

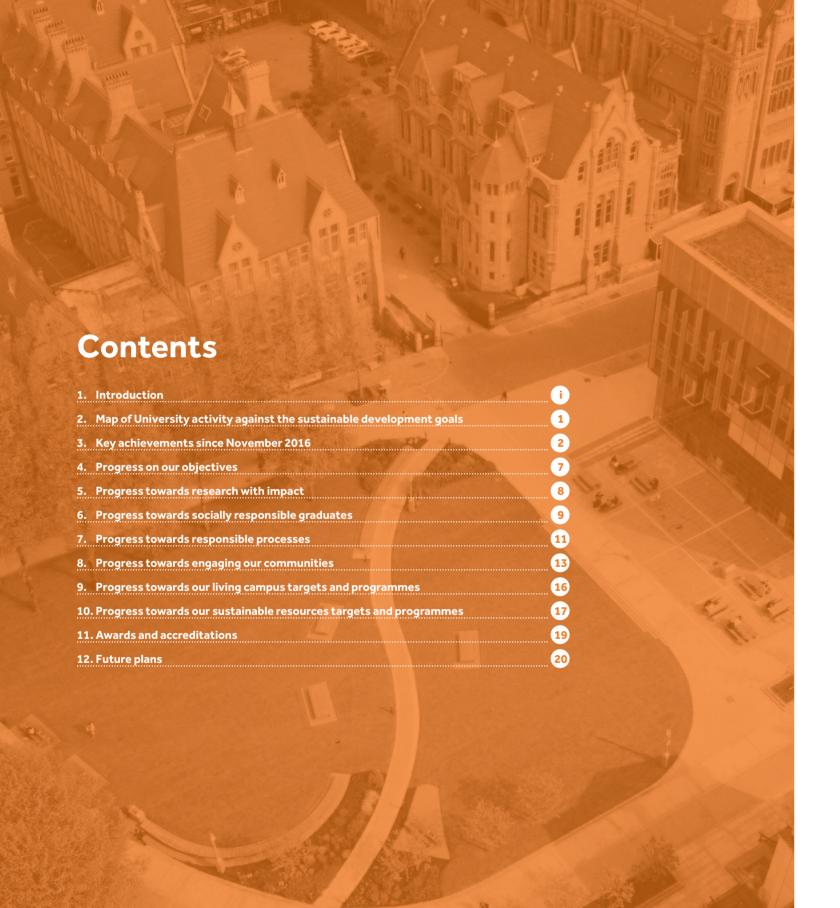
# **Environmental Sustainability**



# **The University of Manchester:**

**Environmental Sustainability** 

2016-2018 Review



### Introduction

Social responsibility is one of our three core strategic goals in our Manchester 2020 strategy, sitting equally alongside our commitments to world-class research, and outstanding learning and student experience. Our strategy for social responsibility includes a commitment to pursue change across the following priority areas:



#### · Research with impact

Our research is making a positive difference to society, addressing the major challenges of the 21st century.

#### • Socially responsible graduates

Our Ethical Grand Challenges enable all our undergraduates to tackle and understand problems relating to equality and diversity, sustainability, ethics and social justice.

#### • Engaging our communities

Our events and activities are harnessing our knowledge, resources and visitor attractions for the benefit of our communities.

#### • Responsible processes

Our processes are balancing efficiency with opportunities to create social and environmental benefit.

#### · Environmental sustainability

Our research, teaching and activities are guided by our commitment to environmental sustainability.

This report is a summary of our achievements in environmental sustainability since publishing our Environmental Sustainability Strategy, Sustainable Resources Plan and Living Campus Plan. We are proud to be sector-leading in some elements of sustainability, especially regarding student and staff engagement which can be seen in a number of accolades awarded to us in this area over the past two years. However, there is more to be done. During 2019 we plan to publish a full report against the United Nations Sustainable Development Goals. This will highlight the contribution that our research and our teaching make to environmental sustainability, something that has been complicated to illustrate to date.

In May 2017, Manchester elected its first Mayor of Greater Manchester, Andy Burnham, leading to a devolved government. This brings some changes which will impact on our environmental performance. For example, the Mayor is responsible for the transport budget our region receives from Government, as well as the future of bus services in Greater Manchester. Andy Burnham has announced his ambitions for making Greater Manchester one of the leading green cities in Europe. To help realise these ambitions, he held a landmark Green Summit in March 2018 to accelerate the region's sustainability ambitions, based on research undertaken by our researchers at the Tyndall Centre for Climate Change. The Green Summit also launched a plastic-free Greater Manchester campaign. The University of Manchester has a significant impact in Greater Manchester through our campus, our students and staff and associated operations. Clearly we have an important role to play in realising these regional aspirations, something we will be looking more closely at in the coming year.

1.

**Professor James Thompson,**Vice-President for Social Responsibility

# 1. Map of University activity against the Sustainable Development Goals

The United Nations Sustainable Development Goals came into force in 2016. These goals are unique in that they call for action by all countries, to promote prosperity while protecting the planet. The table below highlights a selection of the Sustainable Development Goals to demonstrate where we are contributing operationally to reaching these goals through the management of our estate. We have convened a cross-University group to map our research and teaching to the goals in the future.



We have a Wellbeing Strategy based on the Five Ways to Wellbeing. Our Living Campus Plan promotes health and wellbeing through encouraging the development of a biodiverse estate and active travel (cycling, running and walking).



We are providing data and support to Triangulum and CityVerve to help foster innovation into smart cities.



Projects within our Capital Programme contain targets to reduce water consumption and staff and student engagement programmes encourage efficient use of water.



Our Sustainable Resources Plan outlines our pathways towards sustainable consumption.



Our Capital Programme, energy contract and combined heat and power projects are part of the University's transition to providing reliable and sustainable modern energy.



Our Environmental Sustainability
Strategy and associated plans detail
our approach to climate action.



Our Capital Programme is building climate resilient infrastructure for the University.



Our Living Campus Plan outlines our approach to protecting, restoring and promoting life on campus.

# 3. Key achievements since November 2016





1,864
actions plans created through
10,000 actions



students engaged in Green Impact through auditing and project assistants



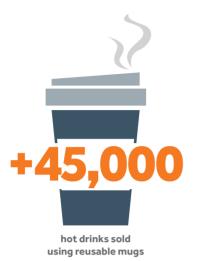


+£30,000

spend with





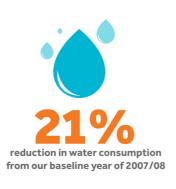












#### Staff main mode of travel choice

	Туре	2017 (%)	% change from 2015
Active travel	Walk	10	+3
	Cycle	16	+1
Public transport	Tram	2	-
	Rail	14	-7
	Bus	19	-
	Car	37	-3
	Others	2	+1

#### Student main mode of travel choice

	Туре	2017 (%)	% change from 2015
Active travel	Walk	37	+7
	Cycle	9	+2
Public transport	Tram	1	-
	Rail	2	-4
	Bus	48	-4
	Car	2	-2
	Others	1	+1

#### **Electric vehicles**

Fleet vehicles	2016/17
Total number of vehicles	77
Electric vehicles	13
Hybrid vehicles	1
% electric	17%
% electric and hybrid	18%

### 10,000 Actions fund

	Number of applications	Funded
Total	40	+£20,000

3

### 3: Key achievements since November 2016



of first years took part in the Sustainability Challenge. Of these, 85% of students enjoyed the experience



complexity of sustainability issues

after taking part







suppliers, 21% have completed our responsible purchasing tool. Of these:

1,321 identify as an SME
227 have a postcode in Greater Manchester
444 make their goods in the UK





environmental organisations currently registered on the Volunteer Hub



applications by students to do environmental volunteering this academic year Students have collectively completed



hours of environmental volunteering this academic year



## 4: Progress on our objectives

#### Environmental sustainability objectives 2016 – 2020

Objective	Key performance measure	Progress	Status
Research with impact	Research with impact cases     developed with environmental     sustainability as a focus.	Out of 181 submitted impact cases, 17 focused specifically on sustainability and 65 addressed environmental issues.	
	2. Research projects having positive interactions with the campus/City.	We have not yet systematically looked at research projects having positive interactions with the campus/City.	
Socially responsible graduates	<ol> <li>Student awareness of the complexity of sustainability issues after taking part in the Sustainability Challenge as part of the Ethical Grand Challenges.</li> </ol>	82% of students more aware of the complexity of sustainability issues after taking part.	
	Student engagement on environmental sustainability issues and projects.	Successful trial taken place in the School of Environment Education and Development.	
Responsible processes	<ol> <li>Reduced consumption of natural resources, including the University's KPI for 40% reduction in Scope 1 and 2 carbon emissions by 2020.</li> </ol>	2016/17 saw a 25% reduction to date. Current trajectory indicates that we will not meet the 2020 target.	
	2. Provision of quality and functional greenspace across the University estate.	Tree planting has commenced. Brunswick Park development and the Graphene Engineering Innovation Centre's pocket park support quality, functional greenspace across campus.	
Engaging our communities	<ol> <li>Awareness of the complexity of sustainability issues after taking part in 10,000 Actions.</li> </ol>	Successful launch has taken place. New software has been developed to help analyse data further.	
	2. Engagement of staff, students and alumni on environmental sustainability issues and projects.	Sustainability website redeveloped to make information more accessible. Staff sustainability champion programme strengthened and relaunched alongside further developments to 10,000 Actions.	

#### Our future priorities include the following:

- We are proud of our research and are actively working on ways to capture the contributions and positive impacts addressing local and global environmental challenges.
- Our carbon is reducing, which we are continuing to champion and we need to ensure consumption continues to reduce.
- We need to progress engagement with our alumni.

Discover more at www.manchester.ac.uk/sustainability/strategy

## 5: Progress towards research with impact

We are at the forefront of tackling key global challenges such as climate change, population growth, rapid urbanisation, overconsumption, food and water security, loss of biodiversity and pollution. Our research also contributes to sustainability challenges closer to home, working in partnership with organisations across Manchester and the North West to help improve the quality of our environment and peoples' lives.

#### Case studies of research with impact



#### **Greater Manchester climate change targets**

Tyndall Manchester, the University's interdisciplinary climate change and energy research centre has led on setting city region-level carbon budgets that are consistent with the Paris Climate Agreement. Their work shows that Manchester drastically needs to reduce its emissions to play a fair role in limiting global warming to the two degrees threshold identified as dangerous in Paris. Tyndall Manchester was asked to provide an evidence-based target date for 'carbon neutrality' for Greater Manchester as part of the Mayor of Greater Manchester's Green Summit event. Following their analysis, the approximate date they determined was 2038.

To reach this goal, a minimum of a 10% reduction in  $CO_2$  is needed every year. This is a tough but necessary challenge and the need for change is immediate.

Dr Carly McLachlan from Tyndall Manchester proposes that the immediate priorities for Greater Manchester include:

- · Carbon neutral homes.
- Amend our spatial plans to favour and support renewables deployment.
- Introduce a new decision making requirement for every public spending decision across the Greater Manchester Combined Authority to shift us to a lower carbon economy.



#### Microplastic contamination in rivers

Researchers from our Geography department undertook the first detailed catchment-wide study anywhere in the world. They examined the microplastics in river sediments from 40 sites across Greater Manchester, including rural streams in the hills and urban rivers in the city centre. This study found that urban river channels are a major contributor to the pollution problem in the oceans.

Microplastics are very small pieces of plastic debris including microbeads, microfibers and plastic fragments which enter river systems from multiple sources including industrial effluent, storm water drains and domestic wastewater.

These particles pollute the environment and pose a threat to ecosystem health. Although around 90% of microplastic contamination in the oceans is thought to originate from land, not much is known about their storage and movements in river basins.

They discovered microplastic contamination in all parts of the network - including a site on the River Tame at Denton which had the highest levels so far recorded anywhere in the world.

Following a period of major flooding, the researchers resampled at all of the sites - levels of contamination had fallen at the majority of them, and the flooding had removed about 70% of the microplastics stored on the river beds. This demonstrates that flood events can transfer large quantities of microplastics from urban rivers to the oceans.

Discover more at www.manchester.ac.uk/sustainability/research

# 6: Progress towards socially responsible graduates

Through our teaching, volunteering, programmes and projects, the University is providing our students with the opportunities to gain understanding and experience to tread lightly on our planet.

#### Case studies of socially responsible graduates



#### **Sustainability Challenge**

The Sustainability Challenge is offered to all 8,000+ incoming first year students on their second day at the University. It immerses students in a highly interactive simulation activity, based on building a new campus for the fictitious University of Millchester. Students work in interdisciplinary groups of ten, against the clock, to develop recommendations for the new campus. Students have to balance competing environmental, economic and social factors, tight budgets and restrictions to carbon emissions. Constructed TV news features, skype communications and replicated live twitter feeds create an evolving situation, forcing students to juggle new budget cuts, carbon caps, changes to planning requirements, and interference from an increasingly anxious University President.

"The Sustainability Challenge was an incredible opportunity to become aware of the environmental problems faced by our society in the present. It also allowed a forum to meet people from various courses and make new friends!"

First year undergraduate student after taking part in the Sustainability Challenge

High-end learning materials are streamed into 100 classrooms across nine buildings, to guide the students on their simulation activity. A closing plenary session links the Sustainability Challenge to the real world, explains its grounding in current University research, and highlights the exciting ways in which students can continue to engage with the sustainability agenda e.g. through elective units, UK and international volunteering, and diverse student societies.

#### Latest data shows that

- 60% of first years took part in the Sustainability Challenge.
   Of these, 85% of students enjoyed the experience.
- 250 academic and administrative staff were involved in the development and delivery of the challenge.
- 82% of students were more aware of the complexity of sustainability issues after taking part.



#### **Applied sustainability projects**

Third year students studying for their degree in Geography worked with local organisations to undertake applied sustainability projects in the field of smart and sustainable cities. Evaluation undertaken post project found that:

- 88% of students enjoyed the project.
- 96% of students thought that there was a broad range of topics on offer.
- 83% found the project challenging.
- 85% thought that the project improved their academic understanding.

Following this trial, a set of applied sustainability projects are now being advertised to students across the University.

#### Local organisations worked with:

- Greater Manchester Combined Authority
- Corridor Manchester
- Solutions for Brunswick
- Friends of the Earth Manchester
- Manchester City Council
- ARUP
- E-Forum
- Future Everything
- Collaboratory for Urban Resilience and Energy (CURE)

## 7: Progress towards responsible processes

#### Responsible purchasing

We have taken a lead in demonstrating value for money, looking beyond a simple reduction in bottom-line costs and identifying how we can demonstrate additional benefits through our spend and considering additional positive impacts.



We have reached the highest level, level 5, of the Government's Flexible Framework which allows organisations to measure and monitor their progress on sustainable purchasing over time. We are the first university in the UK to attain this level, representing our leadership on responsible purchasing in the sector.

Almost 1,500 of our suppliers have signed up to use our supplier engagement tool which has helped us move from supplier engagement towards supplier development. The tool, that we developed and piloted, supports our suppliers to develop a free sustainability action plan. This plan can be used to discuss sustainability with us but also with any other university or client the supplier may have. As part of our procurement process, we use the action plans to engage and develop our suppliers through the contract management process.

We held our first award ceremony to celebrate the responsible practices of our suppliers. This helped to recognise and support businesses who want to work in more sustainable ways.

#### The categories were:

- Outstanding demonstration of social impact.
- Outstanding demonstration of environmental impact.
- · Outstanding demonstration of impact by a local SME.

## Feedback from the Flexible Framework scrutiny panel

"I have no hesitation in supporting your assessment and confirming your Level 5 status. You have clearly evidenced how you had embedded sustainability into the life of your department and the University as a whole."

#### Simon Walsh

Procurement Director, Central Manchester University Hospitals NHS Foundation Trust

"You have provided clear evidence that you are meeting the requirements of level 5 of the Flexible Framework and you are leading others. Your work is driving change in other universities and at Consortia level. The reputation of your team precedes you and other universities."

#### Emma Kennan

Procurement Specialist,
Higher Education Procurement Academy

#### Sustainable catering and conferences

We are committed to offering healthy and sustainable catering that is produced, processed and traded in ways that:

- Contribute to the local economies and sustainable livelihoods.
- · Avoid damaging our planet.
- Enhance animal welfare.
- Provide social benefits.

#### We have in place the following policies:

- · Sustainable Food.
- Fairtrade.
- Animal Welfare.

Year on year we have increased our positive impact with a number of key initiatives:

- · Introducing Meat Free Mondays.
- · Introducing organic milk in catered halls.
- Ensuring that 54% of our beef in catered halls is organic.
- Starting a partnership with Manchester Veg People.
- Establishing tray free dining in catered halls, encouraging students to select what they actually will eat rather than fill their tray.
- Food waste recycling in all our kitchens across campus.
- · Opening a vegetarian café on campus.
- Implementing a Land Army student volunteer scheme.
- Ensuring that there is a daily vegan option in catered halls.
- Introducing a wonky veg campaign in catered halls.
- Paying the National Living Wage Foundation rate to all Catering staff.
- · Holding an annual food sustainability event.
- Introducing compostable hot drinks cups and takeaway packaging.
- Achieving Marine Stewardship Council Certification in FoodInResidence.

- Holding a weekly fresh fruit and veg stall to students using, when possible, Manchester Veg people produce.
- Sending unwanted food to Humanity Giving Back, a charity that distributes food to organisations across Manchester who support vulnerable people.
- Hosting a weekly street food market for local artisan food producers and local street food vendors.
- Ensuring that all palm oil used is from a sustainable source.

Sustainable Restaurant Association ratings we hold:

Catered halls: three stars

**Greenhouse Café:** three stars

Christie Bistro: two stars

**Target:** three stars across campus by 2022.



Discover more at www.procurement.manchester.ac.uk

Discover more at www.manchester.ac.uk/sustainability/food

# 8: Progress towards engaging our communities

Environmental sustainability should be an integral part of every individual's roles and activities. We support our staff and students to take action for environmental sustainability.

#### **10,000 Actions**

"The videos made me feel proud to work for an organisation that cares about its impact on the world and is actively working to make a difference."

#### **Staff participant in 10,000 Actions**



In November 2016, we launched 10,000 Actions, the biggest environmental sustainability initiative in the UK higher education sector. 10,000 Actions helps every member of staff take positive action on environmental sustainability and has resulted in the University being hailed as the first Carbon Literate university in the world. It has already gained significant sector awards for its scale, innovation and impact by challenging all 10,000+ staff to perform at least one action on sustainability.

The aim of 10,000 Actions was to create at least 10,000 new actions on sustainability – an average of one from every member of staff. We have significantly exceeded this, to date, staff have committed to:

- Over 36,000 actions, with over 6,000 of them in progress or already completed.
- 55% of staff have so far engaged with the initiative.
   Previous staff engagement on environmental sustainability programmes reached only 3% of staff.

A fund was launched alongside 10,000 Actions for staff to access funding for environmental sustainability projects. Over £20,000 has been allocated for a range of projects including living campus gardens, upgrades to lab equipment, furniture refurbishments and technology to reduce the need for air travel.

Building on the success of 10,000 Actions, we have improved the platform so it is now much more interactive. This new software will be launched in November 2018.

"I'm really behind this initiative and the quality of the content is excellent. I think you've pitched it at just the right level."

Staff participant in 10,000 Actions

#### **Sustainability Champions**

We have run a staff sustainability engagement network since 2008. Recently this has evolved into our Sustainability Champion programme which has 149 active members.

#### **Support available for Sustainability Champions:**

Access to leading experts on sustainability through our sustainability seminars.

Resilience and influencing training.

Induction sessions.

Opportunity to gain a carbon literacy certificate.

An annual conference.

Advice and guidance on practical actions to take.

Updates from staff and groups within the University on their sustainability activity.

#### **Sustainability seminars**

The sustainability seminar series provides opportunities for staff and students to make a positive impact on our campus and our city through learning and sharing knowledge on sustainability. The seminars explore a range of topics with short presentations from academics, researchers, professional support staff and colleagues from across the city. The seminars end with informal discussion and engagement.

Sustainability seminar topics and number of staff attending:	
Sustainable construction at The University of Manchester	49
Modern slavery	28
Understanding and designing circular economies	39
Natural resource use and new materials	24
Influencing and persuading skills for sustainability	48
Health and wellbeing	70
Commuter travel	65
Air quality	57
City living in positive sustainability terms	51
Energy use in our buildings and how we expect it to change	52
Art and sustainability	29
Urban data justice	39

### 8: Progress towards engaging our communities

#### Student volunteering

There is a well-established and active student volunteering programme here at The University of Manchester. Environmental organisations regularly advertise their volunteering opportunities through our Volunteer Hub.

#### Student environmental volunteering:

79 environmental organisations registered on the Volunteer Hub.

61 environmental opportunities advertised.

648 applications by students to do environmental volunteering.

Students have collectively completed 1,161 hours of environmental volunteering.

#### (2017/18 academic year)

Pharmacy student Jenny volunteers on a wide variety of different projects including bee keeping, Incredible Edible Manchester and driving the mini bus for various Student Action projects.

"I've been involved in volunteering since my first few months of university when I got involved at a City of Trees event to help plant over a 100 trees in Wythenshawe. While there I found out about Incredible Edible Manchester and wanted to get involved. Incredible Edible aims to give communities the opportunity to grow their own sustainable fruit and vegetables, whilst also improving biodiversity as what we grow is all fresh and organic. The produce is available for the community and can be a useful source of food during times of food poverty.

I've recently got involved with the new Incredible Edible plot at St Peter's House Chaplaincy. The Chaplaincy has started 'bee sitting' hives from Manchester Art Gallery, volunteering has thrown up some off-beat experiences and opportunities – doing some city bee keeping is one of them.

Before university I hadn't really been involved in many gardening/ environmental projects, but as I'm in labs a lot for my course, my volunteering gives me the chance to get outside which I love. It's also great to have some decompression time when I'm not thinking about course work.

I love volunteering with Student Action. I don't volunteer because I want to put it on my CV; I do it because it's something that isn't related at all to what I'm studying, it's a diversion from pharmacy. I've also met some great people getting involved with the committee and the different projects, the work and organisation involved in a lot of the projects is crazy and it's fantastic to volunteer with other students who are so driven and eager to make an impact with their projects."



Discover more at www.manchester.ac.uk/sustainability/get-involved

# 9: Progress towards our living campus targets and programmes

Our living campus plan sets out a number of programmes under three themes: key spaces; key species; and key activities. Highlights include:

We have developed three interactive tree trails for staff, students and the local community to enjoy. They are full of interest with a variety of trees, abundance of wildlife and glimpses of our heritage to explore.

Since 2015 the number of students commuting by walking and cycling has increased by nine per cent and for staff by four per cent.

We are working with local residents and Manchester City Council, supporting greenspaces within Ardwick. This includes tree planting and delivering seminars on biodiversity and the natural environment.

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79 trees have been planted in the first phase of the Tree Planting Implementation Plan.
This is in addition to trees planted as partof capital projects.

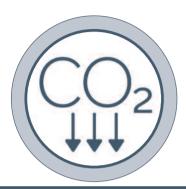
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Phase I has seen a variety of trees including Oak, Persian ironwood and Scots pine planted across the University campus, providing opportunities for local communities to connect with nature in their local surroundings.

Discover more at www.manchester.ac.uk/sustainability/livingcampus

# 10: Progress towards our sustainable resources targets and programmes

Our sustainable resources plan is delivered through ten themes. Highlights of our progress so far include:



## CARBON REDUCTION

• Carbon management projects identified for future work.



#### ENERGY EFFICIENCY

- Update on revolving green fund.
- Energy engagement programme initiated.
- Building audits have identified energy efficiency opportunities.



## WATER CONSERVATION

Building audits have identified water conservation opportunities.



#### SUSTAINABLE TRAVEL

- Air travel working group established to develop proposals to increase efficiency of air travel.
- Received a gold award and champion of champions award from TfGM.
- Partnership working through Triangulum.



## SUSTAINABLE TECHNICAL SPACES

- 35 green impact lab teams.
- Established technical spaces engagement networks for the Faculty of Biology, Medicine and Health and the Faculty of Science and Engineering.



## SUSTAINABLE BUILD AND CONSTRUCTION

- Environmental sustainability advisor framework for construction projects established.
- The Schuster Annexe Project achieved a 10% energy improvement over building regulations when compared to an equivalent building.



## RESPONSIBLE PURCHASING

- Achieved level 5 of the Flexible Framework.
- Supplier engagement programme well established, engaging with over 1,500 suppliers.



## SUSTAINABLE CATERING AND CONFERENCING

 Sustainable Restaurant Association accreditations achieved: Catered halls, three stars; Greenhouse Café, three stars; Christie Bistro, two stars.



#### SUSTAINABLE IT SERVICES

- Work is being undertaken to strengthen environmental sustainability standards as part of IT tenders.
- Currently investigating ways to measure the carbon footprint of IT Services.



## WASTE REDUCTION

- Recycling week held November 2017 in partnership with Manchester City Council and Manchester Student Homes
- Reduce week held March 2018, focussing on reducing plastics, food waste, paper waste and making informed purchasing decisions.

Discover more at www.manchester.ac.uk/sustainability

Discover more at www.manchester.ac.uk/sustainability

## 11: Awards and accreditations



Discover more at www.manchester.ac.uk/sustainability/contact/awards

## 12: Future plans

We are excited to build on the work we have already started under the lifetime of the Environmental Sustainability Strategy and associated plans. This includes:

#### Living campus programmes:

Living campus gardens.

Tree plan and programme.

#### Engagement programmes:

Phase II of 10.000 Actions.

Sustainability Champions.

Green Impact.

Update of the Sustainability Challenge.

#### Sustainable resources programmes:

Campus masterplan.

Carbon management implementation programme.

Revolving green fund and halls green fund.

Energy engagement programme.

Supporting delivery of the Triangulum programme.

Reducing University-related air travel.

Technical spaces engagement networks.

Environmental Sustainability Advisor framework.

Construction frameworks.

Waste data monitoring programme.

Reuse and recycling engagement programmes.

Align with the principals of the circular economy.

Supplier engagement.

IT Services sustainability review.

Catering and Conferences sustainability review.

### Some new programmes are due to start in the next academic year:

- Provision and enhancement of habitat spaces.
- · Water engagement programme.
- Mapping of the Sustainable Development Goals across all functions of the University.
- · Phase II of the Tree Implementation Plan.
- Habitat and species surveys and engagement programmes.

### In addition to these programmes, we have made commitments under the Mayor's Green Summit.

- We will engage every member of staff and every student on a programme of sustainability. This will be through the Sustainability Challenge for students and 10,000 Actions for staff.
- Greater Manchester's tourism and hospitality sector will aim
  to eradicate the use of single use plastics by 2020. Within the
  coming months, local businesses will set out a plan to achieve
  this and, as a first step, have begun to replace plastic straws
  with more sustainable alternatives. Hospitality Services will
  be leading this work on behalf of the University.

Discover more at www.manchester.ac.uk/sustainability

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