Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

http://www.tcd.ie/provost/sustainability/

Energy

Waste

Water

Transport

Resources

Biodiversity

Procurement

Education

Communication
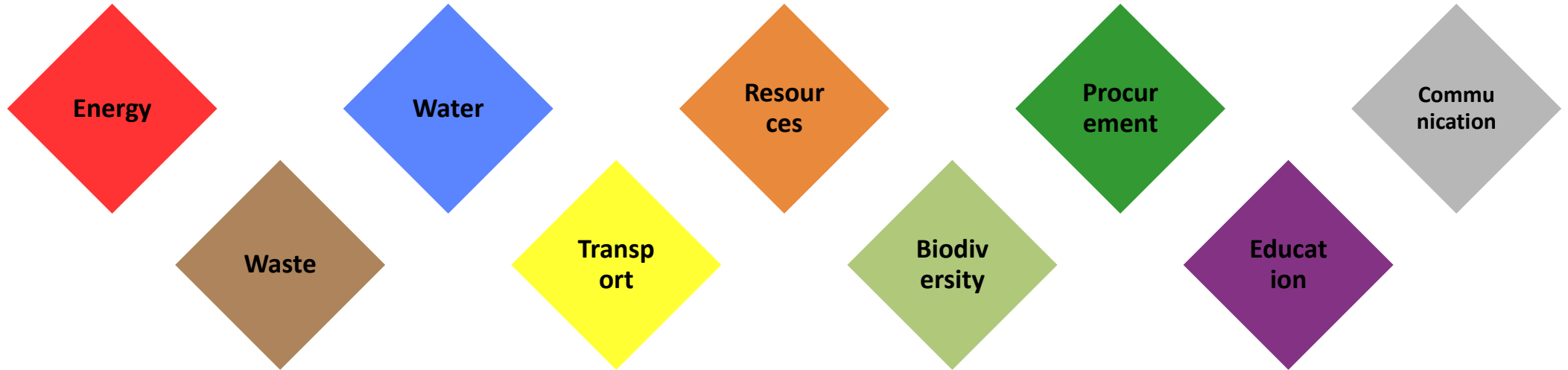
Destiny is a Matter of Choices

Trinity College Dublin – The University of Dublin

Sustainability Report 2018

Contents

This report covers the 2018 calendar (or in some cases academic year, Sep. 2017 – Aug. 2018) unless otherwise stated. It is based on the most accurate and applicable data available at the time of writing. All feedback is welcome and actively encouraged by contacting us on sustainability@tcd.ie

"Nobody ever made a greater mistake than he who did nothing because he could only do a little."

Edmund Burke, statesman and philosopher (1729-1797)

Founder of a debating society which later became the TCD's Historical Society

Destiny is a Matter of Choices: 2018 HIGHLIGHTS

ENERGY & CLIMATE

Versus 2006-08 baseline: **27.7%** Improvement in Energy Efficiency, **8.6%** Decrease in energy related emissions, **15.1%** Renewable Energy (mainly grid electricity)

Versus 2016/17: **2.0%** Improvement in Energy Efficiency, **1.7%** Decrease in greenhouse gas emissions, **3.0%** Increase in Renewable Energy

WASTE & RECYCLING

51.5% Recycling rate   **24%** increase in total waste generated vs 2012

9% increase in waste/person   **5%** increase in hazardous waste vs 2012

WATER & WASTEWATER

38.8% Reduction in Water Use Versus Baseline (3% increase vs 2016/17)

47.6% Reduction in Water Use Per Student Versus Baseline

SUSTAINABLE TRANSPORT

97% of Staff and Students Use Sustainable Transport for Commuting   **14%** Staff and Students Commute by Bicycle (35% reduction versus baseline)

RESOURCE USE & FOOD

52% Reduction in Paper Use vs 2011 (1.6% decrease on previous year)

24% Increase in Bottled Water Cooler Use vs 2011 (3% increase on previous yr)

TREES & BIODIVERSITY

1,900+ Total Trees Across University Grounds & New Grounds Added

Campus Pollinator Plan supported

GREEN PROCUREMENT

69% of key tenders issued reference environmental standards   32 out of 93 of tenders referenced green criteria, 2 of which had green award criteria

EDUCATION & RESEARCH

All new staff and 80% freshers inducted on sustainability

Improving the campus as a smart living lab via links with Dublin City

New green pages highlight sustainability courses on offer

COMMUNICATION & STUDENT INVOLVEMENT

16th Annual Green Week.

University's GreenPages website updated with record number of visitors

Provost's Advisory Committee on Sustainability & Low Carbon Living

Sustainability Fund established

For Further Details Please Visit the Trinity Sustainability Webpages (https://www.tcd.ie/provost/sustainability/).

Introduction

Trinity College Dublin, the University of Dublin, is Ireland's highest ranked university with an international reputation for research and scholarship, and for the success of its graduates in many fields. Trinity's major activities are carried out on a beautiful historic campus located in the heart of Dublin, with health sciences also located at St James's Hospital and Tallaght Hospital. The university has 16 locations including a 5 acre technology campus located at Grand Canal Dock, student residences at Darty, a 33 acre sports facility at Santry and the Iveagh Sports Grounds, a 16.5 acre site acquired in 2017. Trinity has a community of 18,000 students, approximately 3,400 staff and over 100,000 alumni. With a tradition of scholarship spanning more than four centuries, Trinity is home to talented and inquiring minds, a liberal education, and research conducted at the frontiers of disciplines.

Sustainability has been at the heart of Trinity for a very long time. The late Professor Simon Perry originally founded the University's green campus committee in 1993 as a means for staff and students to raise campus environmental issues and to propose innovative solutions. Building on this initiative the University published its first Sustainable Development policy in 2008 and in 2013 Trinity was awarded its first Green Flag award for campus sustainability. Trinity's five-year strategic plan (2014 -2019) further committed the University to becoming an institutional leader in sustainability, and the next strategic plan (2020-2024) is near completion. To add a further impetus to sustainability the Provost's Advisory Committee on Sustainability and Low Carbon Living was launched in 2017 whose membership included Student Union and Graduate Student Union representatives, as well as general student activists.

This is our fourth annual Sustainability Report and it is entitled "**DESTINY IS A MATTER OF CHOICES**". While our first reports focused on our continuous journey towards sustainability this report aims to consolidate our sustainability metrics and highlight data gaps more explicitly. Indeed there seems to be 9 targets for which we need to develop a robust tracking system,. One of the key focuses of our sustainability strategy remains to inspire people, in particular our students, to move forward on the path to a more sustainable future. We want to inspire all our Trinity community including our students, staff, alumni, surrounding communities and the over one million visitors we welcome to our campus each year. We also aim to inspire and collaborate with our academic peers, city neighbours and the global academic community to which we belong.

This report covers the nine key sustainability areas we identified as part of our Green Flag campus award in 2013 and reaffirmed as part of the Green Flag renewal in 2016 and again in 2019. These aspects include energy, carbon, waste, water, transport, resource use, green procurement, sustainability education, research, and entrepreneurship, and student /community involvement. Each aspect is further detailed in each section of this report and we hope to prove we are walking the walk and not just talking the talk when it comes to sustainability leadership.

Provost's Welcome Message

This is our fourth annual Trinity College Dublin sustainability report. At Trinity we have created nine sustainability themes, each with its own set of targets against which we track our progress on an annual basis. This report builds on previous ones and helps to highlight the achievements made to date. Much has happened since our previous Sustainability Report:

- In May 2019, Ireland became the second country in the world to declare a Climate and Biodiversity Emergency, and our Government published a Climate Action Plan. The Climate Action Plan will likely mean that Trinity may need to publish more details on its carbon footprint and adopt a Climate Mandate.
- We are also expanding our facilities with two very significant Near Zero Energy Buildings (NZEB) to our campus, both fronting Pearse Street - the new Trinity Business School (BER - A2; opened May'19) and Printing House Square (scheduled for completion Q4, 2019). The Martin Naughton E3 Learning Foundry is also at design stage.
- Of course, education and research is at the heart of what we do, and we hope you will explore the growing number of courses with sustainability and environmental themes (https://www.tcd.ie/provost/sustainability/researcheducation/)

While we have made strides in some areas of sustainability, challenges still remain. We must redouble our efforts both on the small and the significant choices. This is why we have taken from a quotation by William Jennings Bryan, ex Former US Secretary of State (1860-1925) "Destiny is not a matter of chance, it's a matter of choices". By providing our students and staff with a Living Laboratory and choices, we will contribute to the momentum needed to move humanity to where it needs to go: a future of possibilities with a safe and wonderful environment for all to enjoy.

Patrick Prendergast, Provost

Policy, Strategy & Progress

Our key sustainability drivers are the University's Sustainability Policy (https://www.tcd.ie/about/policies/assets/pdf/sustainability-policy-15112017.pdf last updated in 2017) and the University's 5 year strategic plan (2014 -2019: https://www.tcd.ie/strategy/strategic-plan-201419.pdf, particularly section C8.1 on Sustainable Campus). The following are the key sustainability extracts from the strategic plan, which follow the definition of Sustainable Development established by the UN Brundtland Commission, which states "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Our baselines and targets are based on our maintenance of Green Flag status. Baseline years vary based on available data and national targets, and we will envisage future targets to be adjusted to coincide with the University's 5 year strategic plan.

MISSION C: FEARLESSLY ENGAGE IN ACTIONS THAT ADVANCE THE CAUSE OF A PLURALISTIC, JUST, AND SUSTAINABLE SOCIETY.

Goal: C8.1 Sustainable Campus

Trinity aspires to be a global leader in university sustainability. The college's properties comprise a significant and integral part of the Dublin conurbation. Trinity has a responsibility to conduct its activities in a manner that protects and enhances the environment, conserves natural resources, reduces greenhouse gas emissions, and supports society as a whole. Much progress has been made in these areas since 2008, marked by the award of the Green Flag campus status in 2013 for which Trinity committed to a series of objectives for energy and carbon emissions, waste management/litter reduction, water and waste-water management, sustainable transport, resource use, biodiversity, green procurement, education and research, communication and student involvement. Our objective is to move further towards becoming a sustainable campus, a key measure of which will be to become the first university in Ireland to join the eminent group of visionary universities constituting the International Sustainable Campus Network (ISCN). We will achieve this objective by:

— publishing an Annual Sustainability Report, including carbon, energy, waste, transport and water consumption data
— ensuring, through the Estates and Infrastructure Development Plan, that all new buildings (in particular our E3 development), refurbishments, and purchases comply with and, where possible, exceed, energy-efficiency standards
— promoting research into, and teaching on, sustainability issues as well as promoting the campus as a living laboratory
— setting up a Sustainable Campus Advisory Group and appointing a sustainability champion
— undertaking sustainability audits and engaging campus users in sustainability targets
— working towards developing an environmental management system and an energy management system
— publishing a carbon footprint and action plan for reducing carbon emissions
— fostering links with Dublin City Council's 'Greening the City' and with national and EU smart city and other relevant initiatives.

Goal: C7.3 Relationship with the City

- promoting environmental sustainability, in partnership with Dublin City Council's 'Greening the City' initiative and developing, via the Estates and Infrastructure Development Plan, a campus infrastructure in line with this objective.

1. Energy, Climate Change & Greenhouse Gas Emissions (GHG)

Objectives	Targets	Status	
1.1 Use Energy Efficiently	1.1. 33% Increase in Energy Efficiency by 2020 vs 2006-2008	⬆	On Track
1.2. Increase Renewable Energy Use (Onsite & Offsite)	1.2. 14% Increase in Renewable Energy Use Until 2020 vs 2006-2008	☺	Achieved
1.3. Reduce GHG Emissions (Direct, Indirect & Embodied)	1.3. 2% Year-on-Year Decrease in Greenhouse Gas Emissions Until 2020	⬇	Off Track
	1.4. 80% Reduction in Greenhouse Gas Emissions by 2050	➔	Close to Track
1.4. Prepare for Climate Change (Mitigation & Adaptation)	1.5. To Create a Climate Change Action Plan		

Our Progress:

- ✓ 27.7% improvement in energy performance measured in kWh/Research Equivalent Floor Area. Published on [SEAI's Monitoring & Reporting](#) platform annually, despite an increase in built area of almost 19% since our baseline.
- ✓ 15.1% renewables used by Trinity. 99.5% of this is from increased renewables penetration on the grid, with 0.5% generated by on-site solar thermal panels to provide hot water at 4 locations (Pavillion, Lír Centre, New Square houses 33 and 28), and 0.03% from transport biofuels (excluding weightings)
- ✓ 8.6% reduction in energy-related carbon emissions as reported through SEAI's Monitoring & Reporting. This decrease is against an increase in built area of almost 19% since the baseline period. The carbon intensity of these emission per staff and student has reduced by 29.9%.

Challenges:

- △ We will need to increase our efforts in tackling greenhouse gas emissions by further improving energy efficiency, undertaking larger energy retrofits of existing buildings, engaging campus users, using energy storage and increasing onsite renewables in order to meet our interim goal of a 2% annual reduction to 2020 and to stay on track towards our long term 2050 target
- △ Trinity will be required to report emissions against a public sector target in SEAI's Monitoring & Reporting platform which will likely require additional data collation
- △ Climate Change Action Plan to be drafted. For information about Trinity's energy progress, visit the [Sustainability GreenPages website](#).

Annual Highlights:

- ✓ Replacement of all remaining oil-fired boilers with gas-fired boilers on campus
- ✓ Installation of high efficiency LED lighting in some areas of the Science Gallery, Buttery, Ussher Library, South Leinster St and the external lighting on the main campus

- ✓ Near completion of the new Trinity Business School (TBS) and Printing House Square residence which include low energy lighting, rainwater harvesting, part green roof (TBS project), on site renewable Photo Voltaic panels, Combined Heat and Power (CHP) unit and improved bike parking
- ✓ Energy reduction campaigns in Goldsmith Hall student residences and Trinity Translational Medicine Institute (TTMI) in St James hospital are active to reduce wasted energy and greenhouse gas emissions from campus. This is operated in conjunction with the Office of Public Works (OPW) targeting students and academic/research groups. A Student Project Coordinator is appointed to liaise with student residents.
- ✓ We also completed energy retrofit work at Trinity Hall and replaced the last oil burning boiler on campus at 190 Pearse Street with a high efficiency condensing natural gas boiler.
- ✓ The sustainability committee continue to work hard on promoting energy awareness amongst staff and students.
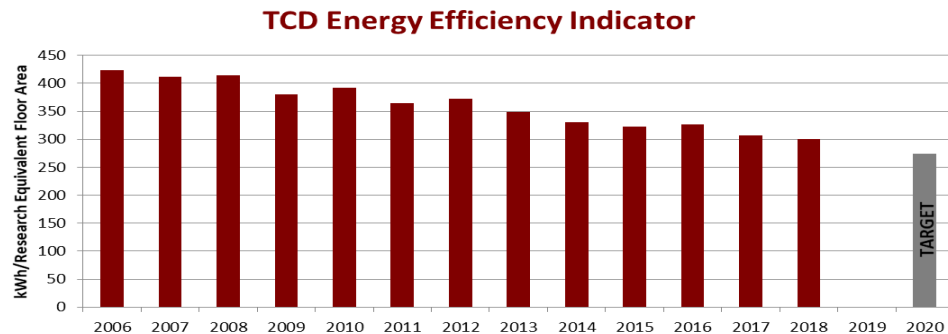
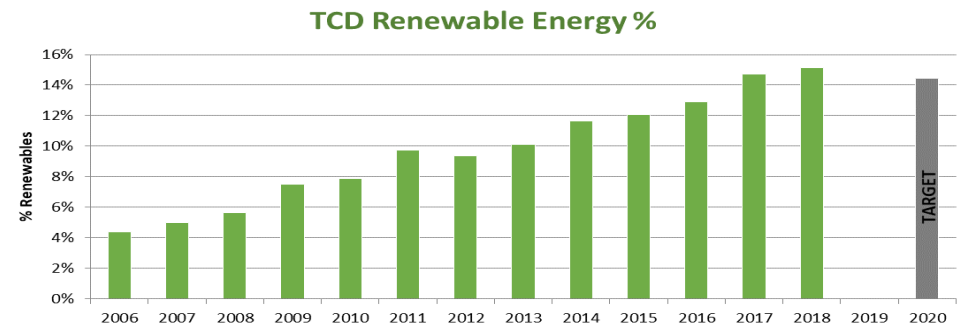# Energy & GHG Statistics (by calendar year)

TCD Energy Efficiency Indicator

Figure 1: Energy Efficiency Indicator
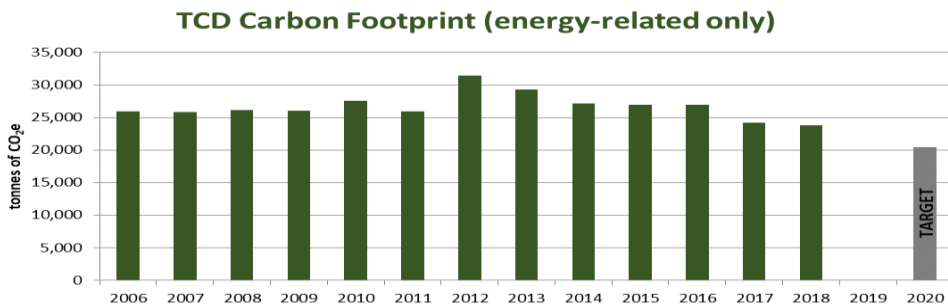
TCD Renewable Energy %

Figure 2: % Energy from Renewables

TCD Carbon Footprint (energy-related only)
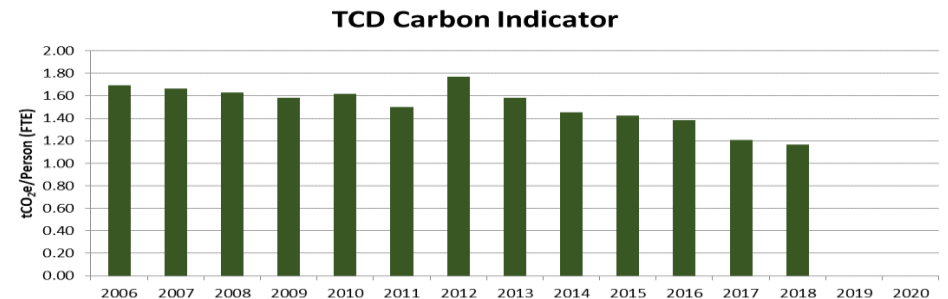
Figure 3: Carbon Footprint (Absolute)

TCD Carbon Indicator

Figure 4: Carbon Indicator (Per Person Equivalent)

2. Waste, Recycling & Litter Reduction

Objectives	Targets	Status	
2.1. Reduce Waste Generation / Prevent Waste	2.1. 10% Decrease in Total Waste Generated by 2020	⬇	Off Track
2.2. Increase Recycling & Reuse	2.2. 50% Recycle for Municipal Solid Waste by 2020	☺	Achieved 2018
2.3. Reduce Waste to Final Disposal	2.3. ZERO Waste direct to Landfill by 2015	☺	Achieved 2012
2.4. Zero Litter on Grounds	2.4. 100% of University Users to be Within 100m of a Litter Bin by 2012	☺	Achieved 2012
2.5. Minimize Hazardous Waste	2.5. 10% Reduction in Hazardous Waste by 2020	➔	Close to Track

Our Progress:

- ✓ 51.5% recycling rate achieved in 2018
- ✓ Zero municipal waste to landfill since 2012. This waste stream is now recovered as to waste-to-energy and is down 3% versus our 2012 baseline or down 15% on a per capita basis.
- ✓ TCD awarded litter free status 2012
- ✓ Tracking additional waste streams under construction projects, maintenance and summer concerts from 2018. We hope to report on this in our 2018/19 report
- ✓ Significant progress on eliminating litter and disposable single-use plastics towards the latter half of 2018

Challenges:

- △ Overall waste is up 24% versus our 2012 baseline and up 9% on a waste per capita basis
- △ Hazardous biological and chemical waste has come down from a peak in 2016 over the past two years but is still 5% higher than our 2012 baseline
- △ WEEE (waste electrical and electronic equipment) continues to be challenging and we aim to apply a materials management approach to our procurement and waste management systems, as they have a direct influence on each other.

Annual Highlights:

- ✓ Work has commenced on a master Waste Management Plan
- ✓ Trial of an online chemical management system, developed by Trinity alumni, called 'Labcup' to reduce hazardous waste. Hazardous waste levels have dropped for the first time since reporting began which is a great improvement.
- ✓ Trinity is continuing to expand its bin-less office system across the campus. This places responsibility with the office user to segregate their waste and bring it to the recycling bins near their office.

Get Involved & Learn More:

- Did you know most waste can now be recycled once it is contamination free? Visit the [Trinity recycling page](#) or map for what can be recycled and where.
- If it's not broke, don't fix or replace it. Most items that do break can usually be fixed/repaired saving time, money and resources.
- Think contamination. Just one coffee cup emptied into a recycling bin can mean none of the waste in the bin is fit for recycling.
- One man's trash is another man's treasure. Getting rid of old items such as clothes, computers or furniture? Try giving them to a charity shop such as St. Vincent DePaul (SVP) or try trading them online. End of year clear-outs can be passed onto next year's students. Remember, it all helps.
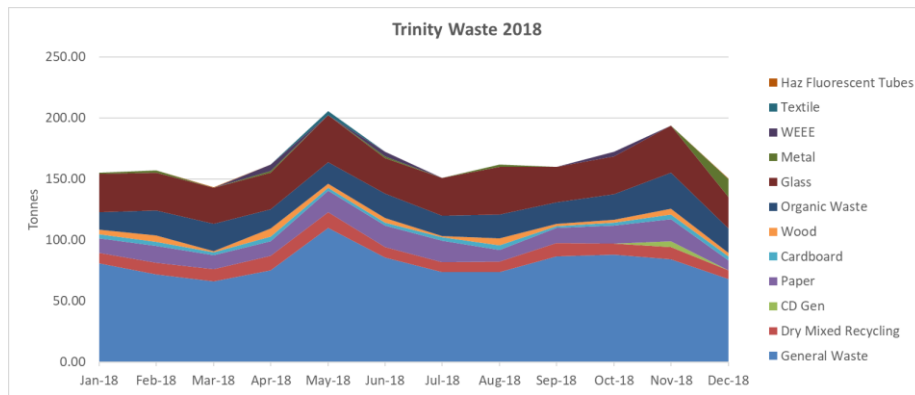
Waste Statistics (by calendar year)

Figure 5: Trinity 2018 Waste Streams
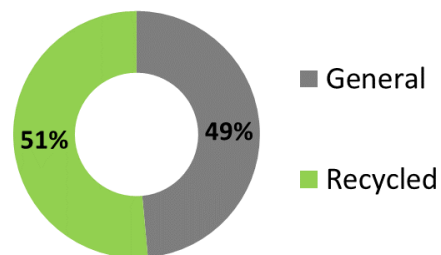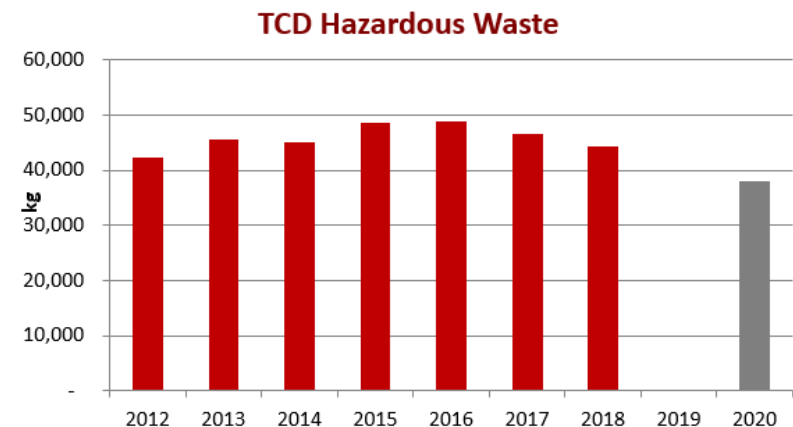

Figure 6: Trinity Annual Waste Totals

Figure 7 (left): Recycling Rate

Figure 8: Hazardous Waste

3. Water & Wastewater

Objectives	Targets	Status
3.1. Reduce Water Use	3.1. 45% Decrease in Water Consumption per Student by 2020/21 vs 2009/10	☺ Achieved 2015/16
3.2. Increase Sustainable Onsite Water Use	3.2. 5% Increase in Onsite Water (groundwater and rainwater) Use by 2020 vs 2009	Rainwater harvesting in 2 buildings and planned for 4 more
3.3. Increase Water Reuse & Recycling	3.3. 10% Increase in Water Reuse by 2020 vs 2009	Closed loop water coolers in use in some labs
3.4. Decrease Wastewater Generation	3.4. 10% Reduction & Quality Improvement in Wastewater Released by 2020 vs 2009	SUDs implemented in a number of buildings in the East End.
3.5. Improve Wastewater Quality	No target set	Hazmat program to recover & re use chemical waste in place

Our Progress:

- ✓ 38.8% reduction in total water use or 47.6% improvement in water use per student since 2009/10 baseline, equating to 43.5 litres/day/student
- ✓ 10% target reduction in water use per student achieved 2012/13, and subsequent 45% target achieved and maintained since 2015/16

Challenges:

- △ No means of measuring groundwater, rainwater harvesting, grey water recycling or wastewater quality leaving Trinity sites
- △ Trinity used just over 270 million litres of mains water in 2017/18, a 3% increase on the previous year

Annual Highlights:

- ✓ The University has a continuous leak detection programme to identify and repair major leaks in the campus' piping network.
- ✓ Closed loop water cooling is installed in CRANN one of the larger science buildings. There is also a new planned project for which funding is identified in the Chemistry undergraduate labs. These systems reuse water rather than discharging to sewer
- ✓ All new buildings/major renovations include water efficient fixtures and fittings such as dual flush toilets, low flow showerheads and auto-stop taps.
- ✓ Rainwater harvesting systems are in the Trinity Biomedical Sciences Institute and the refurbished residences in House 38 and 40 as well as all new buildings in construction, i.e. Printing House Square (student accommodation on Pearse Street) and in the Trinity Business School
- ✓ Ground water was used for much of the irrigation of the rugby pitch during the particularly dry summer of 2018, reducing the amount of potable water required for irrigation.

Get Involved & Learn More:

- Be more water efficient by carrying a water bottle with you and refilling it at water fountains rather than buying bottled water. One litre of bottled water consumes between 1.4 – 3.7 litres during manufacturing (visit Trinity's water efficiency page for more ideas).
- Only use dishwashers, washing machines and other water consuming devices when they are full.
- Turn off taps in labs and at home when not actively in use and save up to 41 litres of water per minute.
- Never flush chemicals, oils or hazardous substances down the drain. They could block pipes, cause leaks or damage wildlife and the environment.
- If you find a leaking tap or tap with too high a flow rate, don't ignore it. Report it to **sustainability@tcd.ie.**

Water Statistics (by financial year)

Figure 9: Trinity Water Use Per Student
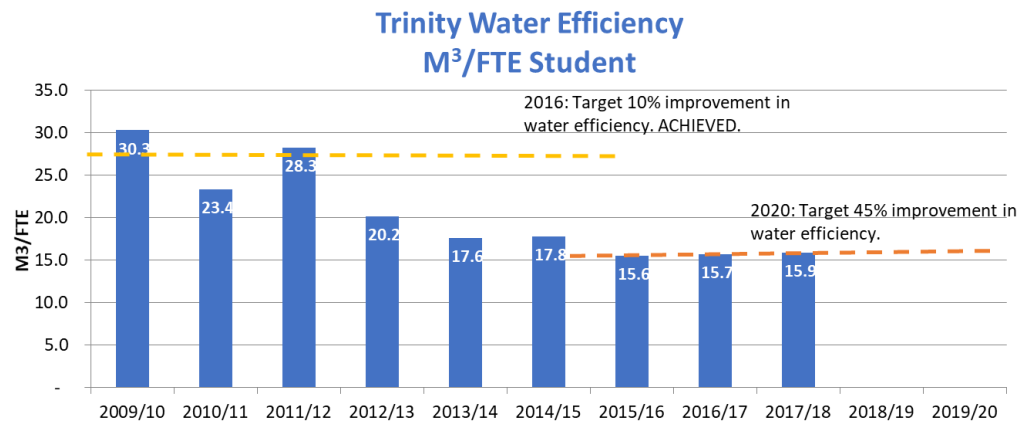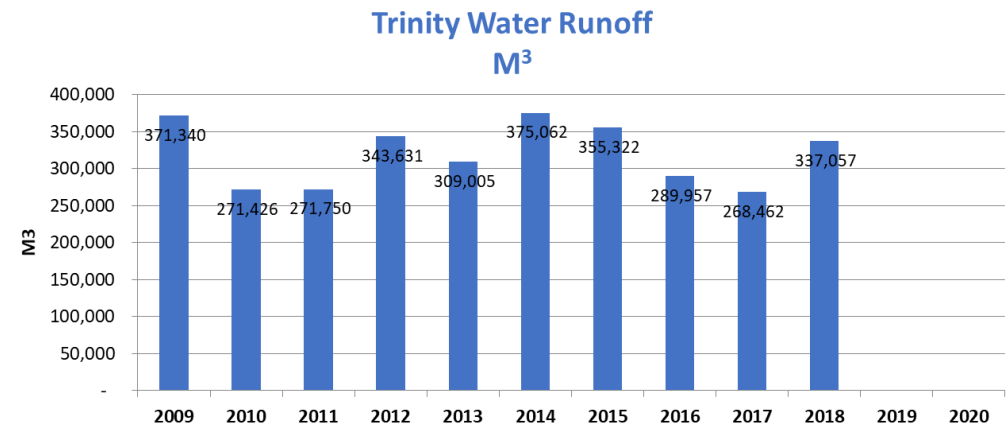
Figure 10: Total Rainwater Received

Trinity Water Efficiency M³/FTE Student

2016: Target 10% improvement in water efficiency. ACHIEVED.

2020: Target 45% improvement in water efficiency.

Trinity Water Runoff M³

4. Sustainable Transport

Objectives	Targets	Status	
4.1. Maintain Use of Sustainable Transport	4.1. Maintain Over 90% Use of Sustainable Transport to 2020	☺	Achieved
4.2. Increase Renewable Energy Use in University Transport	4.2. 10% Increase in Renewable Energy in Transport by 2020;	☺	Achieved
4.3. Reduce Car Use	4.3. 5% Reduction in Single Occupancy Car Trips by 2020	☺	Achieved
4.4. Promote Cycling & Active Travel	4.4. 10% Increase in Bicycle Use by 2020	↓	Off Track

Our Progress:
- ✓ 97% of participants in the 2018 travel survey use sustainable modes of transport (sample size, n = 3,912). This compares with the 2011 survey where only 93.9% of participants used the more sustainable transport modes
- ✓ Currently 28% of staff and students walk, 14% cycle, 27% take the bus, 17% the train or DART and 11% the LUAS.
- ✓ Single car occupancy is down from 4.2% in 2011 to 2% in the 2018 survey
- ✓ The smarter travel survey is carried out every 2-3 years among staff and students (national smarter travel programme). The University campus has access to some of the best public transport in Ireland and has a very limited amount of car parking. Due to this, Trinity has one of the best sustainable transport rates for a university in the world.

Challenges:
- △ Cycling is down from a high of 21.6% in 2011 to only 14%. Target 4.4 may not be achievable due to cycling infrastructure being so poor. Safe segregated cycling is required in Co.Dublin
- △ The impacts of international travel, i.e. flights, on the University's carbon footprint is not being assessed. Other universities are reporting on flights, taking action to minimise the flight footprint and some are purchasing offsets where flight avoidance proves difficult.

Annual Highlights:
- ✓ Continued promotion of sustainable transport and increasing bicycle parking facilities on campus by 300 spaces;
- ✓ "Trinity Loves Cycling" initiative in Green Week February 2018
- ✓ Two zero emission electric vehicles were purchased as part of the Facilities & Estates fleet + battery-powered 1 x grounds buggy , 1 x path sweeper , various mowers, blowers , hedge trimmers etc; for University owned combustion engine vehicles approximately 3% of fuel (energy content) consumed was from renewables (biofuels) as per the national biofuel targets.
- ✓ Trinity continues to support electric vehicle users with the provision of 2 EV charging points
- ✓ Trinity has met with Dublin City Council on a bi-annual basis since 2017 to investigate and promote collaboration opportunities on sustainable city initiatives.

Get Involved & Learn More:
- ▪ Why not try cycling/walking to college once or twice a week. It's a great way to keep fit and there are plenty of cycle friendly facilities available.

- Instead of driving or flying to meetings/events, see if you can telecommute using videoconferencing such as Skype, Google Hangouts, FaceTime, GoToMeetings, Zoom etc.
- There is a range of financial incentives for sustainable travel such as bike-to-work tax breaks, tax incentive travel cards and grants for Electric Vehicles (EVs).
- Please visit https://www.tcd.ie/collegehealth/promotion/travel/ for more on sustainable transport for the campus.
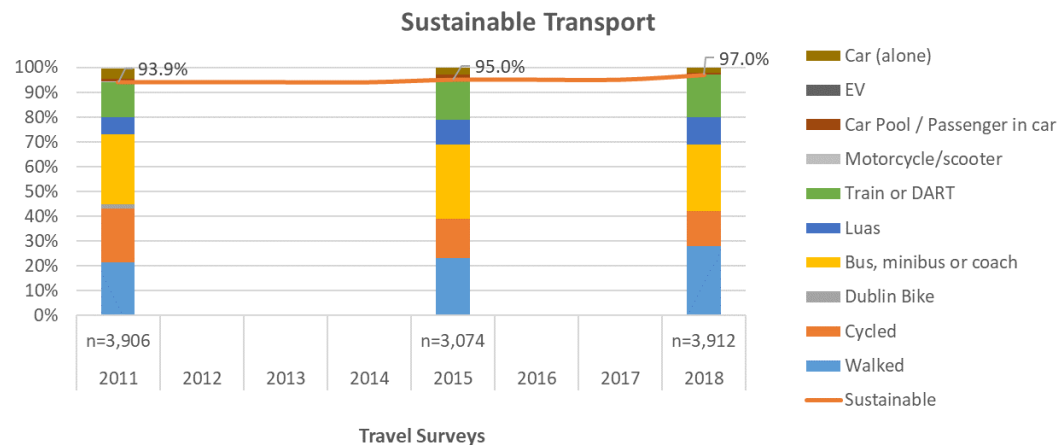
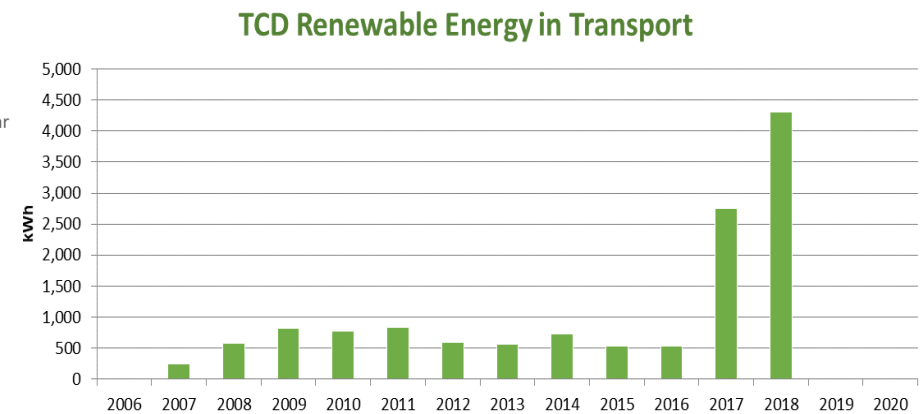# Transport Statistics

Figure 11: Commuting Travel Surveys

Figure 12: Renewable Energy in Transport (biofuel blended)

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5. Resource Use & Sustainable Food

Objectives	Targets	Status
5.1. Reduce Paper Use	5.1. 20% Decrease in Paper Use by 2020 vs 2012	☺ Achieved
5.2. Increase Sustainable Food Use	5.2. 50% Food to Meet 1 of 4 Sustainability Criteria (outlined on GreenPages) by 2020	? No data
5.3. Reduce Bottled Office Water Use	5.3. 50% Reduction in Bottled Water Use by 2020 vs 2011	Program in place to replace bottled water with filtered mains water fountains
5.4. Reduce Disposable & Single Use Materials	5.4. 50% Reduction in Disposable Materials by 2020	Various schermes in place to reduce single use materials (see highlights below)

Our Progress:

- ✓ 52% reduction in paper use since 2012, although still using 11.3 million pages in 2017/18
- ✓ Replacement of single use disposable plastics with compostable equivalents (straws, containers, cutlery and cups)

Challenges:

- △ Not collating data on sustainable sourcing of food (euro spend) or on disposable materials whether single use plastic or compostable (quantities)
- △ 24% increase in bottled water use on campus since the baseline in 2011 (2% YoY), however further roll out of mains fed water fountains is on-going to help address this increase

Annual Highlights:

- ✓ TCD Plastic Solutions presented the petition of 3,800 signatures to the Provost in Green Week 2018 which caused the creation of the Disposable Plastics Plan which aims to eliminate disposable plastics where possible by 2020 – replaced by disposable compostables (straws, containers, cutlery and cups)
- ✓ Deposit/return scheme on reusable plastic pint glasses in the Pavilion Bar as well as replacement of single use plastics with compostable disposables;
- ✓ Investigation of elimination of single use pint glasses at the Trinity Ball, Europe's largest outdoor ball, by the Students' Union;
- ✓ Establishment of a plastic glove recycling programme in Libraries in 2018 – the first plastic glove recycling scheme in Ireland.
- ✓ In 2017 an online platform was investigated (Warpit) for salvaging and reusing unwanted furniture within the college
- ✓ In October 2018, staff voted (88% of participants) in favour of Trinity choosing post-consumer recycled (PCR) content paper over standard paper from virgin forests
- ✓ A pilot project and concerted effort to encourage offices across campus to replace water dispensers with drinking water filters, (piped directly from the mains) resulted in enthusiastic uptake and the discontinuation of large bottled water in 25 offices.
- ✓ 10% tender marks awarded for sustainability credentials of catering contract

Get Involved & Learn More:

- Use e-documents and don't print unless you really need to. Always print double sided and try reusing old single sided prints for scribble paper.
- Use the water fountains on campus to refill your bottle and bring your own reusable mug for coffee/tea to get a discount for using it.
- Why not give catering suggestions for sustainable food using their feedback forms. You could also try a daily healthy vegetarian specials.
- Avoid using disposable materials such as plastic cups, plates and cutlery from offsite catering and instead keep ceramic cups, mugs, etc. in your work kitchen or carry reusable travel cutlery.
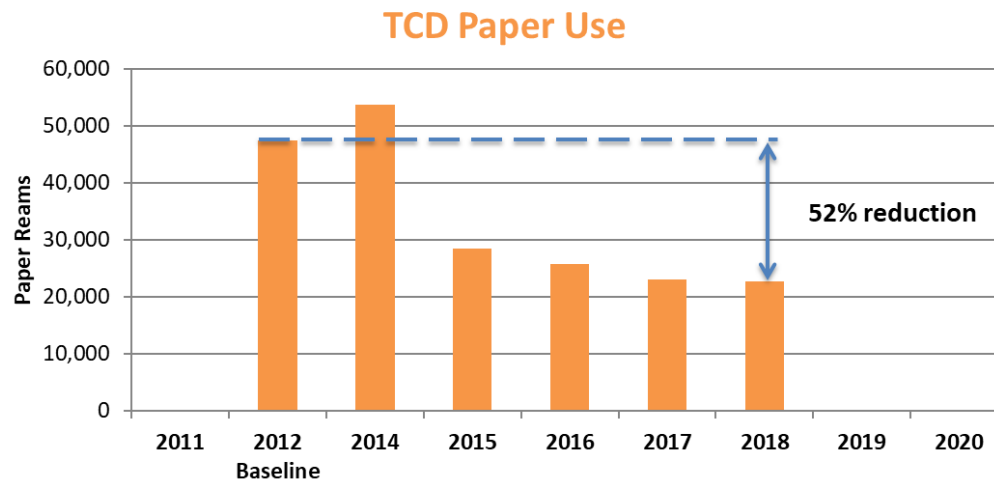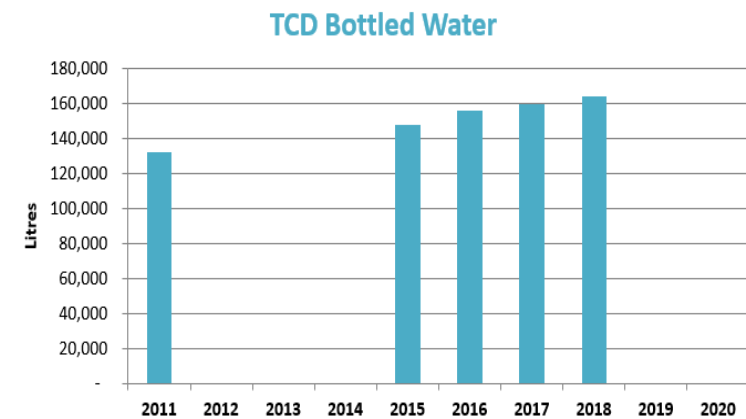
Resource Use Statistics

Figure 13: Trinity Paper Use

Figure 14: Trinity Bottle Water Use (large 19 litre office water drums)

6. Biodiversity & Trees

Objectives	Targets	Status
6.1. Increase Numbers of Trees	6.1. 10% Increase in Number of Trees by 2020;	☺ Achieved
6.2. Increase Green Areas & Green Corridors	6.2. Maintain and Improve Green Areas by 2020	☺ Achieved
6.3. Increase Biodiversity & Protect Soil	6.3. 5% Increase in Biodiversity Rich Areas by 2020	➔ Close to Track

Our Progress:

✓ 58.4.% increase in tree numbers versus our 2011 baseline (10% target exceeded mainly by additional 400 young trees at Santry, 239 at Darty Halls and 80 on the main campus)
✓ 58.7% of space is green (2% target exceeded with the purchase of Iveagh Sports Grounds site in 2017)
✓ 16.9% of space is biodiverse or pollinator friendly (1.5% improvement but not yet on target)

Challenges

△ Trinity lost three of its oldest trees in 2018: the two elderly Oregon Maples (planted in 1827) in Library Square and a large Plane tree at Lincoln Gate.
△ Improving native biodiversity on campus and recording this improvement. For this we need regular surveying/audits of biodiversity, which are time-consuming and require taxonomic expertise and buy-in

Annual Highlights:

✓ Trinity has over 1,900 trees across its estate including a small woodland at its Santry sports grounds. The University campus has some of the most well recognised and historic trees in Ireland. It also has its own botanic gardens in Darty for research purposes. We continue to implement the hundred-year management plan for trees across the University estate.
✓ Our 2017 resurvey showed we continue to increase the number and diversity of trees which provide numerous services including producing oxygen, creating habitats, sequestering CO_2, fixing nitrogen, distilling water, reducing flooding, creating a renewable fuel/material and improving campus aesthetics.
✓ 250 young trees on the Santry site during the 2018/19 academic year [Beech + Oak]
✓ Continue to promote the Campus Pollinator Plan (launched April 2017)
✓ Campus Buzz reflecting the research of Professor Jane Stout's group
✓ The planting in the Chief Stewards Garden is planned for 2019 (circa 800 – 1,000m²) and will be enhanced with a new long pollinator-friendly hedgerow and many new trees, shrubs and herbs.
✓ A large number of areas have also been renovated and replanted both indoors and outdoors. The indoor areas would include the whole of the Hamilton range and the Atrium of the O'Reilly Building.
✓ As part of the development plan for the new business school, a biodiversity rich green wall will be incorporated into the development in 2019.

Get Involved & Learn More:
- Spend time in nature, appreciate nature and everything it does for us, and make space for it, i.e. by leaving wild areas in your garden.
- Plant a tree. As the Chinese proverb says, "the best time to plant a tree was 20 years ago, the second best time is now".
- Support wildlife by avoiding the use of pesticides and chemical fertilizers in gardens and lawns where possible.
- Try to incorporate green roofs and walls into new construction projects or even keep a few office plants if space is limited.
- If you want further information on the trees of Trinity, read the "Trees of Trinity College Dublin" book available in the Library shop.

Target 6.1: Increase # of trees by 10% by 2020 vs 2011
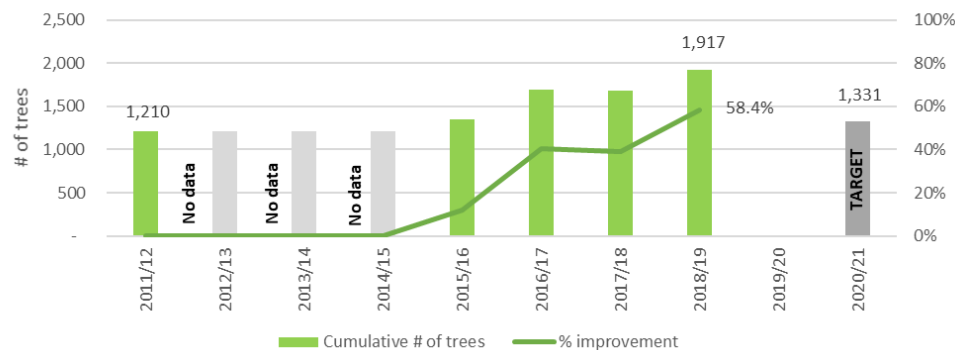
Target 6.2: Increase Campus Green Areas by 2% by 2017 vs 2011
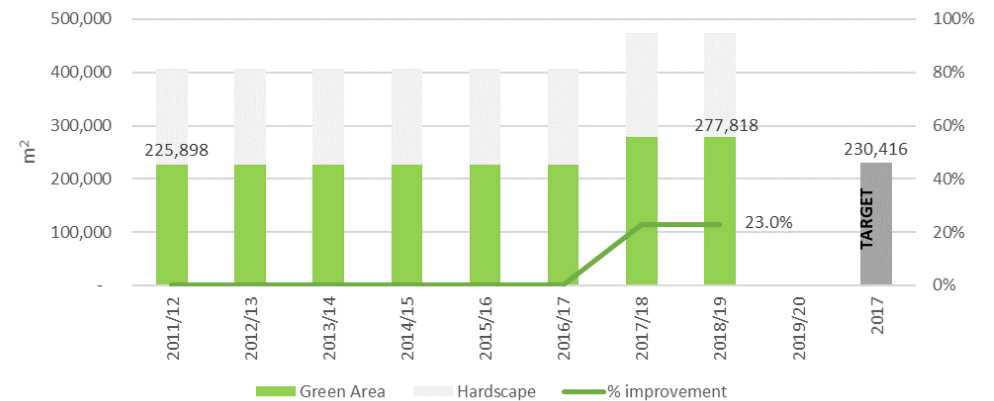
Target 6.3: Increase Biodiversity Rich Areas by 2% by 2015 vs 2011

7. Green Procurement

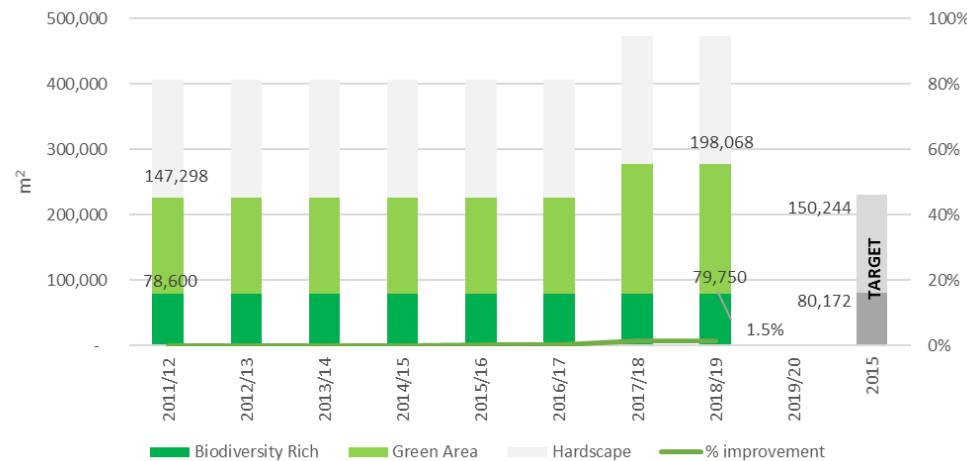| Objectives	Targets	Status
7.1. Increase Environmental Awareness of Suppliers	7.1. 100% Tenders Requested to Submit Environmental Information by 2020	↓ Off Track*
7.2. Increase Green Criteria in Tender Marking	7.2. 10% Increase in the Number of Tenders with Green Award Criteria by 2020	↓ Off Track^
7.3. Improve Use of Whole Life Cycle Costing (WLCC)	7.3. Maintain or improve levels of sustainable criteria used in category management	**Early phase#**

Our Progress:

- ✓ Environmental information requested in 64 out of 93 tenders
- ✓ Marks awarded for green criteria in 32 out of 93 tenders
- ✓ 7.1: * Category management approach to increase awareness. Formal vendor review process has been adopted and applied to Top 20 vendors.
- ✓ 7.2: ^ Office of Government Procurement (OGP) have advised caution regarding Green criteria which must be narrowly defined and based on quantifiable criteria. Therefore, the increase in tenders being placed on our behalf by other agencies such as the OGP, EPS and HEAnet, means that the University must align with the sectoral approach for eligible green award criteria.
- ✓ 7.3: # EU Green Procurement Policy project has acknowledged the need for WLCC training to mitigate legal challenge to tender outcomes
- ✓ https://ec.europa.eu/environment/gpp/toolkit_en.htm

Challenges:

- △ A software based system is required to track sustainable criteria in category management. The University Procurement & Contracts Office has engaged a consultant and has committed to developing a system a system from Q1 2020. 'Go live' date September 2020.

Annual Highlights:

- ✓ Sustainable Procurement Working Group has commenced work on a Green Procurement Policy.
- ✓ The Printing House Square being constructed to and the E3 Learning Foundry at early design stage are to BREEAM Excellent standard
- ✓ Trinity continues to promote sustainability throughout its supply chain. This includes day-to-day purchases, teaching/research equipment and capital projects. The University's strategic plan via the Estates and Infrastructure Development Plan commits all new buildings, refurbishments and purchases to comply with and, where possible, exceed, energy-efficiency standards. We also strive to incorporate further sustainability into building design. In the technical specifications of each individual item of equipment, we often detailed particular "green" requirements, such as:
    - o Biannual supplier maintenance and management;
    - o Sustainability criteria in food/drinks catering tenders;
    - o Light bulb LED purchasing;
    - o Hazardous waste procurement management.

- ✓ WARPit (a Waste Action Reuse Portal), an IT system for reusing unwanted furniture on the campus is still under consideration subject to funding approval.
- ✓ Yammer Repurpose/ Reuse group set up for staff to reuse/ repurpose equipment and furniture. It has about 150 users currently (TCD staff use their normal login to gain access). Link here: https://www.yammer.com/tcd.ie/#/threads/inGroup?type=in_group&feedId=15704503&view=all
- ✓ An energy performance contract initiative in early stages of investigation to improve the results and cost effectiveness of energy efficiency upgrades.

Get Involved & Learn More:

- ▪ What will you do with what you are buying at the end of its life? Make sure you think cradle-to-cradle for lifecycle of purchases.
- ▪ Think before buying. The item you need may already be in your department, elsewhere on campus or available from a reuse website. Find out more on the Trinity Sustainable Procurement Green Page.
- ▪ If you want to see if there are any sustainable alternatives for your purchase, contact the Trinity procurement office directly.
- ▪ Buy A-rated lab appliances and for home appliances to reduce energy use.

8. Education, Research & Entrepreneurship

Objectives	Targets	Status	
8.1. Induct all College Users into Green Campus	8.1. 100% Staff and Students Inducted into Green Campus by 2020	⬆	On Track
8.2. Increase Sustainability Focus in Taught Courses	8.2. 10% Increase in Sustainability Course Content by 2020	?	No data
8.3. Support Sustainability Research	8.3. Promote and Increase the Use of the Campus as a Living Lab by 2020;	⬆	On Track
8.4. Support Sustainability Focused Entrepreneurship	8.4. Create an Annual Sustainability Award (i.e. Green Carpet Awards) by 2020	⬆	On Track
	8.5. Increase and Support Entrepreneurship in Area of Sustainability by 2020.	?	No data

Our Progress:

- ✓ 95% new staff, or 285 staff, have received the sustainability induction programme since its launch in 2017, with a view to driving good habits such as proper recycling, water and energy conservation, use of sustainable transport options and awareness of resource consumption.
- ✓ 80% of freshers have received sustainability content as part of their induction
- ✓ We are continuing to facilitate the campus as a living lab
- ✓ A sustainability fund has been established to seed new initiatives, particularly focused on student involvement and/or education

Challenges:

- △ There are still over 3,000 existing staff that have not received the sustainability awareness presentation

Annual Highlights:

- ✓ A Staff Sustainability Network was established in 2017 (>260 members; first monthly meeting was convened in December 2017)
- ✓ Student sustainability Network (almost 600 members on mailing list) and Facebook page was established in 2017
- ✓ A dedicated email address was established in 2017, to attend to suggestions, queries and communication regarding sustainability: sustainability@tcd.ie
- ✓ All first year students received a welcome gift of a reusable water bottle in 2017 to increase the use of drinking fountains.
- ✓ Acquisition of Trinity branded "Keepcups"
- ✓ Members of the Green Campus Committee (GCC), including students, graduates and staff, also sit on the Provost's Advisory Committee on Sustainable and Low Carbon Living (PACS), and have the opportunity to directly impact the University in regard to sustainability
- ✓ New 'Trinity Electives' being developed for 2019/20 as part of the Trinity Education Project (College wide curriculum review), which will be available to all students; for example a Trinity Elective on "Smart, Sustainable Cities", "Toolkit for a Smart and Sustainable World" and other electives on sustainability are to be developed
- ✓ An undergraduate programme on the SDGs is in development for release in 2019; as a Trinity Elective, it will be available to all students.

- ✓ There are a number of educational courses and research centres with sustainability at their core including the Trinity Centre for Biodiversity Research (TCBR) and the Trinity Centre for the Environment. Trinity has also set 'Smart, Sustainable Planet' as one of its key research themes.
- ✓ An online MOOC called 'Achieving Sustainable Development', which teaches the United Nations Sustainable Development Goals (SDGs), was launched in 2016 and has had prominent uptake globally. It is in its third year of being available free online for anyone to participate in.
- ✓ Trinity has partnered with Future Learn to provide free online courses including one on Achieving Sustainable Development (5,000 participants to date) Hosting of students from around the world at the week-long European Climate KIC summer schools in 2017 and 2018;

Get Involved & Learn More:

- ▪ Visit the sustainability greenpages website to induct yourself into the green campus programme (**https://www.tcd.ie/provost/sustainability/**).
- ▪ Get involved with the Green Campus Committee (**https://www.tcd.ie/provost/sustainability/greencampuscommittee/**)
- ▪ If you have a suggestion for increasing the sustainability focus of your chosen subject, ask your lecturer if it could be included in future teaching.
- ▪ If you are interested in research in the area of sustainably, contact the Research Office (**https://www.tcd.ie/innovation/contact/**)
- ▪ Launchbox, Trinity's accelerator for student start-ups, is always looking for sustainable startup ideas. Why not apply on **http://www.launchbox.ie/** and join the list of previous sustainable start-ups including FoodCloud and LabCup.

No. of Staff Receiving Sustainability Induction

Freshers Inducted
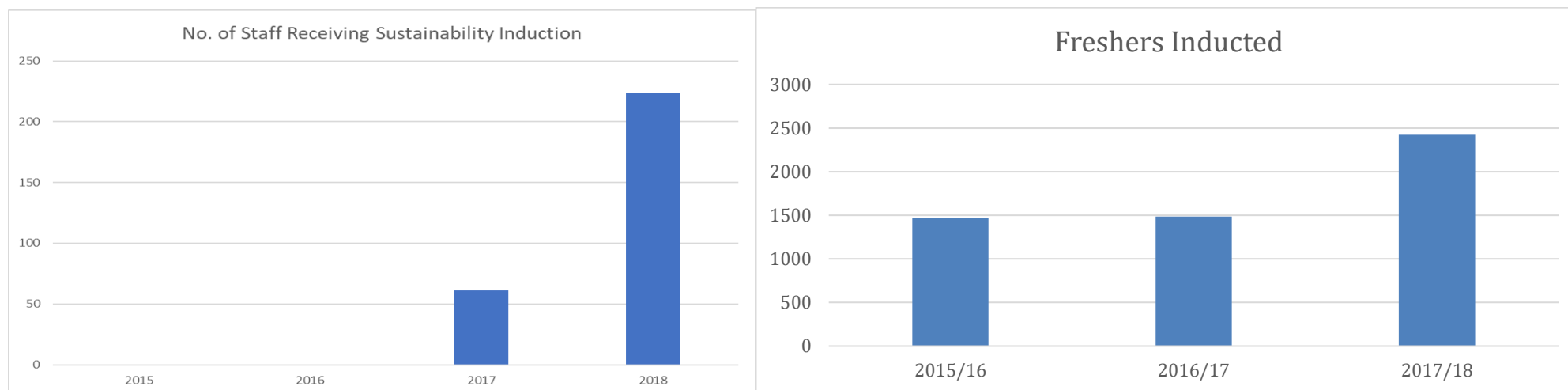
9. Communication, Student Involvement & Transparency

Objectives	Targets	Status
9.1. Increase the Number of Green Events & Attendees on Campus	9.1. Maintain or Improve Levels of Sustainable Events by 2020	☺ Achieved
9.2. Increase the Number of Societies Involved with Green Week	9.2. 10% Increase in Number of Societies Participating in Green Events by 2020	Several societies involved in Green Campus Committee.
9.3. Meet all Requests for Access to Information on the Environment	9.3. 100% Fulfilling of Requests for Information on the Environment (On-going)	☺ Achieved
9.4. Report on all Environmental Aspects	9.4. Develop and Launch Annual Sustainability Report by 2016	☺ Achieved
9.5. Increase the Use of Trinity Green Pages Website	9.5. 5% Increase in Visitors to GreenPages Website by 2020	☺ Achieved

Our Progress:

- ✓ Three-fold increase in number of green events since 2016, with 123 events in 2018 (in part due to improvements in tracking event numbers)
- ✓ No requests for access to information on the environment
- ✓ This is our fourth Annual Sustainability Report
- ✓ Record number of visitors to the relaunched sustainability webpages, an increase of 425% versus 2013

Challenges:

- △ No data tracked on number of societies involved in green week

Annual Highlights:

- ✓ Trinity ran its 16th annual Green Week, the longest running university Green Week celebration in Ireland
- ✓ Over 60 green webpages relaunched as new Sustainability section accessed from home page, including Green Maps which show the locations of recycling bins, public water fountains, bicycle parking and public transport hubs, etc.
- ✓ Five social engagement campaigns in 2018 to invite campus participation in decision making for sustainability initiatives, such as environmentally friendly paper for use on campus, sustainable products to be stocked in the SU shop, elimination of disposable plastics on campus and vegetarian choices of food at the Buttery Café (23% participation rate).
- ✓ OneStepCloser, a social engagement platform which puts a vote to a defined population (eg. students only/ staff only/ students and staff) on a decision, using accessible language in an easily understandable format (between 12% and 23% engagement).
- ✓ Green Campus Committee meets monthly during term times working to maintain the college's Green Flag status, and weekly in the run up to Green Week
- ✓ The Provost's Annual Review in 2018 featured a section focussing entirely on sustainability.

Communications office has 10 electronic screens around campus which have been used to publicise environmental events such as talks, conferences and Green Week; The Buttery café in the dining hall recently installed an additional two e-screens which are also being used to promote food and consumption related environmental initiatives such as discounts for reusable cups.

Get Involved & Learn More:

- If you are involved in a society or sport club why not organise a sustainability event for your members.
- Why not volunteer for the Green Campus committee or organize an event for the annual Trinity Green Week.
  Visit the Trinity Sustainability - GreenPages website to learn more about what you can do (https://www.tcd.ie/provost/sustainability/

9. Engagement Statistics

Environmentally Themed Events
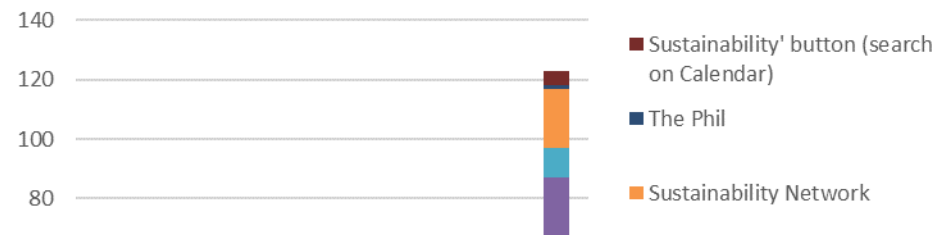
TCD Green Pages Visitors
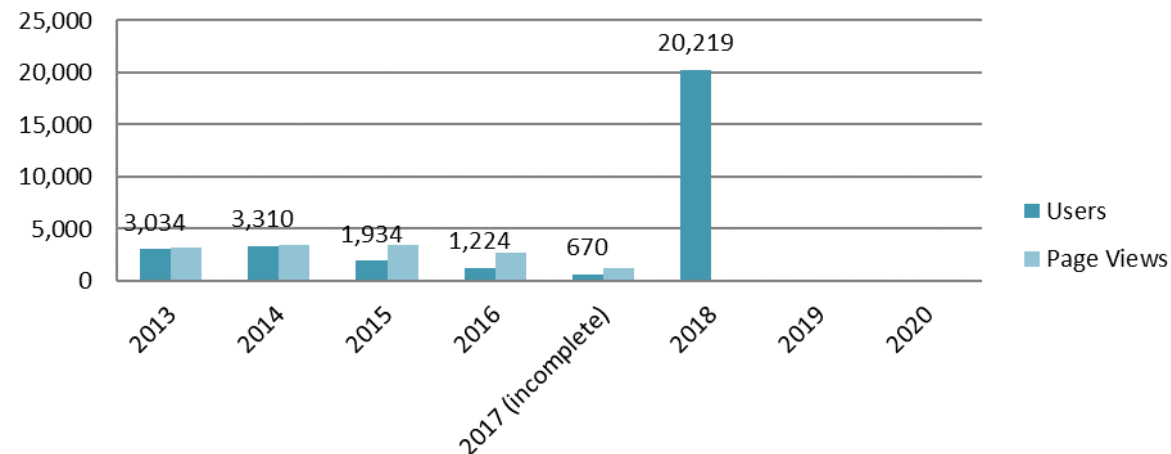
Gaps & Challenges

There are a number of areas we hope to improve on as we report on our sustainability journey. This section of the annual sustainability report has been included to help us outline to the Trinity community, areas where we are facing challenges and gaps in the data we collect and report on. It is part of our transparency objectives to highlight where we think we can improve the accuracy or content in the future. In particular, 9 of our 38 targets do not yet have robust data sets. It should also prove useful to other institutions to highlight challenges they might also experience in reporting on sustainability in their own organisations.

- Embodied carbon. We are currently investigating how we can account for the carbon emissions associated with the embodied carbon in materials used in construction projects on the campus. This becomes more important as newer buildings become more energy efficient and the embodied carbon in materials used becomes more significant. We will also endeavour to look at the embodied carbon in our purchases including food, drinks, paper and other consumables.
- The majority of renewable energy consumed in the campus comes via grid-based renewables, which contribute, to electricity supply in Ireland. We also are limited in purchasing green electricity sources by government procurement rules.
- Carbon emissions from travel. We are currently investigating how much carbon is emitted as a result of staff taking flights for work purposes. This is a significant challenge for Universities, in particular around participating in international projects and conferences. We do not currently generate commuter carbon emissions data for staff and students travelling daily to University.
- We report on carbon in total emissions and in an indicator (per full time equivalent). This helps to show how sometimes our absolute carbon emissions grow but on a per capita basis we can still be improving.
- Fugitive emissions from refrigerant gases (HCFCs) are usually lost when equipment fails and vents the gases to atmosphere. We are currently working with our contractor in the area to collate this data on an annual basis.
- We do not currently include construction and demolition (C&D) waste in our statistics. This waste is generally very heavy and usually 100% recycled. While this would skew our recycling rates upwards significantly, it does not reflect how people are disposing of their waste in general and so, when the data becomes available, will be reported on separately.
- We do not currently report on wastewater or indoor air quality. This is an area we hope to improve on in future possibly as part of our living lab initiative. A post occupancy evaluation study on Trinity Business School will monitor environmental parameters including air quality.
- While the numbers of people walking has increased, our numbers of cyclists continues to decrease. This is possibly due to students living further away from the campus meaning fewer can avail of cycling as a commuting choice. As cycling numbers continue to increase in the city in general, our cycling parking infrastructure continues to come under pressure from internal and external users.
- The majority of renewable energy in transport comes from biofuel blended at a national level for use in meeting Ireland's biofuel obligations around renewable energy in transport.
- We have found quantifying the sustainability of food served on the campus problematic based on difficulties with available data and definitions of sustainability. We will continue to work with our catering departments to better quantify sustainability.
- Trinity has recently lost some of its oldest and most famous trees. While we endeavour to protect and enhance our trees on campus, sometimes due to age and disease, we continue to lose some of our most iconic trees.
- Collecting data on the sustainability content of all courses and research carried out across the University has been challenging, as no central repository for this information has been found. We continue to investigate practical ways to gather and improve this information.
- Keeping staff and, in particular, students engaged in sustainability initiatives is difficult especially as students change each year. How we communicate and reach them is also changing rapidly with technology so we continue to experiment with the best ways to reach all our community.

Our Journey

A Brief History of the Sustainability Actions in Trinity College Dublin – The University of Dublin.

1979   ▪ Trinity Environmental Sciences Unit created

1990s   ▪ Focus on improving recycling of waste on the campus

1993   ▪ First recorded minutes of the College Recycling Committee (CRC)

1998   ▪ Establishment of Trinity Centre for the Environment

2000s   ▪ CRC renamed College Recycling and Environment Committee (CREC)

2003   ▪ First student led Green Week event held

2007   ▪ Drafting of University Sustainable Development Policy

2008   ▪ Trinity Sustainable Development Policy approved by Board

2012   ▪ CREC Renamed the Green Campus Committee (GCC) as part of Green Flag application

2013   ▪ Trinity applied for and awarded Green Flag Award for campus sustainability

2015   ▪ Trinity reapplies for Green Flag Award for Campus Sustainability and GCC student led co-chair position established

2016   ▪ Trinity publishes its 1st Annual Sustainability Report and the Board approves it;
      ▪ Trinity divested from fossil fuel investments thanks to a student-led campaign

2017   ▪ Provost's Advisory Committee on Sustainability and Low Carbon Living established & Sustainability Policy updated
      ▪ Sustainability Champion and Sustainability Advisor appointed
      ▪ Trinity Pollinator Plan launched

2018   ▪ First university in Ireland to join the International Sustainable Campus Network (ISCN); the Provost presented at a panel discussion entitled "Leadership for Sustainable Development" at the annual ISCN conference in June 2018, hosted by KTH Royal Institute of Technology, Stockholm
      ▪ Established a Plastic Disposables Plan to eliminate disposable plastics from catering outlets on campus by 2020.
      ▪ Sustainable Procurement Working Group established
      ▪ Move-Out donation of student belongings to charity to divert waste from incineration
      ▪ Sustainability Fund for education/ awareness raising projects established.

Roll of Honour

"None of us is as smart as all of us."

Special thanks to all our contributors to this report who make Trinity a more sustainable place to live, work, play and learn, in no particular order: Michele Hallahan, David Hackett, Ben Hartnett, John Parnell, Moira O'Brien, Patrick Prendergast, Jane Stout, Joe Borza, Pat McDonnell, Martina Mullin, Kieron McGovern… and the many, many others that have contributed to Trinity's journey to sustainability.

Go Raibh Maith Agat.

Web: **https://www.tcd.ie/provost/sustainability/**
If you have any questions or would like to know more, feel free to contact us: **sustainability@tcd.ie**

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Annex 1 – International Sustainability Campus Network (ISCN) Report

The International Sustainability Campus Network (ISCN) is a network of universities and colleges from across the world who have committed to achieving sustainable campus operations and integrating sustainability in research and teaching.

Principle 1: To demonstrate respect for nature and society, sustainability considerations should be an integral part of planning, construction, renovation, and operation of buildings on campus. A sustainable campus infrastructure is governed by respect for natural resources and social responsibility, and embraces the principle of a low carbon economy. Concrete goals embodied in individual buildings can include minimizing environmental impacts (such as energy and water consumption or waste), furthering equal access (such as nondiscrimination of the disabled), and optimizing the integration of the built and natural environments. To ensure buildings on campus can meet these goals in the long term, and in a flexible manner, useful processes include participatory planning (integrating end-users such as faculty, staff, and students) and life-cycle costing (taking into account future cost savings from sustainable construction).

Topics	Goals and Initiatives		Results			
Priority topics (with units of measurement)	**Objectives and targets** (for…	**Key Initiatives** (in reporting year, and /or planned for the following and beyond)	**Baseline**	**Performance 2016**	**Performance 2017**	**Performance 2018**
Resource use						
Water Consumption (m³)	Reduce water use by 51% by 2020 compared to 2009/2010 levels	On-going leak detection and water management programme. Water awareness campaign as part of annual Green Week.	441,945 m3 (30.3 m3 per person per year) (2009/2010)	42% Reduction. 255,000 m3 (15.6 m3 per person per year)	41% Reduction. 263,000 m3 (15.6 m3 per person per year)	38.8% Reduction. 270,414 m3 (15.9 m3 per person per year)
Rain/Grey Water Consumption (m³)	Increase onsite water generation by 5% by 2020.	Rainwater harvesting on Biosciences Building & in New Square. No new initiatives.	Zero (2009/2010)	Estimates based on rainfall levels for 2016.	Reduction based on estimates for rainfall levels in 2017.	Estimates of rainwater harvesting potential. No submetering data for rainwater harvesting.
Energy (kWh)	Improve energy efficiency by 33% by 2020 (public sector target) compared to 2006-2008 baseline.	Various energy efficiency projects on-going including better heating controls, LED lighting, energy efficient equipment, insulation retrofits & behavioural campaigns.	416 kWh / Research Equivalent Floor Area (2006/2008)	327 kWh / Research Equivalent Floor Area (21% saving versus baseline)	307 kWh / Research Equivalent Floor Area (26% saving versus baseline)	301 kWh / Research Equivalent Floor Area (27.7% saving versus baseline)

Renewables and Combined Heat and Power (kWh)	Increase renewable energy use to 14% by 2020	Use of grid electricity to facilitate grid based renewables. Onsite solar water panels.	3% energy from renewables (2006/2008)	12.9% energy from renewables	14.7% energy from renewables	15.1% energy from renewables
Paper Reduction	Reduce paper consumption by 20% by 2020	Numerous processes going paperless including board meetings and SU meetings.	47,363 Reams (2011 Baseline)	25,782 Reams	23,048 Reams	22,668 Reams (52% reduction vs baseline)
Waste, recycling, local emissions, and non-compliance						
Total waste produced (tonnes MSW, Recyclables, Compost)	Reduce total waste by 10% by 2020	Binless office system expanded and source separate bins installed in buildings. Behaviour & training.	1,595 tonnes (2012 Baseline)	1,806 tonnes	2,063 tonnes (14% increase)	1,984 tonnes (4% decrease vs previous year)
Hazardous Waste	Reduce total hazardous waste by 10%	Labcup trial rolled out to help prevent purchase of chemicals already in stock. Training on reducing contamination in hazardous waste bins.	42,270 kg (2012 Baseline)	48,890 kg	46,670 kg (4.5% decrease)	44,550 kg (4.5% decrease vs previous year)
Research/IT facilities and sustainability						
Green Data Centre	Reduce Energy and GHG emissions	Award winning Green Data centre opened in 2014.	NA	On-going monitoring.	On-going monitoring.	On-going monitoring.
Users						
Stakeholder engagement	Increase visitors to green pages website	Annual Green week held and investigation of induction into student orientation.	3,000 users on green pages (2013 Baseline)	1,224. Being updated due to website revamp.	670 visitors. New website being developed.	20,000 visitors with launch of new sustainability pages.
Building design aspects						
Sustainable Building Standards	Increase campus as a living lab.	New building designed to excellent standard and near zero energy buildings.	NA	2 significant building projects still in design stage. Business School and Oisin House residences.	2 significant building projects in construction stage. Business School and Printing House Square (Oisin House) residences. E3 centre in design stage.	2 significant NZEB building projects in construction stage. Business School (BER - A2; opened May'19) and Printing House Square (Oisin House, scheduled for completion Aug'19) residences. E3 centre in design stage.

| Campus Strategic Plan | Green, energy efficient campus. | All new buildings aim to meet or exceed building energy codes. | NA | New buildings in planning. | New buildings in planning. | Next Strategic Plan 2020-2024 being drafted |

Principle 2: To ensure long-term sustainable campus development, campus-wide master planning and target-setting should include environmental and social goals. Sustainable campus development needs to rely on forward-looking planning processes that consider the campus as a whole, and not just individual buildings. These processes can include comprehensive master planning with goals for impact management (for example, limiting use of land and other natural resources and protecting ecosystems), responsible operation (for example encouraging environmentally compatible transport modes and efficiently managing urban flows), and social integration (ensuring user diversity, creating indoor and outdoor spaces for social exchange and shared learning, and supporting ease of access to commerce and services). Such integrated planning can profit from including users and neighbors, and can be strengthened by organization-wide target setting (for example greenhouse gas emission goals). Existing low-carbon lifestyles and practices within individual campuses that foster sustainability, such as easy access for pedestrians, grey water recycling and low levels of resource use and waste generation, need to be identified, expanded and disseminated widely,

Topics	Goals and Initiatives		Results			
Priority topics (with units of measurement)	**Objectives and targets** (for…	**Key Initiatives** (in reporting year, and /or planned for the following and beyond)	**Baseline**	**Performance 2016**	**Performance 2017**	**Performance 2018**
Institution-wide carbon targets and related achievements						
Carbon Emissions (tCO2e)	Short Term: reduce carbon emissions by 2% year-on-year. Long Term: reduce carbon emissions by 80% by 2050.	See energy efficiency. Investigating use of electric vehicles in fleet. Review of climate change plan.	25,947 tCO2e (2006-2008) 1.7 tCO2e / full time equivalent	26,928 tCO2e (-4% increase vs 2006-08) 1.38 tCO2e / full time equivalent	24,158 tCO2e (7% decrease vs 2006-08) 1.21 tCO2e / full time equivalent	23,741 tCO2e (8.6% decrease vs 2006-08) 1.17 tCO2e / full time equivalent
Master Planning						
5 Year Strategic Plan	Sustainable Development	Implementation of sustainability elements of strategic plan & updating of sustainable development policy.	2009 – 2014 TCD Strategic Plan.	On-going.	Sustainable Development policy updated and renamed Sustainability Policy.	2020-2024 strategic plan being drafted
Campus Development Plan	Sustainable Development	In development.	NA	Master plan in development.	Master plan in development.	Estates Strategy published Nov'18
Transportation						

Transportation initiatives	Promote sustainable transport.	Review strategy and set objectives and targets to increase the sustainability of business travel.	1,700 bicycle spaces (2011)	Not counted (run every two years due to resourcing).	1,615 bicycle spaces (decrease of 6% from baseline).	97% surveyed in 2018 using sustainable transport, with only 3% travelling by car. No data on cycling spaces.
Food						
Stakeholder engagement	Promote sustainable food.	Student led talks on sustainable food and food waste. Support for trinity start-up FoodCloud.	Not recorded.	Catering investigating improving sustainable food.	On-going catering investigating improving sustainable food.	OneStepCloser, a social engagement platform used to engage students and staff on elimination of disposable plastics on campus and vegetarian choices of food at the Buttery Café (23% participation rate).
Food purchase	Promote sustainable food.	Reduce pre-consumer and post-consumer waste.	None.	On-going.	On-going. Free water available in catering areas.	No data
Land-use and biodiversity						
Sustainable Building Standards	Enhance campus biodiversity	Green roofs on campus at arts block, Long Room Hub and Biomedical Sciences Institute.	Green roofs.	None added.	None added.	Trinity Business School to have green roof (completed May'19)
Pollinator plan	Enhance campus biodiversity	Campus pollinator plan being drafted.	NA	Drafted.	Completed and published. https://naturalscience.tcd.ie/pollinator/	Pollinator Plan in place

Principle 3: To align the organization's core mission with sustainable development, facilities, research, and education should be linked to create a "living laboratory" for sustainability. On a sustainable campus, the built environment, operational systems, research, scholarship, and education are linked as a "living laboratory" for sustainability. Users (such as students, faculty, and staff) have access to research, teaching, and learning opportunities on connections between environmental, social, and economic issues. Campus sustainability programs have concrete goals and can bring together campus residents with external partners, such as industry, government, or organized civil society. Beyond exploring a sustainable future in general, such programs can address issues pertinent to research and higher education (such as environmental impacts of research facilities, participatory teaching, or research that transcends disciplines). Institutional commitments (such as a sustainability policy) and dedicated resources (such as a person or team in the administration focused on this task) contribute to success.

Topics	Goals and Initiatives		Results			
Priority topics (with units of measurement)	Objectives and targets (for…	Key Initiatives (in reporting year, and /or planned for the following and beyond)	Baseline	Performance 2016	Performance 2017	Performance 2018
Topical Integration						
Sustainability in Courses	Increase sustainability focus in courses.	Sustainability is taught to undergraduates via the broad curriculum programme and via some course content i.e. engineering.	NA.	2 relevant broad curriculum courses open to undergraduates in area of sustainability. On-going review of general course content.	2 relevant broad curriculum courses open to undergraduates in area of sustainability. On-going review of general course content.	Website currently lists: - 15 undergraduate courses - an online course on Achieving Sustainable Development (5,000 participants) - 3 modules for Trinity Electives
Sustainability Training	Induct all college users into Green Campus.	Induction for new staff and for Campus residents includes promotion of campus sustainability.	None.	Continuing to be expanded.	All new staff inducted into sustainable campus initiative.	285 new staff inducted on sustainability + approx 80% of 3,000 freshers
Sustainability Focused Courses	Increase courses with sustainability education.	Review of all current courses and those with sustainability at their core.	NA.	Review continuing Including running open online courses in area.	Review continuing. New open online courses in sustainable development launched.	See above and https://www.tcd.ie/provost/sustainability/researcheducation/
Social Integration						

External Organisations	Increase green areas.	Linking with the Dublin City Council Greening the City initiative.	0	Continued contact with DCC.	Biannual meeting at executive level to discuss synergies and opportunities.	Continue to meet with DCC to liaise on cycling infrastructure; addition of Iveagh Sports ground provides 67,000m2 green space
Green Campus Committee (GCC)	Increase the number of green events on campus.	The GCC run the annual green week for the university with events held each day to raise sustainability awareness across the campus community.	21 (2011)	Data collection under review.	Increase in green events during the annual green week.	Green events up to 123 in number in 2018
Research & Education projects on Laboratory/IT facilities and sustainability						
LabCup software – chemical management trial.	Facilitate living lab & support sustainable start-ups.	LabCup was trialled in the campus to help reduce hazardous waste generation and improve safety.	0	Further roll out and expansion.	Embedded and training for staff.	Hazardous biological and chemical waste down 4.5% for two consecutive years
Commitments and resources for campus sustainability						
Green Campus Committee (GCC)	Student involvement.	The GCC is made up of staff and student volunteers (approx. 20 people) who run the annual Green Week and the University's Green Flag programme.	NA	The Green flag award and status was successful for another 3 years.	The Green flag award interim review (retained).	GCC continue to maintian green flag status, host green week and discuss sustainability initiatives and engagement strategies
Green Campus Co-ordinator	Running Green Flag reporting.	Data collection, TCD GreenPages website updates and reporting.	1	Additional external support provided.	Additional external support provided via communications support.	Green Campus report completed Jan 19; In addition this Annual Sustainability report has been completed for 4th consecutive year

Sustainability Task Force	Joining ISCN & annual sustainability reporting.	Initial database creation for sustainability data including energy, waste, water, transport, etc.	NA	Research into creation of TCD Sustainability Task Force is continuing with the development of its scope and composition. Due to report directly to the University's Provost.	Application to ISCN commenced. Annual report 2017. Provost Advisory Group Established.	Provost's Advisory Committee on Sustainability (PACS) established, co-chaired by the registrar as "Sustainability Champion" and support by "Sustainability Advisor" Michele Hallahan

Annex 2 - Green Flag Campus Report

This annex is used to provide any additional material required for the annual update to An Taisce for the Green Flag campus programme.

1. Green-Campus Committee

   https://www.tcd.ie/provost/sustainability/greencampuscommittee/

2. Environmental review

   http://www.tcd.ie/provost/sustainability/initiatives/

3. Action plan

   See section 1 – 9 of the annual sustainability report.

4. Monitoring and evaluation

   See section 1 – 9 of the annual sustainability report.

5. Link to learning on campus

   https://www.tcd.ie/provost/sustainability/researcheducation/ & https://www.tcd.ie/OnlineEducation/free-online-course/

6. Informing and involving campus and wider community

   http://www.tcd.ie/provost/sustainability/initiatives/communicationstudentinvolvementtransparency/

7. Green Charter

   http://www.tcd.ie/provost/sustainability/policies/

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