

**“We want to
improve our
sustainability and
play our part in
tackling climate change,
because if every
business did that,
the collective
impact would be massive.
However, as many
SMEs know, it can be
daunting knowing
where to start.”**

Jess Barnett, Brand Director at The Treat Kitchen



Nottingham Trent
University

The Sustainability in Enterprise project

Supporting small and
medium-sized Nottingham
businesses on their journey
to Net Zero

June 2023



European Union

European Regional
Development Fund

It is with great pleasure that we share the outcomes and insights from the Sustainability in Enterprise programme, which provided decarbonisation support for small to medium-sized enterprises in the Greater Nottingham area.

“There’s a real connection between the Sustainability in Enterprise project and Nottingham’s goal to be carbon neutral by 2028. NTU’s support for organisations is critical if the city is to reach that target and can influence the citywide strategy and investment needed to make it happen.”

Matthew Chesney,
Founding Director at BACKLIT



Thanks to the European Regional Development Fund we have delivered this two-year project, supporting over 200 businesses to reduce their annual carbon emissions by almost 1,000 tonnes.

Beyond immediate carbon reduction, our goal has been to enhance the capacity of local small and medium- sized enterprises (SMEs) to innovate, solve problems, and make informed decisions by leveraging the knowledge and expertise from schools and departments across NTU.

We know how important this is. SMEs might individually have a low carbon footprint, but collectively are estimated to account for around half of the UK's business-related emissions¹. National research shows smaller businesses are generally at an early stage of transitioning to Net Zero. Investing in sustainability is vital to the future of UK SMEs, with consumers, investors, suppliers and regulators all demanding more environmentally responsible products and services.

The Sustainability in Enterprise project is one of the many ways NTU is putting sustainability at the heart of everything we do. Embracing Sustainability, one of our six key strategic themes is led by our Vice Chancellor and for

over 10 years NTU has consistently ranked as a first-class university in the People and Planet University League.

We have an institutional pledge to achieve Net Zero Carbon emissions across all three carbon scopes by 2040. Our Green Academy has embedded sustainability across our curriculum. Sustainable Futures is one of our five research themes, where our interdisciplinary research offers holistic solutions and unique approaches to address the complex sustainability challenges the world is facing. All this, and the opportunity to deliver projects such as Sustainability in Enterprise, enable us to serve as champions for climate research, education, and action within our local economies and communities.

Thank you for your interest in this project and the work we do to support local SMEs in achieving their Net Zero goals.

Jeremy Hague, Director of
Knowledge Exchange at NTU

1. British Business Bank (2021), Smaller businesses and the transition to net zero



“The grant has enabled us to create a new graduate job, while the SCL gave us a structured way to give Georgie [the graduate] the knowledge and tools she needs in her new role.”

Jo Cox-Brown, CEO of Night Time Economy Solutions

Part-funded by the European Regional Development Fund, the £4 million Sustainability in Enterprise project supported **218 small and medium-sized businesses** (SMEs) to understand and reduce their carbon footprint and drive low-carbon growth.

Eligible businesses were located in a geographic area, comprised of all of Nottingham City Council and Broxtowe Borough Council, parts of Rushcliffe and Gedling Borough Councils and the Hucknall area of Ashfield District Council.

Running between 2021 and 2023, the project provided support from sustainability specialists across the University, enabling local businesses to benefit from free, practical support and interdisciplinary expertise delivered through one, holistic project.

SMEs received at least 12 hours of support or a grant. However, the support was often much more. The product design strand averaged over 100 hours of consultancy to each business they worked with.

218 businesses were supported to measure and reduce their carbon emissions, resulting in carbon savings of an estimated 1,000 tonnes.

WHO WE WORKED WITH

SIZE



PREMISES



SECTOR



HOW SiE SUPPORTED SMEs

UNLOCKING NTU EXPERTISE

Full Environmental and Carbon Audits – NTU Sustainability Team

- 56 businesses provided with baseline carbon footprints and detailed, practical carbon reduction recommendations with carbon emission reduction, cost savings and payback periods calculated.
- 15 hour consultancy package including a site visit.

Product Design Consultancy – Design Matter group in the School of Art and Design

- 14 bespoke product design consultancies provided by commercial product design consultants to reduce carbon, including product/packaging life cycle analysis, practical design concepts, material recommendations, and data for prototype production.
- 50 – 200 hour consultancy packages depending on complexity of brief.

Premises Consultancy – School of Architecture, Design, and the Built Environment (ADBE)

- 7 businesses seeking to move or refurbish their premises supported with retrofit survey and recommendations by the SiE Sustainability Consultant Architect.
- 15 hour consultancy package including a site visit.

Supervised Student Carbon Consultancy – delivered by Nottingham Business School (NBS)

- 43 businesses given carbon management insights to help them become more sustainable.
- 280 final year undergraduate students comprising 51 student consultancy groups.
- Consultancy package includes site visit and presentation of report to client.

Supervised Student Retrofit and Product Design Consultancy – ADBE

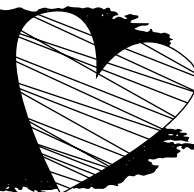
- 20 businesses given retrofit and product design insights to support decarbonisation.
- 220 students involved in consultancy from undergraduate and post graduate courses.
- Consultancy package includes site visit and presentation of report to client.

Environmental audits gave recommendations that led to a reduction of 3000 tCO₂e. 56 businesses now have a roadmap to reduce their emissions by an average 53% of their assessed carbon footprint



Working holistically: Of the 218 SMEs supported, 76 had support from 2 SiE delivery teams and 36 were supported by 3 or more SiE strands of support.

500 NTU undergraduate students now have practical carbon management skills and experience they can take into their future employment.



Over 1200 consultancy hours provided for product design consultancy.

“Sustainability has an impact on humanity around the world, it’s not just about activism. There needs to be more education around the small and large changes we can all make to have an impact.”

Zoe Binding, HR Assistant, White Rose

BUILDING IN HOUSE CAPACITY

Carbon Management Programme (CMP) - Nottingham Business School (NBS)

- Participants from 55 businesses learnt how to measure and reduce their carbon footprint, set carbon reduction targets, and develop an implementation plan.
- 10 cohorts of 4 half day workshops, with additional 1-2-1 support.

Sustainability Community Lab (SCL) - NTU Employability Department

- 77 early career professionals gained the tools, knowledge, and peer support to improve sustainable practices within their enterprise.
- 8 cohorts of six half-day workshops over eight weeks, including talks from guest business speakers.

FINANCING CARBON REDUCTION

- 31 businesses awarded **carbon grants** to fund 40% of the cost of implementing carbon reduction actions. **£260,000 of ERDF grant** supported businesses to invest £360,000 in their own decarbonisation.
- 20% of the salary of 88 new graduate roles were supported via the **SiE Talent Grant. £315,000 of ERDF grant** supported SMEs to embed **sustainability KPIs** into these new roles.

Collectively, grant funded actions will save businesses an estimated £130,000 and 185 tonnes of GHG emissions every year. The median payback period for investment is 4 years with the SiE grant.



Many SMEs are in leased premises. Post SiE support, there are two main barriers faced by businesses who want to improve their environmental performance – lack of capital funding and factors outside of their control. Analysis of the latter suggests that this is predominantly the challenges of being in rented premises and supply chain issues from the Covid-19 pandemic.



“We have learnt a huge amount about how to apply our prior knowledge to the context of business as well as developing skills in calculating the carbon footprint and developed innovative recommendations on how to reduce this. It has been an exciting and inspiring opportunity for all, and we are so grateful for everyone involved.”

SiE student consultant

INSIGHTS AND IMPACTS

Whilst the project reports to an overall carbon reduction target of 750 tCO₂e, a wider lens is required to understand the full impact of the support.

All SiE beneficiaries completed a sustainability survey before and after receiving support. Analysis of the data shows carbon management and sustainability practices have progressed significantly, as a result of the project. This is likely to result in an overall carbon emission reduction impact greater than that we can confidently calculate.

A interdisciplinary research team from Nottingham Business School and the School of Architecture Design and Built Environment supported the SiE impact evaluation and data analysis as part of the SUSchange project. The project was co-led by Dr Muhammad Mazhar and Dr Ana Rita Domingues.

“NTU’s Sustainability in Enterprise programme has genuinely accelerated our progress by 12 months – in terms of awareness and ability to assess our carbon emissions.”

David Mather, New Art Exchange

PHYSICAL ACTION		
Almost 1000 tCO ₂ e reduced. Carbon calculations were only completed for businesses receiving SiE consultancy.		
SMEs report planned action on: building energy (70%), waste (52%), business travel (50%), procurement & supply chain (50%), staff commute (40%), own transport fleet (27%), water (23%)		
62% of businesses are effectively managing their carbon emissions and successfully implementing carbon reduction projects as planned, compared with 9% before support		

AWARENESS, ENGAGEMENT & STRATEGY	BEFORE	AFTER
We have developed an environmental or sustainability policy for the business	57%	72%
We have a dedicated carbon management plan or strategy	10%	57%
Carbon management is central to our business activities and decision making	20%	56%
We have, or are progressing towards setting, carbon reduction targets	25%	70%
We are able to manage the conflicts between carbon management and core business growth	23%	59%
We have carbon reduction behavioural change and awareness raising programmes for staff	12%	59%
We communicate our carbon reduction targets, strategies and performance to all relevant stakeholders	12%	53%

KNOWLEDGE & CAPABILITIES	BEFORE	AFTER
Does your enterprise measure its carbon emissions/ footprint? yes/in progress	18%	71%
We have the required knowledge and skills to calculate the carbon footprint of our business	12%	73%
We are effectively tracking and reviewing progress towards our carbon management target	8%	58%



“We’ve set ourselves a target to reduce our carbon footprint by 15% this year, and by a further 15% by the end of 2024. The support we’ve had from NTU’s Sustainability in Enterprise programme has helped us to embed sustainability across the business and get the whole staff team on board with lowering our emissions.”

Joanne Ord, Finance and Administration Manager, Millward Consulting Engineers

SiE support led to a marked improvement in business resource monitoring. Capacity to collect resource data was a significant barrier for some businesses accessing the programme. Many SMEs received considerable SiE help to identify and collect data in the correct format prior to formal support commencing.

MONITOR RESOURCES REGULARLY	BEFORE	AFTER
Electricity	52%	83%
Gas	37%	59%
Water	34%	46%
Waste	30%	60%
Fuel - owned fleet vehicle	8%	31%
None	40%	9%

LOOKING FORWARD

Before the project, SiE businesses reported the lack of knowledge & expertise and lack of time & resources were the biggest barriers to decarbonisation. Exit surveys showed SiE style support significantly reduces these barriers. SiE businesses told us that access to capital funding and factors outside their control are the biggest barriers going forward. Being in leased premises and the challenges associated with that, were referenced prominently by exiting businesses.

	BEFORE	AFTER
Lack of knowledge and expertise	79%	2%
Lack of time and resources	58%	15%
Lack of capital funding	46%	48%
Lack of data collection, monitoring or management systems	44%	8%
Lack of policy or strategy	42%	2%
Not a priority	7%	2%
Staff resistance to behavioural change	6%	7%
Factors out of control (e.g. rented premises/ accessing suppliers)	Not asked	40%

“The only barriers are what we are able to do within our contract on our leasehold building - we have to comply with the landlord which may restrict certain changes”

SiE client

WHITE ROSE

SIE SUPPORT – ENVIRONMENTAL & CARBON AUDIT |
CARBON GRANT | TALENT GRANT

White Rose is a pioneering sustainable fashion retailer, raising money for the Aegis Trust.

Following a full SiE environmental and carbon audit, White Rose received a talent grant to hire a new graduate Assistant Shop Manager. This new role helped take forward recommendations from the audit, and the salary savings were reallocated alongside an SiE carbon grant, to finance carbon reduction actions.

Through the consultancy, White Rose now has a clear picture of its baseline carbon emissions, together with recommendations for reducing its carbon footprint by up to 80%. Recommendations included switching to certified green energy tariffs, a cycle2work scheme, installing LED lighting, running an energy-based employee engagement campaign, and implementing manual heating controls.

Amy Zibek, HR Manager told us their plans after the audit report.

"It could have been easy to put sustainability on the back burner because we're really busy, but NTU made it simple and has saved us so much time. They were really supportive, and the consultancy has given us an invaluable source of comprehensive information we can use now and in the future. It's given us a clearly defined pipeline of plans and the data we needed to implement change. As well as being the prompt we needed to move ahead more quickly."

"On a people front, we're putting the foundations in place to introduce a sustainability champion role into the business. We've also applied for NTU grant funding to help us recruit a recent graduate to help support sustainability at White Rose. Along with cost, lack of resources can be a key barrier for SMEs like us when it comes to sustainability, so both of these steps will make a big difference."

Amy Zibek, HR Manager



ALPKIT

SIE SUPPORT - STUDENT CONSULTANCY | PRODUCT DESIGN CONSULTANCY |
ENVIRONMENTAL & CARBON AUDIT | CARBON GRANT

Alpkit are an award-winning outdoor and bike brand with retail stores across the UK.

After a sustainability consultancy and recommendations that would reduce their carbon emissions by 16%, Alpkit received a grant to install LED lighting and worked with Product Design undergraduates and NTU's commercial product design research group, Design Matter, to reduce the carbon footprint of two products.

Design Matter, provided 57 hours of consultancy to carry out a life cycle analysis to identify the weight and carbon footprint of each component in their best-selling BruKit stove and developed design changes.

Rowan shared: "As a result, we're replacing the stove's insulating neoprene sleeve with cork, a high quality insulator which is less toxic to produce. We're also making a few other design tweaks to the stove, based on Design Matter's recommendations, including reducing the volume of plastic in the product and removing part of the assembly."

72 NTU Product Design undergraduate students were supervised to provide a similar consultancy of the Alpkit Soloist tent.

"Focusing on our Soloist tent enabled us to explore the data-driven redesign of one of our best-selling products, which was really exciting and got us into the nitty-gritty of sustainable design and the product life cycle. Using aspects from every student project, we're exploring switching to recycled materials, eliminating waste in production, redesigning the pole hubs to reduce weight and material use, tweaking the tent's dimensions and structure, improving our packaging, and prolonging the Soloist's usable life with improved care instructions and repair kits."

"Thanks to NTU, the Soloist and BruKit will both be more sustainable in 12-18 months' time, but it doesn't end there. Now we have the LCA data from both projects, we can cross reference it and make rough estimates about the carbon footprint of other products, enabling us to carry forward the lessons learnt and explore data-driven sustainable design throughout the entire Alpkit range."

Rowan Williams, Senior Product Developer



Alpkit received a carbon grant to install LED lighting, resulting in carbon savings of 5.8% (10.1 tCO₂e). Additionally, the team now have product design recommendations with a potential carbon saving of 31% (16.8 tCO₂e) on their Soloist tent and 19% (4.64 tCO₂e) on their best-selling BruKit stove, which was reduced in weight by 200g.



"The support we've had has been fantastic and so worthwhile. Above all, it's given us the tools, know-how and motivation to supercharge our approach and implement our sustainability strategy deep into our company culture."

Callum Tindall, Previous Sustainability Champion at Cockburn Lucas

Sustainability in Enterprise

Supporting small and medium-sized Nottingham businesses on their journey to reach Net Zero.

MILLWARD

SIE SUPPORT - CARBON MANAGEMENT PROGRAMME | TALENT GRANT |
SUSTAINABILITY COMMUNITY LAB | STUDENT CONSULTANCY | CARBON GRANT



Millward is an integrated engineering consultancy working across the construction industry.

Millward first engaged with the SiE project when two of their staff attended the Carbon Management Programme, while their Graduate Civil Engineer (hired through the talent grant) joined the Sustainability Community Lab. Following this, Millward worked with Nottingham Business School student consultants and used a carbon grant to take forward student recommendations for LED lighting.

"I was very new to sustainability when I joined the Millward team last April, so I signed up to NTU's Carbon Management Programme to find out more and learn how to calculate our carbon footprint."

"Next, I thought it would be good to get some help from NTU's student consultants as they've been studying sustainability for much longer than I have and really know their stuff. As a company, we wanted to find out if we were on the right track with sustainability and get some practical help to reduce our energy use and carbon impact."

"The student consultants were all really insightful, they asked great questions and came back with some fantastic solutions. They checked our lighting and recommended the best way for us to switch to LED which gave us the confidence to go



ahead with our lighting plans. We had a Carbon Grant from NTU, which has refunded 40% of the upfront cost, making switching even more affordable. Our LED lightbulbs have only been fully installed since January, but we've already seen a 20% saving in our monthly electricity bills."

"We've set ourselves a target to reduce our carbon footprint by 15% this year, and by a further 15% by the end of 2024. The support we've had from NTU's Sustainability in Enterprise programme has helped us to embed sustainability across the business and get the whole staff team on board with lowering our emissions."

Joanne Ord, Finance and Administration Manager

Millward now has energy-efficient lighting 40% funded by a Carbon Grant, reducing their monthly electricity bills by 20%



"As well as making our carbon reporting more accurate, bringing it in-house has saved us thousands of pounds in consultancy fees. At the same time, it has enabled us to focus on sustainability as a business and to understand exactly what we what to achieve, which is the baseline of carbon reporting."

Carbon Management Programme participant:
Luke Radford, Administration Manager and Sustainability Lead at 2bm Ltd



CADXTRA

SIE SUPPORT - TALENT GRANT | SUSTAINABILITY COMMUNITY LAB |
ENVIRONMENTAL & CARBON AUDIT



NTU's Sustainability Community Lab helped Nottingham-based design consultancy, CADXtra, set carbon reduction targets.

CADXtra is a multi-disciplined design consultancy, working with world-leading manufacturers.

CADXtra received funding through a graduate talent grant to hire Kieran Stewart as a Junior Design and Project Engineer. The additional sustainability targets for the role included working with an external consultant to put the company through their ISO 14001 assessment. Additionally, he was tasked with helping map their footprint and researching ways of improving the overall sustainability of the business. Kieran was supported to do this through the Sustainability Community Lab.

The company also worked with NTU's Sustainability Consultants to calculate their carbon impact and put an action plan in place to reduce emissions.

"As part of the programme, NTU calculated our first ever carbon footprint and gave us 29 recommendations for reducing our carbon emissions. Kieran is exploring how we can successfully roll out as many of the recommendations as possible, from using segregated food waste bins, to reducing our business travel, to setting up a system for gathering accurate sustainability data."

"The SiE programme has given us the capability to dedicate time to sustainability and invest in the future of our business. As a small company, it can be hard to maintain the impetus when there's no one else supporting you. Through NTU's support, you feel as if you have a partner, someone who is able to sit with you, guide you, and give you the tools, which makes everything seem so much easier."

Jonathan Hedge, Director

"The Sustainability Community Lab has taught us how to think about and apply sustainability specifically to our companies, rather than simply telling us what to do. It's also showed me how small changes can add up and broadened my view of sustainability and how different approaches can be used."

"Being aware of how I can change my own habits around sustainability has made it easier for me to ask my colleagues to join in and change theirs. As part of that, we're holding monthly environmental meetings so I can share what I've learnt, and I'll keep educating myself and passing it on. That learning, together with our carbon footprint and recommendations, will also be written into our environmental policy."

Kieran Stewart, Junior Design and Project Engineer

MICROTIPS FOR SMES

JAMES MEADWELL – PRODUCT DESIGN MANAGER

- Embed sustainability in the design process for a new product at the outset. As with all design issues, sustainability will lead to trade-offs. Try to ensure you understand how making choices, for example in materials selection, might affect other parts of the product lifecycle. Consider what will happen to your product at the end of its life.
- Don't presume. Sometimes preconceptions about materials or processes and their sustainability are incorrect. Furnish yourself with the appropriate information. Take advantage of recycled materials. Ask your suppliers for Environmental Product Declarations.
- Moving components and products around can be carbon intensive, try to use local supply chains and manufacturers if you can, and keep the weight of your products as low as possible.

DR MUHAMMAD MAZHAR – SENIOR LECTURER IN SUSTAINABILITY

- Take time to collectively define what sustainability actually means for your business, and how it can be translated into actions.
- Make carbon management part of normal business practices by developing a realistic action plan with clear responsibilities for delivery. Start with the low or no cost measures and regularly monitor progress against targets. Don't forget to celebrate successes.
- Communicate your commitments and progress to stakeholders internally and externally. Be open to seeking support from peers and local support networks. We can only achieve net zero through meaningful collaboration.



MICHELLE JOHANSSON – SUSTAINABILITY CONSULTANT ARCHITECT

- First, invest in improving the airtightness and insulation of your building envelope to ensure you aren't wasting energy through heat loss. Solar PV arrays should be considered once the envelope is improved, appliances are energy efficient and occupant behaviour change is underway.
- Have certified electrical and HVAC consultants do a survey of your electrical and HVAC systems. Energy costs can generally be reduced by removing redundancies and ensuring your systems work efficiently.
- Electric Air Source Heat Pumps work very well and are very energy efficient. As an emerging technology that is not always well understood, think about having a certified heat pump consultant provide a feasibility appraisal.

ROSE PLAYLE – SUSTAINABILITY CONSULTANT

- Don't let a perceived lack of influence over landlords, suppliers, or other stakeholders prevent you from seeking access to data or low-carbon upgrades. Requests may not be immediately accommodated, but a shift towards carbon-consciousness will develop as more organisations add their voices.
- Think carefully about 'locking in' future emissions when purchasing new equipment. Electric-powered equipment will benefit from reduced emissions as the UK electricity grid decarbonises over time, whereas gas-fuelled equipment won't.
- Inviting all colleagues to be part of the solution, builds a solid culture of sustainability. Excellent ideas can originate from any organisational level, often those ideas that aren't immediately obvious to a specific 'green champion', or the business leadership team.

Partner with NTU

Together, let's step up for Net Zero and build a sustainable future.
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