary and recognise interdependence and interconnectivities across other sectors
5. To use a variety of pedagogical techniques that promote active and participatory learning and the development of key dispositions and skills
6. To emphasise social justice and equity
7. To focus on values and promote active democratic citizenship and inclusion as a means of empowering the individual and the community
8. To be an agent for positive change in reorienting societies towards sustainable development.

Strategic Aims:



- To foster a culture of sustainability citizenship within the University Community through both formal and informal teaching and learning opportunities and activities
- To facilitate the development and empowerment of future leaders in sustainability through our teaching and learning programmes and activities.

Table 2. Progress update against “Learning and Teaching” targets and indicators.

Indicator	Target	Status
Number of sustainability relevant education programmes	45	●
Proportion of students on sustainability relevant education programmes	20%	●
Proportion of ‘other’ students taking sustainability relevant modules	50%	●
Participation by members of the public and other stakeholders in courses with sustainability content	200/yr	●

As part of UCC’s recent submission to the AASHE STARS (Sustainability Tracking Assessment and Rating System) programme, a full inventory of UCC modules with sustainability content was undertaken. The estimate indicated that 6% of UCC modules address sustainability.



Fig 2. Number of UCC modules addressing each of the UN SDGs as identified in STARS curriculum inventory

3.2 Learning and Teaching

University Wide Module in Sustainability

UCC's UW Module in Sustainability ran for its third year in 2017/18. 71 students registered for the module in UCC, while for the first time it was also streamed live to Kerry (Dingle Hub) and Skibberren (Ludgate Hub). In total 36 people were registered at those locations. The module is open to students, staff and the general public and can be taken for interest, additional university credit, Continuing Professional Development or a Digital Badge. In total, 14 students were awarded university credit, 12 CPD and 5 digital badges. On the final night, students presented their group projects, which ranged in scope from the use of aquaponic systems to improve food security to how gender equality is impacted by poor sanitation. At the end of the module, students submit a reflective report. This is used by the module coordinator to inform future iterations.

The module is coordinated by Dr Ger Mullally (Sociology) and was taught by academic staff from CACSSS, Business and Law, SEFS, ERI and external partners. The module was the subject of a presentation at the Environmental Association for Universities and Colleges Annual Conference in Keele in June 2018.

“Through the module, I've learnt that there are many multidisciplinary aspects to be considered in achieving a more sustainable world”

Anonymous student feedback

Sustainability Summer School

In May 2018, UCC Green Campus, UCC Sociology, UCC International Office, the Office of the Deputy President and Registrar and the Ludgate Hub in Skibberren organised UCC's inaugural Sustainability Summer School. The School “Global Goals, Local Action: Making Sustainability Work” was attended by 25 staff and students from UCC, The University of Massachusetts Lowell, Universidad Nacional de Colombia, and UCA El Salvador.



The week included a “Sustainability Showcase” highlighting the links between UCC and the local community. At the Ludgate Hub, Eamon Gilmore, EU Special Envoy to the Colombian Peace Process delivered a keynote address on the importance of SDGs in the Colombian peace process.

UCC reaffirms commitment to Centre for Global Development

The Centre for Global Development at UCC was launched in 2011 in support of UCC's strategic commitment to adopt a global perspective in all of its activities. This commitment was renewed in UCC's Strategic Plan for 2017-22. The main purpose of the CGD is to provide a forum to stimulate further engagement by staff and students in global development initiatives and to enable interdisciplinary cooperation in this mission across the University. The CGD aims to bring the concept of sustainable global development to the forefront of UCC activities.

The CGD aims to promote a focus on addressing major global development challenges, informed by values of social justice, inclusivity and sustainability. In doing so the CGD will strengthen UCC's role in promoting global citizenship and in attracting a multi-cultural student community. The SDGs provide an appropriate framework for much of the work of the CGD, drawing on the existing expertise and interests of UCC staff and students. However there are other pressing global development challenges not explicitly addressed by the SDGs where UCC has existing expertise, including the related areas of migration, rights of refugees and humanitarian action; and applications of ICTs for development.

Sustainability to be at centre of new UCC Academic Strategy

In 2018, the Office of the Deputy President and Registrar committed to implementing an Academic Strategy to deliver an outstanding, student-centred learning and teaching experience with a responsive, sustainable, research-based curriculum at its core (launched 4th Dec 2018). This directly addresses UCC's Strategic Plan 2017-2022, which aims to position transdisciplinarity as a core academic mission of the university. That Strategic Plan outlines how the University's institutional focus on transdisciplinary thematic areas will be informed by the United Nation Sustainable Development Goals. UCC's Academic Strategy forms part of the wider “Connected University” programme in UCC, more details of which are available [online](#).



3.3 Research

The Sustainable Development Goals are increasingly informing both the subject matter of research projects, and the way in which research is carried out. It is widely accepted that transdisciplinary science provides the fundamental knowledge base necessary for decision-making and practical implementation of the goals. Due to the integrated nature of the SDGs they can best be achieved through an integrated, cross-sectoral approach. UCC’s Strategic Plan 2017-2022 highlights a number of high-level, interdisciplinary research areas of current interest including: sustainability and climate action; future and emergent technologies; financial and business services; creative and engaged local/global citizenship; and chronic disease and food, health and social wellbeing.”

In the higher education sustainability landscape the idea of universities acting as “Living Laboratories”, where solutions developed on campus are also demonstrated on-site, is gaining momentum. The Environmental Association of Universities and Colleges published guidelines on this approach in 2017, while Living Laboratories are at the heart of the Association’s new Strategy to 2021³. This approach is also highlighted in UCC Green Campus’ motto of being “Student-led, research-informed and practice-focused”. In 2017/18 Green Campus delivered talks at the UCC Research Office’s Postgraduate Training programme, the Environmental Research Institute Open Day and the SEAI Information Session on the topic of Living Laboratories. Plans are in place to rollout a Living Laboratory Seed Fund for 2018/19 Academic Year.

The UCC STARS submission revealed that just under 15% of UCC’s research staff are working in the area of sustainability. Over half of the University’s academic units have at least one staff member researching a subject that is related to sustainability. The Environmental Research Institute at UCC is the university’s flagship institute for inter- and transdisciplinary research in UCC. With the launch of the Institute’s new Strategic Plan (2018-2022) last December, the University has now committed to invest €44 million in environmental and sustainability focused research projects over the next three years.



³ http://www.eauc.org.uk/eauc_living_labs_project

Strategic Aims



- To facilitate the development and empowerment of future leaders in sustainability through our research activities
- To maintain and enhance the University’s standing in research on sustainability topics

Table 3. Progress update against “Research” targets and indicators.

Indicator	Target	Status
Research funding for sustainability related research	30% of total	●
Proportion of total research income related to sustainability	30%	●
Number of sustainability related research projects	200	●
Number of sustainability researchers	> 15% of total	●
Number of publications on sustainability and environment (average per year)	> 300	●
Scholarly events related to sustainability and environmental research	> 200	●
Number of internal interdisciplinary and transdisciplinary collaborations	> 40	●



3.3 Research

UCC's ERI brings researchers together to tackle complex problems

The Environmental Research Institute's associated Principal Investigators come from all four colleges of the University; over 300 environmental researchers from across science, engineering, business and humanities come together under the ERI umbrella to address complex environmental challenges in a multi-disciplinary approach. The ERI also incorporates a number of environmental research centres including Marine Renewable Energy Ireland (MaREI), Aquaculture and Fisheries Development Centre (AFDC) and the Centre for Research on Atmospheric Chemistry (CRAC). In the past year, the ERI launched its new Strategic Plan (2018-2022), identifying three focus "grand environmental challenges": Climate Action, Circular Economy and Healthy Environment. These cross the institutes five sustainability research platforms of: environment, energy, marine, materials, and, agriculture and food.



Above: The Environmental Research Institute in [2017](#).

The ERI's Strategic Plan also highlights the importance to the institute of engaging with Green Campus in order to enhance UCC's reputation as a sustainable campus. This is undertaken through outreach events, for example the Cork Climathon, and engagement with the ERI Climate Lab initiative, which brings together internationally leading researchers to provide a platform for collaborative, integrated research enabling the transition to a zero carbon and climate resilient economy and society.

Centre for Law and the Environment launched

UCC's newly established Centre for Law and the Environment was launched on the 26th April 2018. Led by Professor Owen McIntyre and Dr Áine Ryall, the launch of the Centre follows 16 years of delivery of the Annual Law and the Environment Conference by UCC's School of Law. While the Centre is rooted firmly in the discipline of Law, it is engaged in significant interdisciplinary research collaborations and extensive outreach and advocacy activity. The centre brings together seven full and part-time academic staff to support and promote a wide range of high-impact research activities in Environmental, Marine, Climate, Energy and Natural Resources Law.

UN Environment GEMS/Water Capacity Development Centre

The UN GEMS Water Capacity Development Centre was founded in 2015 to provide global capacity development in water quality monitoring and assessment. Based at the ERI in UCC, the primary objective of the centre is to ensure compatibility and comparability of data for use in national, regional and global assessments. The Centre encourages a standardised approach to water quality data generation through providing guidance and training on all aspects of water quality monitoring and assessment and quality assurance of monitoring activities. Centre staff liaise closely with global partners such as the GEMS/Water Data Centre in Germany, United Nations Environment Regional Offices and regional GEMS/Water partners to identify capacity needs at regional and national levels, to provide appropriate support, and to develop training for delivery in-situ and on-line in countries all over the world. This year saw the centre publish their "Progress on Ambient Water Quality 2018 Piloting the monitoring methodology and initial findings for SDG indicator 6.3.2" [report](#).

20 students undertook the Centre's first run of the PG Diploma in Freshwater Quality Monitoring and Assessment, which is taught online (with one field-based module in a developing country). The centre also this year launched a number of short online CPD courses. The GEMS CDC at UCC also takes part in a number of outreach events. In March 2018, they joined forces with Green Campus to run a number of activities celebrating World Water Day. The day included a river walk with Cork Nature Network, photography competition, water footprint information booths and a series of talks by academics from both within and outside of UCC.



3.4 Food, Health and Wellbeing

The links between the health of human beings, and that of our environment are becoming ever more apparent. The effects of burning fossil fuels in our homes and transport system is polluting the air we breathe and contributing to the prevalence of illnesses such as asthma. High levels of beef consumption have a significant impact on an individual’s carbon footprint⁴. Our mental wellbeing is impacted by the amount of time we spend in green space. UCC Green Campus works together with the University’s Health Matters Team on a number of initiatives. The UCC Commuter Manager for example works with the active travel group to promote walking and cycling to college/work. UCC students and staff take part in a number of initiatives throughout the year including the annual Marchathon. UCC’s Sustainability Officer works with the Food, Nutrition and Sustainability Working Group of the Health Matters team to support the promotion of more healthy eating options on campus and the availability of clean and accessible drinking water. Both of these elements are promoted as part of the annual “Health Matters Day” on campus. A “Be Well” online calendar of events is available on the UCC Health Matters [website](#).

In 2018, UCC was the first higher education institution in Ireland to be awarded the KeepWell Mark from IBEC (the Irish Business and Employers Confederation). The KeepWell Mark demonstrates an organisation’s commitment to improving the lives of those who work for it. Accreditation is through a rigorous auditing process involving benchmarking against a set of recognised standards across eight critical business practice areas and on-site assessments. The 8 key areas include physical activity, smoking, healthy eating and mental health.



The Community Garden at UCC

⁴ <http://greencampus.ucc.ie/meatless-monday-whats-it-all-about/>

There is potential for significant collaboration between the domains of health, wellbeing and sustainability particularly when it comes to food provision. This reflects growing expertise within the research community in UCC around nutrition and food production.



Strategic Aim

- To enhance the health and well-being of the University and wider community through the facilitation and promotion of aspects of healthy eating and living as an integral part of sustainable living.

Table 4. Progress update against “Food, Health and Wellbeing” targets and indicators.

Indicator	Target	Status
Proportion of staff and students engaged in regular exercise	70%*	●
Health surveys of students and staff	In line with national and international standards.	●
Availability of sustainable food choices in campus food outlets	Assess	●
Proportion of students and staff actively selecting local sustainable food (food surveys)	Assess	●
Food growing initiatives on-campus	Maintain garden and identify opportunities for staff window boxes	●
Integration and awareness raising projects, research and initiatives between key actors in food, health, well-being and sustainability	Develop 2 flagship joint projects	●
Student and staff involvement in relevant societies/organisations on and off campus	Assess**	●

*A student volunteering report for UCC was completed in Nov 18 and will inform targets going forward.

** Based on SASSI report, target will be refined with UCC Health Matters Team.



3.4 Food, Health and Wellbeing

Urban Agriculture in Practice

Both the type of food we eat, and the distance that it travels to our plate, contributes to its environmental impacts. Growing more of our own food on campus reduces its carbon footprint and provides an opportunity for students and staff to learn how to grow their own food at home/college. As well as the “Farm to Fork” initiative, KSG also grows its herbs in the glass houses behind UCC’s Food Science Building. UCC’s “Community Garden” continues to thrive, with numerous events held throughout the year to educate students and staff on food growing, and to raise awareness of the resources itself.

The installation of bee hives at the North Mall campus (see 3.5) also means that UCC’s very own honey is now available. The bees are managed by a local beekeeper, and the aim is that they will become a teaching resource for students and staff. A bumper crop of “Alma Nectar” honey this year highlights the fact that, even in a city centre, opportunities for self-sufficiency exist.



KSG Greenhouse on Main Campus

There is a wealth of initiatives ongoing in Cork in relation to the Sustainability of food growing systems. Cork Food Policy Council (CFPC) is an inter-agency group chaired by Dr Colin Sage, from UCC’s Geography Department. The CFPC run programmes and events throughout the year, including a harvest festival each October. In October 2017, festival-goers were invited to visit UCC’s Community Garden.



Beekeeper Thomas Quigley checking UCC hives

Making the sustainable option, the easier option

As part of the STARS submission process, an inventory of all food and beverage purchases was undertaken by KSG (see also Section 3.7). This analysis revealed that 40% of all food and beverages purchased for use in UCC are either “local” or “community-based”, as defined by the Association for the Advancement of Sustainability in Higher Education. These include fish purchased from Matt O’Connell Fishmongers and bread from Hasset’s Bakery in Carrigaline. Prominent signage in the Main Restaurant highlights these local producers to customers.

As part of ongoing collaborations with KSG and the UCC Restaurant Committee, Meatless Mondays have become a regular feature in the Main Restaurant in UCC. For AY 17/18, one event was held per term, which was complemented by an online marketing campaign including blogs and social media posts. The number of events per term will be increased year on year. One tweet highlighting the event made over 5,000 impressions on Twitter, while the blog post was the third best performing page on the Green Campus website over the course of the year. The idea of “Meatless Mondays” highlights that small changes can make a difference; rather than encouraging people to become vegetarian, going meat free for just one day a week can make an impact on our carbon footprint as well as the amount of water consumed in the production of meat-based foods.

UCC Farmer’s Market

In the Spring of 2018, a Farmer’s Market was established on UCC campus, to promote healthy and local food purchases amongst students and staff. The market ran for four weeks in the spring, with stalls including local organic vegetables, homemade jams and chutneys. UCC Green Campus are working to develop a regular market on campus over the coming years, which will be a focal point for the UCC and local communities, enabling them to make more sustainable choices when purchasing groceries. The market promotes reuse, low impact packaging and healthy diets.



Veg on sale at UCC Farmer’s Market

3.4 Food, Health and Wellbeing



UCC is awarded the KeepWell Mark from IBEC



UCC students tending the Community Garden on College Rd

PlateForms – New research at CUBS looks at sustainable food platforms.

Green Forum member **Dr Claire O'Neill** has recently started a new H2020 funded project looking at food provisioning systems, with **Professor Mary McCarthy**. In recent years, the range of food provisioning systems available to consumers has multiplied. Each provisioning system or platform presents consumers with a unique choice architecture. These platforms emerge from both e-commerce development (e.g. online supermarket or online box schemes) and consumer-driven food provisioning (e.g. food cooperatives or sharing apps). Little is known about the impact of these new platforms on food choices, or to what degree they represent new opportunities to promote or enable sustainable food practices in the home.

PLATEFORMS aims to produce in-depth knowledge on how food practices are affected by these socio-technical innovations in food provisioning, and communicate success stories of sustainability to platform owners and policy makers. The project will promote sustainable food choices through involvement with platform owners, dissemination of academic results and communication of sustainable success stories across countries and platforms. The countries involved in the project are Norway, Sweden, Germany, Italy and Ireland. By producing new in-depth knowledge about concrete strategies to enable sustainable food consumption through food provisioning platforms, the project will affect consumer practices and choices on a larger scale. The main aims of the project are to:

- Promote sustainable practices through direct involvement with households
- Communicate findings with local food providers that may directly impact the way in

which they offer their product/service

- Directly impact sales of sustainable products and services and on the uptake of socio-technical innovations in food provision.

This will be achieved by recommending a combination of practice modifications, substitutions and new household practices and by producing new knowledge about strategies that enable sustainable food consumption. Furthermore, as consumer-insight driven research, the knowledge will serve as an important contribution to both consumption and public policy efforts in attainment of a more sustainable Irish Agri-food system. In line with the Food Wise 2025 plan, the impact of this research will ensure that Irish Agri-food sector continues to grow within the framework of sustainability. Ensuring that both the national suppliers of innovative food provisioning platforms and the consumers of such products/services are sustainable in practice is a key element.

The potential for greater engagement with consumers by local producers in the co-creation of customer value is significant. Designing offerings that fit more closely with everyday household practices will place these business on a more sustainable footing. In the context of the UCC community, this project will contribute to multiple stakeholders including staff and students' practices of food consumption in the home and will reach out to, and assist, the sustainable food provider(s) from the monthly markets on campus.



3.5 Landscape, Heritage and Natural Resources

UCC campus comprises a total area of 740,300m², over two-thirds of which is green space. This green space is a significant resource both in terms of heritage and biodiversity. A total treeline of 2.3km exists within the campus comprising well in excess of 2,500 trees. These trees exist both as individual specimens and as riparian groups and vary from young, newly-planted, trees to very mature specimens. The University overlooks both the north and south channels of the River Lee, where bats, otters, herons and kingfishers are regularly sighted. UCC Campus will undergo an expansion over the next five years in order to accommodate the rising number of students attending college. It is important that this expansion pays due regard to habitats and species identified and that, where possible, mitigation measures are put in place.

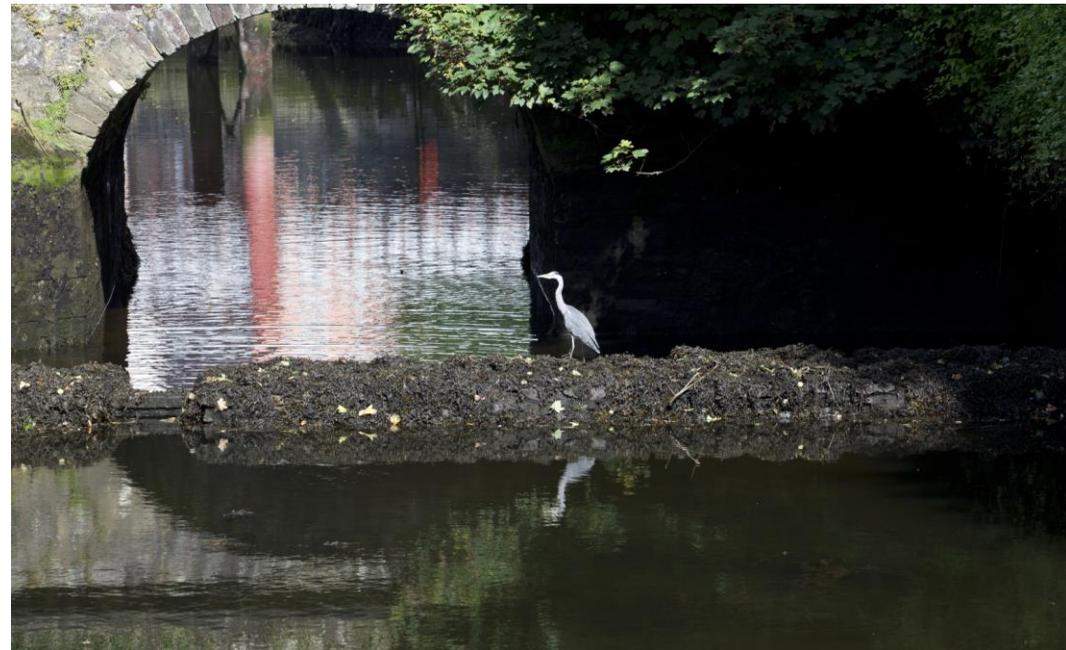
2017/18 saw the completion of a three year project to map the habitats across the UCC main and satellite campuses and the publication of the University's first ever Biodiversity Action Plan. A 3-year pilot Biodiversity Survey was commissioned by UCC in 2014 and undertaken by Lalor Ecology on 8 campus sites. The work involved detailed surveys of habitats, bryophytes, bats and other small mammals. In addition, casual records of invasive species, birds, invertebrates and fungi were gathered during fieldwork. Existing knowledge of the species occurring within UCC campus was also gathered and added to a GIS database. The pilot survey has been extended and further work on bryophytes was completed in 2018; further surveys are expected to continue into future years.

The outcome of the Survey was the completion of UCC's first Biodiversity Action Plan (B.A.P.), which identified three key objectives, namely:

1. To identify and implement measures to enhance and protect biodiversity in UCC.
2. To ensure that biodiversity is integral to the planning and design process across all of UCC's developments.
3. To encourage student and staff engagement with biodiversity and increase knowledge and awareness of biodiversity.

The detailed B.A.P. can be found on the UCC Green Campus Website.

2018 also saw the establishment of ten beehives at the North Mall Campus in UCC by local beekeeper Thomas Quigley. Thomas is a member of the County Cork Beekeeping Association, and is managing the hives on behalf of UCC as both a natural and educational resource. It is hoped in future years that the hives will become a learning resource for students and staff of UCC, who may wish to learn about beekeeping.



3.5 Landscape, Heritage and Natural Resources

Strategic Aims



- To promote and engage in the sustainable use and management of the landscape and natural resources of the University, in all its campus areas, with respect to ecosystem services, natural and cultural heritage;
- To minimise the local, regional and global environmental impacts of our educational, research, operations and infrastructural development.

Table 5. Progress update against “Landscape, Heritage, Natural Resources” targets and indicators.

Indicator	Target	Status
Proportion and amount of open spaces on campus	Extend Sli na Slainte to Western Campus	●
Proportion of campus covered in vegetation*	See UCC Biodiversity Action Plan	●
Proportion of ‘wild’ and/or semi natural areas on campus	See UCC Biodiversity Action Plan	●
Proportion of non-retentive surfaces	Asses Green Infrastructure inclusion in all new builds	●
Proportion of campus mapped for biodiversity, with numbers of key habitats and species	All	●
Number and effectiveness of natural resource awareness campaigns and initiatives	2/year	●
Number of projects/partnerships with local authorities and community groups	1/year	●



Biodiversity Survey Results

27 different habitats were recorded within UCC grounds. Opportunities for biodiversity enhancement measures, such as the addition of bat and bird boxes were recorded, and work has already been undertaken to implement these. In line with the All-Ireland Pollinator plan, a number of sites were identified for management as “Pollinator Friendly” habitats. These will add to the existing wildflower areas at the O’Rahilly Building and Aras na Laoi. However, the surveys also identified a number of invasive species of concern. These included the harlequin ladybird, Japanese knotweed and Himalayan balsam. A comprehensive programme for the removal of Japanese knotweed is currently underway.

The Green Forum have also identified significant opportunity to utilise UCC’s green space for formal and informal learning experiences, and to further open the campus to the riverine habitat that it encompasses. These ideas will be further explored in the next number of years as additions to the existing Green Campus Tour as well as “Living Laboratory” projects investigating the use of outdoor space for research and learning.

Biodiversity Survey Highlights



Annex 1 Riparian Woodland present at Environmental Research Institute



141 species of bryophyte recorded, two of which are nationally scarce



Areas for potential pollinator-friendly actions identified at each site.



Two bat roosts present in or adjacent to UCC land.



Grey wagtail and Kingfisher (red and amber listed respectively) recorded



Six species of small mammal recorded, including fox and wood mouse.

3.5 Landscape, Heritage and Natural Resources



The Grounds Team at UCC

Behind the scenes – the work of UCC's grounds team

The UCC grounds team (within the Buildings and Estates office) are tasked with the important role of managing both the ornamental and biodiversity value of the green space on campus. **John Murphy** has been working in UCC since 2002, and as head gardener since 2011. He is joined by Noreen O'Sullivan, Ger Creedon and Patrick Hallinan.

What's a typical day like for the grounds team?

There is no typical day! Our main job is to make sure the campus is ready before people filter in. We also get the campus ready for big events. You could get a phone call at any stage that someone important is coming in tomorrow, or next week, and the place has to be ready. The work is seasonal, in the spring it's lots of grass cutting, at the moment there is a lot of work in cleaning away the leaves. Planting and bedding happens at different times of the year.

Have you seen a change in how the grounds are managed since Green Campus began?

Definitely. There has been a big reduction in reliance on pesticide and herbicides, a healthy plant should be able to keep pests at bay. If treatments are needed, we use organic products. The roses, for example, used to be sprayed with pesticide to keep greenfly at bay. Now we are using a liquid seaweed feed that is completely organic. We also introduced companion planting schemes; we plant marigolds next to the roses and it distracts the greenfly. The grass is mulched and now most of the machines are now battery operated. A lot of

the work is manual, for example manual weed pulling and hoeing around the bottom of the trees,. This cuts down the need for chemicals. You do see a difference as a result, we see lots of wildlife in the gardens for example robins and butterflies.

What's your favourite part of the job?

The feedback that you get after events and from students and visitors to the campus. I also enjoy the fact that you get to meet so many people every day. In this job you meet and see people that you might never meet if you are in an office all day.

What's your favourite part of the campus?

The Main Avenue with the treeline, that's the "grand entrance" to the college and there are some very special specimen trees down there. The Black Walnut and Horse Chestnut down there are very mature specimens..

Are there any "hidden gems" on campus that a typical visitor might miss?

The Lower grounds is a bit of a secret; in the summer time people congregate in the gardens but there are beautiful trees down in the lower grounds. Hopefully when the bridge opens up there will be more activity down there. At the back of Aras na Laoi there is a native habitat on top of the old ice house. You see a lot of wrens and robins flying over there.

Are there any future plans for UCC grounds that we should know about?

The next big job is the new planting scheme in the Quad. That's been designed by Bernard Hickey, who is a top landscape designer. It's a Victorian landscape scheme with strawberry and

yew trees and examples of topiary.

How did the storms of 2017/18 impact the grounds?

We lost a good few trees, but there is a management plan in place for that. The climate is changing, but we are a lot more prepared now than we were ten years ago. The weather warnings are useful as well. These things happen, there will always be storms, so you just have to manage it and not panic.

What are your priorities with regard to maintaining the heritage value of the campus?

Being the head gardener in UCC is like a guardianship. I feel that the campus grounds have been handed down to me from the previous head gardeners, so it's important to me that I pass them on that way to the next person.

Any advice for budding gardeners?

Stick with it and don't be afraid; you learn from your mistakes in the garden. Never be afraid of pruning and try to garden as "green" you can because you really do see the benefits. There's such a thing as green fingers, anyone can do it and you can garden anywhere - I grow spuds at home in dustbins! It's great when you see something growing you know that you're doing something right.

What's your garden at home like?

Plants and weeds grow happily together, I don't use any chemicals or sprays, it's all organically done. Weeds are no bad thing they can tell you a lot about your garden and the type of soil that you have. Nettles are great for making a tonic for the plants to feed them.



3.6 Recycling and Waste Management

The original impetus for the establishment of a Green Campus Programme in UCC was the lack of adequate facilities for recycling, and the management of waste on campus continues to be a central theme in the University's endeavours to be more sustainable. 2017 saw a surge in concern globally around the amount of plastic entering our seas, following the airing of the BBC's Blue Planet 2 series. The previous year, a report by the Ellen MacArthur Foundation warned that by 2050 there may be more plastic than fish in our oceans.

Over the summer of 2017, UCC's cleaning services provider ISS undertook an audit of the bins in the Boole Library building. The audit revealed that over 160 small bins were placed around the library and that the rate of contamination of recyclables in these bins was extremely high. This contamination was principally a result of the disposal of unfinished single-use coffee cups. The result was that the rate of recycling in the library building was negligible. A new "binless" system was introduced with all small bins removed from all floors and offices, and two recycling stations established on the ground floor. ISS monitored the impact of this change and the result was an exponential increase in recycling levels. Coinciding with this, the Library completely banned the use of disposable coffee cups in the building, while a 10cent incentive for reusables was secured from KSG. What started as a difficult and brave move on the part of one building in UCC has now become a movement across the whole campus (see next page).

In the past year, the Department for Communication, Climate Action, and Environment issued a new "Recycling List" for Ireland, which provides clear guidance on what plastics can and cannot be recycled. According to the list, "soft" plastic should not be placed in the recycling bin. This further highlights the need to reduce the amount of this waste at source, and UCC is attempting to do this through the innovative KSG "Bio Green" single-use plastic free café. Food waste segregation has increased year on year (up 20% since 2012), while waste from grass cutting is all composted (see section 3.3) Hazardous waste is disposed of under regulation by the Environmental Protection Authority. Potential to reduce the amount of this type of waste through chemical sharing and storage options is of interest. The inclusion of the Cavanagh Pharmacy Building and the Environmental Research Institute in the "Saver Saves" scheme opens up opportunities to look at the purchasing of chemicals and the potential to reduce packaging waste arising from this.



Strategic Aims:

- To minimise the local, regional and global environmental impacts of our educational, research, operations, and infrastructural development
- To manage and reduce waste generation by the University community through behavioural and practice change, in accordance with the EU 'waste management hierarchy'.

Table 6. Progress update against "Recycling and Waste Management" targets and indicators.

Indicator	Target	Status
Quantities of total waste and individual categories of waste generated	.05 tonnes/person	●
Waste recycling rates (%)	70%	●
Number and type of audits and actions arising	All SEUs audited	●
Initiatives/workshops/training in relation to behavioural change (proportions of staff/students reached)	100% reach	●

Waste and Recycling Highlights



25% reduction in total waste generated since 2012



24m pages -> **4m** reduction in student printing since 2008



10,000 plastic bags saved in "binless" library system



ISS monitoring bin **contamination rate** in 21 buildings



Ireland's first **Plastic free** Café opens in September 2018.



98% landfill diversion rate

3.6 Recycling and Waste Management

UCC and KSG launch Ireland's first "Plastic Free Café"

September 2018 saw the opening of UCC's "Bio Green Café", a single-use plastic free café in the Biosciences Institute. UCC Caterers KSG took a whole lifecycle approach when sourcing all food, beverages, and equipment for the café. All plastic bottles have been replaced with glass or cans, and no plastic-wrapped snacks are available. A condiment station replaces sachets, and a special washing station is available for reusable cups. Food and drinks are served on crockery; where takeaway is necessary compostable items are available at a price.

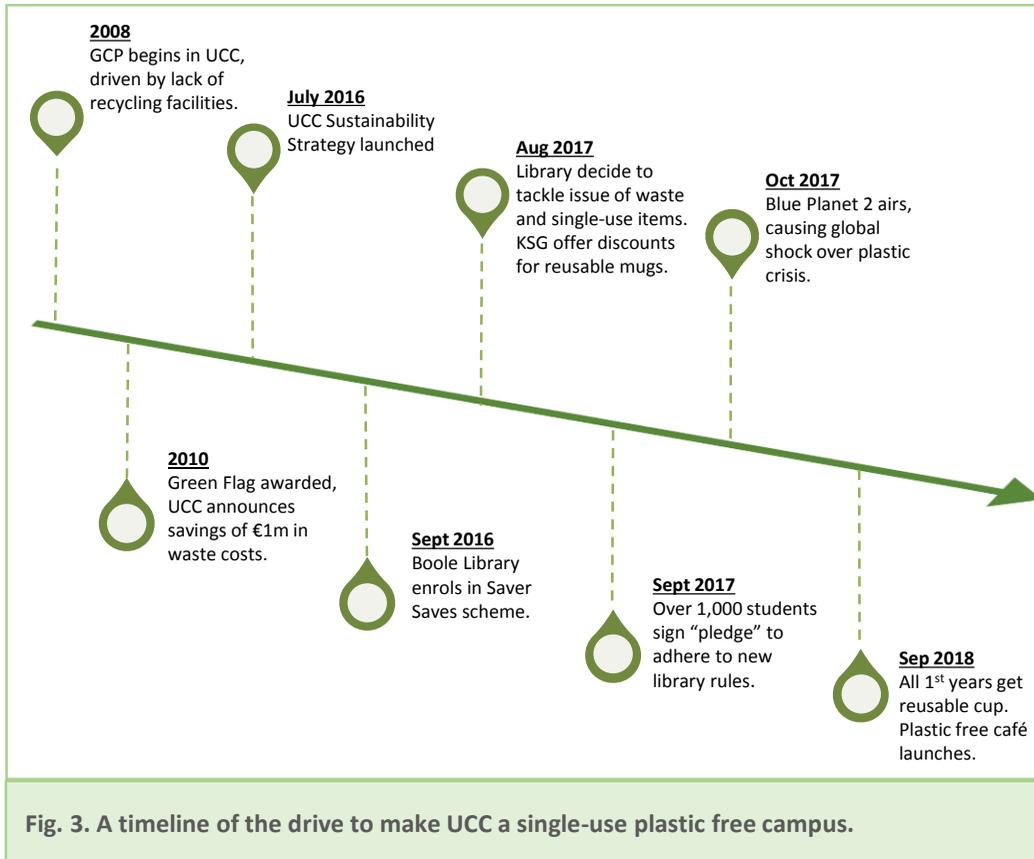


Fig. 3. A timeline of the drive to make UCC a single-use plastic free campus.



These actions were made possible by the collaborative efforts of the "Green Library" team, KSG catering, ISS Cleaning Services, the Student's Union, and the UCC Restaurant Committee. Financial support from Cork City Council also enabled the Student's Union to purchase reusable cups for every incoming first year student, ensuring that the easiest option for students at UCC is also the more environmentally friendly one.

The launch of Ireland's first plastic free café in September 2018, is a signal to service providers everywhere that there is a consumer demand for environmentally friendly approaches to operations, and that going single-use plastic free is possible, if very difficult.

Aware of the broad scale of the issue of plastic pollution, UCC Green Campus, KSG, UCC Canoe Club, An Taisce Clean Coasts, Subowti and Cork City SUP organised a land and river Clean-Up event at the Lee Fields in September, 2018. 16 bags of rubbish were collected from the fields and water on the day.

3.6 Recycling and Waste Management

The problem with plastic – UCC researchers are leading the fight.

As well as addressing the issue of plastic pollution and overconsumption in our operations, UCC has a wealth of expertise in the science behind the issue and in communicating this science to the public. Microplastics are an area of significant concern. We know that microplastics are entering our waterways, and the species that live within them, but we don't yet know the impact this might have on humans. Microplastics result from the fragmentation of larger plastic objects, or are produced for use in products such as cleaning agents, cosmetics, or textiles. It is estimated that the island of Ireland emits some 5700 kg microplastics per year.

Alicia Mateos Cardenas is a PhD student at the School of Biological, Earth and Environmental Sciences in UCC and a member of UCC Green Campus. Alicia's research is funded by the Environmental Protection Agency and looks at the impact of microplastics in the freshwater environment.. The Project PIs are **Professor Marcel Janssen**, **Dr Frank Van Pelt** and **Professor John O'Halloran** (Green Forum Co-Chair). A significant element of the research project involves public outreach. The team have developed a new education tool for primary schools and take part in Culture Night and World Environment Day activities.

At UCC's school of Microbiology, **Dr Niall O'Leary** looks at the production of bioplastics, which are seen by many as an alternative to petrochemical plastics that are produced. One of Dr O'Leary's projects is investigating the production of bioplastic from dairy industry wastewater. Niall also looks at plastic biodegradation and runs a plastic pollution workshop for events such as World Environment Day and "Cork Discovers" festival.

At MaREI, **Dr Tom Doyle** looks at the impact of microplastics in the marine environment, the abundance, distribution and sources of marine plastic and their potential to be transferred through the food chain. Tom recently contributed to a mini series produced by the Riptide Movement in conjunction with Clean Coasts and An Taisce. The "Plastic Oceans" webseries is available online. **Dr Kathrin Kopke**, also at MaREI, is a workpackage lead on a JPI-Oceans funded project looking at the ecotoxicological effects of microplastics in marine ecosystems and has undertaken previous research into improving public engagement and responsibility for the marine litter problem. This summer **Aoife Deane**, MaREI's Communications and Public Engagement Manager worked with Volvo Cork Week to make it a "Clean Regatta". A key aim was to create awareness among participants about the impact of plastic on marine life.

It is hoped that in the coming years, researchers and operational staff across UCC will be able to join forces in the drive to rid the campus of unnecessary single-use plastics.



UCC IT Services donate old computer to local schools and charities

UCC has one of the largest collections of PCs and computers in Cork City. Approximately 4,000 computers are available to students for heavy computational work, software development, or business projects. Once they are over 5 years old, these computers are typically replaced, in order to keep pace with the demands of our students. However these computers are still functioning fine for typical web browsing. In 2015, while upgrading these PC's, John Meade (IT Services) and Catherine Sanborn with Cathy McKenna (Library) had the same idea to recycle these computers into the local community (via local schools) and/ or to developing countries (via the charity Camera). In AY 17/18 150 PCs were donated to local schools, charities and developing countries, bringing the total over the past 3 years to 300. Through promoting reuse of IT equipment, the University is in some small way contributing to education in these communities and reducing the amount of WEEE waste.



UCC IT Services celebrate 300 donated computers.

UCC Students launch Food Waste campaign

AY 17/18 saw UCC's Student's Union launch a Food Waste campaign, aiming to investigate the amount of food that goes uneaten in the university as assess ways of redistributing it. At the same time, students from the Environmental and International Development Societies launched a Food Waste Working group, meeting regularly to develop plans and ideas around bulk shopping and "odd box" systems. This year's students union are looking to roll out the latter over the coming months.

Encouraging Reuse on Campus

In November 2017, a number of outreach events were held to mark European Week for Waste Reduction. A clothing "Swap Shop" was organised with Green Campus. Fashion Soc, and a new student enterprise called "The Nu Wardrobe". The latter facilitates sharing of formal wear for university balls. It was developed by students at Trinity College Dublin and has "ambassadors" on a number of campuses, including UCC.

3.7 Energy, Water and Climate Change

Energy in UCC continues to be managed in line with the ISO50001 system. 13 Significant Energy Using (SEU) buildings have been identified and teams have been set up within 6 of these to drive energy and broader sustainability focused campaigns. A full recertification of ISO50001 was undertaken in November 2017. In addition, 2017/18 saw UCC achieve its Public Sector Energy Efficiency Target, of 33% reduction in consumption, 3 years ahead of schedule. As part of the ISO50001 process, audits are carried out on buildings and a register of opportunities created. UCC are in the process of implementing these opportunities, in many cases aided by grant funding from the Sustainable Energy Authority of Ireland (SEAI). 2017/18 saw UCC receive funding through the Better Energy Communities Scheme for an Air Curtain in the Boole Library and North Mall conversion to LED lighting (1,200 fittings).

UCC's submission to the STARS programme required an update of the University's carbon footprint, which was last undertaken in 2011/12. This revealed that for scope 1 and scope 2 emissions (i.e. those that are produced on-site as a result of UCC-owned boilers, vehicles etc. or purchased from the grid) the amount of CO₂ we are producing has remained almost stable, despite a significant increase in both student numbers and area. Scope 3 emissions (from travel and procurement related activities) were calculated where data were available. The next year will see a carbon management plan put in place to address all scopes.

In regard to water use, waterless cleaning is now being trialled by ISS in the Cavanagh Pharmacy building. This is part of their campaign under the "Saver Saves" scheme. While the "Saver Saves" scheme has targeted increased efficiency in significant energy using buildings, the #WattsOnUCC social media campaign is targeting the broader UCC community in calling out energy wastage on campus.

Strategic Aims



- To minimise the local, regional and global environmental impacts of our educational, research, and ancillary operations, and infrastructural development;
- To reduce energy intensity and greenhouse gas emissions (carbon footprint) of the University's operations;
- To reduce the water use on campus.



Table 7. Progress update against "Energy, Water and Climate Change" targets and indicators.

Indicator	Target	Status
Energy consumption (kWh per student FTE)	40% reduction (2008 baseline)	●
Greenhouse gas emitted	0.215 MtCO ₂ e/m ²	●
Water consumption (m ³ per staff/student FTE)	25%	●
Quantity of water reused (m ³ per staff/student FTE)	5%	●
Proportion of energy from certified renewable sources and onsite renewables (%)	15%	●
Number and effectiveness of awareness raising campaigns in relation to energy, carbon footprint and water	10	●

Energy, Water and Climate Change Highlights



6 "Green Teams" in place and campaigns being rolled out in SEUs.



Carbon Footprint updated (inc. Scope 1, Scope 2, and Scope 3).



33% energy efficiency target reached.



North Mall Campus **LED** replacement complete.



#WattsOnUCC campaign launched.



Waterless cleaning rolled out to Cavanagh Building.

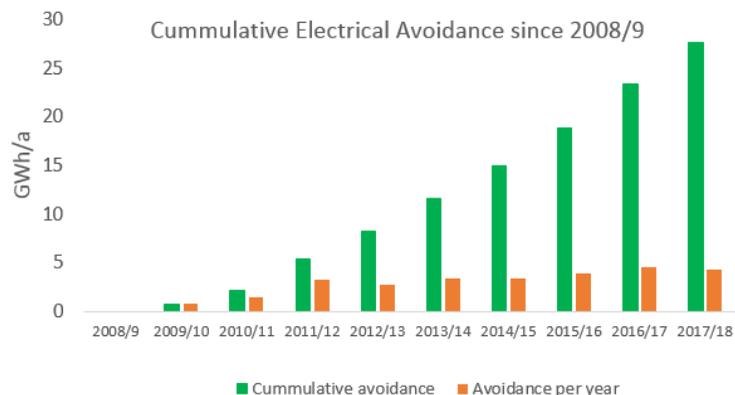
3.7 Energy, Water and Climate Change

The “Saver Saves” scheme incentivises action

The Saver Saves scheme targets the most energy intensive buildings in UCC, putting together teams of stakeholders within the buildings to deliver a tailored campaign improving energy efficiency. The monetary savings associated with increased efficiency remain with that department from year to year, to be reinvested in further environmental projects. With support and advice from UCC’s Energy Manager the “green teams” are given the power to decide on the projects that will be undertaken each year, based on the potential payback in terms of environmental improvement and monetary savings. The Boole Library is the most mature example of this scheme in operation, and in 2017/18, €35,000 was reinvested in the building due to energy savings made in 2016/17. Combined with finds from the SEAI BEC grant, an air curtain was purchased, that would prevent cold air from entering the building in the winter and hot air in the summer. In the summer of 2018, the library also used some of their funds to purchase a “Living Wall” for the Quad Reading Room.

“Green Teams” are now active in the Glucksman Gallery, the Cavanagh Pharmacy Building, the BioSciences Institute, the Environmental Research Institute, and the Quad. These buildings represent a number of different “uses” including gallery spaces, public spaces, restaurants, offices and laboratories. The UCC Energy Manager and Sustainability Officer work with the teams to develop a Post Occupancy Evaluation survey that is administered to all building users. This assesses how staff and students use the building and rate its sustainability performance. Following this, an Action Plan and campaign materials are developed. Surveys have been administered in 5 of the 6 buildings and results are in the process of being analysed.

The activities of “Green Teams” have been key in UCC achieving its PSEEAP targets in 2017. There is still a significant opportunity for further reductions however, particularly in looking at greener laboratory practices, older buildings such as the Quad, as well as the night time load of all campus buildings.



“Love our Library” turns Boole Green

The “Green Library” Team emerged from the “Saver Saves” scheme aiming to improve energy efficiencies in the Boole Library building. Having made extensive savings in energy, the award-winning team have taken on single-use plastics and invested in a “living wall” for the Quad Reading Room. **Ann Byrne** heads up the team and has some nuggets of wisdom to share with other groups embarking on the programme.

What inspired you to take on Green Library campaign?

Getting involved with the “Saver Saves Scheme” left no option but broaden out the campaign in the library. The scheme brought home to us how the library was impacting on the University and the greater environment. Knowing that we could make a difference was a bit of a catalyst.

What has the Green Library campaign meant to the staff in the library?

Library staff are very proud of the campaign and it has brought enormous positivity to all those who have engaged with it.

What was a major challenge you faced?

Trying to keep a diverse group of people – Library staff, University staff, students and the cleaning staff all on the same page. Communication was key to this.

What was the highlight?

Lots of highlights along the way but winning the award for the Best Library Team in the Irish Education Awards was fantastic.

Has being involved in Green Library impacted your choices at home?

Definitely. I am way more conscious of the waste I accumulate and have become a bit of a waste vigilante!!

What advice would you give others Green Teams across campus?

The more diverse the group the better. It’s good to have different opinions which leads to better decision making and outcomes. Have a bit of fun with your campaign!!



3.7 Energy, Water and Climate Change

Carbon Footprint updated

UCC's Carbon Footprint was calculated in 2008/09, 2011/12 and this year was updated for 2016/17. The calculation is carried out using the Greenhouse Gas Protocol Corporate Reporting Standard, with emission factors drawn from SEAI, EPA and DEFRA guidance. Scope 1, 2 and 3 were included, however the assessment of Scope 3 (transport and procurement related) calculations presents serious concerns regarding data availability and reliability. This is being investigated with the intention of refining the measurement. Scope 1 and 2 emissions amounted to 23,049.30 metric tonnes of CO₂ equivalent in 2017. This compares with 22,190.70 metric tonnes of CO₂ equivalent in 08/09. While this is a slight increase, when the growth of the campus and student numbers is accounted for, it amounts to a reduction of approximately 8%. Per FTE the carbon footprint is now 1.46 metric tonnes, and per m² (adjusted for energy intensive space) it's now 0.01 metric tonnes. A key action for the coming year is the development of a carbon management plan, which will identify sites for potential carbon neutrality, mitigation measures for scope 3 emissions and potential for greater production of onsite renewable energy.

UCC hosts Political Forum on Climate Change

In October 2017, in the aftermath of the damage caused by Storm Ophelia, UCC hosted a Cork Climate Action political Forum.. "Storms are brewing, what are we doing?" The panel on the night included Michael Martin (FF), Eamon Ryan (Green Party), Mick Barry (PBP) and Donnchadh Ó Laoghaire (SF). Dr Aine Ryall, UCC School of Law, and member of the expert advisory group to the Citizen's Assembly on Climate Change, acted as academic rapporteur. Deirdre O'Shaughnessy of Cork's 96FM chaired. Over one hundred people were in attendance. Cork Climate Action was set up in advance of the COP21 Climate Change summit in Paris in November 2015. It is a coalition of non-governmental organisations working together to address climate change. It organises events at local level in support of national and global actions. Current members include: Cork Environmental Forum, Social and Health Education Project (SHEP), Trócaire, UCC Green Campus and UCC Environmental Society.



Climate Lab at the ERI

The ERI Climate Lab brings together researchers working in all four areas of Climate Change research, namely: understanding climate science; decarbonising and climate mitigation; responding to Climate Change through adaptation; and transitioning to a low carbon economy. The latter include a significant element of community engagement.

Imagining 2050 – UCC Researchers working to co-produce pathways for a climate resilient Ireland

Green Forum member **Ger Mullally** is lead PI on an exciting new EPA funded-project entitled "Imagining 2050". The project will engage a wide range of stakeholders using innovative approaches to develop visions, and ultimately a scenario analysis for the transition to a low carbon economy for Ireland. The project is transdisciplinary in nature, bringing together researchers with expertise in societal transitions, climate mitigation, climate adaptation and innovative communications and engagement methods.

The research landscape in UCC, which promotes working across disciplinary boundaries and initiatives such as the university's Environmental Research Institute's Climate Lab, University Wide module in Sustainability, and the Green Forum have helped to nurture the capacity for these types of transdisciplinary projects, as well as build the collaborations necessary to undertake them.

ERI Researchers are expert advisors to the Citizen's Assembly on Climate change

Dr Áine Ryall and Dr Margaret Desmond were appointed to the Citizens' Assembly Expert Advisory Group for the topic "How the State Can Make Ireland a Leader in Tackling Climate Change". The

assembly, which sat on 30 September - 1 October 2017 and 4-5 November 2017, were asked to answer 13 questions relating to energy, transport and agriculture sectors, international best practise and existing national policies and activities. The recommendations of the assembly, which were ambitious in terms of targets and actions, are now being put to the government's Climate Action Committee.

Climate Ireland at MaREI

The Climate Ireland programme is coordinated by MaREI and the Irish Centre for High End Computer (ICHEC) at the National University of Ireland, Galway and as part of the EPA-funded project *A Climate Information Platform for Ireland* (ICIP). Climate Ireland works as a research service that connects and integrates scientific research, policy making and adaptation practice for the purposes of enhancing adaptation decision making in Ireland. An example of this is the key role they have played in the development of Sectoral Planning Guidelines for Climate Change Adaptation. These Sectoral Guidelines, released in July, were developed to support Government bodies that are required to prepare sectoral adaptation plans under the recently published National Adaptation Framework. The work was based on international best practice and in close consultation with key sectors such as the Department of Transport, Tourism and Sport (DTTAS) and the Department of Agriculture, Food and the Marine (DAFM).



3.8 Procurement and Contracts

The Procurement and Contracts Office is responsible for putting contracts in place for the purchase of goods and services of common interest to the University. The Office of Government Procurement (OGP) has the responsibility for sourcing all goods and services on behalf of the public service. UCC through its Procurement Strategy (2018-2023) has committed to engage with the OGP to ensure that Green Procurement Guidelines (GPP) and sustainable use of resources is a consideration in tendering processes. The government's GPP guidelines cover vehicles, energy, construction, food and catering, cleaning products, textiles, IT equipment and paper.

Procurement and contracts was a new theme taken under the Green Flag programme at the University's last full Green Flag reassessment in 2016. Since that time the University's catering contract award criteria included sustainability and the University's Sustainability Officer and Energy Manager now sit on the Restaurant Committee, which is tasked with reviewing the operation of that contract. UCC's Procurement Officer is an active member of the University's Green Forum.

In addition, the University's Finance Office have launched an audit of all printing carried out in UCC to develop a new printing policy (including environmental considerations) which will be incorporated into the new tender for printing services. As part of the University's STARS submission, an analysis of all cleaning products used in UCC was undertaken to assess the percentage of those products that were third party certified to sustainability standards.

Strategic Aims



- To minimise the local, regional and global environmental impacts of our educational, research, and ancillary operations, and infrastructural development
- To systematically include sustainability criteria in the selection criteria for the purchase of goods and services for the University
- To consider life cycle perspectives during the selection of goods and services wherever practical and appropriate.



Table 8. Progress update against "Procurement and Contracts" targets and indicators.

Indicator	Target	Status
Development of sustainable/green procurement policy and process	Achieved	●
Development of guidance document(s) on green procurement for suppliers/ providers	By 2020	●
Number of contracts awarded to suppliers of "green" products and services*	8	●
Number of contractors/suppliers/providers who have achieved environmental or sustainability related awards/standards/certifications*	8	●

* Taking account of OGP requirements and GPP Guidelines.

Procurement and Contracts Highlights



Restaurant Committee assess sustainability inclusion in **catering services**.



Sustainability one of six principles of new UCC Procurement Strategy



40% food expenditure is on "local/community – based" products.



95% cleaning and janitorial products are third party certified



UCC commits to responsible investment through signing of **PRI**.



Life Cycle Costing Analysis included in purchases of major energy using products.

3.8 Procurement and Contracts

Leading by example in our investments

In July 2018, UCC became an official signatory to the United Nations supported Principles for Responsible Investment (PRI). UCC divested from fossil fuels a number of years ago, but the PRI commits the University to look at a range of ethical, sustainability and governance (ESG) impacts when considering investments. The University will report annually to the PRI on its investment portfolio. UCC is the first HE institution in Ireland to sign the Principles; current HE signatories globally include Harvard University, Northwestern University, University of Ottawa, University of Montreal, University of Edinburgh and University of St. Andrews. Many large global international corporations, for example AXA, are also signatories. It is hoped that in becoming a signatory, UCC will demonstrate leadership in this area so that other universities, and corporations might follow suit. Currently over 70% of the University's Trust is invested in what would be considered "positive sustainability investments". These include forestry funds, ethical global equity fund, Irish energy efficiency fund, and renewable energy funds.



In June 2018, UCC's Finance Office signed up to the "Saver Saves" Scheme as members of the "Greening the Quad" team. This further demonstrates the commitment from all levels of UCC to review our operations and endeavour to make them more sustainable.



UCC Finance Office launch Greening the Quad campaign

UCC's Student's Union are also working with the Union of Students in Ireland to look at the possibility of making UCC a Fairtrade campus. The SU is also working with UCC Green Campus to review the policy for markets on campus, and ensure that sustainability, and in particular waste, are key considerations for any event or service provided as part of SU activities.

The Business of Climate Change

Dr Celine McInerney is a senior lecturer in Finance at Cork University Business School and was the drive behind UCC becoming a signatory to the UNPRI. Celine also lectures on the University Wide Module in Sustainability. Celine's research is in the area of corporate finance, climate finance, investment in renewables, stranded asset risk and sustainability. She is also a Principal Investigator at the Environmental Research Institute, having moved into the area of climate finance and risk with the help of an Environmental Protection Agency grant award in 2014. Climate finance is an interdisciplinary area of research that has a direct impact on policy making and is of significant interest to business leaders. The work that UCC is doing in this area, combining financial modelling with energy systems modelling to estimate stranded asset risk due to fossil fuel lock in (led by Prof. Brian O Gallachoir), is unique.

Celine points out that the recent surge in carbon prices has caused business leaders to pay more attention to climate risk and that all business will be impacted by increasing electricity prices. In addition, more and more business are also being asked to report against the UN SDGs. At UCC there is an opportunity to become leaders, and to educate future leaders, in sustainability management and reporting. Our graduates don't have to travel far to make an impact. Some of the major renewable companies such as Brookfield Renewable, Element Power, and Amarenco operate in Cork and many UCC graduates have gone on to work in these companies. National agencies, such as Sustainable Nation, are also working to highlight the opportunities green finance offer for developing Ireland as world class destination for capital markets activities in climate finance and green finance is a core pillar of the development of the IFSC.

Celine sees UCC's signing of the UN PRI as a demonstration to our students that we are committed to doing the right thing "We are educating future business leaders, and we need to show them that having these values is important" However, we mustn't rest on our laurels, and when asked about her optimism for the future, Celine is clear that we need to be doing more. "There are moves in the right direction, but it's slow. Investors need to play a greater role in putting Climate Change high on the corporate agenda". Indeed, Celine says that recently, a number of underwriters in the insurance industry took the decision to stop underwriting coal investment. Also, some of the bigger fund managers like Blackrock have said that they will remove directors that don't act on climate risk. In May, Celine and her research team hosted an event with 100 business leaders, informing them about carbon risk and how this would impact company investments and profitability going forward. The financial risks include high carbon taxes in the future as well as the need for significant investment in carbon abatement technologies.

The transition to low carbon future is not just about business, but engaging with communities as well. Celine is part of a consortium that recently received a €4.2 million Marie Curie Innovation Network Training award on community energy financing. This work builds on strong interdisciplinary expertise in the UCC community following H2020 projects such as Entrust (led by Ger Mullally and Niall Dunphy).



3.9 Commuting and Business Travel

Combined, commuting and business travel accounts for approximately one third of UCC's carbon footprint. As one of the main employers in the Cork region, UCC is aware of its potential footprint through travel related emissions. Universities are also coming increasingly under pressure to review the amount of travel undertaken in their academic activities. A more refined measurement of our scope 3 (including transport related) carbon emissions is being prepared. Methods of reducing and mitigating these emissions will then be explored in the preparation of a carbon management plan for the university. UCC engages with other employers in the region through the Cork Transport and Mobility Forum. The UCC Commuter Manager continues to monitor modal share through an annual survey of travel habits. An updated commuter plan is in preparation, which will take into account the expansion of UCC campus as outlined in the UCC Masterplan.

An active bike users group exists in UCC, led by the Commuter Manager and Dr Dean Venebles (Chemistry). Through outreach events such as "Campus Bike" week, barriers to the take up of more sustainable transport modes are explored in roundtable discussions. The provision of safer bicycle parking and facilities for showing and storage of items are a priority to the cycling community at UCC. These are also being investigated in individual buildings through engagement with "Green Teams". In the summer of 2018, a site for secure bicycle parking was identified in the Biosciences carpark and work has begun to make this operational as soon as possible.

The provision of a reliable infrastructure for charging of electric vehicles is currently being assessed by the University with a view to continuing to follow national and international best practice in this regard.

Strategic Aims

- To minimise the local, regional and global environmental impacts of our educational, research, and ancillary operations, and infrastructural development in relation to transport
- To promote and encourage the use of sustainable modes of transport for staff and student commuting, and minimise associated impacts of commuting on University neighbours and the wider city community, and the climate.



Table 9. Progress update against "Commuting and Business Travel" targets and indicators.

Indicator	Target	Status
Proportion of staff/students choosing sustainable travel modes	85%/50%	●
Proportion of staff/students cycling to college	15%/10%	●
Number of bicycle racks	1000	●
Number of park and ride patrons	Assess need for further routes	●
Number of Electric Vehicles chargers installed	In line with national best practice	●
Accessibility of, and linkages between other campus areas and main campus	Extend Sli na Slainte walkway to western Campus	●
Number and effectiveness of awareness campaigns on sustainable transport options and impacts	2/year	●

Commuting and Business Travel Highlights



297 staff members signed up to campus bikes



Updated **Commuter Plan** in preparation



86% students chose "sustainable" modes of transport.



200 car journeys saved everyday thanks to P&R service



770 bike racks across campus

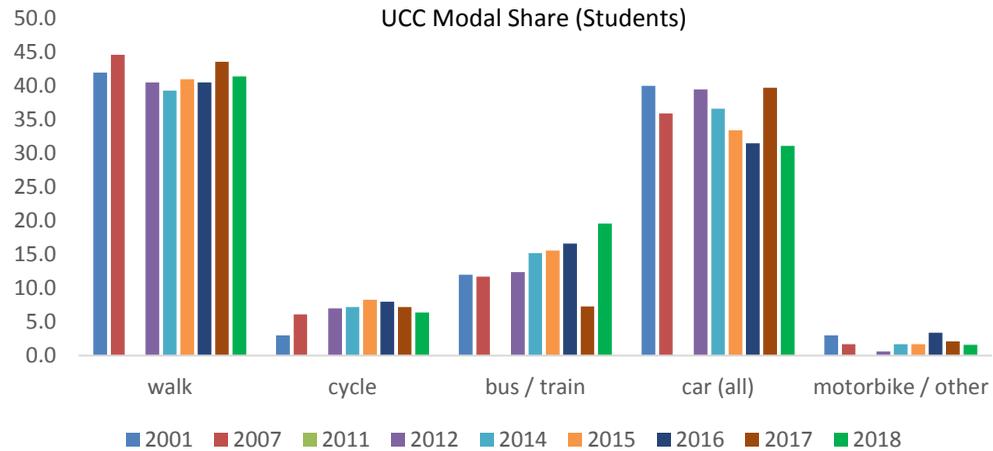
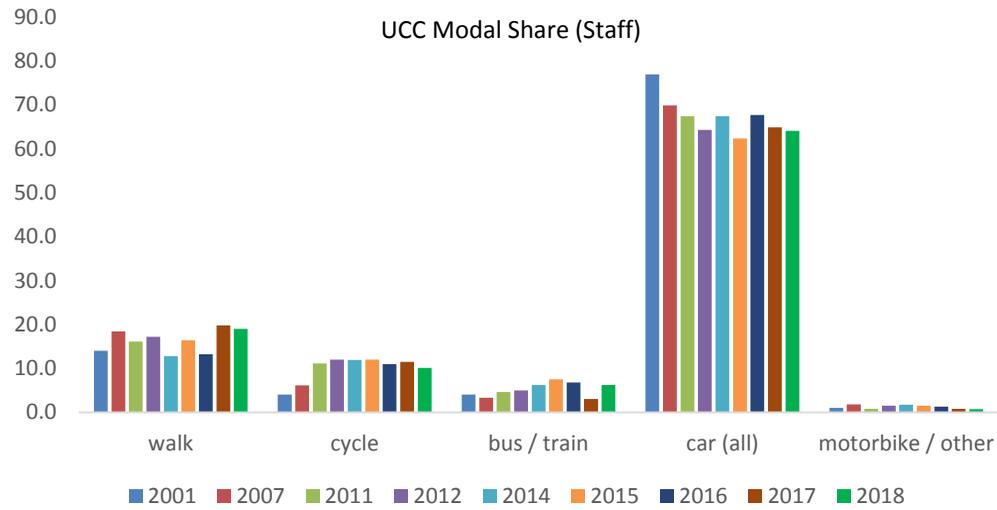


2 Electric "Campus Bikes" installed at Environmental Research Institute

3.9 Commuting and Business Travel

UCC Modal Share

86% of UCC staff and 46 % of students travel to UCC using no- or low- carbon transport.



3.9 Commuting and Business Travel

Engagement with sustainable commuting

“Campus Cycle Week” has now become a regular feature of the UCC calendar. The second event took place from the 25th to the 29th September 2017, with a third happening from the 12th to the 16th March 2018. The latter opened the event up to UCC, CIT, CUH, Saint John’s Central College, Cork College of Commerce, Coláiste Stiofáin Naofa. The focal point of the week was be a screening of the Dutch film “Why We Cycle”.

Campus Cycle Week is organised by a group of enthusiastic cyclists from the participating institution, looking to engage more staff and students in cycling and to lobby for better infrastructure on the campuses and their surrounds. The weeks’ events also include a lunchtime cycle, roundtable discussion, bike doctor on campus and bike maintenance workshops. Across UCC, banners are placed in strategic positions highlighting some of the students and staff that cycle to campus. The banners point out both the health impacts of cycling to campus, and the fact that very often it is both more affordable and faster. The event complements other activities in the cycling calendar such as Cork Bike Week.



Early morning cyclists meet President Patrick O' Shea

EUROPEAN MOBILITY WEEK **CAMPUS CYCLING WEEK**

I BECAUSE...

“...it saves time and money”

Alan Kelly, BEd (Physical Education)

Cycles from Deerpark (2.5 km)

I have lectures all around campus and cycling is a fast way to get around. It saves a lot of time compared to walking – that means less time in the rain in winter! Cycling is also a great way for keeping healthy and saving money.



“...it's easier, healthier and cheaper”

Mary Horgan, Human Resources

Cycles from Passage West (12 km)

 With the volume of traffic, it would take longer by car & parking is never an issue on the bike. I have always cycled to work and get my bike through the Cycle to Work Scheme. Admittedly, I don't always feel like cycling home at the end of the day, but when I do get home, I'm always glad I did!



UCC Climathon tackles low carbon transport

On the 27th October 2017, UCC’s Environmental Research Institute hosted Cork’s “Climathon”, a global hackathon event coordinated by Climate-KIC to address climate challenges through innovation. The Climathon took place simultaneously across 247 cities that same day. **UCC Green Campus** joined forces with the **ERI** and **Blackstone LaunchPad** at UCC to run an event focussed on sustainable mobility solutions for UCC and the wider Cork City area.

The 22 participants were presented with an overview of the transport challenges facing our cities by Aoife Long, ERI, and those specific to an urban campus like UCC by Stephan Koch, UCC Commuter Manager. Páidi O’Reilly (CUBS) gave an overview of how to ideate, while Jeremy Hayes (CUBS) introduced the concept of a business model canvas to help the participants to critically appraise their ideas. The six teams spent the day developing their ideas, before pitching to a jury comprised of Professor John O’Halloran (Chair of Green Forum), Stephan Koch and Dr Damien Organ (CUBS). Ideas ranged from a low carbon commuter bus service to a water taxi for Cork Harbour. The winning team of UCC students Colin Maher, Hannah Bredin and

Fionn Roche pitched their idea of a Transport Infrastructure Development Executive (or TIDE), which includes a catch-all transport app, membership cards and a bike sharing initiative resulting in a streamlining of the current transport model. There was a generous prize fund of €2,000 for the top three teams, sponsored by Climate-KIC, Blackstone LaunchPad at UCC and Energy Cork. The winners are also eligible to participate in the Sustainable Nation Cleantech entrepreneurship programme ClimateLaunchpad, and Blackstone LaunchPad’s Entrepreneurship programme in Montana.



TIDE team receive award from organisers and judges

A podcast from the event is available at the following link: <http://clearlysustainable.com/climathon-event-cork-ireland/>



4. Awards and Recognition

Irish Education Awards: Winner (Green Library Team)

Cork Environmental Awards: Winner (Best Public Sector)

UCC Works Employability Star Award: Susan Butler GCC Intern

EAUC Leadership Award: Finalist (Professor John O'Halloran)

Repak Awards: Finalist (Green Library Campaign)



Best Library Team



CEF Awards



UCC Works Awards



UCC becomes first university outside the US to win top Green award

Wednesday, September 26, 2018 - 01:54 PM

University College Cork has become the first third-level institution outside the US to get a major Sustainability accolade.

The gold star rating from the Association for the Advancement of Sustainability in Higher Education (AASHE) means UCC now joins Princeton, Cornell and UC Berkeley in getting the Gold 'Sustainability Tracking Assessment and Rating System' (STARS) for excellence in sustainability.

It comes after UCC the Foundation of



The university has single-use dispos

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4,500 reusable cups to be issued to UCC freshers

Tuesday, August 21, 2018 - 03:43 AM

By Eoin English Irish Examiner Reporter

Hundreds of University College Cork students pledge to reduce waste

April 23rd, 2018

Institutions urged to follow UCC in investment plan

Thursday, July 19, 2018 - 06:30 AM

By Pádraig Hoare

University College Cork has become the first Irish university to sign up to a United Nations-backed programme aimed at encouraging environmental, social, and good governance for investing funds.



INDEPENDENT.IE NEWS OPINION BUSINESS SPORT LIFE STYLE ENTERTAINMENT
Health & Wellbeing Home & Garden Family Food & Drink Mooring
Wednesday 21 November 2018 Life Food & Drink

Ireland's first plastic free café opens today



4,500 reusable cups to be issued to UCC freshers

Tuesday, August 21, 2018 - 03:43 AM

By Eoin English Irish Examiner Reporter



Thousands of reusable travel cups will be distributed to freshers starting college in Ireland's 'greenest' university later this month.

Participants of the Glucksman People and the Planet project in University College Cork lower grounds.



Child artwork gets a Glucksman exhibition

A LARGE scale exhibition of artwork by more than 350 children opens at the Glucksman in University College Cork on Wednesday.

People and the Planet is an exhibition of creative installations by together to explore biodiversity and sustainability.



6. Key Actions for AY 18/19

Key Area	Action
Sustainability Citizenship	<ul style="list-style-type: none"> • Renew Green Flag following full reassessment in March. • Deliver UI Green Metric International Workshop in April 2019. • Review UCC Volunteering Report outcome and undertake further focus groups.
Learning and Teaching	<ul style="list-style-type: none"> • Work with Registrar's Office to operationalise Academic Strategy.
Research	<ul style="list-style-type: none"> • Develop "Seed Fund" for Living Laboratory projects.
Food, Health and Wellbeing	<ul style="list-style-type: none"> • Highlight green areas on campus and opportunities for greater interaction. • Increase Provision of water fountains. • Formalise regular Farmer's Market.
Recycling and Waste Management	<ul style="list-style-type: none"> • Work with UCC Student's Union to develop Plastic Free plan for UCC.
Landscape, Heritage and Natural Resources	<ul style="list-style-type: none"> • Deliver on Phase 1 of Biodiversity Action Plan.
Energy, Water and Climate Change	<ul style="list-style-type: none"> • Develop Carbon Management Plan, including provision for carbon mitigation and onsite renewable technologies.
Procurement and Contracts	<ul style="list-style-type: none"> • Align printing contract with GPP criteria. • Develop guidance for contractors and service providers.
Commuting and Business Travel	<ul style="list-style-type: none"> • Open new secure bike parking at Biosciences • Finalise Commuter Plan update



Any queries concerning the content of this report can be directed to Dr Maria Kirrane, Sustainability Officer m.kirrane@ucc.ie

The report was prepared on behalf of the UCC Green Forum, chaired by Professor John O'Halloran (Deputy President and Registrar) and Mark Poland (Director of Buildings and Estates).

Further information can be found at the UCC Green Campus website <http://greencampus.ucc.ie/> and the UCC [STARS](#) report.

Visitors to UCC campus are invited to download the UCC Green Tours App, available on the Android and Apple stores.

