

## Campus Sustainability Annual Report 2022/23

### Executive Summary

This report summarises the key environmental sustainability initiatives and outcomes from the University's activities in the academic year 2022/23.

Over the past year, we have been particularly committed to working to strengthen our carbon reduction efforts and meet our targets. While challenges persist and some actions need acceleration around heat provision, the progress we have made demonstrates our dedication to this strategy. This reporting year we came top of the HESA tables for our decarbonisation of Scope 1 and 2 emissions achievements when set against baseline data ahead of all other Institutes reporting within the sector. We were also delighted to be named Green Business of the Year through the Suffolk County Council Greenest County Awards.

We have also developed the team creating a new Sustainability Coordinator in post since January and extended the incumbent sustainability support role to full time, redefining the job role to support waste administration and travel development.

Additional headline activities have included:

- Issuance of the new Climate Carbon Action Plan and positioning of sustainability as a key pillar of the Estates Strategy, has had a profound impact on the wider approach to Sustainability across Directorate activities within Estates and increasingly Digital and Finance. With the emergence of deeper embedding of sustainability into procurement policy approach and waste management decision making.
- Procurement:
  - Early work on Responsible procurement for sustainability and social value has been trailed within a small works careers hub retrofit to great success and now forms a deep stretch component part of the Grounds Maintenance contract and emerging.
  - Responsible and sustainable procurement forms an important part of the emerging FM Hard and Soft Service Contracts and following collaborative work with Procurement, Exceeding and guidance from the Higher Education Procurement Association will be included with Sustainability KPI's in the contract specification for AY 2023/24
  - Consolidation of small energy contracts across the estates was undertaken, bringing them into the main renewable energy contract for electricity REGO certified.

The headlines of the University's Sustainability Report 2022/23 include:

### Energy

- Spend on utilities, including water was **£1,448,686** in 2022/23, up from £622,623 the previous year. Price inflation has been dominated by volatile and fluctuating global and UK energy

costs. In real terms **electricity consumption is down.**

- The overall combined contracted utilities consumption figures less tenanted buildings and spaces for gas and electricity 2022/23 was **3,797,315 kWh**, an energy efficiency reduction of **3.5%** on last year.
- 55,761 kWh of electricity supplied from non-renewable energy, **2,978,256 kWh electricity was supplied from EDF off-site OFGEM certified renewable** energy guarantee of origin (REGO); 763,298 kWh were generated from gas and 56,321 kWh of electricity was generated from on-site solar PV array renewables.
- Water consumption is **down 33%** on last years' usage, with a total consumption of 20,868 m3 and cost of £36,343.
- The total for **Scope 1 and 2 emissions** amounted to **164.35tCO2e**. A decrease of 72% on last year's emissions and a **93% reduction** against our 2009/10 baseline of 2,704tCO2e.

As part of our drive towards decarbonisation of scope 1 and 2 emissions by 2030, step change targets for the academic year 2022/23 sought to ensure:

- *Target 1:* Reduction in carbon emissions for scope 1 & 2 by 65% against the 2009/10 baseload. The University has realised a 93% reduction against the baseline.
- *Target 2:* Operational emission of GHG per m3 of gross internal area is no greater than 21 kgCO2. The University has realised an operational emission of 5.22 KgCO2e per m3 GIA.
- *Target 3:* Emissions per FTE Staff and Student no greater than 160 kgCO2. The University has realised an emission per head of 40.08 KgCO2e.

Key Energy projects:

- LED lighting upgrade was completed to half the areas of the Arts building, with a more comprehensive roll out to follow 2023/24
- Renewable Energy: An additional 34 kWp onsite generation install on the Health and Wellbeing Building
- Campus wide full audit of electricity, gas and water metering, sub metering and AMR's was undertaken, resulting in changes to the process for meter reading reporting and AMR repair management.

## Waste

- Total waste mass for AY22/23 **decreased** from 149.718t, to **148.20 tonnes of total waste**, of which **94.78%** was recycled and **5.22%** sent to landfill.
- Total waste arisings produced **8.2tCO2e** carbon emissions.
- **3.11t of furniture and IT equipment** was diverted fully from the waste stream,

Key Waste Projects:

- Roll out of our new Waste Management Policy and Waste Action Plan,

- Prioritising existing assets and procuring assets with longer lifecycles to reduce waste, selecting products and equipment that are easily repairable and choosing materials and products with high recyclability to reduce landfill waste.
- . Increasing to the number of recycling bins throughout the campus, with the installation of lower ground floor Recycling Stations throughout all main campus buildings

## Biodiversity

- Extension of habitat biodiversity areas to include the creation of biodiversity pollinator corridors. **67% of our existing campus green space are now habitat** managed.
- Planting of the Physic Garden around the Health and Wellbeing Building
- Habitat surveying demonstrates species richness within the terrestrial part of the Wildlife Garden has increased from 26 species in 2022 to 60 in 2023, a 130% increase. The species richness within the **Wildlife Garden is now at 79 species** and for the newly created Bumblebee Buffet Area at 11 plant species.
- The development of a campus community wellbeing allotment.

## Travel

- Increase in modal shift to more sustainable modes of travel identified in the travel to work survey,
- 5 members of staff took advantage of the EV salary sacrifice scheme,
- 16 separate users were logged as using the EV charging facility over the reporting period,
- 6 members of staff took up the salary sacrifice Cycle to Work Scheme.

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## 1. Introduction

The academic year 2022/23 has been marked by several significant sustainability achievements, despite ongoing challenges related to energy and materials supply chain disruptions caused by continued global shortages, heightened demand and divergent economic recoveries. The year has been marked by the growing “polycrisis” of record-breaking global warming climate events and ecological breakdown and continued supply chain pressures impacting on project delivery and cost.

This report highlights not only this year’s performance, but many of the direct actions that the University has taken to in response to the climate and ecological crisis. Throughout the year, our focus has been on advancing policies, targets, making investments and taking action that aligns with the Sustainable Development Goals, institutional objectives, and the estates strategy. Important work that has built upon the foundational initiatives in the previous academic year. Of particular importance has been the successful recruitment of two full-time positions: a Waste and Travel Coordinator and a Sustainability and Built Environment Coordinator. These strategic roles are instrumental in supporting progress across all sustainability domains and key work packages.

During the year we have also committed to and released a new Climate Carbon Action Plan, a Waste Management Policy and Waste Action Plan and a Sustainable Procurement Policy all of which work towards decarbonising and transforming our operational footprint. We have also been creating a process and framework to embed sustainability into all of our undergraduate degree courses, and our Employability, Enterprise and Entrepreneurship Graduate Attributes. While additionally addressing opportunities for widening participation and identify activities that will support the integration of the UN Sustainable development Goals into the student experience throughout their time at the University of Suffolk.

Buoyed on by our success of being named Suffolk’s Greenest Business this year and looking to build on our HESA achievement of having attained the biggest reduction of scope 1 and 2 emissions of any UK university, we are now looking to granulate and reduce our scope 3 data further in the coming academic year and deepen our commitments to delivering net zero and zero waste to landfill as we enter the Year of Sustainability for 2023/24/.

## 2. Carbon and Utilities

In January 2023, The Royal Anniversary Trust released the publication, "Accelerating towards Net Zero," a comprehensive roadmap aimed at significantly reducing carbon emissions within the tertiary education sector. This report presents an exhaustive analysis of the carbon footprint associated with tertiary education, utilising advanced modelling techniques to pinpoint specific areas where emissions reporting and reduction efforts should be concentrated. Furthermore, the report introduces the Standardised Carbon Emissions Framework (SCEF), with the primary objective of enabling all Higher Education (HE) and Further Education (FE) institutions to accurately measure, report, and proactively manage their carbon emissions.

The primary objective of the SCEF is to promote standardisation in greenhouse gas (GHG) emissions by guiding institutions towards best practices, offering comprehensive guidance, and providing established methodologies. It's worth noting that the Framework is rooted in the GHG Protocol and lays the groundwork as the University begins to progress towards adopting a Science-Based Target approach. Expert guidance has been developed by an EAUC Working Group, comprising of sector experts chaired by Glasgow Caledonian University, with support from Avieco and a sector-wide Steering Group inclusive of Universities UK, the Association of Colleges, AUDE, BUFDG, GuildHE, and HESA.

In its capacity as a high-level aggregated reporting Framework the SCEF, will serves as a vital resource for establishing best practices in the FE/HE sector. Whilst individual institutions disaggregated data, will serve as a valuable tool for informing their understanding and facilitating data-driven decision-making processes to work towards achieving Net Zero.

The Department for Education (DfE) has officially confirmed that universities and colleges are mandated to report their new baseline carbon emissions by the year 2024, in accordance with their Sustainability & Climate Change Strategy. Subsequent tracking of progress against national targets is likely to commence from 2025 onward. It is expected that these reporting requirements will encompass Scope 1, Scope 2, and Scope 3 emissions, aligning with the SCEF.

In England and Northern Ireland, the Estates Management Record (EMR) provided by HESA following the transfer to Jisc will continues to be available for carbon emissions reporting for the University. Institutions are being encouraged to continue using EMR for this purpose and this would be our recommenced approach. Collaborative efforts with DfE during the reporting year have been underway to assess the potential value of an enhanced EMR reporting product. This will involve aligning the EMR with the forthcoming SCEF.

As part of the standardisation effort, new baselines and mechanisms will need to be established within the University to ensure comprehensive data capture covering the following areas:

**Image 1:** *New Emissions Reporting Requirements*

Scopes	Description for HE
<b>Scope 1</b>	Electricity that is purchased or otherwise brought into the organisational boundary of the company. This must include both owned and rented or leased buildings where the institution has operational control.
<b>Scope 2</b>	Refrigerants & researched-based fgas and VOC
<b>Scope 3:</b>	<b>Other Indirect GHG Emissions</b>
<b>Purchased goods and services:</b>	Extraction, production, and transportation of goods and services purchased or acquired by the University in the reporting year
<b>Capital Goods</b>	Extraction, production, and transportation of capital goods purchased or acquired by the reporting company in the reporting year
<b>Upstream transportation and distribution:</b>	Transportation of goods to the institution Transportation of goods to the organisation and transportation services paid for by the organisation.
<b>Business travel</b>	Business Travel Emissions associated with transportation (and related, e.g. hotels) of employees for business-related activities.
<b>Employee commuting</b>	Staff Commuting Emissions from transportation of employees between their homes and their worksites
<b>Upstream leased asset</b>	Leased Buildings & Vehicles Emissions from use by the institution (lessee) of leased buildings and vehicles
<b>Downstream transportation and distribution</b>	UK Student Travel & International Student Travel Transportation of students to the institution including daily commuting and return to home
	Student accommodation and halls of residence that are on-site but owned/managed by an external organisation.

<b>Processing of sold products</b>	Likely only to apply if the institution owns a commercial entity producing goods.
<b>Downstream leased assets</b>	Leased Buildings & Vehicles Emissions from use of buildings and vehicles leased out by the institution
<b>Investments</b>	Investments To cover any stocks, shares or investments & endowments an institution has as well as pension schemes. To include any breakout companies which have resulted from research activities.

Over the next two years the University will further develop its Carbon Reduction Plan and Sustainability Strategy across the following key areas:

- Integration Across Key Dimensions:** This encompasses teaching, research, leadership, local contributions, and campus responsibilities. To achieve this, we will establish cross-functional teams to identify opportunities for embedding sustainability principles into our curriculum, research initiatives, and administrative practices. Furthermore, we will emphasise leadership involvement in championing sustainability efforts within the organisation.
- Progress Reporting and Data Enhancement:** We will implement more granulated and transparent progress reporting mechanisms. This will involve enhancing our data collection processes through the utilisation of the SCEF. By preparing for and adopting SCEF, we will ensure that our emissions data is in line with the GHG protocol, systematically gathered, analysed, and reported in a standardised format. This data-driven approach will provide us with actionable insights into our carbon footprint and allow us to make informed decisions regarding emissions reduction strategies.
- Corporate Responsibility:** In alignment with our sustainability objectives, we are exploring signing the United Nations Sustainable Development Goals (UN SDG) Accord. Whilst additionally, working towards the integration of elements from the SDG Accord reporting framework into our existing reporting practices.

We will continue to assess and adapt our strategies to make tangible progress in these critical areas as sector guidance becomes available.

## 2.1 Emissions and Decarbonisation

The Academic Year 2022/23 saw the publication of the Carbon Climate Action Plan: 2022 – 2027. This comprehensive plan directly aligns with our Estates Strategy, ensuring a holistic approach to sustainability. Additionally, it establishes cross-functional connections with the Travel Action Plan and the Sustainable Procurement Policy 2023 - 2025. Collectively, these documents play a pivotal role in advancing our institutional goals, aiming to decarbonise scopes 1 and 2 by 2030 and scope 3 by 2050 in a staggered manner. The Carbon Climate Action Plan will undergo annual reviews and serves as the foundational roadmap guiding our journey towards achieving net-zero emissions.

### 2.1.1 Emissions Performance

For Scopes 1 and 2, all emissions data has been calculated using the extant set of DEFRA Greenhouse Gas Conversion factors. The following data presents our performance over the reportable academic year:

- The annual quantity of emissions in tonnes of total carbon dioxide equivalent from the use of electricity during the reporting period was 10.7 tCO<sub>2</sub><sup>e</sup>
- The annual quantity of emissions in tonnes of total carbon dioxide equivalent from the use of gas during the reporting period was 153.65 tCO<sub>2</sub><sup>e</sup>

The total for Scope 1 and 2 emissions amounted to **164.35tCO<sub>2</sub>e**. Which is a decrease of 72% on last years emissions and a 93% reduction against our 2009/10 baseline of 2,704tCO<sub>2</sub>e. As part of our drive towards decarbonisation of scope 1 and 2 emissions by 2030, step change targets sought to ensure reduction in carbon emissions. Target 1 sought to reduce scope 1 & 2 emissions by 65% against the 2009/10 baseload. The University has realised a 93% reduction.

**Image 2: Carbon Reduction Scope 1&2: University of Suffolk Sector Baseline KPI**

	2019/20		2020/21		2021/22		2022/23	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual
<b>Carbon emissions Scope 1&amp;2 (tCO<sub>2</sub> e)</b>	1541	940	1541	598	1217	603	<b>947</b>	<b>164</b>
<b>Reduction from 2009/10 baseline: 2,704 tCO<sub>2</sub> e</b>	43%	65%	43%	77%	55%	76%	<b>65%</b>	<b>93%</b>

Target 2 sought to ensure operational emissions of Scope 1 and 2 GHG per m<sup>3</sup> of gross internal area was no greater than 21 kgCO<sub>2</sub>. The University has realised an operational emission of 5.22 KgCO<sub>2</sub><sup>e</sup> per m<sup>3</sup> GIA. Target 3 sought to ensure Scope 1 and 2 emissions per FTE Staff and Student was no greater than 160 kgCO<sub>2</sub>. The University has realised an emission per head of 40.08 KgCO<sub>2</sub><sup>e</sup>. Image \* below demonstrates comparative data with previous years.

**Image 3: Emissions per GIA and FTE**

Emission Definition	2018/19	2019/20	2020/21	2021/22	2022/23
<b>Emissions per m<sup>3</sup> of GIA</b>	42.98 Kg CO <sub>2</sub> <sup>e</sup>	34.73 Kg CO <sub>2</sub> <sup>e</sup>	22.08 Kg CO <sub>2</sub> <sup>e</sup>	23.70 Kg CO <sub>2</sub> <sup>e</sup>	5.22 Kg CO <sub>2</sub> <sup>e</sup>
<b>Emissions per staff and Students</b>	329 Kg CO <sub>2</sub> <sup>e</sup>	273.07 Kg CO <sub>2</sub> <sup>e</sup>	154.76 Kg CO <sub>2</sub> <sup>e</sup>	175.2 Kg CO <sub>2</sub> <sup>e</sup>	40.08 Kg CO <sub>2</sub> <sup>e</sup>

### 2.1.2 Heat and Cooling Improvements

The electrification of our estate and the installation of air source heat pumps, along with point-of-use hot water systems, have marked significant milestones in our decarbonisation strategy, please see Image \* below. These initiatives have propelled us closer to our sustainability goals, drastically reducing our carbon footprint and enhancing energy efficiency across our facilities. However, we now face a critical challenge with the remaining gas heating and hot water systems in both the Waterfront and James Hehir Buildings if we are decarbonising the final percentages of scopes 1 and 2.



Addressing this issue requires substantial capital projects and retrofitting efforts. Currently, we are engaged in discussions with an SCC-led project aimed at exploring the development of a district heating network system. This project seeks to identify heat highways and the installation of green grids in Ipswich, a crucial step in decarbonisation of the estate.

**Image 4: Decarbonisation Installs**

<b>Waterfront Building</b>	<b>Install</b>	<b>Max KW</b>
Cooling	Chillers	900
Hub Rooms Cooling	Split AC Units	50
<b>James Hehir</b>		
Heating & Cooling	Daikin VRF systems / Daikin DX AHU systems	306
<b>Library Building</b>		
Cooling	Split AC Systems in some areas	146
Hot Water	POU electric water heaters / electric DHW cylinders	9
<b>Atrium Building</b>		
Heating & Cooling	Mitsubishi VRF Systems / Split AC heat pump systems	430
Hot Water	POU electric water heaters / electric DHW cylinders	20
<b>Health &amp; Wellbeing</b>		
Heating & Cooling	Mitsubishi VRF Systems / Split AC heat pump systems	810
Heating & Cooling	Electric heater battery AHU's	48
Hot Water	POU electric water heaters / electric DHW cylinders	25
<b>Arts Building</b>		
Heating & Cooling	Mitsubishi VRF Systems / Split AC heat pump systems	308
Hot Water	POU electric water heaters / electric DHW cylinders	12
<b>LT4</b>		
Heating & Cooling	Panasonic Split AC heat pump systems	50
Hot Water	POU electric water heaters	9
<b>STSC</b>		
Cooling	Split AC systems	35
Hot Water	POU electric water heaters	9
<b>NM</b>		
Heating & Cooling	Spilt AC Systems	100
Hot Water	POU electric water heaters	9
<b>120 Star Lane</b>		
Hot Water	POU electric water heaters	9

## 2.2 Utilities Costs and Consumption

The Academic year 2022/23 presented another challenging year for the University in respect to utilities cost. Changes expected in the UK Energy market to address the issue of consumers and taxpayers being affected by fluctuating gas prices in England and Wales have been picked up by The Energy Prices Act 2022.

This legislation aims to decouple the cost of low-carbon electricity from the volatility of gas prices, thereby reducing the impact on consumers and taxpayers. The plan involves setting a revenue limit to restrict the profits that generators can earn. In addition, efforts are underway to collaborate with low-

carbon energy providers in order to identify a solution that ensures consumers are not faced with significantly higher costs for electricity generated from renewable and nuclear sources, thereby promoting affordability and sustainability in the energy sector. Whilst a clear timetable for decoupling has yet to be presented, we can expect to see the benefits of marginal price reductions over the next 18 months.

### **2.2.1 Utilities Costs**

Overall energy and water costs after adjustments were £1,457,296 million for 2022/23, an increase of 79% from the previous year. Over the past year, an increase in demand and insufficient supplies caused by the Covid-19 pandemic, further exacerbated by the situation in Ukraine continued to raise concern over the energy market. In early 2023, energy prices began to decline as a result of a reasonably mild winter and countries becoming less reliant on Russian gas.

Wholesale prices have dropped to their lowest point since May 2022; however, the current rate of energy is still extremely high in comparison to that of previous years. Energy market intelligence analysts, Cornwall Insight, have suggested that it is unlikely that wholesale prices will return to pre-pandemic levels in this decade.

Although rates are decreasing, business energy prices are currently uncapped and government assistance was significantly reduced with the Energy Bill Relief Scheme ending in March 2023 and replaced by the Energy Bills Discount Scheme. Neither of these schemes are currently applicable to the University and we are being billed at full costs.

In real terms electricity usage is down, a welcome achievement when taking into account the growth of the estate and the addition of the Health and Wellbeing Building into the campus portfolio in April 2023.

### **Electricity and Gas**

- The average across the estate for September 2022 to March 2023 was 35p/kWh.
- The average cost from April 2023 to September 2023 stands at 28p/kWh.

These averages are fully costed and include all transmission and service costs. Prices for the new academic year will be continue at 28p/kWh, which compare well with industry averages at 30.60p/kWh.

The gas contract has remained consistent and locked at 124.85 p/Th, which roughly equates to 5p/kWh.

Electricity billing throughout the year has been challenging, with EDF delivering at 80% this academic year. We work continually through our Vertas partnership to ensure EDF meet the SLA requirement of 95% billing, with assurances that all billing is expected to be back in line by October 2023 following the addition of new sites to the portfolio.

### **Water**

Water consumption is down 33% on last years' usage, with a total consumption of 20,868 m<sup>3</sup> and cost of £36,343, with monthly management and audit practices having help highlight anomalous and unusual billing. A portion of the 61% cost reduction from 2021/2022 can be attributed to the closure of the former Cult bar in the James Hehir building during the last quarter of the academic year.

### 2.2.2 Consumption

The overall combined contracted utilities consumption figures less tenanted buildings and spaces for gas and electricity 2022/23 was 3,797,315 kWh, an energy efficiency reduction of 3.5% on last year's usage. Of which:

- 55,761 kWh of electricity supplied from non-renewable energy.
- 2,978,256 kWh electricity was supplied from off-site OFGEM certified renewable energy guarantee of origin (REGO)
- 763,298 kWh was gas.

And

- An additional 56,321 kWh of electricity was generated from on-site solar PV array renewables.

### 2.2.3 Off Site Renewable Power Generation

At the close of the academic year all electricity consumption on our premises, apart from the Wharf Car Park lighting, is now exclusively supplied from verifiable renewable sources through our partnership with EDF.

The generation is underpinned by OFGEM and Carbon Trust's assurance that our chosen Renewable tariff is rigorously backed by certificates of renewable energy guarantees of origin, which have been responsibly obtained and retired by EDF. The emission factor associated with our off-site renewable energy consumption aligns with the GHG Protocol Scope 2 guidance, enabling us to transparently integrate it into our performance reporting.

### 2.2.4 On Site Renewables Cost Savings

The Climate Change Levy (CCL) is a government levy added onto business energy bills. It is paid on all energy used and is applicable to all businesses, regardless of who your energy supplier is. The tax was introduced to encourage businesses to implement energy efficiency measures to reduce consumption as well as helping to reduce overall emissions. These are reviewed annually, with rates charged as of 1st April 2023: Electricity: 0.775p/kWh. Gas: 0.672p/kWh. Switching to off-site renewables has saved the University approx. £21,500k this year in consumption and fixed price costs.

## 3. Display Energy Certificates (DECs)

A Display Energy Certificate (DEC) is a mandatory document for any public building with a usable floor space exceeding 250m<sup>2</sup>. This certificate assesses the building's energy performance by considering its carbon dioxide (CO<sub>2</sub>) emissions over the past year. The assessment results in a numerical score and an operational rating, graded on a scale from A (indicating the lowest emissions) to G (indicating the highest emissions). Typically, public buildings tend to score around 100, resulting in an operational rating of D. While there isn't a specific target established for the percentage of rated University buildings, the sector generally anticipates that these buildings should aim for an average DEC rating of D or better.

DEC measurements are taken for a full calendar year and therefore reflect campus usage during 1 January 2022 to the end of the end of December 2023. Comparing these figures with results from similar analyses of earlier years' energy data, the observed energy-type trend remains consistent, with James Hehir continuing to under-perform. A recently commissioned campus building condition

survey which includes James Hehir will evaluate all structures, systems, and components, including electrical and mechanical systems to identify any defects or problems that need to be addressed. Once presented this information will assist in the prioritisation of repairs and maintenance, enabling us to target areas where energy efficiency can be improved, supporting plans for future upgrades or renovations.

The progressive movement towards onsite and offsite renewable electricity generation and greater efficiencies placed on our remaining gas heating services, complete with the AY 2023/24 LED Lamping programme for Arts and Atrium should see representative energy efficiencies during the next DEC round across our building portfolio.

**Image 5: Display Energy Certificates**

Building	DEC Rating 2020/21	DEC Rating 2021/22	DEC Rating 2022/23	Floor Area (m <sup>2</sup> )
Arts	B (38)	C (74)	C (75)	3727
Atrium	B (36)	A (16)	A (13)	11293
James Hehir	E (104)	D (91)	D (92)	3649
Waterfront	C (60)	B (37)	B (47)	10680

#### 4. Energy Efficiency Initiatives

This year progress has continued to be made in identifying energy efficiency gains and the potential to increase value from the estate. Utility reviews, coupled with a focus on space utilisation conducted in the last half of the academic now enable us to focus on the identification of building performance improvements.

##### 4.1 Metering Strategy

Better metering can provide more timely and detailed information on how energy is being used in our buildings. Improving our metering processes and data collection, when coupled with our half-hourlies, will enable us to understand how energy demand varies through-out the day within a given building. This is crucial to the provision of feedback on performance. Our metering strategy provides an important component of our climate reduction programme. This year marked the completion of the initial phase of its implementation, emphasising the evaluation of the condition and accuracy of our existing infrastructure, as well as identifying the sub-metering requirements essential for the subsequent phases to be linked to the BMS. Once the metering strategy is completed, we will be able to provide a disaggregation of the energy demand for internal areas and major plant items. This will be achieved through the sub-metering, giving us a much-enhanced understanding of the patterns of energy demand within a building.

Metering reliability and data granularity levels across the campus is varied and will require standardisation. While half-hourly data provides valuable building profiles for both the James Hehir and the Waterfront Building, our remaining building stock lacks the granularity required for a similar level of scrutiny concerning building performance and energy utilisation.

#### **4.1.1 Meter Review**

Having secured the addition of a new Sustainability and Built Environment Coordinator in January 2023, we were able to embark on a comprehensive metering review this year, encompassing the condition and accuracy of all our electricity, gas, and water infrastructure and meters across all our campus buildings. The results from this undertaking will be instrumental in ensuring billing accuracy and streamlining our resource consumption and financial accountability during the second stages of the metering strategy in AY 2023/24.

Working with Estates Skills Team specialists, assessments were undertaken to precisely correlate our 43 meters with specific buildings and feed-runs, whilst further refining metering at floor level. One of the primary challenges encountered has been the presence of split feeds and ambiguity stemming from uncertain electrical wiring, exacerbated by the lack of updated plans. This is particularly evident in our older legacy buildings, which have undergone patchy upgrades dating back to the 1970s.

During our assessment, several broken analogues and inaccurately reporting Automated Meter Readers (AMRs) for gas and water were identified. Repairs to all gas meters are now complete, with Anglia Water data syncing to Watercore due to be completed by end of Autumn 2023.

#### **4.1.2 Billing Audit and Review**

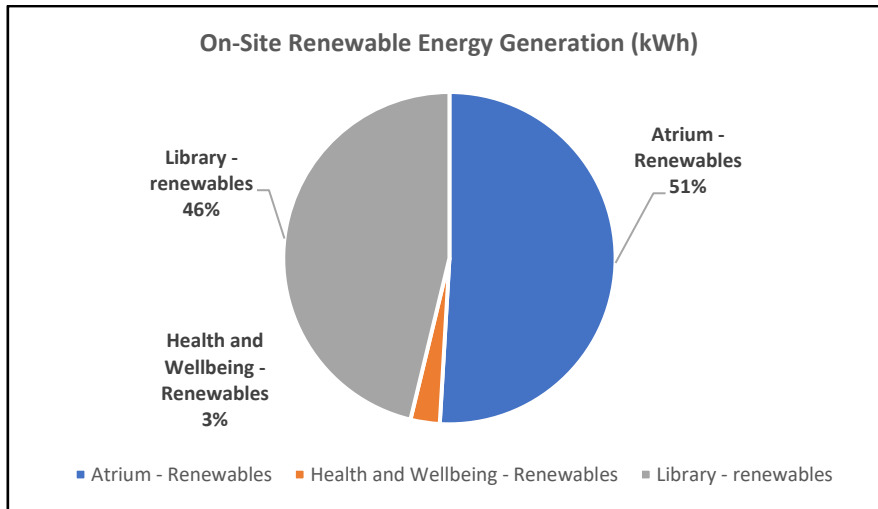
A significant milestone in our metering strategy has involved the proactive management of monthly bill checking. This has led to the identification of anomalies in almost 40% of our water invoices over a 12-month period and a continuance of estimated readings. These anomalies persist despite the presence of Automatic Meter Readers. To address reoccurrence and tackle billing queries early on, we have implemented regular face-to-face meetings with Anglia Water and Vertas. Through these meetings we are systematically reviewing anomalies, addressing operational challenges, and ensuring prompt remedial measures. As we move forward our focus will extend to adopting a procurement Framework for water provision to ensure quality of service.

Both the meter review and ongoing bill evaluation have substantially diminished the financial institutional risk associated with inaccurate bill estimates and faulty infrastructure. Whilst enhancing our processes and the management of external suppliers has empowered us to augment operational efficiencies and prepare for the development of sub-metering individual buildings to granulate energy demands and define consumption profiles. The forthcoming second stage of the meter strategy, subject to funding, is expected for 2023/24, which will ensure the implementation of a sub-metering programme across campus.

#### **4.2 Solar Generation**

Following a series of supply chain challenges the Health and Wellbeing 35kWp solar array was installed and commissioned in July 2023. Breakdown of this year's on-site generation appears in the graph below (Image \*). Combined systems across campus have generated some 50,900kWh of solar electricity during the reporting period up 20% from last AY, representing a saving of 10,540 kg CO<sub>2</sub>e. In operational comparative terms almost the consumption requirements to Neptune Marina and an electricity cost saving of approximately £20k. The lower output from H&W represents generation for the final quarter only due to install date.

**Image 6: Solar PV Renewable Generation**



As identified in the Climate Carbon Action Plan there remains considerable value in further expanding our solar portfolio, with a specific focus on providing support for the James Hehir Building. In the upcoming fiscal year 2023/24, a comprehensive review will be conducted to assess the feasibility and suitability of implementing either solar photovoltaic (PV), solar thermal technologies, or ASHP for this building. This initiative will depend on the outcome of the Building Condition Survey, the results of which will help to determine the application of the most suitable technologies.

#### 4.3 Hot Water Plant Waterfront

Carbon and cost savings are now evident, following the completion of the final stage of the Waterfront hot water boiler upgrade to a condensing, modulating 'A' rated gas fired water heater and solar pre-heat package retrofit in the Autumn of 2022. With carbon down from 70,770 kgCO<sub>2</sub>e to 20,170 kgCO<sub>2</sub>e based on last year's gas usage and a cost saving of 71% on hot water utility spend.

#### 4.4 Air Conditioning Units

Through our NCC partners, several leaking and underperforming air conditioning units were identified across various campus locations. These have been repaired to ensure optimal functionality and better energy consumption performance.

#### 4.5 Waterfront Chillers

Airedale Chiller 2 experienced a severe setback with the failure of three out of its six compressors, whilst repairs have been made to ensure the units continue to service the building it is imperative to consider replacement options for the aging 2008 chillers, with a focus on enhancing energy efficiency. Two viable models have been researched for consideration which provide energy-efficient alternatives and will be brought by Operations to the Estates Strategy Group to request funding in AY 2023/24.

#### 4.6 Building Management System Upgrade

Following an extensive consultation with Digital and Procurement colleagues we have been working collectively to provide a high-level analysis of the existing Building Management System BMS across the estate and define the replacement specification in terms of capability and compatibility of the approved upgrade for suppliers. The purpose of the upgrade is to undertake a BMS Upgrade and optimisation programme as part of our decarbonisation strategy. The upgrade will initially cover the

Waterfront, James Hehir, Atrium, Arts and Health and Wellbeing. Over the years the University has extensively invested in Trend controls and to maximise the return on investment made to date, we will be implementing a head end using the same technology and communications protocols.

This upgrade will seek to achieve:

- Cyber security and risk mitigation and future proofing smart system,
- Optimised energy consumption and reduce operational costs, and provide a comfortable and safe environment for our occupants,
- Improved real-time monitoring, predictive maintenance capabilities, and seamless integration with other building systems, such as HVAC, to create a more intelligent and responsive facility,
- Technology that aligns with their sustainability goals, drives energy efficiency and enhances the overall user experience,
- Improved centralised, potentially cloud based and remote monitoring and alarm/alert controls.
- Future proof capacity to extend and adopt greater accessibility and control of building areas to include full integration of water, sub meters, solar panels, DSE projects and EV chargers and compatibility with potential smart campus management system.
- Data logging capabilities,
- Accurate and timely performance visibility, with usability for different stakeholders,

An expression of framework expression of interest process for the upgrade was initiated in July 2023, with a view to full system roll out by March 2024.

## 5. Campus Travel

The University is dedicated to its travel plan and this year has continued to actively promote a modal shift towards sustainable travel.

**5.1 Unicycle Scheme:** The Unicycle scheme designed to facilitate staff commuting to meetings in Ipswich through bicycle use, has recently undergone a modification in its insurance coverage. This alteration now extends coverage to cycling during lunch breaks for recreational purposes. The scheme will be relaunched in the new academic year, reinforcing wellness and active travel. The University continues to work with the Suffolk County Council, Behaviour Change Team Manager for Transport Strategy. With several initiatives now underway for the new academic year to seek to recruit University Student cycling instructors to deliver sessions to schools; in addition to a free e-bike commuting trial for staff to run for 4 – 6 weeks.

**5.2 Cycle to Work Scheme:** The Cycle to Work Scheme is an employee benefit scheme that enables the University to 'hire purchase' bikes and safety equipment to employees through salary sacrifice. On completion of final payment staff are then able to own the bike. Uptake numbers tend to be fairly even each year and despite a short promotional campaign in June for Bike Week remain similar to previous with 6 members of staff taking advantage of the benefit. Working with POD we will continue to promote and further highlight the scheme.

**5.3 EV Salary Sacrifice Scheme:** 2022/2023 saw the first full year of the EV Salary Sacrifice Scheme with 5 members taking up this benefit.

**5.4 EV Charging:** Utilisation of the vehicle-charging stations located on Long Street amounted to a total consumption of 2,788,170 kWh over the academic year. This usage has resulted in an income of approximately £900 which contributes to offsetting the University's associated energy costs. Throughout the year, 16 separate vehicles have been identified as regular users.











It is worth noting that we encountered challenges earlier in the year due to technical faults with the charging units, the unit providers have since rectified these issues. As a result, the current availability of the charging stations is well aligned with the demand, ensuring efficient service for our users. We will continue to monitor user patterns with a view to installing additional chargers when required.

**5.5 Travel to Campus Survey:** This year, the survey ran from 12<sup>th</sup> September to 7<sup>th</sup> October 2022, with an extension requested to ensure we were able to capture staff and students returned to campus. This enabled us to increase survey participation, totalling 244 respondents. With approx. 50% of staff responding. Several noteworthy differences were evident when comparing the current year's results to those of previous years. Significantly, there was a credible rise in the percentage of individuals opting for more sustainable modes of transportation, such as walking and EV and Hybrid car shifts. Whilst the trend observed last year among survey participants in moving away from single-occupancy car usage has continued into 22/23. Additional observations include:

- 73% of respondents have a petrol or diesel vehicle available for their commute to work, which is slightly below the county average 79.6%, although only **48.77%** drive by car as a single occupant, significantly below the County average. Image 7 highlights the most common preferences among respondents for commuting to the University.

This represents a significant modal shift, as more than 50% of respondents now opt for alternate, sustainable modes of travel when commuting to the university. It is important to note that these figures provide a snapshot of commuter behaviour at best. Increasing the number of survey respondents would enable us to obtain a more precise and comprehensive understanding of the evolving travel landscape.










**Image 7: Modes of Travel by Most Frequent**

Answer Choices			Response Percent
1	Bus		5.74%
2	Car driver - single occupant (whole journey)		48.77%
3	Car driver with a passenger/car share (any part of the journey)		7.38%
4	Car passenger		2.87%
5	Cycle/electric cycle		2.87%
6	<u>Motor cycle</u> /moped/motor scooter		0.41%
7	Park and ride		0.41%
8	Train		6.97%
9	Walk		24.18%
10	N/a - currently working at home		0.41%



- 20% of respondents own a conventional bicycle, but only 5.3% cycle some of the time. This may be due in part to distances to work and safety of cycle routes. With many respondents across the County stating that a number of cycle routes around Ipswich were poorly maintained or felt unsafe to them.
- The proportion of respondents owning an electric or hybrid vehicle has increasing since last year, supported by the staff salary sacrifice scheme and the availability of charge points. 8% of respondents now have either an EV, or hybrid vehicle available to them for their commute. When asked, 77 % said the main reason for not owning one continues to be the purchase/lease price. However, range anxiety and charge point availability are no longer the barriers to transition for staff that they have been in previous years.

**Image 8: Electrical Vehicle Transition Concerns**

1	The car might run out of charge during my journey		13.45%	23
2	I'm not sure where to charge an electric car at home (I live in a flat/terraced house or have no parking)		19.88%	34
3	I'm not sure where to charge an electric car at work or away from home		10.53%	18
4	The purchase/lease price is too high for me at the moment		77.19%	132
5	I don't feel confident in driving an electric car		4.68%	8
6	I'm not sure how it all works		4.68%	8
7	I do not drive/do not hold a driving licence		4.68%	8
8	I also use an electric or hybrid vehicle		1.75%	3
9	None of the above		10.53%	18

- The data reveals that 40% of respondents cover distances exceeding 10 miles during their daily commute. This continues to underscore the significance of regional accessibility, considering the widespread availability and cost-effectiveness of train and bus infrastructure in Suffolk, Norfolk, and Essex. Extending our reach and ensuring equality of campus accessibility remain key priorities.
- An increase in a desire to see improved public transport has increased to 44.7%, with staff discounts and safer cycle routes also presented as important push factors for increasing uptake in sustainable travel.

## 6. Water

The University recognises the intrinsic value of water as a shared resource, characterised by tangible inflows and outflows within our organisation. These natural water flows present both risks and opportunities. Our objective over the coming academic year is to manage these dynamics, minimising potential harm to university assets through and the surrounding environment, while also leveraging opportunities to reduce our reliance on water sources. The water supply the University is described

as very hard, with high levels of calcium carbonate and calcium. Following a preliminary review, this can be seen to be having an impact on heating systems, sanitary ware, and appliances in some areas of campus, reducing product life and efficiency.

It's important to acknowledge that the treatment of potable water carries significant greenhouse gas emissions, which contribute to climate change. In line with our commitment to Sustainable Development Goal 6: Clean Water and Sanitation, during the last quarter of 2022/23 we initiated the first stage of a water billing and consumption review, with a view to establishing a reputable baseline to develop a conservation strategy to ensure the availability and sustainable management of water and sanitation.

Several challenges with the Automatic Readers were identified during this review and continue to persist. During the review inaccuracies were observed with two of the four meters, which throughout the year have at times been required to be brought back online, were low on battery or suffering from pulse feed failures. Staff have continued with manual reads where access has been possible, but AMR failures have led to bills based on estimations, which will have resulted in under or overcharges and led to prolonged staff resourcing to drive repairs with the supplier and wholesalers. These challenges underscore the need for a more streamlined and efficient water metering system to meet the demands of the University and enable us to ensure we have accurate data against which to monitor our billing and establish consumption baselines. Due to Anglia Water estimations for water consumption and evolving water invoices, rebates, and recharges, the water consumption figures provided below are based on the best available data as of this report's release and may require subsequent adjustments once data is confirmed.

For the AY 2022 to 2023 total water consumption and sewerage combined came to 29,885m<sup>3</sup>, a 4% decrease on the previous year, with an estimated spend of £49,984, a 46% decrease on from AY 21/22. Using Defra Carbon Conversion Factors for 2022, scope 3 carbon emission were equivalent to 5,289 kg CO<sub>2</sub>e.

## 7. Waste

This academic year has been pivotal in the formulation of our sustainability Waste Management Policy 2022-2027 and the Sustainable Procurement Policy 2023-2025. Both policies identify strategic areas for development, characterised by the establishment of high-level objectives, primarily focused on advancing circular economy principles and addressing resource consumption inefficiencies. These objectives serve as the overarching framework for mitigating resource utilisation, minimising wastage and seeking to reduce environmental, financial, and social inequalities. A collaborative approach with the procurement team has been instrumental in ensuring the integration of sustainability principles into the broader institutional procurement framework. The accompanying Waste Action Plan 2023 – 2028 identifies implementation initiatives and programmes to ensure progression against the policies and Institutional waste KPI objective.

The University of Suffolk is continuing to work towards its vision of becoming a zero-waste campus, defined as less than 5% waste going to landfill by 2030. This Plan builds upon our 2021 baseline data.

With measurable overarching Key Performance Indicators for all waste streams that seek to:

- Ensure legislative and regulatory compliance.
- Achieve carbon neutrality for scope 1 and 2 emissions by 2030, with a net zero target for remaining Scope 3 emissions by 2050,
- Reduce by 30% tons of total waste produced by 2027 against 2021 baseline.
- Reduce by 60% tons of total waste produced by 2030 against 2021 baseline.
- Zero waste diverting 95% of waste away from landfill and incineration.

### 7.1 Waste Metrics

Image\* below provides a comprehensive overview of waste metrics for the academic year. Importantly, the implementation of innovative waste management initiatives since January 2023 has yielded substantial enhancements in recycling rates. However, it is important to acknowledge that the total volume of waste generated remains a persistent challenge, carrying implications for procurement and asset specification.

**Image 9: AY 2022/23 Waste Performance**

	2019/20	2021/22	2022/23
	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>
<b>All Waste in t</b>	153t	149.7	<b>148.2 t</b>
<b>Reduction from 2019 baseline: 153.7t</b>	0%	2.1%	<b>3.1%</b>
<b>Carbon emissions Scope 3 (tCO2 e)</b>	-	22 tCO2e	<b>8.2 tCO2e</b>
<b>Recycling Figures</b>	90%	90.1%	<b>94.7%</b>

### 7.2 Waste Review

A waste audit was conducted over a six-month period to identify waste composition and complex streams across:

- all schools with laboratory, or workshop facilities.
- the Estates and Digital Directorates.
- controlled solid waste across campus.

The review provided additional opportunities for reinforcing waste reduction and recycling possibilities, identifying training needs and providing a benchmark for an ongoing compliance waste audit programme to launch in AY 2023/24. The results from the review show that a weekly pick up of 18 bin lifts and 3 skips create an average of 2778kg a week dry mixed recycling.

In addition to our waste regulatory classifications, our remaining waste streams can be divided into two broad types: streams made of materials (such as metals, paper or plastics) or streams made of certain products (such as electronic waste and furniture) which require specific treatment and ultimately feed into materials-related streams.

To fully manage these streams, over the year, the University has further invested in the provision of recycling stations across the campus and now oversee 43 waste streams, most of which are recycled or re-used through an extended diversion of waste assets.

### **7.3 Waste Stream Diversion**

This year we have taken action to increase the quantity and quality of resources either reused within the University, removed for reuse, and remanufacture, or recycled, with the aim of achieving high levels of "closed loop" resource management. We have developed clear and coordinated sector-specific programmes of work focusing on resource efficiency, infrastructure needs and the use of recycle. Through our off-site reuse programme, we have collaborated with over six different businesses and charities and resulting in a saving of 44.5t of CO<sup>2</sup>e.

### **7.4 Composting**

Our tea bar and food waste composting program not only reduces our carbon footprint but also played a crucial role in preserving organic materials. By diverting organic waste from landfills, we have saved 24.22 tonnes of CO<sup>2</sup>e equivalent emissions. With the resulting compost directly used in our habitat management programs. This compost has strengthened our soil profiles, promoting healthier ecosystems and contributing to the sustainability of our natural habitats.

### **7.5 New Waste Recycling Stations**

During this academic year, we have expanded our investments into general mixed waste recycling systems by installing recycling stations in all main building reception areas across campus. Our dry mixed waste is collected and segregated by Sackers at their on-site sorting centre, maintaining a closed-loop approach to waste management and ensure we continue to secure high recycling rates for sale into UK and International markets.

### **7.6 Procurement and Waste Management**

Our new Sustainable Procurement Policy emphasises the importance of sustainable procurement that delivers both value for money and social value, encouraging responsible consumption habits among procurement teams, which includes promoting sustainable and ethical products through procurement practices. This innovative approach reflects sector best practice and encapsulates the work we are engaged in with the Higher Education Procurement Association (HEPA) national Responsible Procurement Group (RPG). This group exists to address the issues surrounding responsible procurement in Higher Education and to move our agenda forward.

The Supply Chain is a significant source of scope 3 emissions for the University sector, accounting for 6.6 MtCO<sub>2</sub>e, more than 36% of the sector's total footprint. Therefore, from June 2023 we began to integrate Procurement Policy Note (PPN) 06/21 and NETPositive supplier tools thinking into our framework selections, requiring suppliers to demonstrate a commitment to net zero and implement a carbon reduction plan.

From April 2023 where practicable, we have also sought within estates to prioritise procurement practices that enhance climate resilience, such as sourcing materials and services that are less vulnerable to climate-related disruptions. That are:

- certified or verified to have minimal impact on biodiversity and ecosystems, helping safeguard life both on land and in the ocean,
- part of our social value-driven procurement strategy, support suppliers or initiatives involved charity organisations, support social wellbeing, or habitat restoration projects, such as reforestation, beach cleanup, or coral reef restoration.

Part of this approach since May 2023 has involved the use of second-hand and repurposed assets, sourcing them from within our existing inventory or as part of upcycling initiatives. Similarly, when procuring new products, we have prioritised those crafted from recycled or sustainable materials. Supporting the transition from a linear "take-make-dispose" model to a circular economy, with products designed for longevity and recyclability.

The success of this approach can be observed through the completion of the Careers Hub our first responsible procured small works project. Which delivered a high-quality facility, with strong social value and environmental credentials:

- 10x desks all re-used from campus stock.
- 10x visitors chairs re-used from campus stock.
- 2x break out semi-private pods re-used from campus stock.
- 10x operator chairs- upcycled, VOC free, supplier (Rype) re-manufactured in the UK employing those with long term disabilities.
- Soft seating area- 2x sofas re-upholstered with 'camira' fabrics constructed from 100 recycled post-consumer polyester.
- Small coffee table constructed from recycled yoghurt pots.

## 8. Campus Biodiversity

The University has a commitment to manage and protect the biodiversity assets on our estate. Since 2019 we have had a specific Biodiversity Policy that is designed to ensure that biodiversity becomes an integral part of the University and wider regional habitats network through the application of projects and plans that meet the ambitions of the University strategy and the United Nations SDG's. This year our activities have placed particular emphasis on SDG's 4, 14, 15, and 17.

The following projects have been instigated this year to great success:

### 8.1 Wildlife Garden

16 students engaged with the team to undertake a phase 1 habitat survey of the Wildlife Garden as part of a longitudinal study measuring the increase in biodiversity on campus. The results confirm that since planting species diversity has increased from 26 species in the 2022 Baseline Survey to 60 in 2023, marking a 130% increase. A successful outcome for urban wildlife, demonstrating that with careful application biodiversity can flourish in a small urban area, even one devoid of wildlife for over two centuries.

### 8.2 Pollinator Corridor -Bee Buffet:

In February of 2023 sustainability initiated the creation of a small-scale 'pollinator corridor' to connect the diverse ecosystems of the wildlife garden, physic garden, and the wildflower meadow. By creating foraging pathways, we are seeking to further:

- Enhance Biodiversity: Pollinators such as bees, butterflies, and other insects play a crucial role in pollinating flowering plants, which, in turn, contributes to the biodiversity

of an ecosystem. By establishing a pollinator corridor, we aimed to increase the accessibility of these vital ecosystem services to various plant species within our campus.

- **Genetic Diversity:** For pollinators, maintaining genetic diversity is essential for their resilience in the face of environmental changes. A well-connected pollinator corridor can facilitate gene flow by allowing for the movement of pollinators between different habitat patches, reducing the risk of inbreeding and enhancing their genetic diversity.
- **Ecological Resilience:** The interconnectedness of various habitats through a pollinator corridor promotes ecological resilience. In the face of disturbances like extreme weather events or habitat degradation, a robust network ensures that pollinators can find food and shelter in alternative locations, reducing their vulnerability.

The establishment of the pollinator corridor has created further living lab opportunities for scientific research on pollinator behaviour, plant-pollinator interactions, and the overall health of ecosystems. It will be included in our long-term monitoring and data collection, providing valuable insights into the impacts of habitat connectivity on pollinator populations and the broader ecosystem for students and researchers. 8 ecology students undertook a baseline survey across the pollinator corridor, identifying 11 species.

Later in the year a remarkable observation was made by staff: the mating behaviour of a queen buff-tailed bumblebee (*Bombus terrestris*). The mating behaviour of the queen buff-tailed bumblebee is significant because it suggests that the corridor has provided suitable conditions for the reproductive activities of this important pollinator species. Successful mating is a crucial step in maintaining the population and ensuring its long-term survival.

### **8.3 Wildflower Meadow - Phase 2**

In the third year of our wildflower meadow project, we entered a critical phase of its development. To ensure the continued success of the meadow, we undertook several key activities. In the autumn, we overseed certain areas while allowing others to establish naturally through self-seeding. This strategy aimed to promote biodiversity and maintain the meadow's ecological balance. However, as the meadow evolved, we have noticed an increase in grass dominance, signalling the need for some maintenance during the upcoming year AY. Despite this, we remain committed to a low-intervention approach, as the meadow's success relies on minimal disruption to its natural processes and climate resilience.

One particularly exciting observation during this phase was the prevalence of large grasshopper populations within the meadow. Grasshoppers serve as excellent indicator of habitat heterogeneity and play a crucial role in the local food chain. Their presence can likely be attributed to the creation of microhabitats within the meadow, including ant hills and open swards. These findings underscore the importance of our conservation efforts, demonstrating that our wildflower meadow is not only thriving but also contributing positively to the broader ecosystem.

The presence of a thriving grasshopper population within our wildflower meadow provided an unexpected predation opportunity that revealed the presence of a remarkable species - the wasp spider (*Argiope bruennichi*). This striking arachnid, known for its distinctive yellow and black markings, is typically associated with warmer climates and has been identified as a useful climate change indicator species. Its appearance in our meadow highlights the potential impact of changing environmental conditions on local ecosystems. Additionally, the presence of the wasp spider plays a vital role in maintaining the balance of the grasshopper population

by preying on these herbivores. This natural control mechanism underscores the intricate ecological relationships within our meadow, demonstrating the importance of preserving and studying these dynamic habitats in the context of broader ecological and climate change research.

#### **8.4 Physic Garden – Health and Wellbeing**

The successful establishment of the Physic Garden around the entrance to the Health and Wellbeing building represents a significant achievement in our campus's ecological and communal development. This garden, has been designed to showcase a diverse array of medicinal plants, not only serves as a valuable educational resource, but also creates a welcoming community space for both staff and students. The inclusion of medicinal plants underscores their historical and contemporary significance in healthcare and wellness. Moreover, the garden's habitat features provide critical support for local biodiversity, offering a sanctuary for various species and contributing to the campus's overall ecological balance. This multi-functional garden exemplifies the harmonious integration of nature, education, and well-being, enriching both the environmental and human aspects of our campus community.

#### **8.5 Wellbeing Allotment**

The Wellbeing Allotment project, a recent addition to our campus, has been successfully realised this year, culminating in the completion of the final hard landscaping in July and the procurement of essential equipment. This initiative has been a collaborative effort, with Estates staff building the vegetable beds and participating in a team-building day to transfer compost into the space, ensuring its readiness for the new academic year.

The Wellbeing Allotment holds great promise for our campus community. It offers a unique opportunity for both students and staff to actively engage in sustainable food systems by growing their own produce on-site. Beyond its ecological benefits, the project has a strong focus on wellness and mental health improvement. Gardening has been widely recognised for its therapeutic and stress-relief qualities, and this allotment will provide a serene space for individuals to reconnect with nature. Additionally, the project aims to foster a sense of community by bringing people together to enjoy the shared space and collectively contribute to its cultivation.

### **9. Engagement**

Over several years, the University of Suffolk has developed strong external collaborations, and this is a guiding principle for our sustainability work. Our engagements and events bring together students, academics, technologists, and non-academic stakeholders in the public, private and third sector. This engagement enables us to undertake knowledge exchange, impactful research, drive innovation and enterprise, and influence policy. Over 504 direct engagements have been recorded over the academic year.

#### **9.1 Student and Staff Engagement**

- *Student Micro Interns:* The sustainability team was delighted to work with 5 micro placement students over the year, representing over 150 hours of contact time. Our student team assisted with the implementation of a wide range of projects, covering promotional film making, compost evaluation, blog writing, freshers support and the wellbeing allotment preparation.

Placement students play an essential role in our team's journey towards sustainability. Their infusion of fresh ideas and academic knowledge invigorates our initiatives, presenting

innovative solutions and challenging the status quo. As they gain hands-on experience, our interns develop valuable skills and contribute to our productivity, allowing our core team to focus on strategic tasks. Moreover, our engagement with these talented cross discipline individuals not only diversifies our workforce, but also long-term sustainability by nurturing future leaders and promoting community connection.

- *Mini survey competition:* During Freshers' week we ran a short survey to identify the areas of sustainability that were important to students. Climate and Wildlife and green space provision were the highest scoring topics amongst 113 respondents.
- *Tour of Brickmakers Wood:* An afternoon tour of Brickmakers Wood created a good opportunity for 25 members of staff to see first-hand some of the great work being undertaken by our campus resident charity Eden Rose Coppice Trust. Throughout the year ERC has continued to work with course leaders in providing curriculum opportunities across a range of degrees. The woodland has also played host to an additional number of staff meetings and team building events, with approximately 63 additional users.

Our partnership with Eden Rose showcases the profound impact of hands-on, real-world learning experiences. With regular curriculum visit experiences not only benefiting students by providing practical insights but also contributing to ERC's charity work. The utilisation of Brickmakers Wood for staff meetings and team-building events underscores its significance as a communal space that bridges the gap between academia and local community engagement. In doing so, it promotes a holistic approach to education that not only enriches the minds of students but also nurtures a sense of social responsibility and connection within the broader community.

- *Freshers Week:* Our Freshers Week theme focused on 'energy-saving and carbon reduction', addressing the pressing concerns of students facing the cost-of-living crisis leading into Autumn 2022. A high level of engagement was evident, with approximately 160 students actively participating and interacting with our stand, underlining the importance of sustainable living practices within the student community. It was hoped that this initiative would empower students to make more environmentally conscious choices but also equips them with valuable skills to navigate financial challenges, making it an impactful part of their Freshers Week experience.
- *Living Sustainably for Less Initiative:* This initiative was launched to provide essential support to our community during a particularly challenging period during the Autumn of 2022. We designed and launched our "Living Sustainably for Less" webpages to provide staff and students with valuable resources and information on cost-effective, energy efficient and low consumption living. The site offered a wide range of support, links, and practical tips covering energy-saving measures, budget-friendly food choices, and clear signposting to grants and financial advisory services. We will be migrating it across to the new web platform for 2023.

## **9.2 External Engagement and Collaborative Support**

The university serves as a pivotal anchor institute within the local community, actively engaging in knowledge exchange and providing invaluable support to local groups in their endeavours. Central to this role is the university's commitment to assisting groups in securing funding for community projects and supporting them in their own sustainability journeys. This multifaceted involvement is integral to bolstering the sustainability initiatives of our local community, underscoring the university's dedication to enhancing the region's well-being and resilience through collaboration.



- **New Wolsey Theatre:** Over the past year, the New Wolsey Theatre has received ongoing support and advice from the Head of Sustainability as part of their internal Environmental Responsibility Task Group. This group is working to advance sustainability commitments and integrate sustainability practices within the theatre. Sustainability Estates has delivered 3 Sustainability and Climate Literacy training events to theatre staff members, engaging 53 delegates. The New Wolsey Theatre has recently been awarded Silver by the Suffolk Carbon Charter.
- **Greener Ipswich:** Throughout the late spring and summer, the Sustainability and Estates team remained actively engaged in supporting the Greener Ipswich project. Specifically, the team took on the responsibility of weekly watering for the Greener Ipswich planters located along the waterfront stretch from Stowe Bridge. This coordinated effort included a partnership with the Men's Shed, a local community group, to jointly maintain the area's visual appeal and promote biodiversity.
- **The Make a Difference Social Enterprise Boot Camp:** Provision of support and advice to bootcamp attendees in collaboration with the Business Engagement and Entrepreneurship Team.
- **Policy and Public Sector Engagement**  
Sustainability estates continues to support and lead on a number of county and wider sector working groups. Key collaborations are as follows:
  - Suffolk Climate Change and Energy Board Member
  - Co-Chair of the SCC Climate collaborative Action working group
  - Chair of the Climate Education subgroup
  - Higher Education Procurement Association – RPG CEW (Circular Economy and Waste / Packaging Reduction) Sub-Group
  - Chamber of Commerce – LSIP Working Group - Climate Adaptation Net Zero
  - Transport East Strategy Hub member

Staff team members also support on the following external forums:

- Energy Institute - Energy and Water Management Community
- SSC Climate Community Group sub-group
- 

### 9.3 Events

Running and contributing to sustainability events serves as a valuable link between our internal and external stakeholders and offers meaningful engagement with students. This year a number of events have helped to extend our reach, strengthening our connections within our staff and the broader community.

**9.3.1 Earth Day: Circular Economy:** Our Earth Day event, focused on the circular economy, drew a notable attendance of 53 delegates and featured six distinguished speakers representing key sectors, including business, academia, and the public sector. The event was designed to pinpoint and delve into the significant challenges posed by current consumption patterns while shedding light on pioneering strategies for product design and the development of a sustainable green economy. The lively discussions and informative presentations provided attendees with valuable insights, fostering a platform for awareness, knowledge sharing, and actionable solutions at the crucial juncture of sustainability, consumption, and economic practices.

**9.3.2 SCC Suffolk's Youth Climate Conference:** As a collaborative partner of the Suffolk Climate Change Partnership and working through the Suffolk Climate Emergency Plan actionable outcomes the university supported and exhibited at Suffolks first Youth Climate Conference held on behalf of public sector leaders in July in Bury St. Edmunds. The conference provided an opportunity for young voices to be heard on matters that will affect their future. 85 students attended discussions, workshops and green careers advice.

**9.3.4 SCC Thermal Imagery Loan Project:** Over the winter and early spring the university hosted a thermal imagery loan project for use by Ipswich residents. Supporting residents and SCC with the use of the resource package, feedback and evaluation forms.

## 10. Suffolk Sustainability Institute

In its second year of operation under the directorship of Professor Darryl Newport, the Institute has continued to build a solid stable core around its key research themes. We have attracted several key researchers and continue to build a formidable team from within to lead on our future growth. The team are working collaboratively on several key regional and national projects and since the re-inclusion in Horizon have been invited to partnership opportunities in Europe. The Institute continues to provide additional research, and consultancy; supporting innovation and enabling knowledge transfer and skills development for business, community and policymakers, within Suffolk and through its UK-wide established networks, building a knowledge base that has clear benefit to all its current and future partners.

### 10.1 Areas of Specific Research Interest

The SSI (Suffolk Sustainability Institute) is currently supported by two Research Fellows (in post from Feb 2022), a Research Associate (in post from August 2023) and a Research Administrator (in post from October 2022). The Institute has five PhD students using a range of funding processes. Research is focused interest on specific themes:

- **Sustainable Healthy Communities:** The focus of the SHC theme is the health of the community, how individuals, organisations and the built environment contribute to this. This aligns with ongoing work with the Dunhill Medical Trust, University College London and the Centre for Alternative Technology.
- **Green Infrastructure:** Interactions between the built environment and the natural environment. This includes the proposal (in development) with Suffolk County Council on impact of highways management on biodiversity, wider developing research themes with lecturers on anthropogenic impact on biodiversity, water and air quality. The SSI is working closely with the Church of England on developing a Net Zero programme for their organisation.
- **Natural Systems:** air, water, land and life in our region and beyond includes collaboration with local authorities, community including citizen science groups, and other stakeholders. Development of research on understanding and management of air quality in Suffolk.

- Smart House at Adastral Park: Developing use of facilities at the Smart House to enable research projects with collaborators with other universities (including Herriot Watt, Manchester, Edinburgh) business (including BT, Sustainable Drainage Solutions, Aardra Systems, Connected Energy) and further development of sensor and data systems.

## 10.2 Conferences and Events including International SEEDS (Sustainable Ecological Engineering Design for Society) Conference

- Successfully delivered at University of Suffolk the International SEEDS conference 2023 at which over 70 papers were presented over a three-day programme.
- Organised and ran two Challenge Labs, one focused on Air Quality the other on Hemp and Biobased construction materials, both included active multi-organisational participation and ongoing community involvement.
- Participated in BT's National Sustainability Festival, including keynote and panellists for Symposium for Institute of Engineering and Technology
- Presented online seminar and panellist for BT's Health Innovation Forum
- Keynote presented at Close Look Distant View Symposium
- Presented at Eastern Region Colleges Net Zero Conference
- Keynote presented at the Almshouse Association annual conference
- Presented at South East New Energy (SENE) conference focused on Helping Communities Deliver Net Zero Housing

## 10.3 Contributions to peer-reviewed papers, book chapters, conference proceedings, other publications

- Does distribution and type of aid affect internal migration following a cyclone? Evidence from Bangladesh DOI: 10.2139/ssrn.4468245 EID: 2-s2.0-85161107163 Part of ISSN: 15565068 CONTRIBUTORS: Mustafa, S.; Newport, D.; Rigg, C.; Islam, Md.S.
- Impact of the Covid-19 pandemic on microplastic abundance along the River Thames Marine Pollution Bulletin 2023 | Journal article DOI: 10.1016/j.marpolbul.2023.114763 EID: 2-s2.0-85148763036 Part of ISSN: 18793363 0025326X CONTRIBUTORS: Devereux, R.; Ayati, B.; Westhead, E.K.; Jayaratne, R.; Newport, D.
- "The great source" microplastic abundance and characteristics along the river Thames Marine Pollution Bulletin 2023 | Journal article DOI: 10.1016/j.marpolbul.2023.114965 EID: 2-s2.0-85153505966 Part of ISSN: 18793363 0025326X CONTRIBUTORS: Devereux, R.; Ayati, B.; Westhead, E.K.; Jayaratne, R.; Newport, D.
- Post-cyclonic migration in coastal areas: An assessment of who, where why migrates, and barriers to migration International Journal of Disaster Risk Reduction 2023-04 | Journal article DOI: 10.1016/j.ijdrr.2023.103726 Part of ISSN: 2212-4209 CONTRIBUTORS: Shahed Mustafa; Darryl Newport; Clare Rigg
- Community resilience; people, place, and practice SEEDS 2023 | Conference proceedings CONTRIBUTORS: Alison Pooley, Niamh Murtagh, Evelyn Callahan, Jenny Pannell, Alison Benzimra
- Initial reporting for H2BECS via DESNZ (Department for Energy Security and Net Zero) (Department for Energy Security and Net Zero) has been well received.
- Report and Planning Guidance on inclusion of air quality monitoring in planning conditions has been shared nationally, requested by approximately 30 Local Authorities well received.

## 10.4 Grant Funding and Applications

### Current Funding:

- Safe Suffolk Renters (£175,000) housing and health in the private rented sector
- Almshouse Resilient Communities, in collaborations with UCL (University College London) funded by Dunhill Medical Trust (£300,000)
- H2BECS, social value in development of hydrogen fuels, DESNZ (£70,000)
- ESSNET (Essex Net Zero Task Force) Stage 1 UKRI (United Kingdom Research and Innovation) (£5,000); Stage 2 application in progress at interview stage (£250,000)
- UK Space Agency Optical Communication Lab (£2.45M)
- Local Government Association NZIP (Net Zero Innovation Portfolio) with West Suffolk Council (£12,000)
- CRF challenge fund project with Natural Building Systems (£5,000)
- MRC (Medical Research Council) in collaboration with UEL (University of East London), Kingston University and UoS for Indoor Air Quality Monitoring on newly retro fitted residences (£15,000)

### Applications submitted:

- Resilient Coastal Communities and Seas, collaboration with Eastern ARC, UKRI, (£215,000)
- Expanding understanding in valuing Nature-based Solutions (NbS) in collaboration with UEL (£1.6 million ESRC (Economic and Social Research Council) grant application)
- Vertical Farming Solutions, BBSRC (Biotechnology and Biological Sciences Research Council) collaboration with Suffolk New College (£200,000)
- Local Industrial Decarbonisation Programme collaboration with NALEP (£50,000)

### Applications in preparation:

- Developing collaborative application to NERC (Natural Environment Research Council) for Innovation in Environmental Monitoring
- Highways management impact on biodiversity to SCC (Suffolk County Council): application by approach and request of SCC. Dr Hannah Steventon currently in informal discussions with SCC, potential value £240,000, with Dr Andres Arce and Dr Mark Bowler, School of Allied Health Sciences. In progress.
- Exploring application with Groundwork EAST to Natural England for Citizen Science Hub
- Developing application to ESRC for Building Resilience in Healthy Ageing10.5 Internal engagement projects/initiatives
- Collaborating with IHW re potential future bids to develop external links with Andrew Urquhart (NHS (North Essex and Suffolk)) and Philip Shelton (AHSN)
- Working with colleagues within the School of Technology, Business and Arts (computing) on student projects for Digitech Smart House.
- Research presented at R&KE UoS conference in June 2024
- Biodiversity with School of Allied Health Sciences: Dr Andres Arce, Dr Mark Bowler
- Working with BDKE on KTP (Knowledge Transfer Partnership) and other opportunities

## 10.6 External Businesses and Partners

- Developing further research collaboration with Sizewell C and have proposed several PhD opportunities led by our new Honorary Fellow, Dr Peter Bryant, Head of Environment, Decommissioning and Radiation Safety at Sizewell C
- Wide ranging engagement with local authorities, participation on air quality including funded project on Air Quality and Planning Policy with West Suffolk Council
- Developing collaboration with local/regional hemp and bio-based material producers and product developers

### 10.7 Outreach and Community

Staff are members of:

- Sustainability trustee of John Milton Academic Trust
- Trustee of local almshouse charity
- Youth Outreach including Trustee of Science Centre, BT's British Science Week materials, judge of sustainability challenge
- Members of Greener Ipswich
- Sit on the Suffolk Climate Emergency Plan main and sub theme groups.

### 10.8 Engagement Activities Curriculum - HEI/FE

Work is underway with colleagues in School of TBA to develop undergraduate and postgraduate curriculum for engineering/architecture/built environment:

- Data and challenges for Information Engineering Module
- Development and organisation of annual Data Hackathon for computing and data students (planned for Nov 23)
- Support for dissertation project for SCC / UoS Civil Engineering Apprentice

### 10.9 SMART house emerging case studies and research projects

Work in Smart House continues to include development as research and educational facility. Projects are being broadly developed by:

- Six undergraduate and one post-graduate dissertation project
- BT independent projects
- Workshop with BT Applied Research and computing lecturers.
- Liaison with BT and other partners
- Liaison with multiple technology providers
- Collaboration with local authorities

Natural Building Systems (NBS) project continues to develop with further opportunities for investment and research, in collaboration with NBS Ltd To observe the fabrication, build and installation of an innovative zero-carbon test building, utilising biobased insulation materials and modern methods of construction at the BT Adastral Park in Ipswich as part of the University of Suffolk Sustainability Institute. Funded by New Anglia LEP (Local Enterprise Partnerships) through the UK Government's Community Renewal Fund, the project aims to demonstrate the feasibility of this manufactured construction and assembly solution together with the potential for buildings to act as net carbon sinks.

